



THE CITY OF TOMBALL

Preliminary Engineering Report for MEDICAL COMPLEX DRIVE EXPANSION

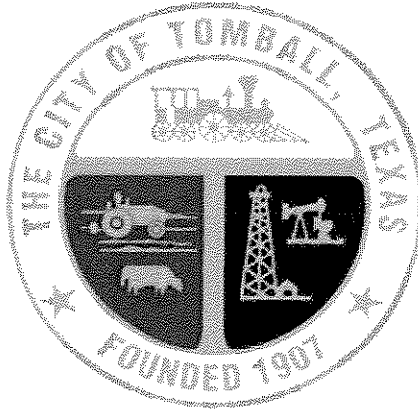
COT E&P Project No. 2003-10017

CobbFendley Project No. 0812-008-00

March 2009

Submitted By:





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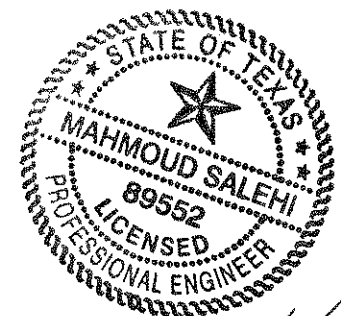
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 **CobbFendley**
Texas Registration No. 274



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3/31/09

**PRELIMINARY ENGINEERING REPORT
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I. EXECUTIVE SUMMARY

City of Tomball (City) authorized Cobb Fendley & Associates (CobbFendley) to prepare a Preliminary Engineering Report (PER) for the Medical Complex Drive Expansion Project (COT E&P Project No. 2003-10017) on July 25, 2008. The primary objective of this PER is to provide the City with engineering recommendations for the feasibility of an approximate 5 miles of four-lane divided boulevard with raised median that serves as an additional east-west corridor in order to alleviate traffic congestion on FM 2920.

As illustrated in **Exhibit 1**, the proposed Medical Complex Drive corridor allows for east-west traffic currently confined to FM 2920 / Main Street to filter to the south through the southern half of City. The project extends from its western terminus, 1790 feet west of the intersection of Park Road and FM 2920, to its eastern terminus at the intersection of Mahaffey Road and FM 2920. In order to reduce the overall project cost, the proposed roadway alignment and right-of-way (ROW) envelope is designed to follow the available City-owned rights-of-way and incorporate the existing improved segments of Medical Complex Drive within the project limits.

The proposed typical roadway section is a reinforced concrete curb and gutter pavement in a boulevard configuration within a 120-foot ROW. The pavement consists of four 12-foot travel lanes divided by a 42-foot raised median with left turn bays and median openings. The median will allow a future roadway expansion to accommodate the construction of two more travel lanes without requiring the acquisition of additional ROW. Three alternatives were considered when determining the proposed alignment of Medical Complex Drive. The alternatives only differed on the western end of the project at the connection to FM 2920. The proposed alternative takes a more northerly route from Calvert Road to align with the existing Park Road and includes three bridges, one at SH 249 and two at the BNSF railroad crossing; five new traffic

signals; and two traffic signal modifications. The proposed roadway ROW will encompass approximately 60 acres of land which impacts 90 parcels.

The proposed Medical Complex Drive alignment is designed to minimize major utility conflicts. Within the ROW, water, gas, sanitary, overhead power, and several oil and gas pipelines and facilities exist. Areas of potential conflict include sanitary public pump stations, a transmission line at the BNSF railroad, a Tortuga oil/gas facility, several public utilities, and underground pipelines. Any conflicts from underground pipelines that are crossing the proposed roadway will be determined upon further investigation. Additionally, a proposed 12-inch waterline, 12-inch wastewater line, and 4-inch natural gas line have been designed to better accommodate the future growth along the proposed corridor.

The drainage for this roadway project utilizes closed conduit storm sewer systems to convey flow from the roadway as well as incoming outside areas to the outfall locations. These storm sewer systems are designed to have sufficient capacity to convey the 2-year storm frequency. Within the project area, there are 16 separate existing drainage systems, each with its own individual outfall. These outfalls consist of roadside ditches, channels, storm sewers and overland swales. Coordination with Texas Department of Transportation (TxDOT) will be required due to the existing outfalls to TxDOT storm sewers/ditches along Tomball Parkway and SH 249 and to a roadside ditch along FM 2920 on the eastern end of the project.

Peak curb elevations along the roadway will be adjusted to allow sheet flow to continue to occur similarly to the way it currently does in the existing condition during the 100-year frequency rainfall event. This sheet flow will be conveyed within the roadway limits to multiple collection points before discharging into the outfall channels at flow rates which are at or below the existing rate. This

project will require an additional 34 acres of land (11 parcels) for constructing detention ponds which will be utilized to mitigate impacts associated with increases in drainage as a result of the construction of the proposed roadway.

Based on 2009 average bid prices, the estimated construction cost for the project is **\$49.278 Million**, which includes **\$9.173 Million** for ROW, but excludes proposed outfall channel construction that will be needed prior to the commencement of certain segments, detailed utility relocation, environmental remediation (if required), and soft costs such as engineering, district formation (if required), and bond issuance cost and interest (if required). The total funding of a project of this size and scale can be complex. It is recommended that a project finance plan and preliminary cash flow schedule be prepared. In order to make the overall project more manageable and cost efficient, it was divided into five complete construction phasing segments that can be independently designed, bid, and constructed.

The primary objective of this PER is to evaluate the feasibility of a proposed east / west corridor that will assist in alleviating traffic along the only existing major east / west corridor, FM 2920 / Main Street. The preliminary design presented in this PER shows that an alignment can be developed to utilize existing roadway and limit utility conflicts in order to minimize the cost of the construction; and it shows that alternative funding options are available to assist the City in funding portions of the project through the use of strategic partnerships with both the public and private sectors.

II. INTRODUCTION

A. Purpose and Scope

The purpose of this Preliminary Engineering Report (PER) is to provide the City of Tomball with an engineering analysis, preliminary design, and recommendations for construction of Medical Complex Drive expansion from approximately 1790 feet west of the intersection of Park Road and FM 2920 and Park Road to its eastern terminus at the Mahaffey Road and FM 2920 intersection. The project will utilize the existing segments of the recently constructed Medical Complex Drive.



Intersection of Park St. and FM 2920
Looking South



Intersection of Agg Rd. and BNSF
Railroad Looking West



Prop. Medical Complex Dr. West of SH 249
Looking East



Intersection of Mahaffey Rd. and FM 2920
Looking East

This report provides recommendations for the following improvements:

- roadway improvements
- horizontal and vertical pavement geometric design
- drainage analysis and impact
- preliminary storm sewer design
- traffic study
- environmental site assessment
- wetlands delineation
- preliminary right-of-way (ROW) mapping
- preliminary signing and pavement markings
- bridge alignments
- construction phasing and segmentation

The PER is prepared in accordance with the *Professional Services Agreement for Engineering Services* and City of Tomball Engineering and Planning Department Guidelines and Requirements. The Scope of Services to accomplish the analysis and design includes the following:

Basic Services:

- public and private utility research
- property ownership research and preliminary ROW mapping
- FEMA floodplain research
- water line condition evaluation
- preliminary drainage and storm sewer analysis
- roadway alignment alternatives
- pavement section alternatives
- bridge crossing schematics
- drainage study
- major utility conflict identification
- water line extension

- project segmentation for construction phasing
- sanitary sewer extension
- gas line extension
- recommendations
- construction cost estimate preparation
- funding options and segment prioritization for design & construction
- private utility companies coordination
- City of Tomball and other governmental agencies TxDOT, H-GAC, and BNSF railroad company coordination
- Project management
- PER preparation
- preliminary roadway alignment plans of recommended alternative preparation

Additional Services:

- Abstracting
- Limited topographic surveying
- GPS coordinate establishment
- Aerial photography with Ortho-Topo and DTM
- Phase I environmental site assessment
- Wetland delineation
- Traffic engineering study
- Public meeting preparation and attendance

B. Project Authorization

Authorization for the PER or Preliminary Design and Feasibility Study Report is provided in the *Professional Services Agreement for Engineering Services* executed on July 23, 2008. The project has the following identification and authorization numbers:

- COT E&P Project No. 2003-10017

C. Pertinent Analysis Data (Gathered and/or Deducted)

- The proposed roadway alignment is centered in a 120-ft wide ROW. This is sufficient to construct the recommended facility.
- The profile grade line (PGL) is generally set at or slightly below the adjacent right of ways to allow positive drainage.
- The proposed travel lanes are 12-feet wide.
- The boulevard section is designed for future lane expansion.
- The design speed is 45 miles per hour.
- The 2-year storm frequency, based upon City of Houston criteria, was used in the calculations to size the proposed Medical Complex Drive storm sewer systems.
- Peak curb elevations along the roadway are designed to allow sheet flow to continue to occur similarly to the way it currently does in the existing condition during the 100-year frequency rainfall event.
- A traffic signal warrant study must be performed at major street crossings of proposed Medical Complex Drive.
- Approximately 4.11 acres of potential wetlands exist within the ROW. This needs to be field verified for surface connections into Jurisdictional Water.
- Further environmental investigation is needed at a dry cleaner site, railroad easement site, and several oil/gas drill sites.

D. Summary of Data Sources

- Gunda Corporation traffic engineering study, February 2009.
- Berg Oliver Associates Phase One Environmental Site Assessment, January 2009.
- Berg Oliver Associates Wetland Assessment, December 2008.
- Manual of Uniform Traffic Control Devices (MUTCD)
- A policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials

- Highway Capacity Manual, Transportation Research Board, 2000
- City of Houston Department of Public Works and Engineering, Infrastructure Design Manual, October 2008
- Hydraulic Design Manual, Texas Department of Transportation, Revised March 2004
- FIRM - Flood Insurance Rate Map panels' 48201C0210L and 48201C0230L, Revised June 18, 2007.

III. EXISTING CONDITIONS

A. Project Location

Medical Complex Drive Expansion Project is located in the City of Tomball in northwest Harris County Precinct 4 (Key Maps 288 and 289). The proposed expansion project adds another east-west corridor that bypasses the current primary east-west arterial, FM 2920 / Main Street, to the south. The project covered by this PER begins at its western terminus, 1790-feet west of the intersection of Park Road and FM 2920, and extends to its eastern terminus at the intersection of Mahaffey Road and FM 2920 for a distance of approximately 5 miles. Refer to **Exhibit 1** for the Project Location Map.



Intersection of Park St. and FM 2920
Looking North



Prop. Medical Complex Dr. at School St.
Looking South



Exist Medical Complex Dr. at Holderrieth S.
Looking West



Prop. Medical Complex Dr. at Mahaffey Rd
Looking West

B. Topography

The proposed project is located in the northern portion of the Willow Creek watershed. The terrain within the drainage area for this project is relatively flat with a range of elevations from approximately 160-feet to 190-feet along the 5-mile alignment. The terrain generally decreases in elevation and sheet flow drains from north to south direction where existing runoff is conveyed by combination of roadside ditches, storm sewer systems and discharged into several outfalls, including HCFCD's M-112-00-00, M-116-00-00, M-118-00-00, M-121E-00-00, M-121W-00-00, and M-124-00-00. Several of these channels are situated in a north-south configuration perpendicularly crossing the proposed Medical Complex Drive ROW. These outfall channels flow in a southerly direction for a distance of approximately 1.5 miles where they drain into Willow Creek, HCFCD M-100-00-00. Indications of scattered ponds and wetland areas were found in the vicinity of the proposed projects.



M124-00-00 approx. 1000-ft S of Triechel
Looking North



Prop. Medical Complex Dr. at School St.
Looking East



Agg Rd at Hufsmith Kohrville Rd
Looking West



M121-00-00 near Holderrieth Rd
Looking South

C. Roadway

This project will extend the existing Medical Complex Drive east and west toward FM 2920 in both directions. In order to reduce the overall project cost, the proposed roadway alignment and right-of-way (ROW) envelope is designed to follow the existing useable sections of Medical Complex Drive and available City-owned rights of ways. The existing Medical Complex Drive that is to remain is currently a four-lane reinforced concrete curb and gutter pavement in a boulevard configuration within a ROW that ranges from 80-foot to 100-foot

between Tomball Parkway and Station 141+15. The existing pavement transitions to a half boulevard section until Holderrieth S. Boulevard. The existing pavement that is to be replaced due to this project is described as the following:

- **Park Road:** A two-lane asphalt pavement with roadside ditch configuration starting at the western terminus of the project to the north side of FM 2920 at approximately Station 145+00. The existing ROW is 60-foot throughout.

- **Medical Complex Road:** A two-lane asphalt pavement with roadside ditch configuration starting at Calvert Road to west side of SH 249 at approximately Station 105+00. The existing ROW is 60-foot from the west until approximately Station 85+00 where it jogs to a 70-foot ROW until it jogs back to a 60-foot ROW at approximately Station 95+00.

- **Medical Complex Road:** A four-lane reinforced concrete curb and gutter pavement in a boulevard configuration in between SH 249 and Tomball Parkway with an additional turn lane at SH 249. The existing ROW is 90-foot from the west until approximately Station 116+00 where it jogs to a 70-foot ROW.

- **Agg Road:** A two-lane asphalt pavement with roadside ditch configuration starting at the east side of S. Cherry Street to the west side of S. Persimmon Street at approximately Station 224+00. The existing ROW is 80-foot from the west until Mulberry Street where it jogs to 60-foot and then jogs back to 80-foot at approximately Station 196+00. The existing ROW is 80-foot until it transitions down to a

60-foot ROW after the BNSF railroad crossing and continues 60-foot until S. Persimmon Street.

- **Mahaffey Road:** A two-lane asphalt pavement with roadside ditch configuration starting at approximately Station 294+00 to the eastern terminus of the project at FM 2920. The existing ROW is 60-foot throughout.

D. Drainage

Aerial imagery (aerials) and digital terrain modeling (DTM) was obtained for the limits of the project. In addition, site visits were made to gather data regarding the existing roadways, drainage structures and the existing outfalls. It was determined that the entire project extents were contained within the Willow Creek Watershed (HCFCD Unit No. M100-00-00). For the majority of the project area, drainage typically occurs from the north to the south conveyed via roadside ditches, except near SH 249 where flow is channelized in storm sewers. The primary HCFCD tributaries associated with this project are: M112-01-00, M116-00-00, M121-00-00, M125-00-00, M124-00-00.

Existing condition drainage area maps were delineated from the aerials and DTM's, as well as as-built drawings. Sixteen individual drainage systems were identified within the project area. Drainage boundaries were also established for outside areas that contribute flow to the project area but were not located directly within the limits of the project by using LiDAR data obtained from the Harris County Flood Control District's TSARP study. This information was utilized to calculate existing flows for each system for comparison to the proposed drainage facilities to determine the amount of detention that will be required to mitigate impacts to receiving streams in the post project condition.

The defined existing condition drainage areas were further subdivided into smaller groups such as areas comprised of concrete, developed residential area, or grass area depending on their respective land use. Values were assigned to each of these different sub-areas to represent their amount of impervious cover. Rational Method runoff coefficients of 0.90, 0.55 and 0.35 were used for pavement, residential development and grass, respectively.

Each of the drainage areas were also analyzed to determine the time of concentration. The time of concentration is defined as the time that it takes a drop of rainfall to travel from the most hydraulically remote point within a drainage area to its point of interception. Time of concentration values were established, using TxDOT criteria, based upon velocities previously established for each different land type traversed. TxDOT's calculation for time of concentration is more conservative as it considers actual land use to determine the rate of flow; therefore, it was used to determine time of concentration rates rather than the City of Houston equation $T_c = 10A^{0.1761} + 15$ which is less conservative and provides more of a generalized number based upon typical land averages within the City of Houston. Hydrologic calculations were then performed for these varying land configurations. The Rational Method was utilized to calculate rainfall intensity and flow for various rainfall events for each of the drainage areas. For this study, the 2-year and 100-year rainfall events were analyzed for hydrologic calculation.

Run-off flows based on Rational Method:

$$Q = CIA$$

Where:

Q = water flow [cfs]

C = Run-off Coefficient

i = Rainfall Intensity [in/hr]

A = Sub-basin Area [acres]

Run-off Coefficient (C-value) based upon percentage impervious area within sub-basin:

$$Ia = \frac{(Area_{Imperv} + Area_{Subdv} * .55)}{Area_{Total}}$$

$$C = 0.6 * Ia + 0.2$$

Determination of Time of Concentration (TC):

- Determined Hydraulic lengths of each sub-basin. The lengths were then divided into three (3) categories: concrete, channel, and grass
- Calculated TC based on run-off velocities for each land cover, where:
 - $V_{conc} = 3 \text{ ft/sec}$
 - $V_{chan} = 1.5 \text{ ft/sec}$
 - $V_{grass} = 0.7 \text{ ft/sec}$
- Minimum TC set to 10 minutes
- Intensities based on City of Houston IDF curves with rainfall duration equal to TC

The existing condition drainage systems were identified from east to west along the project corridor and labeled from A to P as shown on **Exhibit 2** – Overall Drainage Area Map. Listed below is a description of each of the existing condition drainage systems:

System A

System A begins at the east end of the project at the intersection of Mahaffey Road and FM 2920 and ends near Station 300+00. System A has businesses on the south side of Mahaffey Road and residences on the north side. Storm water runoff is conveyed in System A via roadside ditches along Mahaffey Road in the existing condition and outfalls to the roadside ditch along FM 2920 in the northwest direction.

System B

System B ranges from Station 300+00 to Station 276+25. From the eastern end of System B flow is conveyed southwest along the Mahaffey Road roadside ditches to the point just past the turn in the road and outfalls southeast into a small overland swale near the powerline easement near station 295+00. In the existing condition, flow from the west end of System B is currently undeveloped and travels overland as sheetflow towards the same outfall location. The swale the serves as the outfall channel for System B is very shallow and travels through private property and then turns southeast along the powerline easement.



Detention Pond on Mahaffey Rd.
Looking Southwest

System C

System C ranges from Station 276+25 approximately to Station 246+50, just to the east of Hufsmith-Kohrville Road. Approximately 635 acres drains through System C. System C has a large outside area to the north which drains to the project area by M116-00-00, detention pond outfall channels, and several other small ditches.



Detention Pond Outfall
Looking Northwest



M116-00-00 Upstream (West Side)
Looking East



M116-00-00 Upstream (East Side)
Looking East



M116-00-00 Downstream
Looking Southeast

System D

System D ranges from approximate Station 246+50 to Station 232+50, and outfalls to roadside ditches southward along Hufsmith-Kohrville Road. The roadside ditches along Hufsmith-Kohrville carry large amounts of flow from Tomball north of the project area.

System E

System E ranges from Station 232+50 approximately to Station 213+50. The flow from the east side of System E is comprised of overland sheet flow towards the roadside ditch along Persimmon Street. Flow from the

west side of System is conveyed via roadside ditches along Agg Road. The outfall for System E is an undefined swale which runs overland between properties and eventually drains to a pond located on private property. LiDAR data indicates flow will continue to the east along an overland swale to Hufsmith Kohrville Road south of the project location once the pond overflows.

System F

System F ranges from approximate Station 213+50 to Station 207+75. System F runs along what is currently existing Agg Road. System F drains to the west along the roadside ditches on Agg Road and outfalls on the east side of the BNSF railroad tracks.

System G

System G ranges from Station 207+75 to approximate Station 200+00. System G runs along what is currently existing Agg Road. System G drains to the east along the roadside ditches on Agg Road and outfalls on the west side of the BNSF railroad tracks.

System H

System H ranges from approximate Station 200+00 to Station 185+00 at the intersection of Agg Road and S. Cherry Street. System H drains west along the roadside ditches on Agg Road and outfall to the roadside ditches on S. Cherry Street. On the south side of Agg Road in System H, there is an existing detention pond which pumps storm water from the pond to the roadside ditch once the water in the pond reaches specified levels. The detention pond serves the neighborhood on the north side of Agg Road – Cherry Meadows.

System I

System I ranges from Station 185+00 to approximate Station 167+25. System I drains a large portion of the business section of Tomball south along S. Cherry Street in roadside ditches.

System J

System J ranges from approximate Station 167+25 to Station 151+50. System J is mostly undeveloped land which drains to School Street and eventually to M121W which is currently under construction.

System K

System K ranges from approximate Station 151+50 to approximate Station 120+40 at the intersection of Medical Complex Drive and Tomball Parkway. System K drains via concrete curb and gutter to storm sewer and outfalls into M125-00-00. System K is comprised of the existing portion of Medical Complex Drive and is considered mostly developed.

System L

System L ranges from approximate Station 125+80 Station 120+40. System L is located north of the project area and drains directly to the roadside ditches along Tomball Parkway. The area encompassed by System L ranges from FM 2920 on the north end to Medical Complex Drive on the south end.

System M

System M is located between Tomball Parkway and SH 249 ranging from approximate Station 110+60 to Station 120+40. System M drains from west to east in roadside ditches and outfalls into the roadside ditches along the west side of Tomball Parkway.

System N

System N ranges from approximate Station 91+60 to Station 103+60. System N is located west of SH 249 is mostly undeveloped land and drains east in roadside ditches along Medical Complex Drive and outfalls into the storm sewer at SH 249.

System P

System P is the largest of all the existing drainage areas. System P has outside areas that drain from north of FM 2920, south of the project area as well as west of the project area. System P drains to M124-00-00 which is a large roadside ditch which flows south along Triechel Road through the project area. The outfall, M124-00-00 has a large floodplain and the proposed roadway alignment is situated just to the north of the floodway established by FEMA as shown in **Exhibit 2**– Overall Drainage Area Map. M124-00-00 has historical flooding and poor conveyance capacity which results in widespread overland ponding.



M124-00-00 South of Triechel Rd
Looking South

E. Intersecting Streets

There are 19 street intersections and approximately 40 existing residential and commercial driveways along the project limits. The table

below summarizes the intersecting streets and locations along the proposed alignment.

Intersecting Streets			
Approx. Station	Description	Location	ROW Width
45+00	FM 2920, Major Intersection	East & West ROW	120'
54+00	Trichel Road, Minor Intersection	North & South ROW	70'
76+20	Calvert Road, Minor Intersection	North & South ROW	60'
95+50	SH 249, Southbound Connector, Major Intersection	North ROW	Variable
115+90	SH 249, Northbound Connector, Major Intersection	South ROW	Variable
120+20	Tomball Parkway, Major Intersection	North & South ROW	120'
147+20	Holderrieth S. Blvd, Minor Intersection	South ROW	60'
158+80	School Street, Minor Intersection	North & South ROW	80'
185+00	S. Cherry Street, Minor Intersection	North & South ROW	70'
188+50	Joseph Court, Minor Intersection	North ROW	60'
191+20	Ashley Court, Minor Intersection	North ROW	60'
193+00	Mulberry Street, Minor Intersection	North & South ROW	60'
211+50	Pitchford Road North of RR Crossing Connector, Minor Intersection	North ROW	40'
223+50	Persimmon Street, Minor Intersection	North & South ROW	60'
243+70	Huffsmith-Kohrville Road, Minor Intersection	North & South ROW	60'
292+60	Mahaffey Road, Minor Intersection	Northwest ROW	60'
299+20	Brady Lane, Minor Intersection	Northwest ROW	40'
303+00	Colby Lane, Minor Intersection	Northwest ROW	40'
308+30	FM 2920, Major Intersection	Northwest & Southeast ROW	100'

F. Utilities

Multiple public and private utilities exist in and around the proposed ROW. Within the ROW, water, gas, sanitary, overhead power, and several oil and gas pipelines and facilities exist. The proposed roadway alignment was specifically designed to avoid conflict with known active gas wells and major transmission lines.

Public Utilities

City of Tomball, Texas Department of Transportation (TxDOT), and developer record drawings were reviewed and are depicted on the plans as best as possible without completing a detailed utility survey. The following table illustrates where potential conflicts with public utilities may occur:

Public Utilities				
Begin	End	Type	Size	Possible Conflicts
44+30	-	Water	12"	Storm
104+60	119+90	Water	8"	Pvmt, Bridge, Storm
119+90	-	Water	12"	Pvmt
121+00	137+30	Water	12"	Pvmt
136+50	147+00	Water	8"	Pvmt
185+20	-	Water	8"	Pvmt
185+20	197+50	Water	12"	Pvmt, Storm
188+60	-	Water	8"	Pvmt
191+60	-	Water	8"	Pvmt
193+30	-	Water	8"	Pvmt
243+20	-	Water	12"	Pvmt, Storm
45+80	-	San - FM	6"	Pvmt
45+90	-	San Sew	18"	Pvmt
76+00	104+00	San Sew	6"	Pvmt, Storm
104+00	119+90	San Sew	10"	Pvmt, Bridge, Storm
119+90	-	San Sew	10"	Pvmt
136+50	147+00	San Sew	8"	Pvmt
185+00	-	San - FM	4"	Pvmt
185+50	-	San Sew	12"	Pvmt
244+00	-	San Sew	24"	Pvmt, Storm
20+20 (Trieichel)	-	San Sew	18"	Pvmt
20+30 (Trieichel)	-	San - FM	6"	Pvmt
44+30	-	Nat Gas	4"	Storm
104+60	119+90	Nat Gas	4"	Pvmt, Bridge, Storm
119+90	-	Nat Gas	4"	Pvmt
121+00	137+20	Nat Gas	2"	Pvmt
137+20	-	Nat Gas	2"	Pvmt
188+90	-	Nat Gas	2"	Pvmt
191+60	-	Nat Gas	2"	Pvmt
192+80	-	Nat Gas	2"	Pvmt
243+10	-	Nat Gas	6"	Pvmt, Storm

Private Utilities

For private utilities, a thorough review of the Texas Rail Road Commission public data was performed considering the amount of gas and oil facilities with prescriptive rights. This effort was incorporated into the PER to aid in identifying potential conflicts that would result in unaccounted for time and/or money. Additionally, this facilitated designing the concept route for Medical Complex Drive to avoid existing major facilities. The pipelines and wells found through this research have been added to the graphical representation of utilities along with the utilities belonging to the City. It should be noted that all private utilities are not shown at this time. Utilities belonging to a private entity anticipated within public rights of way have not been included in the graphics since these are not expected to impact both the project schedule and cost. Examples of this exclusion are telecommunication facilities. Below is a listing of our findings:

Private Utilities – Table One						
Begin	End	Total LF	Size	Owner	Status	Type
31+00	46+00	1500	3.5"	Eagle Rock (DeSoto)	Active	Nat Gas
33+50	37+00	350	10.75"	Americo Energy	Active	Nat Gas
37+00	-	125	10.75"	Americo Energy	Active	Nat Gas
51+00	56+00	560		Pelican Reserve	Active	Crude Oil
51+00	51+50			Gaither Petro Corp	Active	Equipment
52+50	54+50	245		Tandem Energy	Active	Nat Gas
53+00	57+00	500	2.38"	Americo Energy	Active	Nat Gas
56+00	57+00			Tortuga Operating Co	Active	Tank Battery
60+00	63+00	225		CenterPoint Energy	Active	Electric
75+00	-	125	2.38"	Tandem Energy	Active	Nat Gas
95+50	-	400	3.5"	Tandem Energy	Abandoned	Nat Gas
98+00	101+00	320		Pelican Reserve	Active	Crude Oil
105+00	116+00	1100		Pelican Reserve	Active	Crude Oil
110+00	-	105	6"	Tandem Energy	Abandoned	Nat Gas
155+00	-			Tortuga Operating Co	Plugged	Oil Well
170+00	-	130	4.5"	Eagle Rock (DeSoto)	Active	Nat Gas

Private Utilities – Table Two						
Begin	End	Total LF	Size	Owner	Status	Type
171+00	-	130	12.75"	Tandem Energy	Abandoned	Nat Gas
171+50	-			Tortuga Operating Co	Active	Oil Well
174+25	-	130	4.5"	Tandem Energy	Abandoned	Nat Gas
176+00	177+50	150	3.5"	Texas Petroleum Invest.	Active	Crude Oil
192+65	-	115		Pelican Reserve	Active	Crude Oil
204+00	-			Mobil	Plugged	Oil Well
209+00	-	695		CenterPoint Energy	Active	Electric
214+50	-			Tortuga Operating Co	Active	Equipment
214+75	217+50	450	4.5"	Tandem Energy	Abandoned	Nat Gas
215+00	216+00	350	4.5"	Tandem Energy	Abandoned	Nat Gas
231+00	-	140	2.38"	Tandem Energy	Abandoned	Nat Gas
249+80	250+80	165	2.38"	Tandem Energy	Abandoned	Nat Gas
251+60	232+80	165	2.38"	Tandem Energy	Abandoned	Nat Gas
281+00	-	115	12.75"	BP	Active	Nat Gas
291+50	293+50	300		CenterPoint Energy	Active	Electric

G. Geotechnical

Geotechnical investigation for pavement, storm sewer, and bridge design is not part of this PER; however, it will be conducted during the design phase of Medical Complex Drive.

H. Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) was performed by Berg Oliver Associates, Inc. in conformance with the scope and limitations of American Society for Testing and Materials Practice E1527-2005 of the approximate 5-mile proposed Medical Complex Drive. The report is contained in **Appendix A**.

The ESA consists of Berg Oliver’s discussion of their current/historic land use review, agency review, and site visit. The agency review

indicated several potential sites, but these were judged not to pose an environmental concern to the proposed project at this time. The site reconnaissance was conducted on November 11, 2008 and at that time access agreements had not been executed with all property owners, so the review was performed from publicly accessible areas only. The site reconnaissance revealed a \$1.50 Dry Cleaners located at the southwest corner of SH 249 and Medical Complex Drive that requires further investigation because construction activities would likely affect soil and/or groundwater in that portion of the project area. The BNSF railroad crossing also poses a potential hazard because of chemicals, including arsenic, used in defoliation and PCB from older railroad brake pads. It is expected that construction activities will take place within the easement, so soil conditions are considered a potential environmental concern for the project. There are also approximately twelve (12) former oil/gas sites in close proximity to the proposed alignment. The presence of residual contaminants from former oil and gas activities is considered a potential environmental concern and would require additional investigation. It is recommended that well records and historical aerial photography be obtained to determine the scope of any potential Phase II testing. The remainder of the site appeared free of evidence of recognized environmental conditions.

I. Wetland Assessment

A Wetland Assessment of the project was performed by Berg Oliver Associates, Inc. based on criteria set forth in the *Corps of Engineers Wetland Delineation Manual – Technical Report Y-87-1*. Wetlands were identified and delineated by using interpretation of historical aerial photography, topographic maps, hydrology indicators, and field evaluation of hydric soils, hydrology, and hydrophytic vegetation. At the time of the assessment, property access agreements had not been

executed with all property owners; therefore, only publically accessed portions of the project area were field verified. All privately owned land was delineated using true color aerial photography (2006), infrared aerial imaging (1995), and the National Wetland Inventory Map (1992). The assessment is located in **Appendix B**.

Based on the results of the delineation, there are approximately 4.11 acres of potential wetlands located within the proposed ROW. Boundaries were not field verified, since the potential wetland areas are located on privately-owned land. The wetland areas are not located within any 100-year floodplain of a Jurisdictional Water of the U.S.; however, there is still a possibility that a surface connection exists.

J. Traffic Study

The Medical Complex Drive - Traffic Study, located in **Appendix C**, was performed by Gunda Corporation, Inc. to evaluate the Build and No-Build scenarios for Years 2011 and 2035 of the traffic circulation within the study corridor. It is anticipated that the addition of the proposed Medical Complex Drive to the traffic circulation system in Tomball will result in an alteration of traffic circulation within the study corridor. A comprehensive field study was conducted to observe traffic operations, intersection lane configurations, and existing signal timing in the study area. A total of 20 study area key intersections, including four unsignalized, were evaluated to determine existing and future traffic operations within the study corridor. Turning movement counts were conducted during the AM and PM peak periods and bi-directional 24-hour machine counts were conducted along Medical Complex Drive, S. Cherry Street, Agg Road, Hufsmith-Kohrville Road, Mahaffey Road, Calvert Road, and FM 2920.

Existing levels of service for the analysis intersections were calculated using the SYNCHRO software in accordance with the procedures set forth in the *Highway Capacity Manual* level of service methodology for the evaluation of signalized and unsignalized intersections. The existing AM and PM peak hour levels of services for the study intersections were calculated and summarized below.

LOS Study of Intersections - Existing Conditions					
Intersection Name	Signalized / Unsignalized	AM		PM	
		Worst Approach LOS	Delay (s/v)	Worst Approach LOS	Delay (s/v)
Med. Complex @ Calvert Rd	Unsignalized	A	9.2	A	9.5
Med. Complex @ SH 249 WSR	Unsignalized	A	9.3	A	8.7
Med. Complex @ SH 249 ESR	Unsignalized	A	9.1	B	10.0
Med. Complex @ FM 2920	Unsignalized	C	22.1	E	38.4
Med. Complex @ Tomball Pkwy	Signalized	C	22.4	D	39.4
Calvert Rd @ FM 2920	Signalized	A	4.9	A	4.2
Wood Forest Dr. @ FM 2920	Signalized	B	12.2	C	20.4
SH 249 WSR @ FM 2920	Signalized	C	24.4	B	16.2
SH 249 ESR @ FM 2920	Signalized	B	16.1	C	23.7
Tomball Pkwy @ FM 2920	Signalized	F	183.2	E	71.7
Buvinghausen St. @ FM 2920	Signalized	A	7.5	A	9.9
Quinn Rd @ FM 2920	Signalized	B	12.7	B	17.4
Holderrieth Blvd @ FM 2920	Signalized	C	21.4	C	21.0
Vernon Ave @ FM 2920	Signalized	C	22.2	B	19.6
Baker Dr. @ FM 2920	Signalized	B	15.9	C	23.3
Pine St. @ FM 2920	Signalized	A	4.6	A	7.4
Cherry St. @ FM 2920	Signalized	E	65.6	E	58.4
Willow St. @ FM 2920	Signalized	C	34.5	C	30.2
Hufsmith-Kohrville @ FM 2920	Signalized	E	61.6	E	61.2
Park Rd @ FM 2920	Signalized	A	8.0	A	9.4

For the unsignalized intersections, Medical Complex Drive (Mahaffey Road) at FM 2920 is the only intersection presently operating below acceptable levels of service (C or better during peak hours). For the signalized intersections within the study corridor, the intersections of FM 2920 at Tomball Parkway and Cherry Street and Hufsmith-Kohrville Road are presently operating below acceptable levels of service (levels of service E or F during peak hours).

K. BNSF Railroad Crossing

Along Agg Road at approximately the proposed Station 207+90, there exists a two-lane at-grade Burlington Northern Santa Fe (BNSF) railroad crossing. BNSF has been contacted regarding the existing crossing and was sent proposed plans for comment. As of the date of this report, BNSF has not yet responded.



Intersection of Prop. Medical Complex Dr.
(Exist Agg Rd) and BNSF RR
Looking West



Intersection of Prop. Medical Complex Dr.
(Exist Agg Rd) and BNSF RR
Looking West

IV. PROPOSED IMPROVEMENTS

A. Right-of-Way Acquisition

The proposed Medical Complex Drive alignment varies from 80 – 120 feet in width and requires acquisition of approximately 59.6 acres of right-of-way (ROW) from 90 parcels. Although the majority of the proposed ROW width is 120 feet, it is reduced due to existing commercial and residential buildings around SH 249 and Tomball Parkway and residential buildings around Mahaffey Road. The proposed detention facilities are partially located within existing drainage easements, but acquisition of land will be required. Temporary construction easements will be required for the reconstruction of many existing driveways. Existing structures are located within the proposed paving and drainage improvement expansion at stations 42+00 to 44+00 (building), 57+00 (pipeline equipment), 158+50 (pump station), 185+50 (pump station - may be avoided), and 190+00 (pond pump station). These structures will need to have further investigation during the ROW acquisition process. Refer to **Exhibit 3** for the preliminary ROW and property ownership map. Additional land acquisition necessary for the drainage design is discussed in subsequent sections of this PER.



Building at Sta. 42+00
Looking West

B. Roadway

The design of the roadway geometrics and bridges are based on the *Texas Department of Transportation (TxDOT) Roadway Design Manual* and the remainder of the design is based on the City of Houston requirements located in their *Infrastructure Design Manual*. The other primary design condition is to maintain driver safety while minimizing the cost. In order to reduce the overall project cost, the proposed roadway alignment and ROW envelope is designed to follow the available City-owned rights-of-ways and utilize the existing improved segments of Medical Complex Drive within the project limits.

Typical Section

The proposed roadway section is designed for a 120-foot ROW where available, as illustrated in **Exhibit 4**. This section provides for two 12-foot lanes of traffic in each direction divided by a 42-foot raised median with developed left turn lanes at designated intersections. If additional capacity is required in the future, the esplanade is designed so that travel lanes can be added within while maintaining the proposed boulevard section. The proposed Medical Complex pavement section includes 10-inches of reinforced concrete on an 8-inch lime treated subgrade, shown only for the purpose of developing the project construction cost estimate. The pavement design will be provided during the design phase. The roadway profile follows the existing surface and a transverse slope of approximately 1/4-inch per foot. For the areas that require 100-foot ROW sections, the esplanade width is decreased by 10-feet and the distance between the back of curbs and the ROW lines are decreased by 5-feet on each side.



Example of 100' ROW Section:
Exist Medical Complex Dr. at Holderrieth S.
Looking West

Alignment Alternatives

Three alternatives were considered when determining the proposed alignment of Medical Complex Drive. The alternatives differed only on the western end of the project at the connection to FM 2920, as illustrated in **Exhibit 5**. The alternatives remain the same east of approximately station 70+00 of the proposed alignment. This eastern portion of the project utilizes Medical Complex Drive ROW and existing boulevard improvements as well as Agg Road and Mahaffey Road city-owned ROW. The alignment also uses the existing BNSF railroad crossing and eliminates the need to negotiate an additional railroad crossing. By utilizing this information and maintaining TxDOT geometric standards, there does not appear to be any alternate routes east of station 70+00 that would be more feasible or less disruptive to the existing landowners.

One alternative investigated, Alternative C as denoted on **Exhibit 5**, illustrates a more southerly alignment from FM 2920 to Calvert Road. This alternative utilized the existing Triechel Road ROW and aligned the roadway with Tomball Cemetery Road northwest of FM 2920. It was eliminated due to a number of conflicts and additional costs primarily

due to required single family home demolition and construction within the 100-year floodway.

Alternative B, as denoted on **Exhibit 5**, is similar to Alternative C with the only difference being the continuation of the Triechel Road section. This added another three-way “T” intersection on FM 2920 within 500 feet of the Tomball Cemetery Road intersection. In this alternative, some of the single family home demolition was removed from Alternative C, but the additional intersection and construction within the 100-year floodway made this alternative less feasible than the proposed alternative.

Proposed Alignment

The proposed alternative, Alternative A as denoted on **Exhibit 5** and as illustrated in the Preliminary Plan and Profile Drawings in **Exhibit 6**, takes a more northerly route west of station 70+00 to align with the existing Park Road. This alternative limits the amount of demolition and construction within the 100-year floodway, but requires slightly more ROW acquisition than the other alternatives. The additional ROW acquisition is primarily located through pasture land. This proposed alternative represents the route that is the most feasible and less disruptive to landowners.

The proposed roadway centerline alignment was set to meet the following conditions:

- Maintain the center of the proposed ROW where possible
- Employ TxDOT geometric design standards of tangents, horizontal, and vertical curves
- Maintain a 45 mile per hour design speed

- Utilize existing ROW along Park Road, Medical Complex Drive, Agg Road, and Mahaffey Road
- Minimize the amount of required ROW acquisition
- Minimize the amount of existing owner disruption
- Keep the BNSF railroad crossing at the same location
- Ensure that major road (FM 2920 and Tomball Parkway) crossings are as close to 90° for driver safety and constructability purposes.
- Provide bridge crossings at SH 249 and at FM 2920.

The major roadway intersections and intersections that require atypical designs are described in detail below:

FM 2920 (At Park Road)

The existing intersection of Park Road and FM 2920 is three-way “T” intersection of a two-lane Park Road with a five-lane FM 2920. The proposed intersection aligns the existing Park Road alignment with the new Medical Complex Drive therefore making the intersection into a 4-way. The proposed intersection includes dedicated left-turn lanes onto FM 2920 from Medical Complex Drive from both sides of FM 2920. Approximately 60-foot of additional ROW and a corner cut is required on the northwest side of FM 2920. The full 120-foot ROW is required on the southeast side of FM 2920. Signing, pavement marking, and wheelchair ramps will be added to accommodate the new 4-way intersection and left turn lanes. The existing signal will need to be modified to accommodate the proposed changes.



Intersection of Park St. and FM 2920
Looking South



Intersection of Park St. and FM 2920
Looking North

Triechel Road

The Triechel Road and proposed Medical Complex Drive intersection is designed to realign Triechel Road so that it crosses Medical Complex Drive perpendicularly. This realignment will require additional ROW, but will increase driver safety at the intersection. It is proposed that Triechel Road is realigned approximately 500-feet from the centerline of Medical Complex Drive with 300-foot and 150-foot curves. With the limited traffic on Triechel Road as well as a need to limit ROW acquisition and impacted landowners, this horizontal alignment is justified. The proposed ROW for the realignment keeps the existing 70-foot ROW width and will require a purchase from four separate land owner, but only one additional landowner than is required for the Medical Complex Drive ROW. There are dedicated left-turn lanes in each direction. Signing, pavement marking, and wheelchair ramps will be added to accommodate the new 4-way intersection and left turn lanes.



Triechel Rd. Near Prop. Medical Complex Dr.
Looking South



Triechel Rd. Near Prop. Medical Complex Dr.
Looking North

Calvert Road

The Calvert Road and proposed Medical Complex Drive intersection is designed as most ancillary intersections along Medical Complex Drive. Calvert Road is proposed to transition from the existing two-lane road to include a dedicated left-turn lane north and south of Medical Complex Drive. Only corner clip ROW purchases are required along Calvert Road. The traffic study recommends the inclusion of a traffic signal at this intersection as discussed later in this PER. Signing, pavement marking, wheelchair ramps, and traffic signal will be added to accommodate the new 4-way intersection and left turn lanes.



Calvert St. Near Prop. Medical Complex Dr.
Looking West



Calvert St. Near Prop. Medical Complex Dr.
Looking East

State Highway 249

A bridge crossing is proposed at SH 249 and Medical Complex Drive. To access the north and southbound SH 249 access roads, two-way, 36-foot wide approaches are proposed. Ideally in this situation, it is recommended to use four separate one-way approaches, but the newly constructed La Quinta Inn at the northeast corner of the proposed intersection eliminates the feasibility of this design.

As proposed in the Preliminary Plan and Profile Drawings, **Exhibit 6**, on the west side of SH 249, the two-way approach is on the north side of Medical Complex Drive. If ROW acquisition becomes difficult, routing the two-way approach to the south of Medical Complex Drive is an option. It is not selected as proposed because of possible pipeline and a plugged gas well conflict located on the south of Medical Complex Drive. Constructing the additional approach to the south of Medical Complex Drive in addition to re-striping the approach to the north would help alleviate future traffic congestion. If funds are available, it may be in the City's best long term interest to purchase both the northwest and southwest approach ROWs in order to prevent development that would eliminate this future option as it has on the eastern side of SH 249. The traffic study recommends the inclusion of traffic signals at intersections of both approaches and the east and west SH 249 service roads.

As shown in the Proposed Typical Sections, **Exhibit 4**, the bridge section is proposed to be a single 91-foot flush median structure, which includes four 12-foot travel lanes and 8-foot shoulders on each side. With this width, the bridge could be re-striping for two additional future lanes. The vertical alignment includes 3.4% and 5.0% vertical tangents with an 800-foot vertical curve. It is designed to maintain a 16'6" minimum clearance from the low chord of the bridge to the SH 249 main

lane high point. Retaining walls are required on both sides of Medical Complex Drive. Horizontal clearance of the bents will maintain minimum clearance from the SH 249 travel lanes. The bridge structure and foundation and retaining walls will be designed during final geotechnical design utilizing standard TxDOT bridge design criteria.



Prop. Medical Complex Dr. West Access to
Prop. Bridge West of SH 249
Looking East



Prop. Medical Complex Dr. (Exist. Southbound
SH 249 Frontage Rd.)
Looking South



Prop. Medical Complex Dr. (Exist. Southbound
SH 249 Frontage Rd.)
Looking South



Intersection of Exist Medical Complex Dr and
Northbound SH 249 Frontage Rd.
Looking East

Tomball Parkway

The existing intersection of Medical Complex Drive and Tomball Parkway is a signalized three-way “T” intersection of a seven-lane Tomball Parkway with a five-lane Medical Complex Drive on the east

side of Tomball Parkway. The proposed intersection aligns the existing Medical Complex Drive alignment with the new Medical Complex Drive therefore making the intersection into a 4-way. The proposed intersection includes dedicated left-turn lanes onto FM 2920 from Medical Complex Road from both sides of FM 2920 and the Traffic Study suggested the need for the addition of a dedicated right turn lane on Medical Complex Drive at both sides of the intersection. ROW is required to widen the existing ROW on both sides of Tomball Parkway. Due to the proximity commercial buildings and property the full 120-foot ROW is not maintained in this area. Signing, pavement marking, and wheelchair ramps will be added to accommodate the new 4-way intersection and left turn lanes. The existing signal will need to be modified to accommodate the proposed changes.



Intersection of Prop. Medical Complex Dr.
and Tomball Parkway
Looking East

South Cherry Street

Similar to the Calvert Road intersection, the South Cherry Street and proposed Medical Complex Drive intersection is designed as most ancillary intersections along Medical Complex Drive. South Cherry Street is proposed to transition from the existing two-lane road to include a dedicated left-turn lane north and south of Medical Complex Drive.

Four corner clip ROW purchases are required along South Cherry Street. The traffic study recommends the inclusion of a traffic signal at this intersection. Signing, pavement marking, wheelchair ramps, and traffic signal will be added to accommodate the new 4-way intersection.



Intersection of Prop. Medical Complex Dr.
(Exist Agg Rd.) and S. Cherry St.
Looking West



Intersection of Prop. Medical Complex Dr.
(Exist Agg Rd.) and S. Cherry St.
Looking East

BNSF Railroad Crossing

A bridge crossing is proposed at the BNSF Railroad and Medical Complex Drive. To provide access to the properties surrounding the intersection and Pitchford Road, four, 12-foot, single lane access roads are proposed while keeping the two-way existing at-grade railroad crossing. The access roads begin near the start of the vertical approach curves of the mainlane bridge.

As shown in the Proposed Typical Sections, **Exhibit 4**, the bridge section is proposed to be dual 39-foot bridges. This includes two 12-foot travel lanes and a 12-foot shoulder on each bridge. This configuration allows for the inclusion of an additional future lane in each direction. The vertical alignment includes 4.6% and 4.1% vertical tangents with an 800-foot vertical curve. It is designed to maintain a 25-

foot minimum clearance from the low chord of the bridge to the top rail at the railroad crossing. Retaining walls are not required. Horizontally, the bridge bents will not be located within the BNSF railroad ROW. The bridge structure and foundation will be designed during final geotechnical design utilizing standard TxDOT bridge design criteria.



Intersection of Prop. Medical Complex Dr.
(Exist. Agg Rd.) and BNSF RR
Looking West



Prop. Medical Complex Dr. (Exist. Agg Rd.)
West of BNSF RR
Looking East

Mahaffey Road

The Mahaffey Road and proposed Medical Complex Drive intersection is designed to realign Mahaffey Road so that it crosses the proposed Medical Complex Drive perpendicularly into a new three-way “T” intersection. This realignment will require additional ROW, but will increase driver safety at the intersection. It is proposed that Mahaffey Road is realigned approximately 200-feet from the centerline of Medical Complex Drive with tight curves. With the limited traffic on Mahaffey Road as well as a need to limit ROW acquisition and impacted landowners, this horizontal alignment is justified. The proposed intersection includes dedicated left-turn lanes in both directions. Minimal ROW acquisition on the west side and one corner cut is all that is necessary to maintain the existing 60’ ROW along Mahaffey Road.



Existing Mahaffey Rd.
Looking West

FM 2920 Road (At Mahaffey Road)

The existing intersection of Mahaffey Road and FM 2920 is and unsignalized three-way “T” intersection of a two-lane Mahaffey Road with a five-lane FM 2920. The proposed intersection keeps the same alignment utilizing the existing Mahaffey Road ROW, but widens the section to the typical 120-foot ROW. The proposed intersection includes dedicated left-turn lanes onto FM 2920 from Medical Complex Drive from both sides of FM 2920. Approximately 60-foot of additional ROW and two corner cuts are required at the intersection. Signing, pavement marking, and wheelchair ramps will be added to accommodate the upgraded intersection and left turn lanes.



Intersection of Mahaffey Rd @ FM 2920
Looking East



Intersection of Mahaffey Rd @ FM 2920
Looking East

C. Drainage

A second set of drainage areas were created which represent the proposed condition drainage areas. Proposed condition drainage areas were divided to the inlet level; meaning, each drainage area will enter its respective drainage network at only one point. They were created by modifying the existing condition drainage areas to allow for the proposed roadway improvements, new high and low points in the roadway profile in some locations, as well as increased imperviousness along the length of the project area. Incoming outside areas in the proposed condition remain largely unchanged from the original existing condition. The proposed condition drainage area maps are illustrated in **Exhibit 7**. Hydrologic calculations were performed for the proposed condition in the same manner as the existing condition calculations which resulted in new peak flows and hydrographs.

After the proposed condition hydrologic calculations were determined to effectively represent the proposed condition drainage areas, HouStorm was utilized to model the storm sewer networks and to show how they interact with flow from drainage areas. The proposed condition HouStorm models were used to determine the size of the proposed storm sewer networks and to ensure they had adequate capacity to convey the proposed 2-year rainfall event flow. Storm sewers were designed using the City of Houston design criteria. The tailwater at the outfall of each system was set at top of pipe for a starting water surface elevation. Each system was designed to have the hydraulic grade line either at or below the gutterline elevation throughout the project reach.

Listed below is a summary of the proposed condition drainage networks as well as other considered alternatives:

System A

Similarly to the existing condition, System A carries flow along Mahaffey Road to FM 2920. A storm sewer ranging in size from 24 inches to 48 inches is used to convey flow. This storm sewer drains to the northwest towards the TxDOT ROW to the roadside ditch adjacent to FM 2920 on the south side of the roadway. A culvert transfers flow from the south side ditch to the north side ditch where it continues to the northeast along Stuebner-Airline Road before outfalling to HCFCD Unit No. M121-00-00. In order to prevent impacting TxDOT ROW with additional flow as well as requiring significant roadside ditch improvements to FM 2920, alternative solutions were considered.

System B

Proposed condition System B also drains similarly to its existing condition along the proposed roadway and outfalls to the small swale near the powerline easement.

System A1

This alternative combines the drainage areas for the proposed condition Systems A&B and outfalls to existing condition System B outfall along powerline easement. This alternative was not chosen because the proposed condition storm sewer outfall pipe was too deep (greater than 12 feet) for the small swale which would serve as the outfall channel.

System A2

Similarly to the previous alternative, this alternative combines the proposed condition drainage areas for Systems A&B but flows northeast

towards FM 2920. Instead of outfalling to the roadside ditch along the south side of FM 2920, this alternative conveys flow under FM 2920 to a new proposed detention channel which will route the flow to M112-01-00 providing 55 acre-feet of detention/channel as illustrated in **Exhibit 2**.

System C

Proposed condition System C drains to the same outfall location as in the existing condition. Proposed System C includes 2 drainage areas from System B not included in the recommended alternative flowing towards FM 2920 and also 2 drainage areas previously associated with the existing condition System D. These additional areas now flow towards the System C outfall due to the location of high points in proposed roadway. Approximately 133 acre-feet are required for detention due to additional area and increased imperviousness. The property just south of the proposed roadway ROW can serve as the future proposed detention pond as shown in **Exhibit 2**. In the existing condition, M116-00-00 currently flows to a small detention pond on private property before releasing into the channel that leads to the golf course. The existing detention pond will be filled due to proposed roadway improvements. Flow from M116-00-00 will be collected in a storm sewer and added with additional incoming flows from the north and west and cross under roadway near Station 261+75 then outfall into the detention basin for mitigation.

The future construction of M116-00-00 to the north of the project area, as identified in City of Tomball CIP Masterplan, for drainage improvements will provide additional detention and will result in storm sewers near project location with additional available capacity.

System C-Rev

This alternative is similar to the previous alternative for proposed condition System C. The main difference between the two alternatives is this alternative does not include areas that were previously associated with System D in the existing condition. This alternative results in a smaller storm sewer trunk size within System C and thus reduces the required volume for detention storage. This alternative was not recommended to avoid the need for an additional pond to mitigate System D.

System D1

This proposed condition system is comprised of a 24" RCP crossing under the proposed roadway allowing the roadside ditch to continue conveyance along Huffsmith-Kohrville on the east side.

System D1 Rev

This alternative includes the culvert crossing under the roadway on the east side of Huffsmith-Kohrville and areas removed from proposed condition System C-Rev. This alternative results in an acceptable depth at the outfall and a 24" RCP along Medical Complex Drive, but it was not chosen because an additional detention facility would be required. The detention pond identified for System C has adequate capacity to accept the additional flow from the additional areas.

System D2

This proposed condition system carries flow from west side of Huffsmith-Kohrville and includes a culvert crossing under the proposed Medical Complex Drive. The storm sewer associated with this system requires a depth of 5.8 feet to outfall into the roadside ditch resulting in deep roadside ditches along Huffsmith-Kohrville on the west side.

System D2 Rev

This alternative reverses flow westward along the proposed roadway towards proposed future M118-00-00 and utilizes the future detention and channel proposed in City of Tomball CIP Master Plan to drain to Willow Creek. This alternative was chosen because no additional ROW is required for detention. It should be noted that this portion of the roadway/storm sewer cannot be constructed unless the proposed improvements identified in the City of Tomball CIP Masterplan are completed for the future M118-00-00 proposed improvements are constructed.

System E1

The proposed condition storm sewers for System E1 flows towards the west and results in a 36" RCP outfalling into the roadside ditch on the east side of Persimmon Street. The depth of the proposed condition storm sewer will result in extensive reconstruction of roadside ditches along Persimmon Street south of the project area and a new outfall channel would be have to be constructed to allow flow to drain to Willow Creek. Additional ROW would be required for additional channel & detention.

System E2

The proposed condition storm sewers for System E2 flows towards the east and results in a 42" RCP outfalling into the roadside ditch on the west side of Persimmon Street. The depth of the proposed condition storm sewer will result in extensive reconstruction of roadside ditches along Persimmon Street south of the project area and a new outfall channel would be have to be constructed to allow flow to drain to Willow Creek.

System E-Rev

This proposed condition alternative for System E-Rev combines proposed Systems E1 & E2 and reverses the flow to the future proposed M118-00-00 channel as identified in the City of Tomball CIP Masterplan. The future channel will have sufficient additional volume so that no additional detention will be required to mitigate the increases associated with this proposed condition drainage system. This proposed condition drainage system cannot be constructed unless the proposed improvements associated with the future M118-00-00 are constructed.

System F

This proposed condition system catches the flow associated with the ramps for bridge over the BNSF railroad. These proposed drainage areas flow similarly to the existing condition, south along the tracks until eventually reaching M118-00-00. Channel improvements and additional ROW (approximately 3.5 acres) are required for this proposed system. The proposed channel will provide an additional 13.5 acre-feet for the M118-00-00 drainage system and results in a new channel to tie into future M118-00-00.

System G

The proposed condition for System G includes a 24" RCP culvert crossing under the proposed roadway allowing areas outside of the proposed roadway project location to flow south along the west side of BNSF railroad tracks as in the existing condition

System H

The proposed condition transfers flow west to the roadside ditches along S. Cherry Street. At the outfall along S. Cherry Street, the storm sewer

will be a 72" RCP resulting in a roadside ditch that is approximately 11 feet deep. The depth of the channel along the roadway made this alternative not feasible.

System H1 Rev

The proposed condition System H1 Rev reroutes flow away from S. Cherry Street and towards the future proposed M121E-00-00. By recommending this alternative, no additional ROW will be required for detention. A 54" RCP will drain at the outfall into the channel. Since there is currently no data available for the dimensions for the proposed future M121E-00-00 the depth of the storm sewer may need to be adjusted to accommodate the depth of the channel.

System H1 Rev2

This proposed system is similar to H1 Rev but takes in less area. This alternative allows for some flow to exit the storm sewer and flow down the S. Cherry Street roadside ditches as in existing condition. However, since this system resulted in an insignificant pipe size reduction from H1 Rev this alternative was not chosen in order to relieve the flow remaining in the roadside ditches along S. Cherry Street.

System H2 Rev

The proposed condition System H2 Rev consists of 3- 30" RCPs under proposed Medical Complex Drive, similarly to the existing condition. Flow will continue south along S. Cherry Street roadside ditches; resulting in a 4.5-foot deep roadside ditch along S. Cherry Street

System H2 Rev2

This proposed condition alternative takes in some areas not captured by H1 Rev2 and outfalls along S. Cherry Street resulting in 8-foot deep

roadside ditch along S. Cherry Street. This alternative was not chosen due to depth at outfall.

System I

The proposed condition System I storm sewer flows east towards S. Cherry Street Ditch and outfalls on the west side of the roadway. An equalizer pipe can be used to allow flow to split between the east side of the roadway and the west side since flow outfalling on the east side of the roadway has been reduced by recommended proposed improvements.

System J1

System J1 allows flow from areas north of the project area to continue south along the existing M121W-00-00 via 1- 72" RCP.

System J2

Proposed condition drainage areas flow eastward to M121W-00-00 in this system. M121W-00-00 is currently under construction. The channel is being built as additional development occurs within the City of Tomball. In order for this system to drain properly, M121W-00-00 would need to be completed to Willow Creek. No additional ROW is required for detention for the proposed improvements associated with drainage areas in this system because of the additional volume that will be associated with the construction of the channel.

System M

The proposed condition System M utilizes the area located in between the ramp and Medical Complex Drive at SH 249. Areas between Tomball Parkway and SH 249 will be conveyed to this pond area and

released back to the roadside ditches along Tomball Parkway at a reduced rate.

System P1

The proposed condition System P1 is the largest of all the storm sewer networks in this project area. Drainage areas associated with P1 are collected beginning on top of the bridge over SH 249 and conveys flow west along the proposed roadway which eventually outfalls into the roadside ditches on the east side of Triechel Road. The roadside ditches along Triechel Road are very large ditches, so large in fact, that they are maintained by HCFCD and given the Unit Number M124-00-00.

System P2

The proposed condition System P2 conveys flow west of Triechel Road towards the east along the proposed roadway and outfalls into the roadside ditches (M124-00-00) along Triechel Road.

System P1A

This alternative was created to utilize the proposed future M124-00-00 channel identified in the City of Tomball CIP Masterplan. The trunk on the east side of the proposed channel will end at the proposed channel. This revised storm sewer trunk results in significantly reduced pipe sizes (from 90" RCP to 60" RCP) at the outfall and also reduces the required depth of outfall (10.5 ft to 7.0 ft) channel as well.

System P1B

This segment of the original System P1 reverses the direction of the System P1 trunk and no longer outfalls to the roadside ditches on Triechel Road. Instead, the trunk has been rerouted to outfall into the future proposed channel M124-00-00 as well.

System Park

This proposed condition storm sewer system collects flow along the proposed roadway transition segment north of FM 2920 which will be concrete curb and gutter with inlets. Flow from this system outfalls into the roadside ditch on the north side of FM 2920. Flows generated within this storm sewer network will be detained using an inline 4 acre-foot detention pond.

The table below identifies all recommended systems for the Medical Complex Drive storm sewer systems as well as detention required for each system.

Recommended Systems		
Recommended Alternative	Detention Required (ac-ft)	Detention Provided (ac-ft)
System A2	55	55
System C	133	133
System D1	0	0
System D2 Rev	0	0
System E-Rev	20	0
System F	13.5	13.5
System G	0	0
System H1 Rev	0	0
System H2 Rev	0	0
System I	5	5
System J1	0	0
System J2	15	0
System M	3	4.9
System P2	0	0
System P1A	52	0
System P1B	0	0
System Park	4	4

No proposed condition systems were designed for their existing condition counterparts for Systems K and L. These areas are located in

the existing Medical Complex Drive portion of the project and no further modifications were necessary within this area.

After utilizing City-owned property, the total acreage needed for the purpose of detention for the construction of Medical Complex Drive is 34 acres. The proposed locations of the detention areas are shown on the drainage area map in **Exhibit 2**. This proposed acquisition would require property from 11 parcels.

Since this project is extremely large, construction will not be able to occur all at one time. The project area is divided up and constructed in segments according to areas of higher traffic volume and concern as discussed in later sections of this PER. **Exhibit 8** illustrates the construction segment possibilities with regard to drainage systems.

D. Utilities

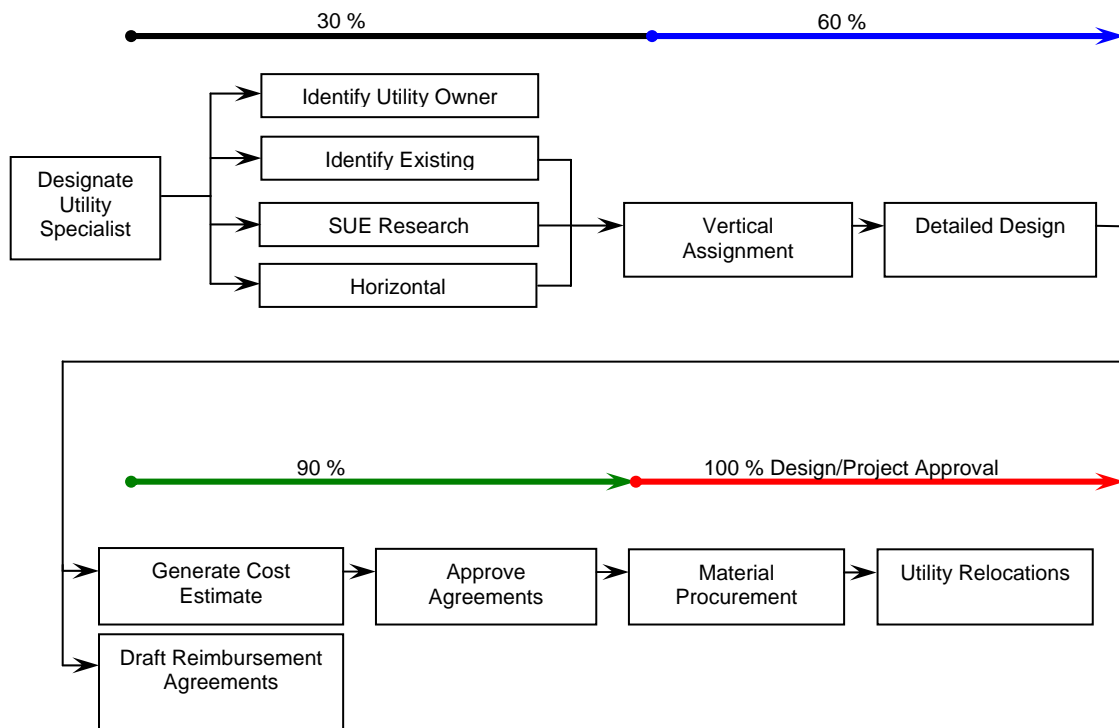
Public Utilities

A proposed 12-inch waterline, 12-inch wastewater line, and 4-inch natural gas line has been designed to better accommodate the future growth along the proposed corridor. The waterline and gas line is located on the north side and the sanitary sewer is on the south side of Medical Complex Drive as illustrated in **Exhibit 4**. The public utilities are designed per City of Houston design standards.

Private Utilities (Reconstruction)

The types of existing private facilities located along this project introduce a logistical challenge that, if properly coordinated, should not impede the construction of Medical Complex Drive. The logistics include complying (or compromising) with the owner of the prior rights associated with

each facility and planning the reconstruction of the facility in a manner that allows for appropriate seasonal shut-ins to facilitate the desired construction schedule. For this reason, CobbFendley recommends the inclusion of a utility specialist with prior utility coordination experience and specific design knowledge of pipeline and electrical design to ensure each facility owner maintains their respective relocations in accordance with the project requirements. The following illustration conveys the approach, which CobbFendley believes to be necessary for this project:



While the Medical Complex Drive plans are progressing towards a 30% design phase, the utility specialist will focus entirely on the following tasks:

- Identify and contact existing utility owners
- Determine areas where proposed structures can be designed to avoid conflicts
- Generate conflict list to help track relocations
- Obtain conceptual design “buy off” from utilities involved
- Develop relocation schedule with input from utilities
- Perform SUE to identify laterals entering and exiting wells and/or battery tanks
- Work closely with the designers and the City to determine the location of all City facilities to ensure private utility designs do not negatively impact the City’s facilities

During this stage, the utility specialist will report to the remainder of the design team any findings that could impact the project schedule and/or cost. Special emphasis should be placed on laying out the horizontal alignment of all utilities being replaced on the project. For telecommunications facilities, the specialist should determine exactly what is being replaced in order to proceed with assigning horizontal locations accurately; specifically, identifying splice points as this will determine the utility’s construction duration. Furthermore, Subsurface Utility Engineering (SUE) should be performed in all areas where underground facilities are determined to possibly remain in place to confirm existing depths meet project requirements. Additionally, the specialist should promptly identify unresponsive utilities early in the project. This should help gain the appropriate level of “higher support” from the design project manager and, if necessary, from the City. Also, utilities with little or no experience submitting relocation agreements to public agencies such as the City and/or generating a plan set in accordance with that required by the City in order to receive reimbursement should be identified during this stage. These utilities should be given more attention than those experienced in these types of

submittals to help minimize the potential delays in the review and/or submittal process.

At the 60% design stage, the specialist's primary focus should be to work closely with the design team to establish a "vertical envelope" for all areas where private utilities will cross the future roadway so that the private utility designs can proceed without waiting for a final plan set before starting their respective designs. By identifying and agreeing to maintain a clear vertical window, the utility relocations should progress more efficiently. During this stage, the utility specialist will gradually begin to transition from the coordinating role into more of a monitoring role by relying on the utility schedule developed in the previous stage and updating all activities based on actual activity status. The specialist will identify and help resolve issues that may impact the successful completion of the scheduled activities as these have the likelihood of affecting the overall success of the project.

During the final project design stage, between the 90% and 100% milestones, the private utility costs and schedule will be finalized. At this point, the specialist will guide the utility process by ensuring that cost estimates and draft reimbursement agreements are submitted in a timely manner. Additionally, the specialist will monitor the ROW acquisition status so that as parcels become available, approved relocations not requiring additional parcels will begin promptly. To ensure agreements are properly prepared and submitted on time, the specialist may need to generate the necessary paperwork for those utilities identified as unfamiliar with this kind of reimbursement process. As the specialist becomes familiar with the particular requirements imposed by the City, he/she will be able to review the documents submitted by the utilities to facilitate the reimbursement process for the

City.

In addition, as utilities begin their relocations, the specialist should monitor the installations and collect as-built information for the City. During construction, if field changes are required, the specialist should thoroughly review the design options and coordinate these changes with any other affected party.

E. Traffic Analysis

The Medical Complex Drive - Traffic Study, located in **Appendix C**, was prepared by Gunda Corporation. It is anticipated that the addition of the proposed Medical Complex Drive to the traffic circulation system in Tomball will result in an alteration of traffic circulation within the study corridor. Future traffic conditions were projected based on anticipated growth rate and GIS Shape Files obtained from Houston-Galveston Area Council (H-GAC). The AM and PM peak hour traffic data was projected for both No-Build and Build scenarios for the Years 2011 and 2035, as illustrated in **Exhibit 9**. The following proposed improvements were presented in the study:

Year 2011 Recommended Improvements

- Anticipated new signalized intersections:
 - Medical Complex Drive at Calvert Road
 - Medical Complex Drive at SH 249 WSR
 - Medical Complex Drive at SH 249 ESR
 - Medical Complex Drive at South Cherry Street
 - Medical Complex Drive (Mahaffey) at FM 2920
- Construct northbound and southbound left turn storage lanes at the Medical Complex Drive and Tomball Parkway intersection.
- Eastbound and westbound approaches of Medical Complex Drive

at the Tomball Parkway intersection should be constructed to provide one left and right turn storage lanes as well as two through lanes.

- Signal timing optimization should occur at the intersections of Tomball Parkway, Cherry Street, and Huffsmith-Kohrville Road.

Year 2035 Recommended Improvements

- Reconstruct the southbound approach at the SH 249 West Service Road intersection to provide one left turn storage lane, one shared left turn/through lane, and one exclusive through lane; and add an additional westbound left turn storage lane.
- Reconstruct the northbound approach at the SH 249 East Service Road intersection to provide one left turn storage lane, one shared left turn/through lane, one shared right turn/ through lane, and one right turn storage lane.
- Add new northbound and southbound right turn storage lanes at Tomball Parkway.
- Add new eastbound, westbound, and northbound left turn storage lanes and a new westbound right turn storage lane
- Optimize signal timing for all intersections in the study corridor.

Only the above 2011 recommendations were added to the proposed design and opinion of probable cost. Also included in the opinion of probable cost are existing traffic signals upgrades to accommodate the new pavement geometry.

F. Signing and Pavement Markings

A preliminary pavement marking plans was prepared and illustrated in **Exhibit 10** of the PER. The design is in accordance with City of Houston Engineering design requirements, TxDOT design requirements

where applicable and the Manual on Uniform Traffic Control Devices (MUTCD). All proposed striping is thermoplastic and all regulatory sign faces are proposed with diamond grade reflective sheeting for maximum reflectivity.

G. Construction Phasing

The length of the proposed Medical Complex Drive is approximately 5 miles. In order to make this project more manageable and cost efficient, the project is divided into five complete segments that can be independently designed, bid, and constructed, as illustrated in **Exhibit 11**. **Exhibit 8** shows the drainage areas and proposed construction improvements by construction segments. The construction cost estimate by construction segment is located in **Section V** of this PER. The following are descriptions of the individual construction segments:

- **Segment One:** The most westerly segment of the proposed roadway consisting of approximately 1.1 miles which includes the connection to FM 2920, Park Road, Triechel Road, and Calvert Road. The segment begins at station 27+10 and ends at station 85+00.
- **Segment Two:** This segment is approximately 0.7 miles of proposed roadway that connects Segment One at station 85+00 with Tomball Parkway. The primary feature of this segment is the proposed 410 foot bridge crossing SH 249. Segment Two ends at station 120+00.
- **Segment Three:** Approximately 0.9 miles of roadway that connects the existing Medical Complex Drive at station 141+15 with a residential section of Agg Road at station 190+00. Segment Three includes the School Street intersection and a crossing of a HCFCD channel (M121-00-00).

- **Segment Four:** This segment is approximately 1.0 mile in length and connects Segment Three at station 190+00 to an area just beyond the Huffsmith Kohrville Road at station 245+00. Segment Four includes dual 350-foot bridges over the BNSF railroad.
- **Segment Five:** The most easterly segment of the proposed Medical Complex Drive is approximately 1.2 miles. It extends from the eastern end of Segment Four at station 245+00 to the easterly connection to FM 2920 at station 307+87. The segment includes Mahaffey Road, Brady Lane, and Colby Lane intersections.

The construction phasing schedule of the segments has not yet been determined. This depends upon a number of factors including segment costs, ROW acquisition, project funding mechanisms, outfall channel construction, environmental and wetland concerns, and traffic control issues.

V. CONSTRUCTION COST ESTIMATE

The construction cost estimate illustrated on the following pages is based on 2009 average bid prices. On average, construction costs inflate over time, so as construction schedules are determined, the construction costs should be inflated based on recent consumer price index (CPI) trends. The construction cost for the entire project is estimated to be **\$40.105 Million** if built in 2009 with approximately **\$9.173 Million** in road and detention ROW land acquisition costs for a total of **\$49.278 Million**. Construction cost estimates exclude outside projects that may be required to be completed prior to start of segment construction (e.g. outfall channel extension, detailed utility relocation, environmental remediation etc.) and soft costs such as engineering, district formation (if required), and bond issuance cost and interest (if required). Construction cost estimates per construction phasing segment (excluding ROW land acquisition costs) are as follows:

- Segment One: **\$ 6.478 Million**
- Segment Two: **\$ 9.824 Million**
- Segment Three: **\$ 4.594 Million**
- Segment Four: **\$11.270 Million**
- Segment Five: **\$ 7.938 Million**

VI. PROJECT FUNDING OPTIONS

The City has several alternatives to consider and to further research in order to fund this project. The initial consideration is to develop public-public partnerships with other governmental agencies that would benefit from the construction or have a significant stake in this project. Meetings were held with Houston-Galveston Area Council (HGAC) and Texas Department of Transportation (TxDOT) roadway and drainage groups. It appears that minimal funds will be available from these sources in the near term with the only possibility being TxDOT drainage with drainage improvements to the FM 2920 and SH 249 areas. The next organizations that should be visited are Harris County Flood Control District, Harris County, Harris County Toll Road Authority, and Tomball Economic Development Corporation. State and federal grant and loan programs should also be further investigated particularly due to the recent passing of the American Recovery and Reinvestment Act.

As it appears, public funds may be limited on the short term to construct Medical Complex Drive. The next approach would be to consider public-private partnerships in order to involve private sector stakeholders. There are several ways to structure a partnership that would be beneficial to all parties. One funding mechanism is the establishment of a Transportation Reinvestment Zone (TRZ). A TRZ is a form of tax increment financing that is used to construct a specific transportation project. An overlay district would be formed and tax assessments would be locked in within the district at the date of the district formation. Any increase in tax assessments due to the increase of property value from the construction of the roadway would be held in a special account. Projects can be paid for in a pay-as-you-go method or revenue bonds can be issued based on the projected future revenue stream entering the account. These TRZ-backed revenue bonds can pay for future segments or reimburse developers that built previous segments. The current capital

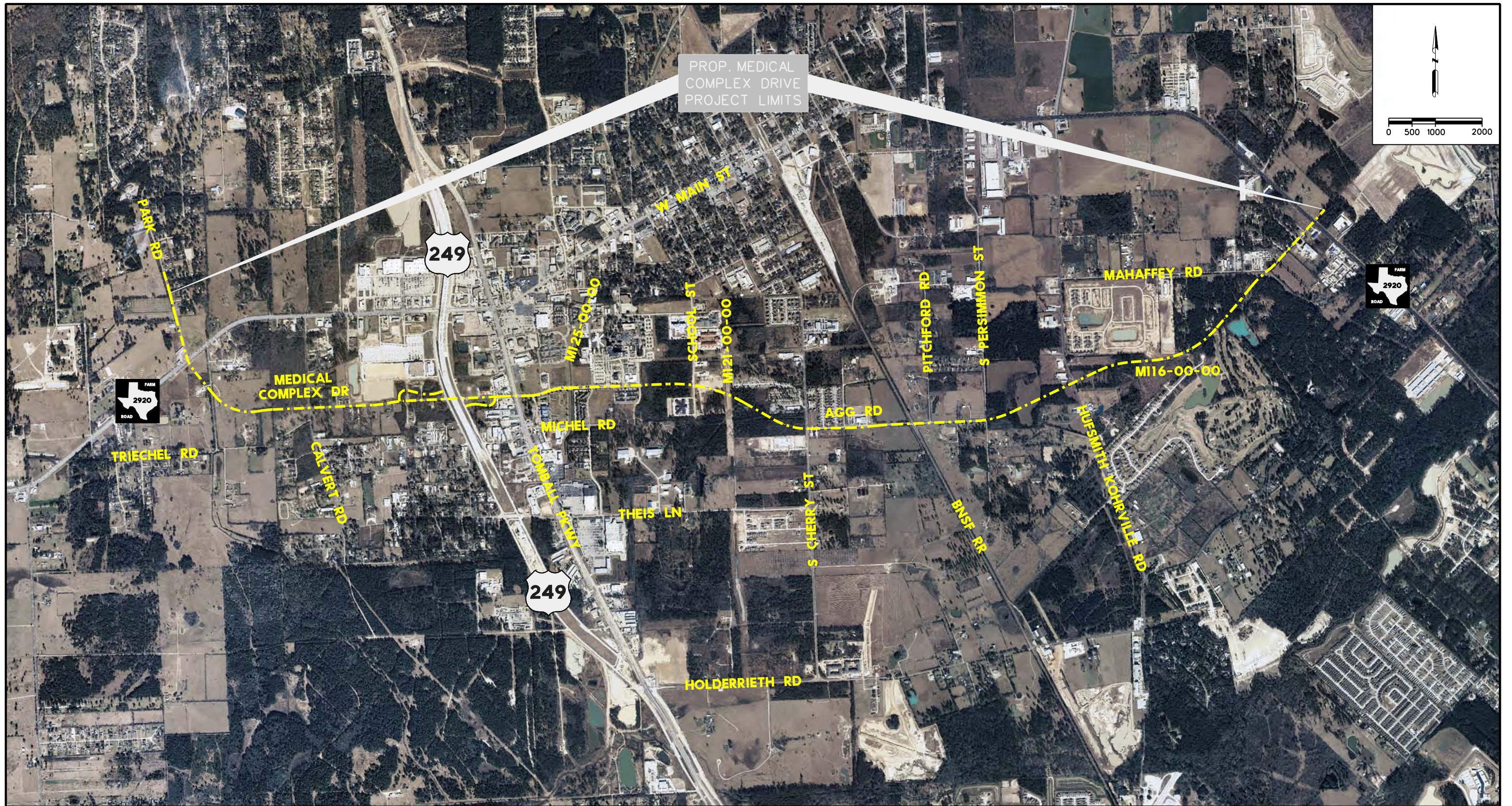
markets make the issuance of bonds more difficult than it was just a few years ago, so the establishment of a track record of increased value is important. To do this, it is CobbFendley's recommendation that the use of a TRZ be immediately reviewed so that if it is deemed necessary to fund the project, the process of establishing the district can begin as soon as possible to lock in this year's tax values. It is also our opinion that the establishment of a TRZ may affect the optimum order of segment construction. This should be reviewed in detail so that the timing of future land values is considered along with segment constructability, safety, and cost.

Other public-private partnership methods include the establishment of an infrastructure fund by a bank, incentivizing developers / owners to build segments upfront, incorporating design / build / finance methods, and / or the construction of catalytic projects. In the end, it will likely be necessary to involve a strategic combination of these methods in order to initiate construction. It is recommended that a project finance plan and preliminary cash flow schedule be prepared to map out a plan to fund the construction and ROW acquisition.

VII. CONCLUSION AND RECOMMENDATIONS

The proposed Medical Complex Drive roadway section includes approximately 5-miles of four 12-foot wide lanes divided with a 42-foot wide raised median constructed of reinforced concrete pavement within a proposed typical 120-foot ROW. The ROW varies in several places near existing commercial development and along existing City-owned ROW. The roadway alignment will require acquisition of 60 acres of ROW from 90 parcels of land. Proposed detention facilities are located in City-owned land where possible, but will require an additional 34 acres from 11 properties. Five new traffic signals are required and two will be modified. Three bridges will be constructed, one at SH 249 and dual bridges at the BNSF railroad crossing. The proposed construction phasing of the roadway is split into five separate segments to make the project more manageable and cost efficient. Drainage includes 5 detention ponds which are not contributing to the City's Capital Improvements Program Master Plan for 2007 - 2017 and 17 proposed closed conduit systems designed to have sufficient capacity to convey the 2-year storm frequency. A detailed hydrologic and hydraulic mitigation analysis will be required to ensure the proposed project has no impact to existing flood hazard conditions for storms events up to an including the 100-year event .

The estimated cost estimate for the project in 2009 dollars is **\$49.278 Million**, which includes **\$9.173 Million** for ROW, but excludes proposed outfall channel construction that will be needed prior to the commencement of certain segments, detailed utility relocation, environmental remediation, and soft costs such as engineering, district formation (if required), and bond issuance cost and interest (if required). The funding of a project of this size and scale can be complex. It is recommended that a project finance plan and preliminary cash flow schedule be prepared.



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CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT LOCATION MAP**

SCALE: 1"=2000'
 DATE: 03/27/09
 CFA JOB NO.: 0812-008-00

EXHIBIT 1

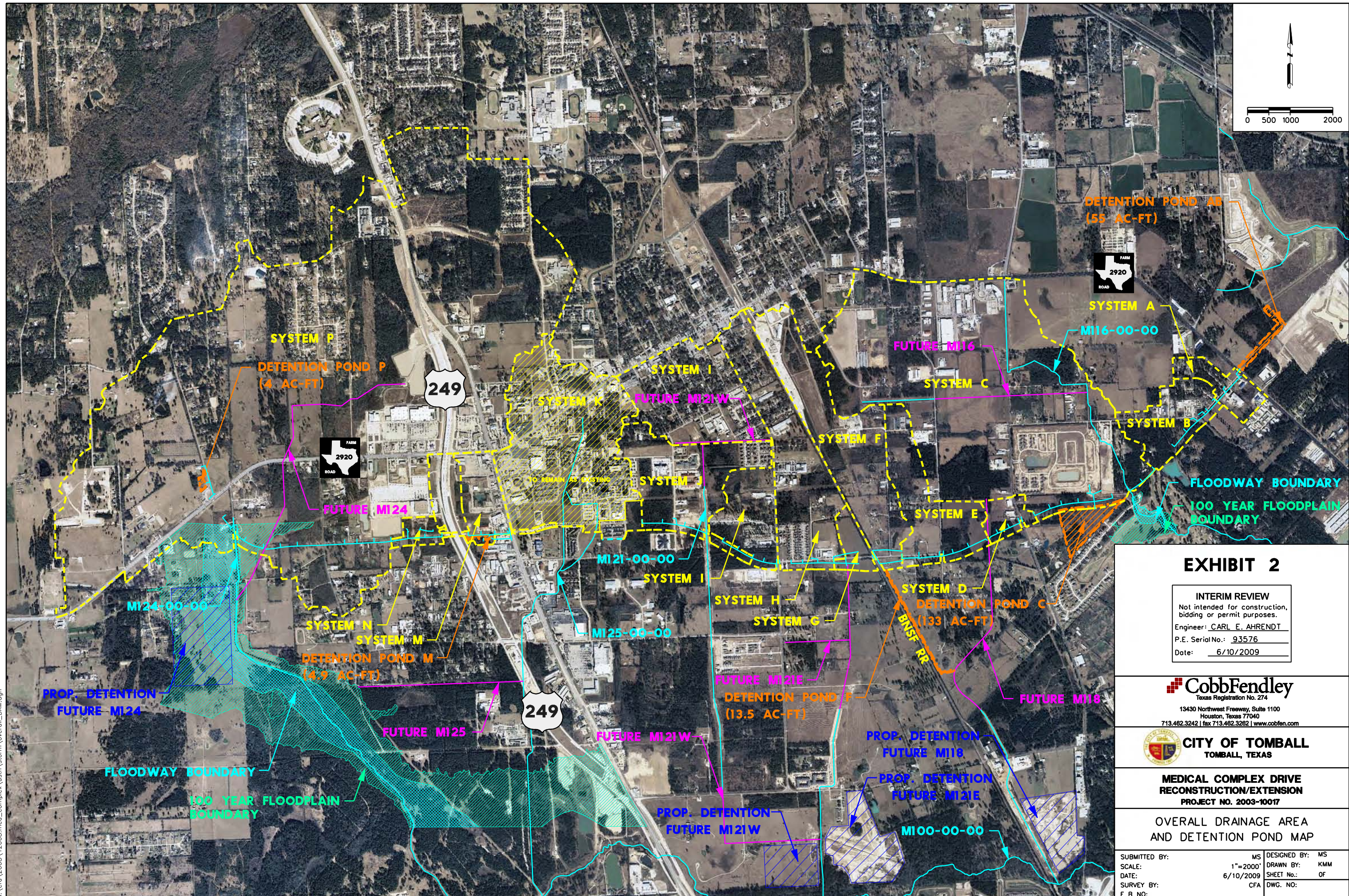
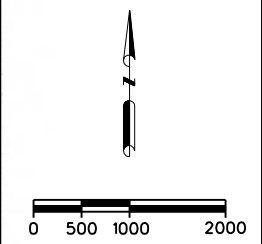


EXHIBIT 2

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

OVERALL DRAINAGE AREA AND DETENTION POND MAP

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=2000'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009
 d:\cfa\2008\12008.med_complex\storm\overall_DAM.dgn

ESTIMATED PRELIMINARY ROW ACQUISITION

Track No.	Property ID	Owner	Existing Acres	Taking Acres	Approximate Acquisition Cost (@ \$2.25/Sq. Ft.)
1	0402700000091	William M. Tilger	2.1421	0.0387	\$3,797.78
2	0402700000092 0402700000157	Tom Keating	1.6069 46.0899	1.0402	\$101,949.30
3	0402700000100	Guadalupe T. and Silvia H. Gonzales	2.7718	0.1165	\$11,414.70
4	0402700000101	Guadalupe T. and Silvia H. Gonzales	2.7718	0.0749	\$7,344.68
5	0402700000606	James D. and Kerl L. Vidrine	1.00	0.0138	\$1,353.38
6	0402700000013	Douglas Henderson	4.375	0.0010	\$95.18
7	0421810000025	Park Road, LLC.	8.4916	0.0314	\$3,076.65
8	0421810000026	Tom Keating	2.00	0.3668	\$35,952.98
9	0421810000111	J W Rumfalo	2.7257	0.7876	\$77,189.40
10	0421810000118	Alvin W.M. Schultz or Vera Mae Schultz	9.61	0.9153	\$89,711.10
11	0421810000020	Gaither Petroleum Corp.	5.00	1.2763	\$125,090.33
12	0421810000151	Glen Busa	5.00	0.2302	\$22,561.20
13	0421810000151	Kenneth Schultz	21.93	0.3809	\$37,332.45
14	0421810000119	The Haynes Family	33.2209	2.9811	\$292,175.33
15	0421810000105	Tortuga Operating Co.	10.00	1.2078	\$118,374.08
16	0430410000010	Jackson B. and Myrtle Smith	34.9550	2.1075	\$206,552.25
17	0430410000094	Kerry K. and Laura Johnston	2.771	0.2556	\$25,049.93
18	0430410000003	Rick J. Bice	4.0459	0.2487	\$24,374.48
19	0430410000023	Anthony E. and Carla J. Holub	2.9895	0.1522	\$14,917.05
20	0430410000108	Anthony E. Holub	1.50	0.1352	\$13,254.98
21	0430410000008	Robert W. and Alice E. Holley	4.7705	0.1981	\$19,414.13
22	0430410000132	Stacy D., Carnathan Collins, Mitzi J. Carnathan Fenske, Beverly S. Carnathan	1.9958	0.0867	\$8,493.08
23	0430410000022 0430410000197 0430410000198	Tran Diep Ba Dan Ngo Victoria Ho and Jenny Ho Pham	5.00	0.2264	\$22,188.38
24	1287790000011	Weigoren Investments, Inc.	6.0320	0.0304	\$2,978.10
25	1287790000009	Weigoren Investments, Inc.	8.3554	0.3768	\$36,930.83
26	0430410000188	Vivian Vaquez and Kevin Ashe	3.3806	0.1717	\$16,825.65
27	0430410000033	Mary A. Tucker	1.00	0.0851	\$8,337.38
28	0430410000021	Robert L. Page	1.9416	0.0499	\$4,888.35
29	0430410000004	Robert E. and Charlotte L. Bailey	5.00	0.2366	\$23,188.95
30	0430410000205	JTS Development, LTD.	6.5980	0.8063	\$79,023.38
31	0430410000204	KCS Development, LTD.	8.4890	3.7232	\$364,909.95
32	1238020010003	Tomball Gateway, LTD.	3.0070	0.0893	\$8,750.48
33	0430410000045	Gateway Plaza, LTD.	3.6115	2.3309	\$228,451.51
34	1238020010001	KKC International, LLC.	1.8390	0.0833	\$8,163.00
35	1192890010001	Amergy Bank National Assoc.	1.2710	0.1586	\$15,540.08
36	0430410000230	Tomball Gateway, LTD.	2.1440	0.1658	\$16,250.06
37	1174370050001	Tomball Hospital Authority	11.7220	0.1158	\$11,349.56
38	1268010010001	Tomball Professional Bldg, LP.	2.146	0.3487	\$34,174.13
39	0430440000058	Tomball 10 Joint Venture	9.8720	1.4780	\$144,857.70
40	0430440000018	Tomball Hospital Authority	7.99	1.5247	\$149,438.03
41	1302030010002	Harkins & Barlett Investments, LTD.	2.4863	0.0020	\$200.25
42	0402700000092 0402700000157	Harkins & Barlett Investments, LTD.	1.5172 7.2514	0.3970	\$38,908.35
43	0352860000163	Genye Allen and Jacquelyn D. Marshall	15.541	2.2191	\$217,497.83
44	0352860000172	Trailside Group, LTD.	7.5580	1.9760	\$193,669.43
45	1204740010061	Orbit Development, INC.	1.3598	0.0268	\$2,630.03
46	1204740010062	Edgar C. Ray	0.7851	0.0701	\$6,873.75
47	1204740010001	Ryan P. & Shannon Coffell	0.2360	0.0023	\$224.78

Track No.	Property ID	Owner	Existing Acres	Taking Acres	Approximate Acquisition Cost (@ \$2.25/Sq. Ft.)
48	1204740010063	Cherry Meadows Community	2.2725	0.3095	\$30,329.55
49	0352860000425 0352860000426	Tomball Cowboy Church	13.3799	0.2925	\$28,666.35
50	0352860000219	Agg Road Associates, LP.	4.9838	0.9808	\$96,130.13
51	0352860000217	Agg Road Associates, LP.	11.515	1.6845	\$165,095.55
52	0352860000220	Agg Road Associates, LP.	9.9744	1.5324	\$150,192.00
53	0352860000416	Carolyn N. Cole	1.2910	1.0740	\$105,259.50
54	0352880000287 0352880000423	Dean R. Johnson	7.6936	2.0789	\$203,749.43
55	0352880000417	James and Patricia Case	2.364	1.1553	\$113,229.45
56	-	James and Patricia Case	1.8015	0.2601	\$25,492.28
57	0352880000411	James and Patricia Case	1.670	0.4984	\$48,849.53
58	0352880000281 0352880000414	Joe Serna	6.210	0.0294	\$2,880.68
59	0352880000435	Higinio Sanchez	4.340	0.2069	\$20,281.50
60	0352920000525	Sam E. and Helen E. Raburn	10.00	1.6683	\$163,506.15
61	0352920000364	Pete's Man's Shop, Inc.	30.00	1.6797	\$164,622.60
62	0352920000526	Sam E. and Helen E. Raburn	5.00	1.5831	\$155,161.58
63	1229830000002	Spears Investments	4.00	0.1863	\$18,263.48
64	1229830000003	David Swisher / DS Services	1.8380	0.1658	\$16,251.53
65	0352960000485	Brandt Exploration, LLC.	8.1479	1.9617	\$192,267.90
66	0352960000536	RDBE, LLC.	4.9980	0.4714	\$46,204.65
67	0352960000490 0352960000524	TCC Development, Inc.	5.00 25.00	4.1865	\$410,320.58
68	0440550010079 0440550010084	Raymond E. and Karen D. O'Bannon	12.00	0.3476	\$34,067.48
69	0440550010087	The Estates at Willow Creek, LLC.	0.5045	0.1537	\$15,059.70
70	0440550010088	The Estates at Willow Creek, LLC.	0.1262	0.0180	\$1,760.85
71	0440550010074	Thomas L. and Brenda J. Meuth	30.4540	2.8232	\$276,705.68
72	1223210020007	TCC Development, Inc.	0.6850	0.0153	\$1,497.15
73	1207880000002	Tomball Country Club, Inc.	36.1312	0.3112	\$30,497.63
74	0410260000264	Craig O. and Mandy L. Bussell	2.280	0.1307	\$12,805.20
75	0440550010073	Craig O. and Mandy L. Bussell	6.6113	2.5761	\$252,485.55
76	0410260000254	Craig O. and Mandy L. Bussell	36.3877	0.0086	\$847.35
77	0440550010048	Doka USA, LTD.	5.8254	0.2063	\$20,223.45
78	0410260000155 0410260000233	CR Hall, ETUX	1.00 15.5818	0.3489	\$34,194.38
79	1150660000058	Jesus and Guadalupe Vargas	0.3834	0.0637	\$6,243.53
80	1150660000057	James and Victoria Griep	0.4953	0.0815	\$7,988.63
81	1150660000057	Marcelina Westfall	0.4523	0.0671	\$6,576.30
82	0410260000243 0410260000261	American Coatings, Inc.	1.150	0.2758	\$27,031.05
83	1150660000036	David and Margaret Posey	0.3616	0.0574	\$5,623.88
84	1150660000035	William and Jean Adams	0.4118	0.0611	\$5,989.28
85	1150660000034	William and Jean Adams	0.4293	0.0654	\$6,414.08
86	1150660000002	James and Victoria Griep	0.4544	0.0694	\$6,806.25
87	0410260000286	620 Main Partnership	0.5580	0.0790	\$7,743.83
88	1150660000001	Twila Langness	0.4034	0.0656	\$6,425.55
89	0410260000285	Dog It, LLC.	1.50	0.1921	\$18,823.28
90	1279330010001	Mahaffey Road Partnership, LLP.	1.4270	0.1859	\$18,221.63

ESTIMATED PRELIMINARY OFF-SITE DETENTION POND ACQUISITION

System	Property ID	Owner	Existing Acres	Taking Acres	Approximate Acquisition Cost (@ \$2.25/Sq. Ft.)
P	0421810000111	J W Rumfalo	2.7257	0.9578	\$93,873.98
F	0352880000287 0352880000423	Dean R. Johnson	0.50 7.1936	0.1869	\$18,318.07
F	0352880000290 0352880000426	John and Peggy Ford	0.50 7.1936	0.7660	\$75,075.66
F	0352880000292	William R. and Betty J. Lancaster	7.0176	0.5231	\$51,269.03
F	0352880000293 0352880000376-380	Betty Zurek Benard, John B., and Mabel E. Bireline/Tomball ISD	6.5587	0.5360	\$52,533.36
F	0352880000095/295/297/298	Childrens Hospital of LA, Robbie Royer, Lorie P. Rabalais	4.0421	0.4965	\$48,661.97
F	0352920000500-502/505	Robbie Royer, Lorie P. Rabalais, Childrens Hospital of LA	13.1848	0.8843	\$86,670.24
C	0352960000490 0352960000524	TCC Development, Inc.	5.00 25.00	23.2342	\$2,277,183.94
AB	0440550010008 0440550010051	FM 2020 Limited Partnership	30.62	1.8375	\$180,093.38
AB	0440550010010	Ajaz R. and Hina Siddiqui Najeeb R. and Sana Siddiqui	15.37	3.6948	\$362,127.35
AB	0440550010067	Dowdell LTD.	170.94	0.9327	\$91,413.93

EXHIBIT 3

INTERIM REVIEW
Not intended for construction,
bidding or permit purposes.
Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

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Texas Registration No. 274
13430 Northwest Freeway, Suite 1100
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713.462.3242 | fax 713.462.3262 | www.cobfen.com

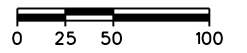
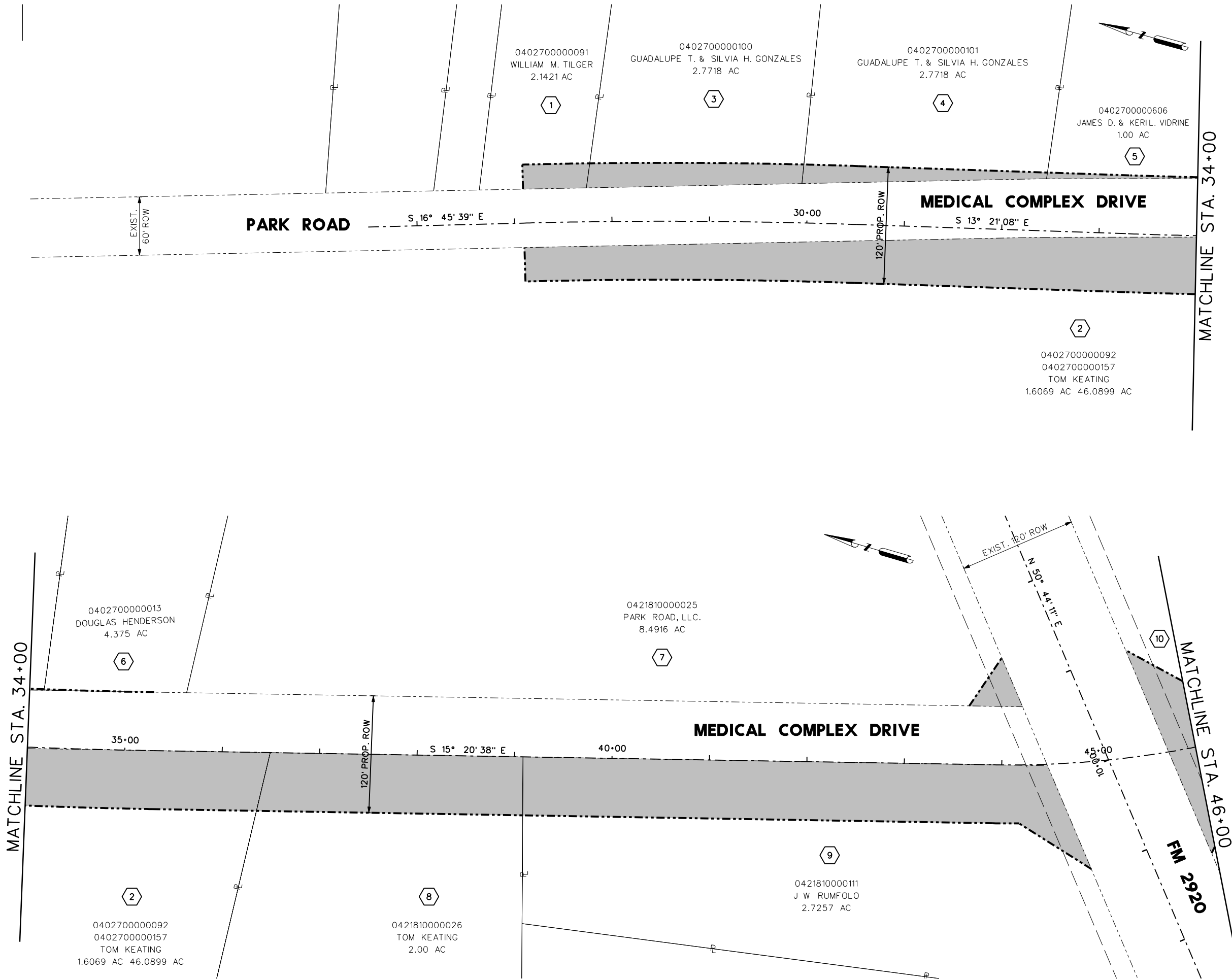
 **CITY OF TOMBALL**
TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

**ESTIMATED PRELIMINARY
ACQUISITION**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	N/A	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

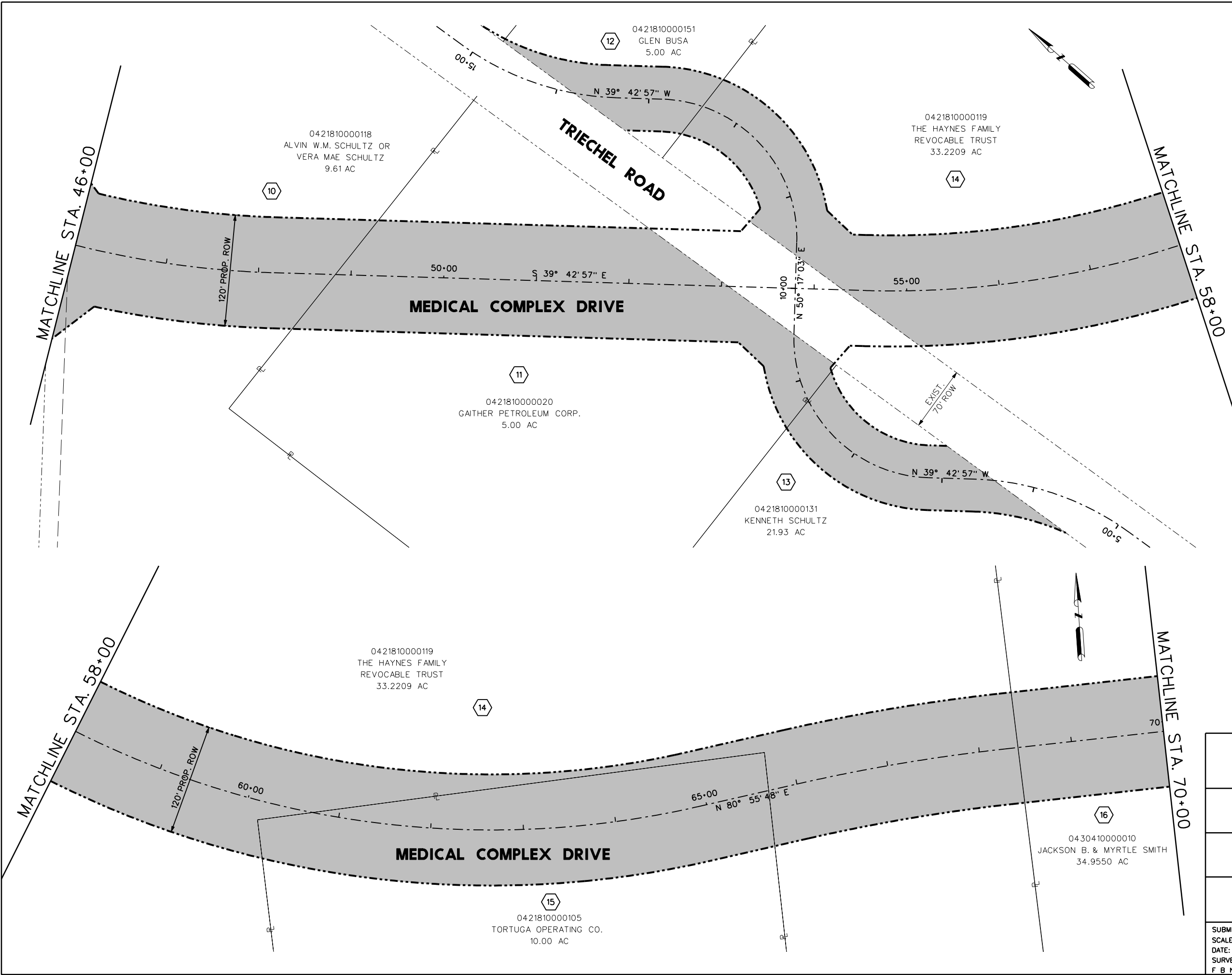
EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	- - - -
PROP. ROW	-----
PROP. ROADWAY	⊕
EXIST. PROPERTY LINE	⊕
PROP. AREA TO ACQUIRE	▨
TRACT NUMBER	①

EXHIBIT 3

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

<p>CobbFendley Texas Registration No. 274 13430 Northwest Freeway, Suite 1100 Houston, Texas 77040 713.462.3242 fax 713.462.3262 www.cobfen.com</p>	
<p>CITY OF TOMBALL TOMBALL, TEXAS</p>	
<p>MEDICAL COMPLEX DRIVE RECONSTRUCTION/EXTENSION PROJECT NO. 2003-10017</p>	
<p>PRELIMINARY ROW MAP BEGIN TO STA. 46+00</p>	
SUBMITTED BY: MS SCALE: 1"=100' H DATE: 6/9/2009 SURVEY BY: CFA F B NO:	DESIGNED BY: MS DRAWN BY: KMM SHEET No.: OF DWG. NO:

6/9/2009
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LEGEND

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY
- EXIST. PROPERTY LINE
- PROP. AREA TO ACQUIRE
- TRACT NUMBER

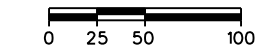


EXHIBIT 3

INTERIM REVIEW
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 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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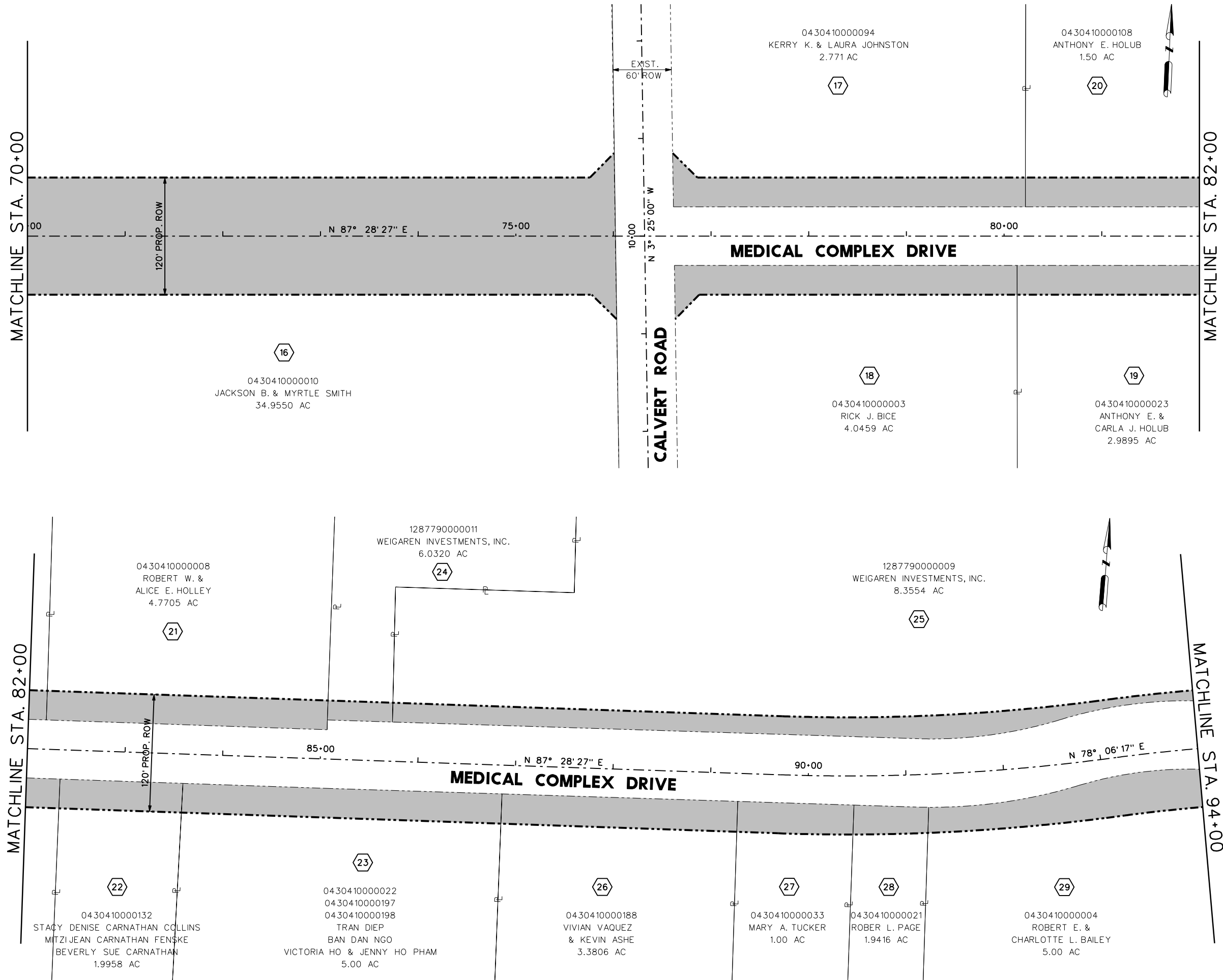
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PRELIMINARY ROW MAP
 STA. 46+00 TO STA. 70+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY CL
- EXIST. PROPERTY LINE
- PROP. AREA TO ACQUIRE
- TRACT NUMBER

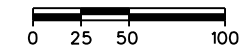


EXHIBIT 3

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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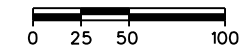
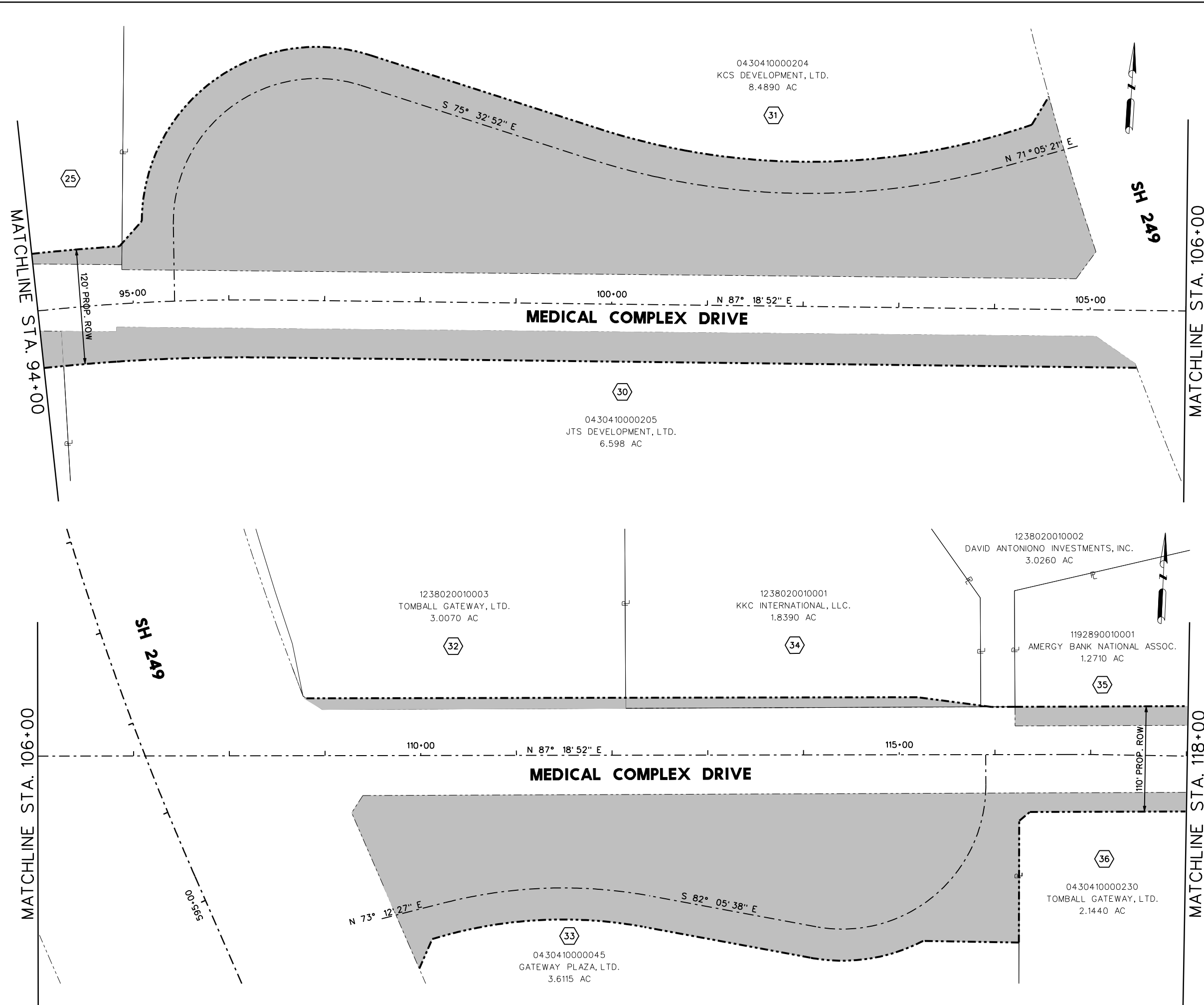
CITY OF TOMBALL
 TOMBALL, TEXAS

MEDICAL COMPLEX DRIVE RECONSTRUCTION/EXTENSION PROJECT NO. 2003-10017

PRELIMINARY ROW MAP STA. 70+00 TO STA. 94+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY CL	---
EXIST. PROPERTY LINE	---
PROP. AREA TO ACQUIRE	---
TRACT NUMBER	①

EXHIBIT 3

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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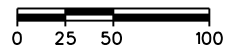
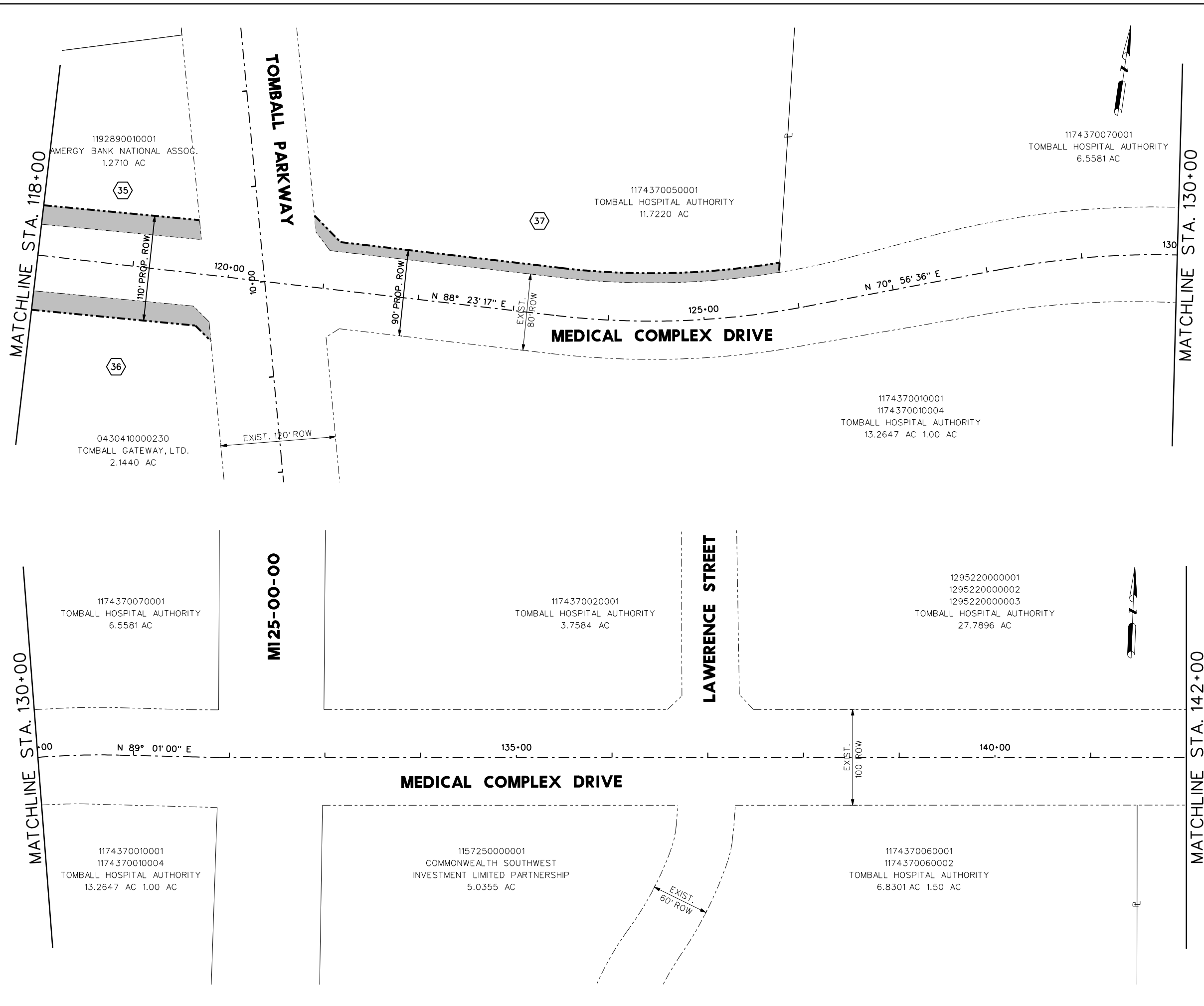


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PRELIMINARY ROW MAP
 STA. 94+00 TO STA. 118+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			



6/9/2009
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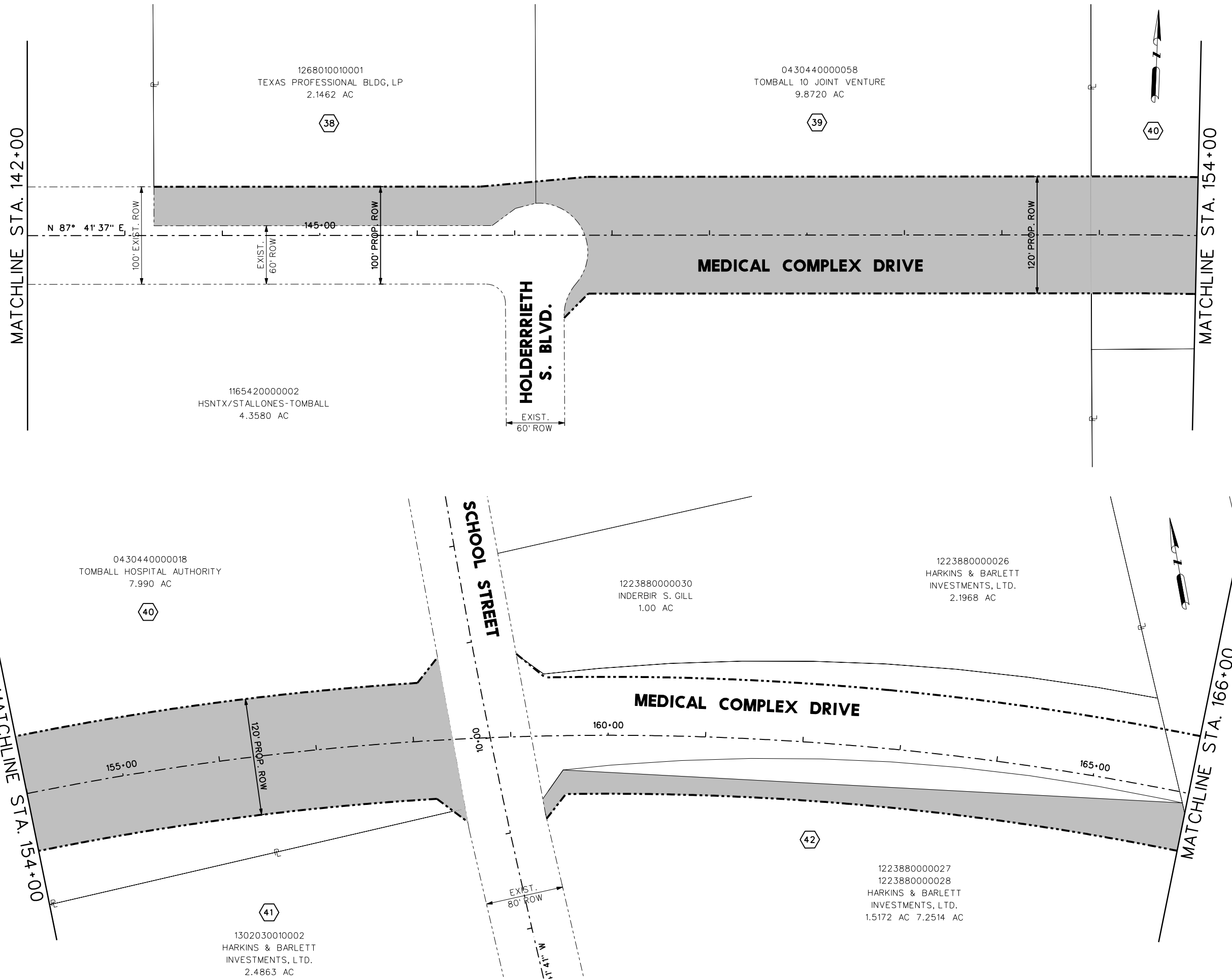
- LEGEND**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY
 - EXIST. PROPERTY LINE
 - PROP. AREA TO ACQUIRE
 - TRACT NUMBER 1

EXHIBIT 3

INTERIM REVIEW
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 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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 CITY OF TOMBALL TOMBALL, TEXAS	
MEDICAL COMPLEX DRIVE RECONSTRUCTION/EXTENSION PROJECT NO. 2003-10017	
PRELIMINARY ROW MAP STA. 118+00 TO STA. 142+00	
SUBMITTED BY: MS SCALE: 1"=100' H DATE: 6/9/2009 SURVEY BY: CFA F B NO:	DESIGNED BY: MS DRAWN BY: KMM SHEET No.: OF DWG. NO:

6/9/2009
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LEGEND

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY CL
- EXIST. PROPERTY LINE
- PROP. AREA TO ACQUIRE
- TRACT NUMBER

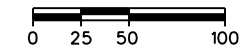


EXHIBIT 3

INTERIM REVIEW
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 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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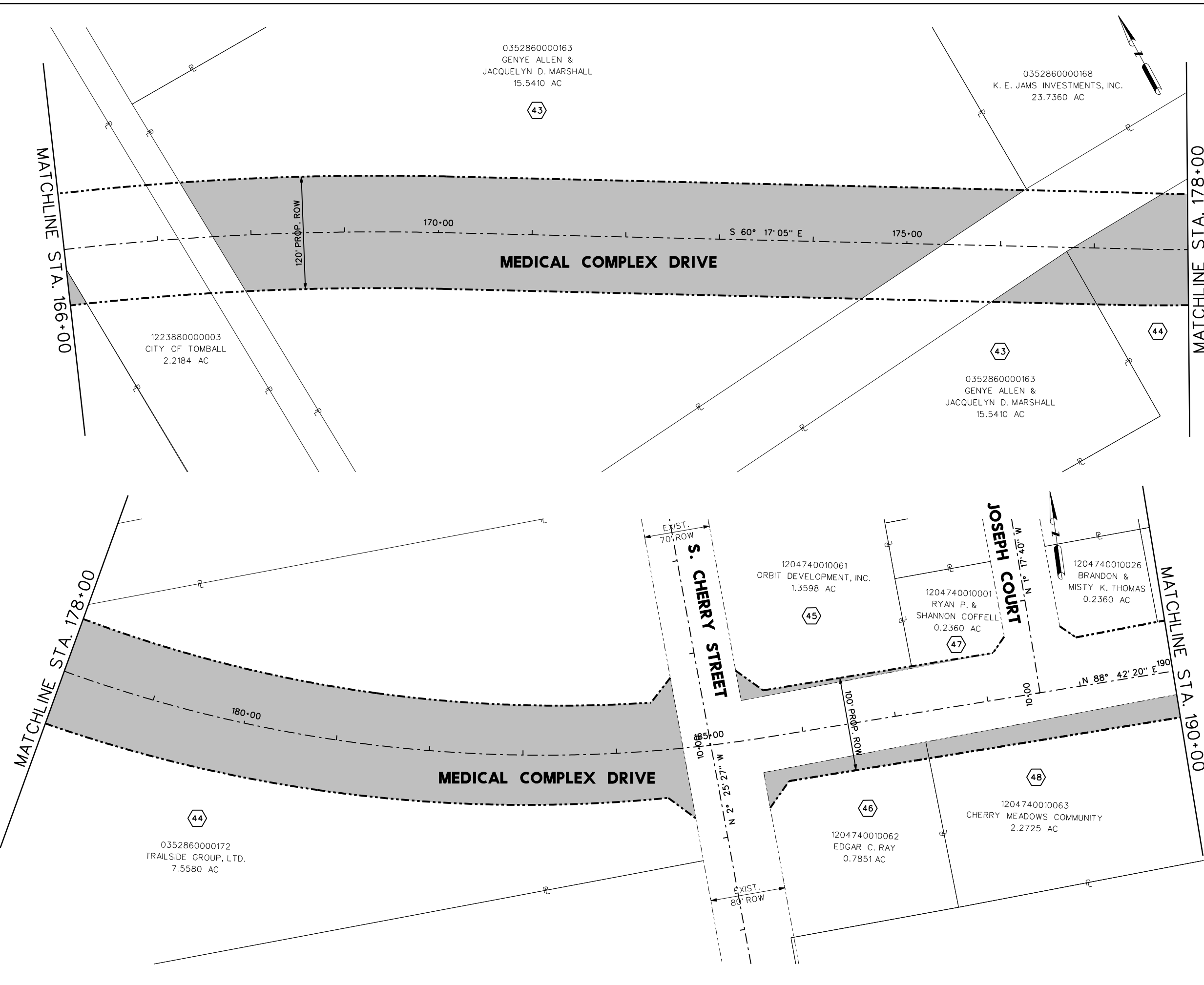
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PRELIMINARY ROW MAP
 STA. 142+00 TO STA. 166+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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0352860000163
GENYE ALLEN &
JACQUELYN D. MARSHALL
15.5410 AC

0352860000168
K. E. JAMS INVESTMENTS, INC.
23.7360 AC

1223880000003
CITY OF TOMBALL
2.2184 AC

0352860000163
GENYE ALLEN &
JACQUELYN D. MARSHALL
15.5410 AC

1204740010061
ORBIT DEVELOPMENT, INC.
1.3598 AC

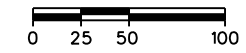
1204740010001
RYAN P. &
SHANNON COFFELL
0.2360 AC

1204740010026
BRANDON &
MISTY K. THOMAS
0.2360 AC

0352860000172
TRAILSIDE GROUP, LTD.
7.5580 AC

1204740010062
EDGAR C. RAY
0.7851 AC

1204740010063
CHERRY MEADOWS COMMUNITY
2.2725 AC



LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	- - - - -
PROP. ROW	-----
PROP. ROADWAY C	-----
EXIST. PROPERTY LINE	---
PROP. AREA TO ACQUIRE	▒
TRACT NUMBER	①

EXHIBIT 3

INTERIM REVIEW
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bidding or permit purposes.
Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

CobbFendley
Texas Registration No. 274
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713.462.3242 | fax 713.462.3262 | www.cobfen.com

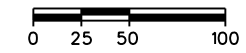
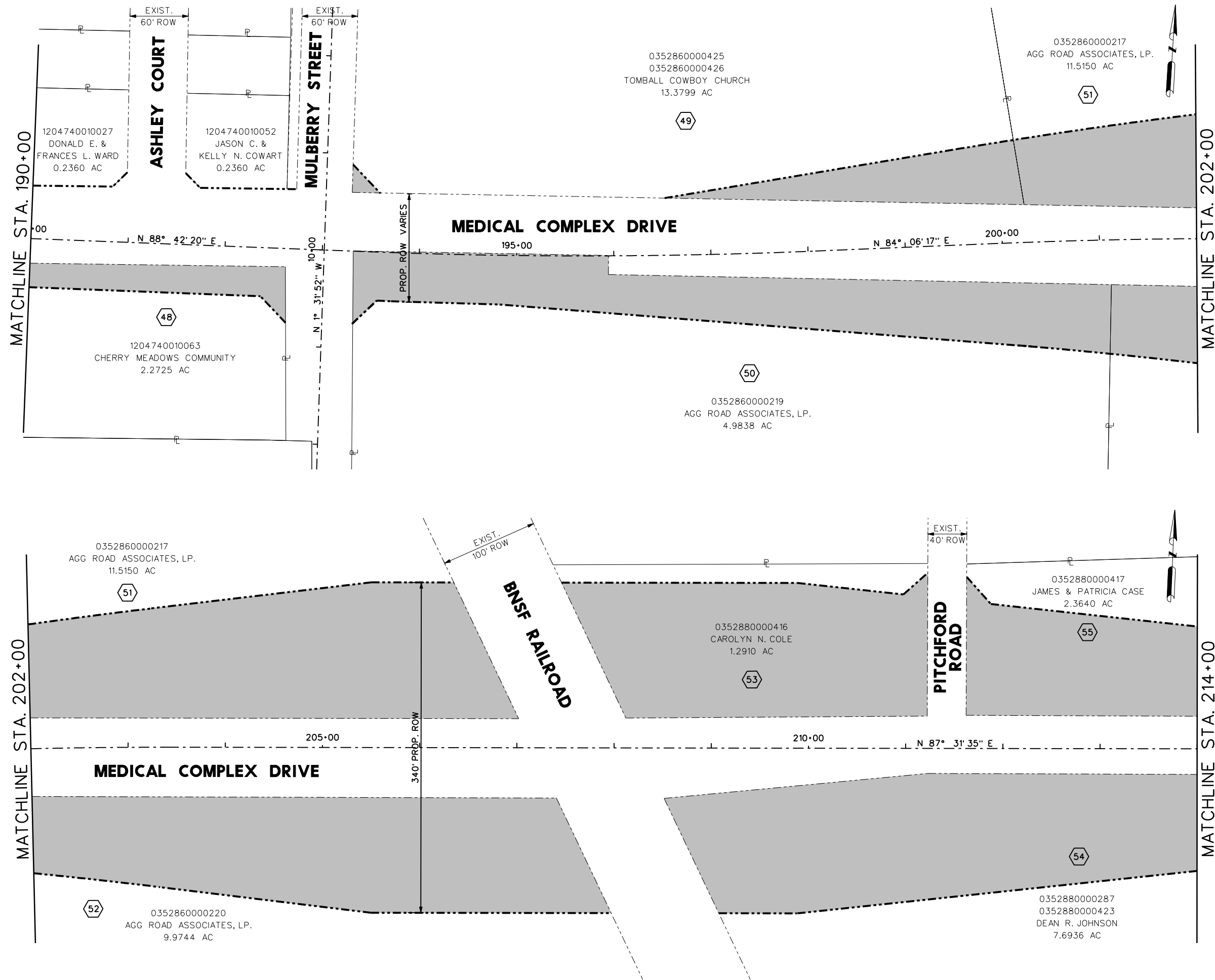


**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

**PRELIMINARY ROW MAP
STA. 166+00 TO STA. 190+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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- LEGEND**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY
 - EXIST. PROPERTY LINE
 - PROP. AREA TO ACQUIRE
- TRACT NUMBER 1

EXHIBIT 3

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

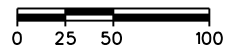
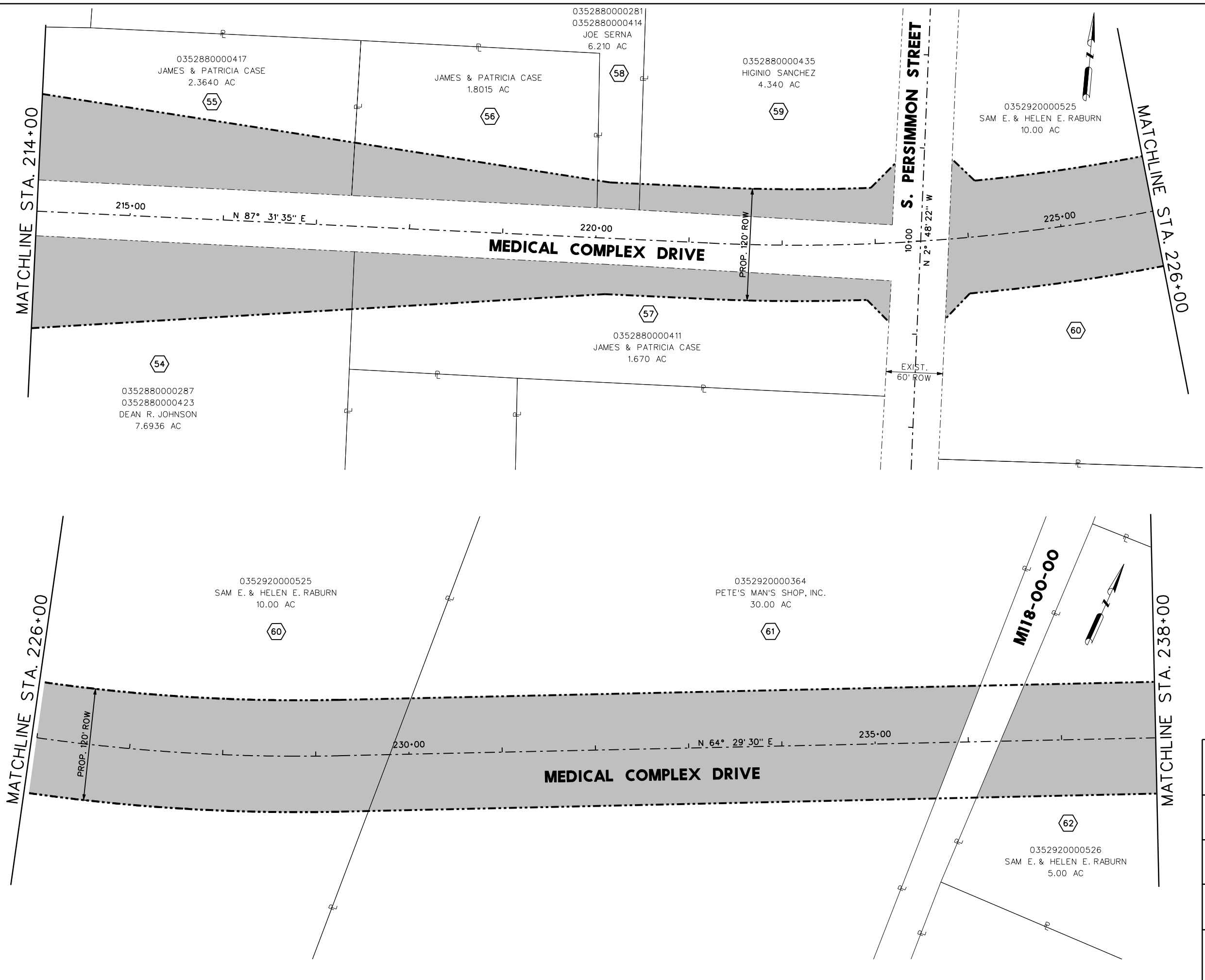


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PRELIMINARY ROW MAP
 STA. 190+00 TO STA. 214+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	- - - -
PROP. ROW	— · — · —
PROP. ROADWAY C	— · — · —
EXIST. PROPERTY LINE	— P —
PROP. AREA TO ACQUIRE	■
TRACT NUMBER	①

EXHIBIT 3

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

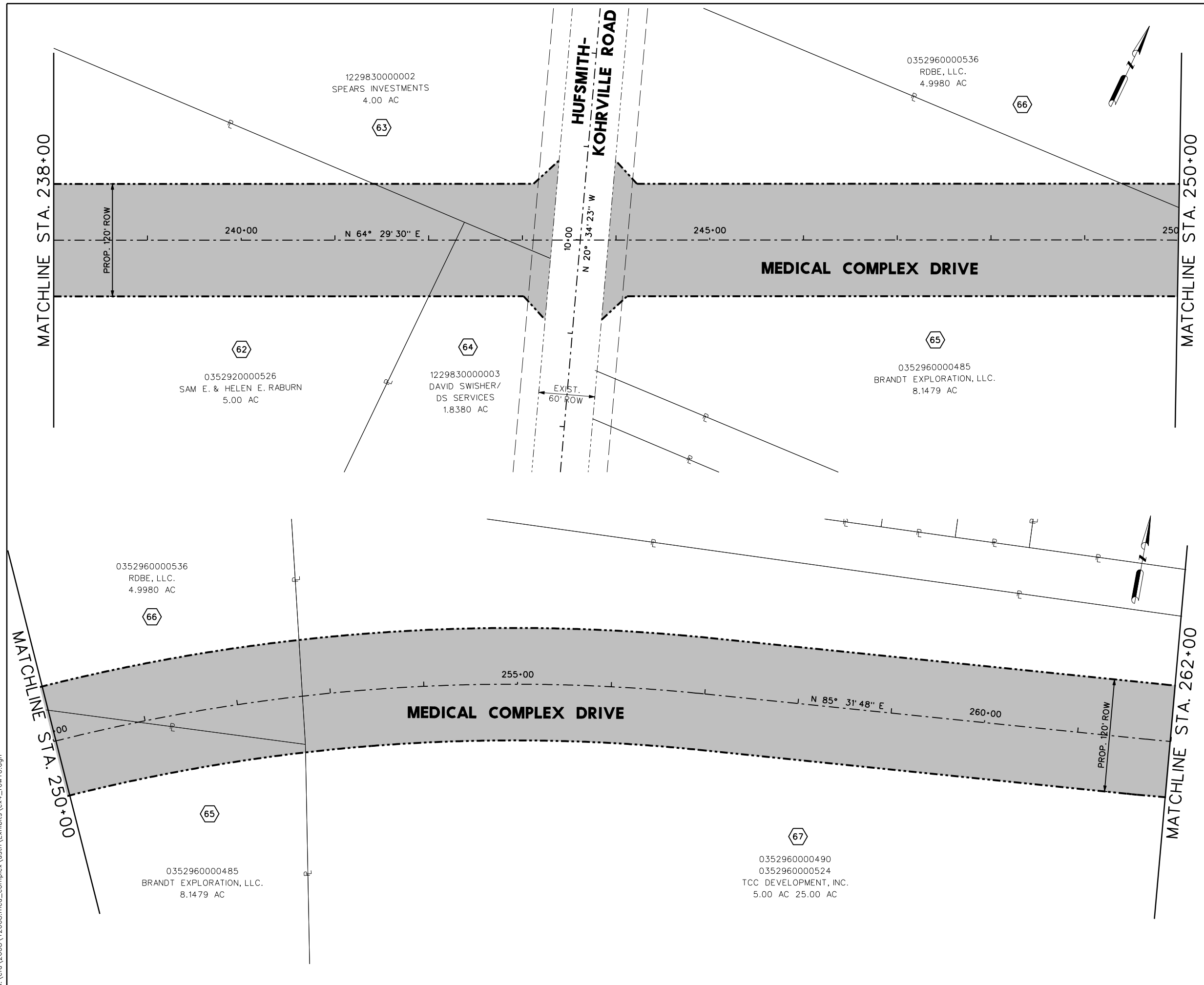
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PRELIMINARY ROW MAP
 STA. 214+00 TO STA. 238+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100'	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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0 25 50 100

LEGEND

EXIST. ROW

EXIST. DRAINAGE EASEMENT

PROP. ROW

PROP. ROADWAY

EXIST. PROPERTY LINE

PROP. AREA TO ACQUIRE

TRACT NUMBER

EXHIBIT 3

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

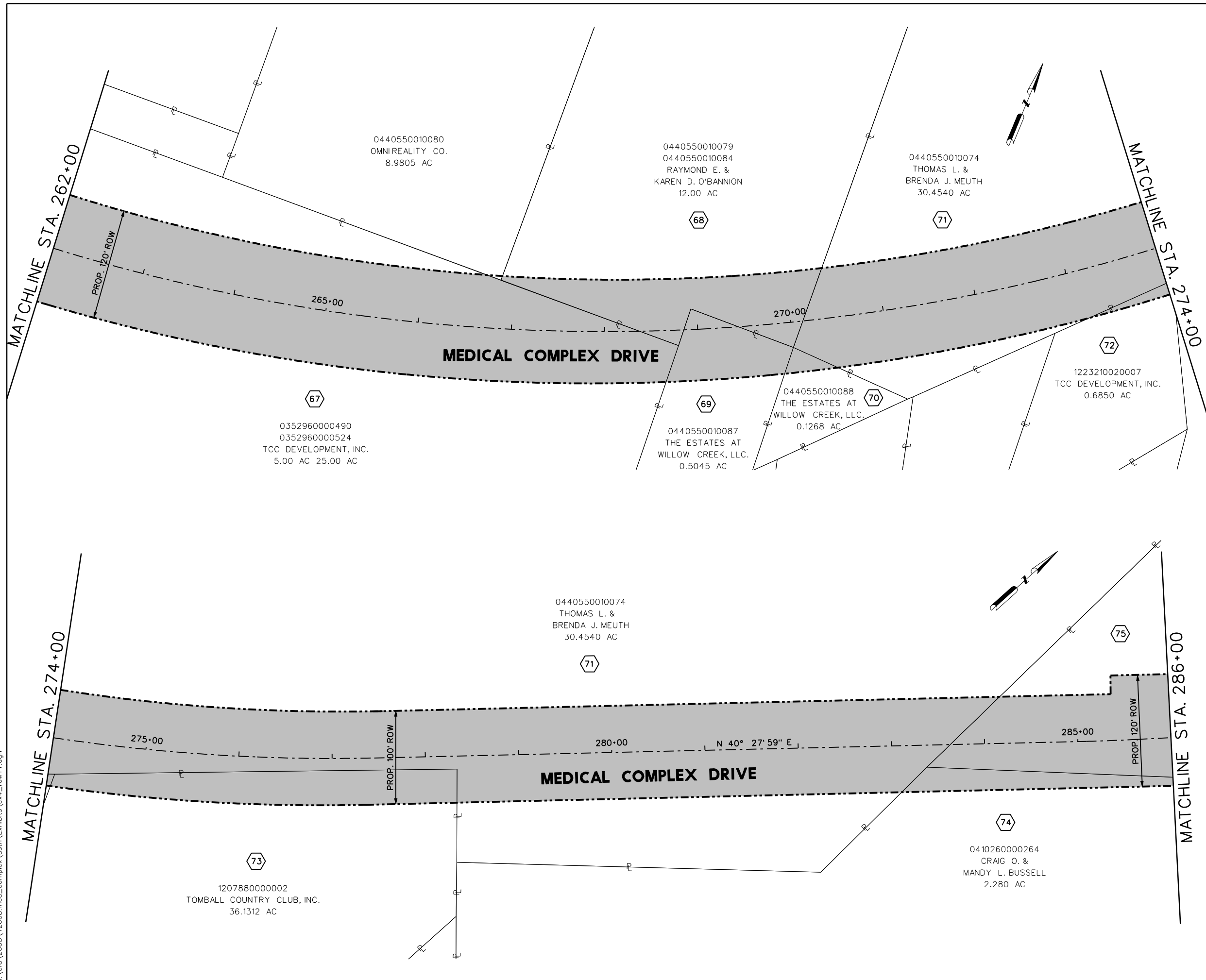
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PRELIMINARY ROW MAP
 STA. 238+00 TO STA. 262+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY
- EXIST. PROPERTY LINE
- PROP. AREA TO ACQUIRE

TRACT NUMBER

EXHIBIT 3

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

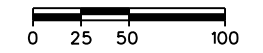
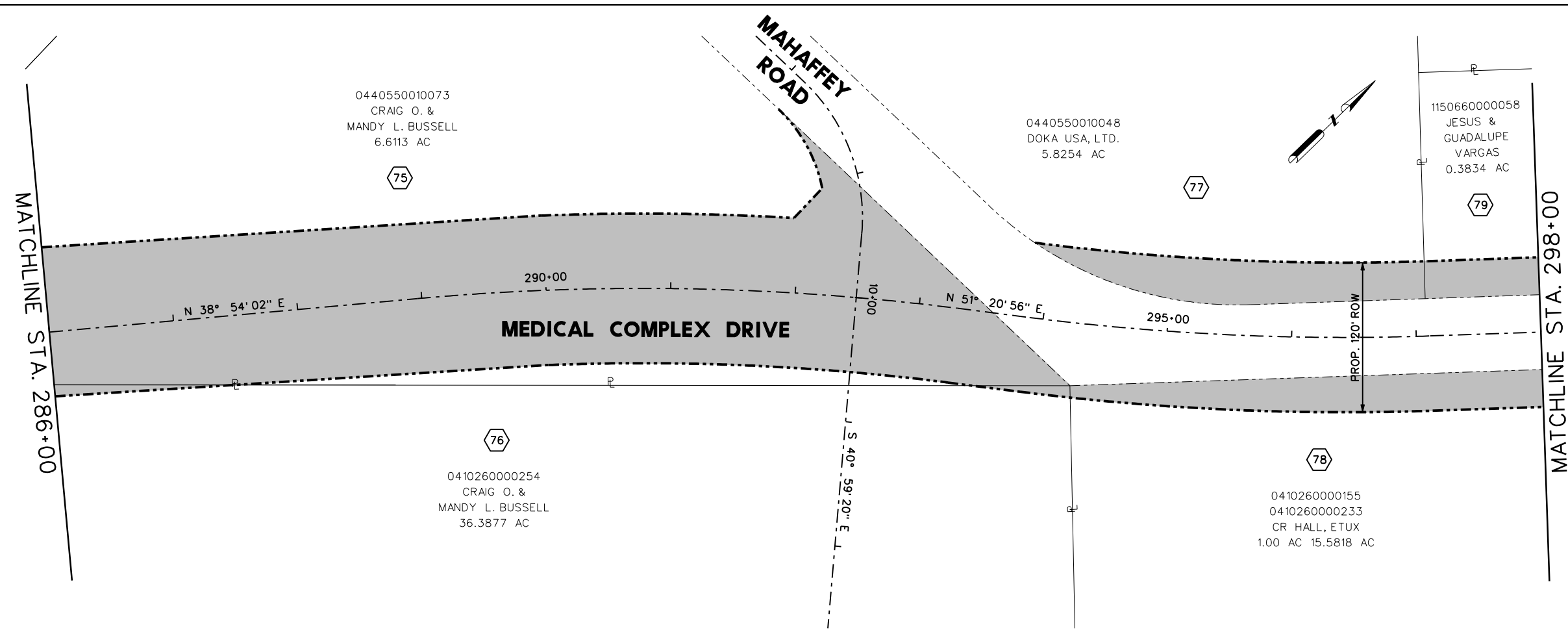
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PRELIMINARY ROW MAP
 STA. 262+00 TO STA. 286+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
EXIST. PROPERTY LINE	---
PROP. AREA TO ACQUIRE	---
TRACT NUMBER	1

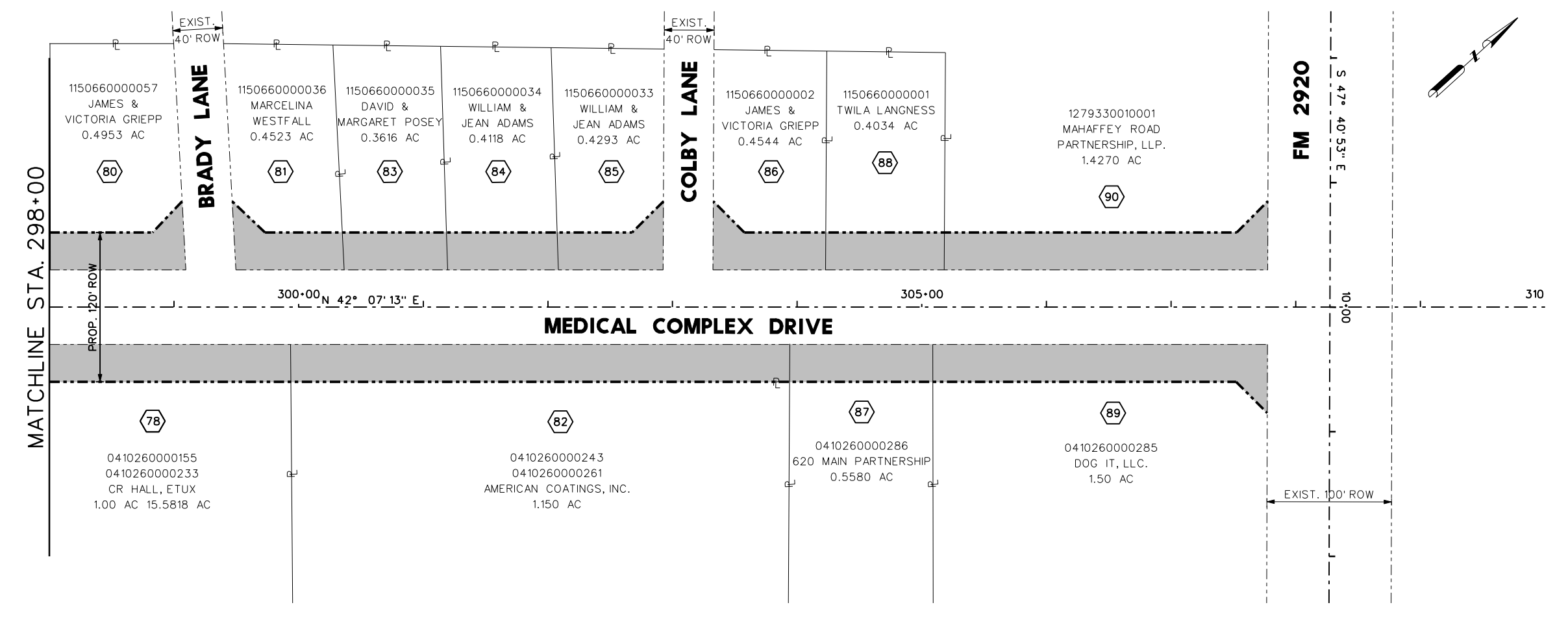


EXHIBIT 3

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

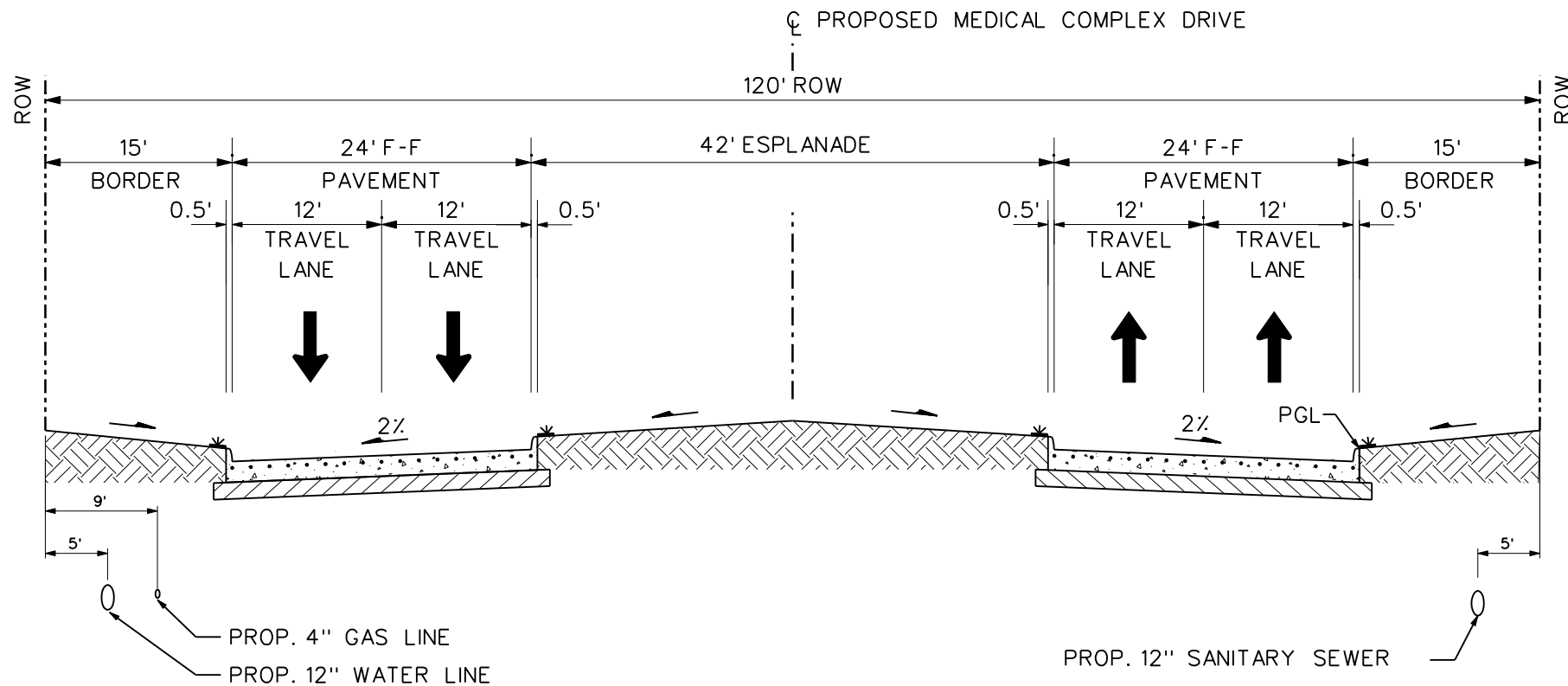
CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com



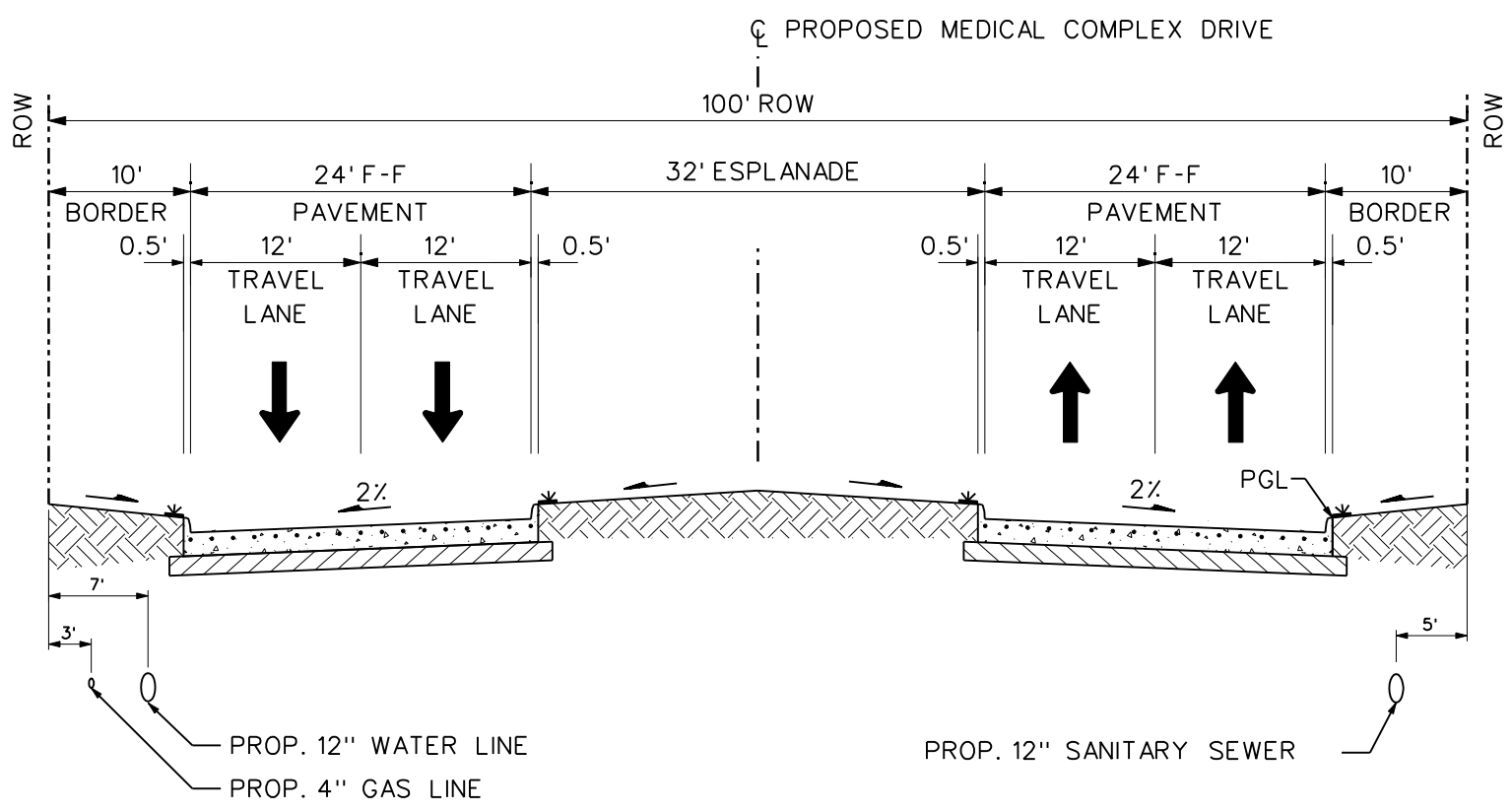
MEDICAL COMPLEX DRIVE RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017

PRELIMINARY ROW MAP
 STA. 286+00 TO END

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			



PROPOSED TYPICAL SECTION
FROM STA. 27+10 TO STA. 307+90



PROPOSED TYPICAL SECTION
FROM STA. 185+00 TO STA. 197+65
FROM STA. 277+45 TO STA. 285+35

EXHIBIT 4

INTERIM REVIEW
Not intended for construction,
bidding or permit purposes.
Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

CobbFendley
Texas Registration No. 274
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobfen.com



**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

**TYPICAL SECTIONS
SHEET 1 OF 4**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	N/A	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\Typ_secs\typ_secs.dgn

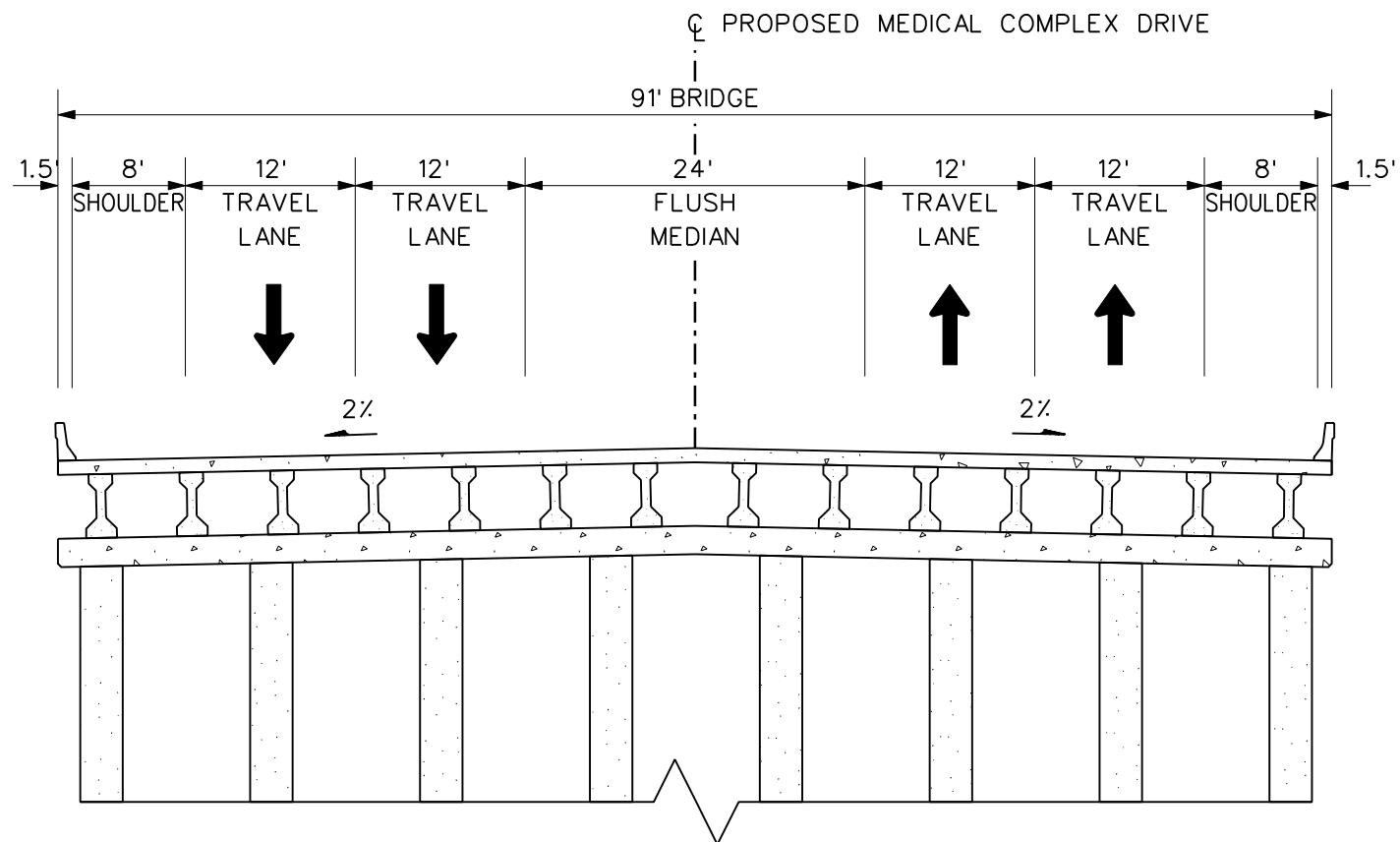


EXHIBIT 4

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

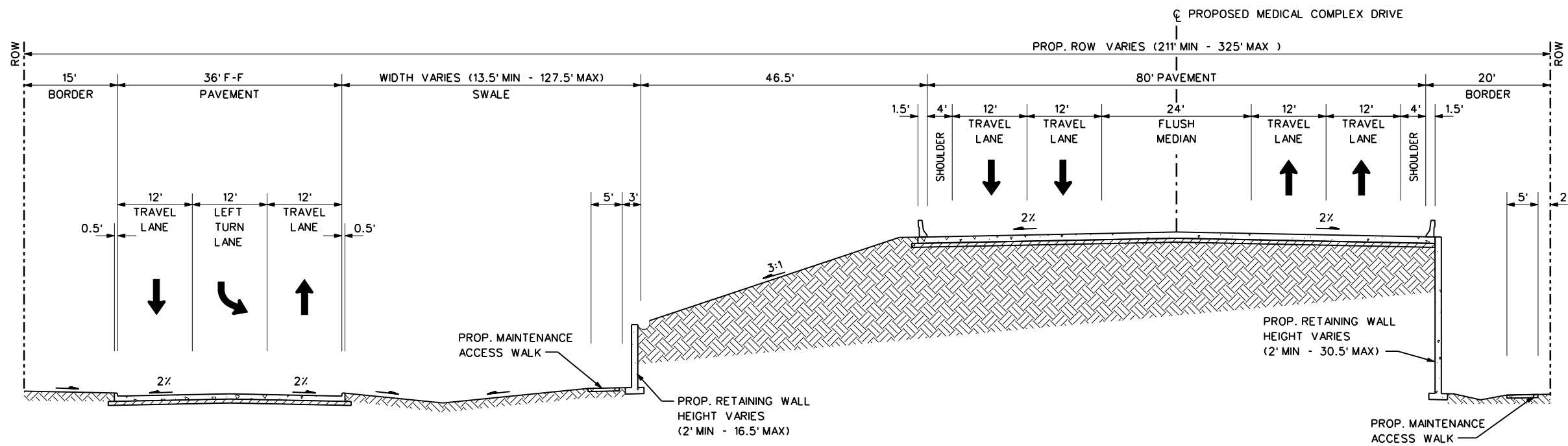
CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com


CITY OF TOMBALL
 TOMBALL, TEXAS

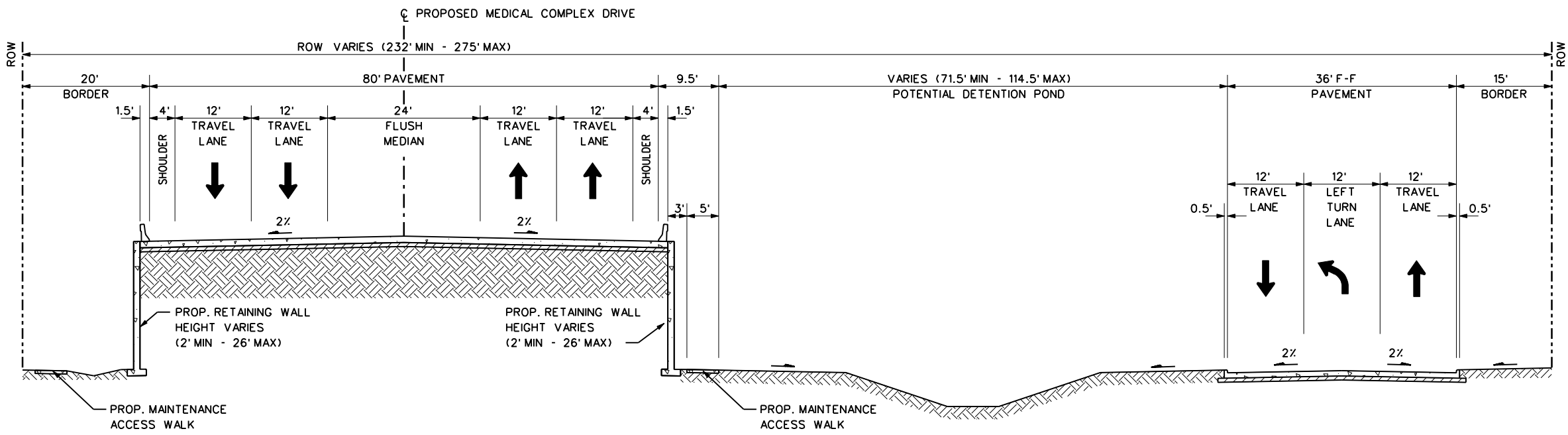
**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**TYPICAL SECTIONS
 SHEET 2 OF 4**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	N/A	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			



PROPOSED TYPICAL SECTION
 SH 249 OVERPASS BRIDGE WEST APPROACH
 FROM STA. 95+45 TO STA. 104+65



PROPOSED TYPICAL SECTION
 SH 249 OVERPASS BRIDGE EAST APPROACH
 FROM STA. 109+50 TO STA. 115+90

EXHIBIT 4

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

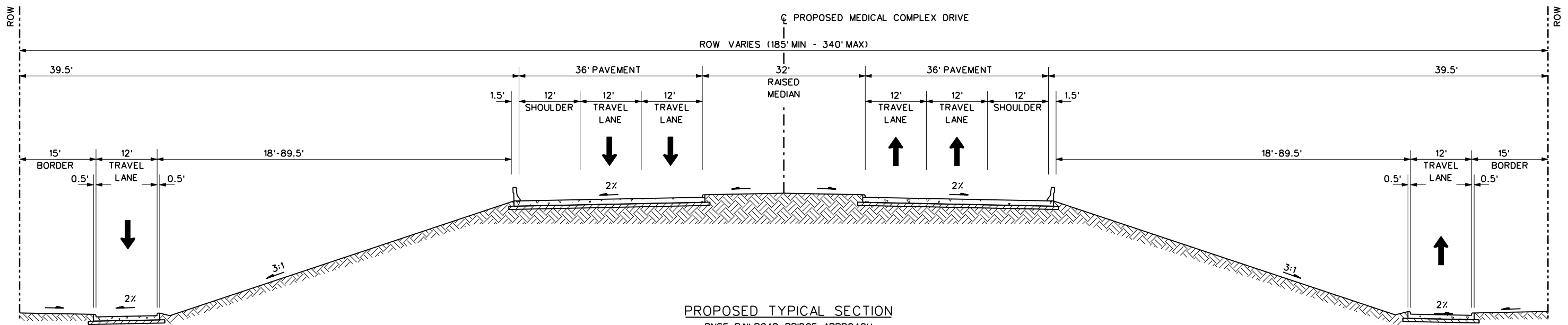
CITY OF TOMBALL
 TOMBALL, TEXAS

MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017

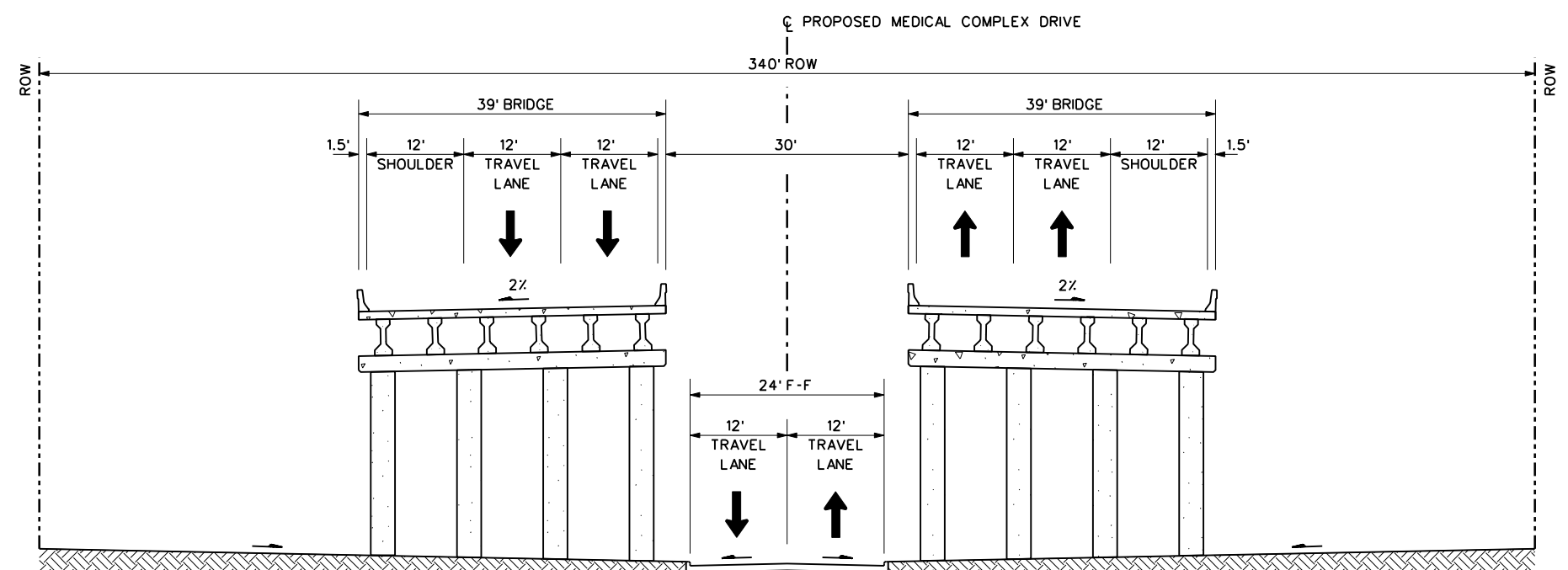
TYPICAL SECTIONS
SHEET 3 OF 4

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	N/A	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\Typ_secs\typ_secs.dgn



PROPOSED TYPICAL SECTION
 BNSF RAILROAD BRIDGE APPROACH
 FROM STA. 197+65 TO STA. 205+50
 FROM STA. 209+90 TO STA. 219+00



PROPOSED TYPICAL SECTION
 BNSF RAILROAD RIDGE OVERPASS
 FROM STA. 205+50 TO STA. 209+90

EXHIBIT 4

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

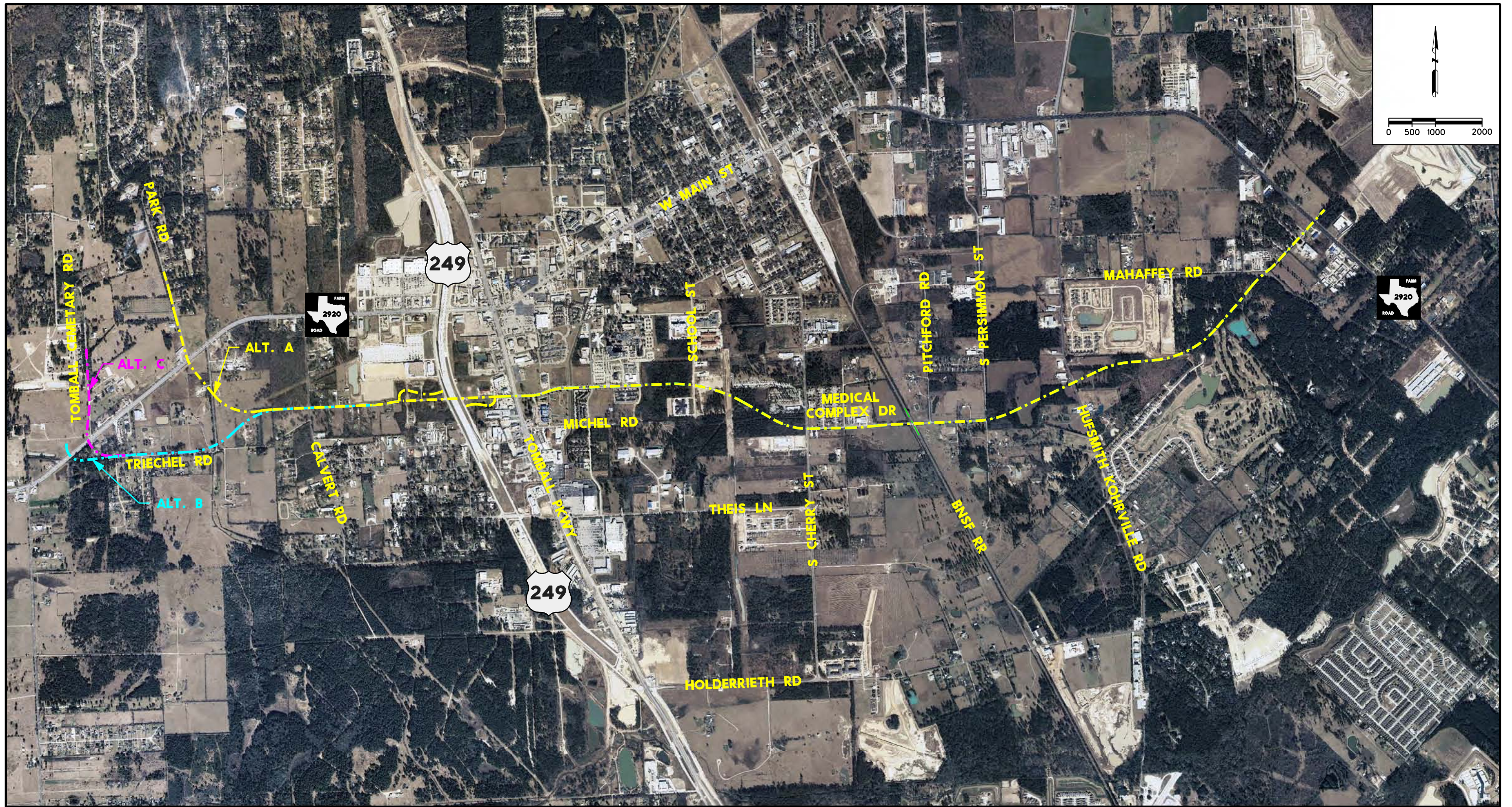
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**TYPICAL SECTIONS
 SHEET 4 OF 4**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	N/A	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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Texas Registration No. 274

13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobfen.com



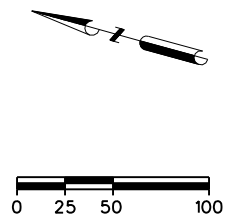
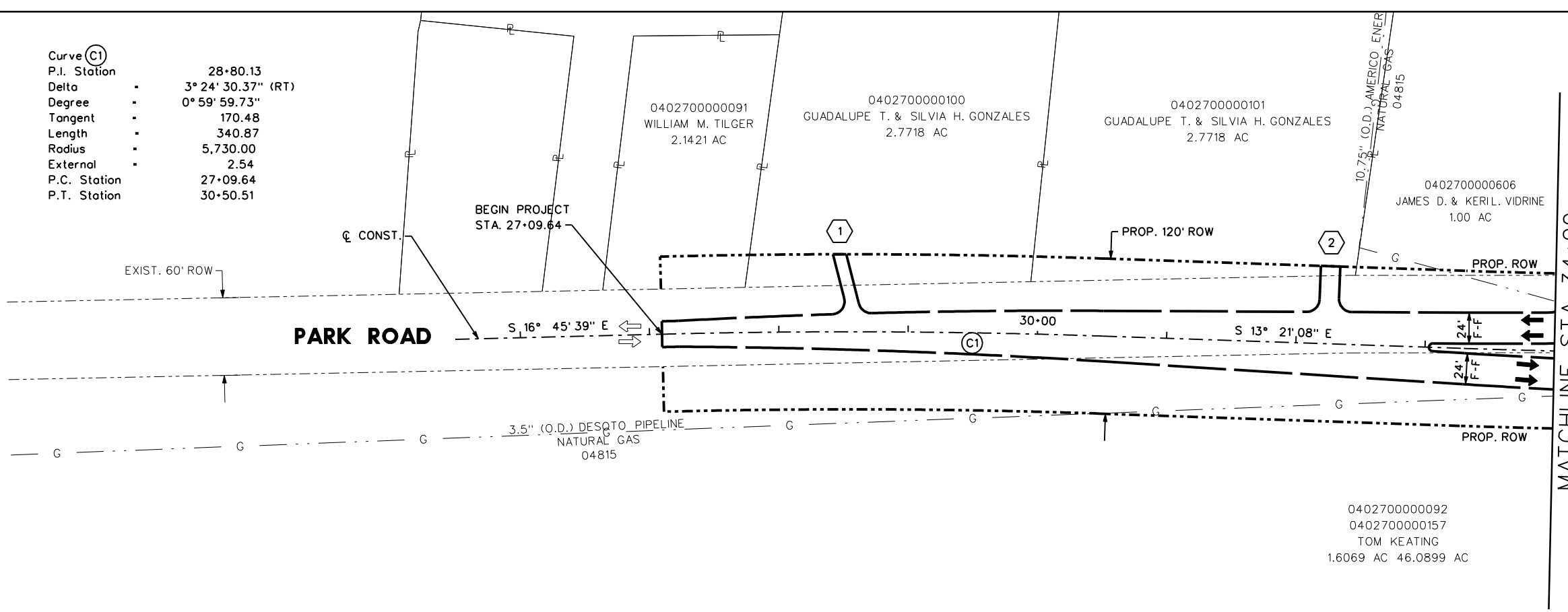
CITY OF TOMBALL
TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
ALIGNMENT ALTERNATIVES**

SCALE: 1"=2000'
DATE: 03/27/09
CFA JOB NO.: 0812-008-00

EXHIBIT 5

Curve (C1)
 P.I. Station 28+80.13
 Delta 3° 24' 30.37" (RT)
 Degree 0° 59' 59.73"
 Tangent 170.48
 Length 340.87
 Radius 5,730.00
 External 2.54
 P.C. Station 27+09.64
 P.T. Station 30+50.51



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY C
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ C CONST.
 - PROP. N&S T/C & PGL

MEDICAL COMPLEX DRIVE

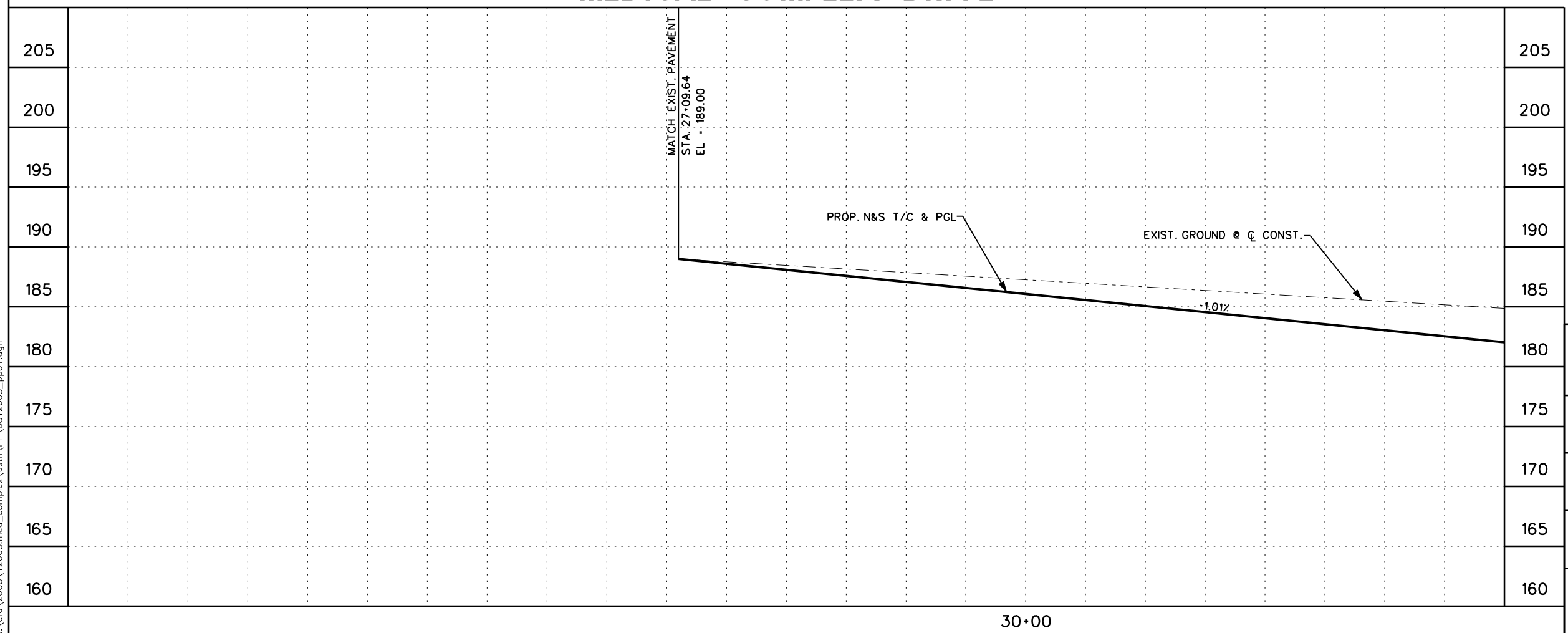


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com



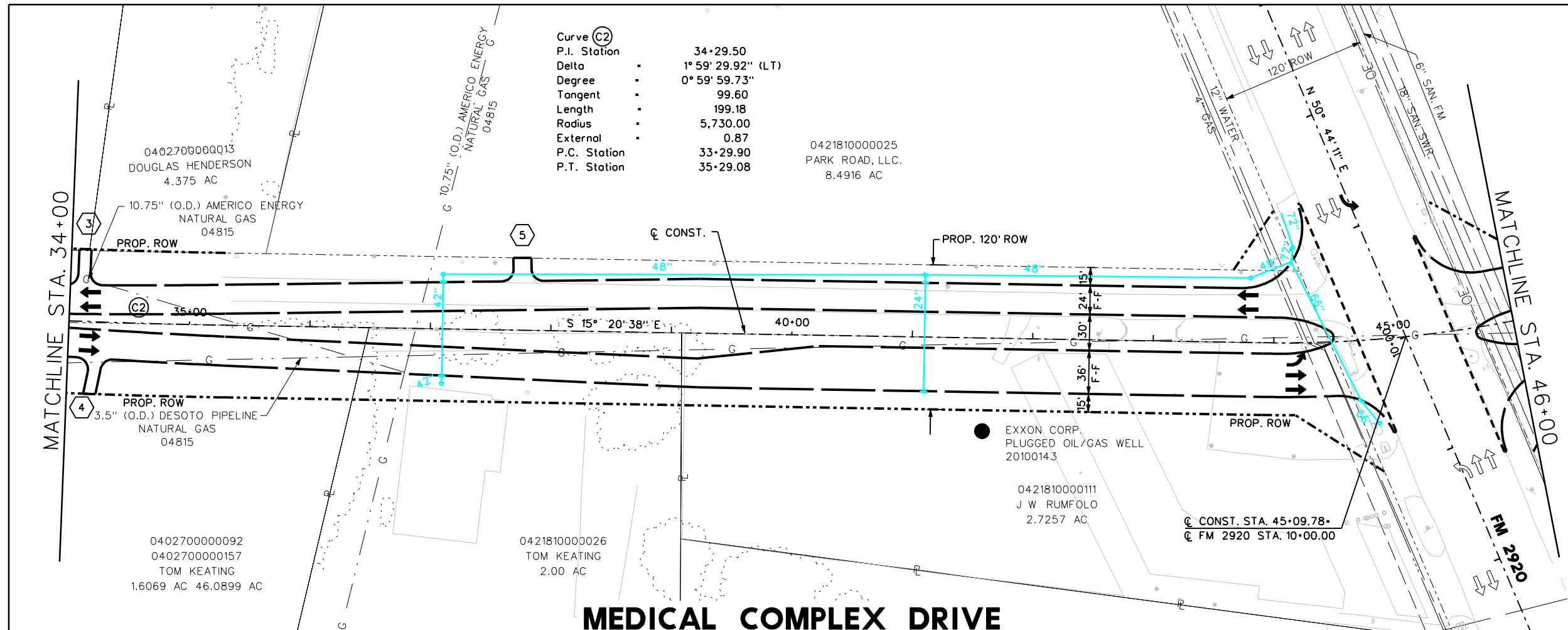
CITY OF TOMBALL
 TOMBALL, TEXAS

MEDICAL COMPLEX DRIVE RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017

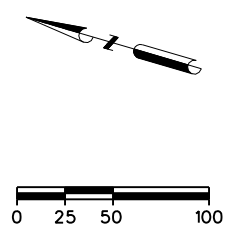
PLAN AND PROFILE
 BEGIN TO STA. 34+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\pp\0812008_pp01.dgn



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY ϕ
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND ϕ ϕ CONST.
 - PROP. N&S T/C & PGL



MEDICAL COMPLEX DRIVE

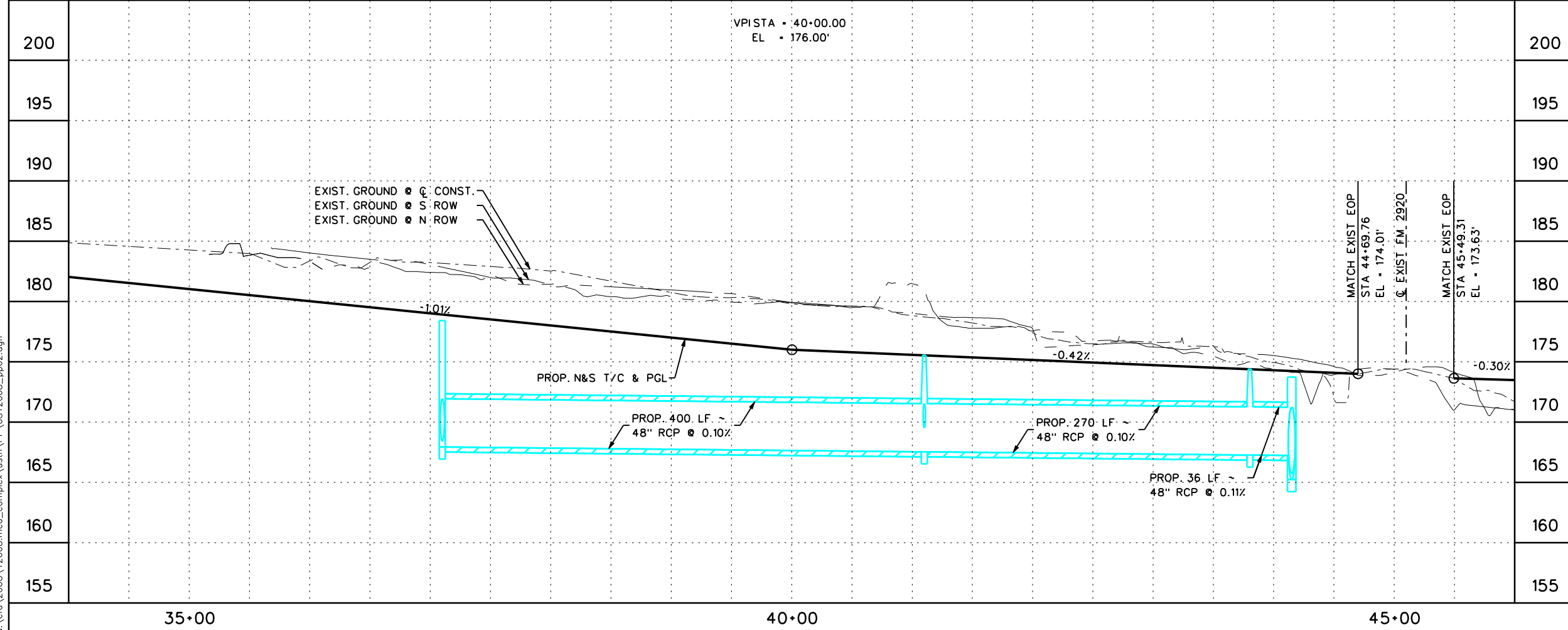


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
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**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 34+00 TO STA. 46+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\pp\0812008_pp02.dgn

Curve (C3)
 P.I. Station 46+07.27
 Delta 24° 22' 19.36" (LT)
 Degree 5° 43' 46.48"
 Tangent 215.95
 Length 425.37
 Radius 1,000.00
 External 23.05
 P.C. Station 43+91.32
 P.T. Station 48+16.69

0421810000118
 ALVIN W.M. SCHULTZ OR
 VERA MAE SCHULTZ
 9.61 AC

0421810000135
 0421810000151
 GLEN BUSA
 5.00 AC

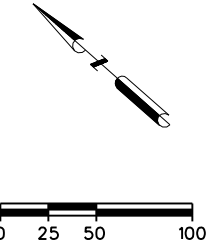
TORTUGA OPERATING COMPANY
 GAS WELL
 20130546

0421810000119
 THE HAYNES FAMILY
 REVOCABLE TRUST
 33.2209 AC

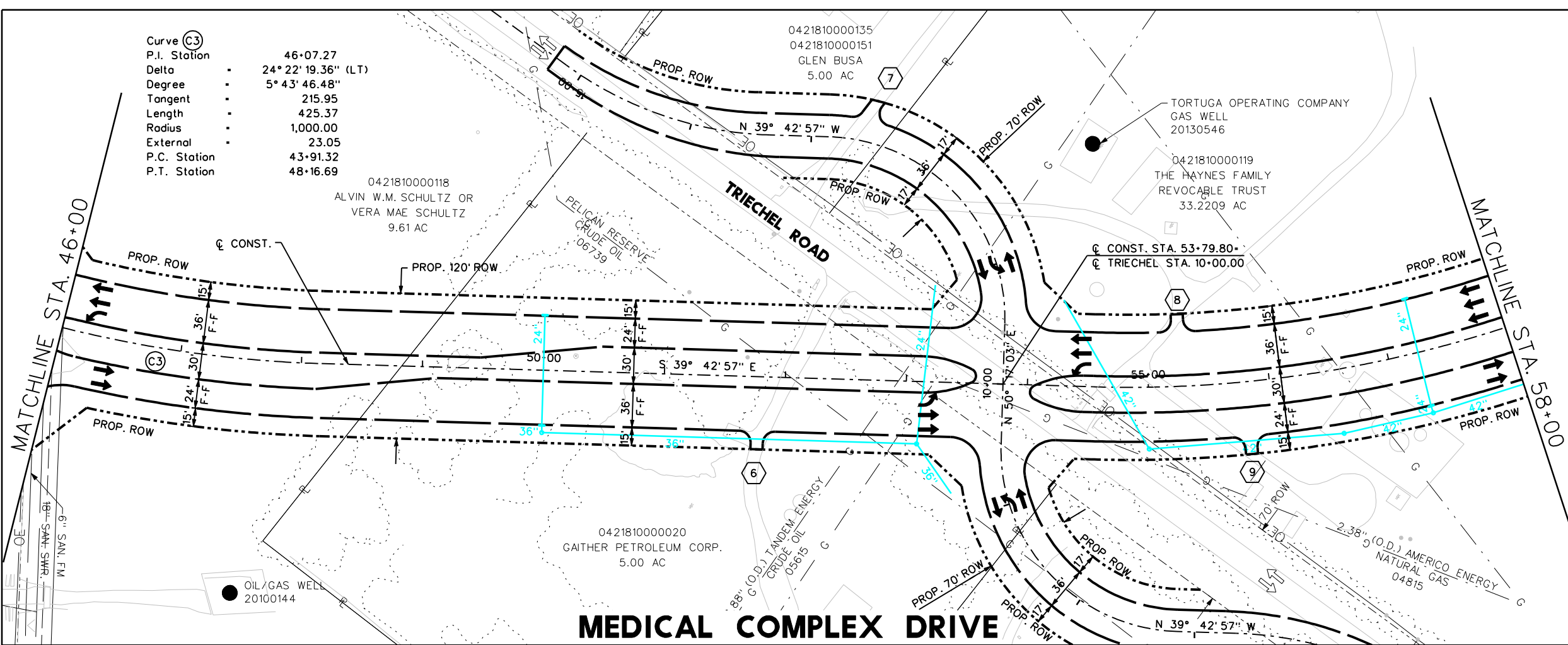
0421810000020
 GAITHER PETROLEUM CORP.
 5.00 AC

88" (O.D.) TANDEM ENERGY
 CRUDE OIL
 05615

2.38" (O.D.) AMERICO ENERGY
 NATURAL GAS
 04815



- LEGEND**
- PLAN:**
 EXIST. ROW ———
 EXIST. DRAINAGE EASEMENT ———
 PROP. ROW ———
 PROP. ROADWAY & ———
 PROP. FACE OF CURB ———
 PROP. TOP OF BERM ———
 PROP. STORM ———
 PROP. STORM MANHOLE ———
 PROP. CURB INLET ———
 EXIST. PROPERTY LINE ———
 EXIST. OVERHEAD POWER ———
 EXIST. PIPELINE ———
 DRIVEWAY NUMBER ———
- PROFILE:**
 EXIST. SOUTH ROW ———
 EXIST. NORTH ROW ———
 EXIST. GROUND @ & CONST. ———
 PROP. N&S T/C & PGL ———



MEDICAL COMPLEX DRIVE

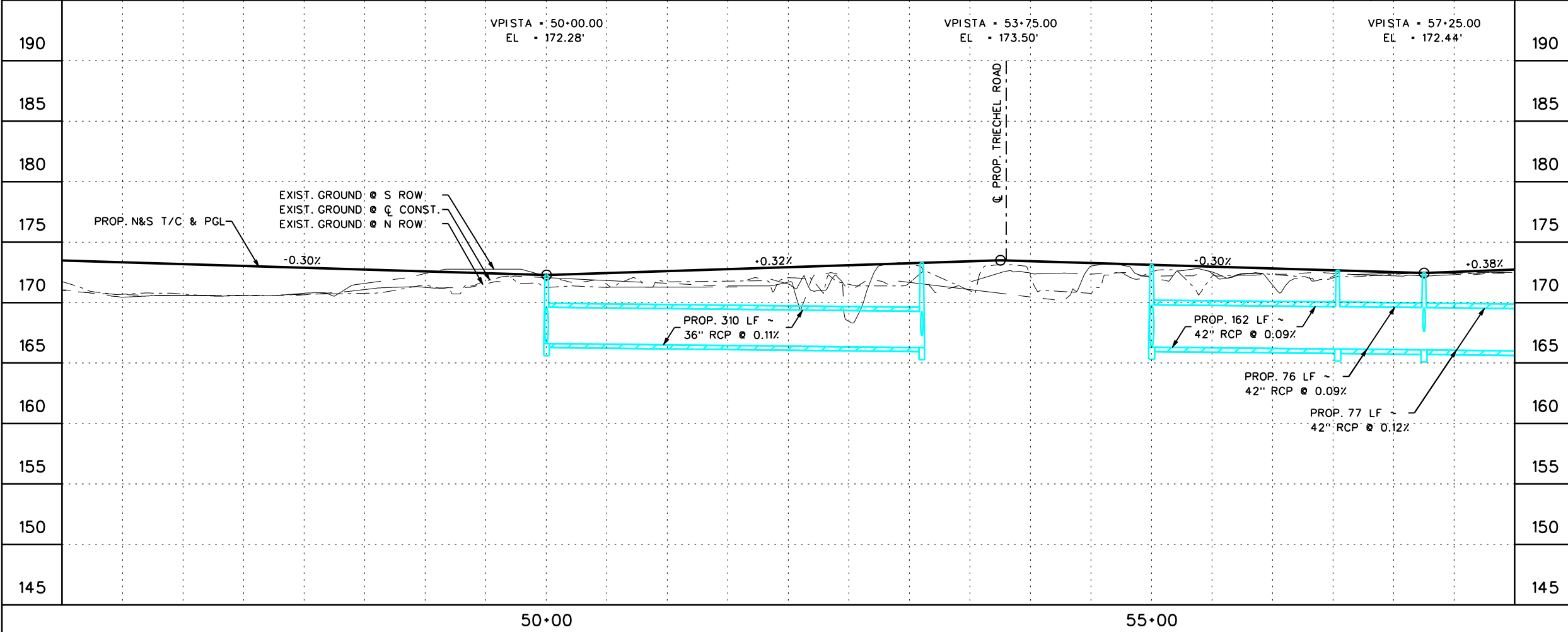


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
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 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com



**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 46+00 TO STA. 58+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\usr\pp\0812008_pp03.dgn

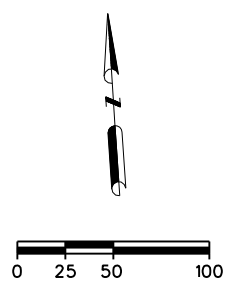
Curve (C4)
 P.I. Station 60+24.11
 Delta 59° 21' 14.86" (LT)
 Degree 5° 43' 46.48"
 Tangent 569.86
 Length 1,035.92
 Radius 1,000.00
 External 150.97
 P.C. Station 54+54.25
 P.T. Station 64+90.18

0421810000119
 THE HAYNES FAMILY
 REVOCABLE TRUST
 33.2209 AC

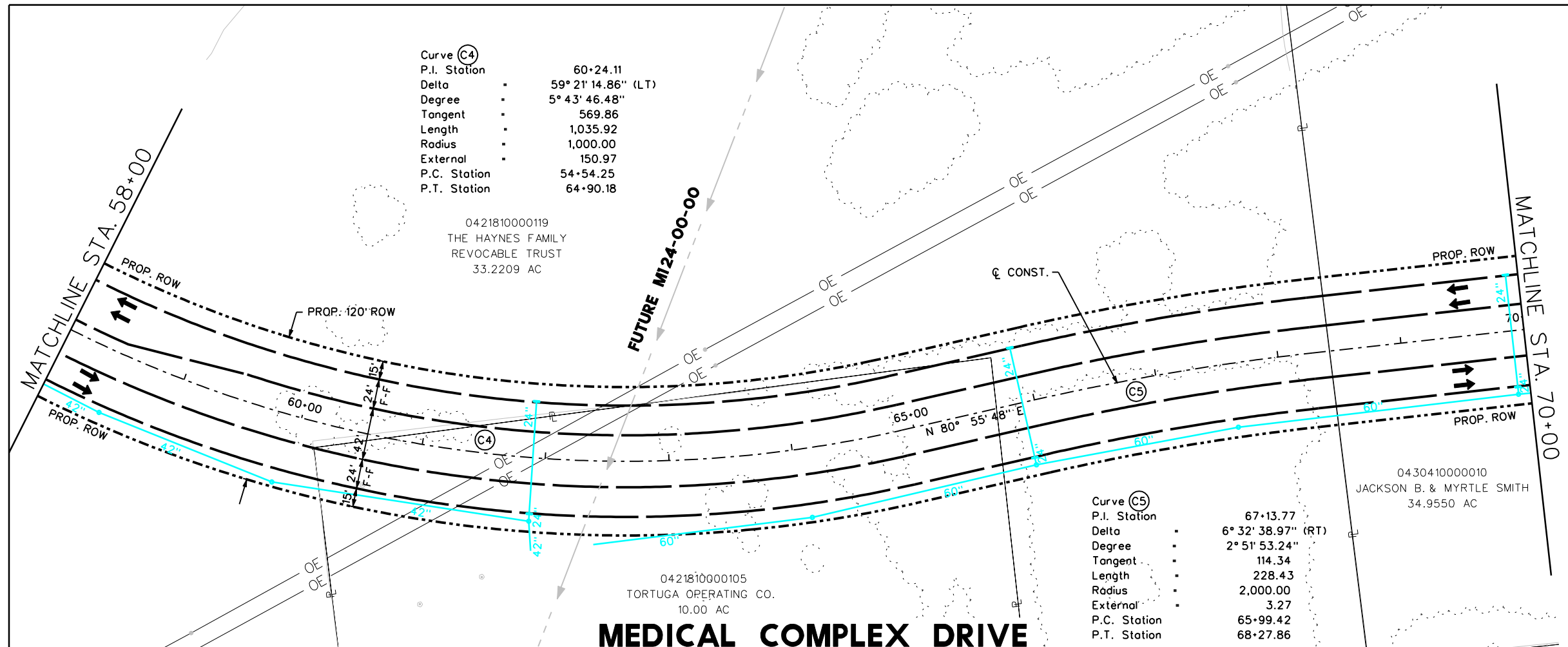
0421810000105
 TORTUGA OPERATING CO.
 10.00 AC

Curve (C5)
 P.I. Station 67+13.77
 Delta 6° 32' 38.97" (RT)
 Degree 2° 51' 53.24"
 Tangent 114.34
 Length 228.43
 Radius 2,000.00
 External 3.27
 P.C. Station 65+99.42
 P.T. Station 68+27.86

0430410000010
 JACKSON B. & MYRTLE SMITH
 34.9550 AC



- LEGEND**
- PLAN:
 EXIST. ROW - - - - -
 EXIST. DRAINAGE EASEMENT - - - - -
 PROP. ROW - - - - -
 PROP. ROADWAY & - - - - -
 PROP. FACE OF CURB - - - - -
 PROP. TOP OF BERM - - - - -
 PROP. STORM - - - - -
 PROP. STORM MANHOLE - - - - -
 PROP. CURB INLET - - - - -
 EXIST. PROPERTY LINE - - - - -
 EXIST. OVERHEAD POWER - - - - -
 EXIST. PIPELINE - - - - -
 DRIVEWAY NUMBER - - - - -
- PROFILE:
 EXIST. SOUTH ROW - - - - -
 EXIST. NORTH ROW - - - - -
 EXIST. GROUND @ & CONST. - - - - -
 PROP. N&S T/C & PGL - - - - -



MEDICAL COMPLEX DRIVE

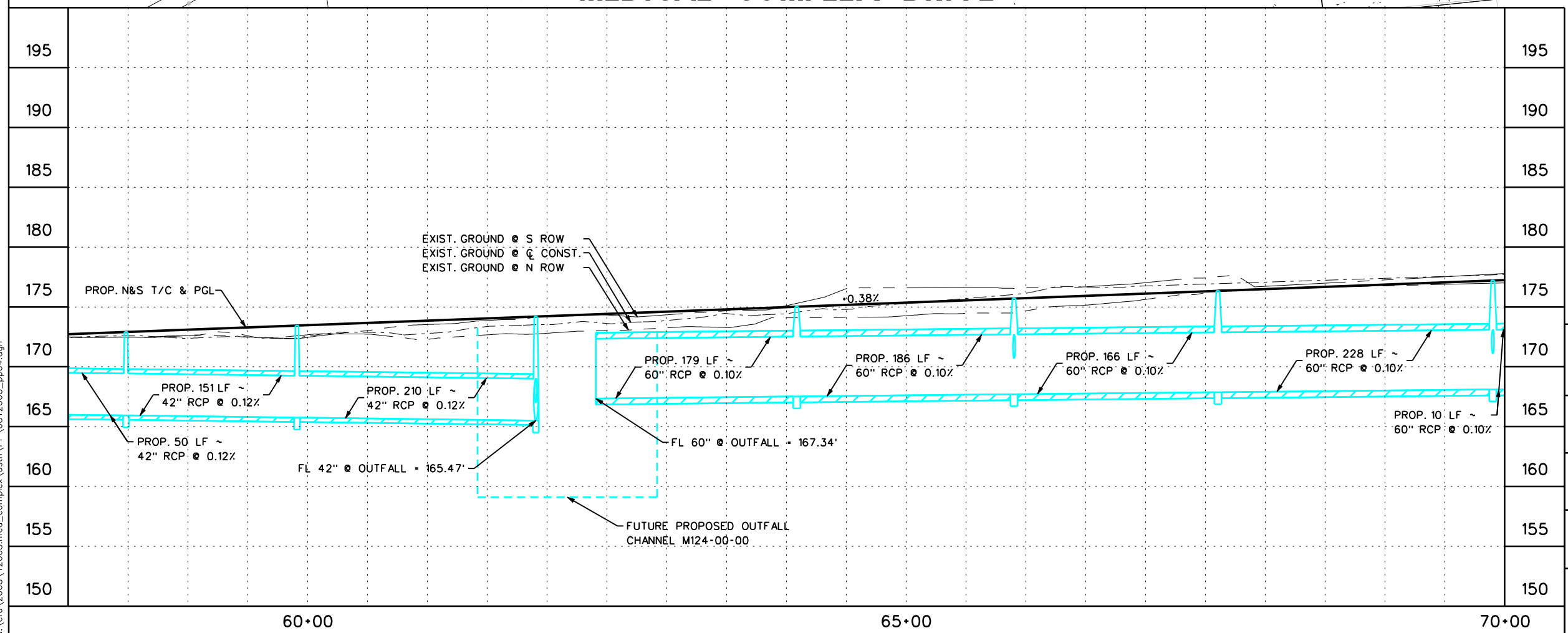


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

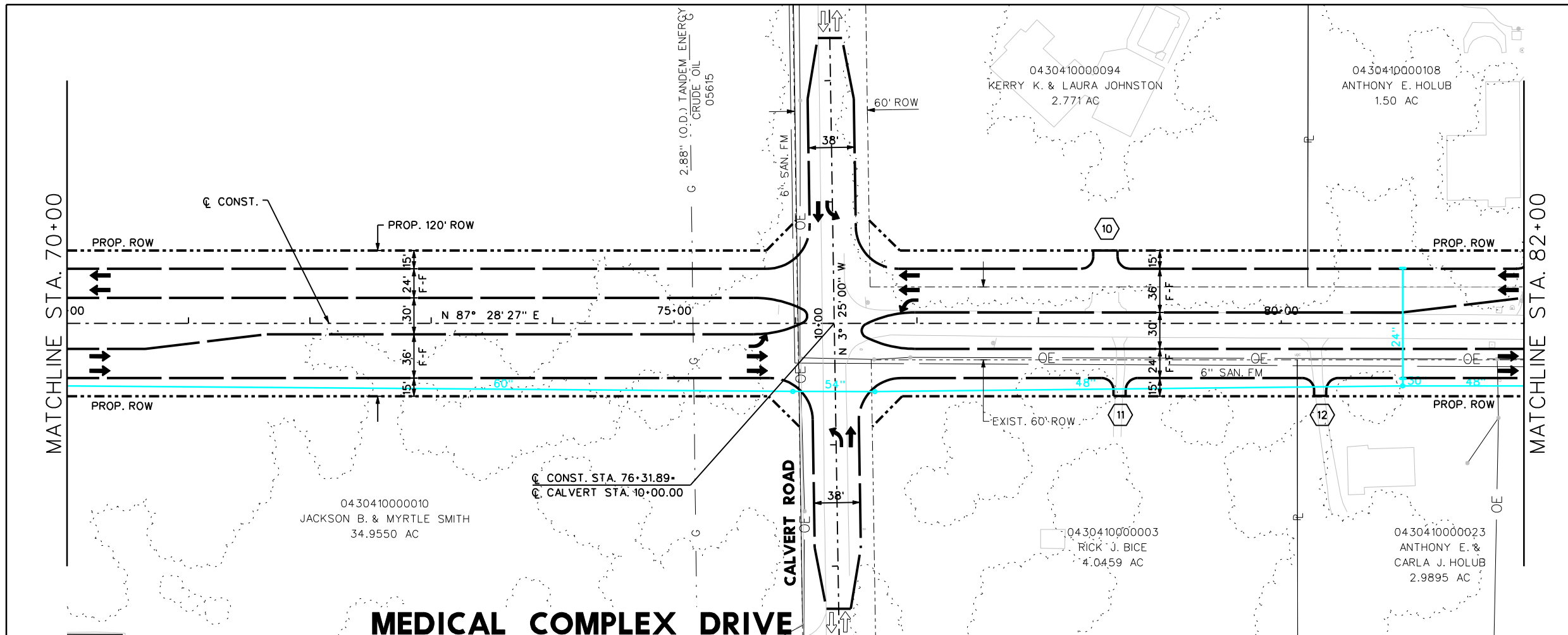


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 58+00 TO STA. 70+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustr\PP\0812008_pp04.dgn



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY ϕ
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND ϕ
 - PROP. N&S T/C & PGL

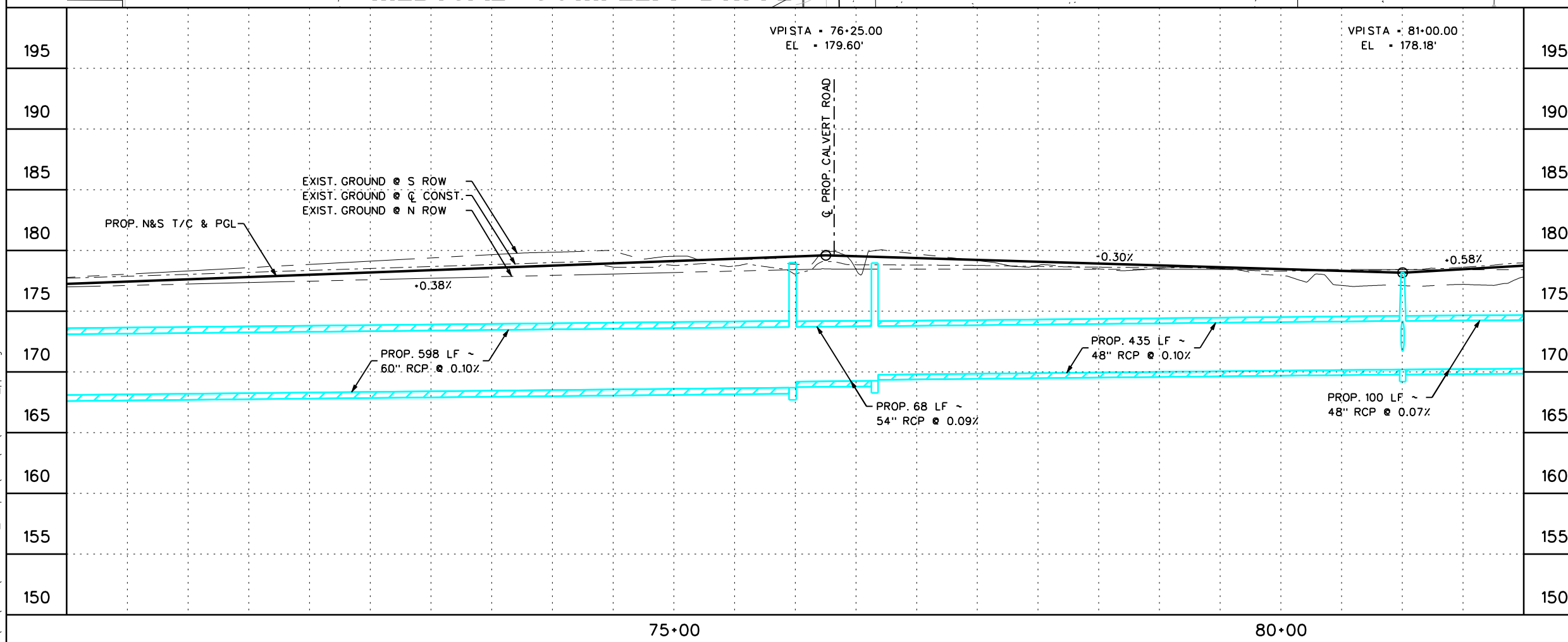


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

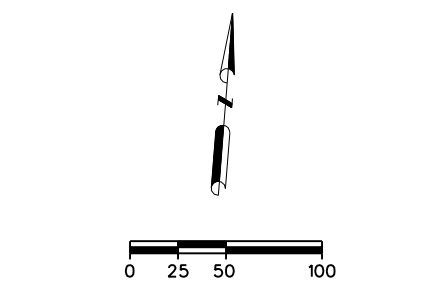
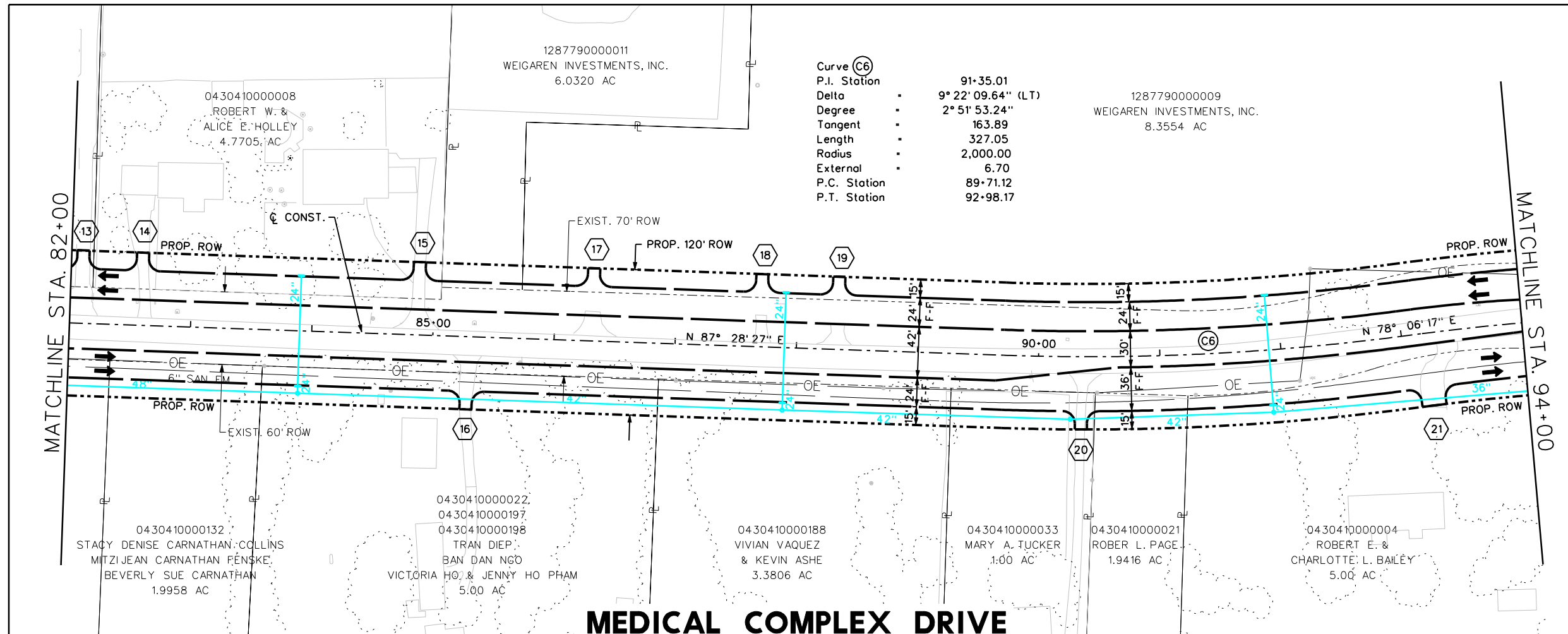


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 70+00 TO STA. 82+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\pp\0812008_pp05.dgn



- LEGEND**
- PLAN:
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY C
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ C CONST.
 - PROP. N&S T/C & PGL

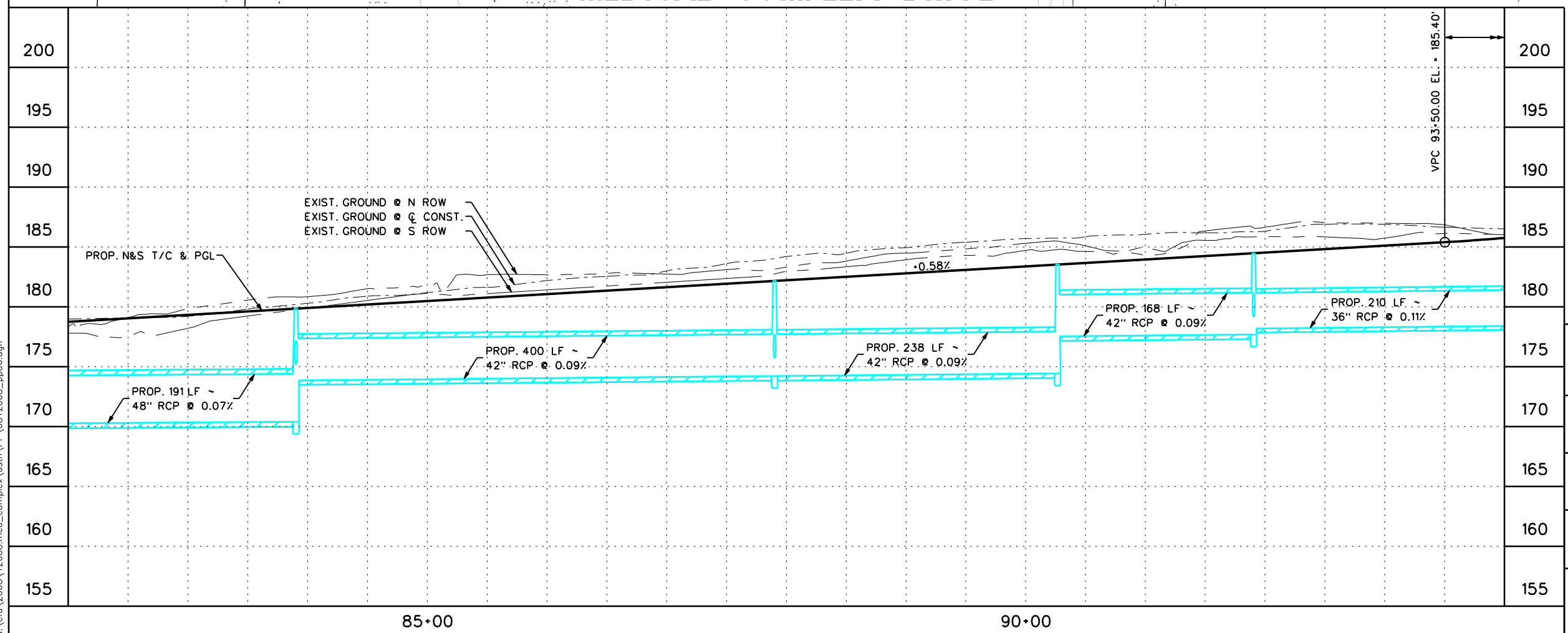


EXHIBIT 6

INTERIM REVIEW
Not intended for construction, bidding or permit purposes.
Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

CobbFendley
Texas Registration No. 274
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobfen.com



**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

PLAN AND PROFILE
STA. 82+00 TO STA. 94+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

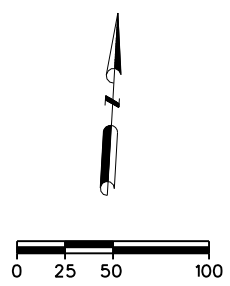
6/9/2009 d:\cfa\2008\12008.med_complex\ustn\pp\0812008_pp06.dgn

0430410000204
KCS DEVELOPMENT, LTD.
8.4890 AC

0430410000205
KCS DEVELOPMENT, LTD.
6.598 AC

TORTUGA OPERATING COMPANY
PLUGGED OIL/GAS WELL
20100224

PELICAN RESERVE
CRUDE OIL
06739



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY ϕ
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND ϕ & CONST.
 - PROP. N&S T/C & PGL

Curve (C7)

P.I. Station	94+78.22
Delta	9° 12' 35.45" (RT)
Degree	2° 51' 53.24"
Tangent	161.09
Length	321.48
Radius	2,000.00
External	6.48
P.C. Station	93+17.13
P.T. Station	96+38.62

MEDICAL COMPLEX DRIVE

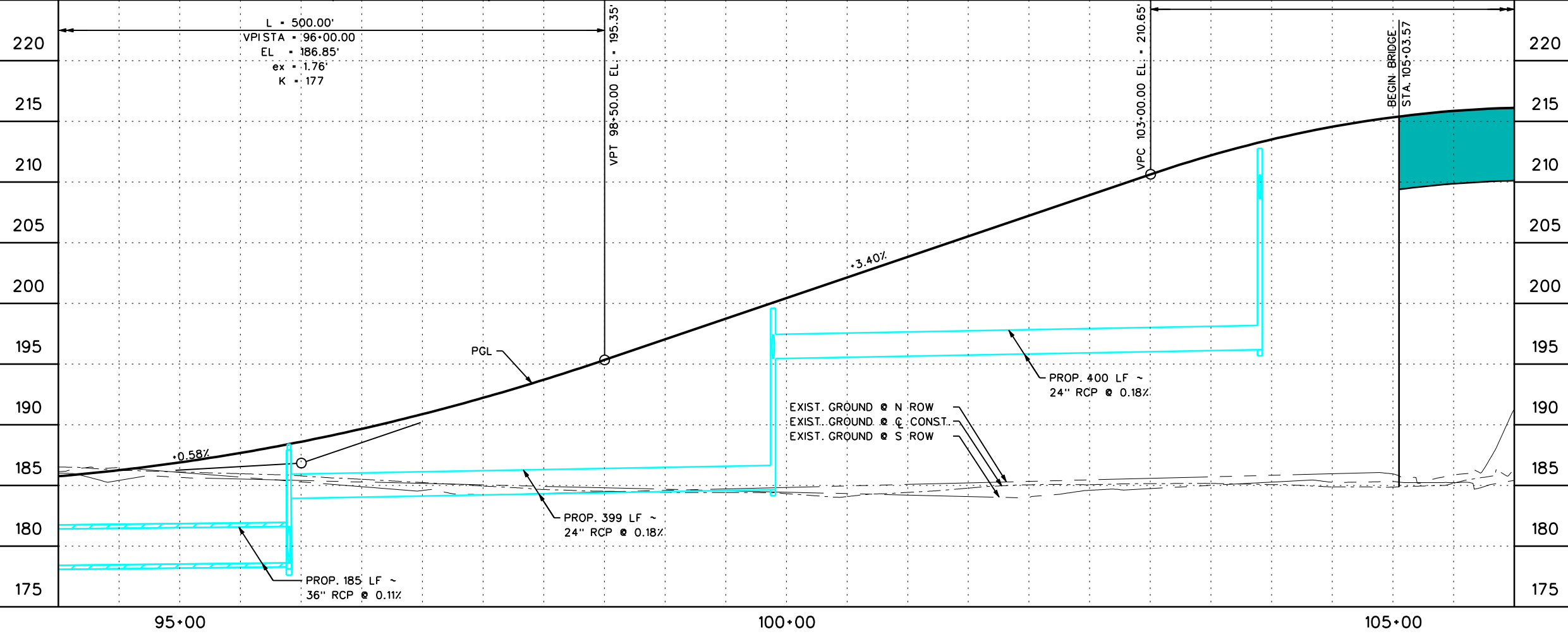
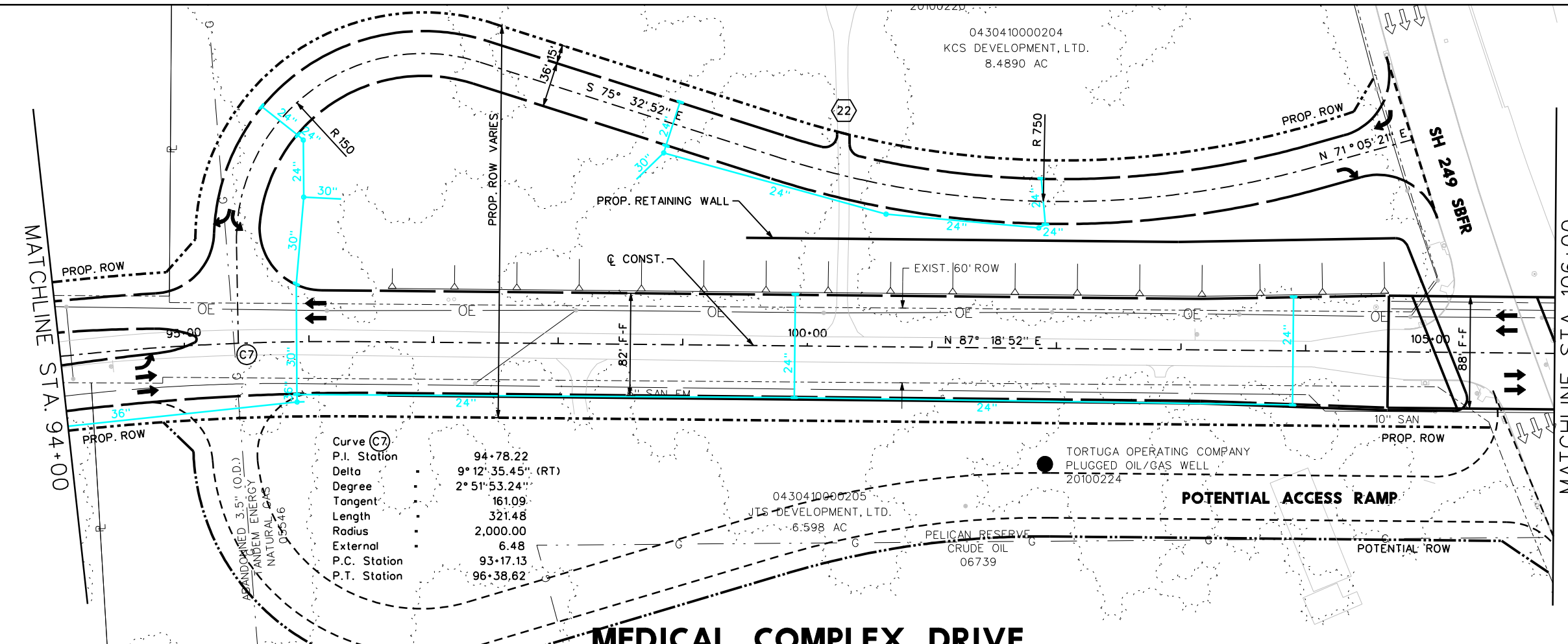


EXHIBIT 6

INTERIM REVIEW
Not intended for construction, bidding or permit purposes.
Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

CobbFendley
Texas Registration No. 274
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobfen.com

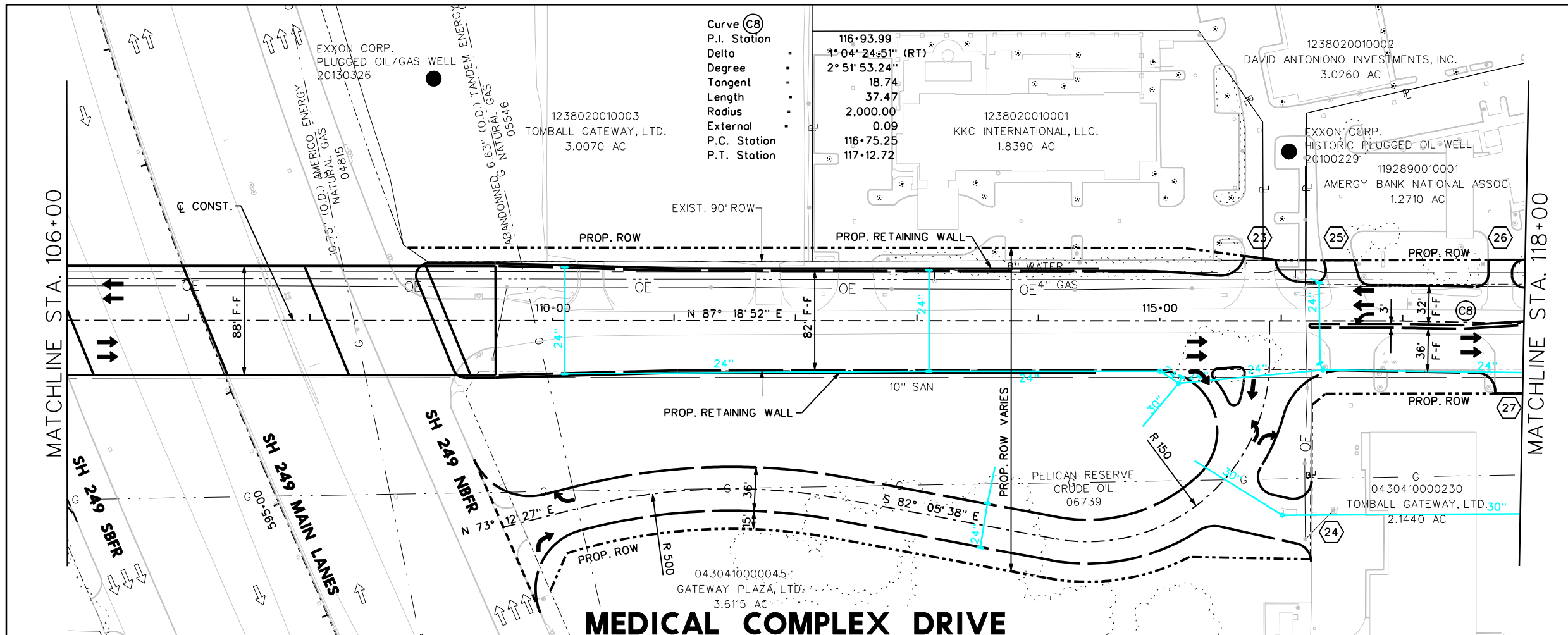
CITY OF TOMBALL
TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

PLAN AND PROFILE
STA. 94+00 TO STA. 106+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\pp\0812008_pp07.dgn



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY C
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ CONST.
 - PROP. N&S T/C & PGL

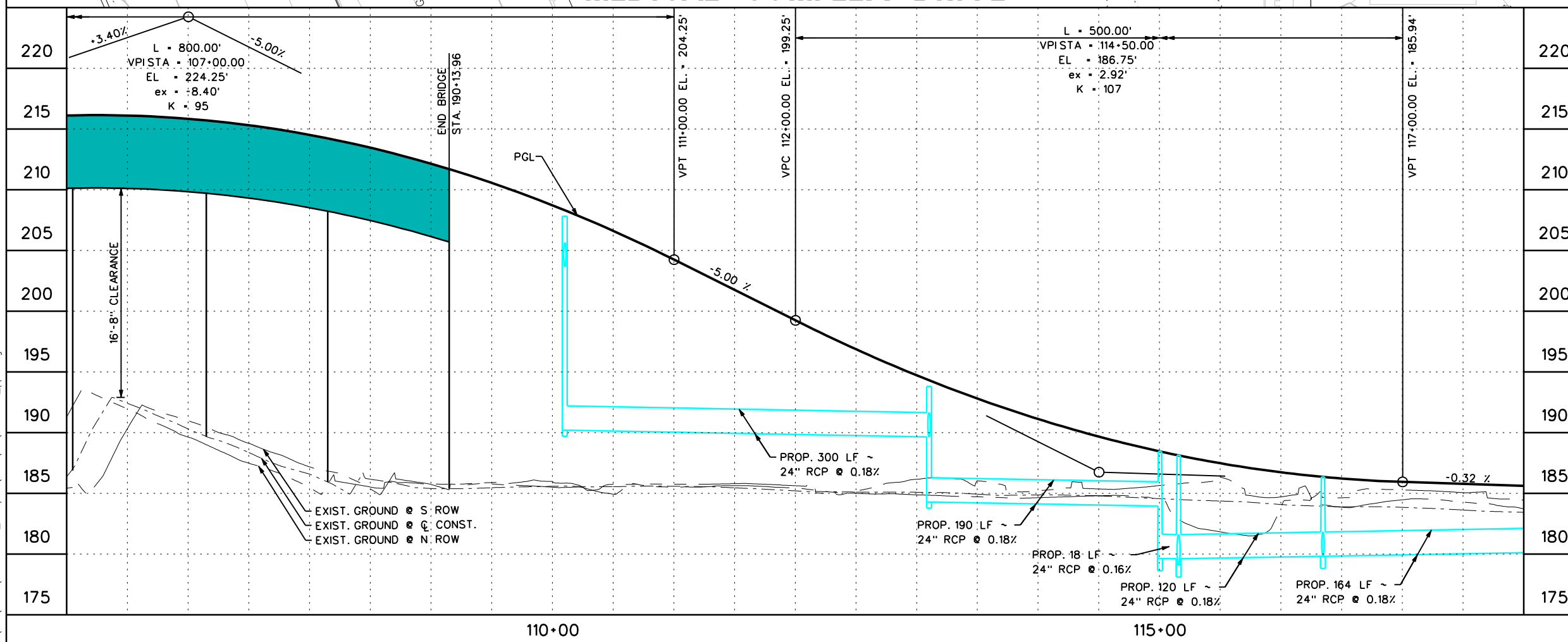


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

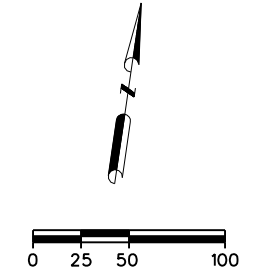
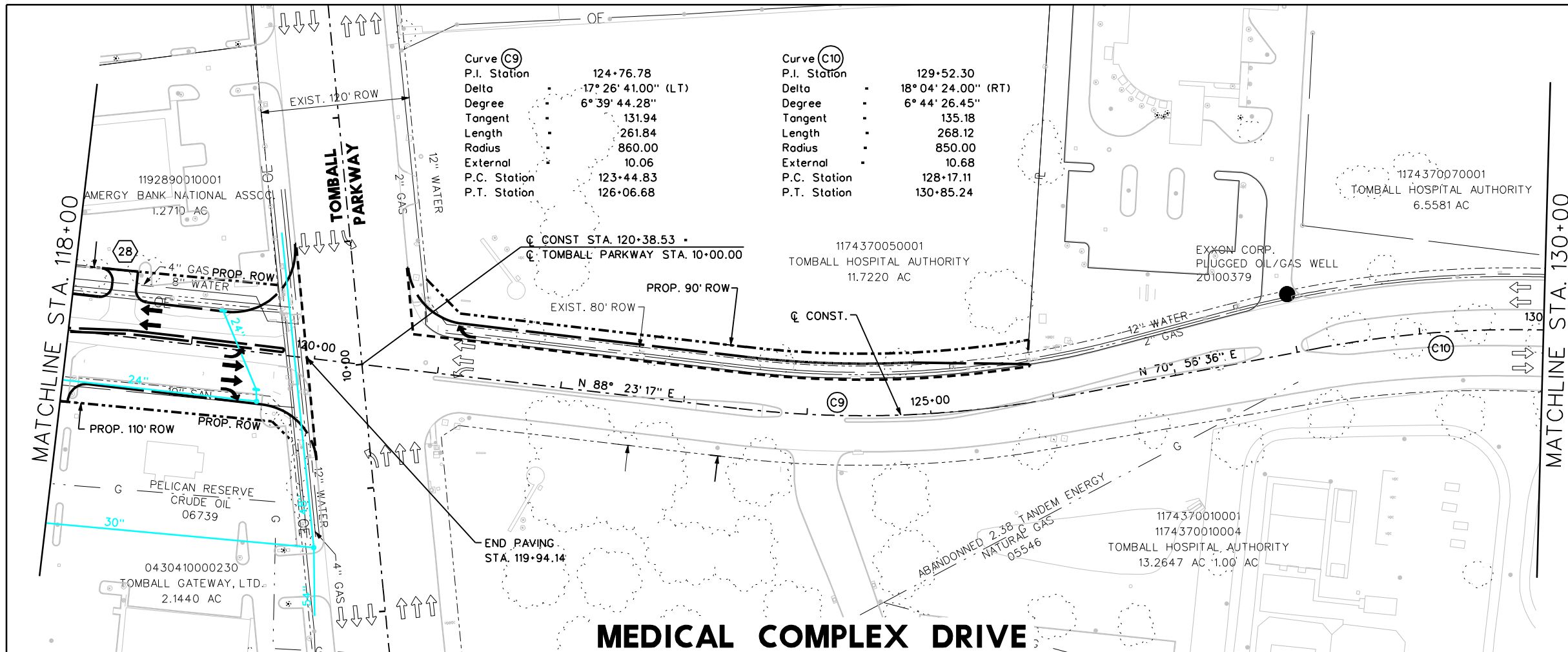


MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017

PLAN AND PROFILE
 STA. 106+00 TO STA. 118+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

PLAN:

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY C/L
- PROP. FACE OF CURB
- PROP. TOP OF BERM
- PROP. STORM
- PROP. STORM MANHOLE
- PROP. CURB INLET
- EXIST. PROPERTY LINE
- EXIST. OVERHEAD POWER
- EXIST. PIPELINE
- DRIVEWAY NUMBER

PROFILE:

- EXIST. SOUTH ROW
- EXIST. NORTH ROW
- EXIST. GROUND @ C/L CONST.
- PROP. N&S T/C & PGL

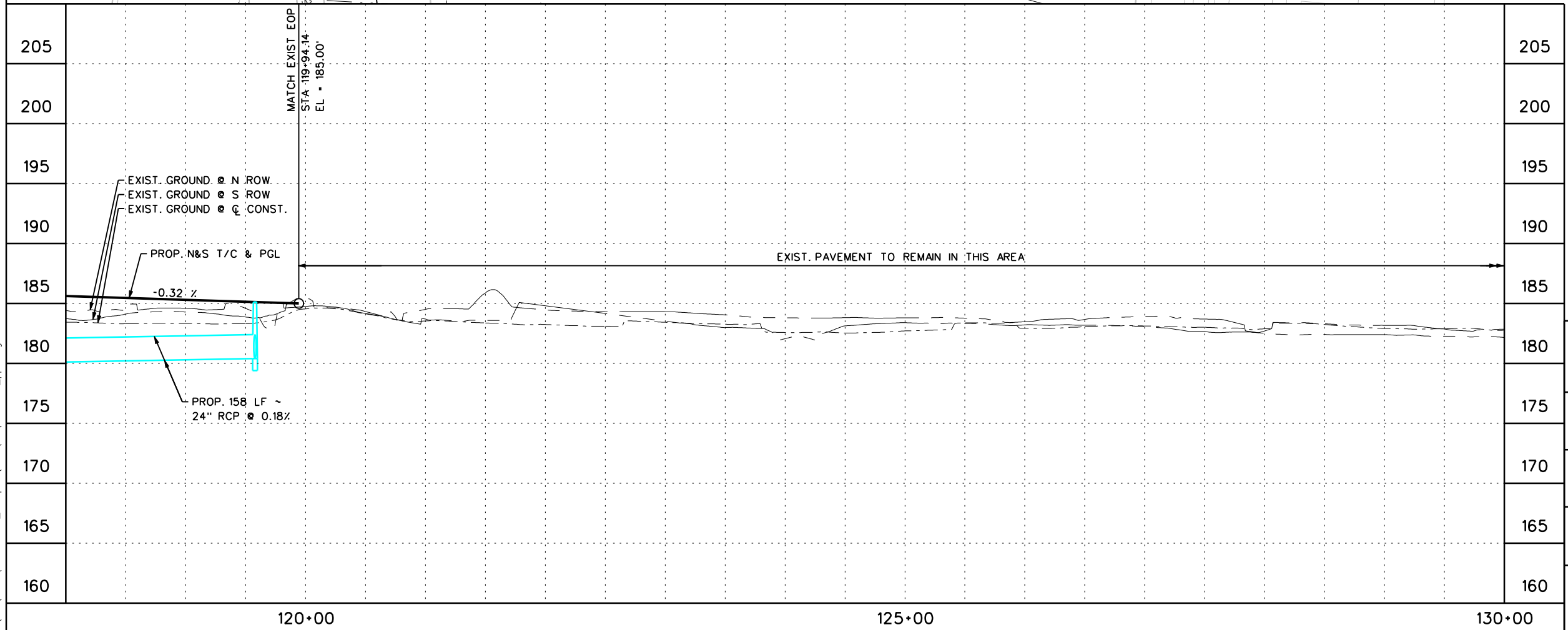


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
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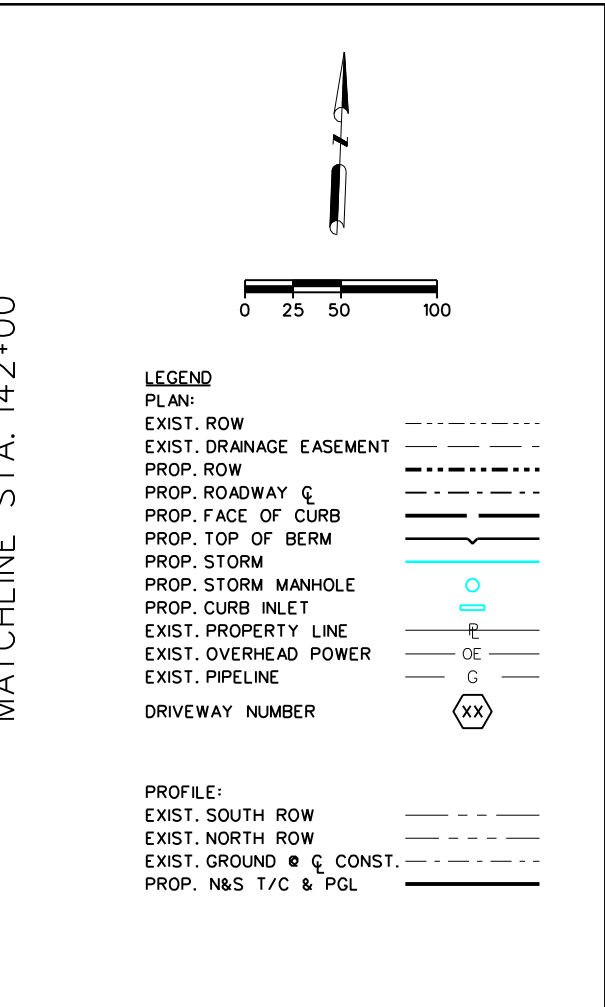
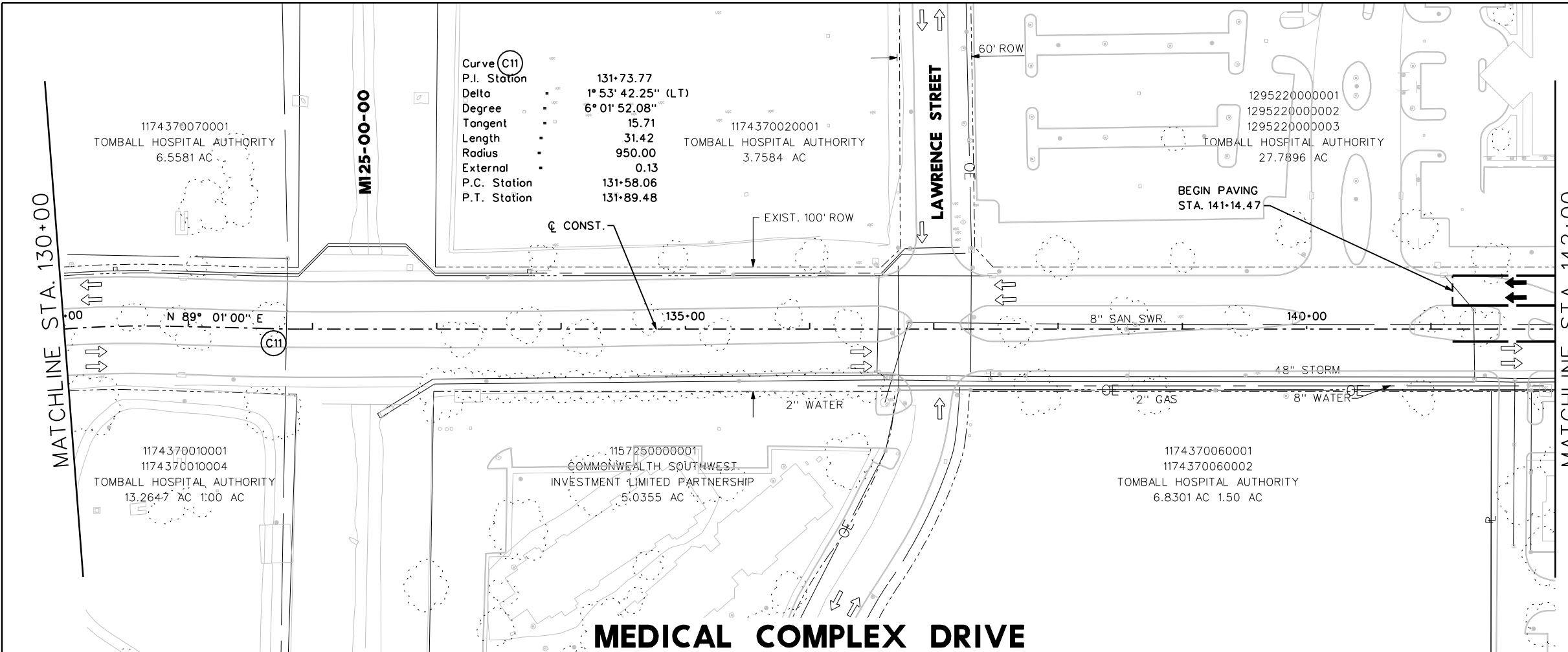


MEDICAL COMPLEX DRIVE RECONSTRUCTION/EXTENSION PROJECT NO. 2003-10017

PLAN AND PROFILE STA. 118+00 TO STA. 130+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\pp\0812008_pp09.dgn



LEGEND

PLAN:

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY C/L
- PROP. FACE OF CURB
- PROP. TOP OF BERM
- PROP. STORM
- PROP. STORM MANHOLE
- PROP. CURB INLET
- EXIST. PROPERTY LINE
- EXIST. OVERHEAD POWER
- EXIST. PIPELINE
- DRIVEWAY NUMBER

PROFILE:

- EXIST. SOUTH ROW
- EXIST. NORTH ROW
- EXIST. GROUND @ C/L CONST.
- PROP. N&S T/C & PGL

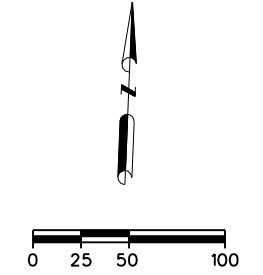


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 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
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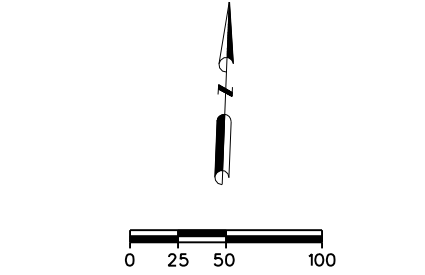
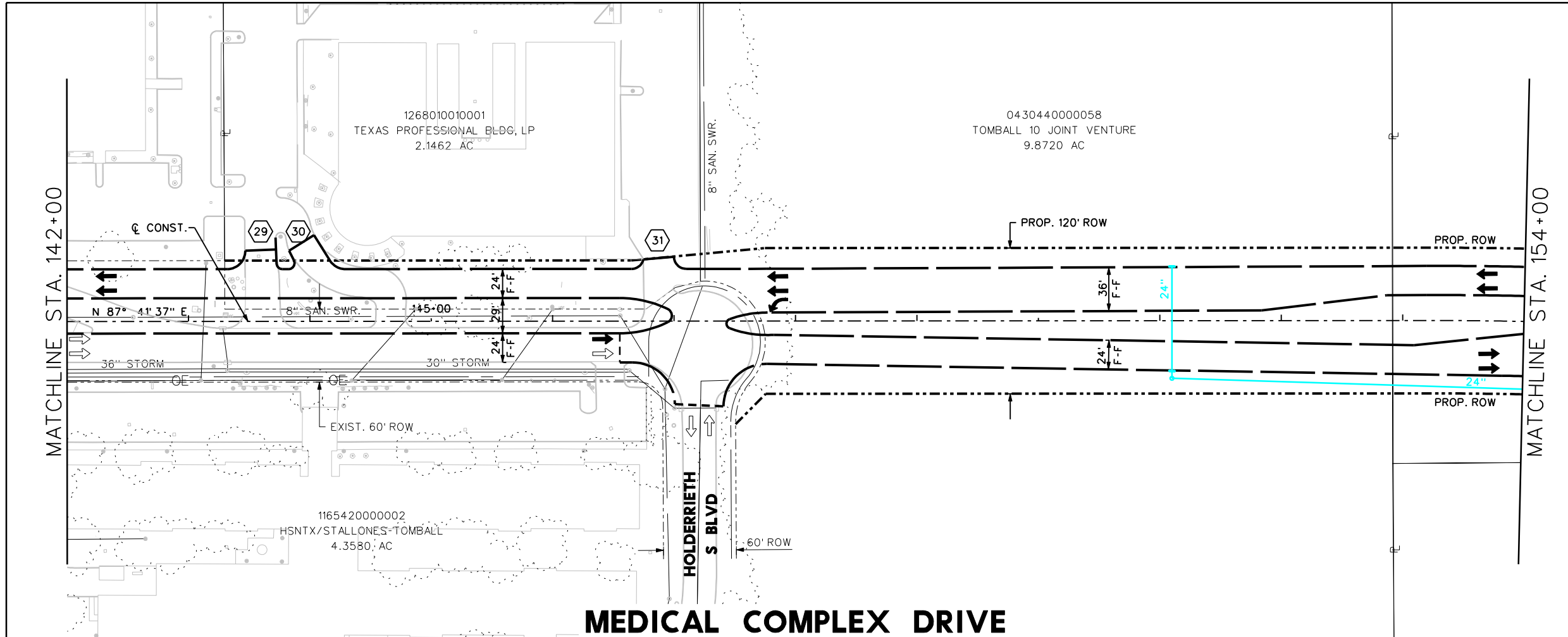


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 130+00 TO STA. 142+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\pp\0812008_pp10.dgn



- LEGEND**
- PLAN:
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY ϕ
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER XX
- PROFILE:
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND ϕ CONST.
 - PROP. N&S T/C & PGL

MEDICAL COMPLEX DRIVE

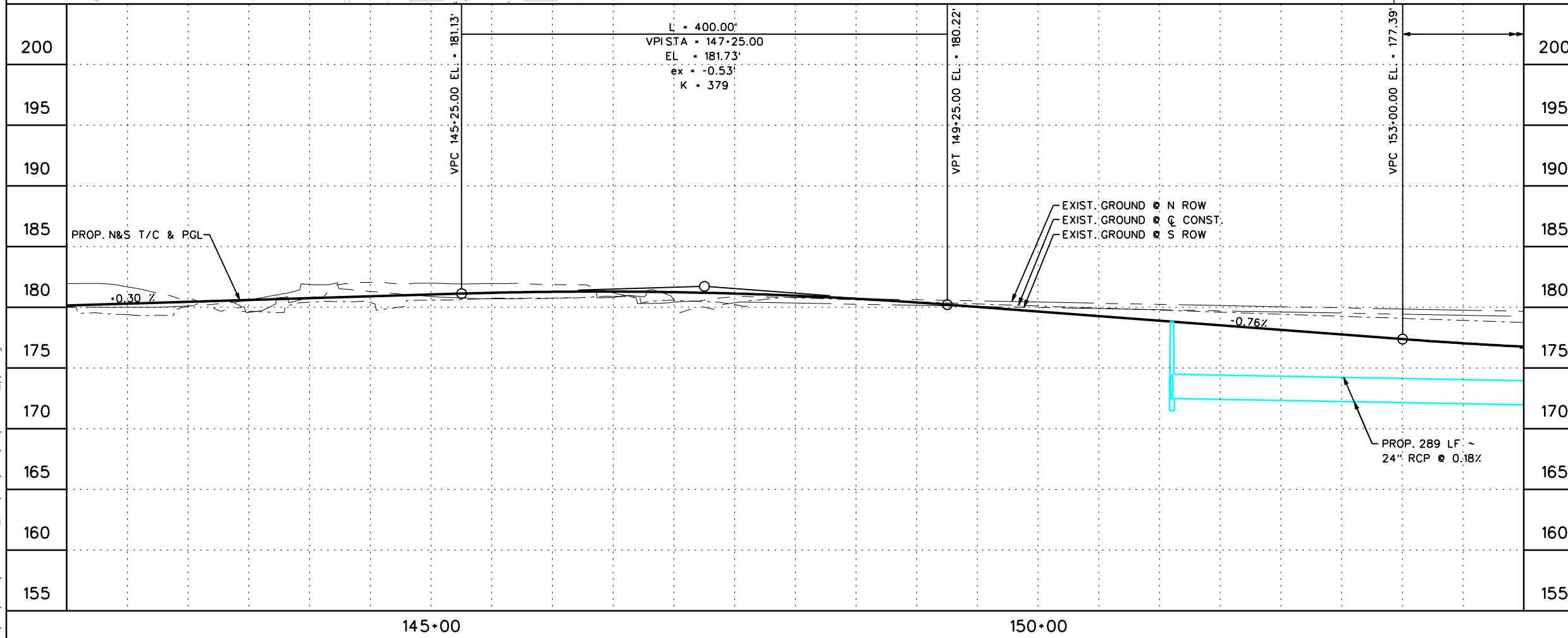


EXHIBIT 6

INTERIM REVIEW
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 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
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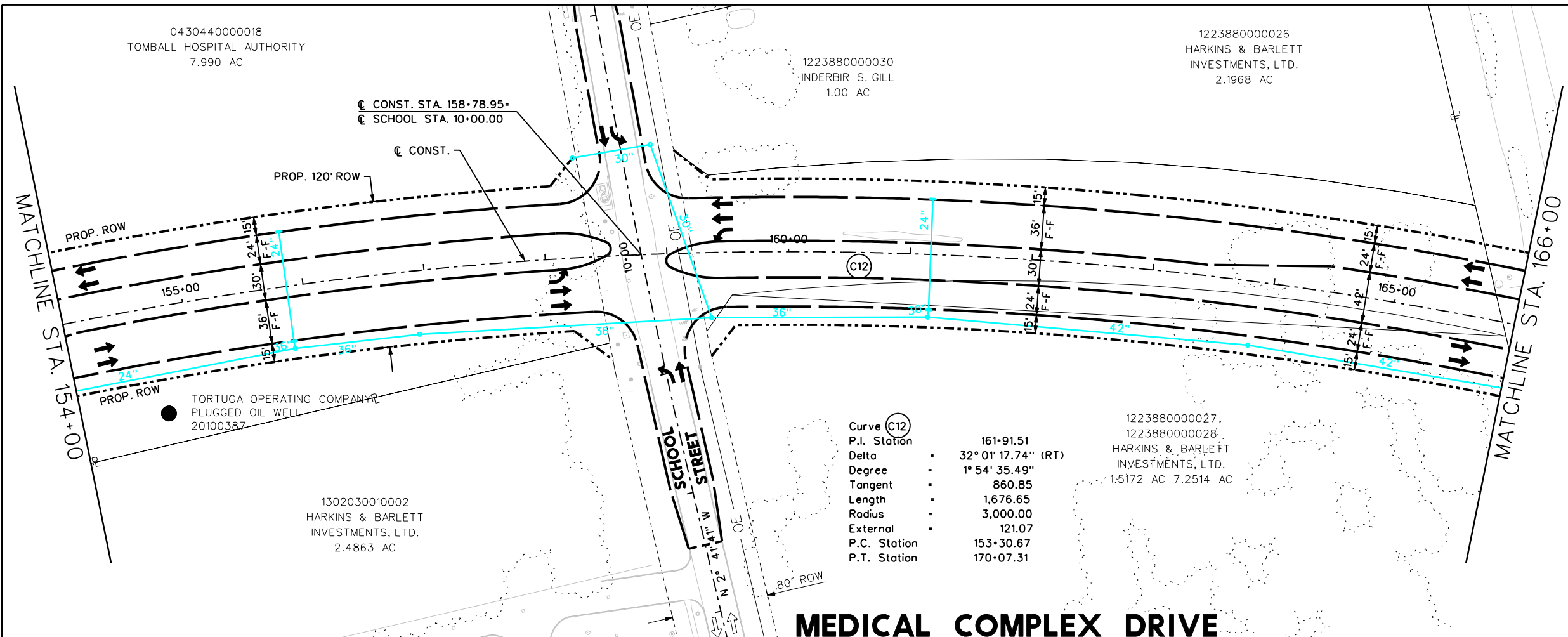


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

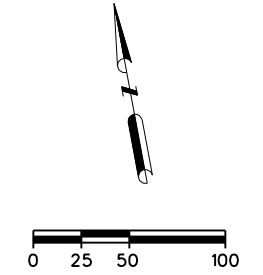
PLAN AND PROFILE
 STA. 142+00 TO STA. 154+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\pp\0812008_pp11.dgn



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY C
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ CONST.
 - PROP. N&S T/C & PGL



MEDICAL COMPLEX DRIVE

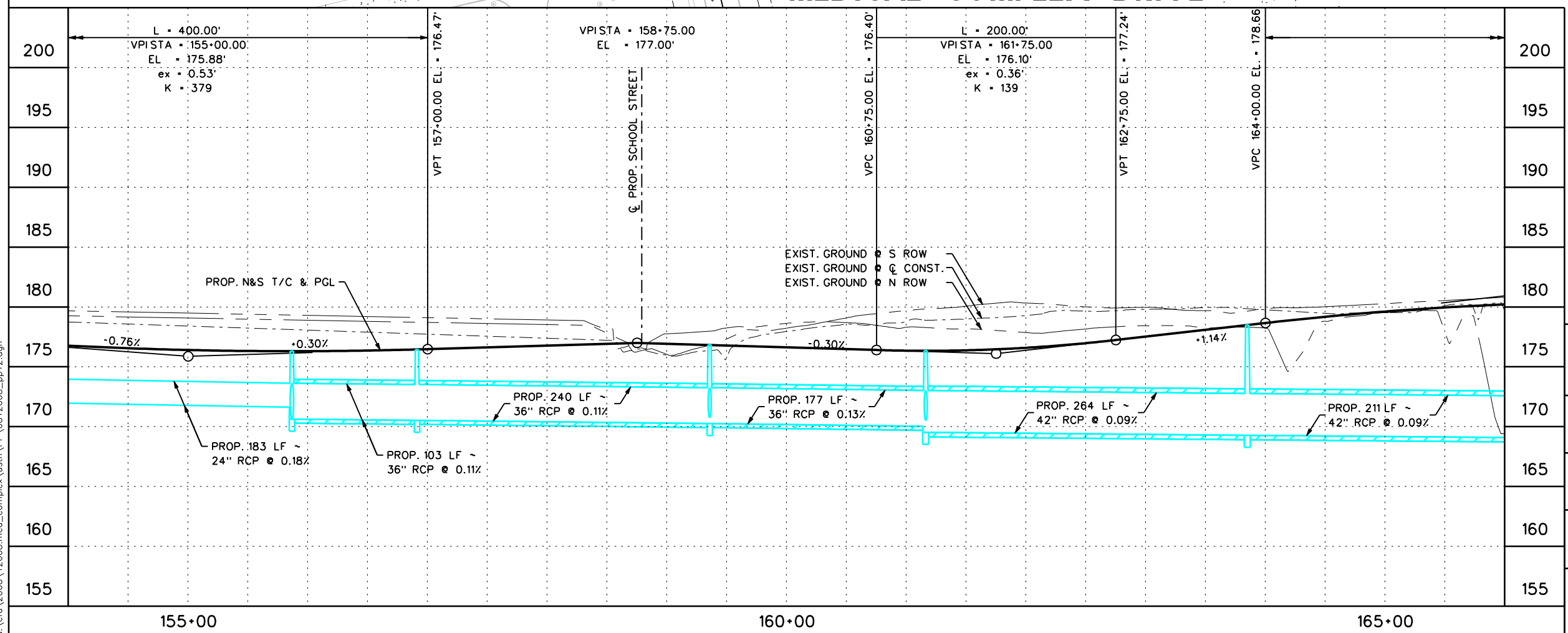


EXHIBIT 6

INTERIM REVIEW
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Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

CobbFendley
Texas Registration No. 274
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
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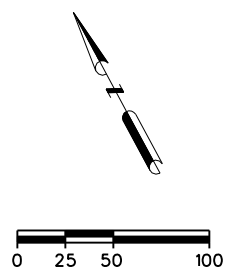
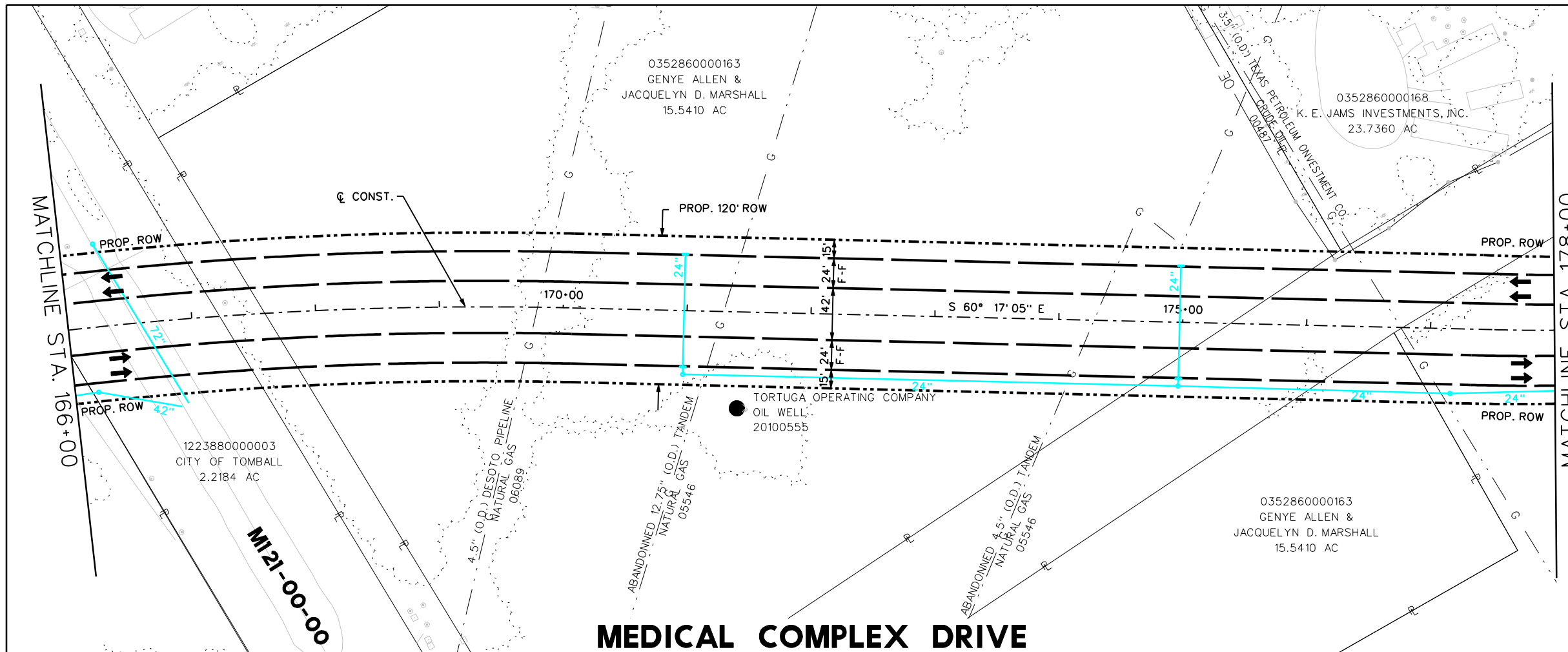
CITY OF TOMBALL
TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

PLAN AND PROFILE
STA. 154+00 TO STA. 166+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY C/L
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND & C/L CONST.
 - PROP. N&S T/C & PGL

MEDICAL COMPLEX DRIVE

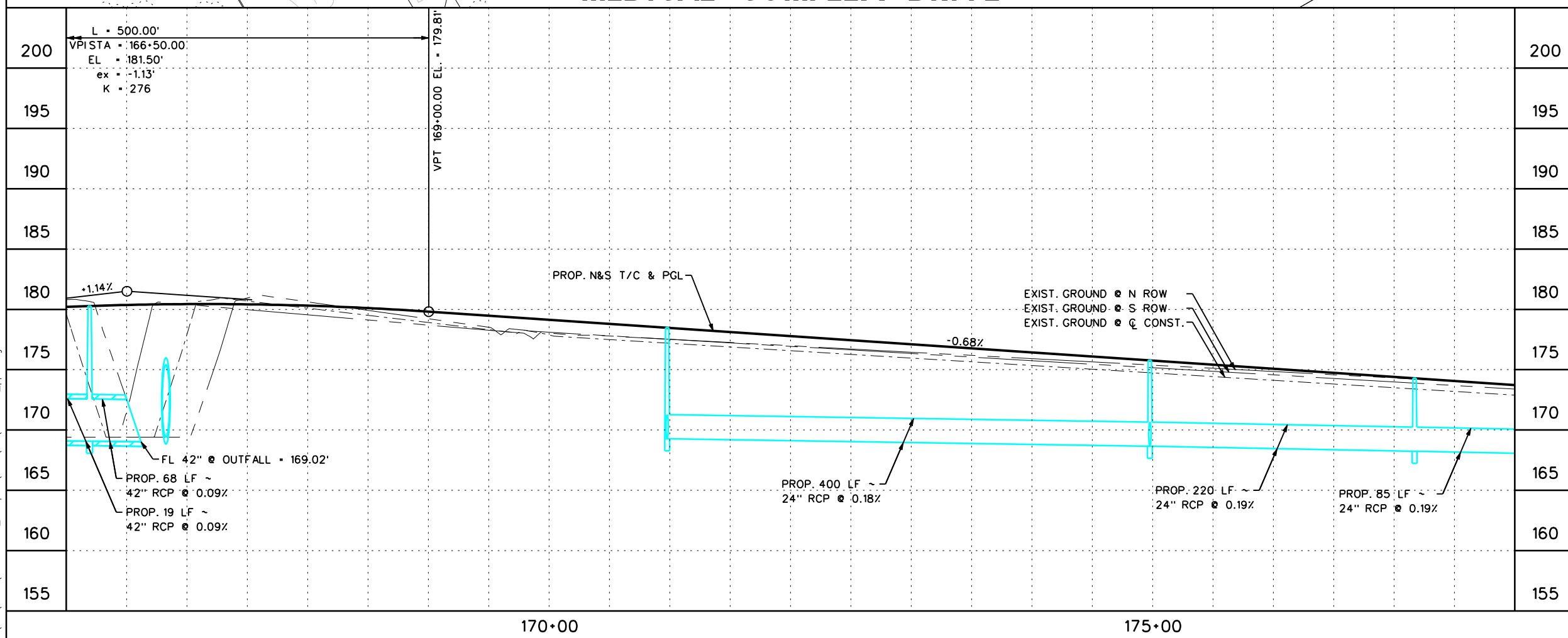


EXHIBIT 6

INTERIM REVIEW
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 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
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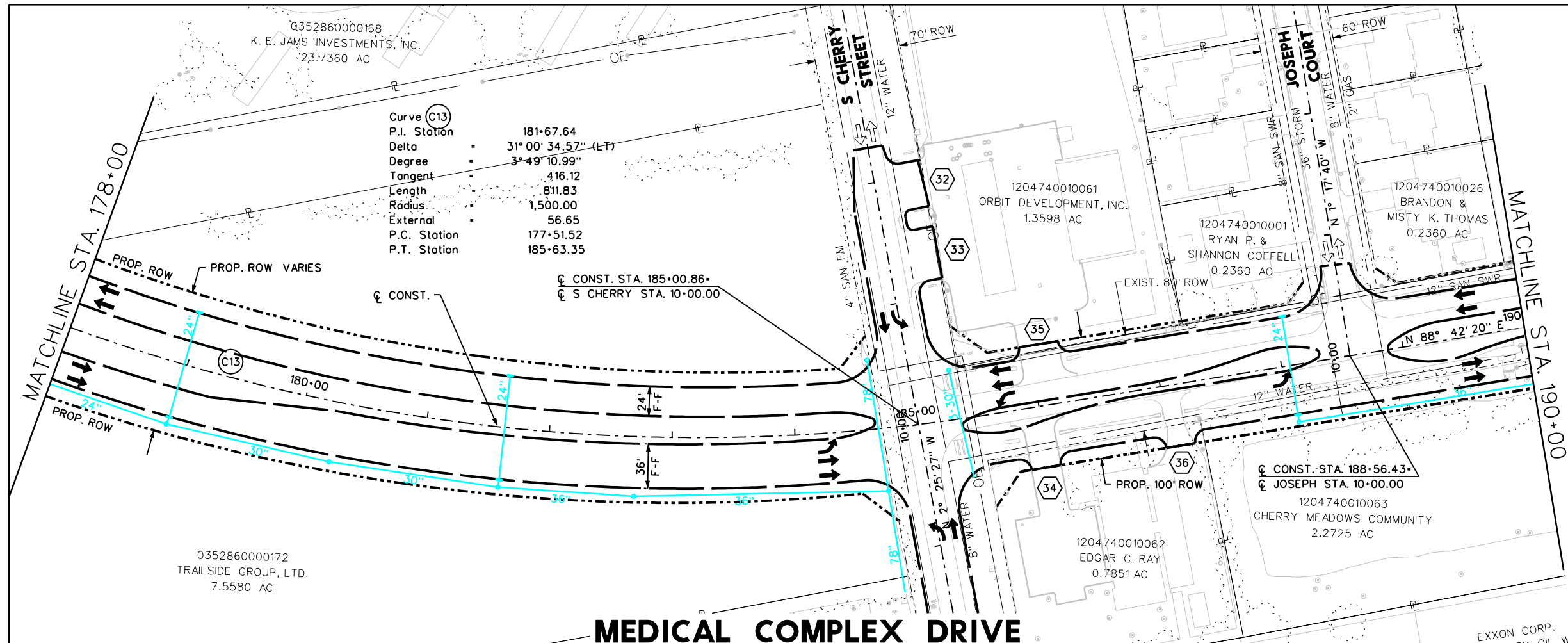


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

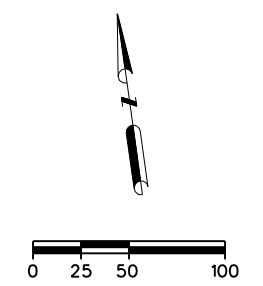
PLAN AND PROFILE
 STA. 166+00 TO STA. 178+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY C
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ CONST.
 - PROP. N&S T/C & PGL



MEDICAL COMPLEX DRIVE

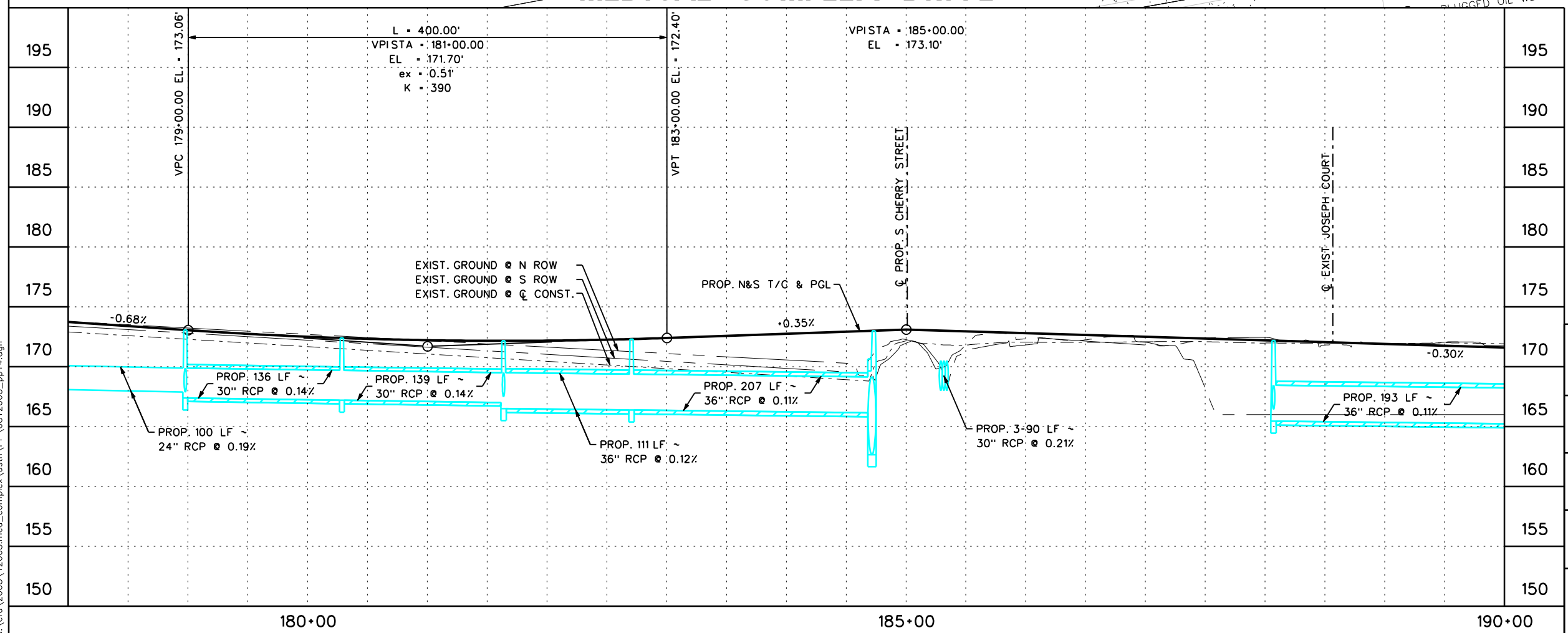


EXHIBIT 6

INTERIM REVIEW
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Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

CobbFendley
Texas Registration No. 274
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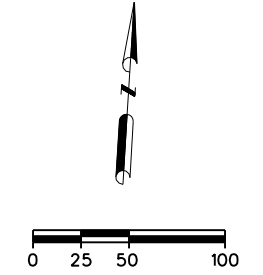
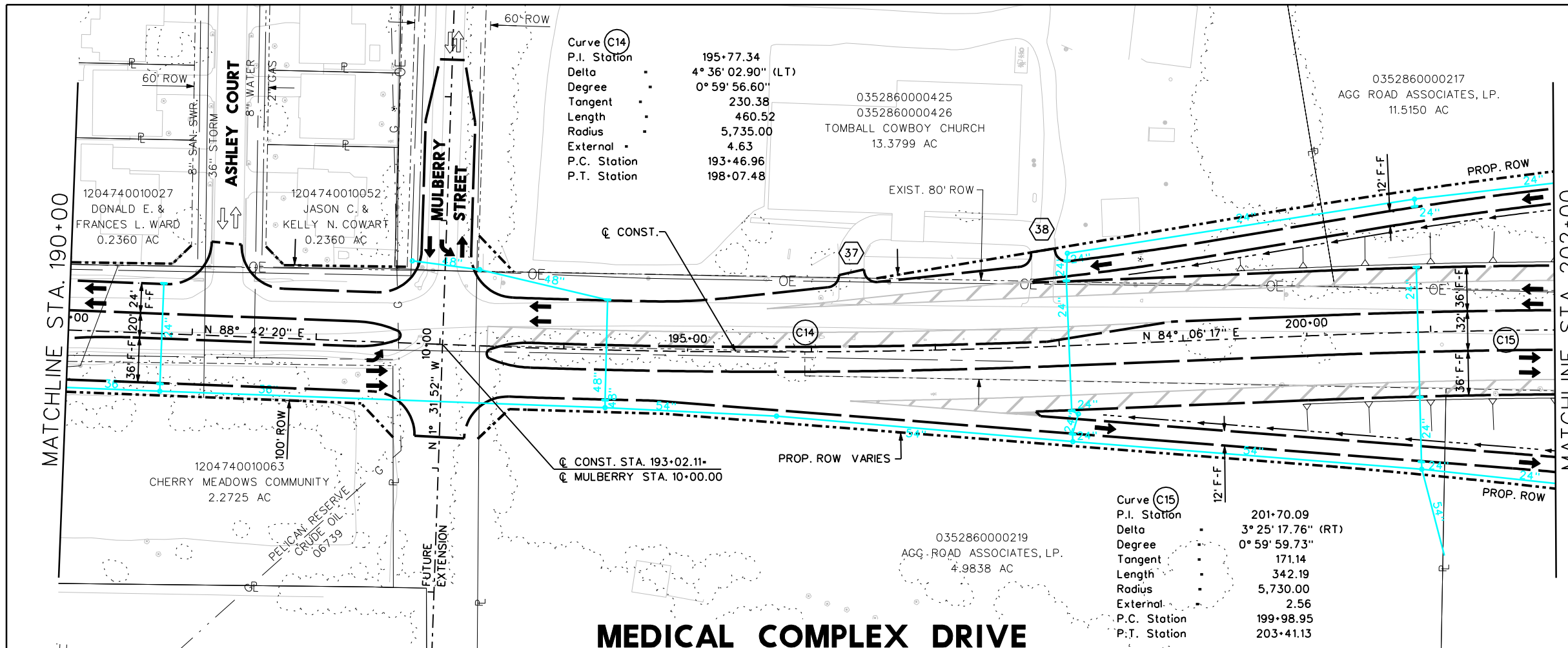


**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

PLAN AND PROFILE
STA. 178+00 TO STA. 190+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET NO.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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LEGEND

PLAN:

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY C
- PROP. FACE OF CURB
- PROP. TOP OF BERM
- PROP. STORM
- PROP. STORM MANHOLE
- PROP. CURB INLET
- EXIST. PROPERTY LINE
- EXIST. OVERHEAD POWER
- EXIST. PIPELINE
- DRIVEWAY NUMBER

PROFILE:

- EXIST. SOUTH ROW
- EXIST. NORTH ROW
- EXIST. GROUND @ C CONST.
- PROP. N&S T/C & PGL

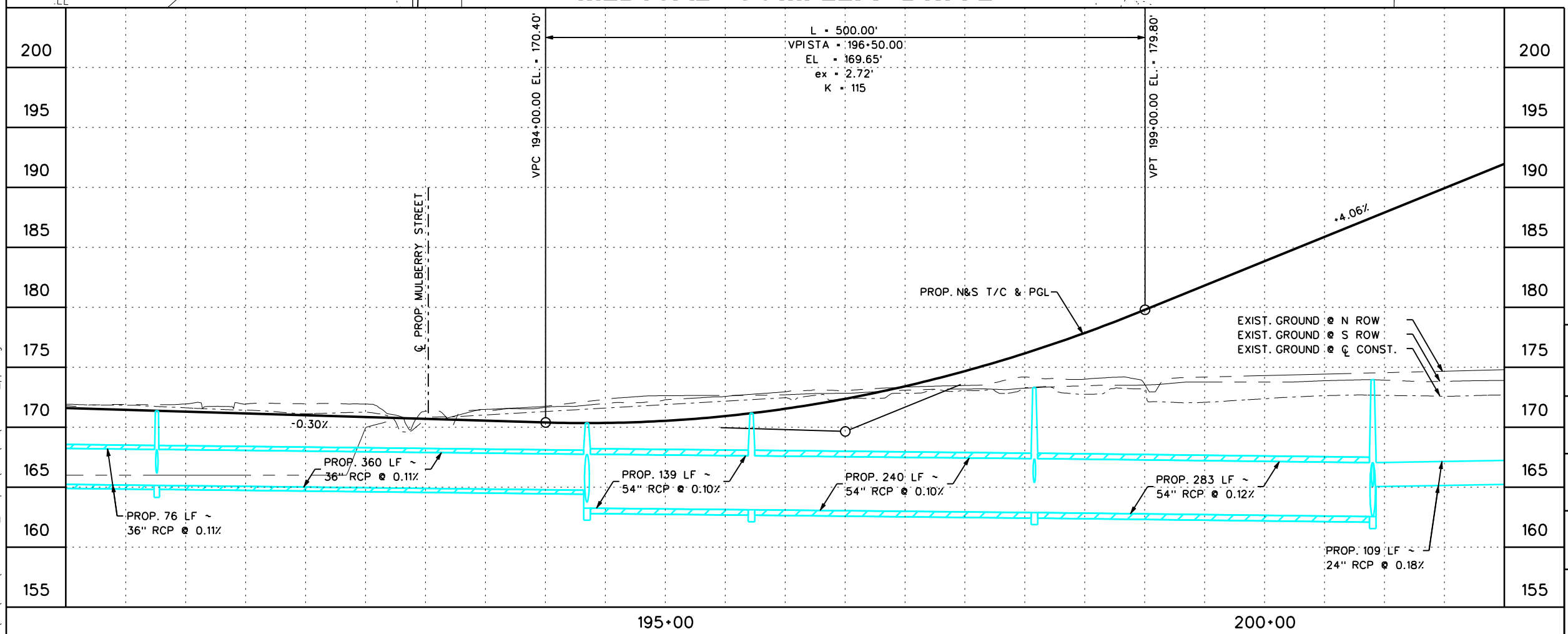


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
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 Houston, Texas 77040
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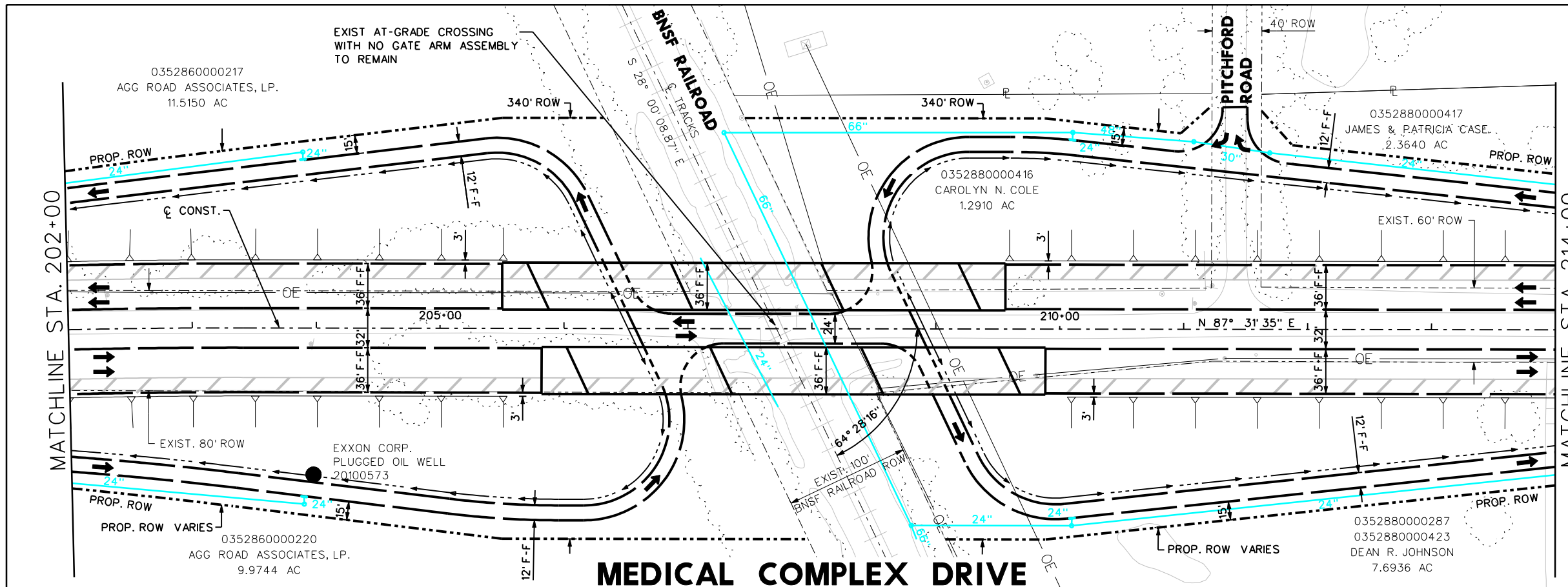


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PLAN AND PROFILE
 STA. 190+00 TO STA. 202+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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- LEGEND**
- PLAN:
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROF. ROW
 - PROF. ROADWAY C
 - PROF. FACE OF CURB
 - PROF. TOP OF BERM
 - PROF. STORM
 - PROF. STORM MANHOLE
 - PROF. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ C CONST.
 - PROP. N&S T/C & PGL

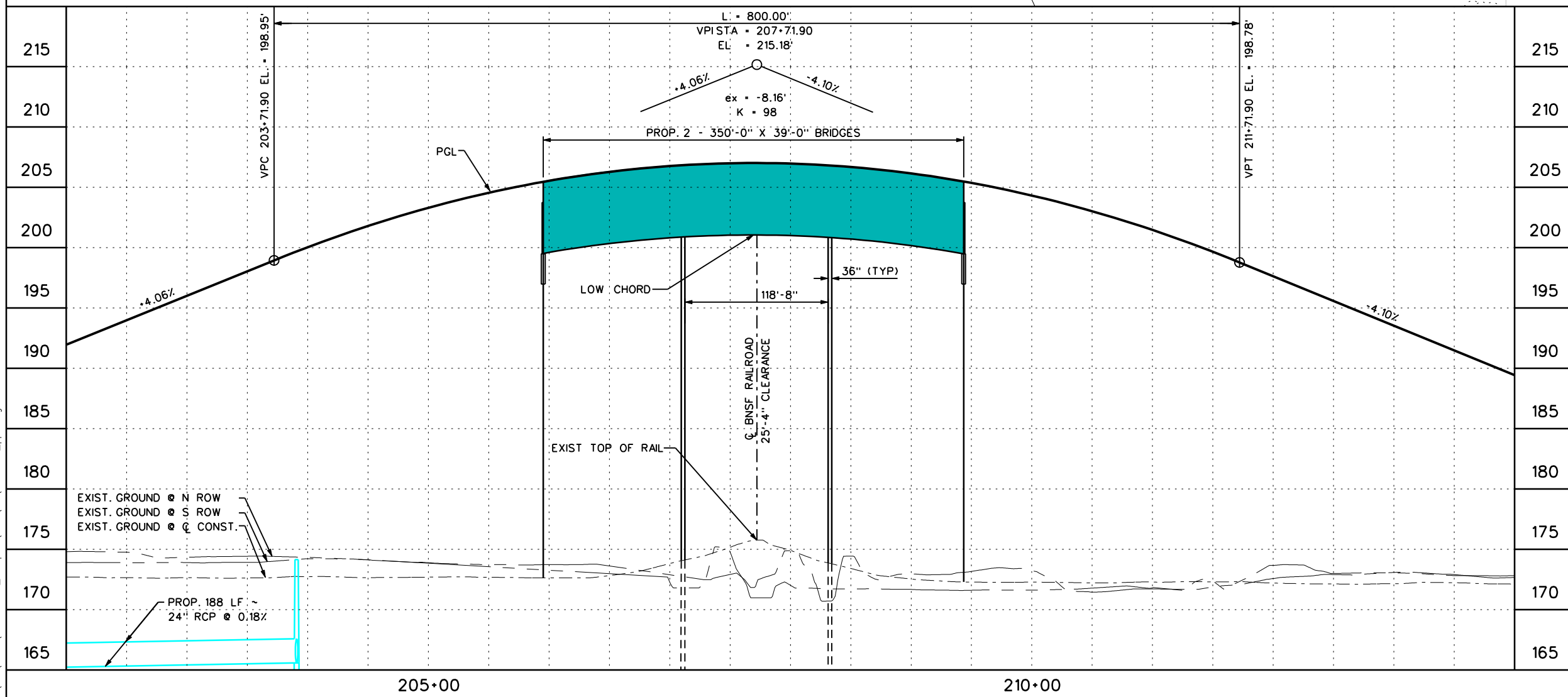
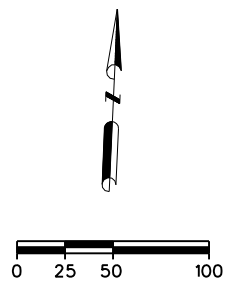


EXHIBIT 6

INTERIM REVIEW
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Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

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Houston, Texas 77040
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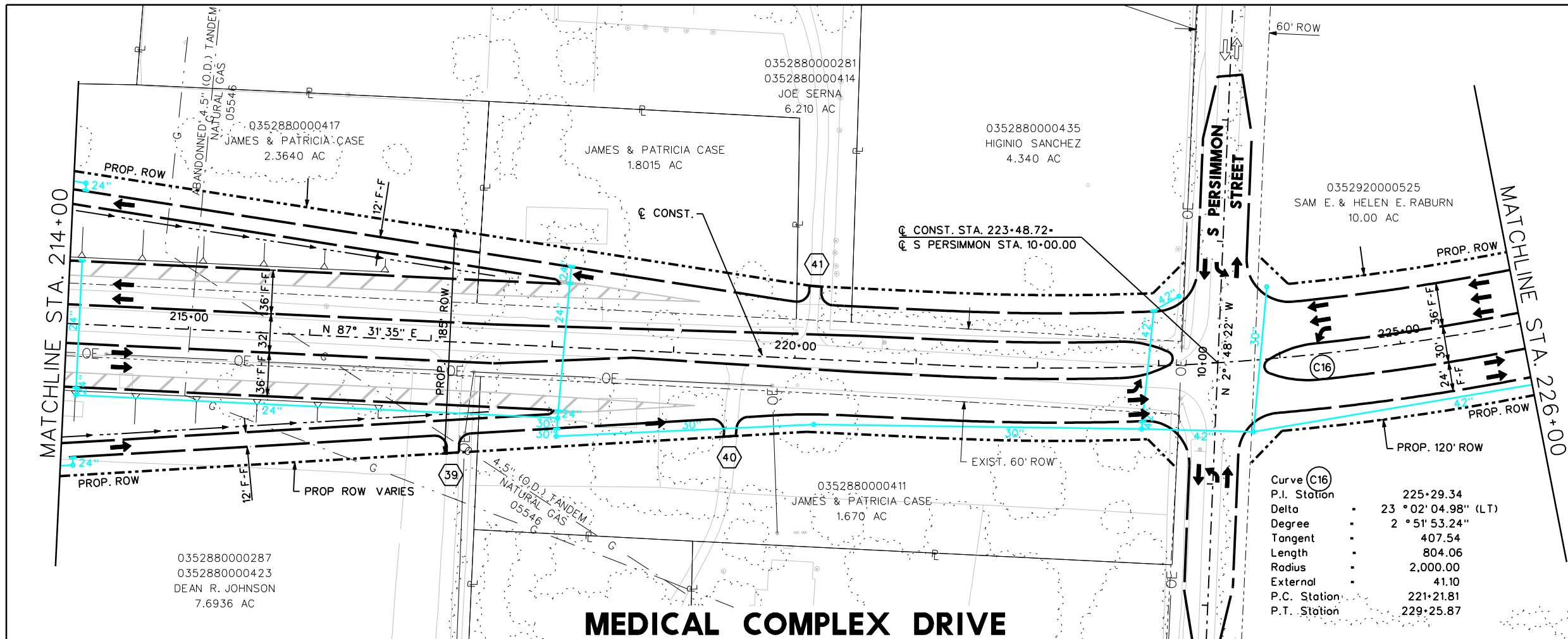


**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

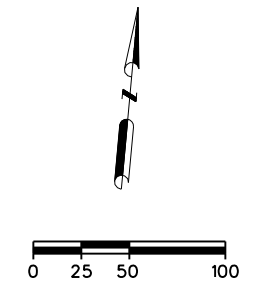
PLAN AND PROFILE
STA. 202+00 TO STA. 214+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\p1\0812008_pp16.dgn



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY C
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ C CONST.
 - PROP. N&S T/C & PGL



MEDICAL COMPLEX DRIVE

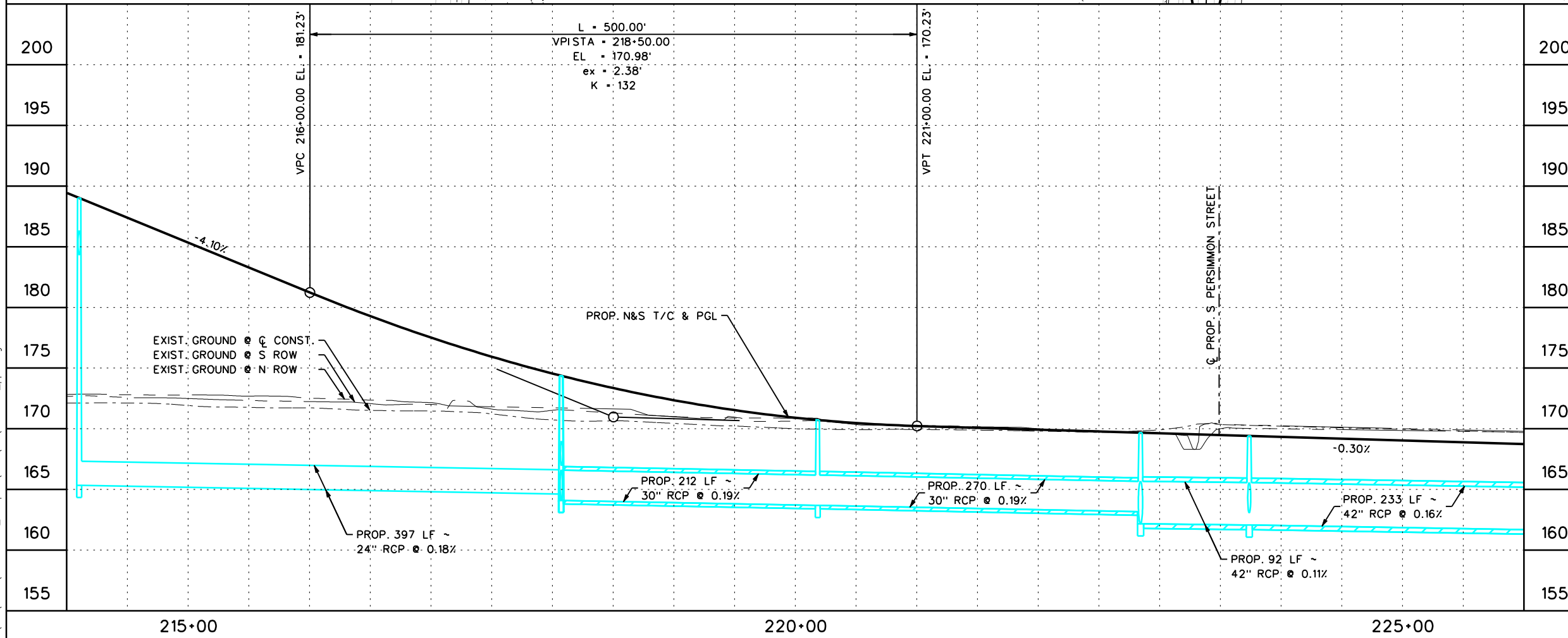


EXHIBIT 6

INTERIM REVIEW
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 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

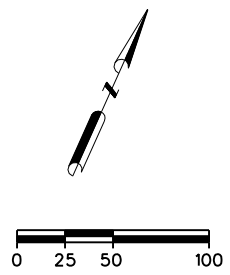
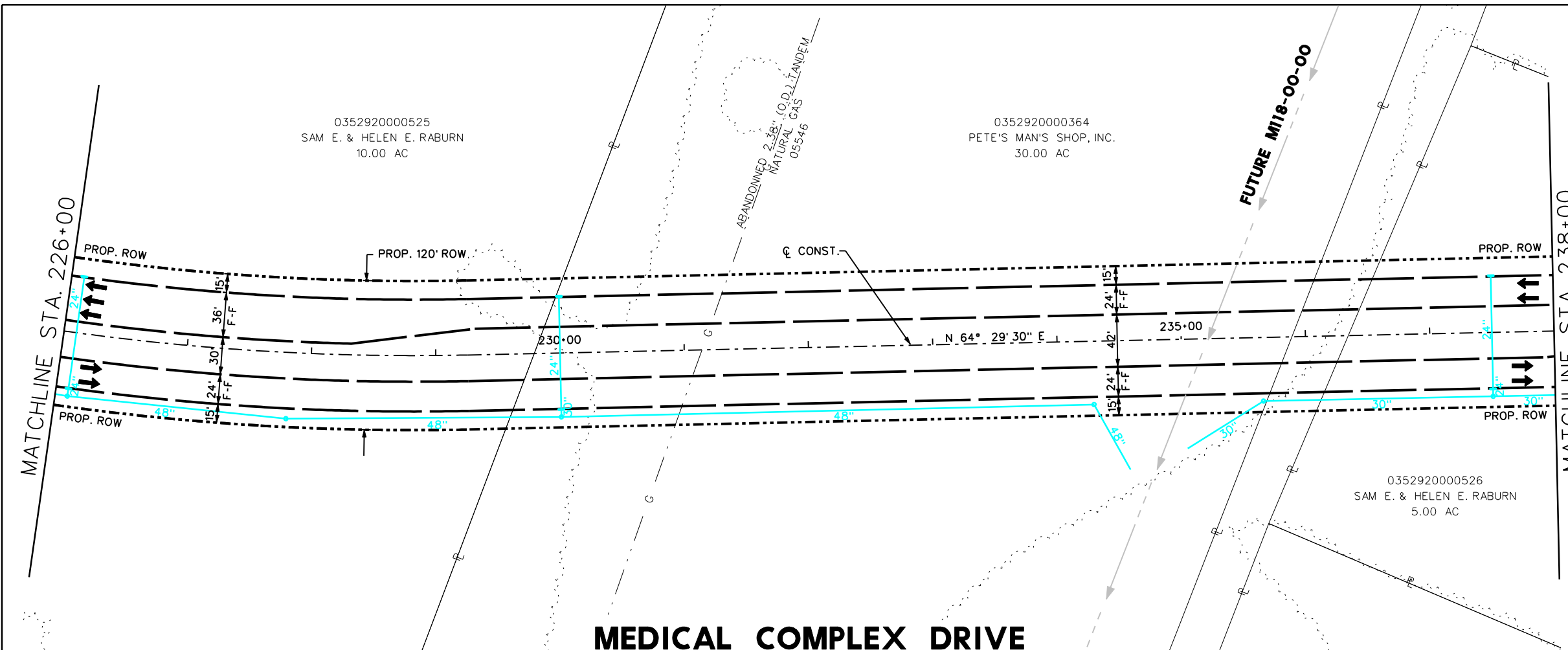


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 214+00 TO STA. 226+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008_med_complex\usr\pp\0812008_pp17.dgn



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY ϕ
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND ϕ CONST.
 - PROP. N&S T/C & PGL

MEDICAL COMPLEX DRIVE

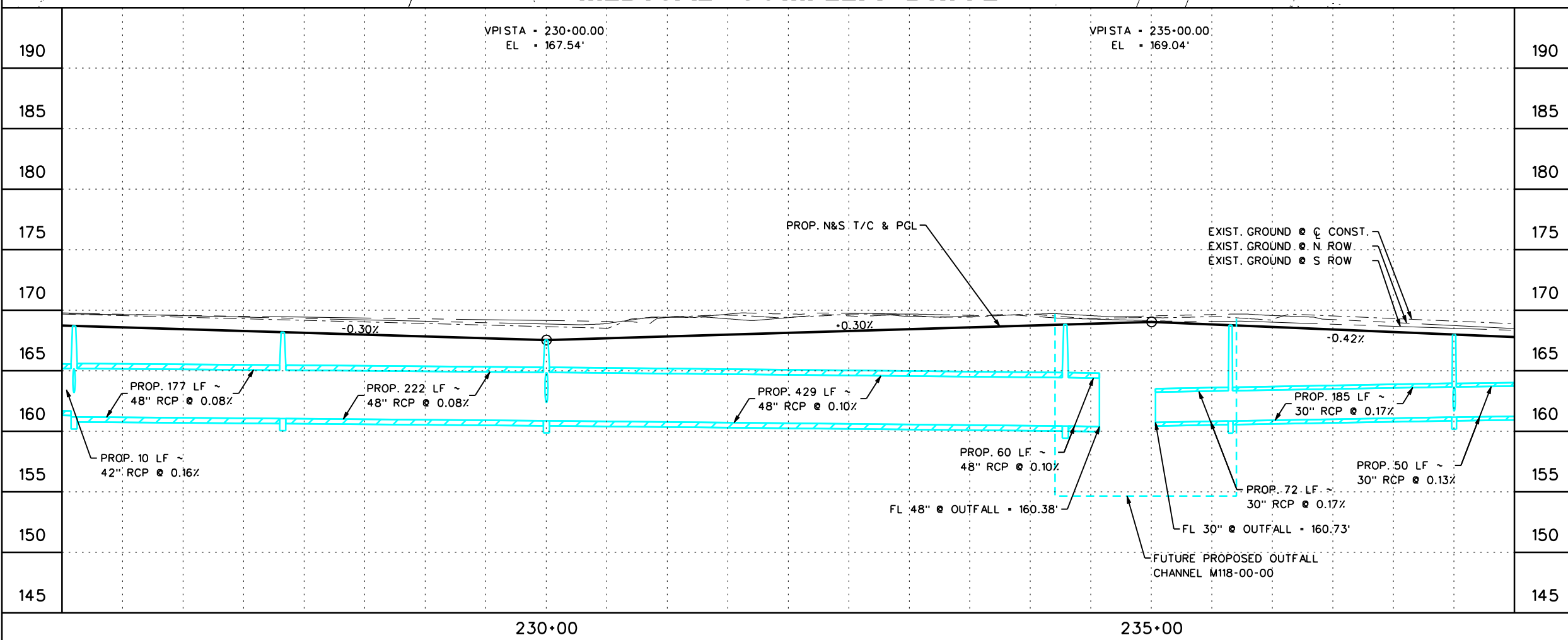


EXHIBIT 6

INTERIM REVIEW
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 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

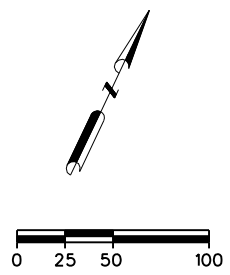
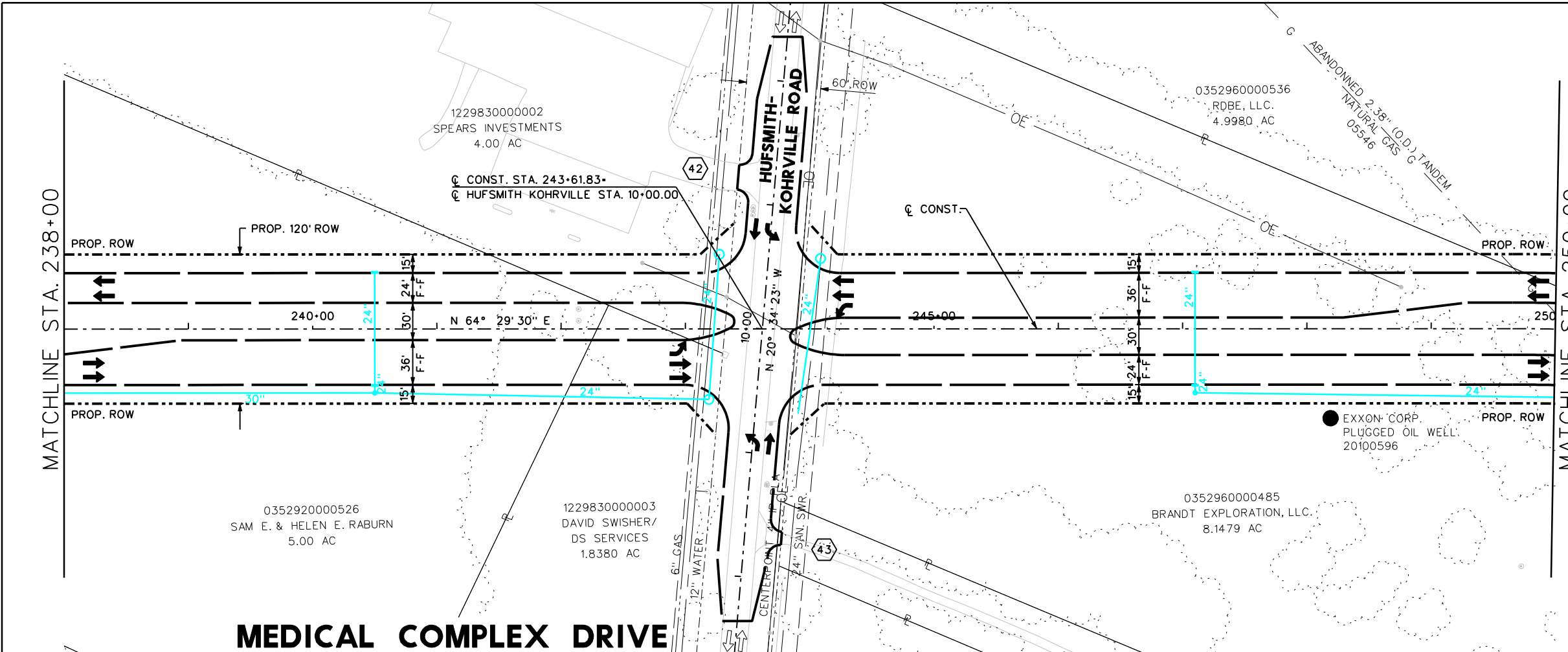


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

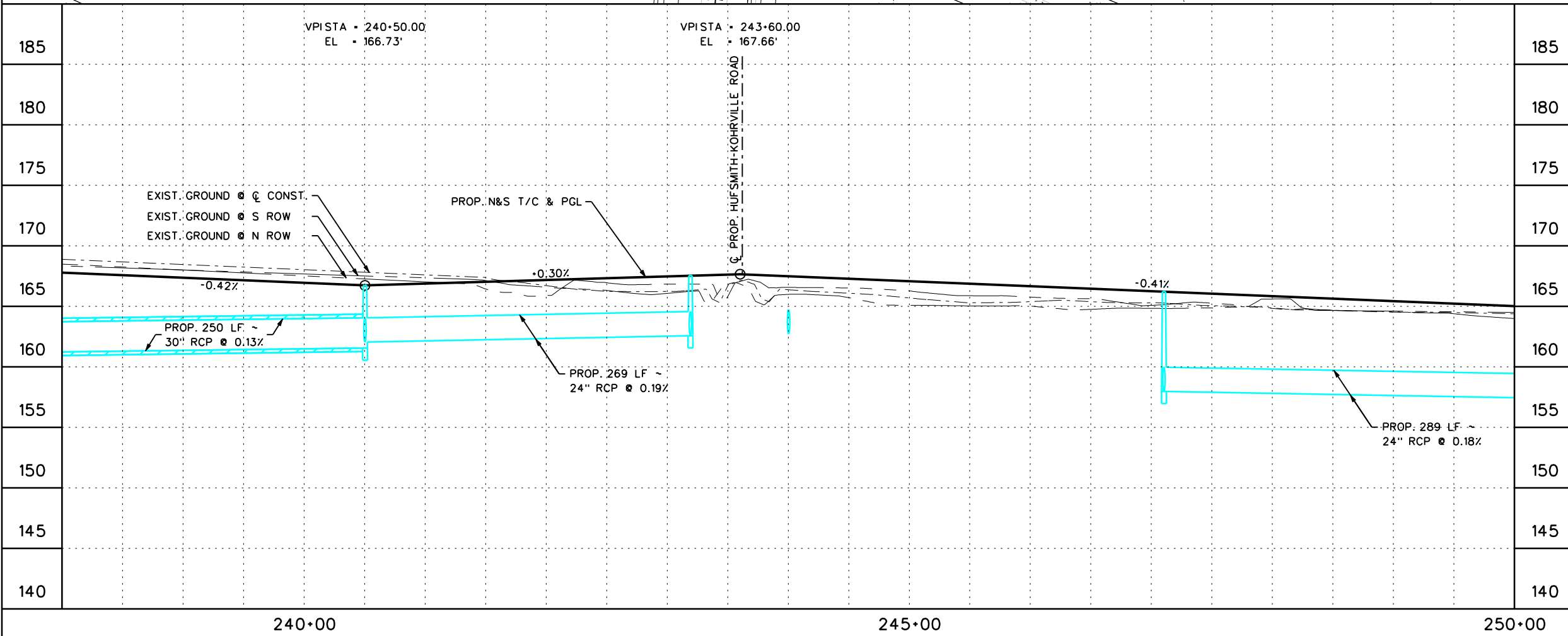
PLAN AND PROFILE
 STA. 226+00 TO STA. 238+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\pp\0812008_pp18.dgn



- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY CL
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ CL CONST.
 - PROP. N&S T/C & PGL



INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
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 713.462.3242 | fax 713.462.3262 | www.cobfen.com

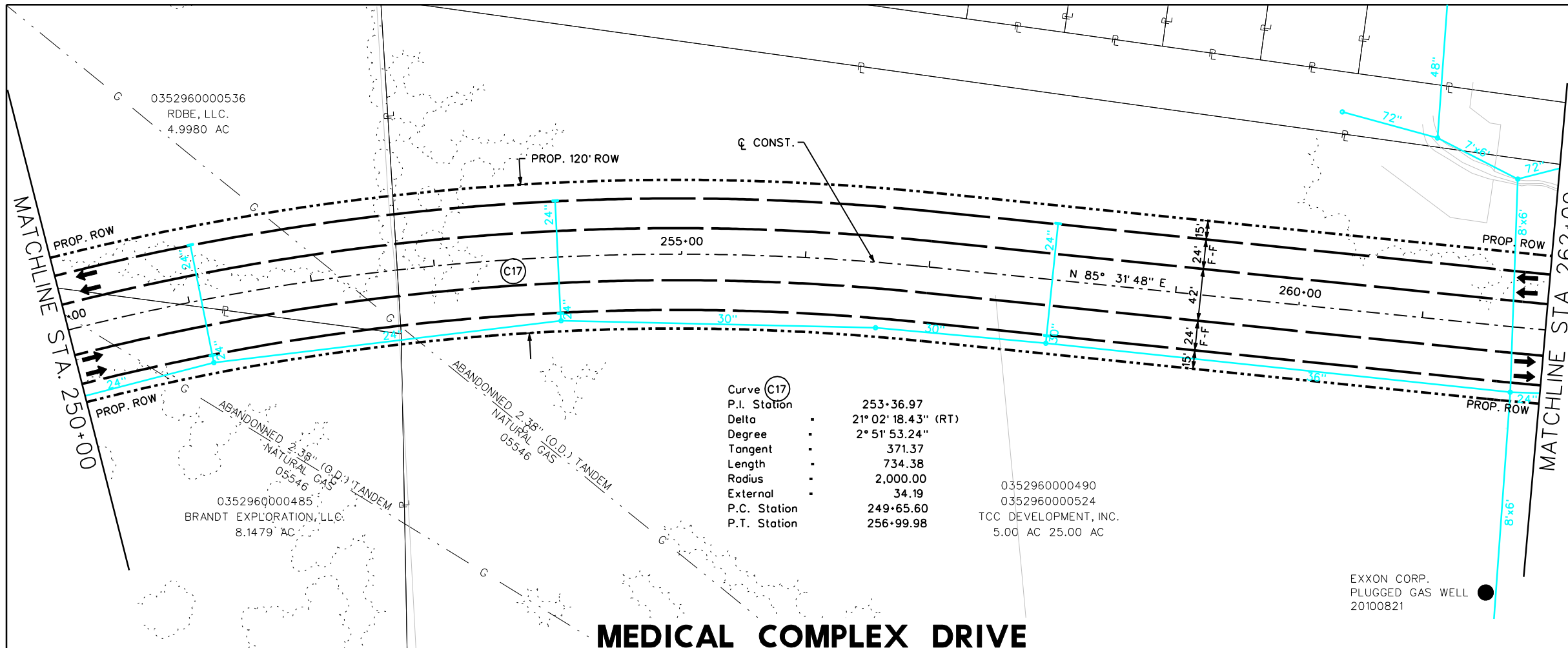


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 238+00 TO STA. 250+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\pp\0812008_pp19.dgn



LEGEND

PLAN:

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY C
- PROP. FACE OF CURB
- PROP. TOP OF BERM
- PROP. STORM
- PROP. STORM MANHOLE
- PROP. CURB INLET
- EXIST. PROPERTY LINE
- EXIST. OVERHEAD POWER
- EXIST. PIPELINE
- DRIVEWAY NUMBER

PROFILE:

- EXIST. SOUTH ROW
- EXIST. NORTH ROW
- EXIST. GROUND & C CONST.
- PROP. N&S T/C & PGL

MEDICAL COMPLEX DRIVE

Curve (C17)

P.I. Station	253+36.97
Delta	21° 02' 18.43" (RT)
Degree	2° 51' 53.24"
Tangent	371.37
Length	734.38
Radius	2,000.00
External	34.19
P.C. Station	249+65.60
P.T. Station	256+99.98

0352960000490
0352960000524
TCC DEVELOPMENT, INC.
5.00 AC 25.00 AC

EXXON CORP.
PLUGGED GAS WELL
20100821

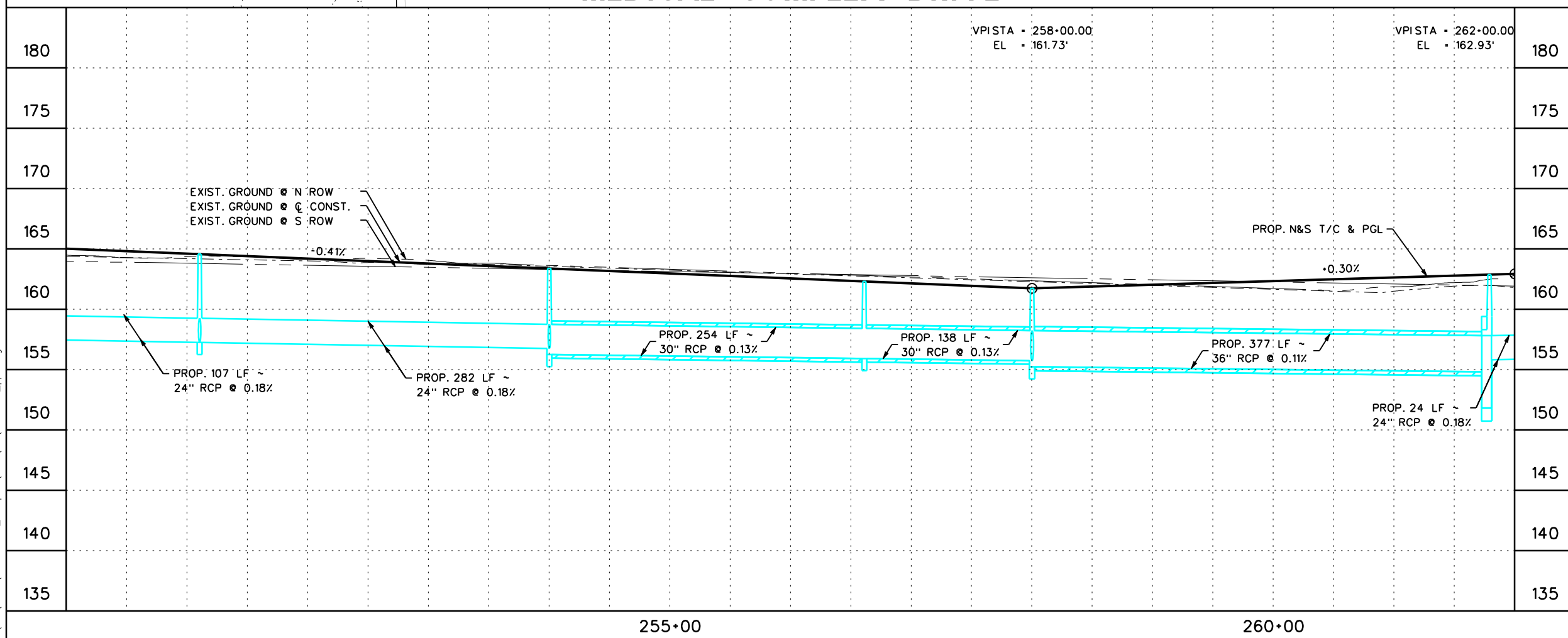


EXHIBIT 6

INTERIM REVIEW
Not intended for construction,
bidding or permit purposes.
Engineer: MAHMOUD SALEHI
P.E. Serial No.: 89552
Date: 6/9/2009

CobbFendley
Texas Registration No. 274
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobfen.com

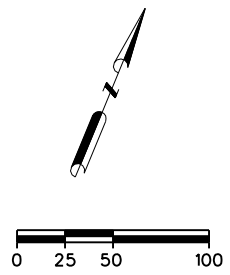


**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

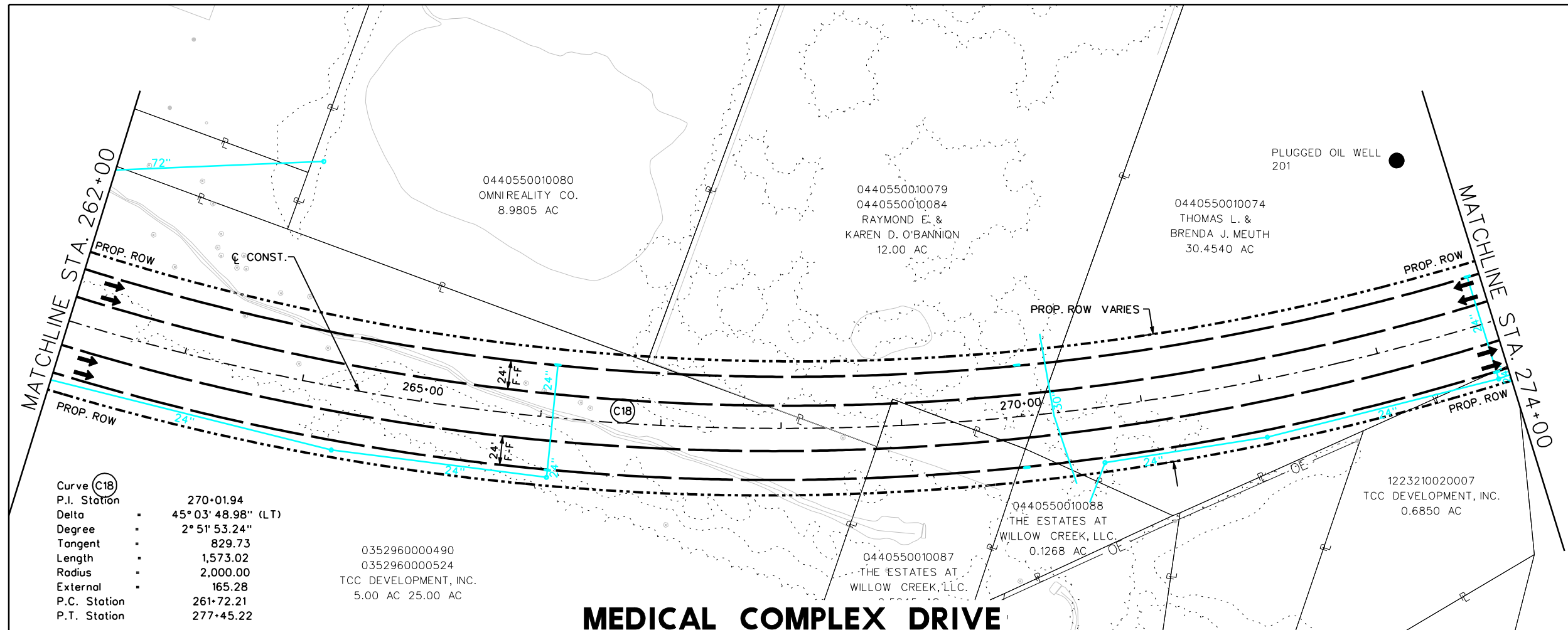
PLAN AND PROFILE
STA. 250+00 TO STA. 262+00

SUBMITTED BY: MS	DESIGNED BY: MS
SCALE: 1"=100' H 1"= 10' V	DRAWN BY: KMM
DATE: 6/9/2009	SHEET No.: OF
SURVEY BY: CFA	DWG. NO.:
F B NO.:	

6/9/2009
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- LEGEND**
- PLAN:**
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY ϕ
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:**
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND ϕ & CONST.
 - PROP. N&S T/C & PGL



Curve (C18)
 P.I. Station 270+01.94
 Delta 45° 03' 48.98" (LT)
 Degree 2° 51' 53.24"
 Tangent 829.73
 Length 1,573.02
 Radius 2,000.00
 External 165.28
 P.C. Station 261+72.21
 P.T. Station 277+45.22

0352960000490
 0352960000524
 TCC DEVELOPMENT, INC.
 5.00 AC 25.00 AC

MEDICAL COMPLEX DRIVE

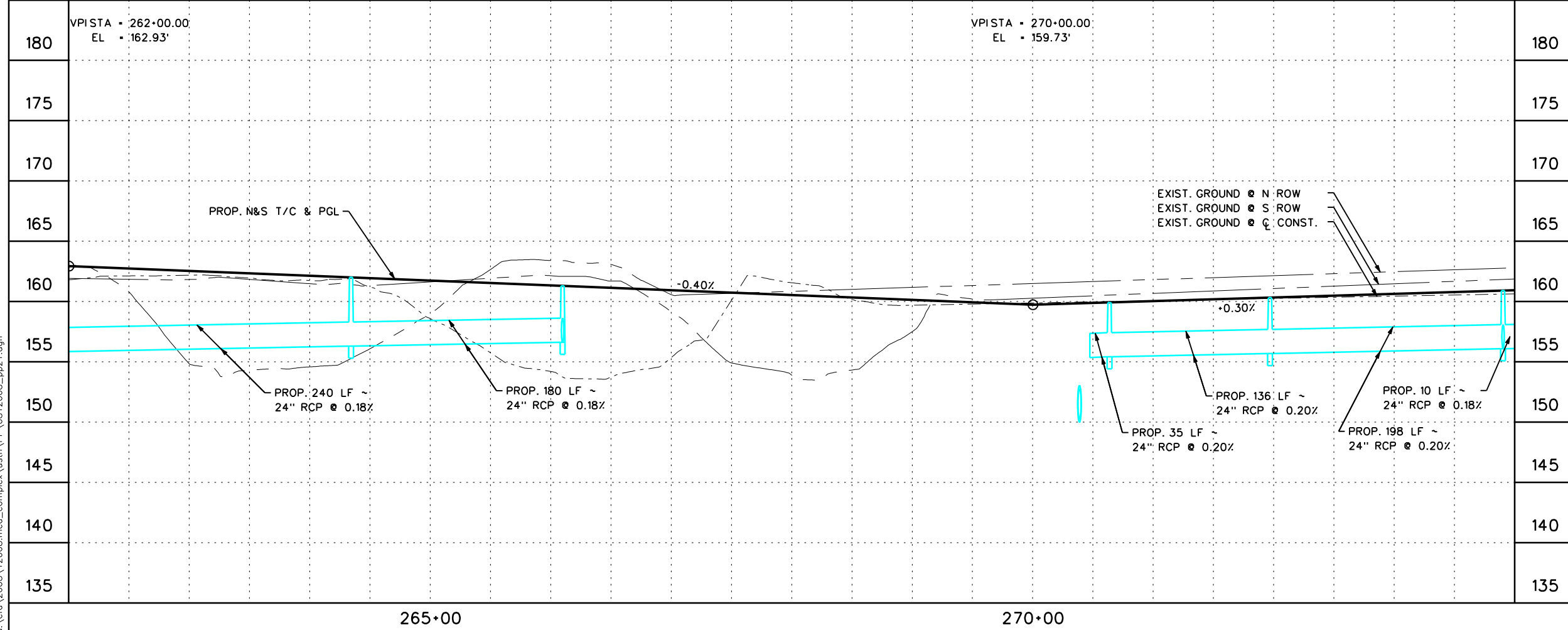


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com



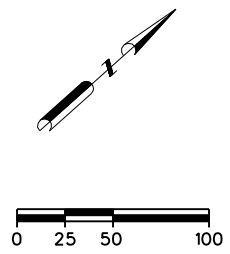
**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 262+00 TO STA. 274+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\ustn\pp\0812008_pp21.dgn

Curve (C19)	
P.I. Station	285+36.42
Delta	1° 33' 57.58" (LT)
Degree	2° 51' 53.24"
Tangent	27.33
Length	54.66
Radius	2,000.00
External	0.19
P.C. Station	285+09.09
P.T. Station	285+63.75



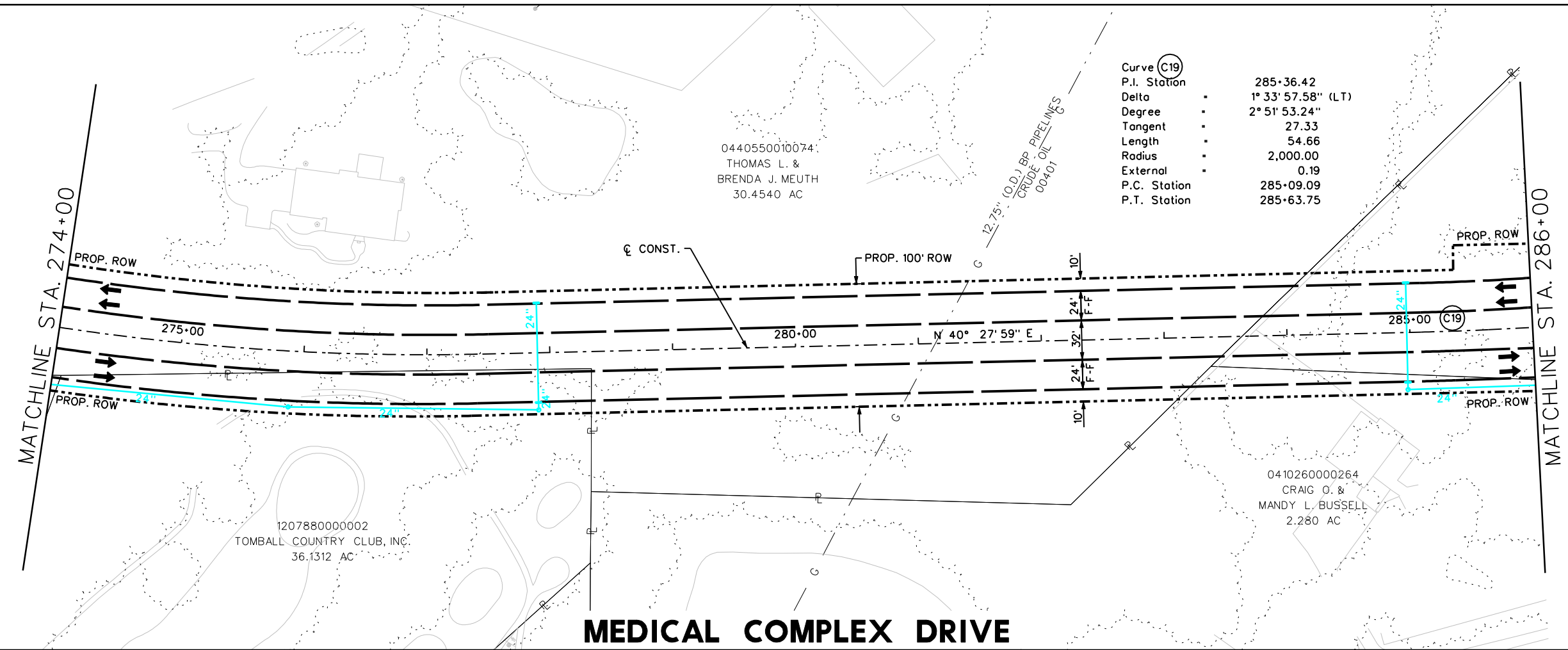
LEGEND

PLAN:

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY ϕ
- PROP. FACE OF CURB
- PROP. TOP OF BERM
- PROP. STORM
- PROP. STORM MANHOLE
- PROP. CURB INLET
- EXIST. PROPERTY LINE
- EXIST. OVERHEAD POWER
- EXIST. PIPELINE
- DRIVEWAY NUMBER

PROFILE:

- EXIST. SOUTH ROW
- EXIST. NORTH ROW
- EXIST. GROUND ϕ ϕ CONST.
- PROP. N&S T/C & PGL



MEDICAL COMPLEX DRIVE

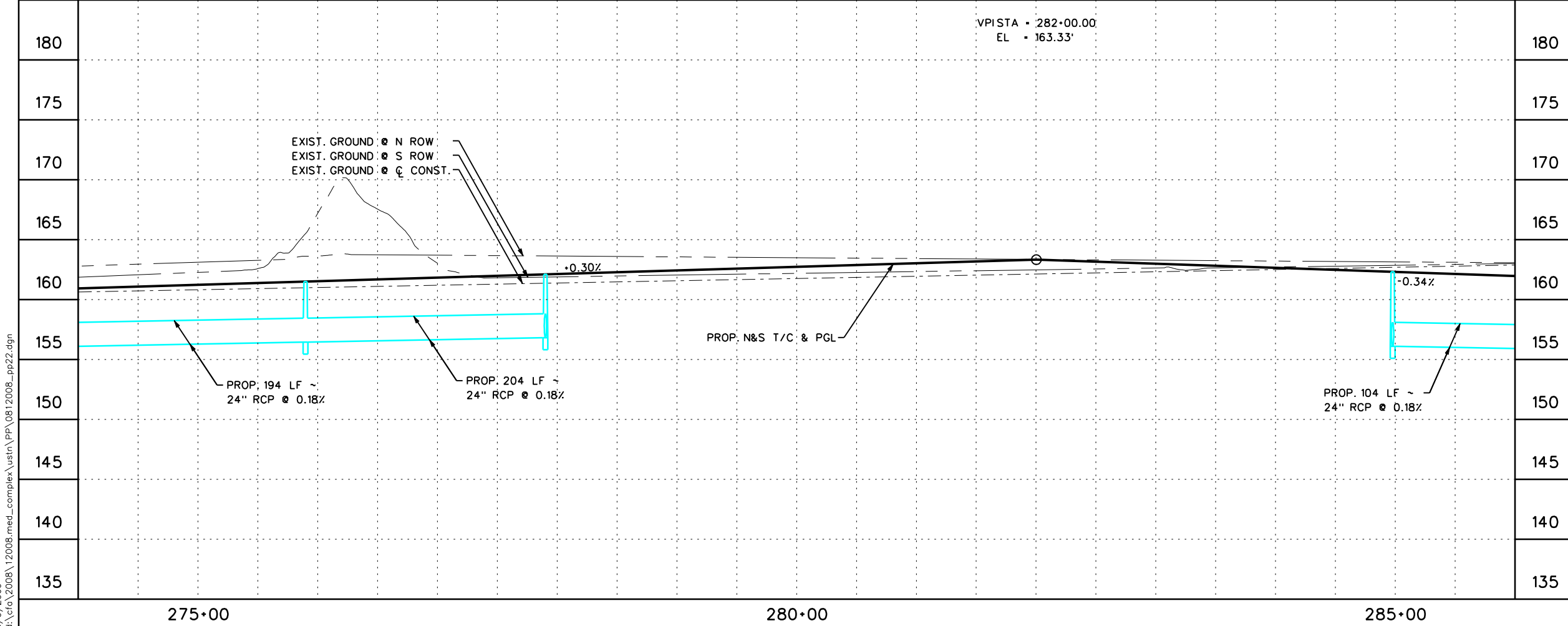


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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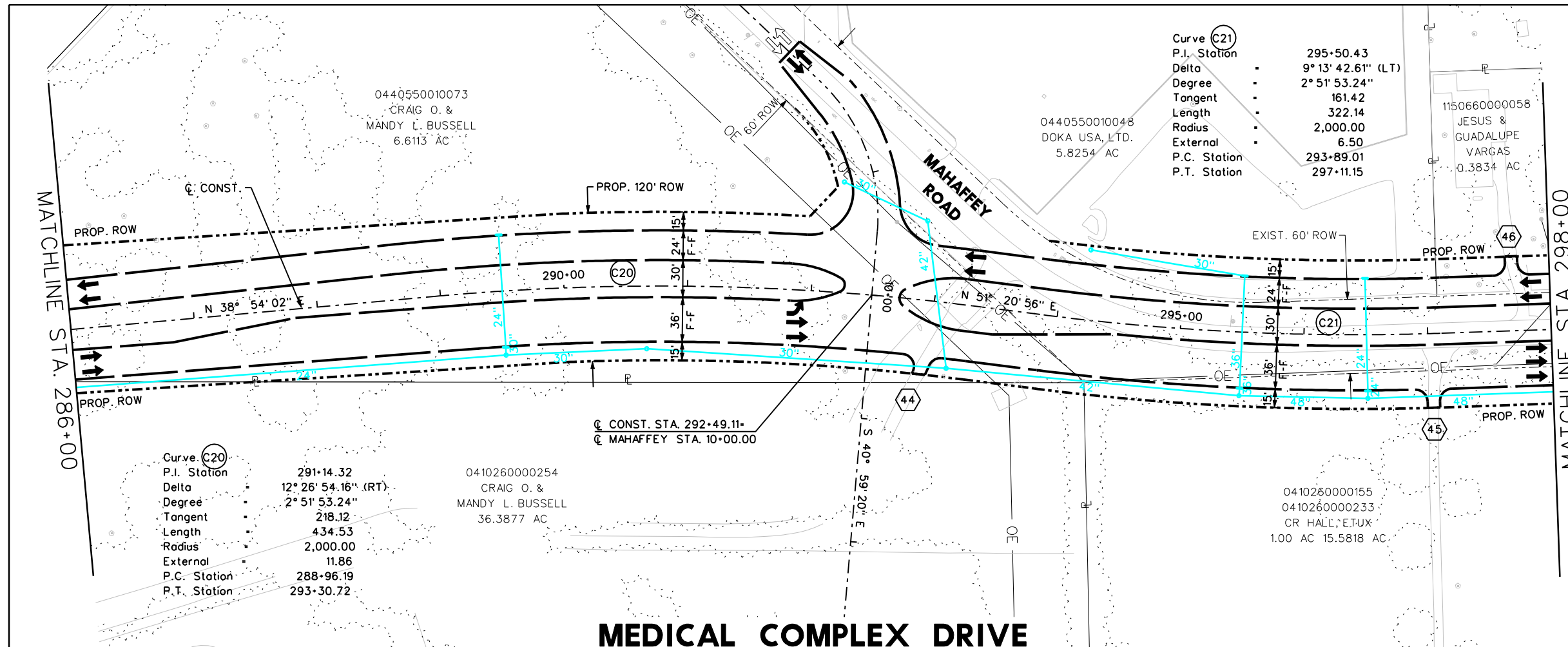


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 274+00 TO STA. 286+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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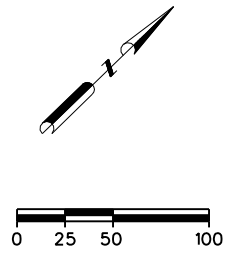


Curve (C21)

P.I. Station	295+50.43
Delta	9° 13' 42.61" (LT)
Degree	2° 51' 53.24"
Tangent	161.42
Length	322.14
Radius	2,000.00
External	6.50
P.C. Station	293+89.01
P.T. Station	297+11.15

Curve (C20)

P.I. Station	291+14.32
Delta	12° 26' 54.16" (RT)
Degree	2° 51' 53.24"
Tangent	218.12
Length	434.53
Radius	2,000.00
External	11.86
P.C. Station	288+96.19
P.T. Station	293+30.72



LEGEND

PLAN:

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY C
- PROP. FACE OF CURB
- PROP. TOP OF BERM
- PROP. STORM
- PROP. STORM MANHOLE
- PROP. CURB INLET
- EXIST. PROPERTY LINE
- EXIST. OVERHEAD POWER
- EXIST. PIPELINE
- DRIVEWAY NUMBER

PROFILE:

- EXIST. SOUTH ROW
- EXIST. NORTH ROW
- EXIST. GROUND @ C CONST.
- PROP. N&S T/C & PGL

MEDICAL COMPLEX DRIVE

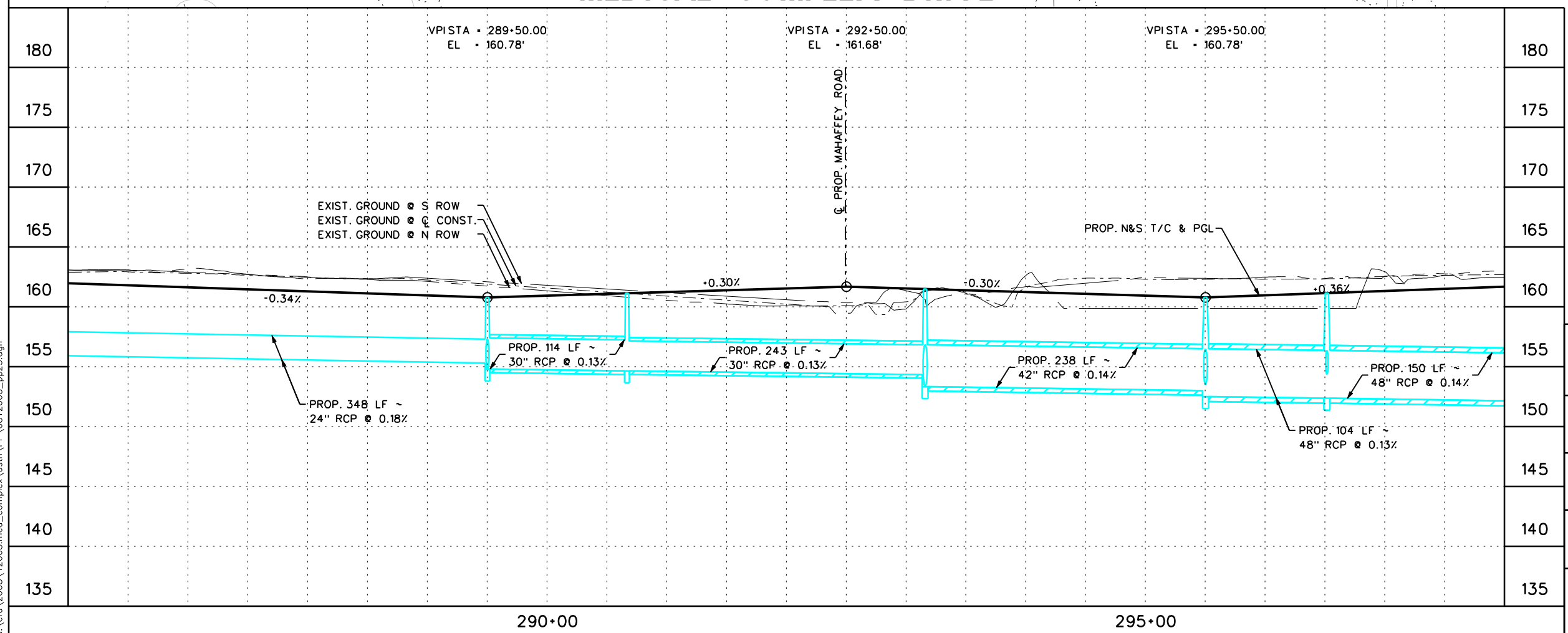


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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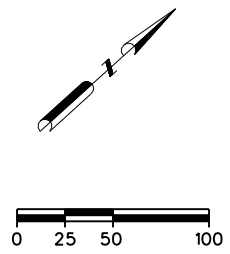
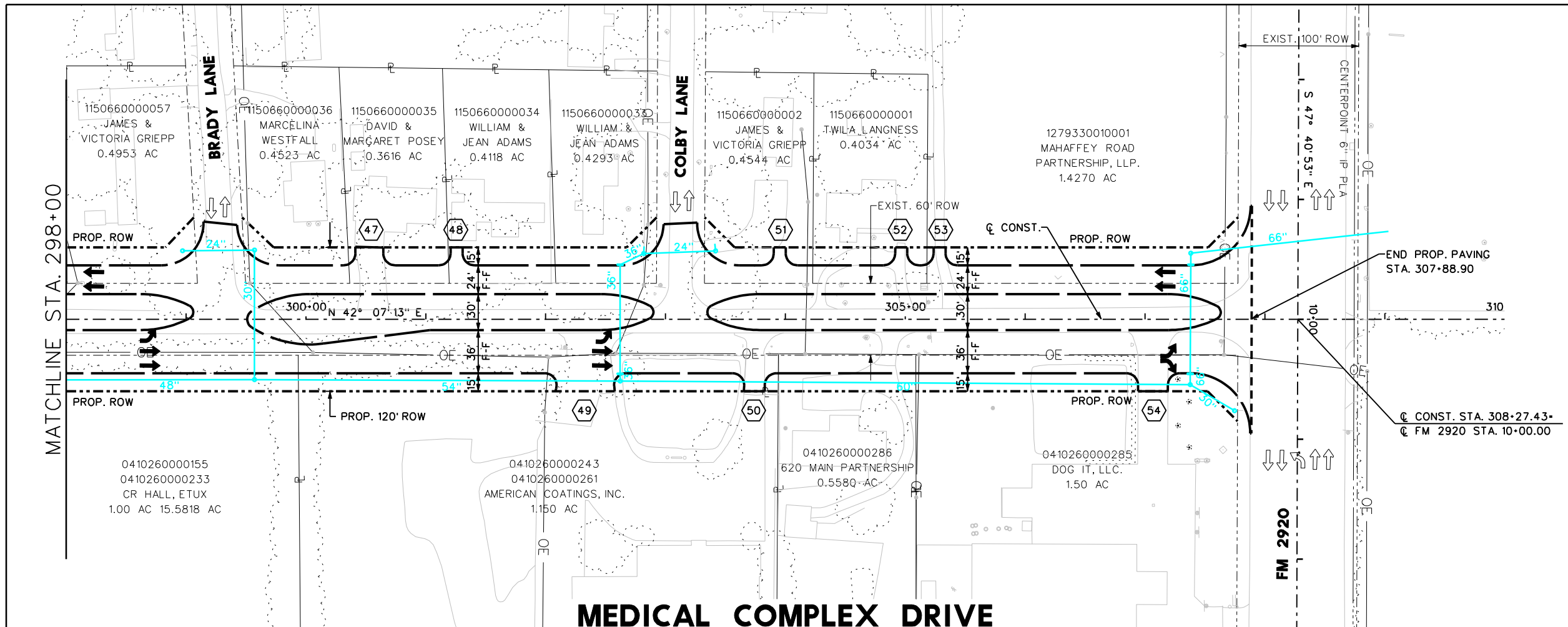


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 286+00 TO STA. 298+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\12008.med_complex\usr\pp\0812008_pp23.dgn



- LEGEND**
- PLAN:
- EXIST. ROW
 - EXIST. DRAINAGE EASEMENT
 - PROP. ROW
 - PROP. ROADWAY C
 - PROP. FACE OF CURB
 - PROP. TOP OF BERM
 - PROP. STORM
 - PROP. STORM MANHOLE
 - PROP. CURB INLET
 - EXIST. PROPERTY LINE
 - EXIST. OVERHEAD POWER
 - EXIST. PIPELINE
 - DRIVEWAY NUMBER
- PROFILE:
- EXIST. SOUTH ROW
 - EXIST. NORTH ROW
 - EXIST. GROUND @ C CONST.
 - PROP. N&S T/C & PGL

MEDICAL COMPLEX DRIVE

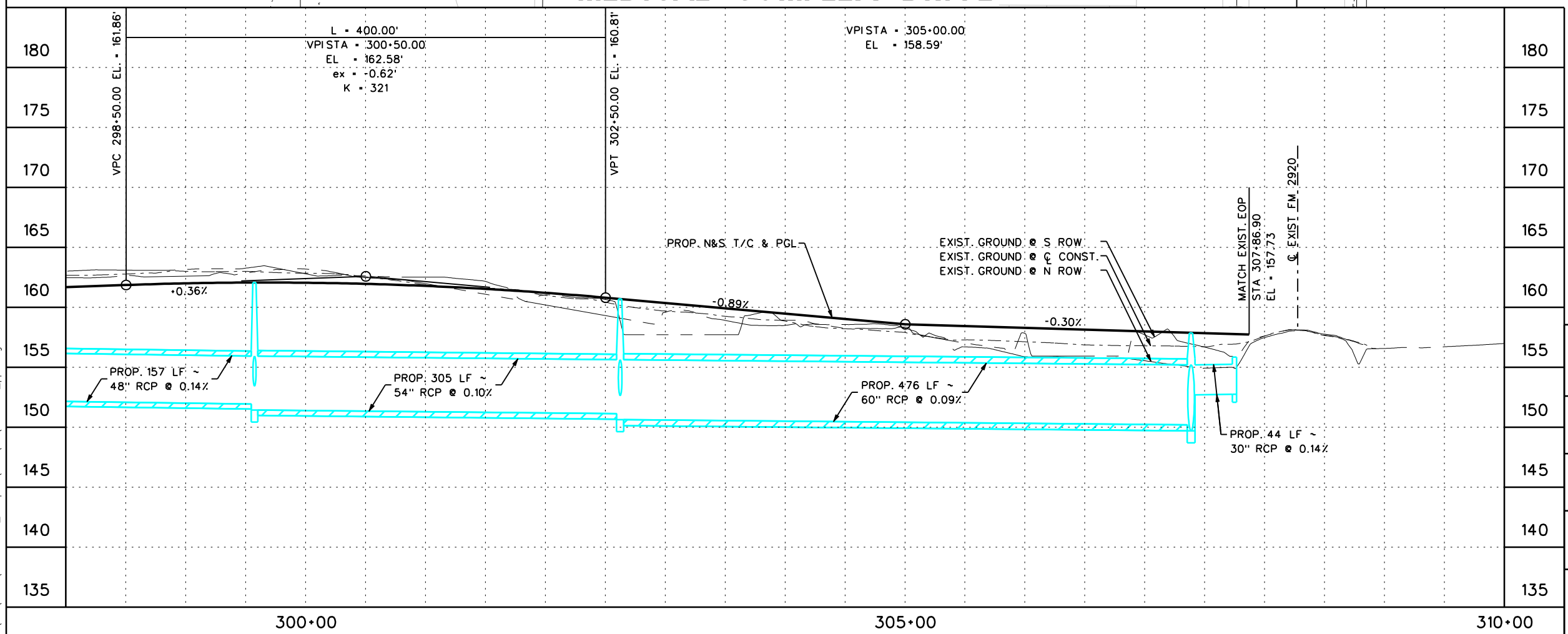


EXHIBIT 6

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
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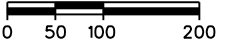


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PLAN AND PROFILE
 STA. 298+00 TO END

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H 1"= 10' V	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

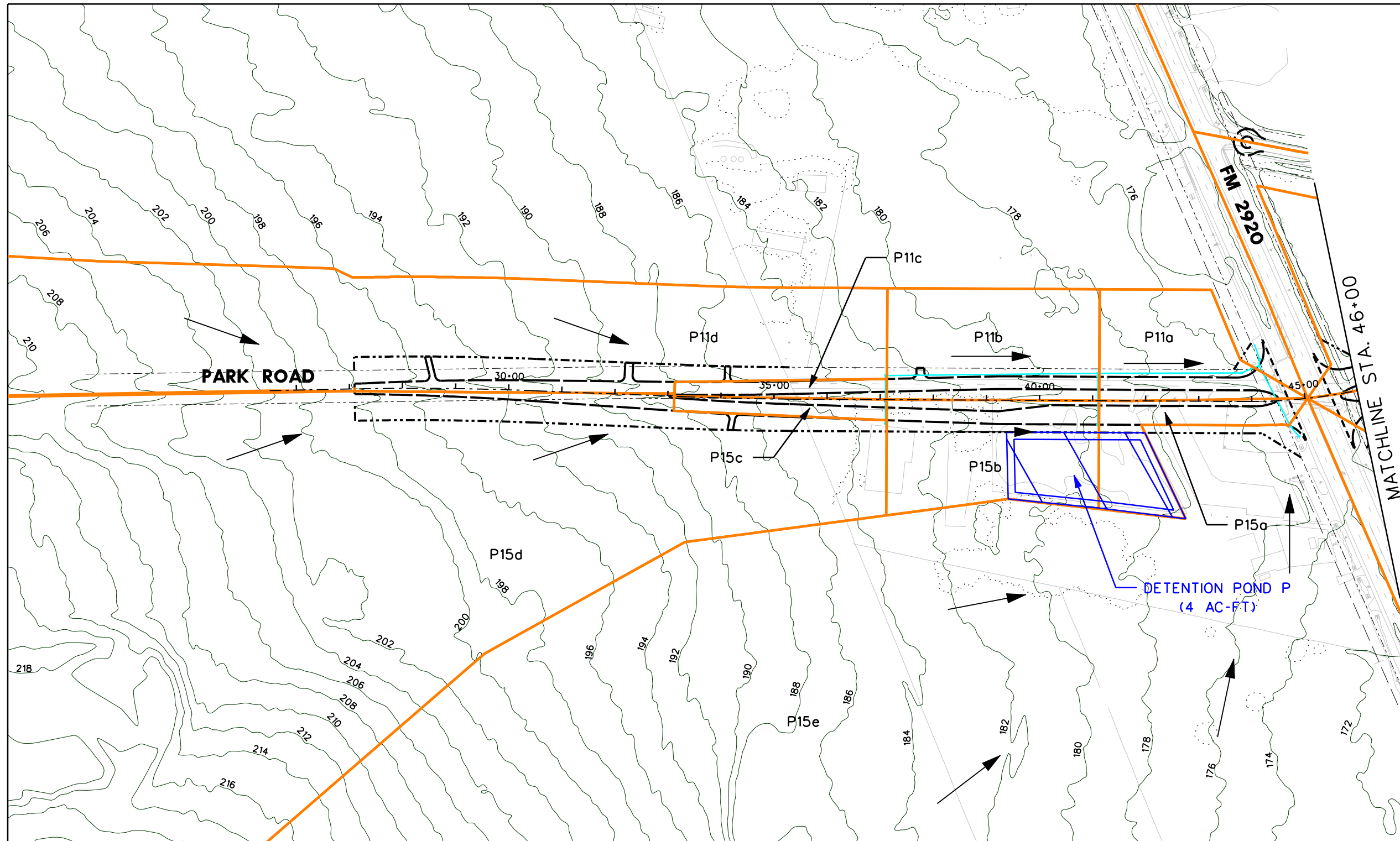


EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

Drain Area I.D.	Area (ac)				Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv	Grass					
P11a	1.30	0.22	0.00	1.08	16.9	0.30	10.00	4.96	1.94
P11b	1.93	0.22	0.00	1.71	11.4	0.27	10.00	4.96	2.57
P11c	0.30	0.23	0.00	0.07	76.6	0.66	10.00	4.96	0.99
P11d	13.28	2.17	0.00	11.11	16.4	0.30	35.17	2.84	11.23
P15a	0.87	0.32	0.00	0.54	37.4	0.42	10.00	4.96	1.83
P15b	1.83	0.37	0.00	1.46	20.4	0.32	10.00	4.96	2.93
P15c	0.30	0.21	0.00	0.09	68.8	0.61	10.00	4.96	0.92
P15d	59.40	5.56	0.00	53.84	9.4	0.26	56.88	2.12	32.18
P15e	242.64	13.80	30.52	198.32	12.6	0.28	114.09	1.31	87.47

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 Houston, Texas 77040
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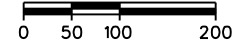
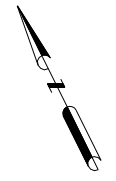


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PROPOSED DRAINAGE AREA MAP
 BEGIN TO STA. 46+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009
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LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

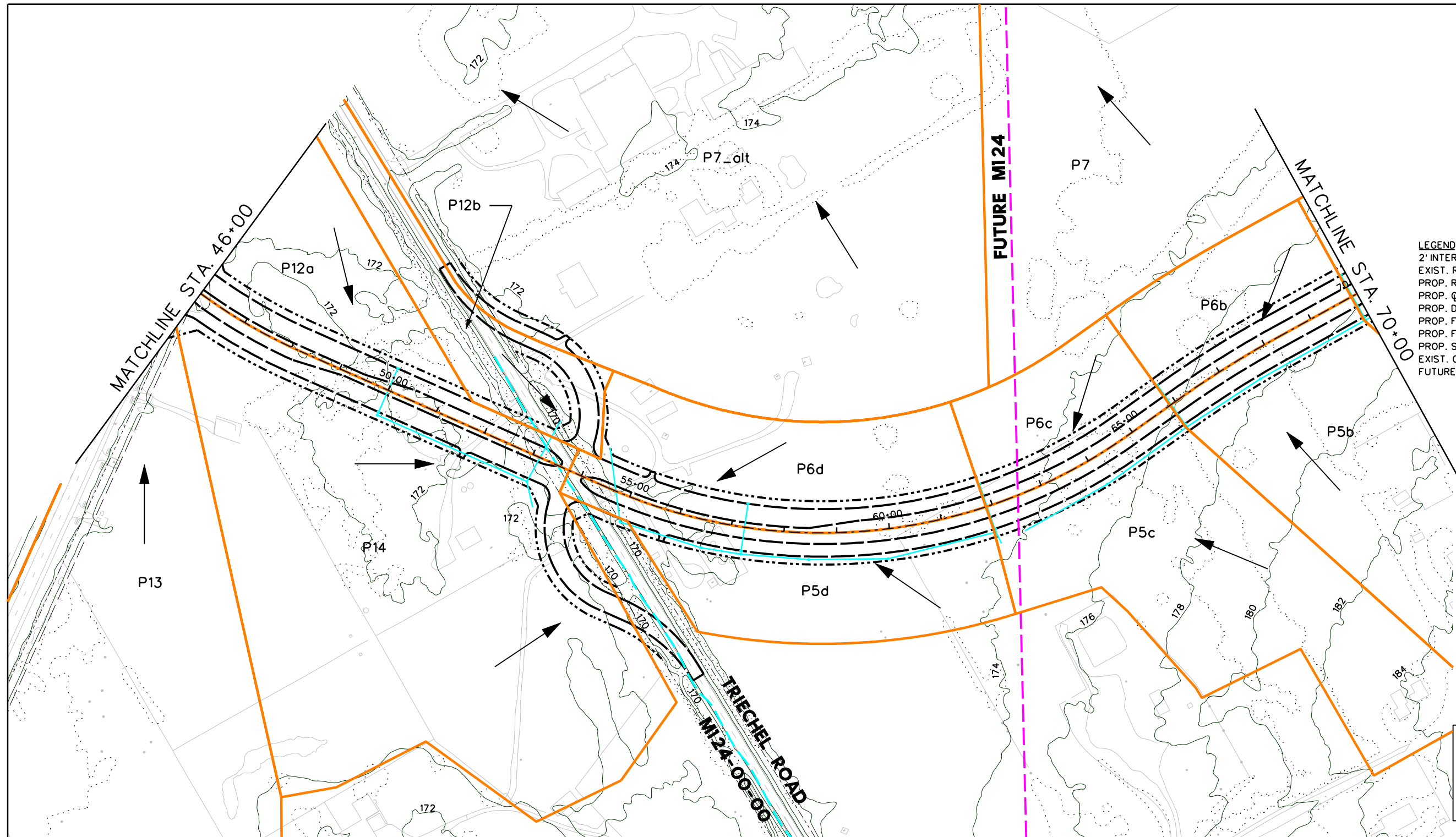


EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

2-YR PROPOSED DRAINAGE AREA CALCULATIONS

Drain Area I.D.	Area (ac)				Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv	Grass					
P5b	5.74	0.39	0.00	5.36	6.7	0.24	18.88	3.89	5.38
P5c	6.08	0.30	0.00	5.78	5.0	0.23	21.24	3.69	5.16
P5d	3.34	0.49	0.00	2.85	14.6	0.29	10.00	4.96	4.76
P6b	1.99	0.22	0.00	1.76	11.2	0.27	10.00	4.96	2.63
P6c	1.78	0.22	0.00	1.57	12.1	0.27	10.00	4.96	2.41
P6d	3.47	0.58	0.00	2.89	16.8	0.30	10.00	4.96	5.18
P7	78.69	9.74	0.00	68.95	12.4	0.27	68.57	1.87	40.35
P7_alt	37.08	6.32	0.00	30.76	17.1	0.30	40.56	2.61	29.26
P12a	3.52	0.62	0.00	2.90	17.5	0.31	11.48	4.74	5.09
P12b	3.01	0.92	0.00	2.09	30.7	0.38	12.72	4.57	5.29
P13	18.92	5.12	0.00	13.80	27.0	0.36	31.94	2.99	20.51
P14	12.49	1.48	0.00	11.01	11.9	0.27	19.81	3.81	12.90

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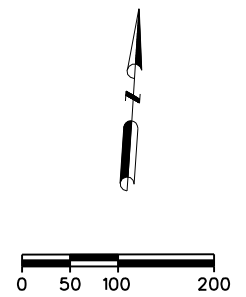
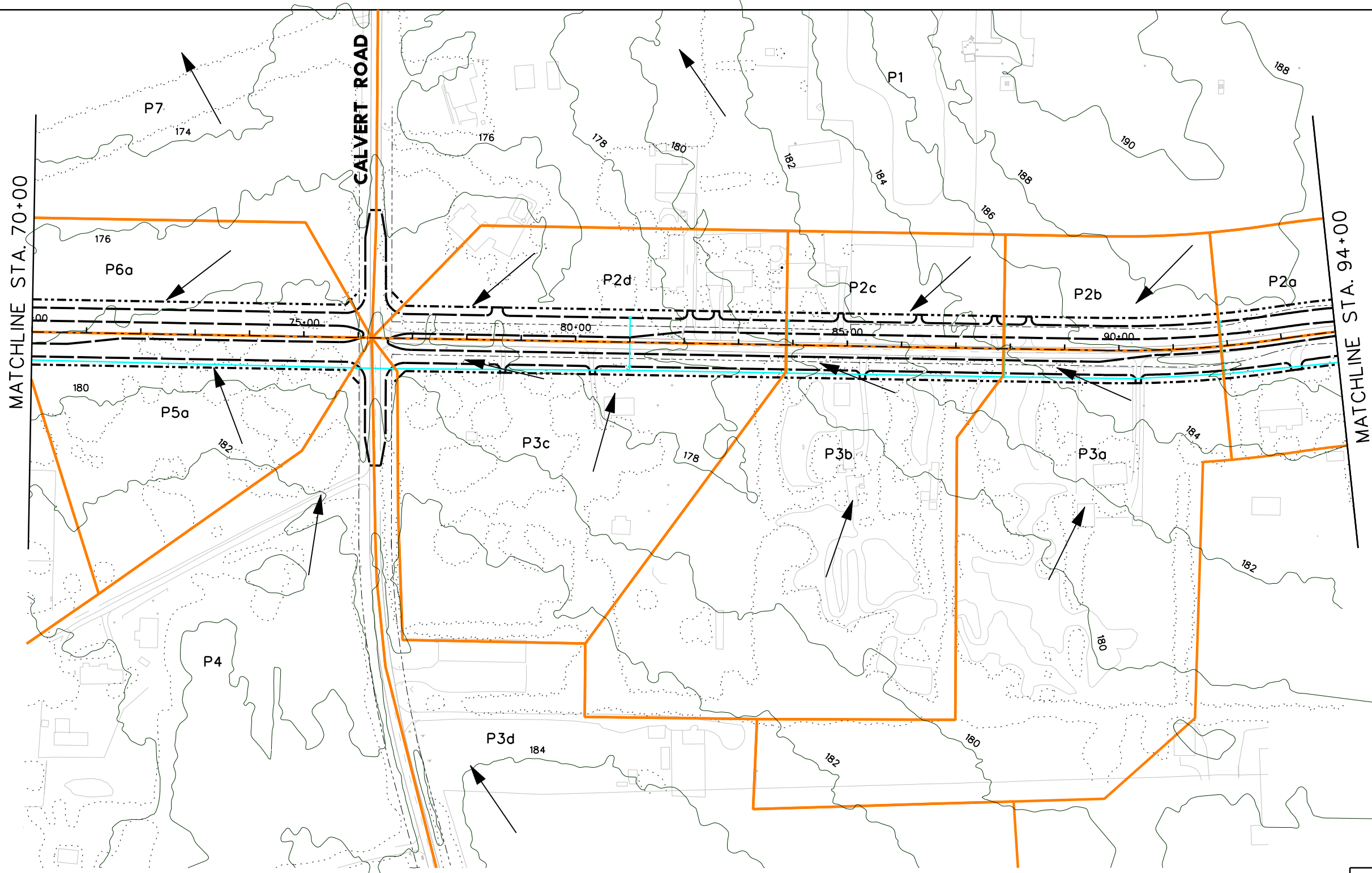
**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PROPOSED DRAINAGE AREA MAPS
 STA. 46+00 TO STA. 70+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009
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6/10/2009
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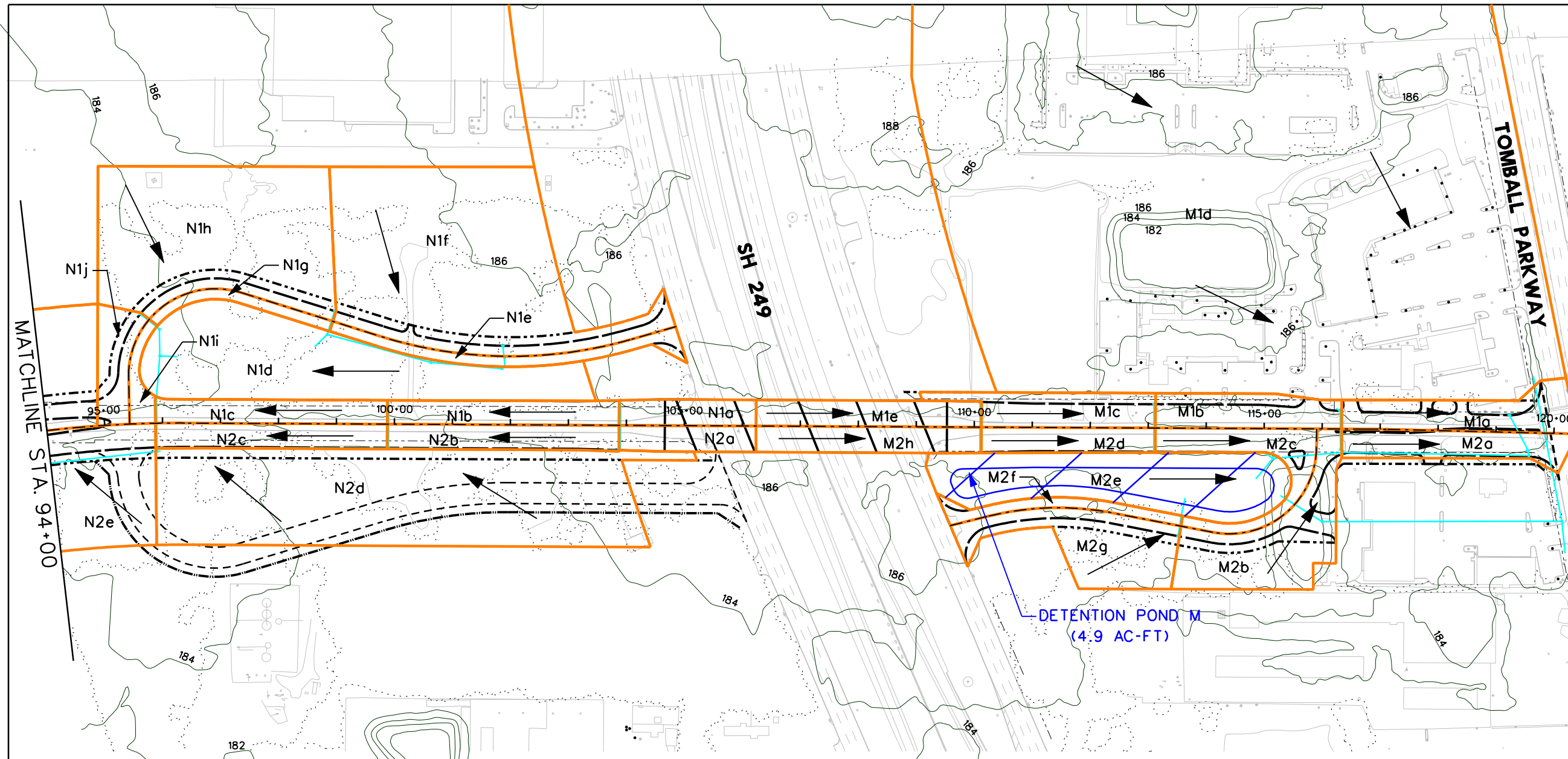
LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

 Texas Registration No. 274 13430 Northwest Freeway, Suite 1100 Houston, Texas 77040 713.462.3242 fax 713.462.3262 www.cobfen.com	
 CITY OF TOMBALL TOMBALL, TEXAS	
MEDICAL COMPLEX DRIVE RECONSTRUCTION/EXTENSION PROJECT NO. 2003-10017	
PROPOSED DRAINAGE AREA MAPS STA. 70+00 TO STA. 94+00	
SUBMITTED BY: MS SCALE: 1"=200' DATE: 6/10/2009 SURVEY BY: CFA F B NO:	DESIGNED BY: MS DRAWN BY: KMM SHEET No.: OF DWG. NO.:



LEGEND

- 2' INTERVAL CONTOUR
- EXIST. ROW
- PROP. ROW
- PROP. C CONST.
- PROP. DRAINAGE AREA BOUNDARY
- PROP. FLOW DIRECTION
- PROP. FACE OF CURB
- PROP. STORM SEWER

EXHIBIT 7

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

Drain Area I.D.	2-YR PROPOSED DRAINAGE AREA CALCULATIONS				Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv	Grass					
M1a	0.54	0.41	0.00	0.13	75.4	0.65	10.00	4.96	1.76
M1b	0.42	0.37	0.00	0.05	87.7	0.73	10.00	4.96	1.53
M1c	0.45	0.43	0.00	0.02	96.1	0.78	10.00	4.96	1.73
M1d	39.68	30.72	0.00	8.96	77.4	0.66	14.64	4.33	114.26
M1e	0.40	0.40	0.00	0.00	100.0	0.80	10.00	4.96	1.59
M2a	0.44	0.39	0.00	0.05	88.5	0.73	10.00	4.96	1.61
M2b	0.84	0.18	0.00	0.66	21.5	0.33	10.00	4.96	1.38
M2c	0.43	0.43	0.00	0.00	100.0	0.80	10.00	4.96	1.69
M2d	0.30	0.30	0.00	0.00	100.0	0.80	10.00	4.96	1.19
M2e	1.33	0.06	0.00	1.27	4.7	0.23	10.00	4.96	1.51
M2f	0.19	0.19	0.00	0.00	100.0	0.80	10.00	4.96	0.75
M2g	0.73	0.24	0.00	0.48	33.4	0.40	10.00	4.96	1.44
M2h	0.40	0.40	0.00	0.00	100.0	0.80	10.00	4.96	1.59
N1a	0.38	0.24	0.00	0.00	63.5	0.58	10.00	4.96	1.10
N1b	0.38	0.38	0.00	0.00	100.9	0.81	10.00	4.96	1.51
N1c	1.86	0.38	0.00	0.00	20.3	0.32	10.00	4.96	2.97
N1d	0.28	0.08	0.00	1.78	29.7	0.38	12.11	4.65	0.49
N1e	2.88	0.28	0.00	0.00	9.7	0.26	10.00	4.96	3.69
N1f	2.88	0.32	0.00	2.56	11.2	0.27	10.00	4.96	3.82
N1g	0.14	0.14	0.00	0.00	100.0	0.80	10.00	4.96	0.54
N1h	2.20	0.15	0.00	2.05	6.6	0.24	10.00	4.96	2.61
N1i	0.11	0.11	0.00	0.00	100.0	0.80	10.00	4.96	0.45
N1j	0.29	0.12	0.00	0.16	43.3	0.46	10.00	4.96	0.65
N2a	0.24	0.24	0.00	0.00	100.0	0.80	10.00	4.96	0.96
N2b	0.40	0.40	0.00	0.00	100.0	0.80	10.00	4.96	1.57
N2c	0.39	0.39	0.00	0.00	100.0	0.80	10.00	4.96	1.57
N2d	3.21	0.11	0.00	3.10	3.4	0.22	13.32	4.49	3.17
N2e	1.88	0.42	0.00	1.46	22.5	0.34	10.00	4.96	3.13

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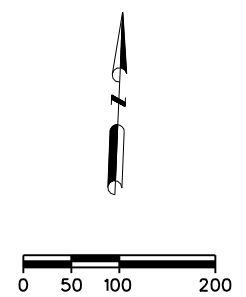
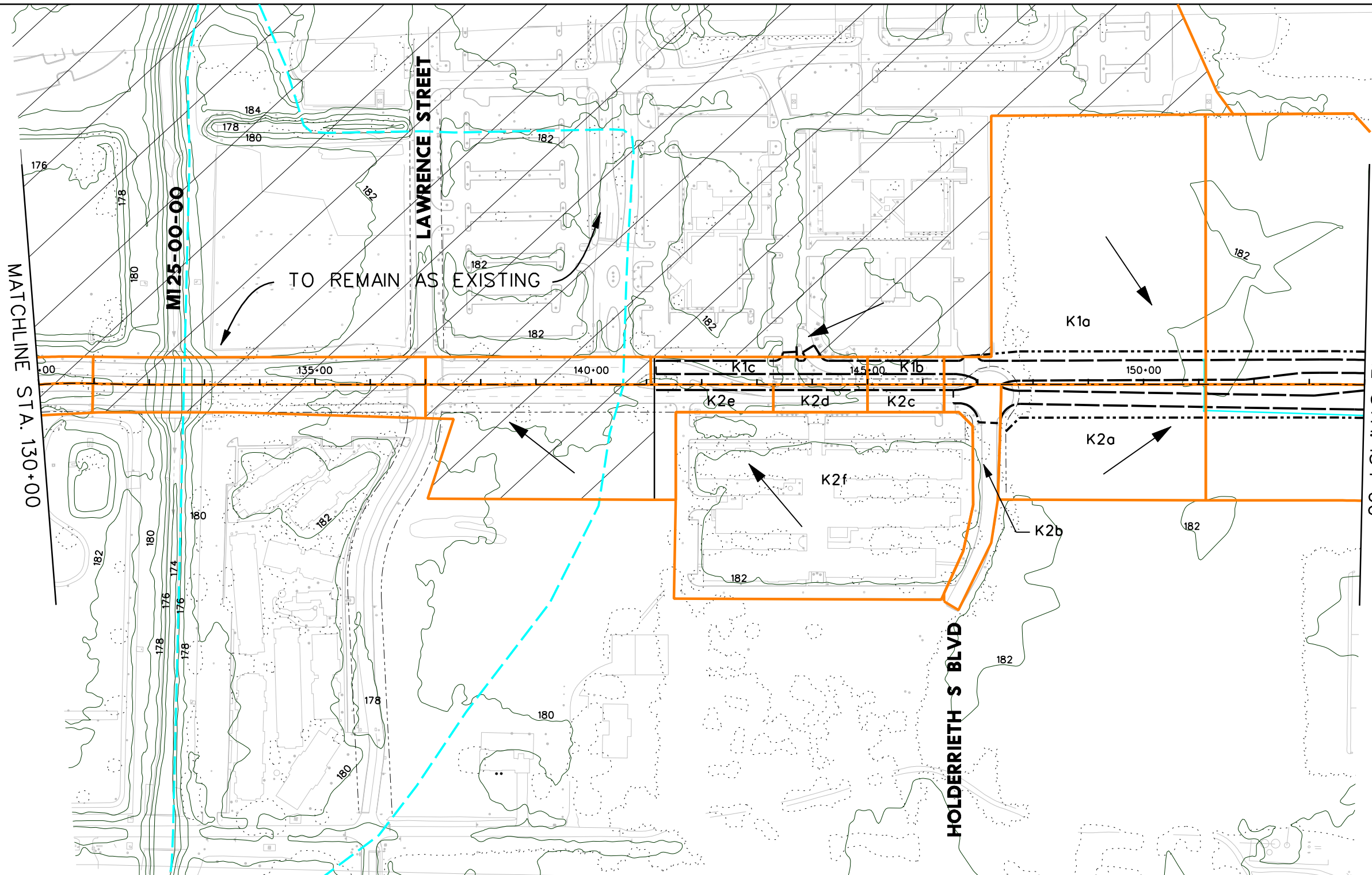
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PROPOSED DRAINAGE AREA MAPS
 STA. 94+00 TO STA. 120+40

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009
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- LEGEND**
- 2' INTERVAL CONTOUR
 - EXIST. ROW
 - PROP. ROW
 - PROP. C. CONST.
 - PROP. DRAINAGE AREA BOUNDARY
 - PROP. FLOW DIRECTION
 - PROP. FACE OF CURB
 - PROP. STORM SEWER
 - EXIST. CHANNEL
 - FUTURE CHANNEL
 - EXIST. DRAINAGE PATTERN TO REMAIN

EXHIBIT 7

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

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**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

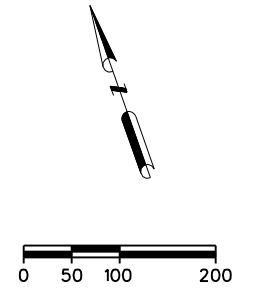
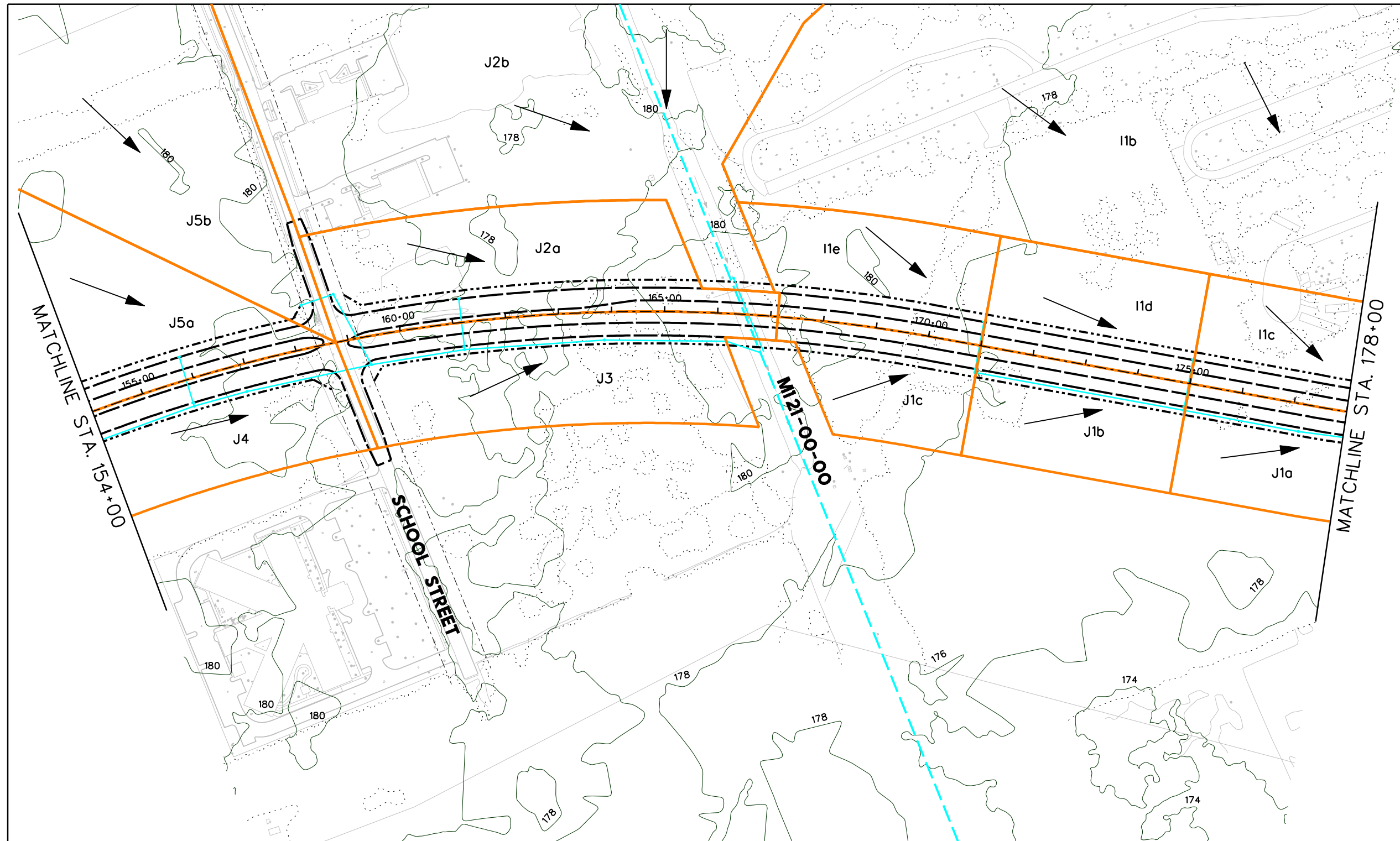
PROPOSED DRAINAGE AREA MAPS
 STA. 130+00 TO STA. 154+00

SUBMITTED BY: MS DESIGNED BY: MS
 SCALE: 1"=200' DRAWN BY: KMM
 DATE: 6/10/2009 SHEET No.: OF
 SURVEY BY: CFA DWG. NO.:
 F B NO.:

Drain Area I.D.	2-YR PROPOSED DRAINAGE AREA CALCULATIONS			Gross	Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv						
K1a	4.44	0.40	0.00	4.05	8.9	0.25	12.70	4.58	5.15
K1b	0.16	0.08	0.00	0.08	48.0	0.49	10.00	4.96	0.39
K1c	0.45	0.28	0.00	0.17	61.6	0.57	10.00	4.96	1.27
K2a	1.79	0.21	0.00	1.58	11.8	0.27	10.00	4.96	2.41
K2b	0.49	0.35	0.13	0.01	85.4	0.71	10.00	4.96	1.73
K2c	0.16	0.11	0.05	0.00	86.3	0.72	10.00	4.96	0.57
K2d	0.20	0.14	0.06	0.00	86.6	0.72	10.00	4.96	0.70
K2e	2.27	0.50	0.05	1.72	23.3	0.34	10.00	4.96	3.83
K2f	4.09	0.54	3.55	0.00	61.0	0.57	10.00	4.96	11.49

6/10/2009
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6/10/2009
 d:\cfa\2008\12008.med_complex\storm\DMAP07.dgn



LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

2-YR PROPOSED DRAINAGE AREA CALCULATIONS

Drain Area I.D.	Area (ac)				Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv	Grass					
I1b	187.20	31.72	88.89	66.60	43.1	0.46	93.18	1.51	129.79
I1c	1.88	0.22	0.60	1.05	29.4	0.38	10.00	4.96	3.50
I1d	1.93	0.22	0.00	1.71	11.4	0.27	10.00	4.96	2.57
I1e	2.11	0.35	0.00	1.75	16.7	0.30	10.00	4.96	3.14
J1a	1.97	0.22	0.00	1.75	11.2	0.27	10.00	4.96	2.62
J1b	1.93	0.22	0.00	1.71	11.4	0.27	10.00	4.96	2.57
J1c	1.52	0.21	0.00	1.31	13.9	0.28	10.00	4.96	2.13
J2a	3.53	0.70	0.00	2.84	19.7	0.32	10.00	4.96	5.59
J2b	88.17	34.22	0.00	53.95	38.8	0.43	49.87	2.30	87.80
J3	3.58	0.55	0.00	3.03	15.3	0.29	10.00	4.96	5.18
J4	3.69	0.64	0.00	3.04	17.5	0.30	10.00	4.96	5.58
J5a	5.71	0.44	0.00	5.27	7.8	0.25	13.22	4.51	6.35
J5b	18.96	2.42	0.00	16.54	12.8	0.28	47.07	2.38	12.50

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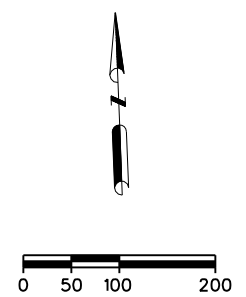
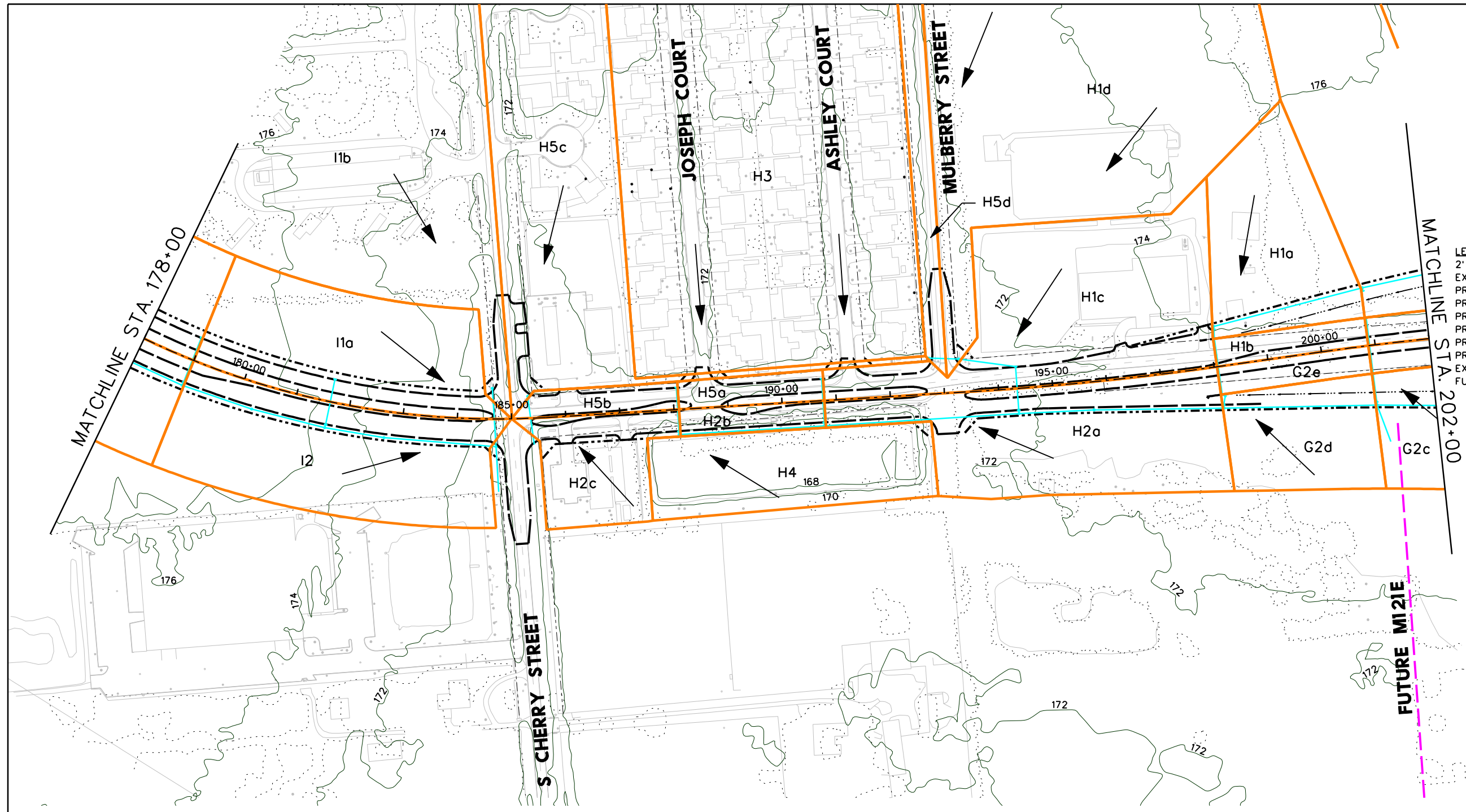


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PROPOSED DRAINAGE AREA MAPS
 STA. 154+00 TO STA. 178+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009
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LEGEND

- 2' INTERVAL CONTOUR
- EXIST. ROW
- PROP. ROW
- PROP. C. CONST.
- PROP. DRAINAGE AREA BOUNDARY
- PROP. FLOW DIRECTION
- PROP. FACE OF CURB
- PROP. STORM SEWER
- EXIST. CHANNEL
- FUTURE CHANNEL

EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

2-YR PROPOSED DRAINAGE AREA CALCULATIONS

Drain Area I.D.	Area (ac)				Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv	Grass					
G2c	1.56	0.08	0.00	1.48	5.2	0.23	10.00	4.96	1.79
G2d	1.26	0.08	0.00	1.19	6.2	0.24	10.00	4.96	1.49
G2e	0.34	0.23	0.00	0.10	69.2	0.62	10.00	4.96	1.03
H1a	1.91	0.11	0.00	1.80	5.6	0.23	10.25	4.92	2.20
H1b	0.34	0.24	0.00	0.09	72.2	0.63	10.00	4.96	1.06
H1c	3.41	2.54	0.00	0.87	74.6	0.65	10.00	4.96	10.96
H1d	9.38	0.29	0.00	9.09	3.1	0.22	21.80	3.64	7.47
H2a	2.80	0.69	0.00	2.11	24.6	0.35	10.00	4.96	4.83
H2b	0.31	0.21	0.00	0.10	67.3	0.60	10.00	4.96	0.93
H2c	1.02	0.94	0.00	0.08	92.1	0.75	10.00	4.96	3.82
H3	10.53	0.00	10.18	0.35	53.2	0.52	10.00	4.96	27.13
H4	1.76	0.00	0.00	1.76	0.0	0.20	10.00	4.96	1.74
H5a	0.33	0.19	0.00	0.14	57.1	0.54	10.00	4.96	0.90
H5b	0.33	0.24	0.00	0.09	71.6	0.63	10.00	4.96	1.03
H5c	60.25	13.65	25.99	20.60	46.4	0.48	65.76	1.92	55.42
H5d	64.76	10.44	3.88	50.43	19.4	0.32	79.06	1.70	34.79
I1a	2.41	0.32	0.00	2.09	13.3	0.28	10.00	4.96	3.35
I1b	187.20	31.72	88.89	66.60	43.1	0.46	93.18	1.51	129.79
I2	2.86	0.48	0.00	2.38	16.6	0.30	10.00	4.96	4.26

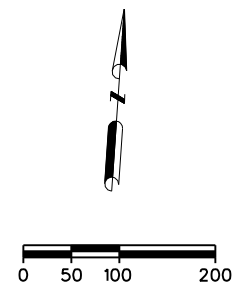
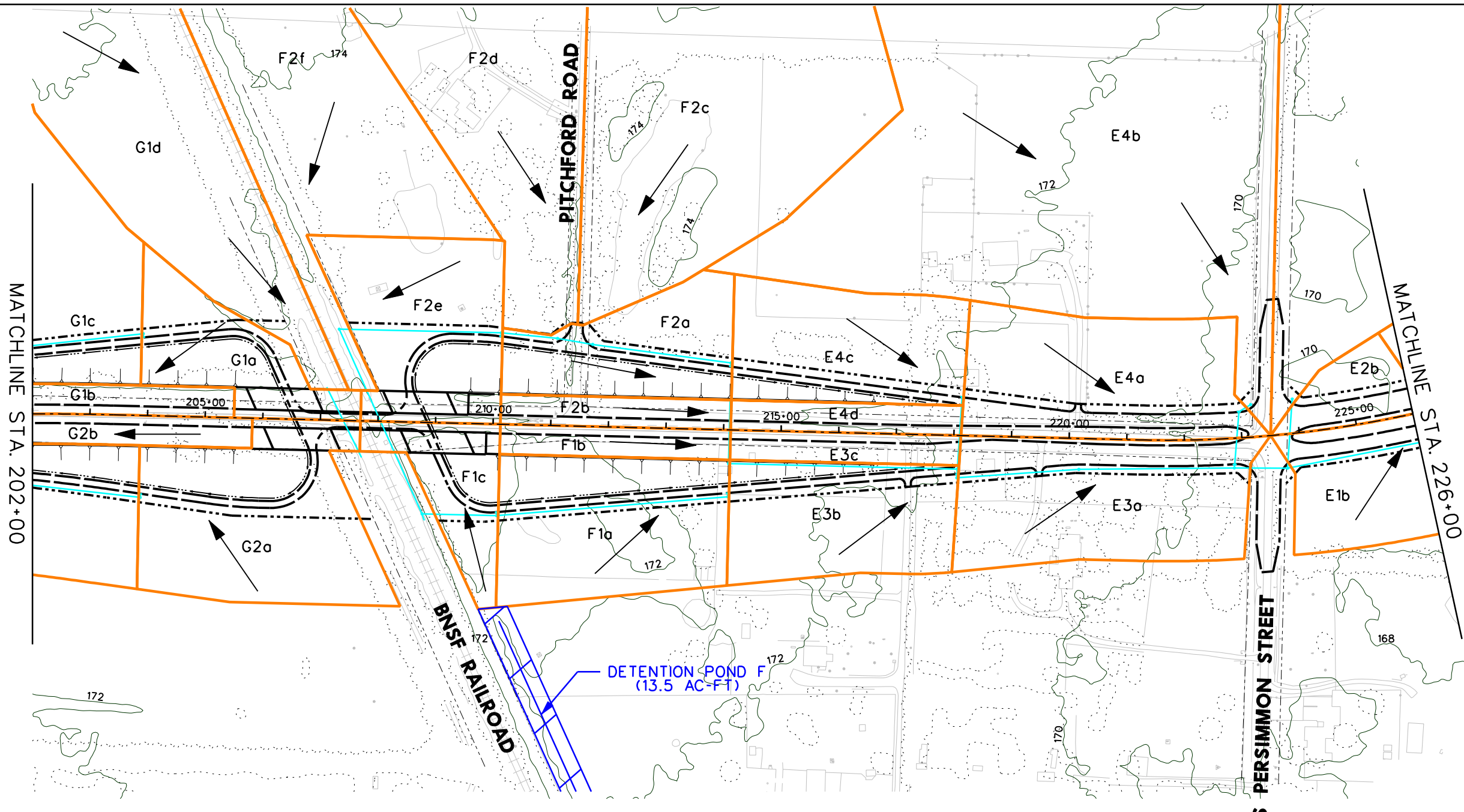
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CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PROPOSED DRAINAGE AREA MAPS
 STA. 178+00 TO STA. 202+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			



LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

2-YR PROPOSED DRAINAGE AREA CALCULATIONS

Drain Area I.D.	Area (ac)				Imprv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv	Gross					
E1b	1.22	0.16	0.00	1.06	12.9	0.28	10.00	4.96	1.68
E2b	0.56	0.21	0.00	0.35	37.1	0.42	10.00	4.96	1.17
E3a	2.53	0.72	0.00	1.81	28.4	0.37	10.00	4.96	4.64
E3b	1.79	0.16	0.00	1.63	8.7	0.25	10.00	4.96	2.24
E3c	0.48	0.33	0.00	0.14	70.3	0.62	10.00	4.96	1.47
E4a	2.38	0.38	0.00	1.99	16.0	0.30	10.00	4.96	3.49
E4b	56.80	7.64	0.00	49.16	13.5	0.28	81.30	1.66	26.54
E4c	1.84	0.11	0.00	1.73	6.0	0.24	10.00	4.96	2.16
E4d	0.48	0.33	0.00	0.15	69.5	0.62	10.00	4.96	1.47
F1a	2.22	0.11	0.00	2.11	5.0	0.23	10.00	4.96	2.54
F1b	0.48	0.34	0.00	0.14	70.6	0.62	10.00	4.96	1.48
F1c	0.89	0.29	0.00	0.60	33.0	0.40	10.00	4.96	1.75
F2a	1.45	0.14	0.00	1.31	10.0	0.26	10.00	4.96	1.87
F2b	0.48	0.34	0.00	0.14	70.5	0.62	10.00	4.96	1.48
F2c	11.29	0.98	0.00	10.31	8.7	0.25	25.28	3.39	9.65
F2d	55.23	6.80	0.00	48.43	12.3	0.27	48.91	2.33	35.22
F2e	2.01	0.31	0.00	1.69	15.6	0.29	10.00	4.96	2.92
F2f	94.15	26.29	0.00	67.86	27.9	0.37	77.32	1.72	59.62
G1a	1.21	0.32	0.00	0.89	26.2	0.36	10.00	4.96	2.15
G1b	0.55	0.39	0.00	0.17	69.7	0.62	10.00	4.96	1.70
G1c	5.57	0.09	0.00	5.48	1.6	0.21	22.18	3.61	4.22
G1d	6.75	0.75	0.00	5.99	11.2	0.27	24.21	3.46	6.24
G2a	2.61	0.31	0.00	2.30	11.7	0.27	10.00	4.96	3.50
G2b	0.59	0.41	0.00	0.18	69.7	0.62	10.00	4.96	1.81

DETENTION POND F
 (13.5 AC-FT)

6/10/2009
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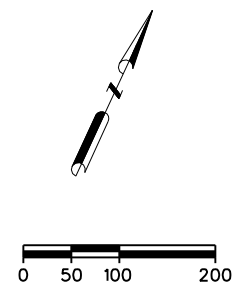
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**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PROPOSED DRAINAGE AREA MAPS
 STA. 202+00 TO STA. 226+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			



LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

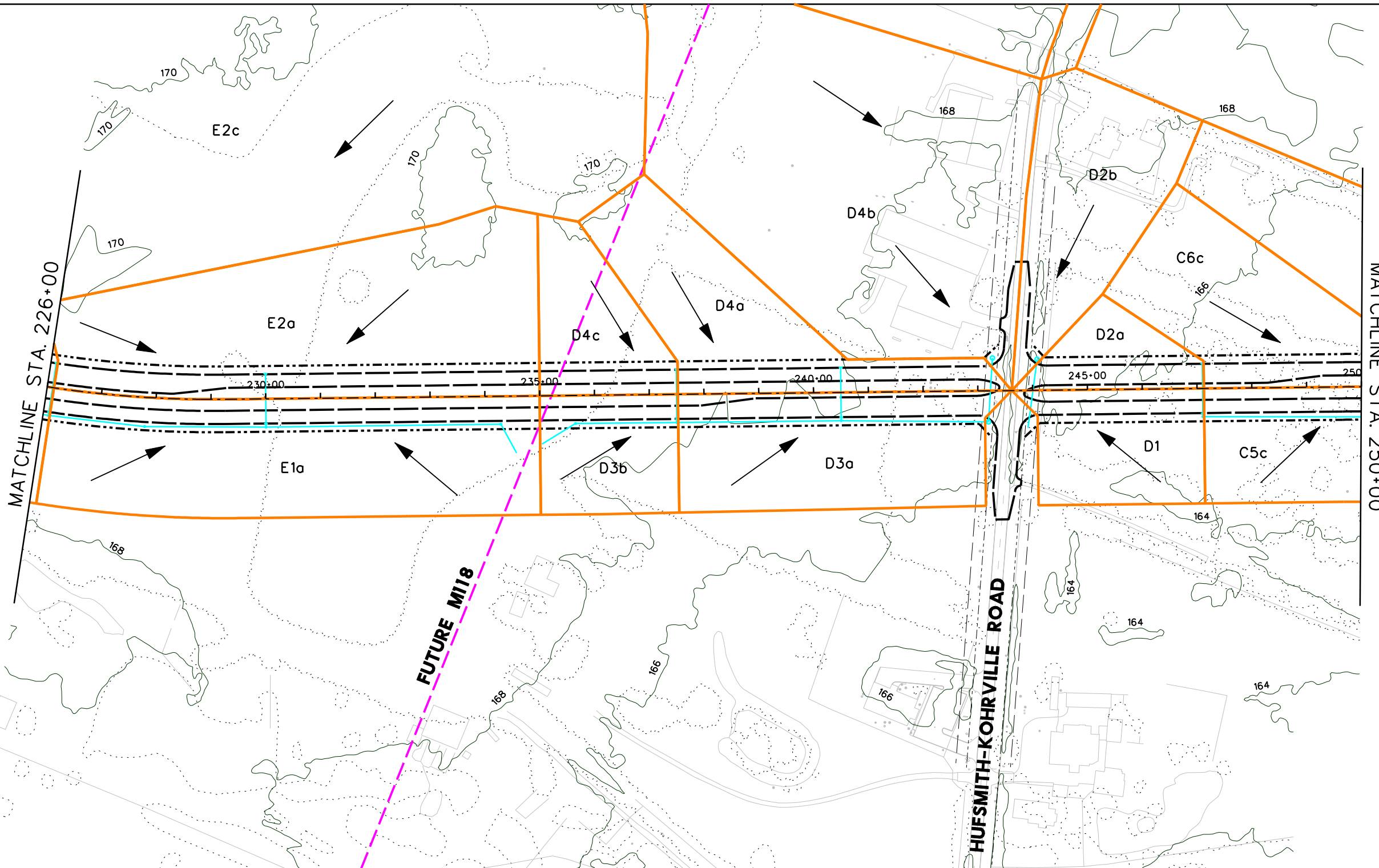


EXHIBIT 7

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

2-YR PROPOSED DRAINAGE AREA CALCULATIONS

Drain Area I.D.	Area (ac)			Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv					
C5c	1.89	0.22	0.00	1.68	11.6	0.27	10.00	4.96
C6c	2.56	0.27	0.00	2.29	10.5	0.26	12.96	4.54
D1	1.49	0.19	0.00	1.31	12.4	0.27	10.00	4.96
D2a	0.81	0.28	0.00	0.53	34.3	0.41	10.00	4.96
D2b	2.44	0.34	0.00	2.10	13.9	0.28	12.22	4.64
D3a	2.77	0.46	0.00	2.31	16.7	0.30	10.00	4.96
D3b	1.26	0.14	0.00	1.12	11.1	0.27	10.00	4.96
D4a	2.55	0.33	0.00	2.22	13.0	0.28	10.00	4.96
D4b	8.59	1.68	0.00	6.91	19.6	0.32	23.23	3.53
D4c	1.32	0.14	0.00	1.18	10.5	0.26	10.00	4.96
E1a	4.50	0.49	0.00	4.01	10.9	0.27	10.00	4.96
E2a	5.36	0.56	0.00	4.80	10.4	0.26	10.00	4.96
E2c	19.24	0.48	0.00	18.76	2.5	0.21	35.42	2.82

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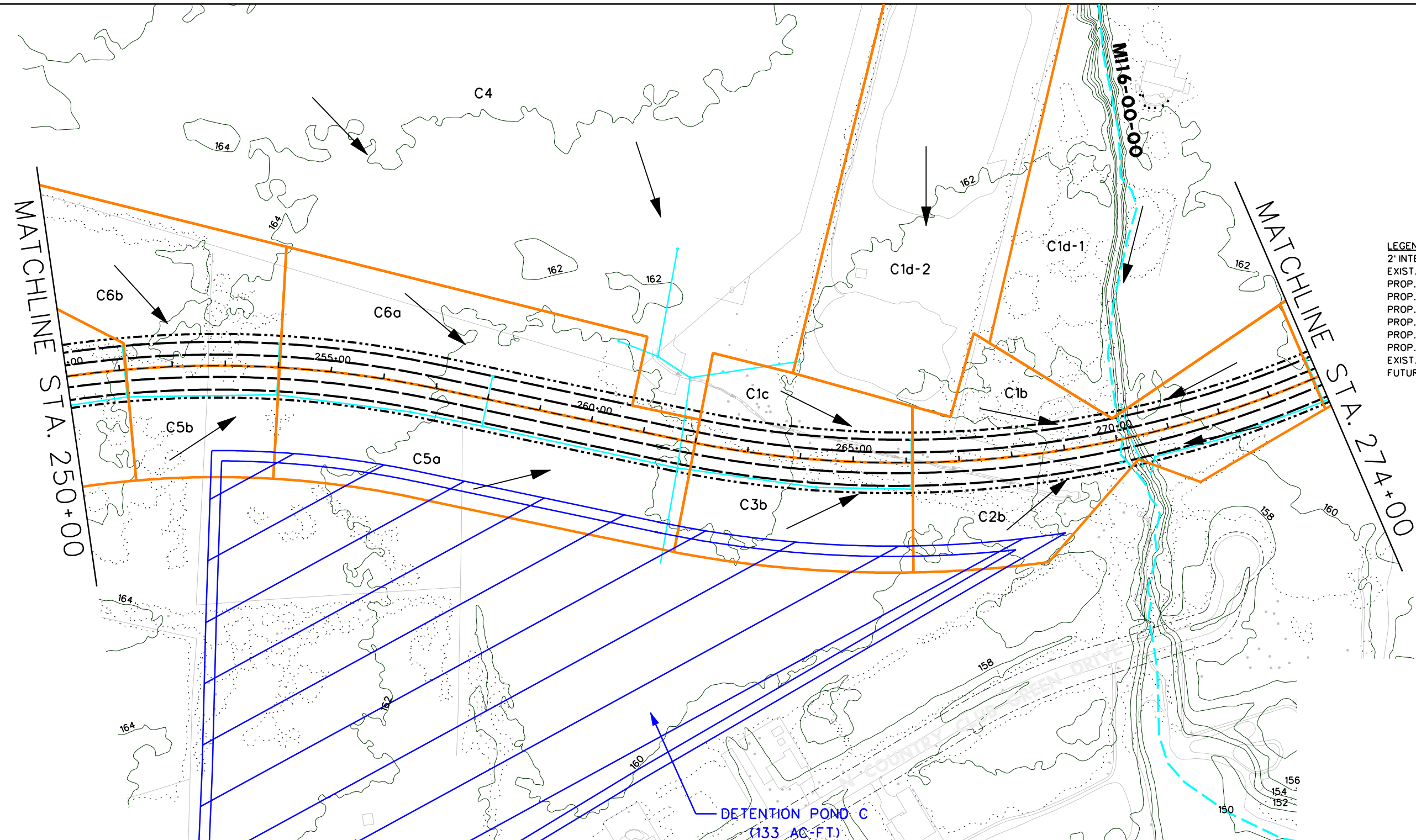
**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PROPOSED DRAINAGE AREA MAPS
 STA. 226+00 TO STA. 250+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009
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6/10/2009
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LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

DETENTION POND C
 (133 AC-FT.)

2-YR PROPOSED DRAINAGE AREA CALCULATIONS

Drain Area I.D.	Area (ac)			Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv					
C1b	2.09	0.42	0.00	1.67	20.1	0.32	10.00	3.33
C1c	1.35	0.22	0.00	1.13	16.6	0.30	10.00	2.01
C1d-1	16.80	0.98	0.00	15.82	5.8	0.23	30.88	3.05
C1d-2	195.14	54.82	0.00	140.32	28.1	0.37	90.52	1.54
C2b	2.38	0.43	0.00	1.95	18.2	0.31	10.00	3.66
C3b	2.07	0.23	0.00	1.84	11.1	0.27	10.00	2.74
C4	76.40	0.15	76.02	0.24	54.9	0.53	28.26	3.20
C5a	3.77	0.44	0.00	3.34	11.6	0.27	10.00	4.96
C5b	1.32	0.16	0.00	1.17	11.9	0.27	10.00	4.96
C6a	3.18	0.48	0.00	2.70	15.1	0.29	10.00	4.96
C6b	3.99	0.18	0.00	3.80	4.6	0.23	18.44	3.94

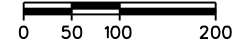
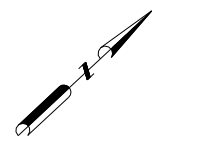
CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
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**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PROPOSED DRAINAGE AREA MAPS
 STA. 250+00 TO STA. 274+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			



LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

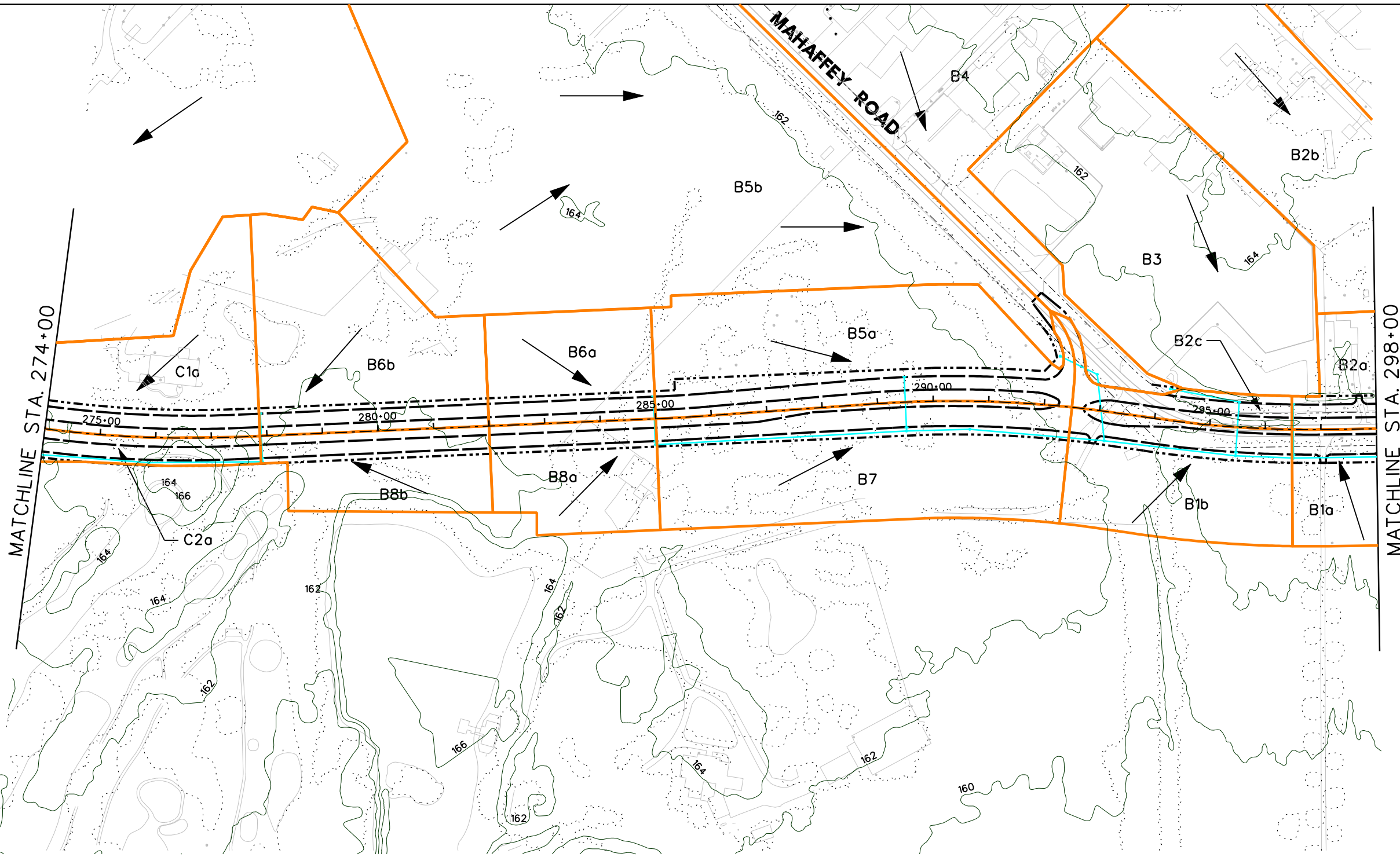


EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

Drain Area I.D.	2-YR PROPOSED DRAINAGE AREA CALCULATIONS				Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv	Grass					
B1a	1.54	0.31	0.00	1.23	20.1	0.32	10.00	4.96	2.44
B1b	1.98	0.35	0.00	1.63	17.7	0.31	10.00	4.96	3.01
B2a	1.07	0.41	0.00	0.66	38.1	0.43	10.00	4.96	2.29
B2b	4.31	0.63	0.00	3.68	14.7	0.29	16.13	4.17	5.18
B2c	0.54	0.29	0.00	0.25	54.5	0.53	10.00	4.96	1.41
B3	5.22	3.72	0.00	1.50	71.3	0.63	10.00	4.96	16.26
B4	12.00	5.16	0.00	6.85	43.0	0.46	24.50	3.44	18.92
B5a	3.39	0.49	0.00	2.90	14.4	0.29	10.00	4.96	4.81
B5b	17.05	0.65	0.00	16.40	3.8	0.22	30.26	3.08	11.71
B6a	1.38	0.17	0.00	1.21	12.0	0.27	10.00	4.96	1.86
B6b	2.98	0.29	0.00	2.69	9.9	0.26	10.00	4.96	3.84
B7	3.49	0.80	0.00	2.69	22.8	0.34	10.00	4.96	5.83
B8a	1.30	0.32	0.00	0.98	24.4	0.35	10.00	4.96	2.24
B8b	1.28	0.23	0.00	1.06	17.7	0.31	10.00	4.96	1.95
C1a	2.08	0.52	0.00	1.56	25.0	0.35	10.71	4.85	3.54
C2a	0.48	0.22	0.00	0.26	45.3	0.47	10.00	4.96	1.12

6/10/2009 d:\cfa\2008\12008.med_complex\storm\DMAP12.dgn

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 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

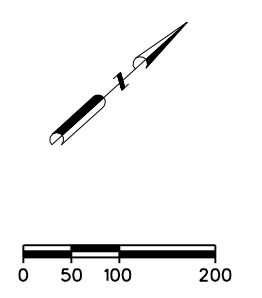
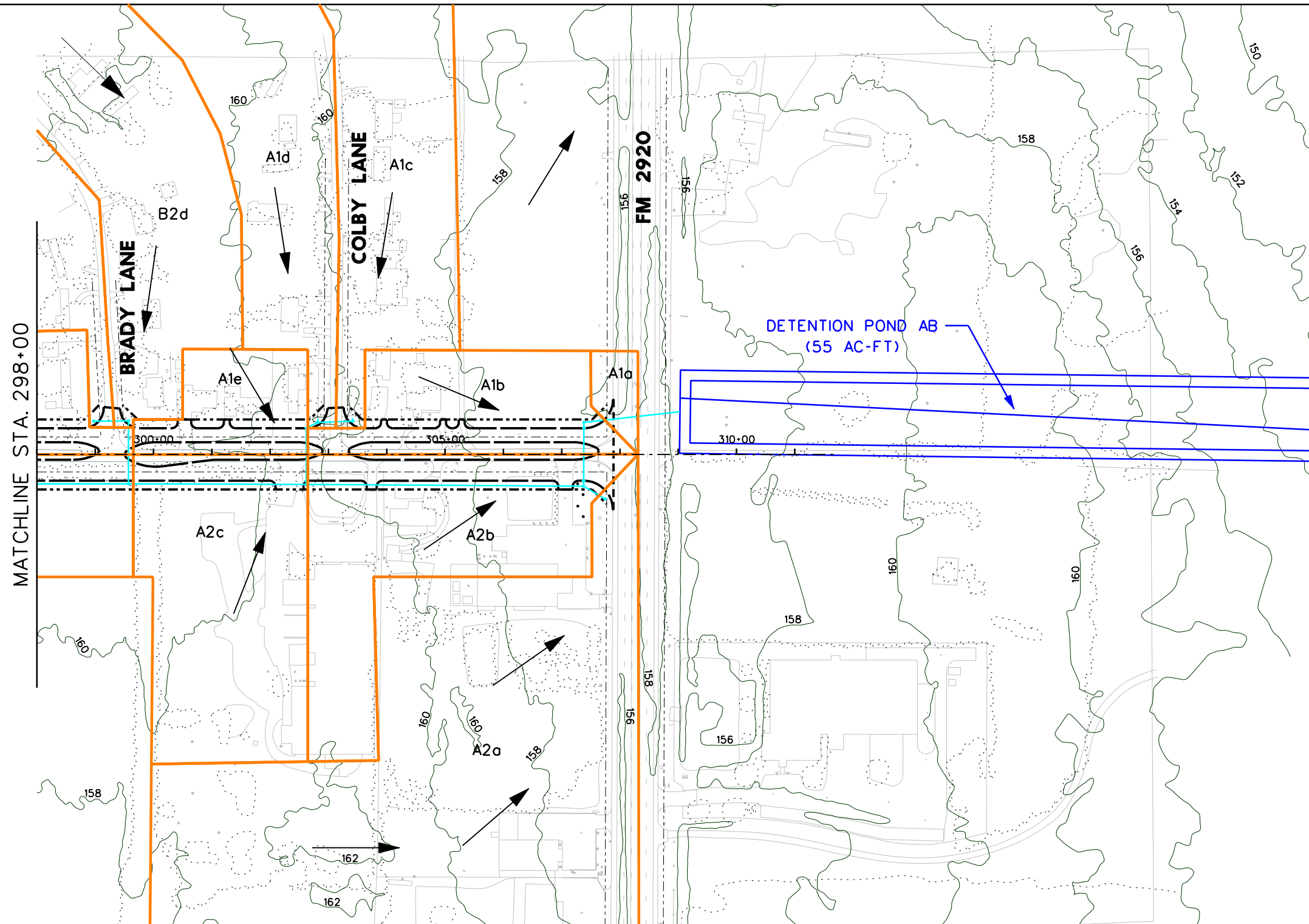
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

PROPOSED DRAINAGE AREA MAPS
 STA. 274+00 TO STA. 298+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009
 d:\cfa\2008\12008.med_complex\storm\DMAP13.dgn



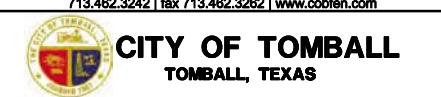
LEGEND

2' INTERVAL CONTOUR	
EXIST. ROW	
PROP. ROW	
PROP. C. CONST.	
PROP. DRAINAGE AREA BOUNDARY	
PROP. FLOW DIRECTION	
PROP. FACE OF CURB	
PROP. STORM SEWER	
EXIST. CHANNEL	
FUTURE CHANNEL	

EXHIBIT 7

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

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**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

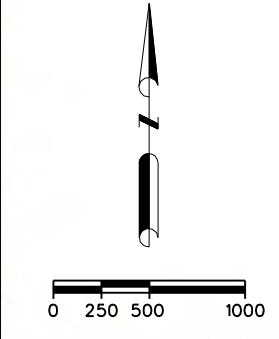
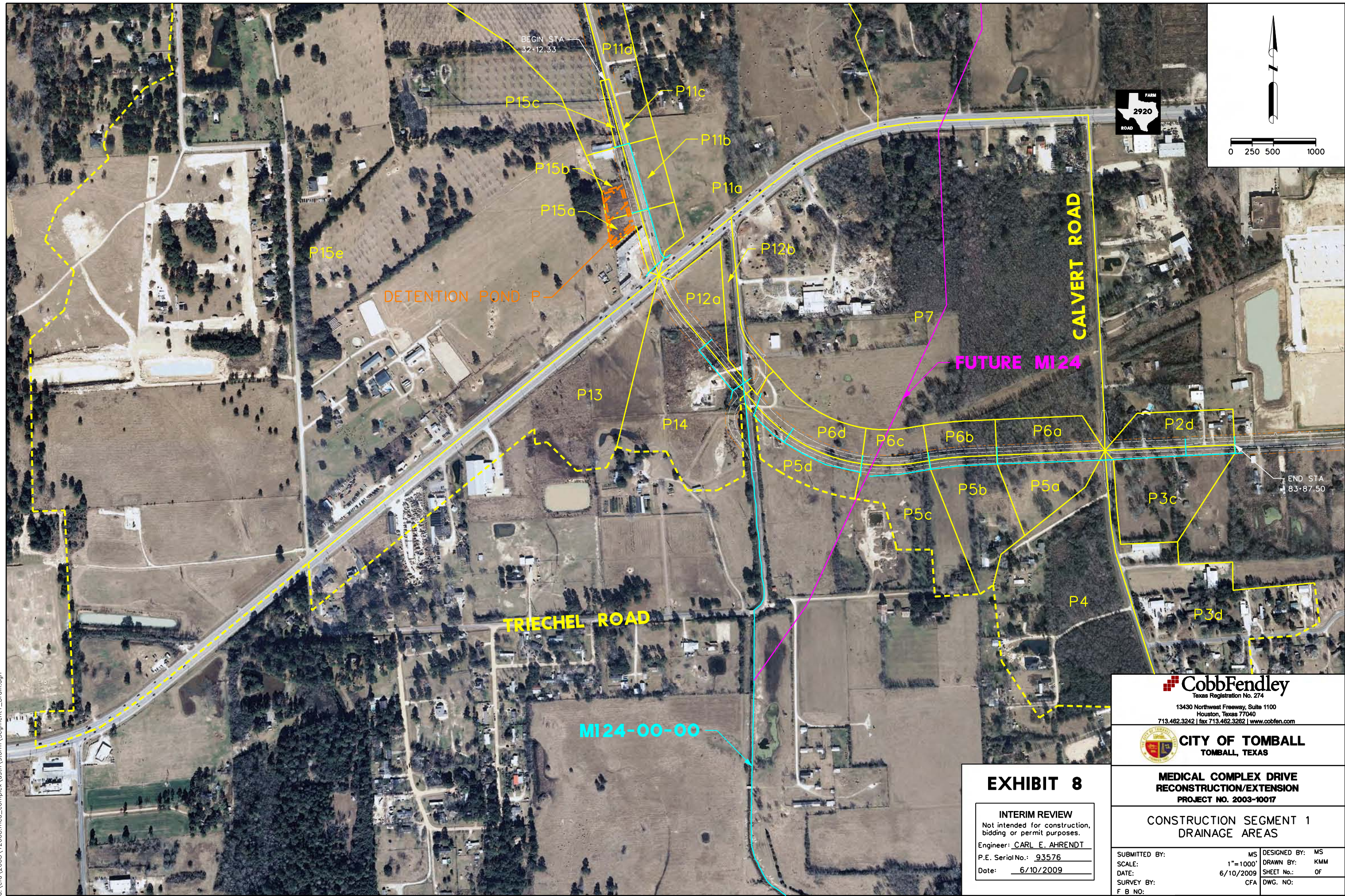
PROPOSED DRAINAGE AREA MAPS
 STA. 298+00 TO END

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=200'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

2-YR PROPOSED DRAINAGE AREA CALCULATIONS

Drain Area I.D.	Area (ac)			Imperv. (%)	Run-off Coeff.	TC (min)	i 2-yr (in/hr)	Q 2-yr (cfs)
	Total	Imprv	Subdv					
A1a	0.25	0.16	0.00	0.09	0.58	10.00	4.96	0.72
A1b	1.76	0.49	0.00	1.28	27.7	10.00	4.96	3.21
A1c	6.94	1.35	0.00	5.60	19.4	0.32	19.84	3.81
A1d	6.16	1.64	0.00	4.52	26.7	0.36	19.91	3.80
A1e	1.00	0.36	0.00	0.64	36.1	0.42	10.00	4.96
A2a	9.85	2.62	0.00	7.23	26.6	0.36	20.25	3.77
A2b	3.28	2.28	0.00	1.00	69.5	0.62	10.00	4.96
A2c	3.40	1.11	0.00	2.28	32.8	0.40	13.09	4.52
B2d	5.85	1.20	0.00	4.64	20.6	0.32	16.32	4.15

6/10/2009
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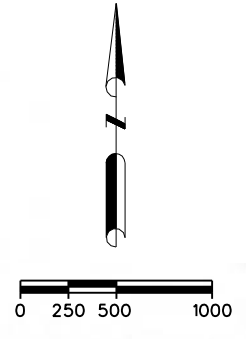
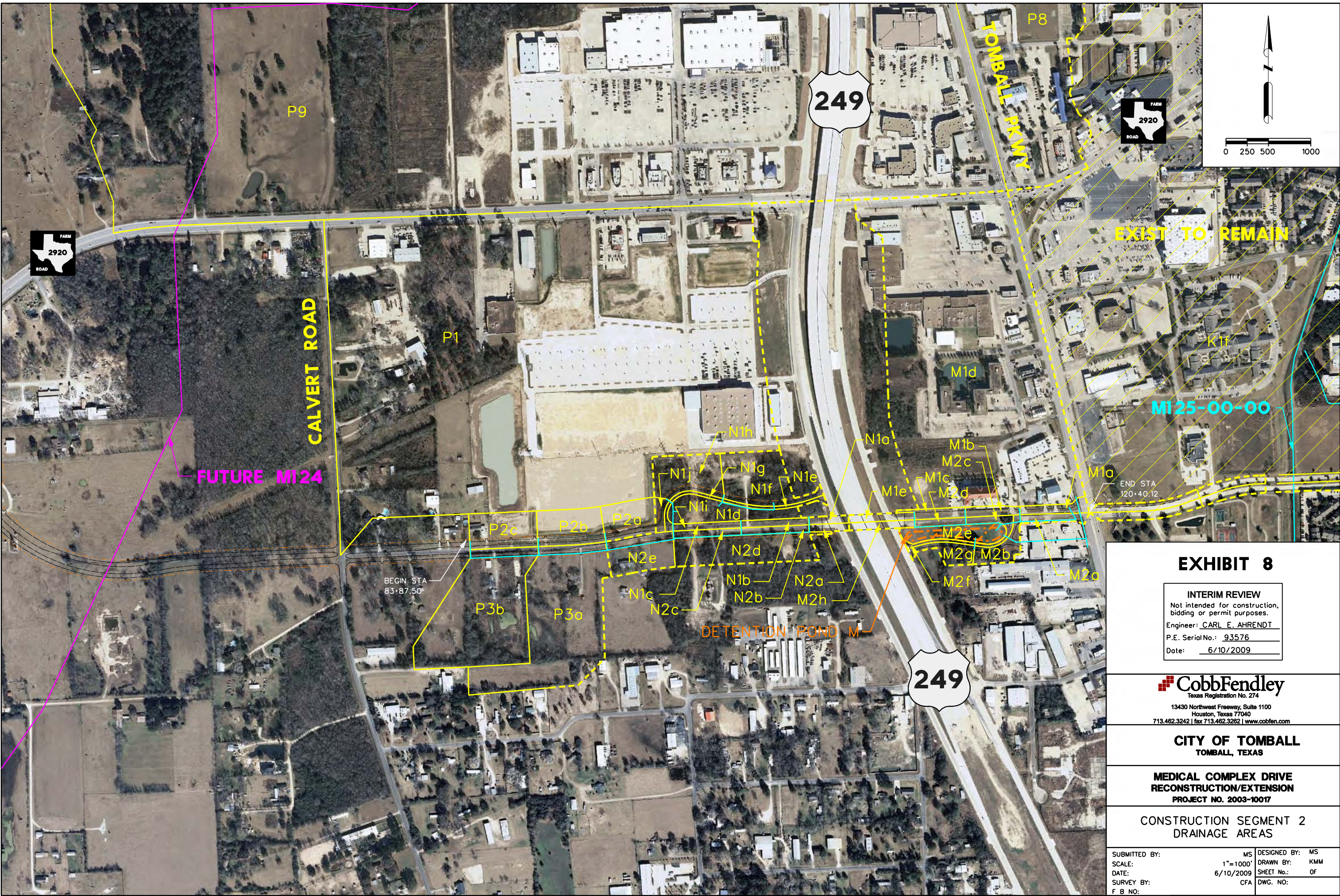


**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 1
DRAINAGE AREAS**

EXHIBIT 8
INTERIM REVIEW
Not intended for construction,
bidding or permit purposes.
Engineer: CARL E. AHRENDT
P.E. Serial No.: 93576
Date: 6/10/2009

SUBMITTED BY: MS
SCALE: 1"=1000'
DATE: 6/10/2009
SURVEY BY: CFA
F B NO:
DESIGNED BY: MS
DRAWN BY: KMM
SHEET No.: OF
DWG. NO.:



EXIST TO REMAIN

MI25-00-00

END STA
120+40.12

BEGIN STA
83+87.50

DETENTION POND M

EXHIBIT 8

INTERIM REVIEW
Not intended for construction, bidding or permit purposes.

Engineer: CARL E. AHRENDT
P.E. Serial No.: 93576
Date: 6/10/2009

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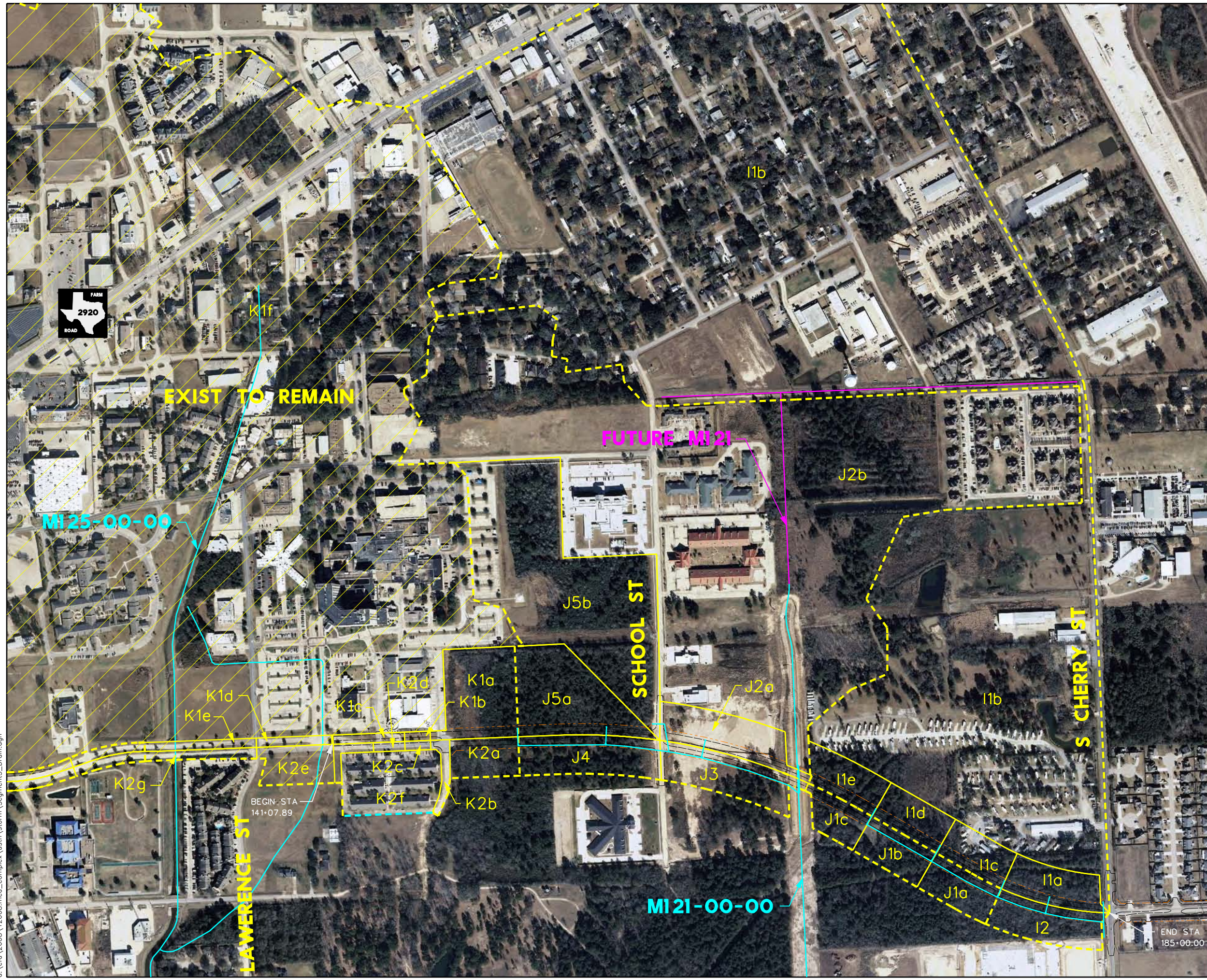
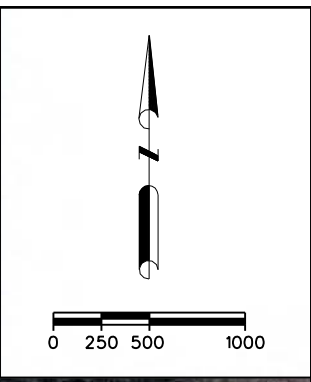
CITY OF TOMBALL
TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 2
DRAINAGE AREAS**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=1000'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009
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INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

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 **CITY OF TOMBALL**
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 3
 DRAINAGE AREAS**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=1000'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CF	DWG. NO.:	
F B NO.:			

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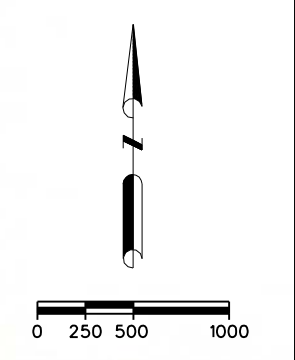
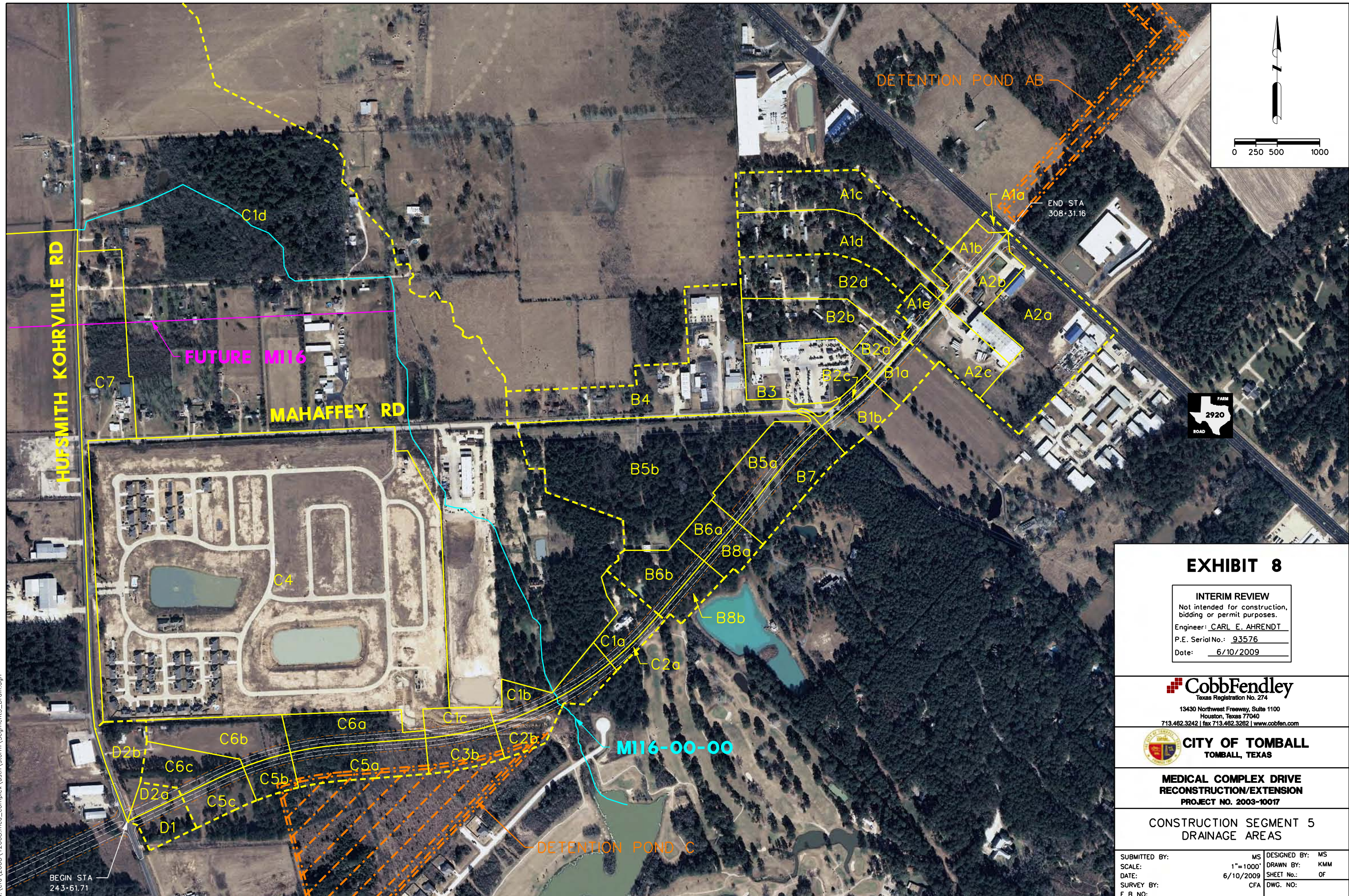


EXHIBIT 8

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: CARL E. AHRENDT
 P.E. Serial No.: 93576
 Date: 6/10/2009

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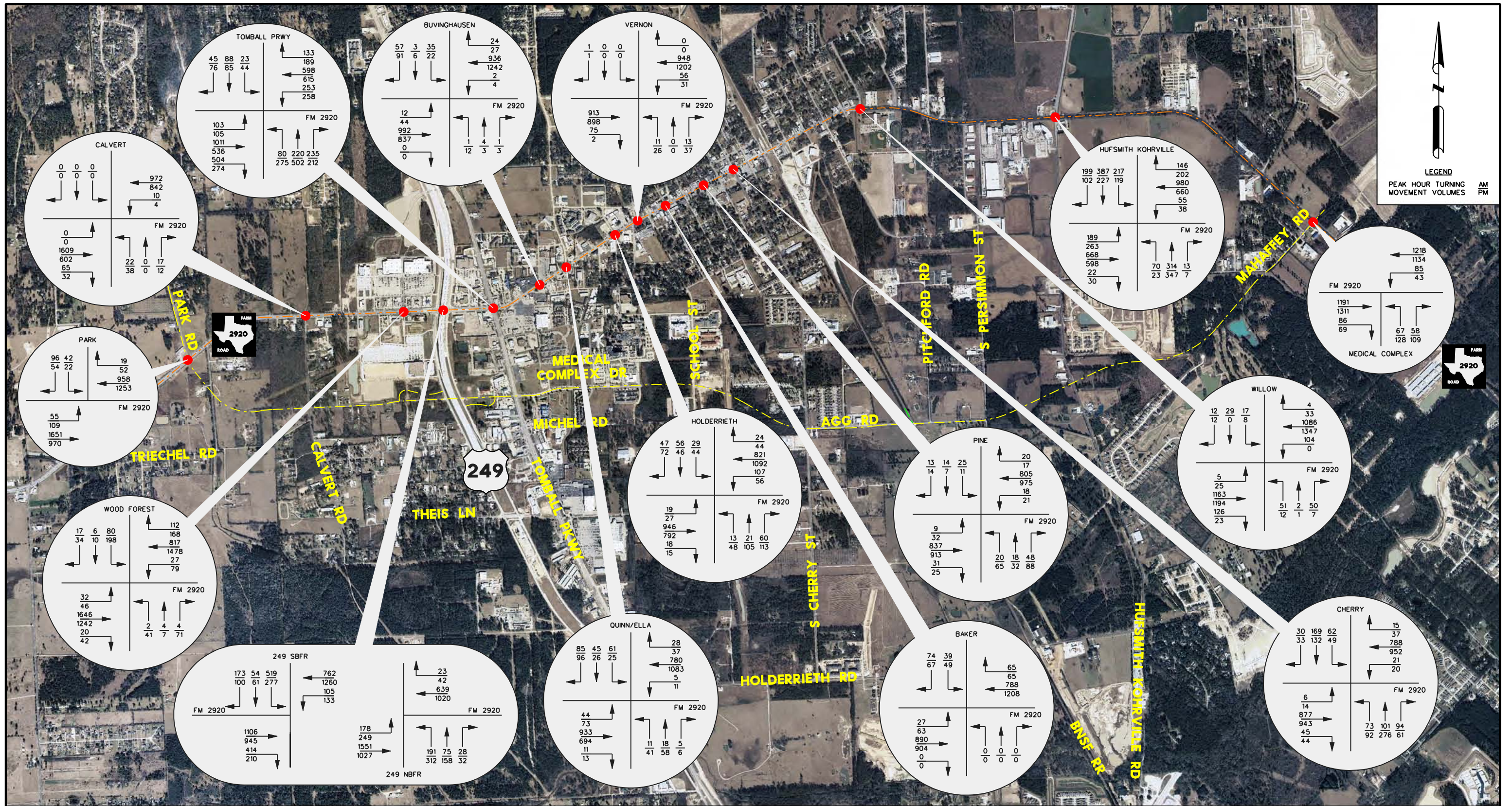


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 5
 DRAINAGE AREAS**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=1000'	DRAWN BY:	KMM
DATE:	6/10/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/10/2009 d:\cfa\2008\12008.med_complex\storm\Segment5_Drain.dgn



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CITY OF TOMBALL
TOMBALL, TEXAS

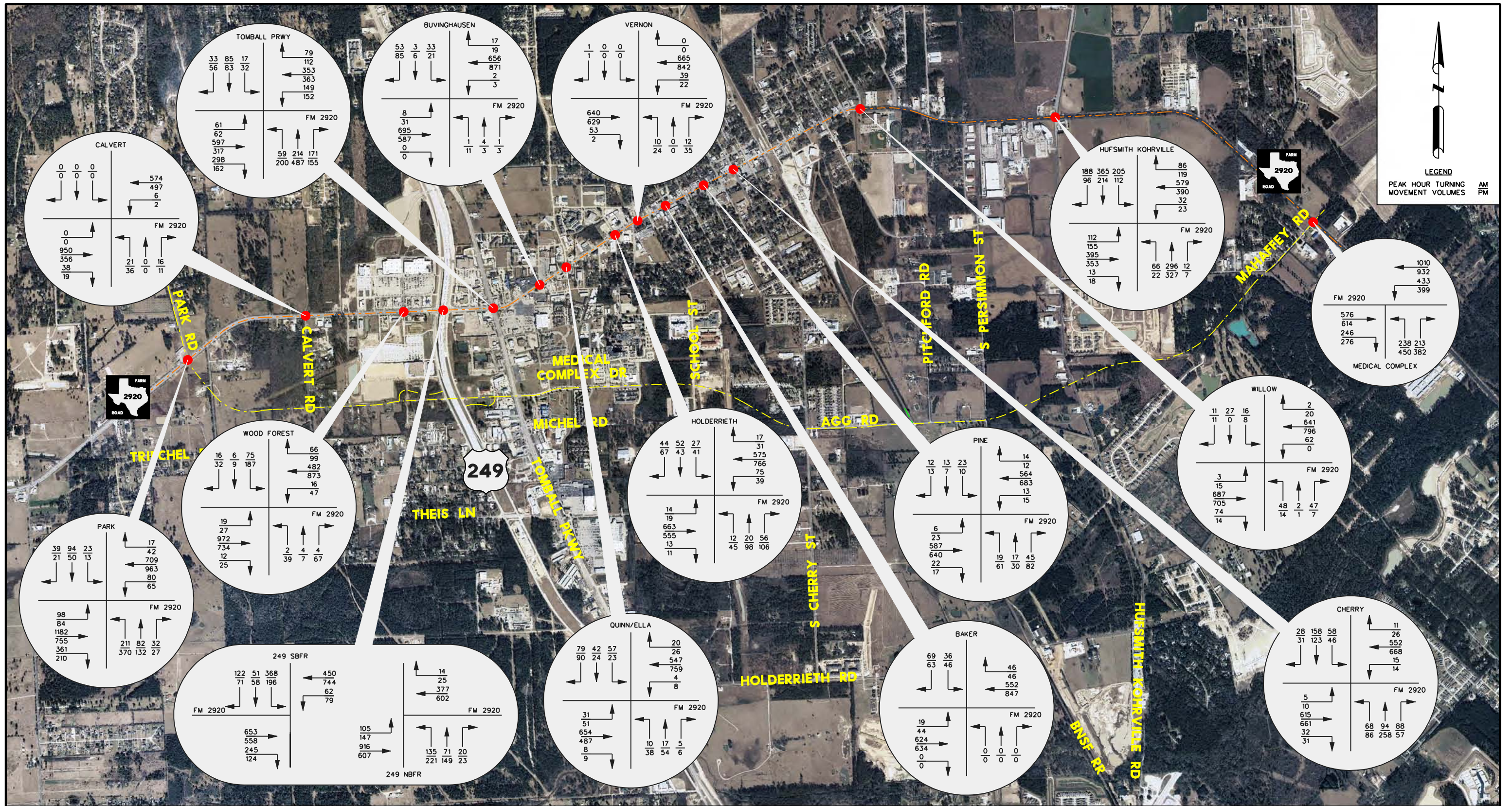
**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION**

**INTERSECTION CONFIGURATION
2011 NO-BUILD CONDITIONS
FOR FM 2920**

SCALE:
DATE:
CFA JOB NO.:

1"=2000'
6/9/2009
0812-008-00

EXHIBIT 9



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Houston, Texas 77040
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CITY OF TOMBALL
TOMBALL, TEXAS

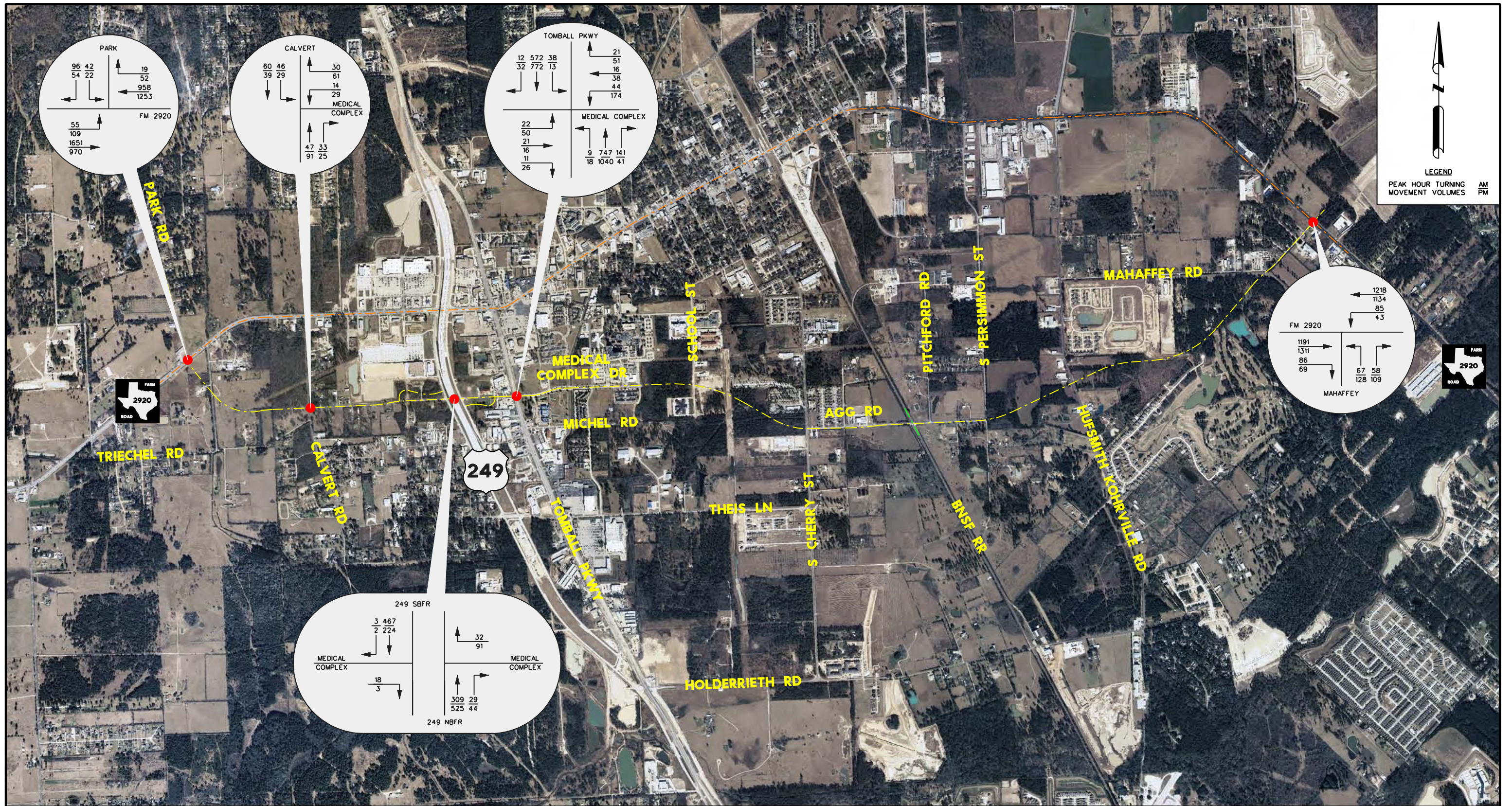
MEDICAL COMPLEX DRIVE RECONSTRUCTION/EXTENSION

INTERSECTION CONFIGURATION
2011 BUILD CONDITIONS
FOR FM 2920

SCALE:
DATE:
CFA JOB NO.:

1"=2000'
6/9/2009
0812-008-00

EXHIBIT 9



Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
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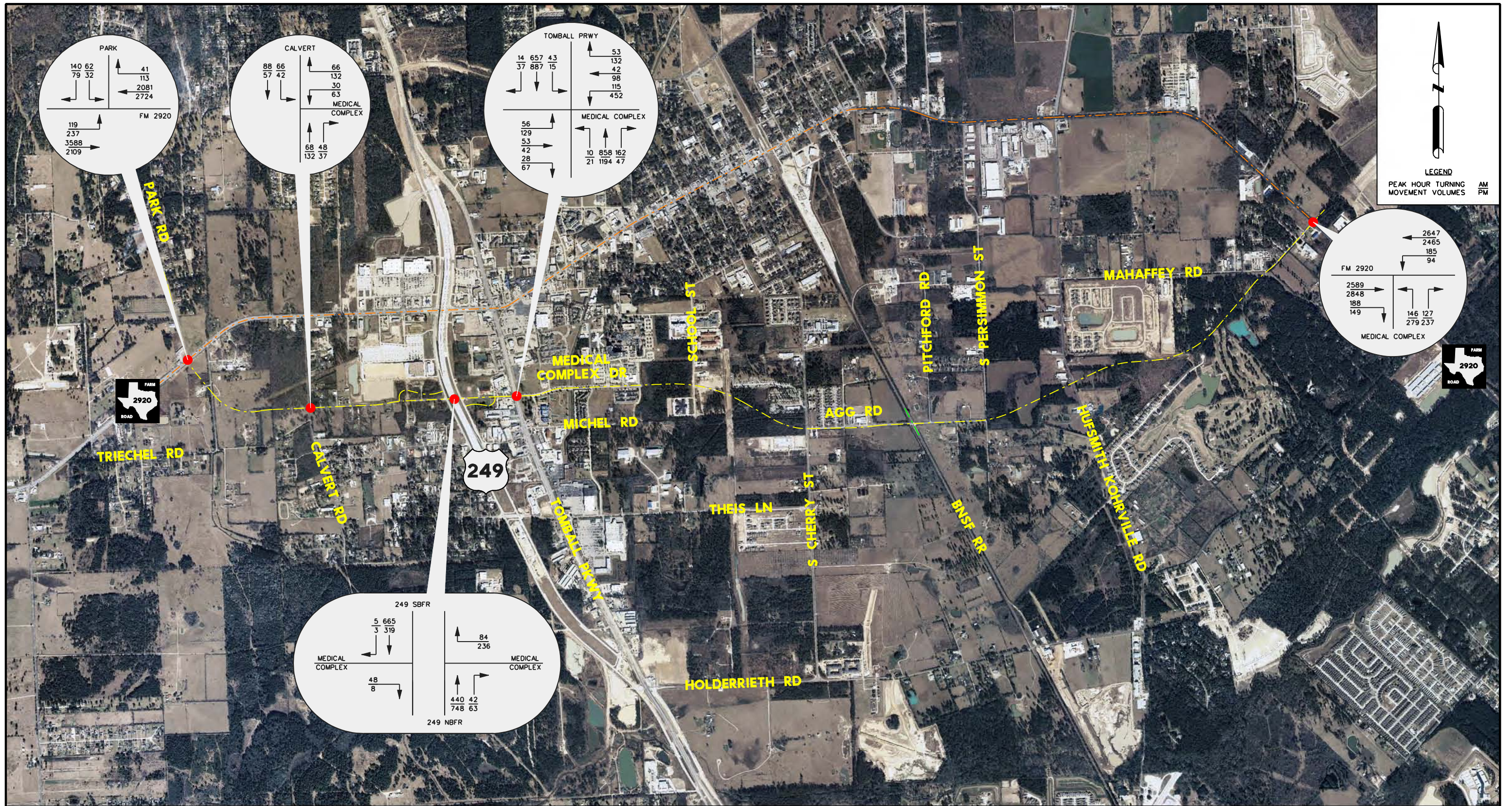
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION**

**INTERSECTION CONFIGURATION
 2011 NO-BUILD CONDITIONS
 FOR MEDICAL COMPLEX DRIVE**

SCALE: 1"=2000'
 DATE: 6/9/2009
 CFA JOB NO.: 0812-008-00

EXHIBIT 9



CobbFendley
Texas Registration No. 274

13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
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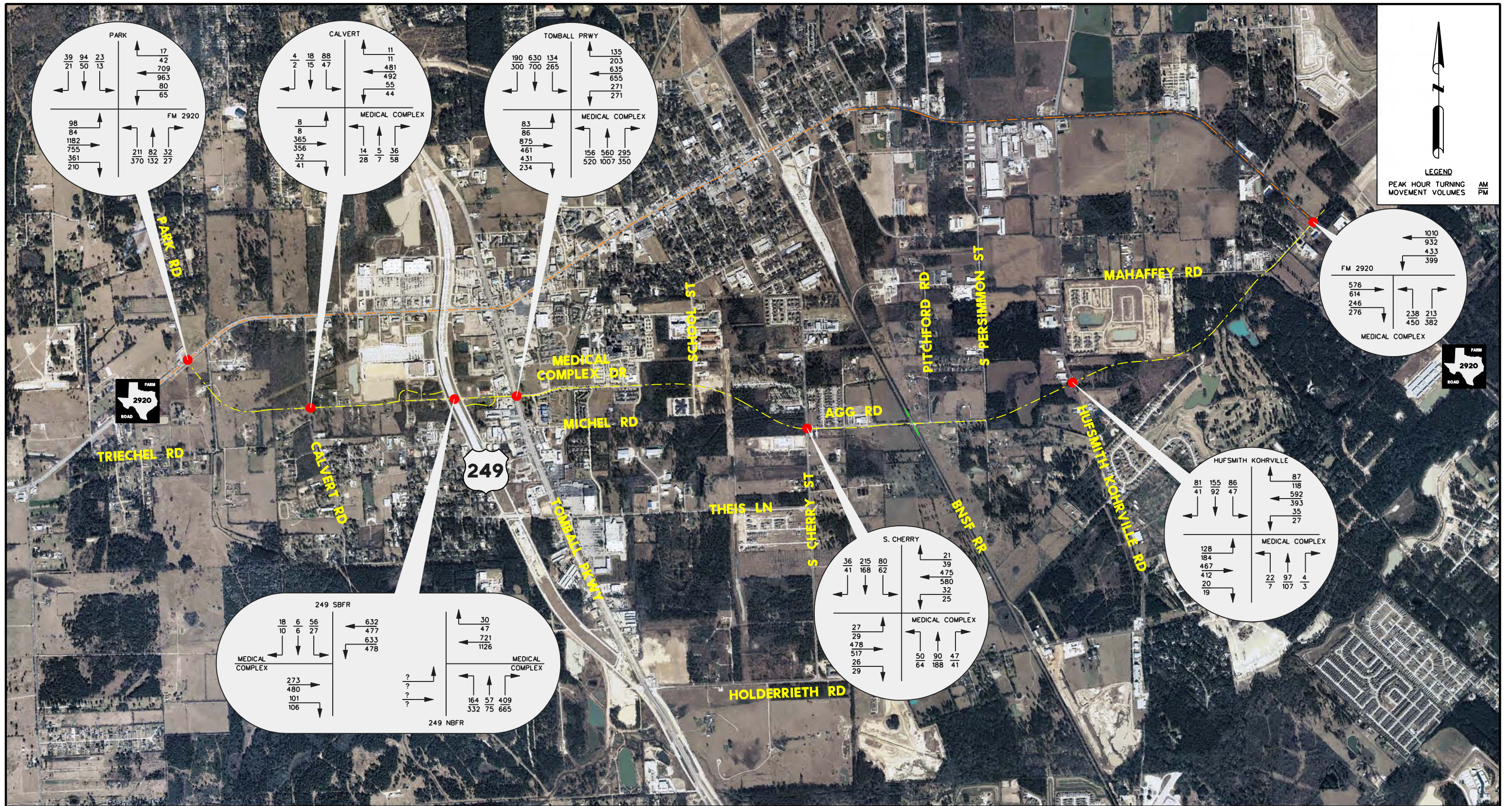
CITY OF TOMBALL
TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION**

**INTERSECTION CONFIGURATION
2035 NO-BUILD CONDITIONS
FOR MEDICAL COMPLEX DRIVE**

SCALE: 1"=2000'
DATE: 6/9/2009
CFA JOB NO.: 0812-008-00

EXHIBIT 9



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CITY OF TOMBALL
TOMBALL, TEXAS

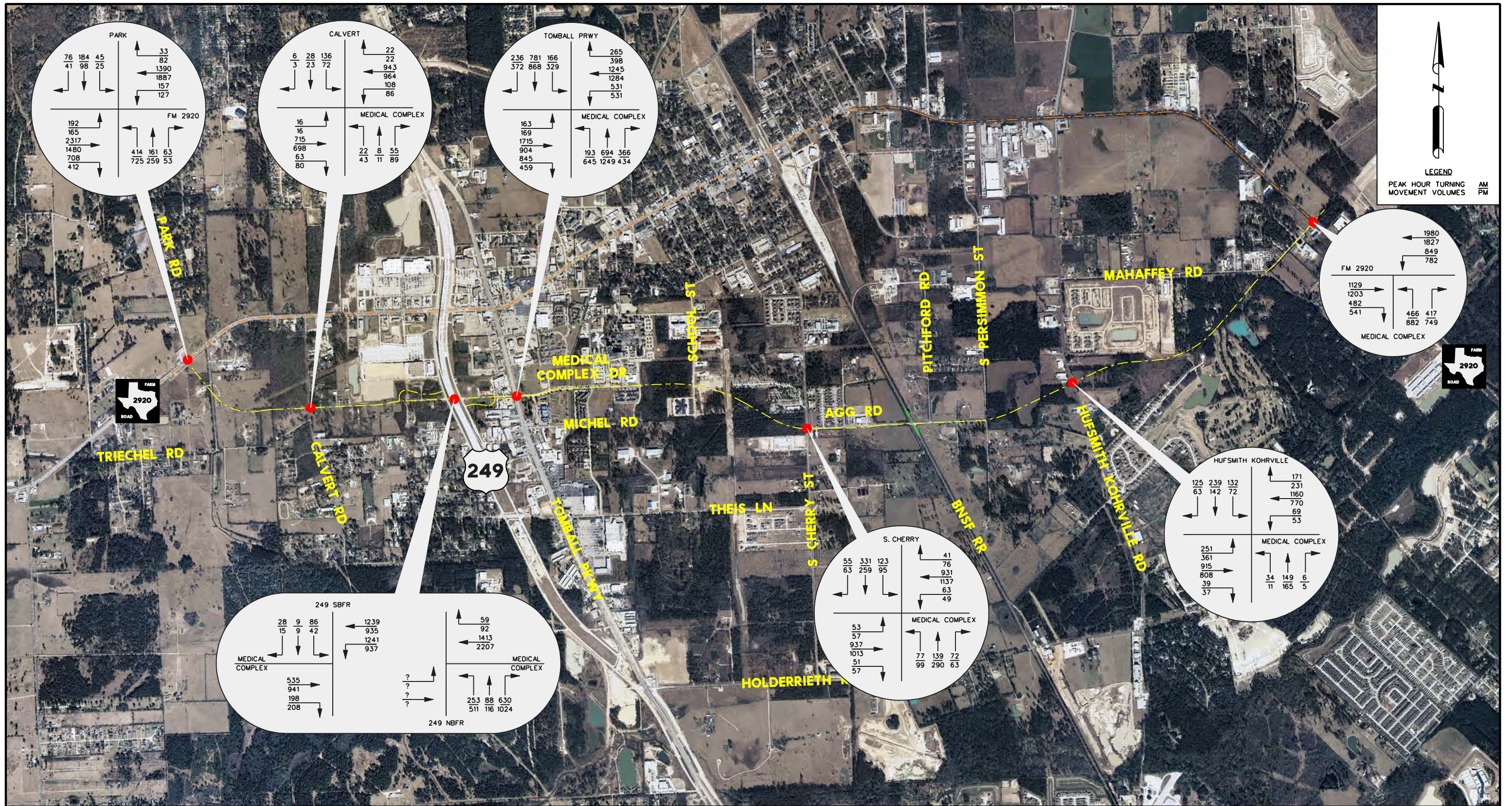
**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION**

**INTERSECTION CONFIGURATION
2011 BUILD CONDITIONS
FOR MEDICAL COMPLEX DRIVE**

SCALE:
DATE:
CFA JOB NO.:

1"=2000'
6/9/2009
0812-008-00

EXHIBIT 9



CobbFendley
Texas Registration No. 274

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Houston, Texas 77040
713.462.3242 | fax 713.462.3262 | www.cobfen.com



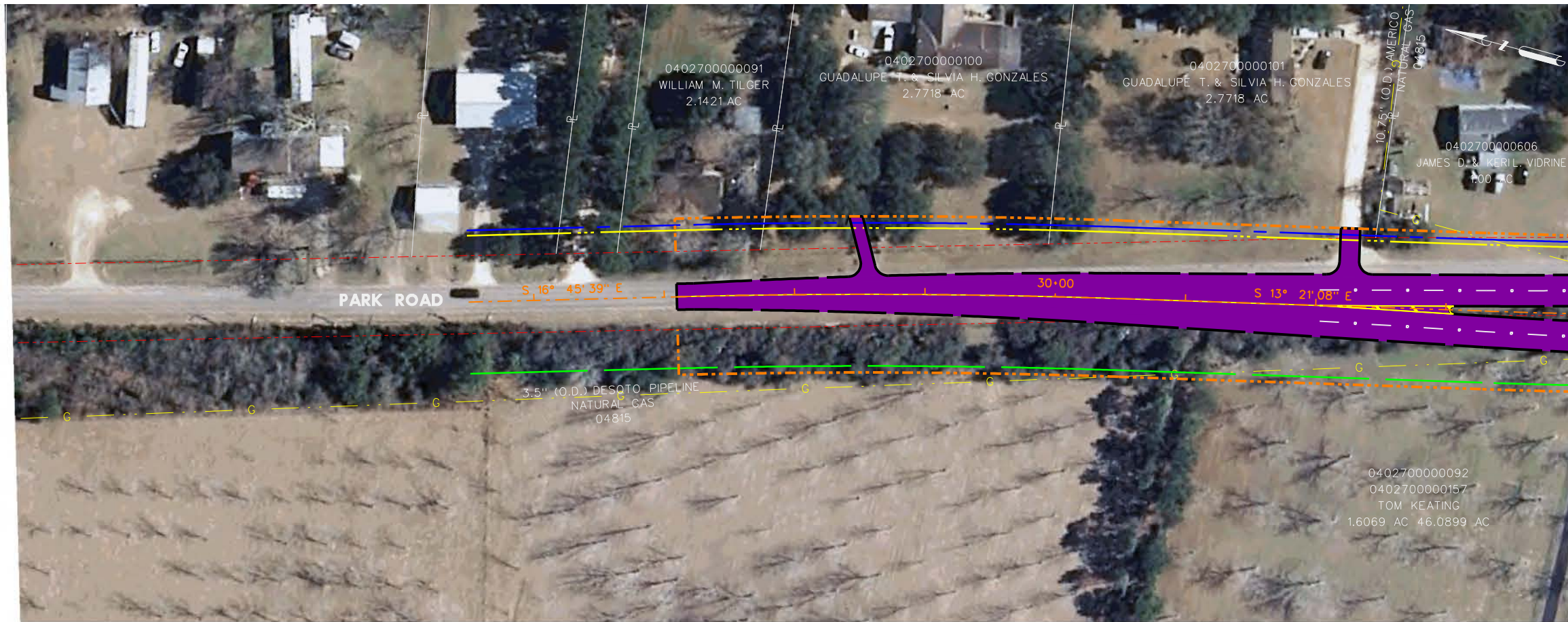
CITY OF TOMBALL
TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION**

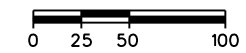
**INTERSECTION CONFIGURATION
2035 BUILD CONDITIONS
FOR MEDICAL COMPLEX DRIVE**

SCALE:
DATE:
CFA JOB NO.:

1"=2000'
6/9/2009
0812-008-00



MATCHLINE STA. 34+00



LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	□
EXIST. PROPERTY LINE	PE
EXIST. OVERHEAD POWER	OE
EXIST. PIPELINE	G
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---



MATCHLINE STA. 34+00

MATCHLINE STA. 46+00

EXHIBIT 10

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

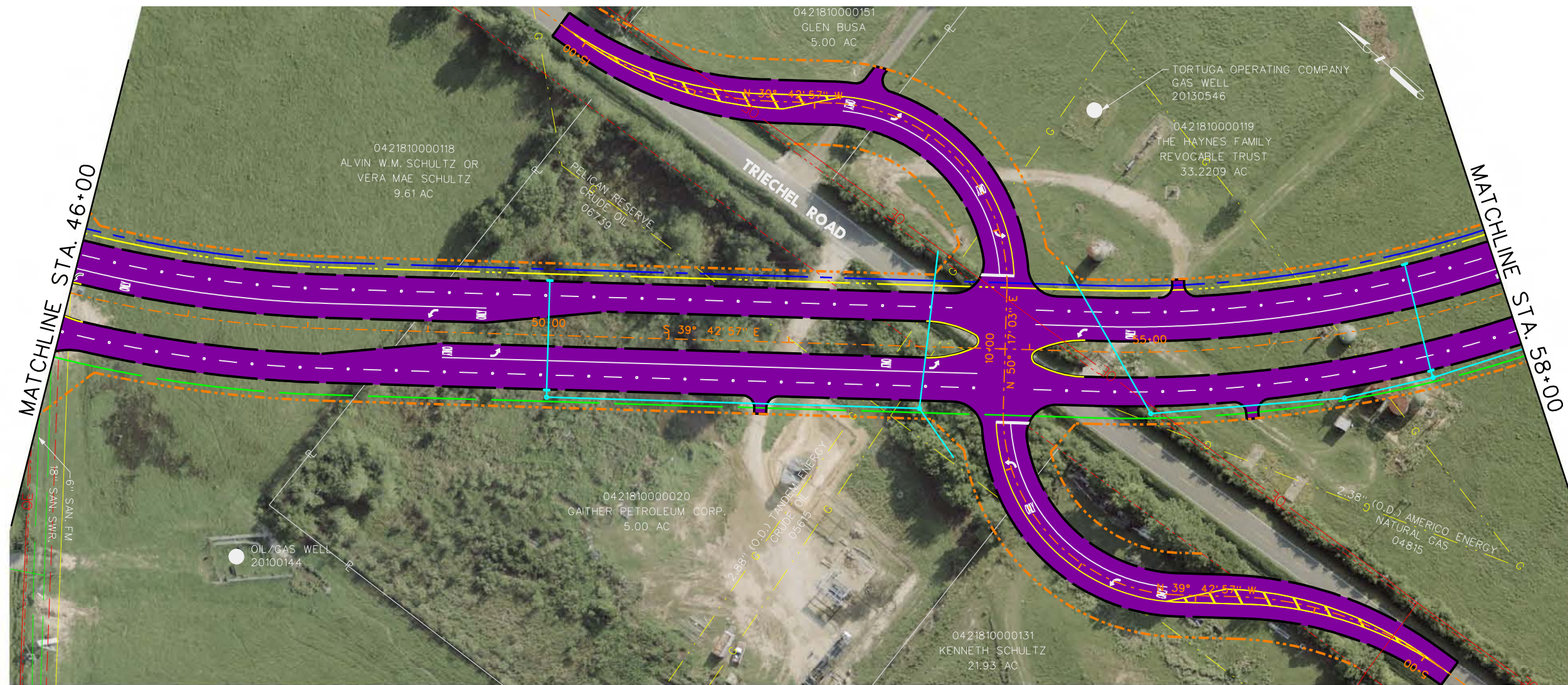
CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PAVEMENT MARKINGS
 BEGIN TO STA. 46+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			



LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	□
EXIST. PROPERTY LINE	---
EXIST. OVERHEAD POWER	---
EXIST. PIPELINE	---
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---

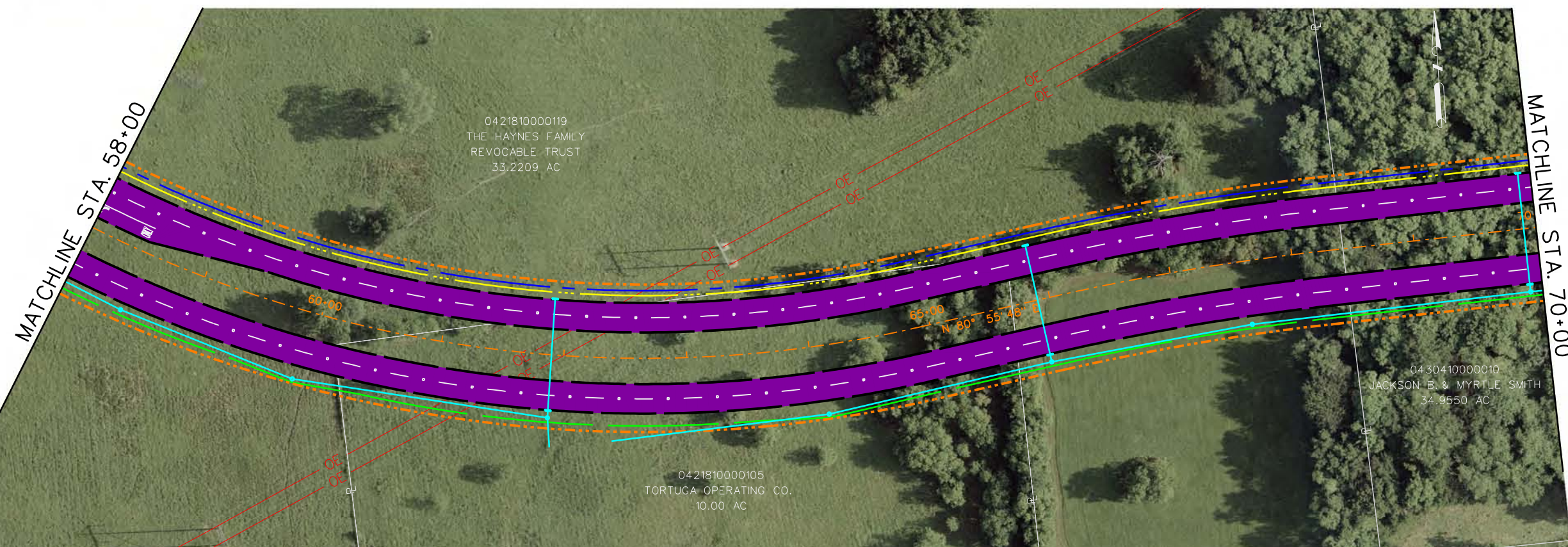


EXHIBIT 10

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

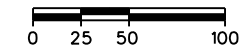
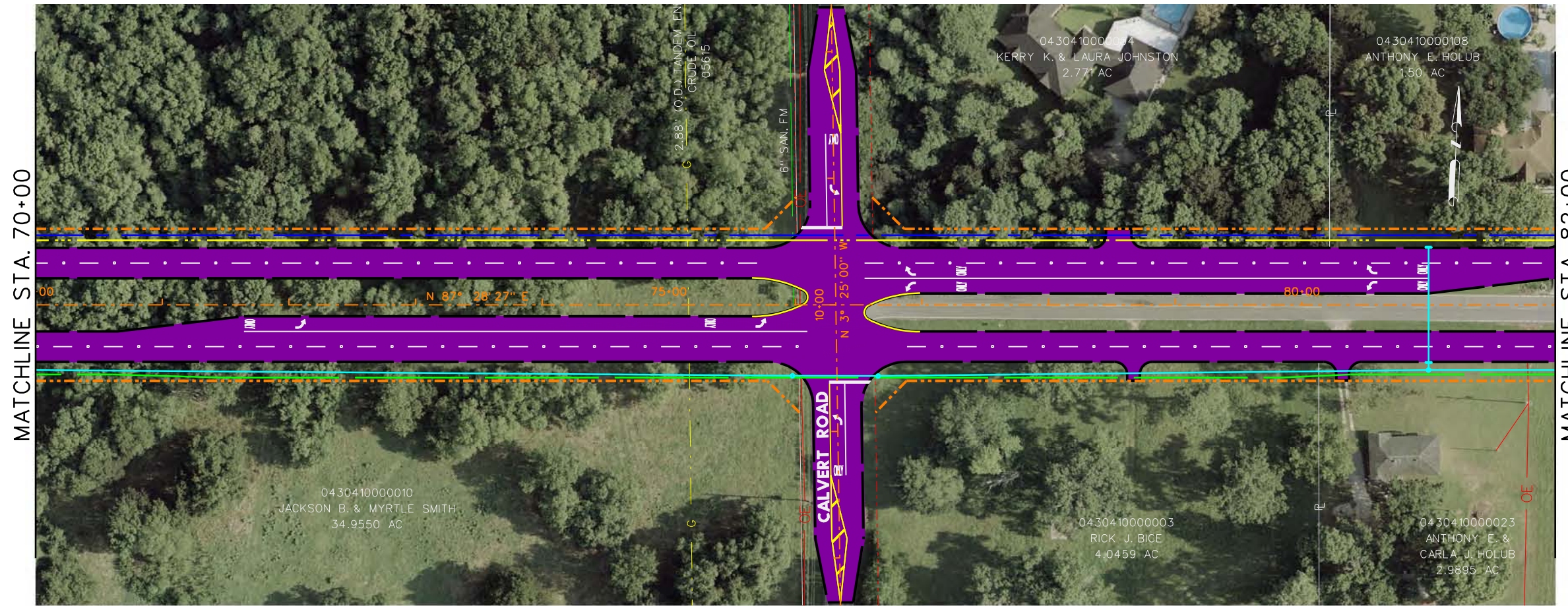
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PAVEMENT MARKINGS
 STA. 46+00 TO STA. 70+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	□
EXIST. PROPERTY LINE	PE
EXIST. OVERHEAD POWER	OE
EXIST. PIPELINE	G
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---

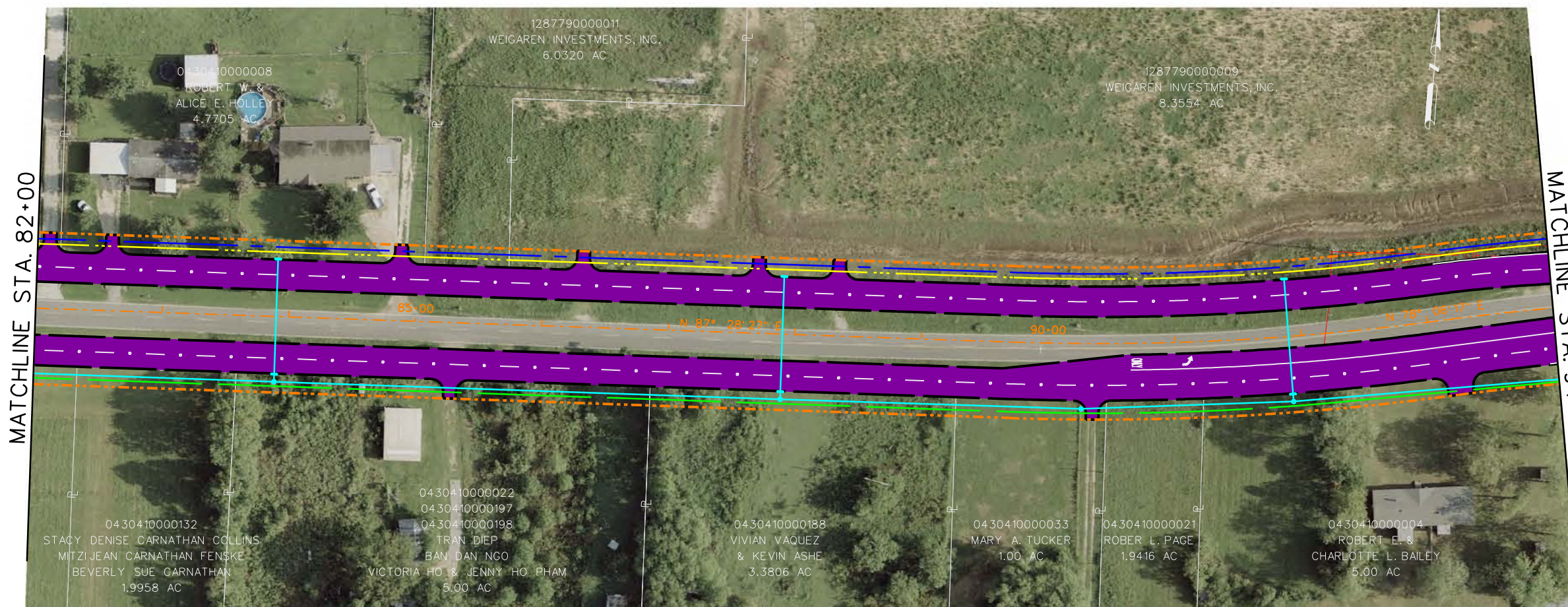


EXHIBIT 10

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

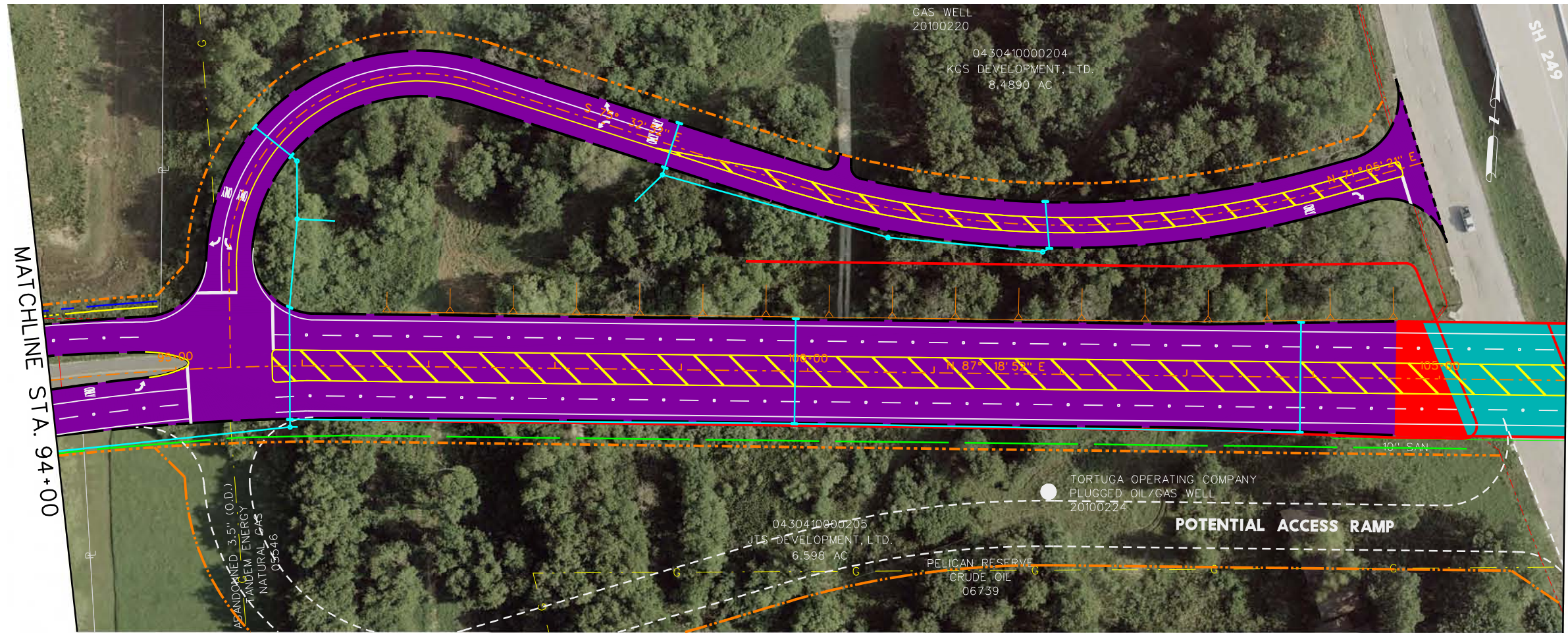
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PAVEMENT MARKINGS
 STA. 70+00 TO STA. 94+00**

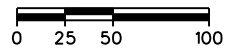
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SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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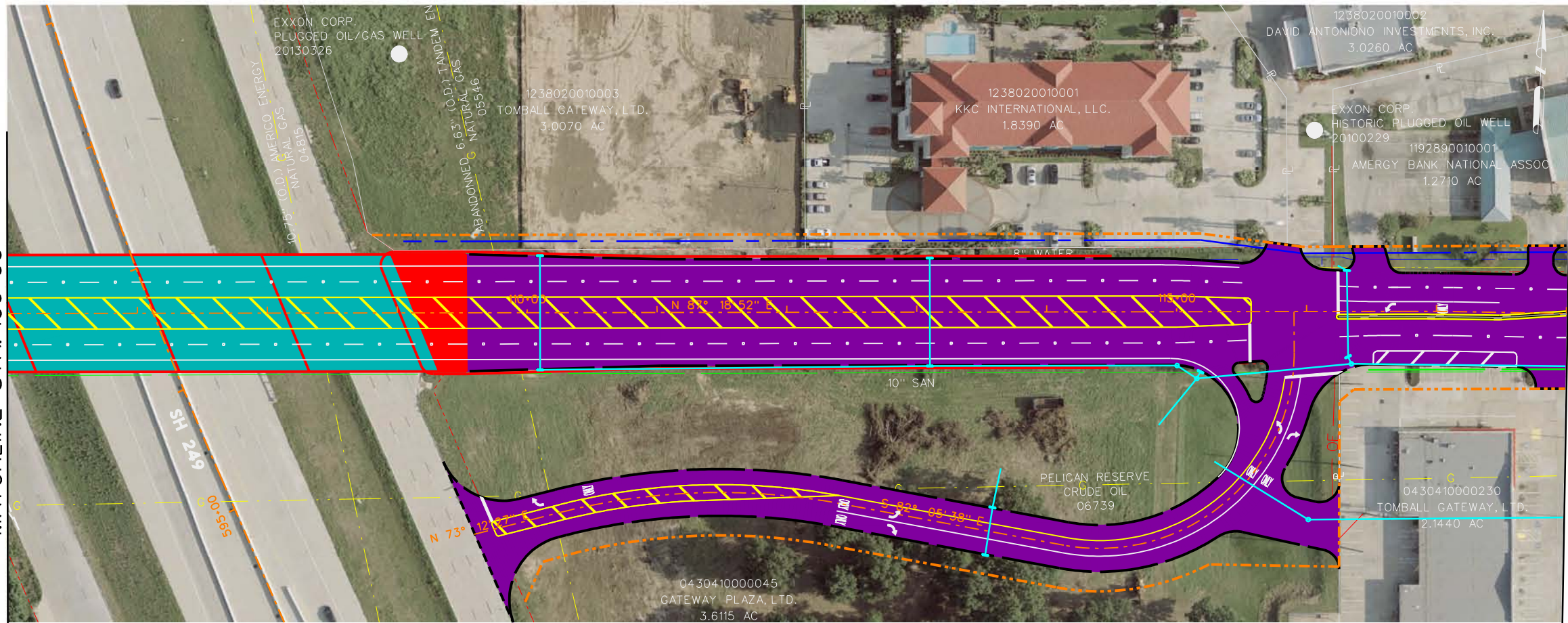
MATCHLINE STA. 94+00

MATCHLINE STA. 106+00



LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	□
EXIST. PROPERTY LINE	PE
EXIST. OVERHEAD POWER	OE
EXIST. PIPELINE	G
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---



MATCHLINE STA. 106+00

MATCHLINE STA. 118+00

EXHIBIT 10

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

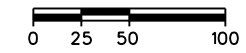
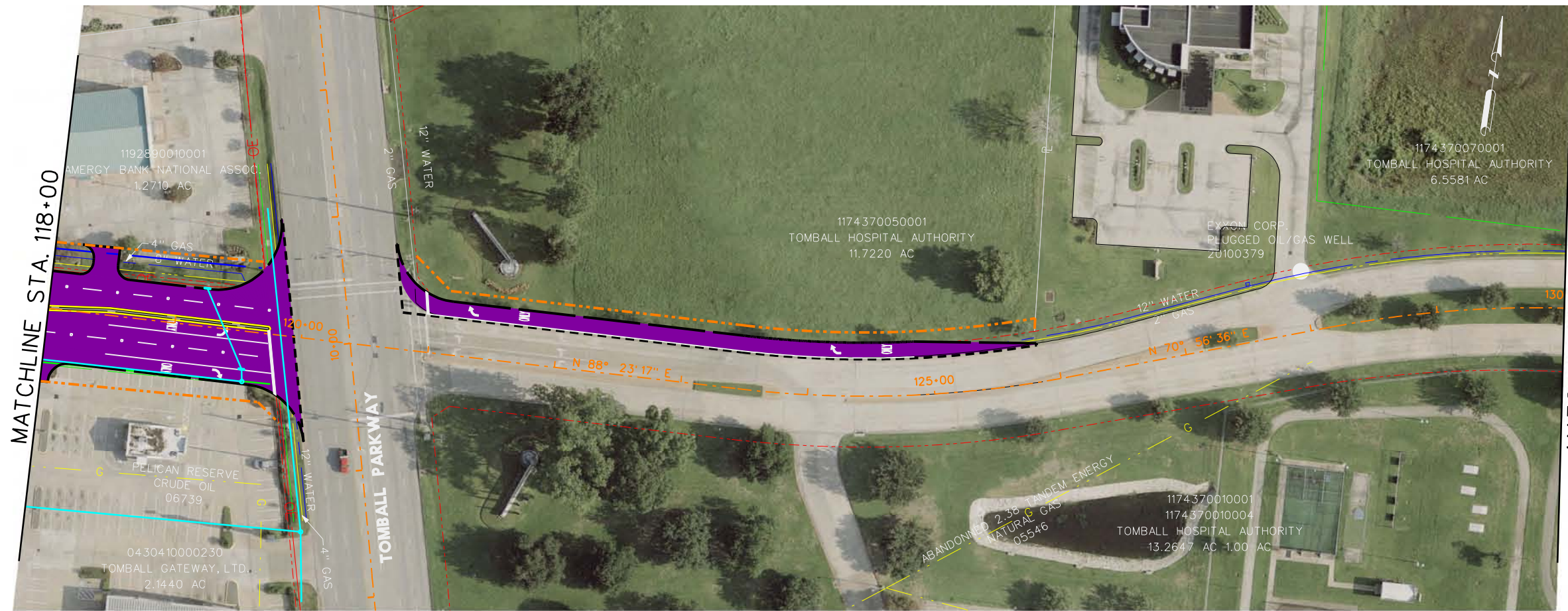
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PAVEMENT MARKINGS
 STA. 94+00 TO STA. 118+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	□
EXIST. PROPERTY LINE	---
EXIST. OVERHEAD POWER	---
EXIST. PIPELINE	---
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---

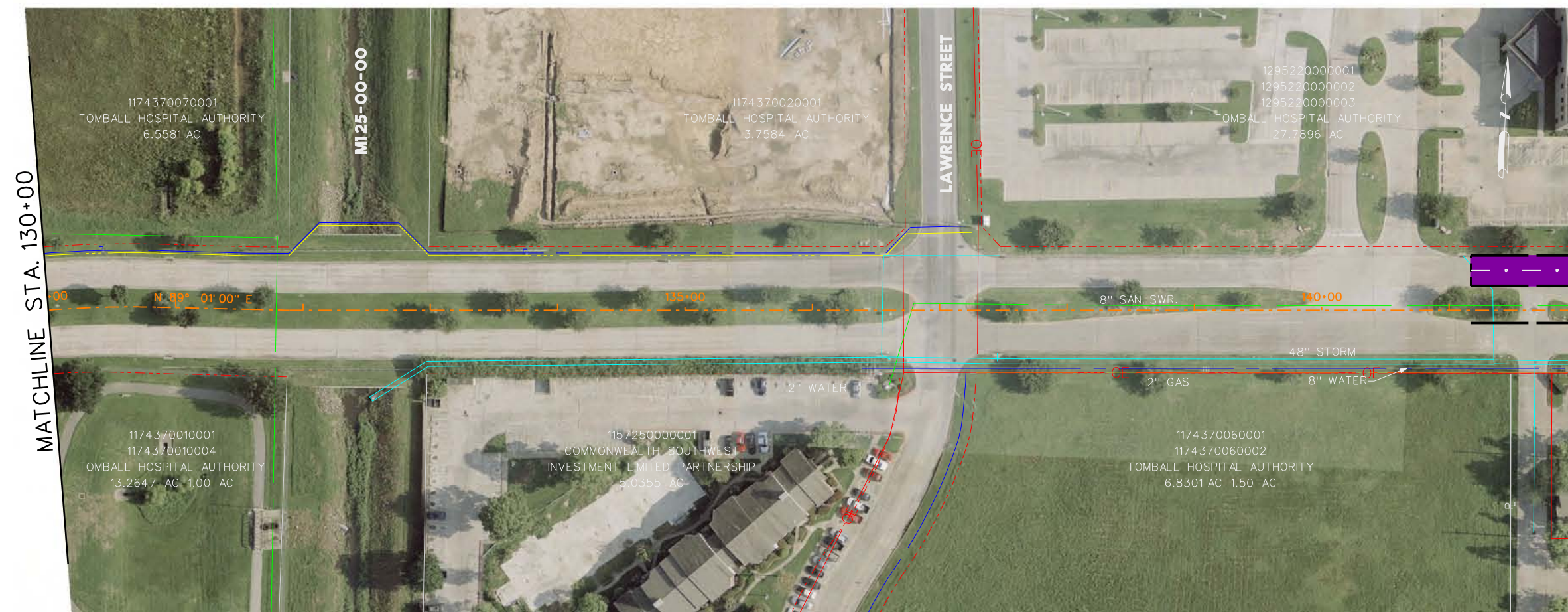


EXHIBIT 10

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
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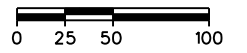
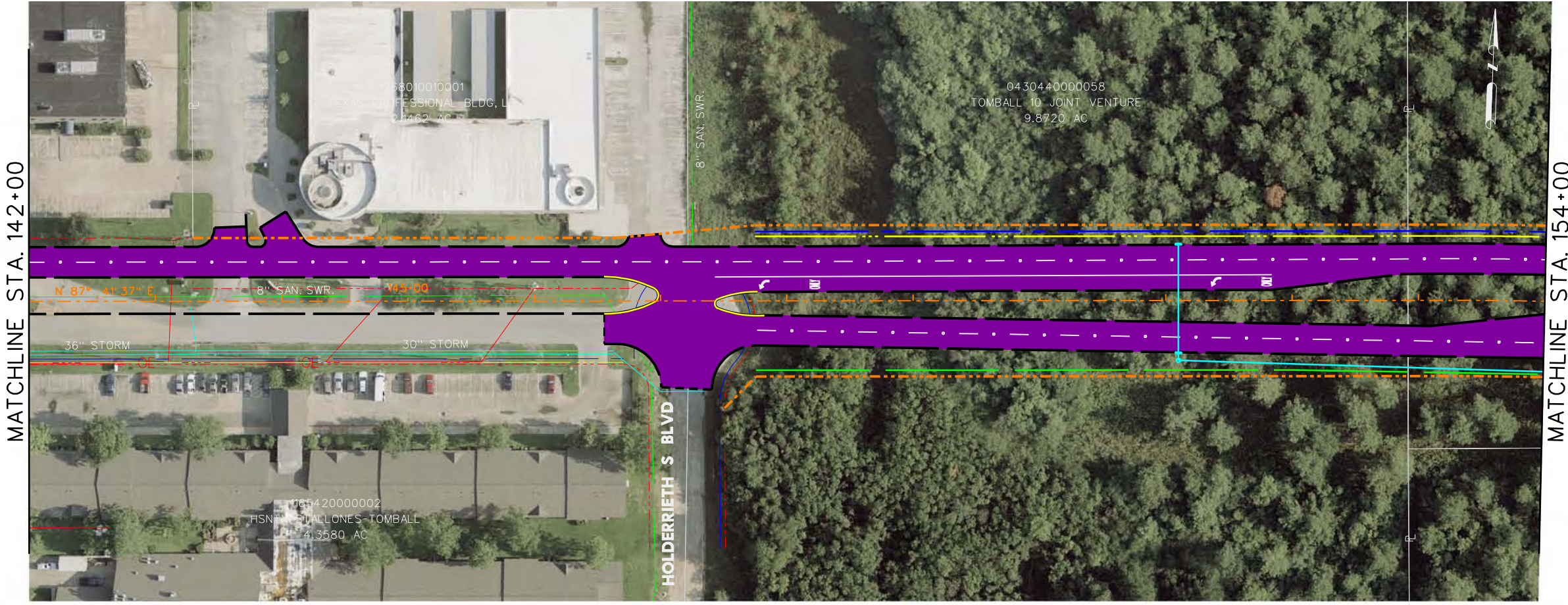
CITY OF TOMBALL
 TOMBALL, TEXAS

MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017

PAVEMENT MARKINGS
STA. 118+00 TO STA. 142+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	□
EXIST. PROPERTY LINE	PE
EXIST. OVERHEAD POWER	OE
EXIST. PIPELINE	G
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---

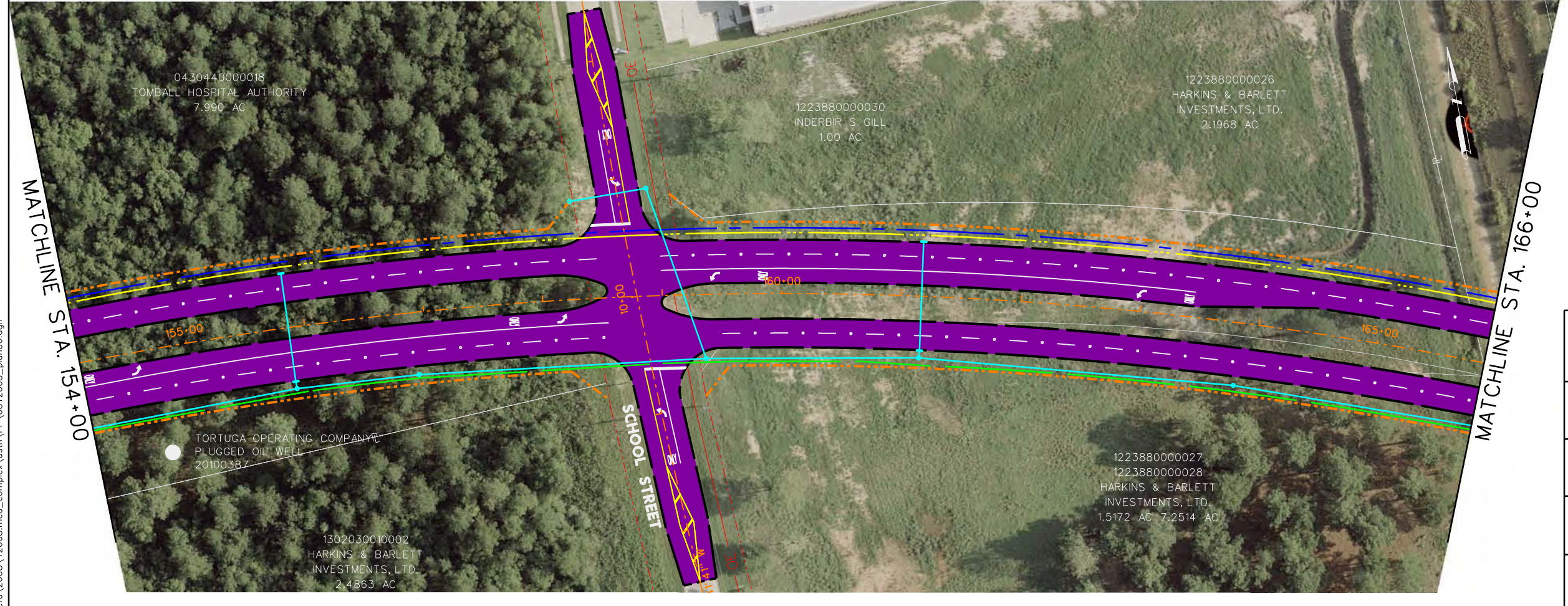


EXHIBIT 10

INTERIM REVIEW
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 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PAVEMENT MARKINGS
 STA. 142+00 TO STA. 166+00**

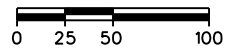
SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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6/9/2009
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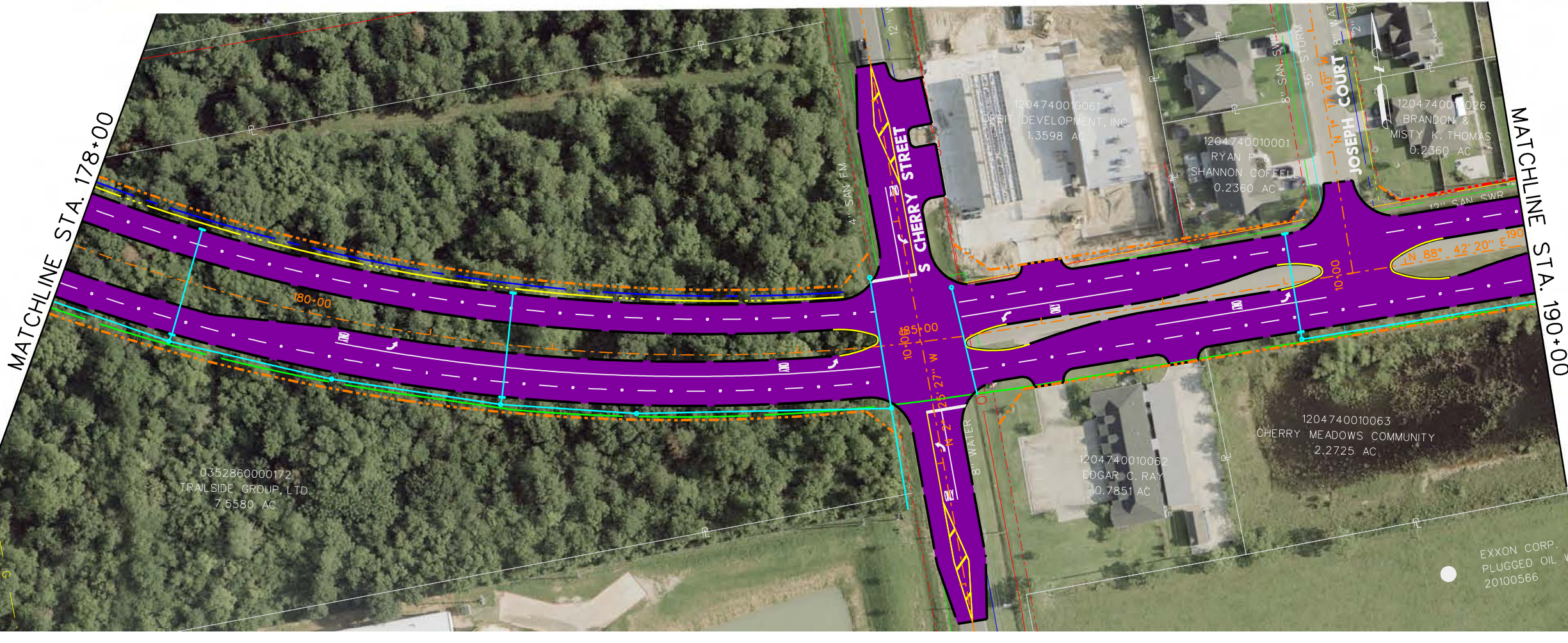


MATCHLINE STA. 178+00



LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	□
EXIST. PROPERTY LINE	PE
EXIST. OVERHEAD POWER	OE
EXIST. PIPELINE	G
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---



MATCHLINE STA. 190+00

EXHIBIT 10

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

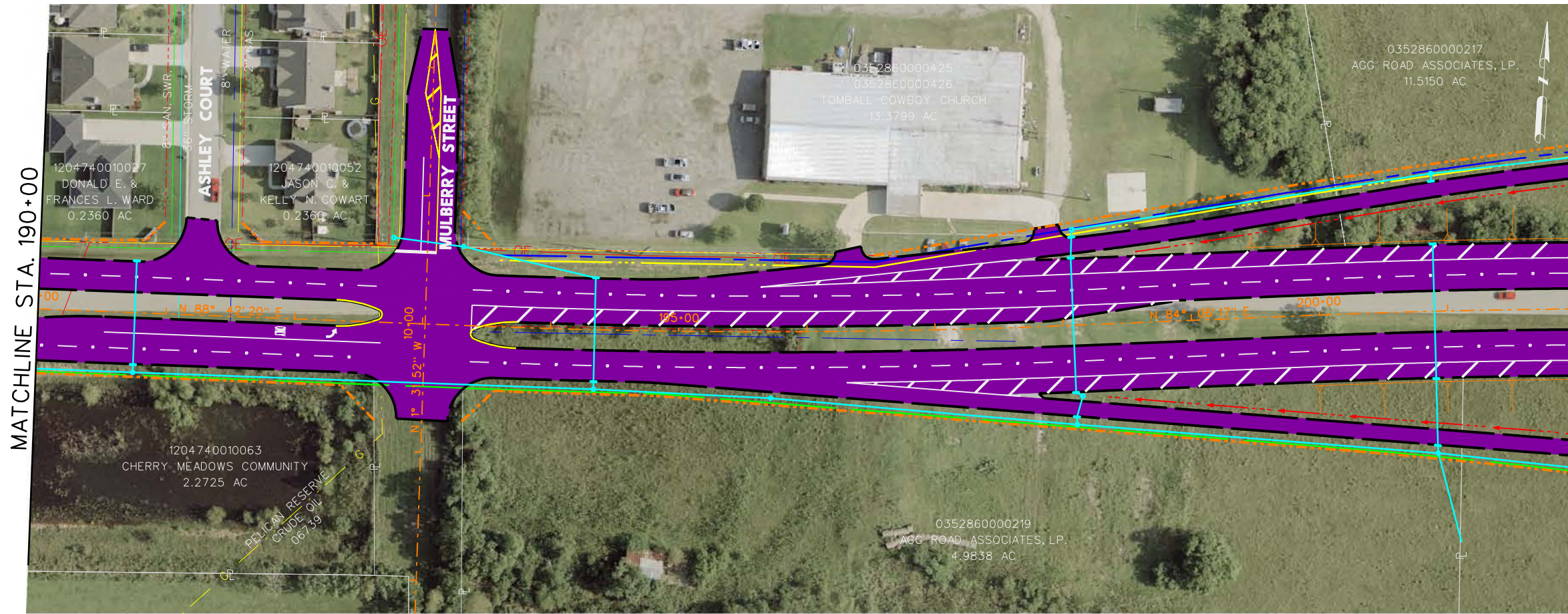
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**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PAVEMENT MARKINGS
 STA. 166+00 TO STA. 190+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

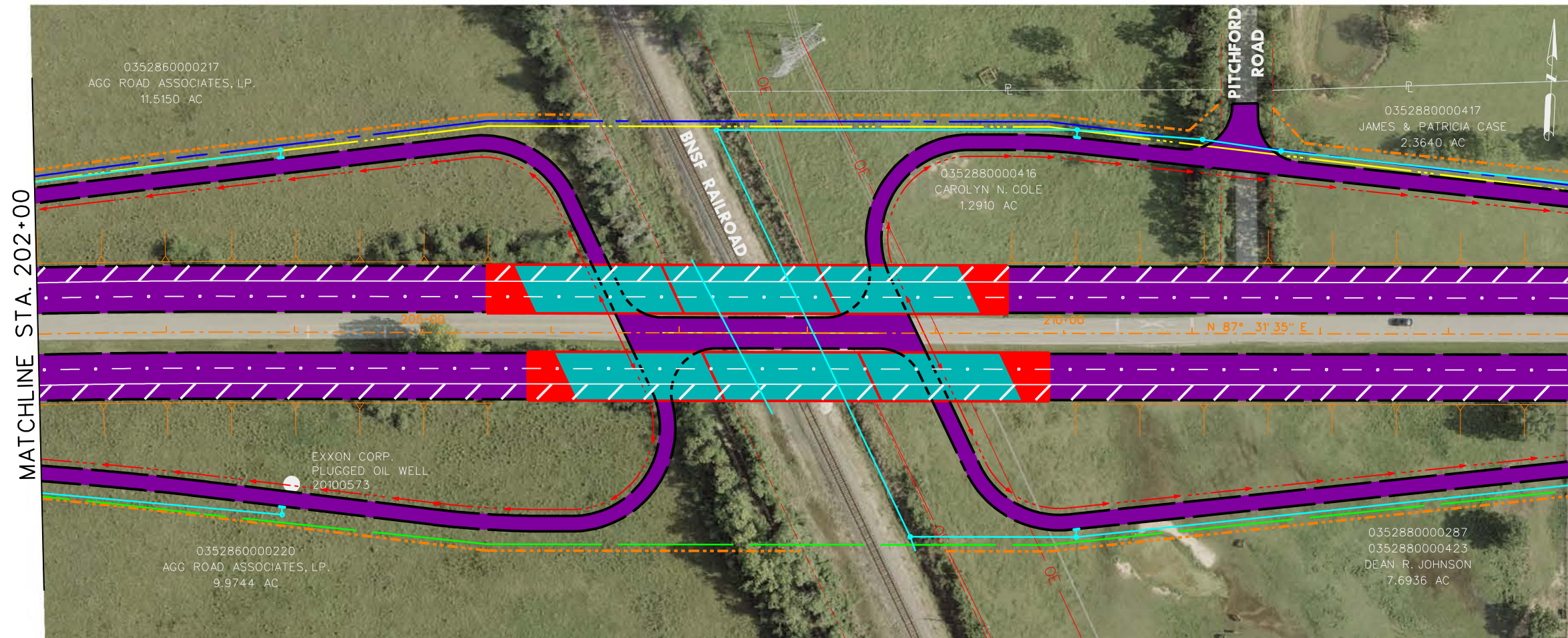
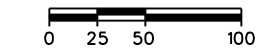


MATCHLINE STA. 190+00

MATCHLINE STA. 202+00

LEGEND

- EXIST. ROW ---
- EXIST. DRAINAGE EASEMENT ---
- PROP. ROW ---
- PROP. ROADWAY C ---
- PROP. FACE OF CURB ---
- PROP. TOP OF BERM ---
- PROP. STORM ---
- PROP. STORM MANHOLE ○
- PROP. CURB INLET □
- EXIST. PROPERTY LINE ---
- EXIST. OVERHEAD POWER ---
- EXIST. PIPELINE ---
- PROP. 12" WATER ---
- PROP. 12" SANITARY ---
- PROP. 4" GAS ---



MATCHLINE STA. 202+00

MATCHLINE STA. 214+00

EXHIBIT 10

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

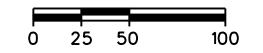
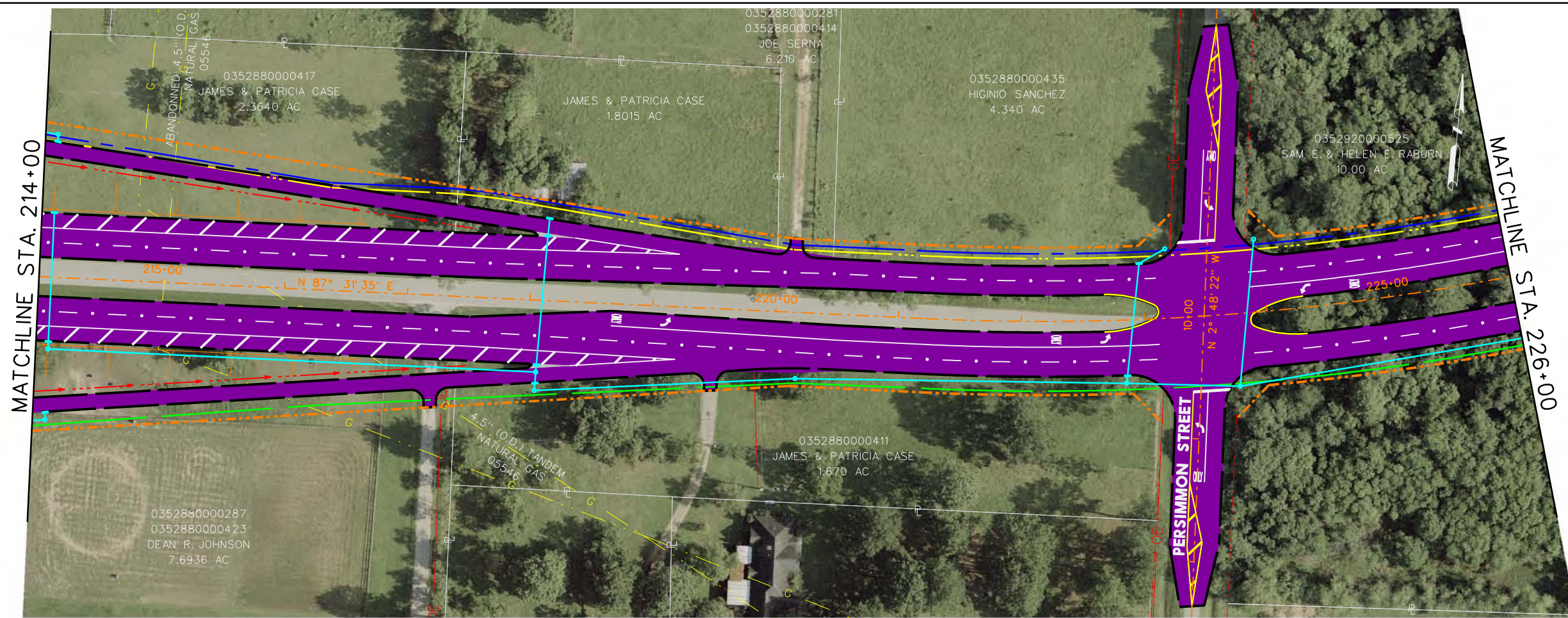
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MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017

PAVEMENT MARKINGS
 STA. 190+00 TO STA. 214+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			



LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	○
EXIST. PROPERTY LINE	---
EXIST. OVERHEAD POWER	---
EXIST. PIPELINE	---
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---

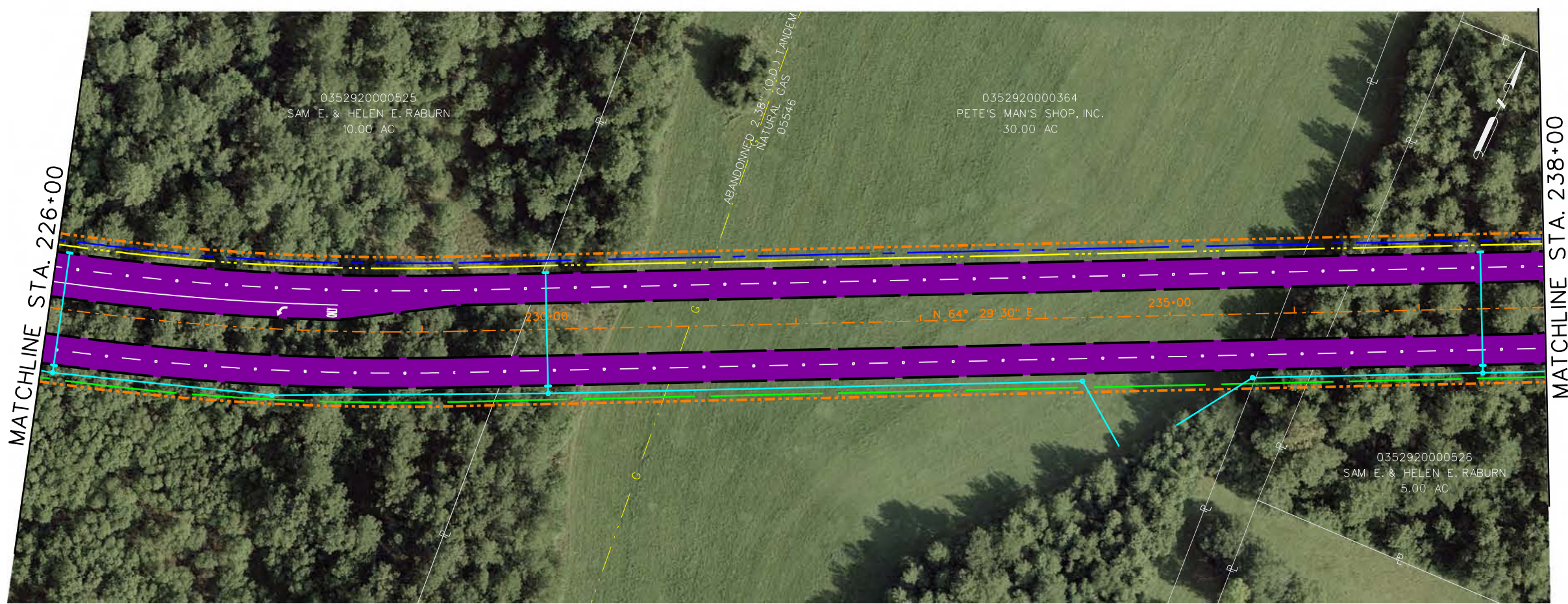


EXHIBIT 10

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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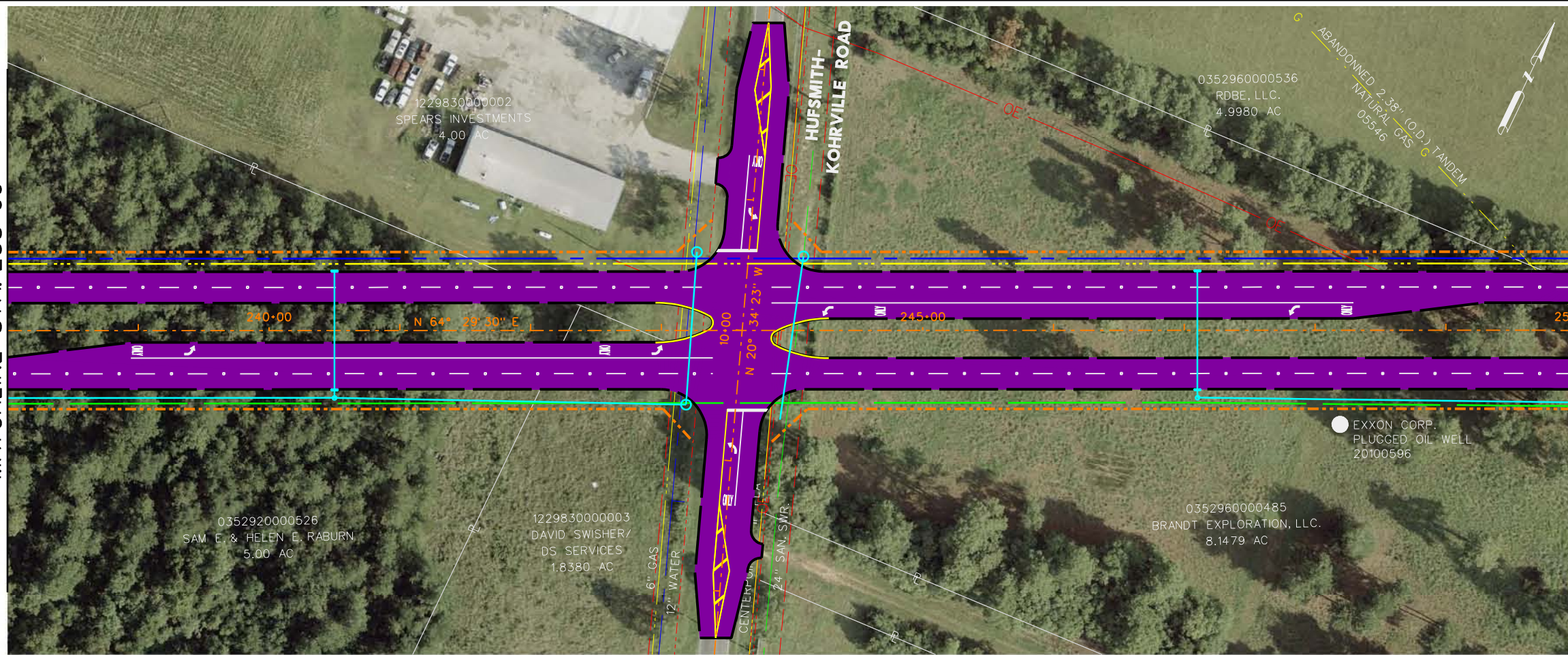
MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017

PAVEMENT MARKINGS
STA. 214+00 TO STA. 238+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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MATCHLINE STA. 238+00

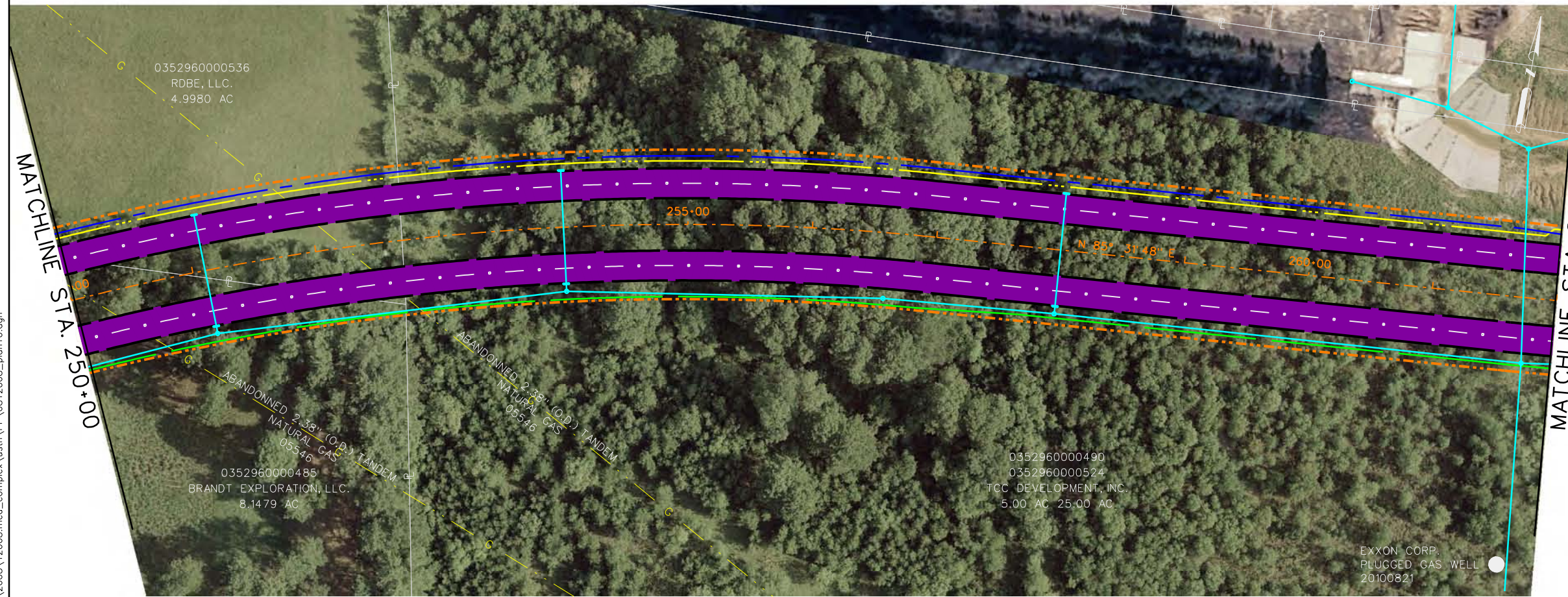


MATCHLINE STA. 250+00

LEGEND

- EXIST. ROW
- EXIST. DRAINAGE EASEMENT
- PROP. ROW
- PROP. ROADWAY C
- PROP. FACE OF CURB
- PROP. TOP OF BERM
- PROP. STORM
- PROP. STORM MANHOLE
- PROP. CURB INLET
- EXIST. PROPERTY LINE
- EXIST. OVERHEAD POWER
- EXIST. PIPELINE
- PROP. 12" WATER
- PROP. 12" SANITARY
- PROP. 4" GAS

MATCHLINE STA. 250+00



MATCHLINE STA. 262+00

EXHIBIT 10

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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 Houston, Texas 77040
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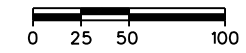
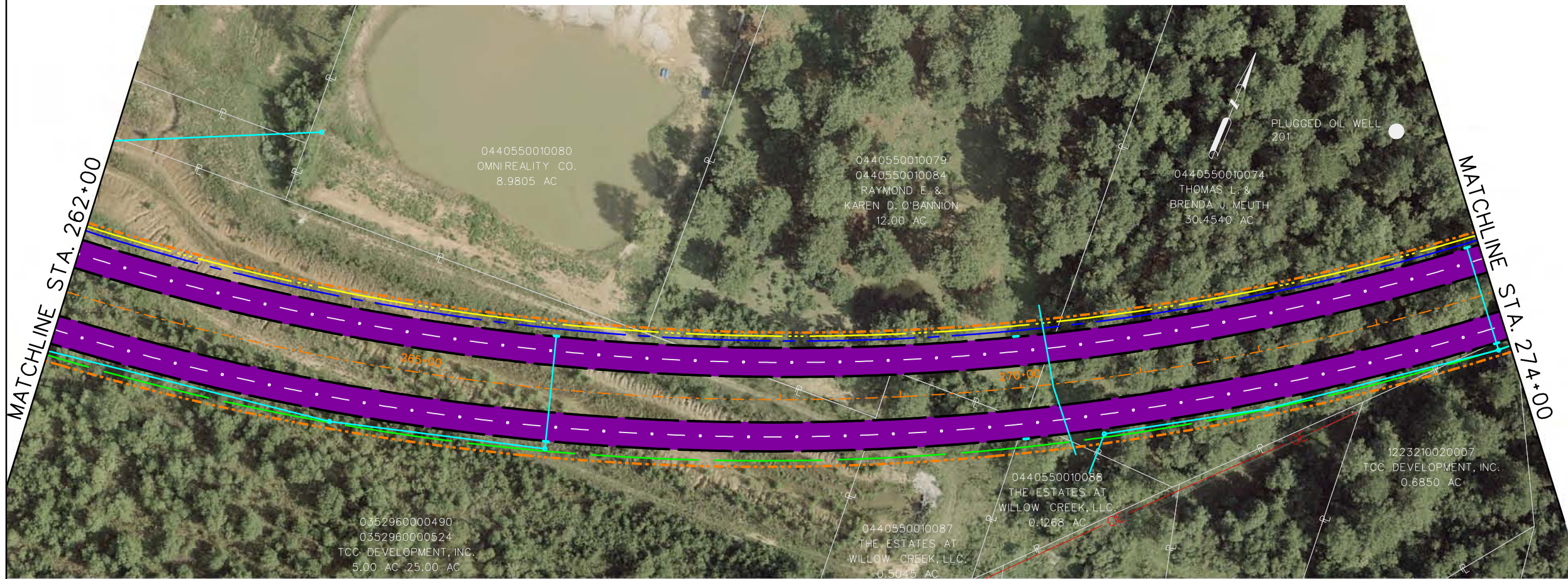
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PAVEMENT MARKINGS
 STA. 238+00 TO STA. 262+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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LEGEND

EXIST. ROW	---
EXIST. DRAINAGE EASEMENT	---
PROP. ROW	---
PROP. ROADWAY C	---
PROP. FACE OF CURB	---
PROP. TOP OF BERM	---
PROP. STORM	---
PROP. STORM MANHOLE	○
PROP. CURB INLET	○
EXIST. PROPERTY LINE	PE
EXIST. OVERHEAD POWER	OE
EXIST. PIPELINE	G
PROP. 12" WATER	---
PROP. 12" SANITARY	---
PROP. 4" GAS	---

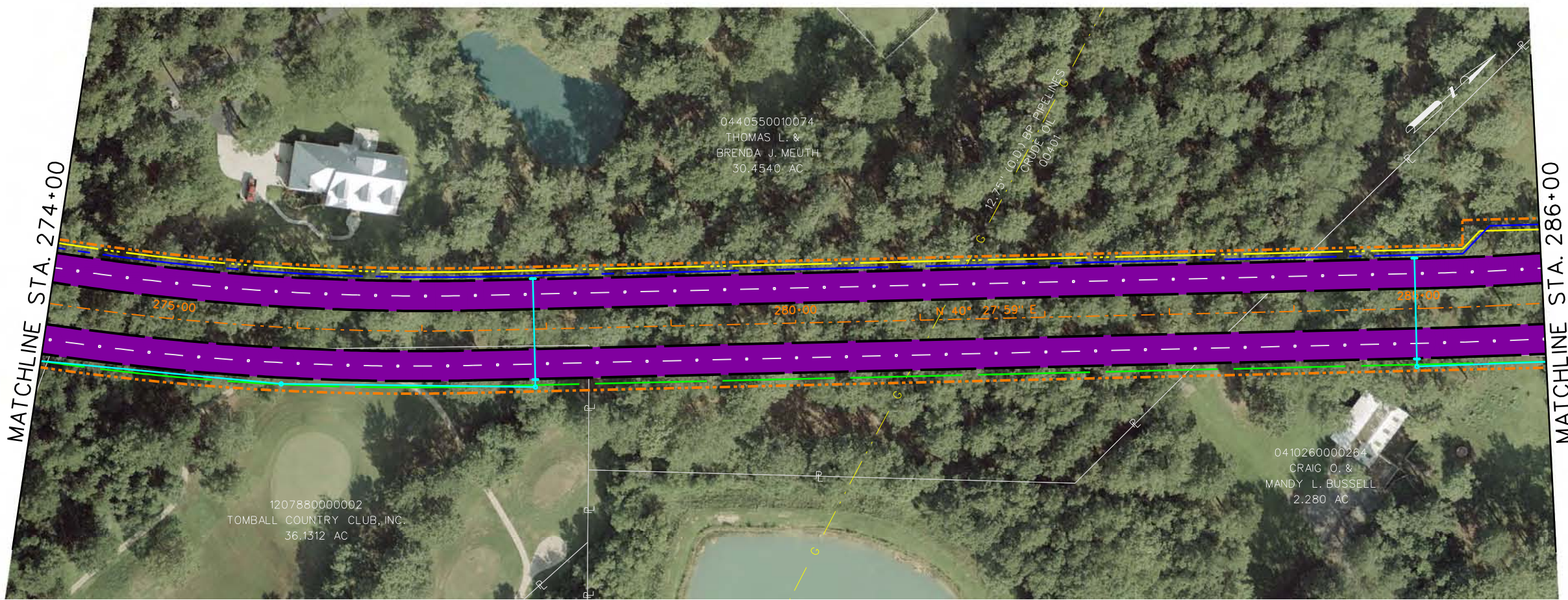


EXHIBIT 10

INTERIM REVIEW
 Not intended for construction, bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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CITY OF TOMBALL
 TOMBALL, TEXAS

MEDICAL COMPLEX DRIVE
RECONSTRUCTION/EXTENSION
PROJECT NO. 2003-10017

PAVEMENT MARKINGS
STA. 262+00 TO STA. 286+00

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

- EXIST. ROW ---
- EXIST. DRAINAGE EASEMENT ---
- PROP. ROW ---
- PROP. ROADWAY C ---
- PROP. FACE OF CURB ---
- PROP. TOP OF BERM ---
- PROP. STORM ---
- PROP. STORM MANHOLE ○
- PROP. CURB INLET □
- EXIST. PROPERTY LINE P
- EXIST. OVERHEAD POWER OE
- EXIST. PIPELINE G
- PROP. 12" WATER ---
- PROP. 12" SANITARY ---
- PROP. 4" GAS ---

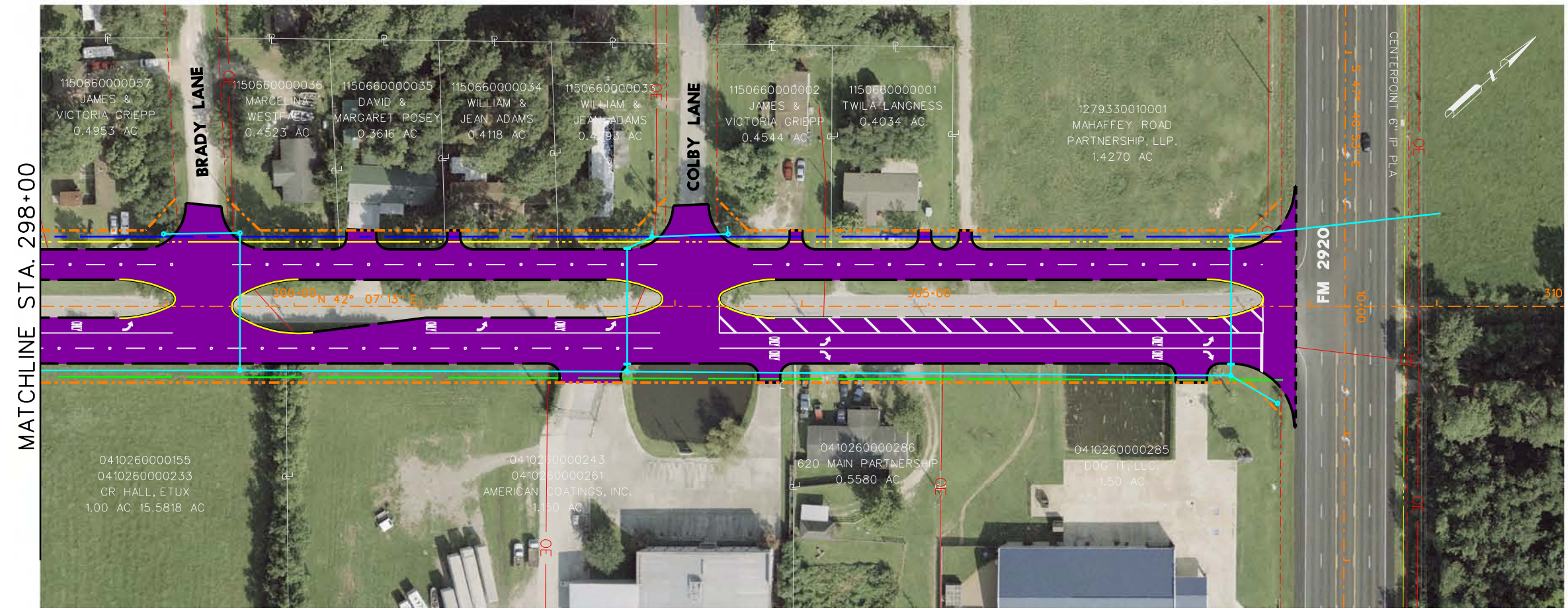


EXHIBIT 10

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
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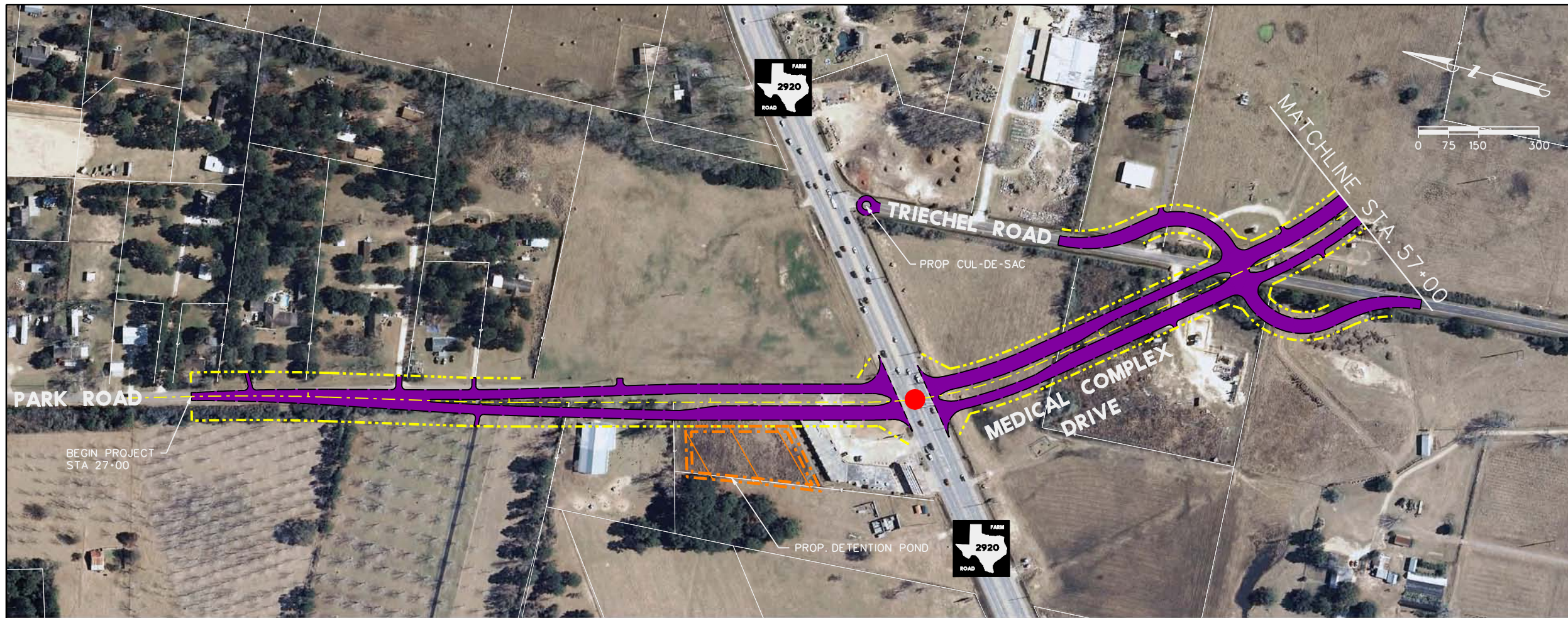
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**PAVEMENT MARKINGS
 STA. 286+00 TO END**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=100' H	DRAWN BY:	KMM
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

PROP. ROW	-----
PROP. ROADWAY C	-----
PROP. FACE OF CURB	-----
PROP. PAVEMENT	█
PROP./MODIFIED SIGNAL	●

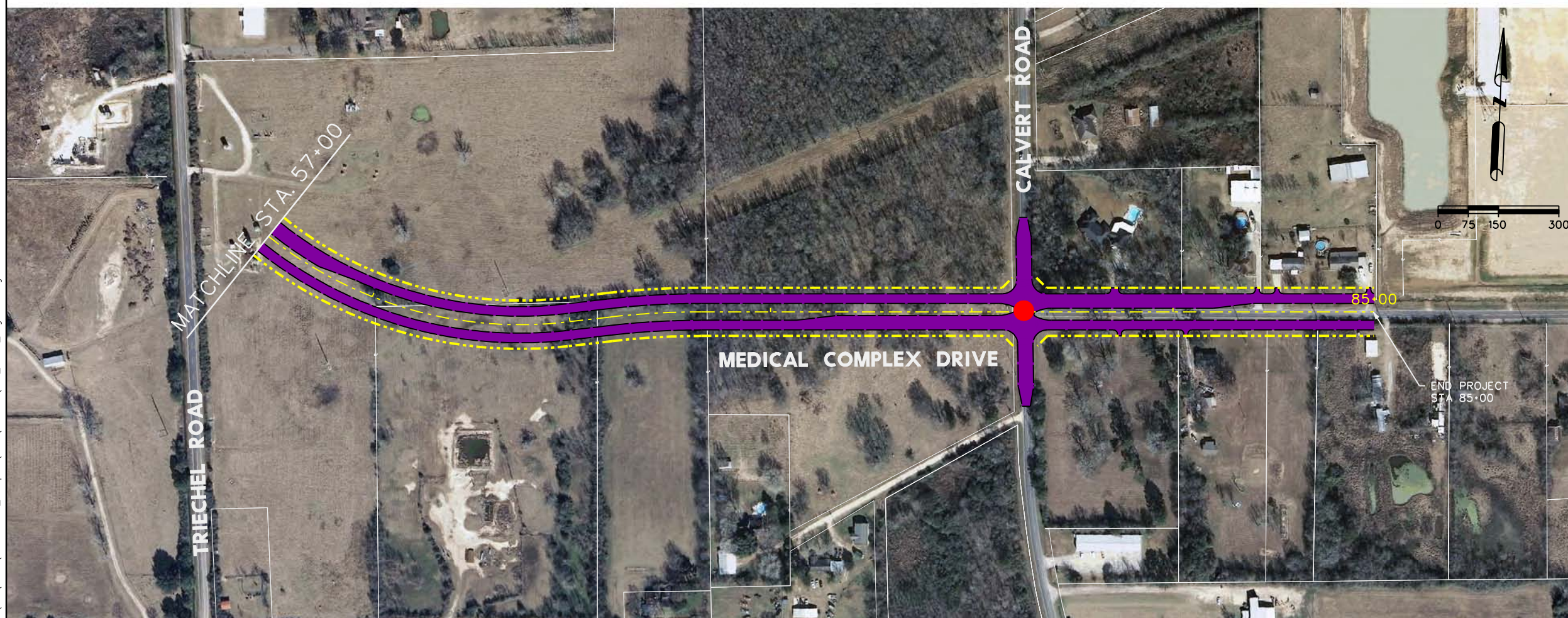


EXHIBIT 11

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
 13430 Northwest Freeway, Suite 1100
 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

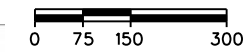
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 1
 27+00 TO STA. 85+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=300'	DRAWN BY:	BCB
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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LEGEND

- PROP. ROW
- PROP. ROADWAY ϵ
- PROP. FACE OF CURB
- PROP. PAVEMENT
- PROP./MODIFIED SIGNAL

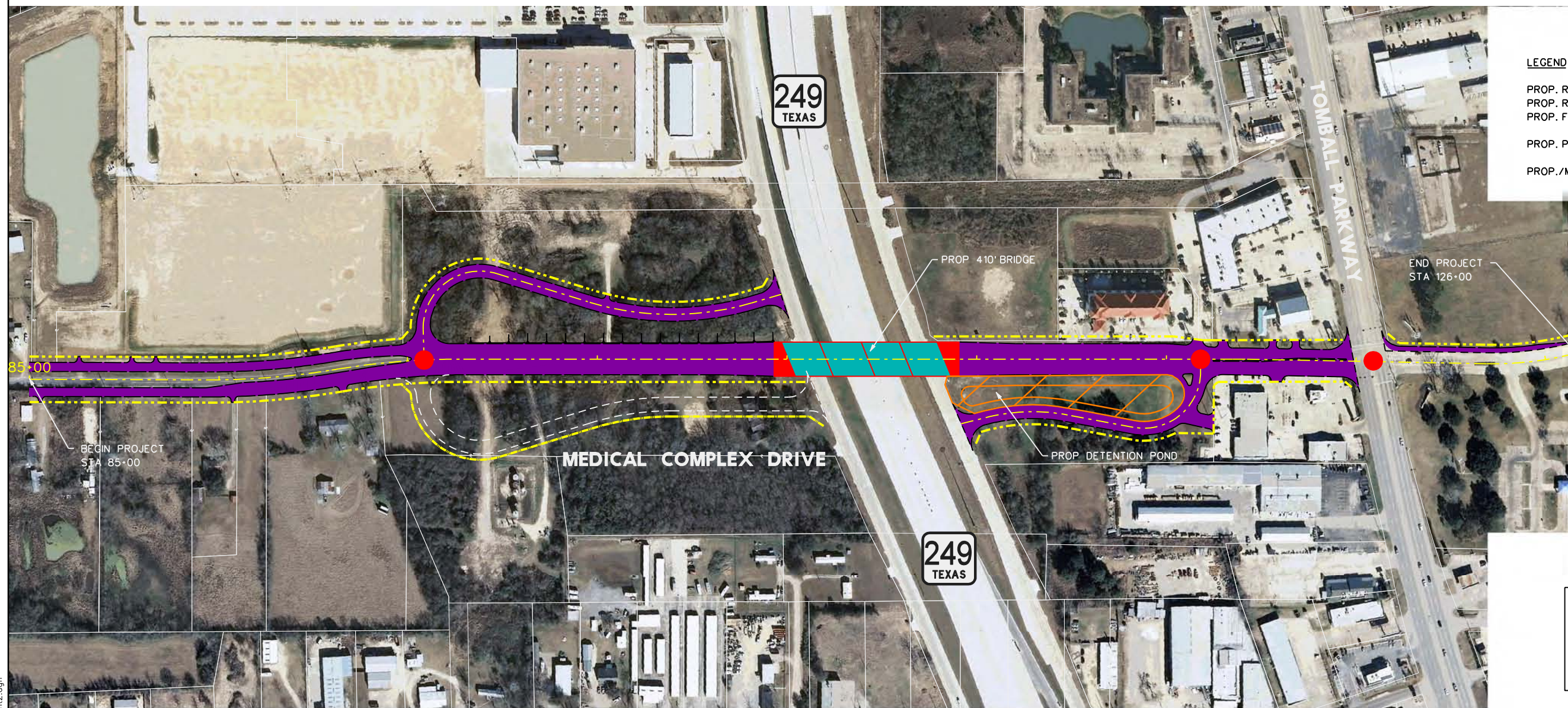


EXHIBIT 11

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
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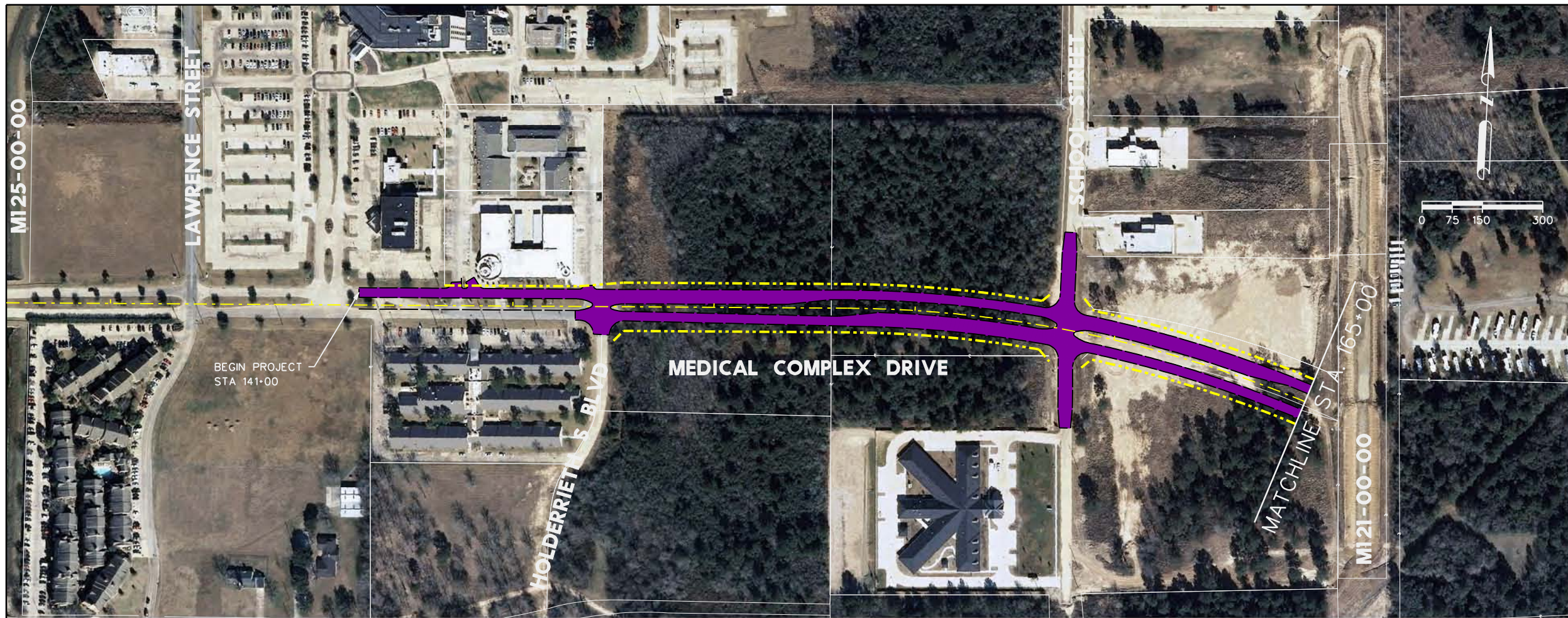


**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 2
 STA 85+00 TO STA 126+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1" = 300'	DRAWN BY:	MS
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

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LEGEND

PROP. ROW	-----
PROP. ROADWAY C	- - - - -
PROP. FACE OF CURB	-----
PROP. PAVEMENT	█
PROP./MODIFIED SIGNAL	●

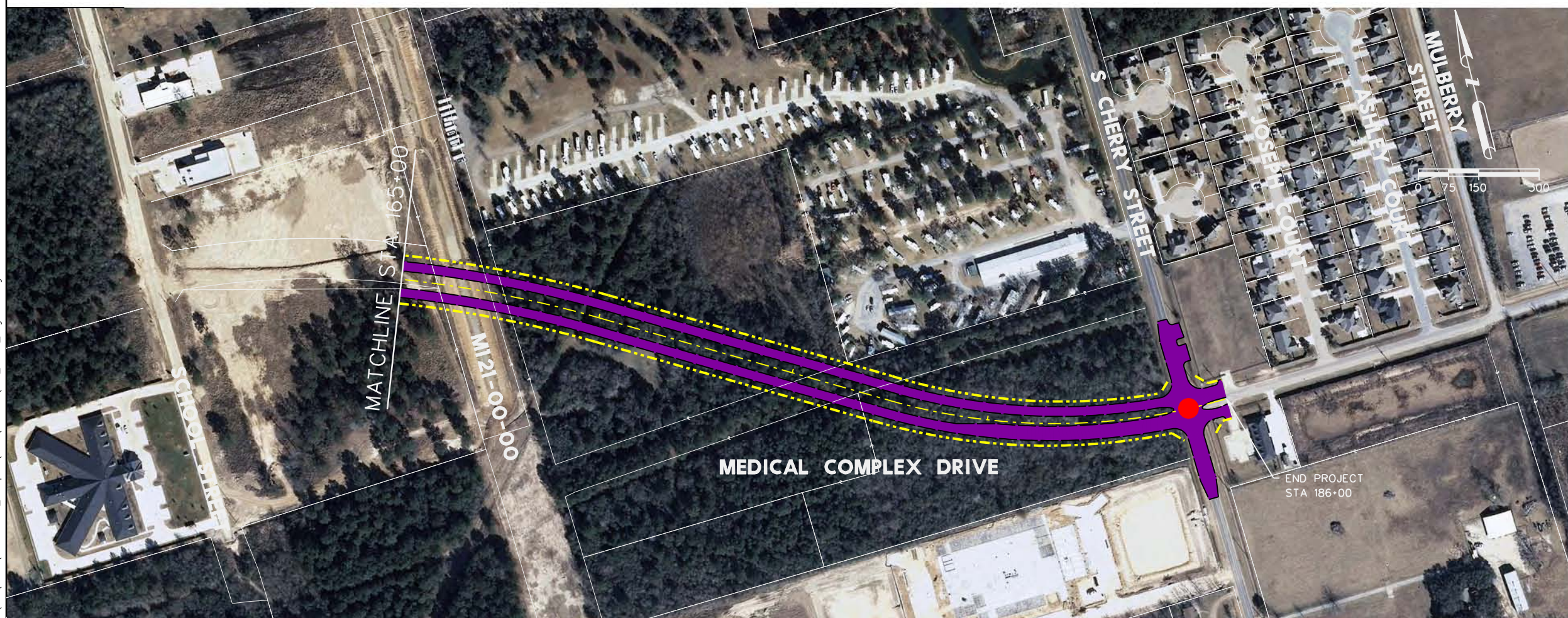


EXHIBIT 11

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

CobbFendley
 Texas Registration No. 274
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 Houston, Texas 77040
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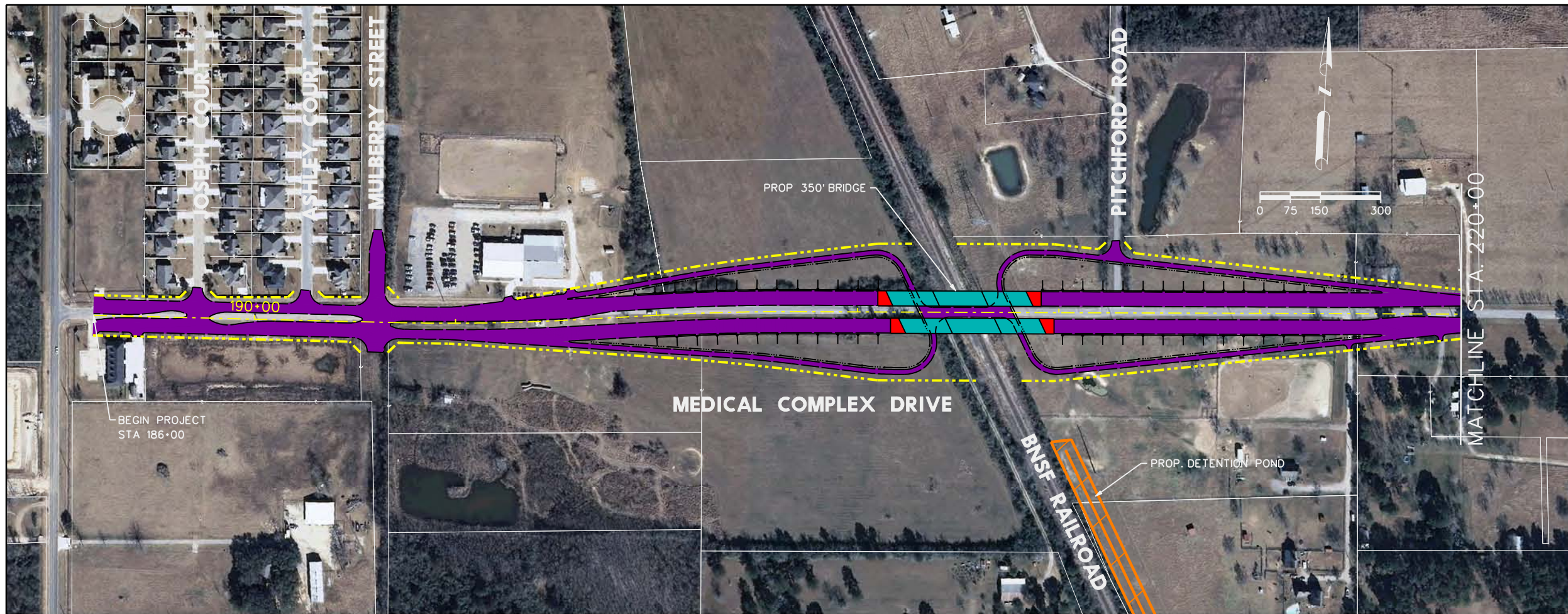
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 3
 STA 141+00 TO STA 186+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=300'	DRAWN BY:	BCB
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009
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- LEGEND**
- PROP. ROW
 - PROP. ROADWAY ϵ
 - PROP. FACE OF CURB
 - PROP. PAVEMENT
 - PROP./MODIFIED SIGNAL

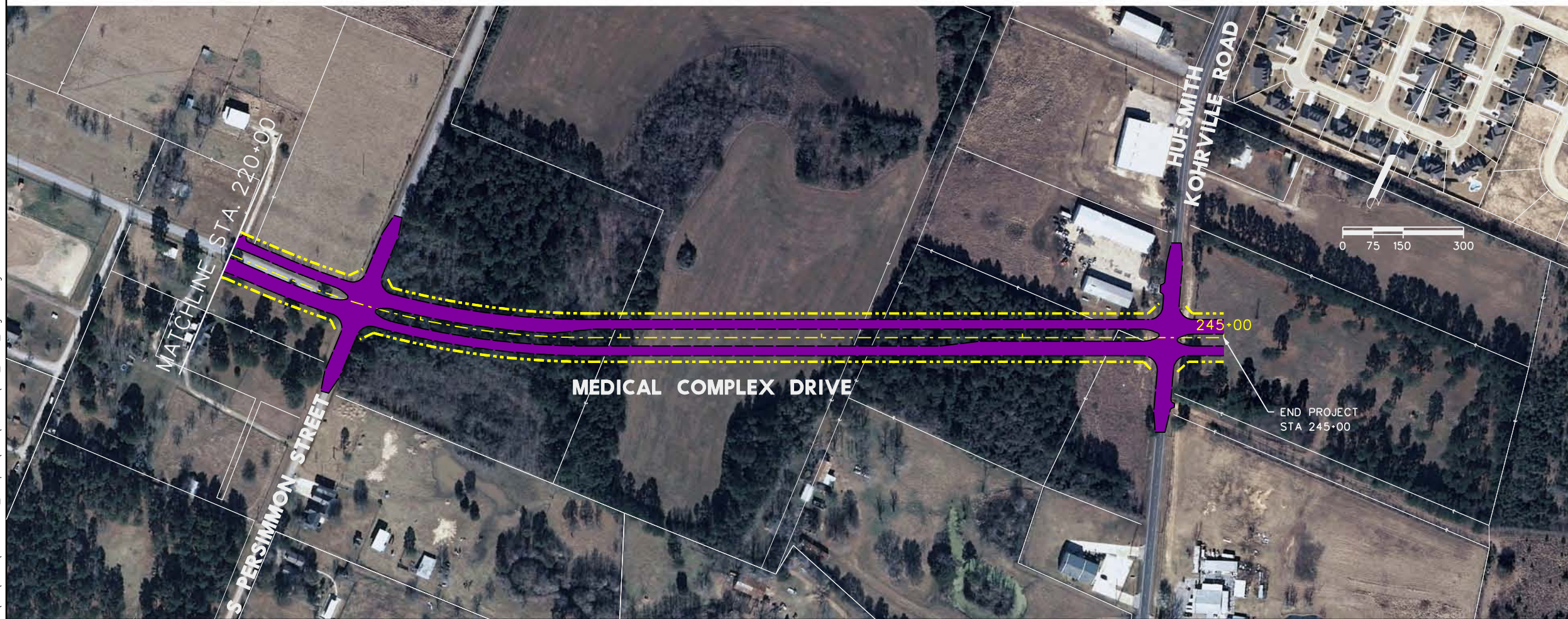


EXHIBIT 11

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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 Texas Registration No. 274
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 Houston, Texas 77040
 713.462.3242 | fax 713.462.3262 | www.cobfen.com

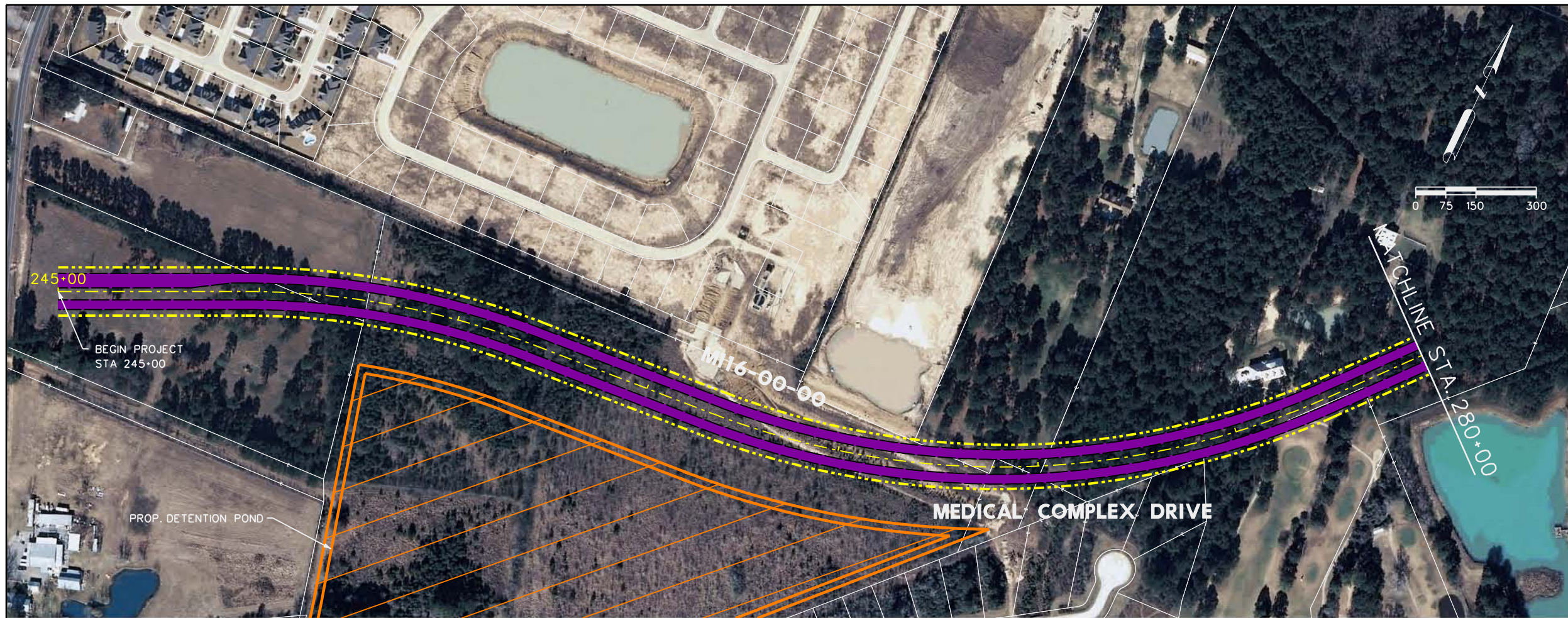
CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 4
 STA 186+00 TO STA 245+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=300'	DRAWN BY:	BCB
DATE:	6/9/2009	SHEET No.:	OF
SURVEY BY:	CFA	DWG. NO.:	
F B NO.:			

6/9/2009 d:\cfa\2008\med_complex\ustn\Exhibits\ex6_const_segment4.dgn



LEGEND

PROP. ROW	-----
PROP. ROADWAY C	- - - - -
PROP. FACE OF CURB	-----
PROP. PAVEMENT	█
PROP./MODIFIED SIGNAL	●

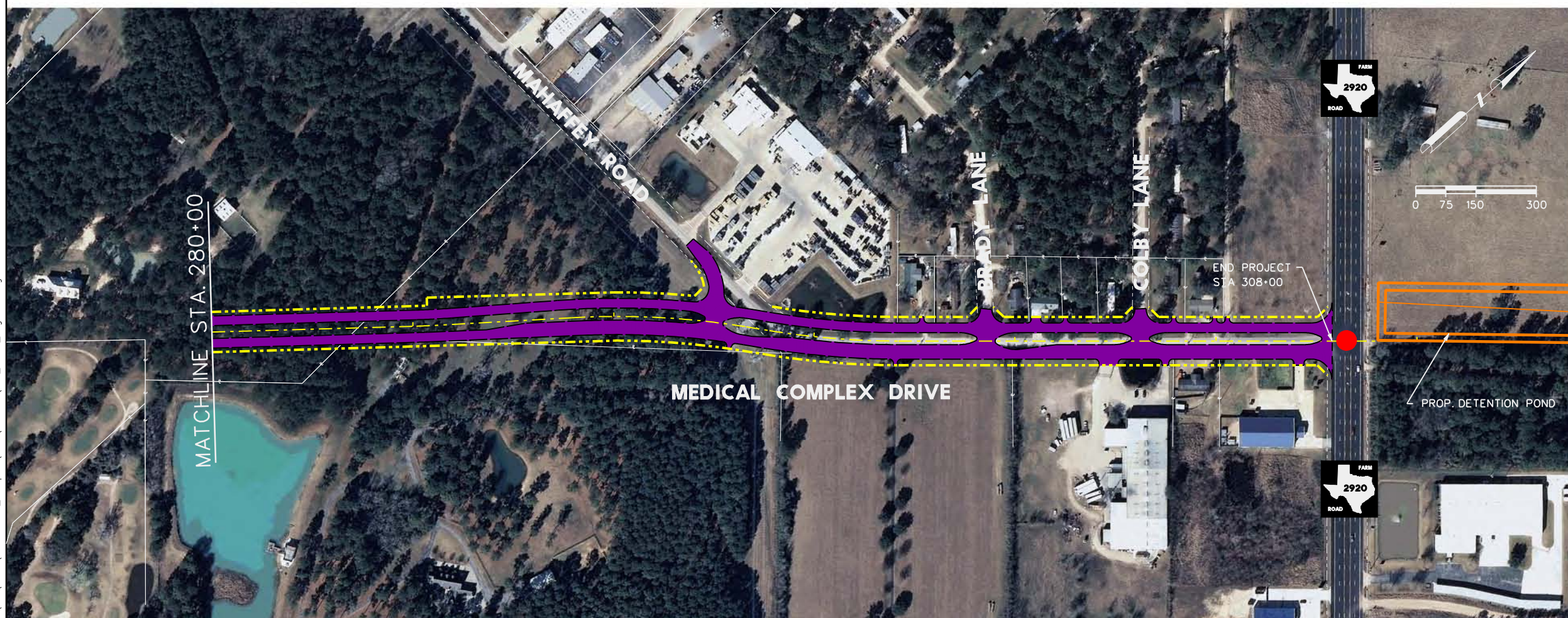


EXHIBIT 11

INTERIM REVIEW
 Not intended for construction,
 bidding or permit purposes.
 Engineer: MAHMOUD SALEHI
 P.E. Serial No.: 89552
 Date: 6/9/2009

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CITY OF TOMBALL
 TOMBALL, TEXAS

**MEDICAL COMPLEX DRIVE
 RECONSTRUCTION/EXTENSION
 PROJECT NO. 2003-10017**

**CONSTRUCTION SEGMENT 5
 STA 245+00 TO STA 308+00**

SUBMITTED BY:	MS	DESIGNED BY:	MS
SCALE:	1"=300'	DRAWN BY:	BCB
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PHASE ONE
ENVIRONMENTAL SITE ASSESSMENT

**5 MILES, MORE OR LESS
PROPOSED TOMBALL MEDICAL COMPLEX DRIVE
HARRIS COUNTY, TEXAS**



PREPARED FOR:
COBB, FENDLEY & ASSOCIATES, INC.

BY:
**BERG & OLIVER ASSOCIATES, INC.
HOUSTON, TEXAS**

**REPORT NO: 7020XPI08
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PHASE I ENVIRONMENTAL SITE ASSESSMENT

1.0 EXECUTIVE SUMMARY

Property Name: Approximate 5 mile right of way for Tomball Medical Complex Drive.

Location:

The proposed alignment is located in Tomball, Harris County, Texas and consists of the existing and proposed right of way for Tomball Medical Complex Drive.

Legal Description:

A legal description of the proposed right of way was not provided to Berg-Oliver Associates.

Current/Historic Land Use:

Currently, the project area is a mixture of existing roadways and unimproved land. Adjoining properties are a mixture of residential and commercial properties and unimproved land. Historically, the proposed alignment appears to have been agricultural land, with oil and gas activity within or in close proximity to the proposed right of way in several locations.

Agency Review:

A review of the currently available database information indicates there are one (1) RCRA site, one (1) petroleum storage tank (PST) site, eight (8) Leaking Petroleum Storage Tank (LPST) sites, five (5) Dry Cleaner sites, and one (1) IHW site within the ASTM Standard search distance of the project area. With the exception of one (1) DCRP site located at the southwest corner of Business 249 and Tomball Medical Complex Dr., these sites were judged not to pose an environmental concern to the proposed project at this time. These sites are further addressed in the Regulatory Database section of this report.

Site Visit:

Site reconnaissance was conducted on November 11, 2008 by Chris Thayer of Berg ♦ Oliver Associates, Inc. At the time of the site reconnaissance, access agreements had not been executed with the property owners, and the site reconnaissance was performed from publicly accessible areas. The proposed alignment was found to consist of approximately 5 miles of existing and proposed right of way associated with Tomball Medical Complex Drive. The western end of the proposed alignment begins just north of FM 2920 near its intersection with Park Road. The proposed alignment then trends generally west to east to the eastern terminus of the proposed project area near the intersection of FM 2920 and Stuebner-Airline. Properties located west of the SH 249 bypass are primarily unimproved, wooded land, with scattered single-family residential home sites also present. An active oil/gas site was observed near the intersection of the proposed alignment and Treichel Road; however, the oil/gas site is located far enough north of the proposed alignment that it is not considered an environmental concern to the proposed project. The proposed alignment runs along an existing roadway (Hooper) from Calvert to the SH 249 bypass. Properties along Hooper are single-family acreage home sites, with oil/gas activity observed in the general vicinity. Hooper currently ceases on the west side of the SH 249 bypass. Access to the existing Tomball Medical Complex Drive located east of the SH 249 bypass is gained via the northbound SH 249 bypass feeder road.

The proposed alignment is in place as a two-lane paved roadway from the east side of the SH 249 bypass,

across 249 Business, and continuing to just east of Holderreith. Adjoining properties to the west of 249 Business are commercial and include two (2) small shopping centers and a hotel. \$1.50 Dry Cleaners was observed in a shopping center located at the southwest corner of 249 Business and Tomball Medical Complex Drive. This facility is identified in the regulatory database as an on-site dry cleaner that uses perchloroethylene in the process. The facility does not appear in either the DCRP or VCP databases as a site that is under remediation or investigation. However, the possibility exists for an undetected release to affect the proposed project area through discharge to storm and/or sanitary sewers. Information provided to BOA indicates utility construction is likely in this portion of the existing Medical Complex Drive; therefore it would be prudent to investigate soil and/or groundwater conditions in this area. Adjoining properties located between 249 Business and Holderreith are primarily medical offices and facilities. Multi-family residential housing is also present at the southwest corner of Lawrence and Medical Complex Drive, and an assisted living facility is present at the southwest corner of Medical Complex Drive and Holderreith.

The proposed alignment trends east/southeast from Holderreith to its intersection with South Cherry. Properties in this section of the project area are primarily unimproved land, with scattered residential housing also present. The proposed alignment then trends east along Agg Road until its intersection with South Persimmon. A convenience store with evidence of USTs was observed at the northeast corner of the intersection of Agg Road and South Cherry. This facility does not appear in the regulatory database information. Review of TCEQ's online PST database indicates the facility is the Cherry Lane Food Mart located at 1525 S. Cherry Ln. TCEQ database information indicates the UST system was installed in July, 2008. This corresponds with information available from historical aerial photography, which indicates the store was constructed after 2006. Given the young age of the system, this facility is not considered an environmental concern to the proposed project at this time. Prior to its intersection with South Persimmon, the proposed alignment crosses a railroad easement (recorded as Burlington Northern on Key Map page). In the past, railroad easements were often defoliated with the use of chemicals that contained arsenic. The presence of PCB from older railroad brake pads is also possible within a railroad easement. Information provided to BOA indicates construction is likely within the railroad easement; therefore, soil conditions within the railroad easement are considered a potential environmental concern at this time.

From South Persimmon, the proposed alignment trends east/northeast until its termination at FM 2920. The last approximately 1,200 feet of the proposed alignment follows existing Mahaffey Road. Properties located along this section of the project area are predominantly unimproved land. The proposed alignment passes in close proximity to a warehouse facility at its intersection with Hufsmith-Kohrville. East of Hufsmith-Kohrville, proposed alignment passes in proximity to the southeast corner of the Willow Creek Estates subdivision and wastewater treatment plant, and the northern portion of the Country Club Greens subdivision. East/northeast of these subdivisions, the proposed alignment passes through unimproved property that appears to be part of a single-family residence with acreage.

Tobin Oil and Gas Maps indicate approximately twelve (12) former oil/gas sites in close proximity to the proposed alignment. Historical aerial photography indicates the potential presence of former reserve pits, tank batteries, and other structures located within or adjoining the proposed alignment. The presence of residual contaminants from former oil and gas activities is considered a potential environmental concern at this time. Location and identification of wells with the potential to adversely affect the proposed project would require a level of investigation outside the scope of this assessment. It is recommended that well records be obtained for wells in proximity to the proposed alignment, and historical aerial photography as close as possible to the drilling dates also be obtained. The RRC records and historical aerial photography can then be utilized to determine the scope of any potential Phase II testing. Additional details concerning the subject site are presented in Section 3.

Findings and Conclusions:

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-2005 of the approximate 5 mile proposed Tomball Medical Complex Drive, located in Harris County, Texas. Any exceptions to, or deletions from, this practice are described in Section 2.3 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property with the exception of the following:

1. \$1.50 dry cleaners at southwest corner of 249 Business and Medical Complex Drive
2. Railroad easement crossing Agg Road
3. Former oil/gas drill sites located within or adjoining proposed project area

2.0 INTRODUCTION

The study reported herein is a Phase I Environmental Site Assessment for Cobb, Fendley & Associates, Inc., for the proposed alignment "site" located in Harris County, Texas. This assessment was performed to satisfy one of the requirements for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) innocent landowner defense, contiguous property owner or bona fide prospective purchaser: that is, the practices that constitute "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in 42 USC 9601(35)(B).

2.1 Purpose

The objective of the Phase I Environmental Evaluation was to identify, to the extent feasible pursuant to the processes prescribed in ASTM Standard Practice E1527-2005, "Environmental Site Assessments: Phase I Environmental Site Assessment Process", *recognized environmental conditions* in connection with the subject property.

The term *recognized environmental conditions* means the presence or likely presence of any hazardous substances or *petroleum products* (see Section 8.0 and 9.0 for special terms and definitions) on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any such hazardous substances or *petroleum products* into structures on the property or into the ground, groundwater, or surface water of the property. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Petroleum products are included within the scope of this practice because they are of concern with respect to many parcels of commercial and/or non-commercial real estate and the current custom and usage is to include inquiry into the presence of petroleum when conducting an environmental site assessment of real estate.

2.2 Detailed Scope-of-Services

The following components, as prescribed in the ASTM standard, comprise the fundamental scope under which this Phase I Environmental Site Assessment was performed:

- 1). Records Review - Review of records, both current and historical, that would help identify recognized environmental conditions in connection with the subject property. A fifty-year chain-of-title may be obtained and reviewed

as part of the scope of the Phase I ESA. Under certain circumstances, historical title instruments and city directory review may be precluded from the completion of the Phase I ESA. This will typically occur when more than one tract of property is associated with the Phase I ESA, unless a pre-agreement has been reached by the client and Berg ♦ Oliver Associates, Inc. (BOA). BOA will provide extended title search information and a review title instruments at our cost, plus a cost effective approach for reviewing the title instruments.

BOA will obtain and review regulatory database information prepared to the approximate ASTM-designated minimum search distance. A reasonable effort or attempt to identify and reconcile inaccuracies presented in the database, if any, will be conducted, when site-specific or related knowledge is available. Unmapped (orphan) regulatory facilities also will be reviewed and their potential risk to the subject property will be evaluated. The following other historical sources if reasonably available also will be utilized to evaluate to condition of the property:

- Review of reasonably obtainable historical aerial photographs of the subject property. Provide observations and/or conclusions concerning the subject property based on the aerial photographs;
 - Review of current an/or historical United States Geological Survey 7.5-Minute Topographical Maps, Sanborn Fire Insurance Maps (when available) or other pertinent maps (Railroad Commission of Texas Maps, Tobin Research Oil & Gas Maps, Geologic Maps, Aquifer Maps, Stratigraphic and Hydrogeologic Cross Section(s), Fault and Radon Maps, United States Department of Agricultural and/or agricultural experiment station Soil Conservation Service Maps, Federal Emergency Management Agency Flood Insurance Rate Maps and other available maps);
 - Review of historical city directories and evaluation of the potential for environmental concern;
 - Review of reasonably obtainable public agency records concerning the storage, treatment and/or disposal of hazardous substances, and the registration of and reported releases of petroleum storage tanks in the vicinity of the subject property; and,
 - Review of available geotechnical or environmental reports for the subject property, when available.
- 2). Site Reconnaissance - Visual and physical observations of the subject property, and any structures located on the property, to the extent not obstructed by bodies of water, adjacent buildings, or other obstacles or a

hindrance to access. A physical inspection of the site and visual inspection of adjoining tracts (reconnaissance) will be conducted.

- 3). Interviews - Interviews with current owners and/or occupants of the property, as well as local government officials that may have jurisdiction of the area that the property exists. Interviews will be conducted with individuals familiar with the site and/or site history and/or historical operations performed at the site, when available.
- 4). Report - A document containing the findings and conclusions of the environmental assessment, including methodologies, information sources, and other necessary documentation will be submitted to the client.

Some substances may be present on a property in quantities and under conditions that may lead to contamination of the property, or nearby properties, but are not included in CERCLA's definition of hazardous substances or do not otherwise present potential liability.

The ASTM standard states that there may be environmental issues or conditions at a property that parties may wish to assess in connection with commercial real estate that are outside the scope of Practice E1527-2005. These issues and/or conditions are designated *non-scope considerations* or *additional services*. If, during the course of this assessment, such considerations or services are addressed in this report, they will be so designated. This study was performed to achieve the following objectives:

- 1). Evaluate past and current land use of the property, and adjacent properties, for indications of the generation, use, storage, transportation, and/or disposal of hazardous substances or petroleum products at the site.
- 2). Evaluate the potential for soil and/or groundwater contamination due to the presence or potential presence of hazardous substances or petroleum products.
- 3). Identify serious or potentially serious threats to human health or the environment to reduce the risks to agents, employees, contractors and the general public.
- 4). Recommend additional investigations as necessary to assess potential contamination of the property, and to determine the nature, level, and extent of such contamination, if present.

2.3 Significant Assumptions

BOA assumes the information concerning the legal description, metes and bounds, title commitment/purchase price versus the appraised value, owner (seller)/buyer provided-information and other site-specific information provided by the client are accurate. BOA does not warrant the accuracy of this information or whether additional work or site visits may be necessary due to inaccurate details concerning the subject property. BOA may require a change order in such cases. BOA will put forth conclusions and recommendations based on professional judgment; and BOA will obtain all practically reviewable, publicly available or reasonably ascertainable information concerning the subject property to the best of BOAs knowledge. This Phase I ESA is not meant to be an exhaustive investigation of "clean" properties such as a residential lot, vacant and undeveloped land with little historic activity or a property with similar low to non-existent environmental risk factors. Phase I ESAs are tailored for commercial properties such as: industrial properties of all natures, office/warehouse facilities, retail and retail center, service-related enterprises (e.g. print shop, car repair, lube facility, car dealerships, airport, pesticide applicators, manufacturing, specialty businesses, etc.), office buildings and institutional uses. Properties utilized for single family dwellings with four or less units tend to be outside the Phase I ESA practice or consideration. Phase I ESA may be conducted on multi-family properties at ones discretion or based on lending requirements.

No environmental site assessment can wholly eliminate uncertainty regarding the potential for *recognized environmental conditions* in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property, and this practice recognizes reasonable limits of time and cost. Thus, not every property will warrant the same level of assessment or inquiry. Environmental site assessments must be evaluated based on the reasonableness of the judgments made at the time and under the circumstances in which they were made.

2.4 Limitations and Exceptions

The Phase I Environmental Site Assessment report, and the opinions expressed herein concerning the potential for environmental impairment liabilities from regulated sites, is partially based on published information. Undetectable environmental risks may be present and not documented by regulatory agency files. Berg ♦ Oliver Associates, Inc., therefore, does not warrant, guarantee, or certify the accuracy or completeness of such regulatory information. Berg ♦ Oliver Associates, Inc. disclaims any and all liability for errors, omissions, or inaccuracies in such information and data, and for any and all inaccurate conclusions, inadvertent or otherwise, which may be based on such information and data.

This environmental site assessment cannot wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with the subject property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for such conditions. The following variances from the ASTM Standard were made for this assessment:

1. Due to the nature of the project area as approximately five (5) miles of right of way across multiple ownership, the time and expense involved in obtaining chain of title information, Owner/Occupant Questionnaires, and city directories do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard. Due to the availability of other historical sources and the historically unimproved nature of the project area, the absence of this information is not considered a significant data gap.

2.5 Special Terms and Conditions

This Phase I Environmental Site Assessment was authorized by Mahmoud Salehi on behalf of Cobb, Fendley & Associates, Inc. and was prepared for client use in evaluating the potential environmental risks associated with the property. *Sections 8.0 and 9.0* provide important terms and definitions related to environmental site assessment or environmental-related issues.

The methodology used to perform this study included site reconnaissance, reviews of historical use information, reviews of physical setting sources, reviews of standard environmental record sources (including selected agency files), and interviews with individuals familiar with the site.

Additional services, or non-ASTM E1527-2005 scope of services may have been conducted under the scope of this report. The following are several non-scope considerations that may be appropriate for consideration based on the land-use of the property. No implication is intended as to the relative importance of inquiry into such non-scope considerations and the list is not intended to be all inclusive:

- Asbestos-Containing Materials
- Radon
- Lead-Based Paint
- Lead or other constituents in the Drinking Water
- Wetlands
- Regulatory Compliance
- Cultural and Historic Resources
- Industrial Hygiene, Health and Safety

- Ecological Resources
- Endangered Species
- Indoor Air Quality
- High Voltage/Tension Powerlines

2.6 User Reliance

This report does not constitute an appraisal of value or legal opinion, and Berg♦Oliver Associates, Inc. makes no representations or warranties of the fitness of the property for any specific use or value. Berg♦Oliver Associates, Inc. assumes no responsibility for the customer's, or a third party's, use of this report. Berg♦Oliver Associates, Inc. shall not be liable for any special consequential or exemplary damages resulting, in whole or in part, from customer's use of the report. This report was conducted and prepared under the scope of services presented in the proposal contract between BOA and client. This report was prepared utilizing site-specific data that may only be applicable to a certain time period, or may be specific to the client and was specifically the basis for the preparation of this report. Unauthorized reliance of this document by anyone other than above-listed client is strictly prohibited. No warranty is specifically expressed, or implied in third party matters of this nature, and unauthorized utilization of this document is made at any third party's risk. Any third party utilization of this document will require a BOA review of the information and a reliance letter prepared by BOA.

2.0 SITE DESCRIPTION

3.1 Location

The proposed alignment is located in Tomball, Harris County, Texas and consists of the existing and proposed right of way for Tomball Medical Complex Drive. The western end of the proposed alignment begins just north of FM 2920 near its intersection with Park Road. The proposed alignment then trends generally west to east to the eastern terminus of the proposed project area near the intersection of FM 2920 and Stuebner-Airline.

3.2 Site and Vicinity General Characteristics

The proposed alignment consists of unimproved land and existing right of way along paved roadways. The use of adjoining properties is mixed and includes residential, commercial, retail, and medical facilities. Current and past oil/gas activity is also present in the vicinity.

3.3 Descriptions of Structures, Roads or Improvements on the Site

Portions of the proposed alignment are along paved roadways including, Hooper, the existing Medical Complex Drive, Agg Road, and Mahaffey. The project area also intersects with other paved roadways, as well as a railroad easement. Evidence of existing utility easements was observed along the improved roadways.

3.4 Current Use(s) of the Property

The proposed alignment consists of unimproved land and existing right of way along paved roadways.

3.5 Past Uses of the Property

Historically, the proposed alignment appears to have been agricultural land with evidence of oil/gas activity in the near vicinity.

3.6 Current Uses of the Adjoining Properties

The use of adjoining properties is mixed and includes residential, commercial, retail, and medical facilities. Current and past oil/gas activity is also present in the vicinity.

3.7 Past Uses of the Adjoining Properties

Historically, adjoining properties appear to have been agricultural land use in oil and

gas exploration and production.

3.8 Location and Site Maps

A location map is presented in the *Appendix A*. A site map or site survey or other architectural maps are presented in *Appendix B*.

4.0 USER PROVIDED INFORMATION

4.1 Specialized Knowledge

Specialized knowledge may include actual historical knowledge the environmental professional has concerning the subject property. Additionally, the education, training and experience level of the environmental professional tends to have a direct correlation with the quality of assessment and the ability to provide informed observation of the condition of the subject property. Specialized knowledge also may be provided by others that are familiar with the subject property. No specialized knowledge of the site was revealed during the completion of this assessment.

4.2 Commonly Known or Reasonably Ascertainable Information

Commonly known and reasonably ascertainable information concerning the subject site as defined by the ASTM E1527-2005 were obtained and reviewed for this project. Reasonably identified data gaps or data failures will be reported when the environmental professional determines the lack of information creates an unacceptable risk and additional work is warranted.

Due to the nature of the project area as approximately five (5) miles of right of way across multiple ownership, the time and expense involved in obtaining chain of title information, Sanborn Maps and city directory do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard. Due to the availability of other historical sources and the historically unimproved nature of the project area, the absence of this information is not considered a significant data gap.

4.3 Valuation Reduction for Environmental Issues

The client did not provide title commitment and/or purchase price information on the subject property. Due to the lack of comparison information, BOA can not effectively complete this task.

5.0 RECORDS REVIEW

5.1 Standard Environmental Record Sources, Federal and State

The number of listed regulatory facilities/sites identified within the ASTM designated minimum search distance from the Federal and state environmental records database listings specified in ASTM Standard E1527-2005 are summarized in the following table (Table 1). Detailed information for the facilities/sites identified within the search range is provided in the following text, along with an opinion about the significance of the listing to the analysis of recognized environmental conditions in connection with the subject property. Copies of the research data and a description of the databases are included in *Appendix C-Regulatory Agency Information* of this report.

TABLE 1

Regulatory Database Reviewed	On-Site Facilities/Sites	Abutting Facilities/Sites	Number of Facilities/Sites And Search Distance			Comments
			0.25-mile	0.25-0.50-mile	1.0-mile	
NPL/TXSSF	0	0	0	0	0	-
CERCLIS	0	0	0	0	0	-
RCRA TSD	0	0	0	0	0	-
RCRA CORRACT	0	0	0	0	0	-
RCRA GENERATOR	0	1	0	0	0	-
PST (UST & AST)	0	1	0	0	0	-
LPST	0	0	0	8	0	-
ERNS	0	0	0	0	0	-
TXLF or CLI	0	0	0	0	0	-
TXVCP	0	0	0	0	0	-
TXIOP	0	0	0	0	0	-
DRY-CLEANING OR OTHER	0	1	0	4	0	-

KEY

NPL – National Priority List Facility/Site

TXSSF – Texas State Superfund Facility/Site

CERCLIS – Comprehensive Environmental Response, Compensation and Liability Act Information System under

ERNS – Emergency Response Notification System

FINDS – Facility Index System (Permits, Reports, Violations)

RCRA (RCRIS) Notifiers – Resource, Conservation and Recovery Information System Notification Listings and/or

CERCLA
RCRA (RCRIS) TSD – RCRA Treatment, Storage, and Disposal Facility
TXSPILL – Texas Spill Listing
LPST – TCEQ Leaking Petroleum Storage Tank Facility
PST – TCEQ Registered Petroleum Storage Tank Facility
RCRA (RCRIS) Generator – Hazardous Waste Generator and/or Transporter
TXIOP – Texas Innocent/Owner Operator Program Facility
SSTS – Section Seven Tracking System Facility
CLI – Closed landfill Inventory (Grandfathered Landfills)

TCEQ IHW listings
TRI – Facilities that release substances or materials to the air and/or land and/or water, or transport material/substances off-site for disposal purposes
TXLF – Texas Landfill
TXVCP – Texas Voluntary Clean-Up Program Facility
CERCLA – Comprehensive Environmental Response, Compensation and Liability Act
RCRA – Resource, Conservation and Recovery Act
TSCA – Toxic Substance Control Act Facility
Dry Cleaning Related – Dry cleaning related registration facility

A review of regulatory agency site listings was conducted to determine the proximity of documented regulatory sites in reference to the tract being investigated. These agency-regulated sites may be facilities that store, transport, generate, or dispose of regulated waste materials. The listing of these facilities/sites does not imply that they impact the subject tract through undisclosed dumping, surface run-off, or subsurface migration, but are listed solely to show the proximity of the regulated sites to the subject property. The locations of the facilities/sites are approximate, based on information filed with the respective agencies, and may have not been field verified. The following is a list of regulatory agencies from which data was reviewed.

5.1.1 National Priority List (NPL) Superfund Sites and State Equivalent Sites

The United States Environmental Protection Agency (USEPA) compiles a list of facilities/sites that may have significant environmental concerns and are listed as an NPL facility/site, if deemed appropriate and have a priority ranking system. These sites/facilities are often cross-referenced to a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) facility/site listing. Facilities that have been identified as CERCLA sites are assigned a Hazard Ranking after an assessment of the potential threats the site may pose to human health and the environment. Based on the Hazard Ranking, the facility/site is either listed on the Federal NPL, or is assigned to further actions under state jurisdictions.

No NPL Superfund sites are listed within a one-mile search radius of the subject site. No state equivalent facilities/sites are listed within a one-mile search radius of the subject site.

5.1.2 CERCLA Database (CERCLIS List)

One of the statutory features of the Comprehensive Environmental

Response, Compensation and Liability Act (CERCLA) is the requirement and funding of remedial actions for release or threat of release of hazardous substances, pollutants, or contamination that may present imminent or substantial damage to public health and welfare.

This database is a compilation of those facilities which the U.S. Environmental Protection Agency has identified as having a known or suspected uncontrolled release of hazardous substances, contaminants, or pollutants. This list also encompasses all abandoned hazardous waste sites. These facilities/sites will be assessed and either a hazard ranking will be applied for possible NPL inclusion, or the facility will be de-listed. Some of the facilities may require remedial action, but may have since been de-listed after an appropriate approved response (No Further Remedial Action Planned). Also, some facilities/sites may be determined not to have a significant environmental concern after the assessment phase of the facility or property.

No CERCLA facilities/sites are listed within a half-mile search radius of the subject site.

5.1.3 RCRA Database (RCRIS List)

The Resource Conservation and Recovery Act (RCRA) defines and regulates facilities that generate, transport, treat, store, or dispose of hazardous waste. Such facilities are listed in the RCRIS database, which identifies the following: treatment, storage, or disposal (TSD) facilities; corrective action (CORRACT) facilities; large quantity generators-LQG (>1000 kg/mo); and small quantity generators-SQG (between 100 and 1000 kg/mo). The database may also include conditionally exempt small quantity generators (CESQG), notifiers, transporters, listed violation(s) for a facility and/or enforcement actions.

No RCRA TSD facilities are listed within a one-half mile search radius of the subject site. No RCRA CORRACT facilities are listed within a one-mile search radius of the subject site. One (1) RCRA Generator is listed on or adjoining the subject site.

The RCRA Generator site is listed as American Coatings Management (TXR000018994) located at 10625 Mahaffey Road. The regulatory database map indicates this facility is located in the eastern portion of the project area, just west of its intersection with FM 2920. Regulatory database information indicates the facility is a large quantity generator, with one (1) verbal, informal 1996 citation recorded. No corrective actions are recorded for the facility. Due to the fact the facility has

only one (1) 12 year old verbal citation recorded, and the absence of recorded corrective actions, this facility does not appear to pose an environmental concern to the proposed project at this time.

5.1.4 Registered, Petroleum Storage Tank (PST) List

Owners of registered Petroleum Storage Tanks (PSTs) are required to register the PSTs, along with construction information concerning the PST system, with the Texas Commission on Environmental Quality (TCEQ).

One (1) registered Petroleum Storage Tank (PST) facility is listed on or adjoining the subject site.

The PST site is listed as Walters Quick Stop (PST ID No. 73770) located at 15222 FM 2920, approximately 0.092 mile west of the proposed alignment (west of Park and FM 2920). Regulatory database information indicates the UST system was installed in 1998 and consists of composite steel tanks with automatic tank gauging and in-line leak detection. The system appears to be in compliance with current PST regulations, and no leaks are recorded. This facility does not appear to pose an environmental concern to the proposed project at this time.

5.1.5 Leaking Petroleum Storage Tank (LPST) Facilities

Eight (8) Leaking Petroleum Storage Tank (LPST) facilities are listed within a half-mile search radius of the subject site.

The first LPST site is listed as Parkway Chevrolet (LPST ID No. 100791) located at 27909 Highway 149. The regulatory database map indicates this site is located approximately 0.252 mile west of the project area. Regulatory database information indicates the LPST incident involved minor soil contamination which did not require a remedial assessment plan, and final concurrence has been issued and the case closed by the TCEQ. Due to its distance from the project area and the absence of groundwater impact, this facility does not appear to pose an environmental concern to the proposed project at this time.

The second LPST site is listed as Stop N Go Store #3692 (LPST ID No. 99102) located at 28531 Tomball Parkway. The regulatory database map indicates this site is located approximately 0.262 mile west of the proposed project area. Regulatory database information indicates the LPST incident involved groundwater impact with no apparent threats or impacts to receptors, and final concurrence has been issued and case closed by the TCEQ. Due to its distance from the project area

and the closure of the LPST incident by TCEQ, this facility does not appear to pose an environmental concern to the proposed project at this time.

The third LPST site is listed as Stop N Go #2603 (LPST ID No. 115925) located at 28531 Highway 249. The regulatory database map indicates this site is located approximately 0.262 mile west of the proposed project area. Regulatory database information indicates the LPST incident involves groundwater impact, with impact to a public/domestic water supply well. Due to its distance from the project area, this facility is not considered an environmental concern to the proposed project at this time.

The fourth LPST site is listed as Four Corners Shopping Center (LPST ID No. 108378) located at 14099 FM 2920. The regulatory database map indicates this site is located approximately 0.348 mile west of the proposed project area. Regulatory database information indicates the LPST incident involved no groundwater impact, with no apparent threats or impacts to receptors and final concurrence has been issued and case closed by the TCEQ. Due to its distance from the project area, the absence of groundwater impact, and the closure of the LPST incident by TCEQ, this facility does not appear to pose an environmental concern to the proposed project at this time.

The fifth LPST site is listed as Former Albertson #2776 Former Texaco (LPST ID No. 115967) located at 28631 Highway 249. The regulatory database map indicates this site is located approximately 0.374 mile west of the proposed project area. Regulatory database information indicates the LPST assessment is incomplete, but no apparent receptors are impacted. Due to its distance from the project area, this facility is not considered an environmental concern to the proposed project at this time.

The sixth LPST site is listed as Former Exxon (LPST ID No. 114898) located at 28631 Tomball Parkway. This is the same address as LPST ID No. 115967, and is located approximately 0.374 mile west of the proposed project area. Regulatory database information indicates the LPST incident involved groundwater impact, with no apparent threats or impacts to receptors, and final concurrence has been issued and case closed by the TCEQ. Due to its distance from the project area and the closure of the LPST incident by TCEQ, this facility does not appear to pose an environmental concern to the proposed project at this time.

The seventh LPST site is listed as Tomball Texaco (LPST ID No. 108155) located at 1301 W. Main. The regulatory database map indicates this site is located approximately 0.405 mile west of the proposed project area. Regulatory database

information indicates the LPST incident involved groundwater impact, with no apparent threats or impacts to receptors, and final concurrence has been issued and case closed by the TCEQ. Due to its distance from the project area and the closure of the LPST incident by TCEQ, this facility does not appear to pose an environmental concern to the proposed project at this time.

The eighth LPST site is listed as Klein Supermarket (LPST ID No. 107311) located at 1200 W. Main. The regulatory database map indicates this site is located approximately 0.489 mile northwest of the subject property. Regulatory database information indicates the LPST incident involved groundwater impact, with no apparent threats or impacts to receptors, and final concurrence has been issued and case closed by the TCEQ. Due to its distance from the project area and the closure of the LPST incident by TCEQ, this facility does not appear to pose an environmental concern to the proposed project at this time.

5.1.6 Emergency Response Notification System (ERNS)

The Emergency Response Notification System (ERNS) is a national computer database system that is used to store information on the sudden and/or accidental release of hazardous substances and petroleum products into the environment. The ERNS reporting system contains preliminary information on specific release, including the spill location, the substance released, and the responsible party.

No ERNS releases are recorded on the subject site.

5.1.7 State Landfill List (TxLF) and/or Closed Landfill Inventory

The TCEQ Municipal Solid Waste Division maintains a landfill tracking system that identifies municipal solid waste (MSW) landfills in the state. The division regulates the disposal and treatment of MSW and special waste. The TCEQ also compiled a Closed Landfill Inventory (CLI) that is maintained by the Houston-Galveston Area Council for the Greater Houston Area. In general, this database provides as much information as is available for unpermitted landfills whose operations pre-dated registration requirements.

No MSW landfill sites are listed within a one-half mile search radius of the subject site. No CLI sites are listed within a one-half mile search radius of the subject site.

5.1.8 State Equivalent CERCLIS

The Texas Commission on Environmental Quality maintains a database of sites that serve as a state equivalent to the US EPA CERCLIS database. Sites in this category include the Voluntary Cleanup Program (VCP) and the Innocent Owner/Operator Program (IOP). VCP sites are properties which are not under enforcement order, but which have a materials release that is being investigated and/or remediated by the property owner or their agents. IOP sites are properties on which a materials release from an unrelated off-site source has been identified; however, the owner and/or operator have applied to the state for release of liability and responsibility for the release. Depending upon types of waste generated, stored, or received or the type of processes conducted onsite, some facilities are also required to register with TCEQ as Industrial Hazardous Waste Generators (IHW). These facilities are often cross-listed with RCRA Generator facilities, as the registration requirements are similar.

No TxVCP sites are listed within a one-half mile radius of the subject site.

No TxIOP sites are listed within a one-half mile radius of the subject site.

One (1) IHW site is listed on or adjoining the subject site.

The IHW site is listed as American Coatings Management (TCEQ Facility ID No. 84791) located at 10625 Mahaffey Road. The regulatory database map indicates this facility is located in the eastern portion of the project area, just west of its intersection with FM 2920. Regulatory database information indicates several active waste streams for the facility, including hazardous solid waste, waste resin, dust collector filters, mop heads, and cleanup absorbent. No violations are recorded for the facility, and it does not appear to pose an environmental concern to the proposed project at this time.

5.1.9 Dry Cleaning-Related Sites, Brownfields and Tribal Facilities/Sites

The State of Texas has established the Dry Cleaner Remediation Program (DCRP) which is administered by TCEQ. The DCRP requires dry cleaning facilities to register and contribute to the Dry Cleaning Remediation Fund (DCRF). This fund may then be accessed to assist with remedial action at sites contaminated as the result of dry cleaning activities. The appearance of a facility as a DCRP registrant is not necessarily an indicator that dry cleaning is performed on-site, as drop-off/pick-up only facilities are also required to participate in the program. A Brownfield site is a site in which re-use of the property may be complicated by the

presence or potential presence of contamination. Such sites may enter the EPA's Brownfields program and may apply for grants to be used for investigation and/or cleanup of impaired sites.

Five (5) Dry Cleaner sites were reported in the regulatory database.

The first dry cleaner site is listed as \$1.50 Tomball Cleaners (RN104028097) located at 28145 Tomball Parkway. The regulatory database map indicates this facility is located at the southwest corner of Tomball Medical Complex Drive and 249 Business. This location was confirmed by field reconnaissance. Regulatory database information indicates the facility conducts dry cleaning on-site, and perchloroethylene is used in the process. The facility does not appear in either the DCRP or VCP databases as a site that is under remediation or investigation. However, the possibility exists for an undetected release to affect the proposed project area through discharge to storm and/or sanitary sewers. Information provided to BOA indicates utility construction is likely in this portion of the existing Medical Complex Drive; therefore it would be prudent to investigate soil and/or groundwater conditions in this area.

The second dry cleaner site is listed as Tomball Dry Clean Express (RN104895586) located at 27910 Tomball Parkway. The regulatory database map indicates this site is located approximately 0.240 miles west of the proposed project area. Regulatory database information indicates the facility conducts dry cleaning on-site, and perchloroethylene is used in the process. The facility does not appear in either the DCRP or VCP databases as a site that is under remediation or investigation. Due to its distance from the project area and the absence of recorded investigations or corrective actions, this facility does not appear to pose an environmental concern to the proposed project at this time.

The third dry cleaner site is listed as 4 Corners Cleaners (RN104153663) located at 28527 Tomball Parkway. The regulatory database map indicates this site is located approximately 0.258 miles west of the proposed project area. Regulatory database information indicates the facility conducts dry cleaning on-site, and perchloroethylene is used in the process. The facility does not appear in either the DCRP or VCP databases as a site that is under remediation or investigation. Due to its distance from the project area and the absence of recorded investigations or corrective actions, this facility does not appear to pose an environmental concern to the proposed project at this time.

The fourth dry cleaner site is listed as Nesbits Cleaners (RN103962957) at 14027 FM 2920 Rd. The regulatory database map indicates this site is located

approximately 0.345 miles west of the proposed project area. Regulatory database information indicates the facility is a drop station only, and dry cleaning is not performed on-site. Due to its distance from the project area and its status as a drop station, this facility does not appear to pose an environmental concern to the proposed project at this time.

The fifth dry cleaner site is listed as MW Cleaners #13005 (RN103962957) located at 14027 FM 2920 Road. The regulatory database map indicates this site is located approximately 0.345 miles west of the proposed project area. Regulatory database information indicates the facility is a drop station only, and dry cleaning is not performed on-site. Due to its distance from the project area and its status as a drop station, this facility does not appear to pose an environmental concern to the proposed project at this time.

No Brownfield facilities/sites were reported in the regulatory database.

Regulatory database files are included in the Regulatory Database Report presented in *Appendix C*.

5.2 Physical Setting Sources

5.2.1 Topography

The United States Geological Survey (USGS) 7.5-minute topographic maps of the Rosehill and Tomball Quadrangles indicate the project area is approximately 150 to 190 feet above sea level. Topographic maps also indicate the proposed alignment slopes in a southeasterly direction towards Willow Creek.

A copy of the USGS 7.5-minute topographic map and other physical setting sources which includes the project area can be found under the Physical Setting presented in *Appendix D*.

5.2.2 Geology/Soils

The proposed alignment lies on the Montgomery geological formation and contains soils of the Wockley-Gessner association, as described in the Harris County U.S. Department of Agriculture (USDA) Soil Conservation Service (SCS)/Texas Agricultural Experiment Station soil survey (SCS, 1972) identifies the on-site soils as Hockley fine sandy loam (HoA), Hockley fine sandy loam (HoB) and Wockley fine sandy loam (Wo).

Hockley fine sandy loam (HoA) This is a nearly level soil in forested areas and in cleared areas along the northern boundary of the coastal prairie. The areas are generally irregular and about 150 acres in size. Slopes are slightly convex and average 0.5 percent.

This soil is used mainly for woodland grazing, timber, and improved pasture. A few acres are used for row crops and rice. Native vegetation is chiefly loblolly pine, water oak, sweetgum, red oak, beaked panicum, longleaf uniola, and sedges. Improved pastures are chiefly common bermudagrass, Coastal bermudagrass, and Pensacola bahiagrass.

This soil is moderately well drained. Surface runoff is slow. Internal drainage is medium above the layers that have plinthite and moderately slow in the layers that have plinthite. Permeability is moderately slow. Available water capacity is medium.

Hockley fine sandy loam (HoB) This is a gently sloping soil in forest areas and pastures. The areas are generally irregular and about 100 acres in size. Slopes are slightly convex and average 2 percent.

This soil is used mainly for woodland grazing, timber and improved pasture. A few areas are used for row crops, mainly corn and grain sorghum. Woodland vegetation is chiefly loblolly pine, water oak, sweetgum, beaked panicum, longleaf uniola, and sedges. Improved pasture grasses are mainly bermudagrass and bahiagrass.

This soil is moderately well drained. Surface runoff is medium, and the hazard of erosion is moderate. Internal drainage is medium above the layers that have plinthite and moderately slow in the layers that have plinthite.

Wockley fine sandy loam (Wo) consists of nearly level loam soils in broad areas of prairies and forests. The surface layer is friable, strongly acid, dark grayish brown fine sandy loam to about seven inches deep and is underlain with fine sandy loam and sandy clay loam layers to approximately sixty inches. This soil is somewhat poorly drained and surface run-off is slow. Permeability is moderately slow and the available water capacity is high. Wockley fine sandy loam (Wo) is not considered a hydric soil and is not normally associated with a "wetland".

A copy of the SCS soil survey for the subject property is attached (Appendix D).

5.2.3 Surface Water Hydrology

The flow of surface water onto the project area appears to migrate from a northwesterly direction towards Willow Creek.

According to the Federal Emergency Management Agency (FEMA) map and USGS Topographic map of the area, a small portion of the western portion of the project area appears to lie within the 100-year floodplain zones of the Willow Creek watershed. The FEMA Floodplain Map is attached (Appendix D).

5.2.4 Hydrogeology

The proposed project area is underlain by the two principal fresh water aquifers, the Chicot and the Evangeline. These ground water sources are encountered throughout much of the Texas Gulf Coast, including Harris County.

The Chicot Aquifer is broken into two productive units, designated the Upper and Lower Chicot Aquifers. The Upper Chicot unit, comprised of the water-bearing sands in the Beaumont and Upper Lissie Formations, extends to a depth of approximately 250 feet below surface. The Lower Chicot unit, comprised of the water-bearing sands in the Lower Lissie and the Willis Sand of the Willis Formation, occurs within the approximate depth interval of 250 feet to 600 feet below ground surface. The aquifers are noted for their high sand-clay ratio and abundance of water. Use of the Chicot Aquifer in the Houston area is limited, other than as a water source for domestic or light industrial water supply uses.

The Evangeline Aquifer, corresponding to the Goliad Sand of the Willis and Fleming Formations, represents the principal subsurface water supply source for the City of Houston and surrounding communities. The aquifer is noted for its abundance of good quality ground water and is considered one of the most prolific aquifers in the Texas Coastal Plain. Individual sand beds are characteristically tens of feet thick. Public water supply wells completed within the Evangeline Aquifer in this area are typically screened within a depth interval of 600 feet to 2400 feet below ground surface.

5.3 Historical Use Information for the Property

5.3.1 Chain-of-Title Records

The proposed project area consists of approximately 5 lineal miles of property across multiple ownership. The time and expense involved in review of a

fifty year chain-of-title do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard, and a chain of title review was not performed. The absence of chain of title information is not considered a significant data gap due to the availability of other historical resources.

A copy of the chain-of-title records is normally presented in *Appendix E*.

5.3.2 Historical Aerial Photographs

A review of historical aerial photography was made to evaluate present and past land use, structures, improvements, surface anomalies, and historical development of the subject site and surrounding properties. Photographic coverage was obtained from national and local aerial survey firms for the following years:

Year	Source	Type	Approximate Scale
1944	ASCS	B & W	1"=700'
1953	ASCS	B & W	1"=700'
1969	WALLACE ZINGER	B & W	1"=700'
1978	TxDOT	B & W	1"=700'
1989	TxDOT	B & W	1"=700'
1996	USGS	COLOR	1"=700'
2006	HGACOGs	COLOR	1"=750'

Aerial photographs were obtained from TelAll of Austin, Texas. These aerial photographs were utilized to determine if visual evidence of potential environmental concern was apparent on the subject site on the photographs. Evidence will often include: soil disturbance (barren areas) which may indicate on-site waste disposal, mining, soil/sand/gravel pit activities, or a previous use of the subject site; visible pipeline right-of-way easements; historical changes of structures and/or oil and gas activity. BOA reviewed aerial photographs for the subject site and adjoining properties and the following was noted:

The 1944 aerial photograph indicates the proposed project area and adjoining properties are agricultural land, with extensive oil and gas activity present in the vicinity. Reserve pits and other oil/gas related structures are visible within or in close proximity to the proposed project area. SH 249, Hooper, South Cherry, Agg Road, the Burlington Northern railroad easement, South Persimmon, Hufsmith-Kohrville, Mahaffey, and the eastern

portion of FM 2920 (East Main) appear to be in place. Scattered residential home sites are also seen in the general area, and development of the City of Tomball is seen to the north of the proposed project area.

The 1953 aerial photograph indicates the western portion of FM 2920 is now in place. Little additional change to the proposed project area and adjoining properties is indicated from the previous aerial photo.

The 1969 aerial photograph indicates SH 249 has been improved. Extensive oil/gas activity continues in proximity to the proposed project area. The growth of dense vegetation is apparent within the project area and on adjoining properties.

The 1978 aerial photograph indicates little change to the proposed project area and adjoining properties from the previous aerial photo, with the exception of scattered residential development on adjoining properties. Residential development is also seen to the south of the proposed project area.

The 1989 aerial photograph indicates the apartment complex and assisted living facility are in place to the east of the current 249 Business, and south of the current Tomball Medical Complex Drive. Residential development is also now visible on the north side of Mahaffey in the eastern portion of the proposed project area, and Country Club Green subdivision is seen to the south of the project area. Commercial development has increased along SH 249, and oil/gas activity has lessened as development of the general area has increased.

The 2005 aerial photograph indicates an increase in residential and commercial construction on properties adjoining the proposed project area. The shopping center that currently contains \$1.50 Tomball Cleaners appears to be in place in this photo.

The 2006 aerial photograph indicates construction of the SH 249 bypass is underway to the west of the existing SH 249 (current 249 Business). Development of Willow Creek Estates is visible to the east of Hufsmith-Kohrville, and just north of the proposed project area. Additional residential and commercial development is visible on properties adjoining the proposed project area.

Copies of aerial photographs for the subject property and surrounding area are presented in *Appendix F*.

5.3.3 Owner/Occupant Questionnaire

The proposed project area consists of approximately 5 lineal miles of property across multiple ownership. The time and expense involved in obtaining owner/occupant information do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard. The absence of owner/occupant information is not considered a significant data gap due to the availability of other historical resources.

A copy of the Owner/Occupant Questionnaire is normally presented in Appendix G.

5.4 Historical Use Information for the Property and/or Adjoining Properties

5.4.1 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps are an evaluation tool previously generated for older, commercial and industrial portions of urban areas. These maps show construction details for building structures and descriptions of business types on the mapped properties. Fire insurance maps are useful documentation of past property use in urban areas. Sanborn Maps are generally hand-drafted maps that were prepared in previous years for various purposes, but were basically completed/utilized for fire-related information (location of hydrants, water lines and on-site fire equipment locations), but often show other features that may have associated environmental concerns. These maps, when available are often more useful than aerial photographs because they are similar to architectural site plans and may show features and equipment not apparent on aerial photography. Available maps were reviewed and obtained by AAI Data.

No Sanborn Maps coverage is available for the proposed project area.

A copy of the Sanborn Fire Insurance Maps covering the subject property area is presented in *Appendix H*.

5.4.2 Historical City Directories

Historical city directories provide a source for researching the previous use of the subject property and properties in the surrounding vicinity of the subject site. Historical directories are reviewed at the City of Houston Downtown Public Library - Texas Room. Cole/Polk and/or Kriss Cross historical city directories, when available, are utilized for this investigation.

The proposed project area consists of approximately 5 lineal miles of property across multiple ownership. The time and expense involved in obtaining city directory information do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard. The absence of city directory information is not considered a significant data gap due to the availability of other historical resources.

A copy of the Historical City Directories covering the immediate subject property area is normally presented in *Appendix I*.

5.5 Additional Records Sources

5.5.1 Tobin Research Regional Oil and Gas Survey

A review of Texas Railroad Commission (RRC) records was conducted to determine if current or past oil and gas exploration or production was present on the subject property. According to a regional oil and gas survey map, prepared by Tobin Research, Inc., data from the RRC indicates that there are approximately twelve (12) oil/gas well sites located within or in close proximity to the proposed alignment. Historical aerial photography indicates the potential presence of former reserve pits, tank batteries, and other structures located within or adjoining the proposed alignment. The presence of residual contaminants from former oil and gas activities is considered a potential environmental concern at this time.

A copy of the Tobin map showing oil and gas well sites in the vicinity of the subject tract is included in the Railroad Commission Data section presented in *Appendix J*.

It is important to note that, when oil or gas wells are plugged and abandoned, one or more strings of casing (pipe) are usually not recovered from the well. They remain cemented in place, and common practice is to cut the casing approximately 3-10' below ground surface and backfill with Class A cement and/or soil, concrete plugs and slurry. Therefore, the potential to encounter remnant casing during excavation near an abandoned well site is relatively high.

It is also important to note that, when wells are drilled, a large "reserve pit" is excavated from the ground surface immediately adjacent to the drill site. In previous years, reserve pits were constructed for each well, regardless of whether or not the well ever produces petroleum products. These pits can be small to relatively large (up to an acre or more) and several feet deep. Their purpose is to store excess or discarded drilling fluids. Drilling fluids are commonly water-based or oil-based

(diesel), and may contain components such as bentonite, barite, lignite, lignite derivatives, caustic soda, lime, phosphates, emulsifiers, lubricants, and salts, among a number of others. They may also contain some produced liquids such as crude oil, condensates, and salt water. Currently, drilling fluids are generally stored in Frac tanks or surface impoundments.

5.5.2 Railroad Commission of Texas (RRC) Files

Copies of Railroad Commission of Texas records for the above identified wells were not obtained. Location and identification of wells with the potential to adversely affect the proposed project would require a level of investigation outside the scope of this assessment. It is recommended that well records be obtained for wells in proximity to the proposed alignment, and historical aerial photography as close as possible to the drilling dates also be obtained. The RRC records and historical aerial photography can then be utilized to determine the scope of any potential Phase II testing.

6.0 SITE RECONNAISSANCE

6.1 Methodology

A visit of the subject property was performed by BOA. The site visit included a visual inspection of adjacent properties as well. The purpose of the physical investigation was to attempt to visually identify the obvious presence of, or the potential for, contamination of the subject site. Areas of environmental concern were investigated with particular emphasis on the potential presence of underground and/or above ground storage tanks, PCB-containing transformers, regulated substance storage and/or spillage, excavation of fill activities, stressed vegetation and other pertinent environmental observations at the subject site. The following is a site checklist.

YES	NO	
	X	Hazardous Substances at the Site
	X	Petroleum Products at the Site
	X	Underground and/or Aboveground Storage Tanks (USTs/ASTs)
	X	Containers
	X	Electrical or Mechanical Equipment Likely to Contain PCBs
	X	Stained Soil or Pavement
	X	Stressed Vegetation
	X	Solid Waste Dumping, Landfills or Suspect Fill Material
	X	Drains or Sumps
	X	Wastewater Discharges
	X	Septic or Sewage Tanks
	X	Pits, Ponds or Lagoons
	X	Wells
	X	Other Conditions of Concern or Observations

6.1.1 Hazardous Substances or Petroleum Products

There were no findings of the storage, transportation, disposal or generation of hazardous substances on the subject property.

6.1.2 Storage Tanks, 55-Gallon Drums or Containers

The proposed alignment and adjoining properties were inspected for evidence of petroleum storage tanks, both above and below ground. No evidence of PSTs was detected within the proposed alignment. Evidence of USTs was detected at Walters Quick Stop, located just west of the

intersection of Park and FM 2920. This facility is not considered an environmental concern at this time for reasons addressed in the Regulatory Database section of this report.

6.1.3 Possible Presence of Poly Chlorinated Biphenyls (PCBs)

Electrical transformers present the most common potential source of PCBs or PCB-containing substances. In the past, it was common for transformers to use PCBs as heat dispersants in their lubricating oils. Therefore, transformers are the primary focus of site inspection for PCBs.

All transformers on or adjacent to the project area were inspected for signs of deterioration or leakage, and none were observed. The ground below the transformers was inspected for signs of oily residue or stressed vegetation, and none were observed. No evidence of transformer oil leakage was observed.

Berg ♦ Oliver Associates, Inc. has contacted Reliant Energy in the past about its policy of PCB control, and Reliant Energy employees have stated that Reliant Energy is in compliance with the Toxic Substances Control Act (TSCA), which regulates PCBs. All transformers purchased by Reliant Energy were manufactured after July 1, 1979 and are of the "non-PCB" type. However, those transformers manufactured prior to this time are considered contaminated unless testing proves otherwise. Regulations do not require Reliant Energy to conduct testing. Testing and replacement of transformers are at the request and expense of the customer.

6.1.4 Indications of Solid Waste Disposal

No evidence of solid waste disposal was observed within the proposed alignment, other than minor amounts of non-hazardous wind-blown debris.

6.1.4 Wastewater Disposal or Disposition

The subject site has been vacant and undeveloped to date, with the exception of portions that are paved roadways, and it is unlikely wastewater was generated from the subject site.

6.1.5 Other Conditions of Concern or Observations

Prior to its intersection with South Persimmon, the proposed alignment crosses a railroad easement (recorded as Burlington Northern on Key Map page). In the past, railroad easements were often defoliated with the use of chemicals that contained arsenic. The presence of PCB from older railroad brake pads is also possible within a railroad easement. Information provided to BOA indicates construction is likely within the railroad easement; therefore, soil conditions within the railroad easement are considered a potential environmental concern at this time. No other conditions were observed that appear to pose an environmental concern to the proposed project at this time.

Site photographs documenting the conditions and structures described are presented in *Appendix K*.

7.0 INTERVIEWS

7.1 Owner/Occupant Questionnaire

The proposed project area consists of approximately 5 lineal miles of property across multiple ownership. The time and expense involved in obtaining owner/occupant information do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard. The absence of owner/occupant information is not considered a significant data gap due to the availability of other historical resources.

7.2 Interview with Local Government Official or Similar Individuals

An inquiry was submitted to the Tomball Fire Department HazMat Response Team for information on hazardous materials response calls in the area of the subject tract. However, results of the search were not returned in time to be included in this report.

7.3 Interview with Others

No other individuals were identified for interview which would have had specific knowledge concerning the project area.

8.0 FINDINGS AND CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-2005 of a 5 mile ROW, FM 2920 and East Main located in Harris County, Texas. Any exceptions to, or deletions from, this practice are described in Section 2.3 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property with the exception of the following:

1. 15 dry cleaners located at southwest corner of 249 Business and Medical Complex Drive
2. Railroad easement crossing Agg Road
3. Former oil/gas drill sites located within or adjoining proposed project area

9.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

This Phase I Environmental Site Assessment was prepared for, and submitted to, Cobb, Fendley & Associates, Inc. by Berg ♦ Oliver Associates, Inc., on this, the 24th day of March 2009. We declare that, to the best of our professional knowledge and belief meet the definition of Environmental Professional(s) as defined in 312.10 of this part. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. The following personnel of Berg ♦ Oliver Associates, Inc. were involved in the preparation of this study, as witnessed by the signatures below.



Chris Thayer, REM
Senior Associate



Ben Price
Vice President

If there are any questions regarding this report, or any of the information, conclusions, or recommendations contained herein, they may be addressed to either of us at the following location:

Berg ♦ Oliver Associates, Inc.
14701 St. Mary's Lane, Suite 400
Houston, Texas 77079
281-589-0898

10.0 SPECIAL TERMS

For purposes of conducting a Phase I Environmental Site Assessment pursuant to ASTM Practice 1527-2005, the following definitions were used for *hazardous substance*, *hazardous waste*, and *petroleum products* in this report:

Hazardous Substance - A substance defined as hazardous, pursuant to CERCLA 42 USC 9601(14), as interpreted by EPA regulations and the courts: "(A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33; (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title; (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 USC 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC 6901 *et seq.*) has been suspended by Act of Congress); (D) any toxic pollutant listed under section 1317(a) of Title 33; (E) any hazardous air pollutant listed under section 112 of the Clean Air Act (42 USC 7412); and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator (of EPA) has taken action pursuant to section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)".

Hazardous Waste - Any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 USC 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC 6901 *et seq.*) has been suspended by Act of Congress). The Solid Waste Disposal Act of 1980 amended RCRA. RCRA defines hazardous waste, in 42 USC 6903, as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration or physical, chemical, or infectious characteristics may--(A) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating in reversible illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed".

Petroleum Products - Those substances included within the meaning of the *petroleum exclusion* to CERCLA, 42 USC 9601(14), as interpreted by the courts and EPA, that is: petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance under Subparagraphs (A) through (F) of 42 USC 9601(14), natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). (The word fraction refers to certain distillates of crude oil, including gasoline, kerosene, diesel oil, jet fuels, and fuel oil, pursuant to *Standard Definitions of Petroleum Statistics*, American Petroleum Institute.

11.0 DEFINITIONS

Abandoned property – Is a property that can be presumed to be deserted, or an intent to relinquish possession or control can be inferred from the general disrepair or lack of activity thereon such that a reasonable person could believe that there was an intent on the part of the current owner to surrender the rights of the property. However, this should not be confused with a property that may merely be in-active.

Actual Knowledge – The knowledge actually possessed by an individual who is a real person, rather than an entity. It should be noted that select issues of knowledge is subjective and based on perspective, notions and opinions that will affect or may come from a specific or particular point of view.

Adjoining properties – In this document, an adjoining property is defined as a property that has a property line that abuts the “subject” property’s property line.

Adjacent property – In this document, an adjacent property is separated by any right-of-way easement and other feature from the subject site’s property line.

Aerial photograph – Photographs taken from an aerial platform, typically a small aircraft with photographic equipment capable of providing a media with adequate resolution and scale to permit an adequate level of identification of development and/or activities occurring on-site and in the near vicinity of the subject site.

All appropriate inquiry – Is defined as an inquiry constituting “all appropriate inquiry” into the previous ownership and uses of property consistent with good commercial or customary practice as defined in CERCLA, 42 U.S.C. §9601(35)(B), that will qualify a party to a commercial *real estate transaction* for one of the threshold criteria for satisfying the landowner liability protections (LLPs) to CERCLA liability (42 U.S.C. §9601(35)(A) & (B), §9607(b)(3), §9607(q); and §9607(r)). It should be noted that this is not static, subject to interpretation and may change due to technology improvements, the addition of additional information and knowledge concerning a specific property or land-use.

Commercial real estate – Any real property, except a dwelling (typically a single family residential lot) or property with no more than 4 dwelling units exclusively for residential use, except a dwelling or property with no more than four units exclusively for residential use is included in this term when it has a commercial function, as in the building of such dwellings for profit. Commercial real estate includes, but is not limited to industrial facilities/sites, service-related facilities, retail and retail center, office and office building, and institutional (medical or similar facilities, college/university, all schools) and may include agricultural land and undeveloped real property proposed for commercial development.

Construction or demolition debris – Concrete, brick, asphalt and other such building material(s) discarded as part of the construction of a building or similar improvement or demolition of the same.

Contaminant – A property or feature related to a property has been affected by a hazardous substance (contaminant), petroleum product or an on-site constituent exceeds a regulatory response “action” level. A contaminant may also be referred to as a constituent of concern (COC).

Data failure – A lack or inability to obtain complete information despite *good faith* efforts by the EP to gather information. Typical examples are the lack of city directory information for a site (property) despite its development, limited regulatory database plotting or the fact that very limited resources are available for a property’s area.

Data gap – A lack or inability to obtain complete information despite *good faith* efforts by the EP to gather information. A data gap is tends to be a temporal issue like not having a representative aerial photograph for a specific decade, the site being developed prior to the earliest aerial photograph, incomplete title instrument, the inability to interview knowledgeable persons. Often, this does not hinder or limit the completion of the Phase I ESA due to other available sources to reconcile the information.

Drum – A container, typically steel or plastic that typically contains up to 55-gallons of liquid (or less), but may contain powder, pellets, waste or other material by a different measurement. This should not be confused with a barrel (bbl) that varies depending on the contents of the barrel (e.g. a barrel of crude oil = 42 US gallons).

Dry Well – An underground or subsurface area where soil has been removed and replaced with pea gravel and/or rocks and/or coarse sand and is utilized for drainage, storm water run-off control or the collection of spilled liquids and wastewater disposal.

Due diligence – A process of inquiring into the environmental and other characteristics of a tract or parcel of land of *commercial real estate* usually in connection with a commercial real estate transaction.

Environmental lien – A charge, security or encumbrance upon the title to a property to secure the payment of a cost, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products.

Environmental professional (EP) – A person whom meets the education and/or training and/or experience requirements as set forth in 40 CFR §312.10(b).

Federal Register (FR) – A daily publication of the U.S. government, except Federal holidays and weekends containing all proposed and final regulations and some other activities of the Federal government. When the rules, regulations and related issues are finalized, they are included in the Code of Federal Regulations (CFR) and the FR.

Fill dirt – Dirt: sand, clay, silt (soil) that has been obtained from an off-site source that is typically utilized to fill depressions, create mounds or berms or to increase the land surface elevation of a property. The environmental concern typically is the origination of the fill material and its condition, if of any concern.

innocent landowner defense – A person or affected party may qualify as one of 3 types of innocent landowners: (i) a person who “did not know and had no reason to know” that contamination existed on a property at the time the purchaser acquired the property; (ii) a government entity that acquired the property by escheat or through any other involuntary transfer or acquisition or through the exercise of eminent domain authority by purchase or condemnation, and (iii) a person who “acquired the facility by inheritance or bequest.” To qualify for the first type (i) of innocent landowner LLP, such person/party must have made *all appropriate inquiry* on or before the date of purchase. Furthermore, the *all appropriate inquiry* must have not resulted in knowledge of the contamination. If it does, then such person/party did “know” or “had reason to know” of contamination and would not be eligible for the innocent landowner defense.

Material safety data sheets – Printed or written material prepared to provide information concerning a hazardous substance or material which is generally prepared by chemical manufacturers, importers, and employers (Occupational Safety & Health Administration, Hazardous Communications Standard, 29 C.F.R. §1910.1200).

Petroleum exclusion – The exclusion from CERCLA liability protection as detailed in 42 U.S.C. §9601(14), as interpreted by the courts and the U.S. EPA, that is: petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a *hazardous substance* under Subparagraphs (A) through (F) of 42 U.S.C. §9601(14), natural gas, natural gas liquids and condensate, liquefied natural gas and synthetic gas. However, this does not mean that petroleum substance impact to the property may not be of concern. Nor does this indicate that petroleum products do not have hazardous characteristics.

Physical setting sources – Printed or written sources, maps, figures, cross sections or similar media that provide information concerning the geologic, hydrogeologic, hydrologic, topographic characteristics, soil characteristics, possible flood-related characteristics or related features of a subject property or property.

Pits, ponds or lagoons – Typically man-made or natural depressions in the ground surface that were either constructed or likely made to contain liquids, sludge that may have hazardous waste characteristics or be a petroleum substance.

Practically reviewable – Information that is practically reviewable means the information is provided by the source in a manner and in a format that, upon examination, yields information relevant to the property without the need for extraordinary analysis or the review of irrelevant data. The form of the information shall be such that the user can review the records for a limited geographic area. Records that cannot be feasibly retrieved by reference to the location of the property or a geographic area in which the property is located are not generally practically reviewable. Most databases of public records are practically reviewable if they can be obtained from the source agency by the physical address, county, city or zip code, global position or other geographic area of the facilities listed in the record system. Records that are sorted, filed, organized or maintained by the source agency only chronologically are generally not practically reviewable, unless a database details their location (e.g. file number, etc.).

Publicly available – Information that is publicly available indicates that the source of the information is permitted to most anyone upon request.

Reasonably ascertainable – Information that is (1) *publicly available*, (2) obtainable from its source within a reasonable time frame and by reasonable cost constraints and (3) *practically reviewable*.

Recognized environmental condition – A current or historical condition that may affect the value of a property or may have a cost of response associated with the property. In some instances, the cost of response may exceed the value of a property in a specific time.

Sump – a pit, cistern, cesspool or similar receptacle where liquids drain, collected or are stored. Sumps typically have a pump system associated with receptacle that pumps the material contained, when the level reaches at certain height within the receptacle.

12.0 REFERENCES

<u>DATA</u>	<u>SOURCE</u>
• Location Maps	Key Maps, Inc. 1411 W. Alabama, Houston, Texas 77006 713.522.7949
• Regulatory Database	AAI Environmental Data PO Box 70438, Houston, Texas 77270 713.933.0596
• Topography	USGS 7.5-Minute Maps, Indicated Quads
• Geology	US Soil Conservation Service (SCS)/USDA/B of E Geology
• Hydrogeology	Federal Emergency Management Association (FEMA) FIRM Maps
• Historical Photography 1930s – 1950s	Tobin International PO Box 708902, San Antonio, Texas
• Historical Photography 1960s – 1970s	Adams Aerial 1415 College, S. Houston, Texas 77587
• Historical Photography 1980s	MPSI Maps, Inc.
• Aerial Photography 1990s	Landiscor 3411 Richmond Avenue, Suite 150 Houston, Texas 77046
• Aerial Photography 1940s-2000s	TelAll Corp. (Various Sources) 1300 Guadalupe Street, Suite 203 Austin, Texas 78701
• Hazardous Materials Report	Area Fire Marshal, Captain or HazMat Response Team
• City Directories	AAI Environmental Data PO Box 70438, Houston, Texas 77270
• Sanborn Maps	AAI Environmental Data PO Box 70438, Houston, Texas 77270
• Railroad Commission Data	Via Tobin International, from Railroad Commission of Texas P.O. Box 13087, Austin, Texas 78711-3087

**13.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS PARTICIPATING
IN THE PHASE I ENVIRONMENTAL SITE ASSESSMENT**

See attached resumes of Environmental Professionals



CHRISTOPHER J. THAYER
SENIOR ASSOCIATE
HAZARDOUS AND TOXIC WASTE DEPARTMENT

EDUCATION

Texas A&M University 1983-1986
Sam Houston State University 1988-1989

CERTIFICATIONS/AFFILIATIONS

Registered Environmental Manager (REM) #10917
Federal Energy Regulatory Commission (FERC) Training and Certification
National Environmental Policy Act (NEPA) Training and Certification
Texas Department of Transportation Certification No. 6549
TxDOT precertified in 2.13.1

EXPERIENCE

Mr. Thayer has a diverse background in environmental assessment and testing, specializing in laboratory analyses and data defensibility. In his 16 years in the environmental field, he has been responsible for NPDES compliance monitoring; cleanups administered through the Air Force Center for Environmental Excellence and U.S. Army Corps of Engineers, and NPL Superfund sites. Mr. Thayer has a broad background in analytical methods for the environmental industry, including volatile and semi-volatile organics, metals, and a variety of classical chemistry methods.

REPRESENTATIVE PROJECTS

- **Redevelopment of Former Industrial Facility as Business Park, Southeast Houston**, Private Developer: Project Manager responsible for performing Phase I Assessments for prospective tenants/purchasers on out tracts for the redevelopment of a former industrial facility. The project involved re-use of a former industrial galvanizing and metalworking facility as a business park and retail development. Closure was obtained in approximately 60 days for an on-site Leaking Petroleum Storage Tank (LPST) incident.
- **Redevelopment of Former Industrial Facility as Business Park, South Houston**, Private Developer: Project Manager responsible for performing environmental assessments for the re-use of a former industrial oil/gas equipment manufacturing facility as a business park. The project involved investigating concentrations of BTE, TPH, Metals, and NORM in site soils and/or groundwater. Closure for the project was obtained through TCEQ VCP using risk-based assessment. Also responsible for agency coordination with TCEQ which allowed soils removed from an on-site drainage ditch during drainage improvements to be relocated and reused as fill material on an adjoining property.
- **Alamo Lumber Company Subsurface Investigation and Remediation**, City of Houston, Texas: Project Coordinator for the Phase I, Phase II and Phase III investigations and level-three remediation of soil and groundwater. Mr. Thayer assisted Project Manager in all phases of project, including confirmation sampling, review of laboratory data for completeness and accuracy, interpretation of laboratory results, and preparation of the final report.
- **United Creosote Superfund Site Hazardous Waste Remediation**, City of Conroe, Texas: Laboratory Project Manager responsible for coordination of expedited laboratory analyses, including PAH and low-resolution dioxins and furans. Tasks included review laboratory Quality Assurance/Quality Control data, preparation of Level III data packages and electronic deliverables for client, and client and subcontractor coordination.

- ***Andrau Industrial and Airpark Environmental Site Assessments***, Private Development Project, City of Houston, Texas: Project Coordinator in the development and implementation of a work plan to assess the environmental risks posed by potential hazardous materials at the site. Tasks included sampling analytical methods, review of laboratory data for completeness and accuracy, interpretation of results, and preparation of final report.
- ***Abandoned Oilfield Environmental Assessment***, Private Development Project, City of Houston, Texas: Project Manager in charge of Environmental Site Assessments by ASTM 1527 and 1528. This job involved the following tasks: developed and implemented work plan to assess the environmental risks posed by potential hazardous materials at the site; selected sampling and analytical methods; reviewed laboratory data for completeness and accuracy; interpreted results; prepared final reports; coordinated with EPA, TRRC, and other agencies; and conducted ongoing negotiations with agencies for site closure.
- ***Rodgerdale Road Warehouse Environmental Assessment***, Private Development Project, City of Houston, Texas: Project Manger in charge of Environmental Site Assessments by ASTM 1527 and 1528. This job involved the following tasks: developed and implemented work plan to assess the environmental risks posed by potential hazardous materials and warehouse operations at the site and adjoining Superfund sites; selected sampling and analytical methods; reviewed laboratory data for completeness and accuracy; interpreted results; and prepared final report.
- ***Unidentified School District Phase I ESA, Phase II Testing, and Phase III***: Project Manager responsible for the Phase I ESA, Phase II Testing and Phase III. The project involved identifying lead (Pb) contaminant soils from battery casings in old roadbed material. Mr. Thayer delineated the affected area, designed response action plan, supervised excavation and disposals of more tan 500 cubic yards of waste, and performed risk-based calculations under TRRP.
- ***Former Landfill Site Environmental Services***, Pearland Manvel, Brazoria County, Texas: Project Manager responsible for performing validation for laboratory analytical tests for a former landfill site that accepted radioactive waste. Mr. Thayer installed the monitoring wells and collected soil samples for a Phase II Assessment.
- ***Phase I ESA and Phase II Testing for a Private Client***, Wharton County: Project Manager responsible for performing Phase I ESA and Phase II Assessment at historical and current oil and gas locations. Identify contaminants in excess of residential standards; perform confirmation sampling after excavation and disposal.
- ***Phase I ESA for 3 Midtown Area Streets***, Pate Engineers, Inc., Harris County, Texas: Project Manager responsible for the assessment of 3 streets in Midtown area. The project involved reviewing geotechnical boring logs and construction plans to determine if additional investigation is warranted.
- ***Phase II Investigation and Testing of a Former Cattle Dipping Vat***, Private Client, Williamson County, Texas: Project Manager responsible for the Phase II investigation of former cattle dipping vat. Mr. Thayer designed remediation plan to allow risk-based closure under TRRP.
- ***2,000-acre Phase II Testing***, Private Client, Fort Bend County, Texas: Project Manager responsible for the investigation of an approximate 2,000-acre site to assess impacts from former oil and gas activities and agricultural activities.

- **Active VCP site Environmental Services**, Private client: Consultant to the buyer in real estate transactions responsible for review of previous data for active VCP site. Mr. Thayer assisted in the coordination of additional remedial actions between seller, responsible party and buyer. Participated in meetings with buyer, seller, RP, attorneys, and TCEQ to facilitate sale and development of property while remediation was ongoing. Review, comment, and approve a work plan for construction while remediation was ongoing. Obtain permission from TCEQ for on-site soil reuse by buyer. Submit buyer as additional applicant to TCEQ-VCP.
- **BRH Garver Oilfield Equipment VDP Closure**, BRH Garver Equipment Company: Project Coordinator a soil assessment on the property testing the soils for metals, total petroleum hydrocarbons (TPH), volatiles organic compounds (VOCs) and semi-volatiles. BOA completed closure of this 85-acres facility under RR2. Closure was granted through the TCEQ VCP with no further action required.
- **Former Incinerator Ash Disposal Site**, City of Houston, joint public/private project: Project Manager for Phase I and Phase II investigations of soil and groundwater, risk-based assessment of site, coordination between agencies and affected parties.
-



BENJAMIN M. PRICE, GEOLOGIST
VICE PRESIDENT AND PROJECT MANAGER
HAZARDOUS AND TOXIC WASTE DEPARTMENT

EDUCATION

Master of Science, Geology
Texas A&M University (1991)

Bachelor of Science, Geology
Florida Atlantic University (1972)

CERTIFICATIONS/AFFILIATIONS

Professional Geoscientist (TX #3423)
Certified Wetland Delineator 1997
Certified Environmental Auditor, 1997
Registered Environmental Manager (R.E.M. #10916)
Federal Energy Regulatory Commission (FERC) Training and Certification
National Environmental Policy Act (NEPA) Training and Certification
Society of Wetland Scientists
Texas Association of Environmental Professionals
National Registry of Environmental Professional
Texas Department of Transportation Certification No. 6550
TxDOT precertified in 2.3.1, 2.4.1, 2.6.1, 2.13.1

EXPERIENCE

Mr. Price is an environmental scientist with diverse experience in both business and technical aspects of the environmental industry. Utilizing his extensive background in geological and biological disciplines, he has developed expertise in environmental regulations, property assessments, hazardous waste testing and evaluation, wetland evaluation, endangered species audits, health and safety issues, and silviculture activities. Mr. Price specializes in site investigations relating to hazardous material and petroleum product contamination. His experience with the petroleum industry and contaminated site remediation allows him to effectively consult on cost efficient solutions to environmental impairment concerns. Mr. Price is involved with problem solving related to environmental and ecological issues, especially those that may hinder property transfer, land development activities, or oil and gas activities. He has developed a unique working relationship with many federal and state resource agencies responsible for project permitting and approval.

REPRESENTATIVE PROJECTS

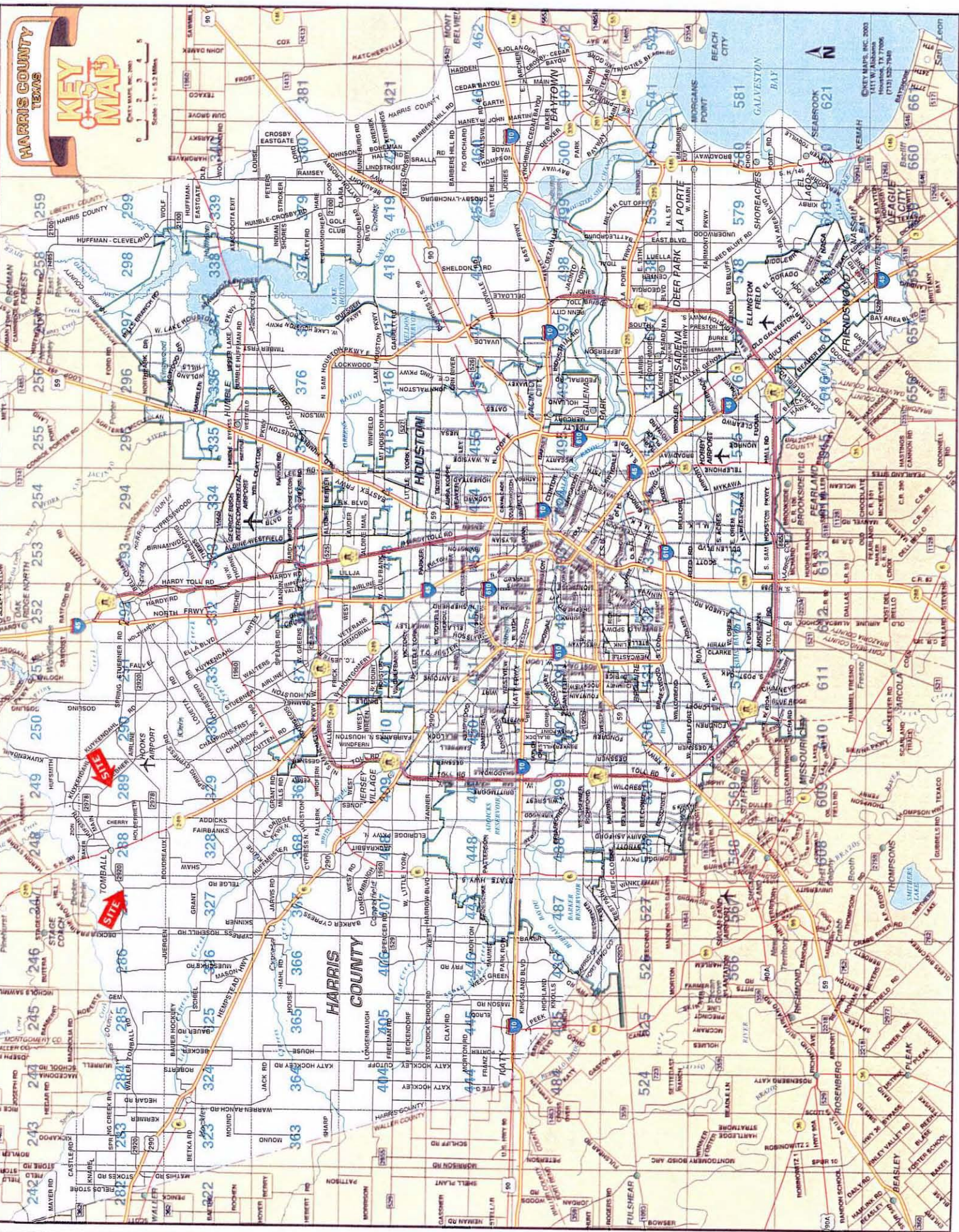
- ***Andrau Industrial and Airpark Environmental Site Assessments***, Private Development Project, Houston, Texas: Project Manager for the development and implementation of a work plan to assess the environmental risks posed by potential hazardous materials at the site. Tasks included sampling analytical methods, review of laboratory data for completeness and accuracy, interpretation of results, and preparation of final report.
- ***Pearland Manvel Dump Site***, Brazoria County District Attorney: Project Manager responsible for the Phase I Environmental Site Assessment and Phase II Testing. The project involved identifying portions of the site containing hazardous and radioactive liquids within the dumpsite. Groundwater monitoring and testing was conducted to evaluate potential off site transport of contaminants. Groundwater flow directions were determined for purposes of site closure. Recommendations to the PRP were made for future remediation goals to obtain state closure.

- **Alamo Lumber Company**, Subsurface Investigation and Remediation, City of Houston, Texas: Project Manager for the Phase I, Phase II, and Phase III investigations and remediation of soil and groundwater. Contaminates of concern included Pentachlorophenol (PCP) and various Dioxins. The project required agency supervision and approvals. Closure was obtained through TCEQ.
- **The Sprint Companies Landfill Expansion Environmental Assessment and Permitting Services**, Fort Bend County, Texas: Project Manager for the preparation of the Phase I Environmental Site Assessment for a 365-acre landfill site proposed to be expanded. The project was approved by the USACE, TCEQ, USFWS, and TPWD under a Clean Water Act Section 404 Permit with off-site mitigation banking.
- **Houston Comprehensive Bikeway Program Environmental Assessment**, City of Houston, all locations, Environmental Assessment. Project Coordinator for the preparation of an Environmental Assessment (EA) for the comprehensive bikeways program covering 100 lineal miles and involving a TxDOT EA for ISTEA funding. The project involved the preparation of NEPA documentation and assessments of environmental issues, such as wetlands, hazardous waste, historic preservation, threatened and endangered species, air quality, noise, water quality, hydrology, and flood plains.
 - **Little White Oak Bayou Hike & Bikeway Trail**: The proposed 0.6-mile trail begins southwest of the intersection of IH 45 and Loop 610 at Calvalcade Road and terminates along the IH 45 frontage road approximately 240 feet north of the intersection of Sylvester Road with the frontage road, in Harris County, Texas. Environmental clearance from TxDOT has been granted.
 - **Keegans Bayou Hike & Bike Trail**: The proposed 3.9-mile trail begins on the north bank of Keegans Bayou at Kirkwood Drive and terminates on the south bank of Brays Bayou at S. Gessner Drive in southwestern Harris County, Texas.
 - **Houston Heritage Corridor Bayou Trails (East Segment III)**: The proposed trail extends entirely on the southside of the bayou between North York Street and Lockwood Drive. The project is one segment of the multi-segment Houston Heritage Corridor System adopted by the City of Houston.
 - **Westchase District Hike and Bike Trail**: The proposed trail would begin on Riverview Way, on the west side of the Harris County Flood Control District drainage ditch W157-00-00, and terminate at Richmond Avenue in southwestern Harris County, Texas. Environmental clearance from TxDOT has been granted.
 - **Columbia Tap Hike and Bike Trail**: The proposed trail will begin at the on-street bicycle lane on Polk Street at the crossing of the abandoned Union Pacific (formerly Missouri-Pacific) Railroad tracks and terminate at the intersection of Bastrop Street and Texas Street in central Harris County, Texas. Environmental clearance from TxDOT has been granted.
 - **Halls Bayou Hike and Bike Trail**: The proposed trail will begin on the north bank of Halls Bayou at Hirsch Road and terminate on the north bank of the bayou at Bretshire Road, west of the Union Pacific Railroad in central Harris County, Texas.

- **Stafford-Staffordshire Road Expansion Environmental Assessment**, City of Stafford, east Fort Bend County: Project Coordinator for the preparation of a TxDOT Environmental Assessment (EA) for the expansion of Stafford-Staffordshire Road through three jurisdictions (Harris County, City of Stafford, and City of Missouri City). The project involved preparation of a NEPA environmental assessment, including wetlands, hazardous waste, historic preservation, threatened and endangered species, air quality, water quality, hydrology, and flood plains.
- **Sienna Plantation Environmental Assessment and Planning**, Private Client, east Fort Bend County, Texas: Project Coordinator for an approximate 11,000-acre project involving current and long range environmental planning. The project involved assessment, permitting, and mitigation for many different tracts and sections of the development. Specific tasks included evaluation of existing wetlands, creation of constructed wetlands, overall project planning, and hazardous waste assessments. The project also included historic, cultural, and archaeological preservation; threatened and endangered species, coordination, land management, and contractor supervision.
- **US 59 and Grand Parkway Limited Environmental Assessment**, Private Development Project, Fort Bend County, Texas: Project Hazards Manager for the preparation of a Limited Environmental Assessment (EA) for a 500-acre land development between the Brazos River and US 59, bisected by the Grand Parkway. The project involved assessment and documentation of environmental issues, such as wetlands, hazardous waste, historic/archaeological investigation and preservation, threatened and endangered species, surface hydrology, and flood plains.
- **Independence Boulevard, Murphy Road Detention and Drainage Facilities Environmental Assessments**, City of Missouri City, east Fort Bend County, Texas: Project Coordinator for the preparation of an Environmental Assessment for the extension of Murphy Road, the Environmental Assessment for the Murphy Road Detention and Drainage Improvements, and other environmental evaluations for the City of Missouri City, Texas. Projects involved preparation of Section 404 permit documentation, and assessment of environmental issues, such as wetlands, hazardous waste, historic/archaeological investigation and preservation, and threatened and endangered species.
- **Sugarland Oil and Gas Field Assessment and Compliance Review**, Private Oil Company, northeast Fort Bend County: Project Coordinator for the environmental assessment and compliance review of a large oil field located around a salt dome structure. The property contained over 125 known oil and gas wells. Environmental evaluation included the evaluation of each currently producing and non-producing historic well site for hazardous material, toxic material, and petroleum products. Phase II site investigation and characterization is still ongoing.
- **Dayton Rice Milling Environmental Services**, Harris County, Texas: Evaluation of agricultural pump house on Lake Houston. The project involved responding to citizen complaint of hydrocarbon contamination in Lake Houston, placing booms in lake to contain discharge, remediation of impacted soils to eliminate the source of hydrocarbon leaks and coordinate with TCEQ, COH to receive NFA from agencies.
- **Farias Ranch Environmental Site Assessment and Phase II Testing**, PW Park 10, Inc., Maverick County, Texas: Conducted environmental site assessment and testing at a 100,000-acre ranch. The project involved performing Phase II Testing to identify potential impacts related to livestock dipping facilities located on the ranch property. The testing identified COC's, concentrations exceeding the TCEQ Texas specific background levels for certain metals and arsenic impacted soil at 3 historical cattle dipping vats. The project also involved remediation of the soils at each location, and submitting an Affected Property Assessment Report to the TCEQ and obtained state closure for these sites.

- **Harris County Sports Authority Environmental Site Assessment and Phase II Testing**, Harris County, Texas: Conducted Environmental site assessment Phase I, Phase II Testing and Phase III of future Reliant Stadium site. Identify onsite LPST sites and ACM containing structures. Remediate and obtain closure for LPST sites through TCEQ. Perform ACM abatement of several structures and historic onsite pipeline. Perform demolition at structures. Conduct all projects simultaneously to be completed within tight time constraints for Reliant Stadium construction.
- **AFG Properties Environmental Site Assessment and Phase II Testing**, Fort Bend County, Texas: Perform Phase I Environmental Site Assessment and Phase II Testing of the 3,000-acre historic sugarcane plantation. Discover impacted soil at two cattle dipping vat locations and oil and gas well site. Perform site clean up to residential standards for future master planned community.
- **FM 1960 Roadway Widening**, Harris County, Texas: Performed environmental site assessment for TxDOT to identify potential constraints related to the widening of FM 1960. Identify multiple adjoining properties, which could impact alignment.
- **Gosling Road**, Harris County, Texas: Project Coordinator for a Phase I Environmental Site Assessment for this TxDOT EA and Public Involvement for a 0.5-mile extension of Gosling Road, and its associated easements, located in northern Harris County. Project activities included a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-00 for the proposed project. Along with a visual survey of the project area, sources reviewed include the USGS Tomball quadrangle, NRCS soil surveys, FEMA maps, city directories, historical aerial photographs, reviews of standard environmental record sources (including selected agency files), and a Tobin Oil and Gas Survey Map.

APPENDIX A
LOCATION MAP(S)



HARRIS COUNTY TEXAS

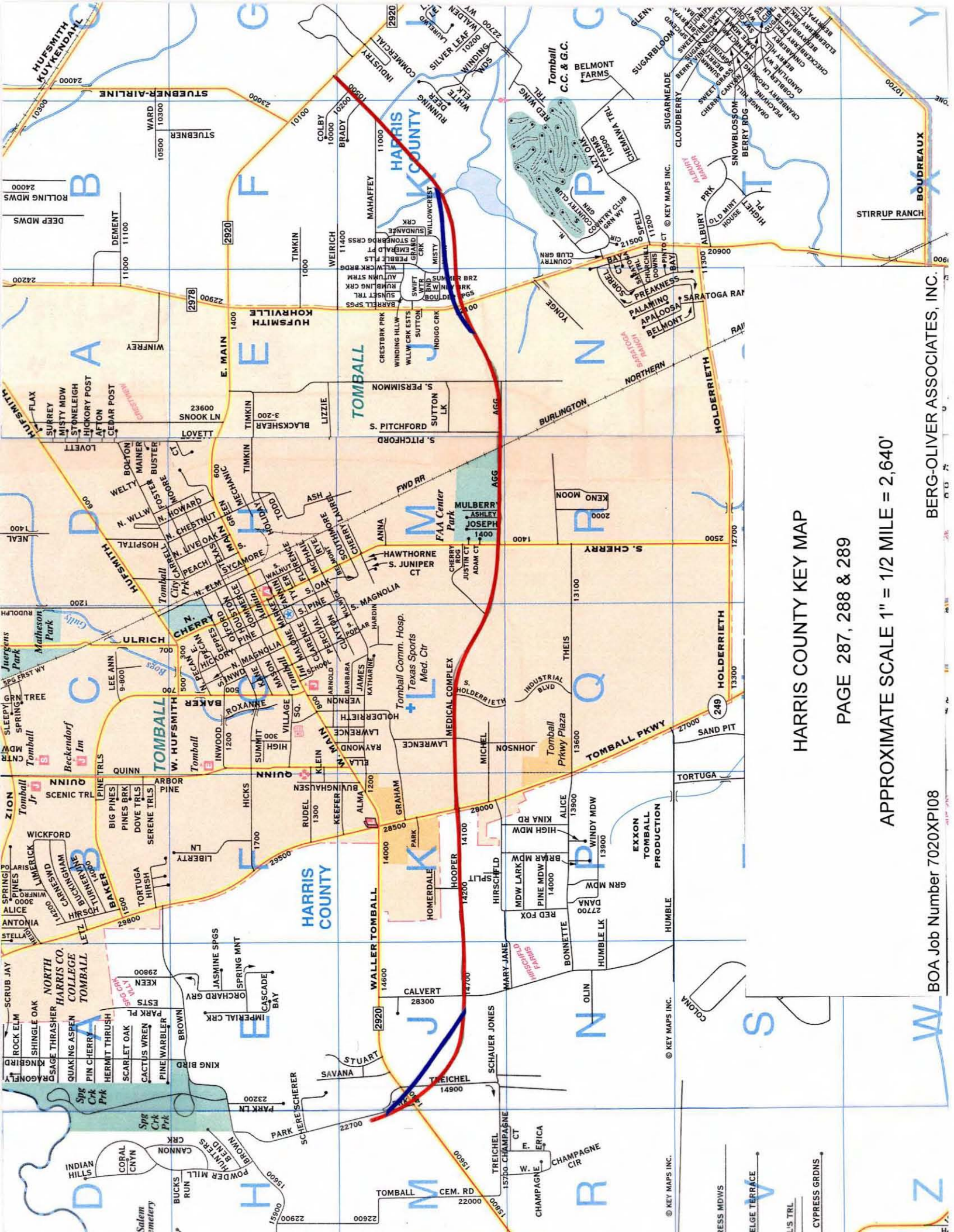
KEY MAP

Scale: 1" = 0.5 Miles



KEY MAP, INC. 2003
1411 W. Arkansas
Houston, TX 77066
(713) 238-1946

The map displays a comprehensive grid of streets and highways across Harris County, Texas. Major roads are highlighted in yellow and orange, while local streets are shown in red and black. The city of Houston is centrally located, with its downtown area and surrounding suburbs clearly delineated. The map also shows the Gulf of Mexico to the east and various parks and green spaces throughout the county. A scale bar in the top left corner indicates that 1 inch on the map represents 0.5 miles. A north arrow is positioned in the upper right quadrant. In the bottom right corner, there is a small legend and contact information for Key Map, Inc., including their address at 1411 W. Arkansas, Houston, TX 77066, and phone number (713) 238-1946. The map is titled 'HARRIS COUNTY TEXAS' and 'KEY MAP' in large, bold letters in the top left corner.



HARRIS COUNTY KEY MAP

PAGE 287, 288 & 289

APPROXIMATE SCALE 1" = 1/2 MILE = 2,640'

BOA Job Number 7020XP108

BERG-OLIVER ASSOCIATES, INC.

© KEY MAPS INC.

© KEY MAPS INC.

© KEY MAPS INC.

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APPENDIX B
SITE MAP(S)



0 0.25 0.5
Miles

7020 ALIGNMENT 11-10-08
HGAC 2006 AERIAL



APPENDIX C
REGULATORY DATABASE SEARCH

Regulatory Database Search

Job Number: 8238

Report Date: October 23, 2008

Property:

Cobb, Fendley & Associates
FM 2920 (Hopper and Agg Road)
Tomball, TX

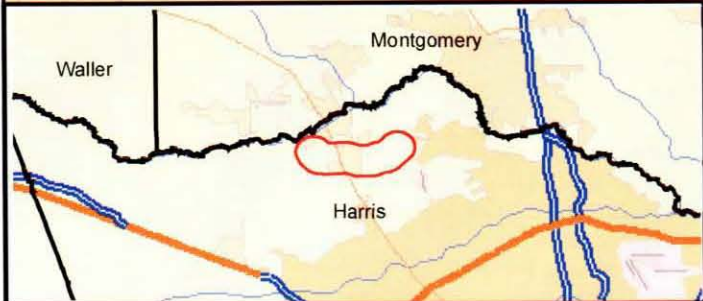
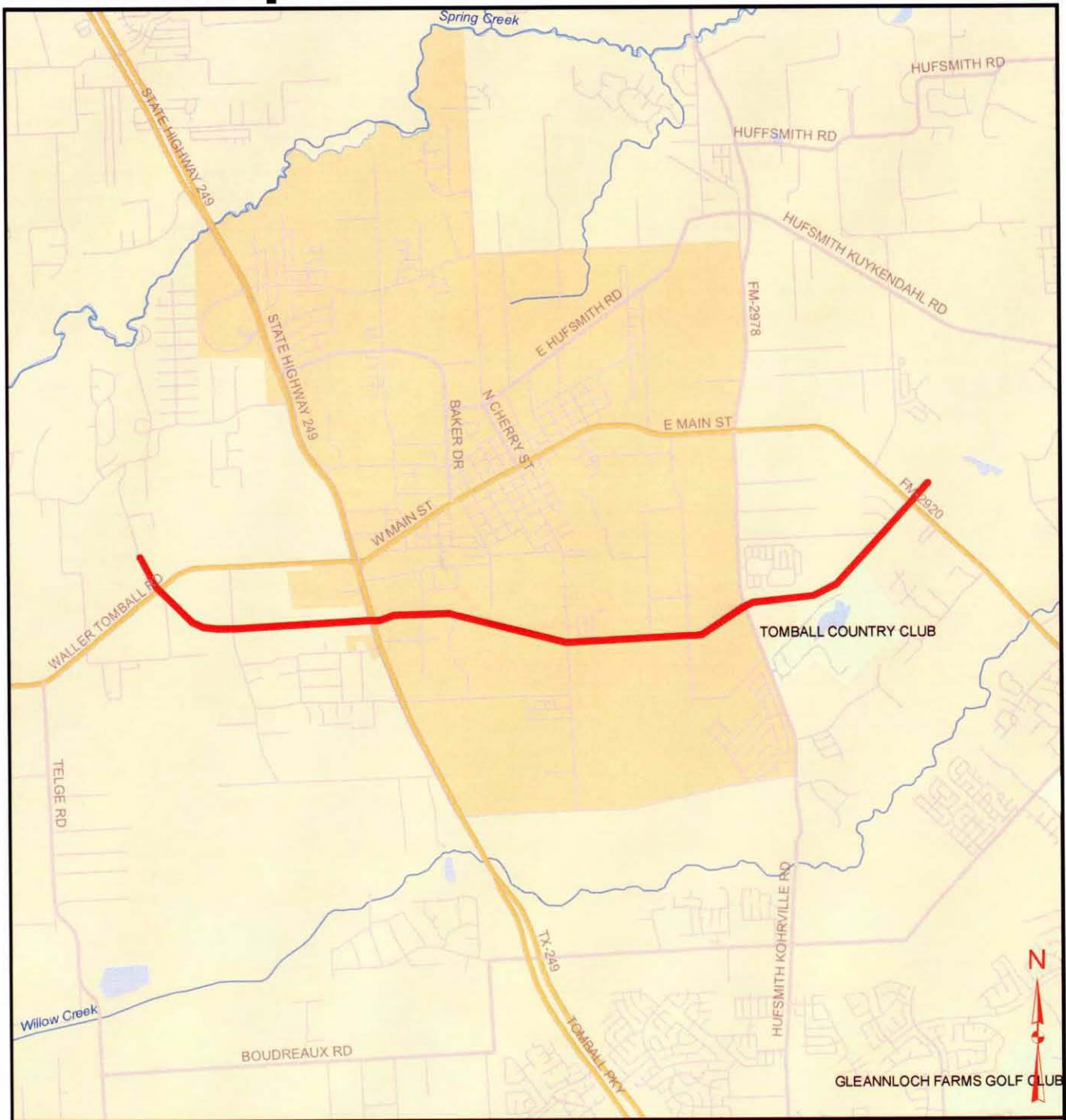
Prepared For:

Berg-Oliver Associates, Inc.
14701 St. Mary's Ln, Suite 400
Houston, TX 77079

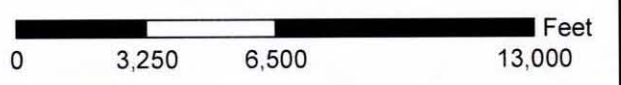
Prepared By:

AAI Environmental Data, Inc.
P.O. Box 70438
Houston, TX 77270

Location Map

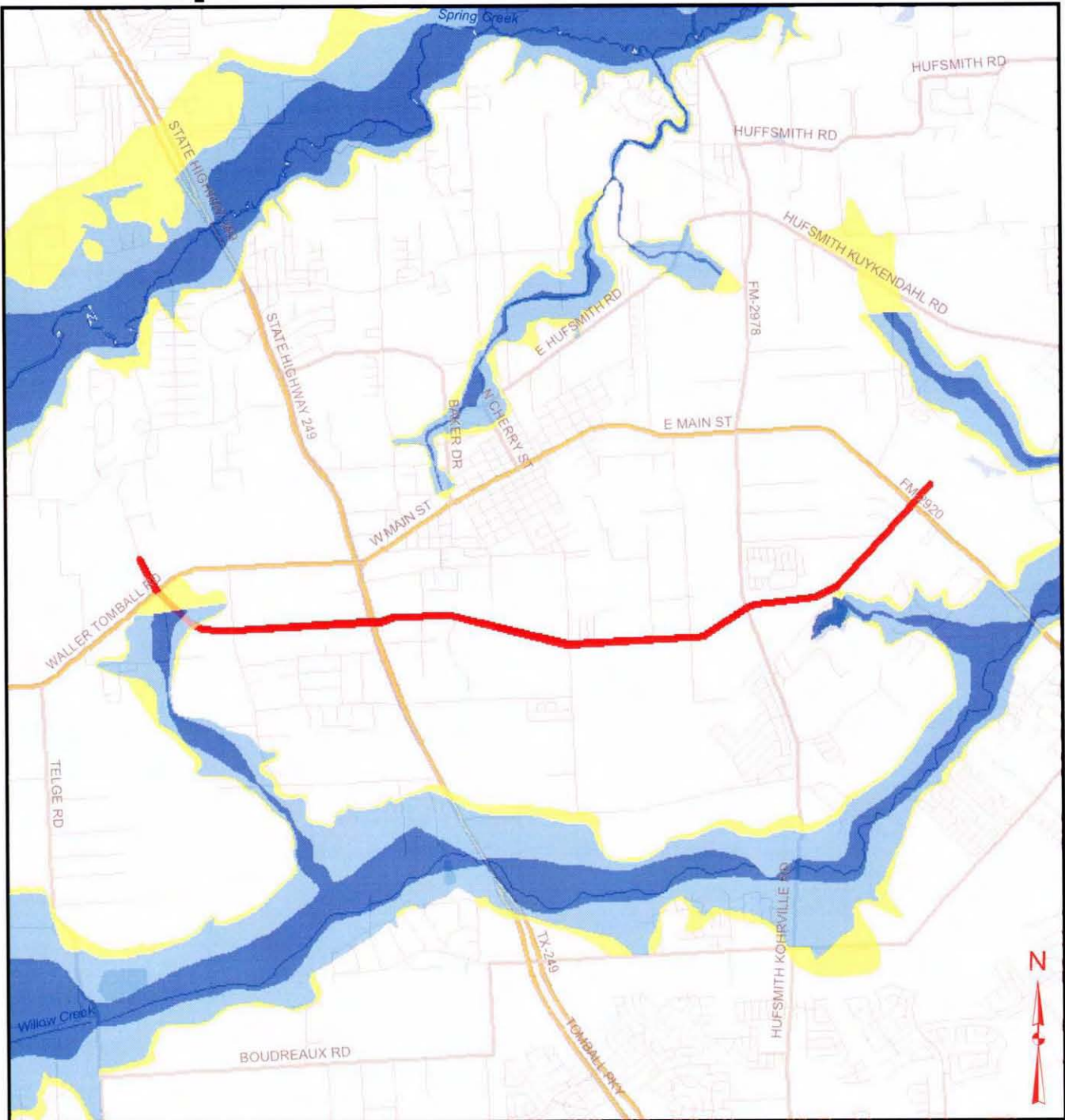


Site Location: FM 2920 (Hopper and Agg Road)
Tomball, TX
Job Number: 8238



Note: Property location and boundaries are representative only and may not be to scale.

Flood Map



Texas Flood Data - FEMA Q3 Data

- FIRM Panel #
- Zone A (100-yr Flood, No Base Elevation Determined)
 - FW (Flood Way)
 - Zone X (Outside 500-yr Flood Plain)
 - Zone X500 (500-year Flood Plain)

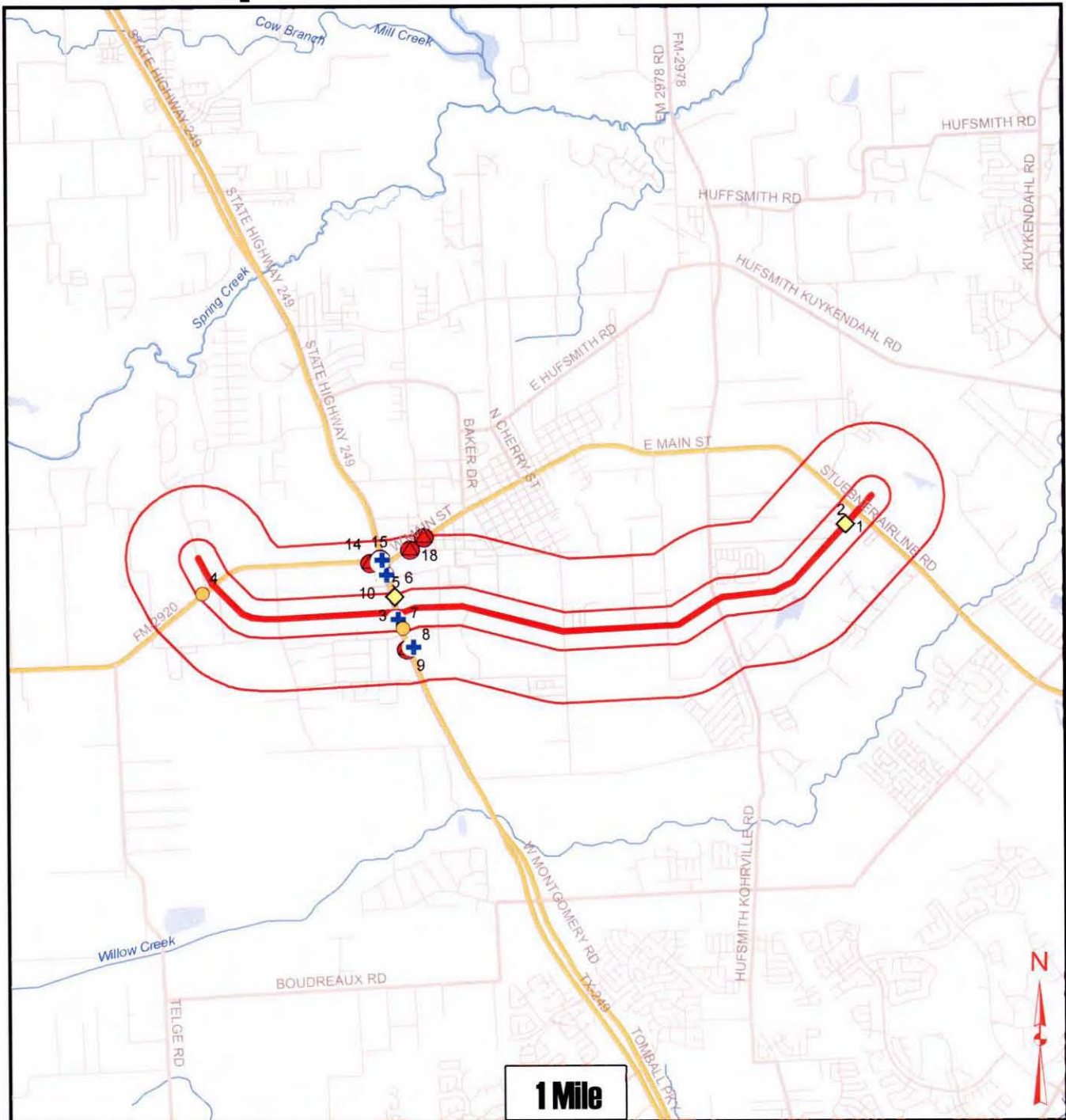
Site Location: FM 2920 (Hopper and Agg Road)
Tomball, TX

Job Number: 8238

0 3,250 6,500 13,000 Feet

Note: This map reflects the most current digital data available from FEMA. Updated information can be found at www.fema.gov

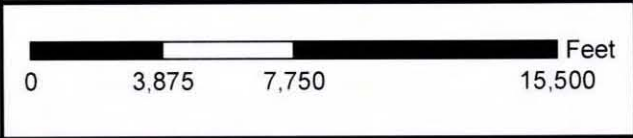
Hazard Map



	SWLF		RCRA		UST
	NFRAP		ERNS		AST
	CERCLIS		LPST		IOP
	RCRA TSD		MSD		NPL
	CORRACTS		IHW		SPL
	BROWNFIELD		VCP		CLI
	DRY CLEANER				

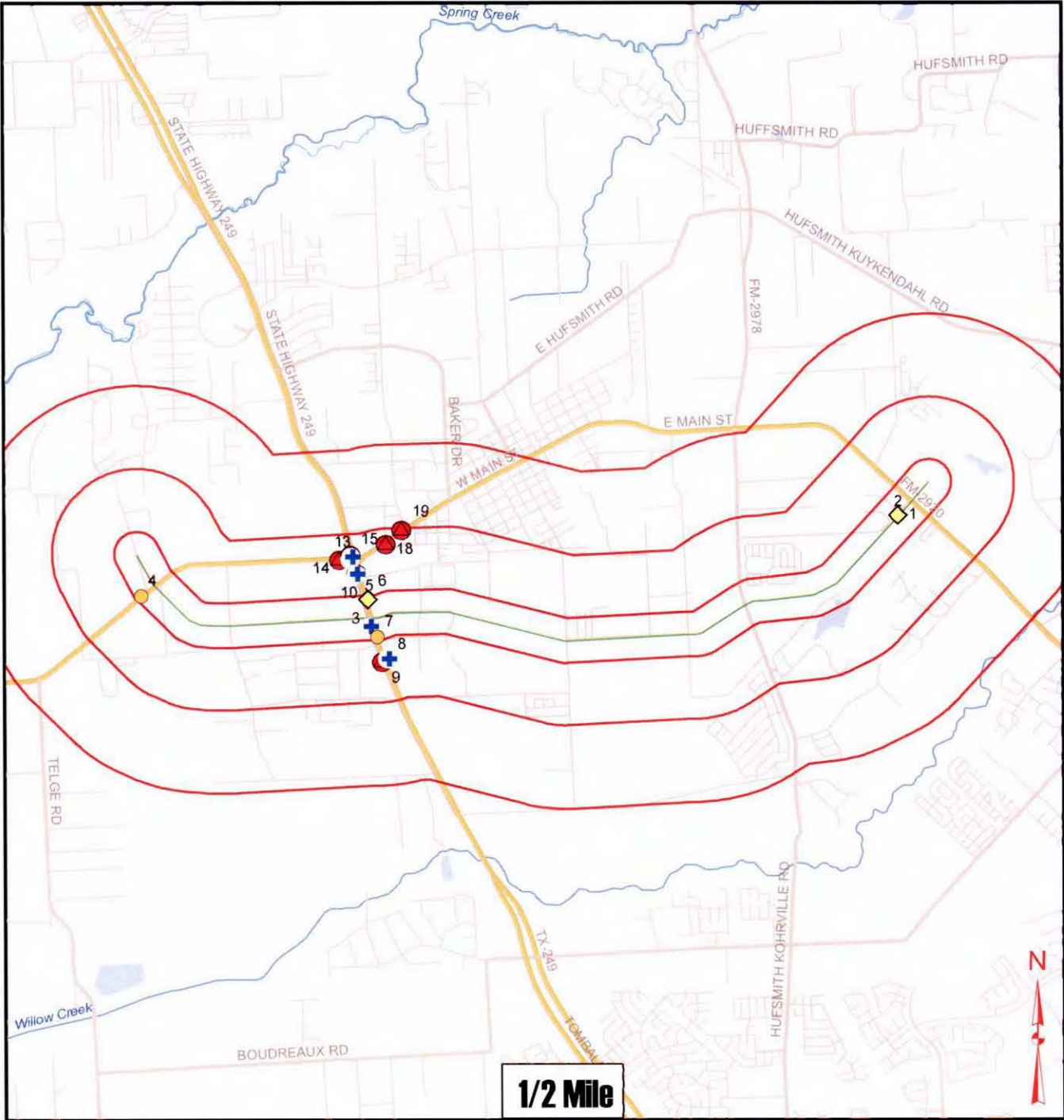
Site Location: FM 2920 (Hopper and Agg Road)
Tomball, TX

Job Number: 8238



Note: Property location and boundaries are representative only and may not be to scale.

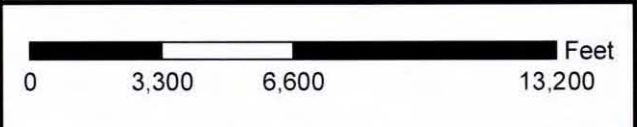
Hazard Map



	SWLF		RCRA		UST
	NFRAP		ERNS		AST
	CERCLIS		LPST		IOP
	RCRA TSD		MSD		NPL
	CORRACTS		IHW		SPL
	BROWNFIELD		VCP		CLI
	DRY CLEANER				

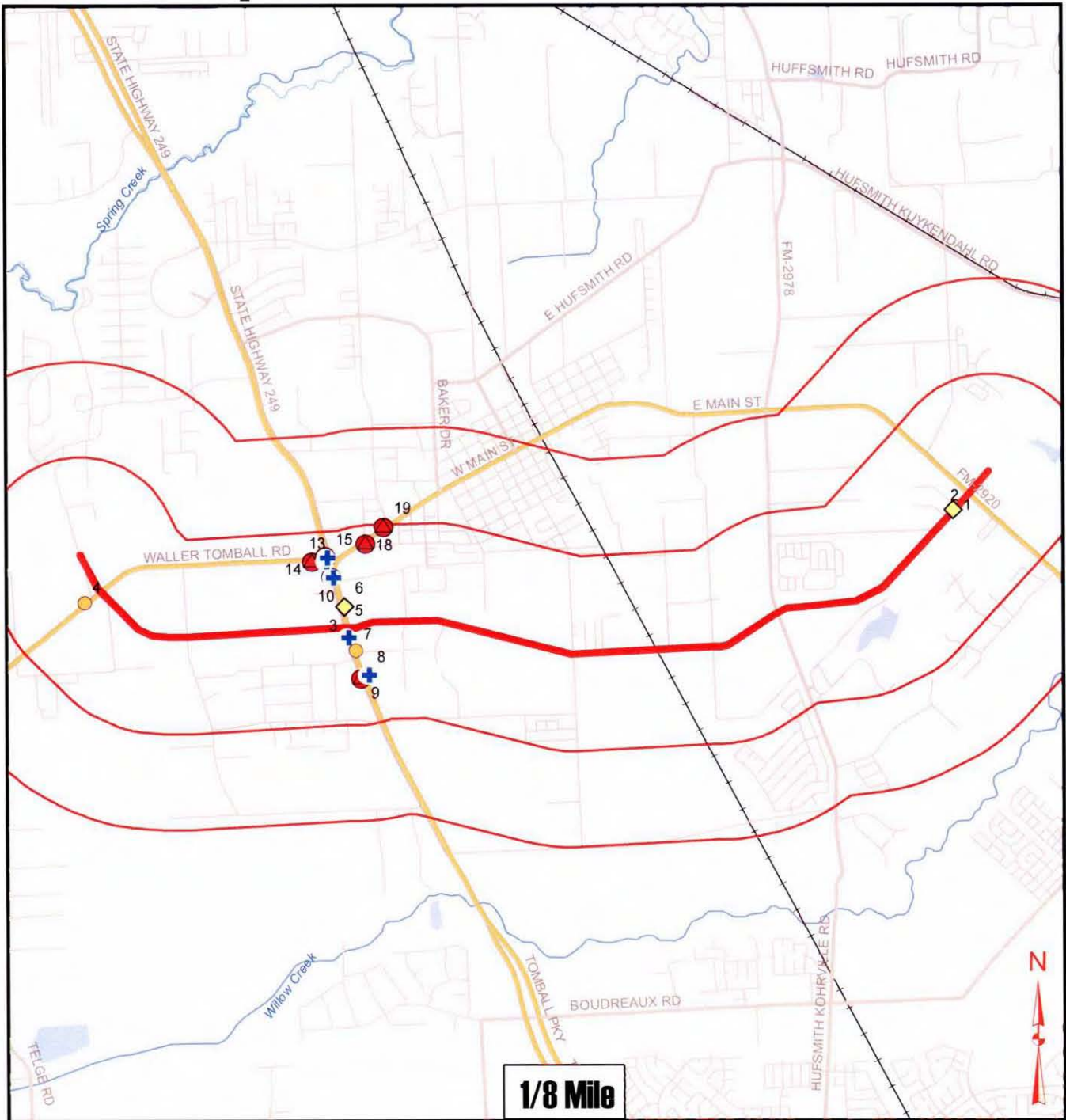
Site Location: FM 2920 (Hopper and Agg Road)
Tomball, TX

Job Number: 8238



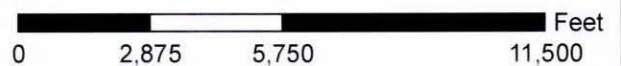
Note: Property location and boundaries are representative only and may not be to scale.

Hazard Map



	SWLF		RCRA		UST
	NFRAP		ERNS		AST
	CERCLIS		LPST		IOP
	RCRA TSD		MSD		NPL
	CORRACTS		IHW		SPL
	BROWNFIELD		VCP		CLI
	DRY CLEANER				

Site Location: FM 2920 (Hopper and Agg Road)
Tomball, TX
Job Number: 8238



Note: Property location and boundaries are representative only and may not be to scale.

Search Summary

Property Location: FM 2920 (Hopper and Agg Road)
 Tomball, TX

Site Radius: PolyLine

Environmental Record Source	Date Released	Date Updated	Search Radii	Subject Property	Adjoining Property	1/2 Mile	1 Mile	Total
Federal Sites								
NPL	04/09/07	06/11/07	1.000	0	0	0	0	0
NPL (Delisted)	04/09/07	06/11/07	0.500	0	0	0	0	0
CERCLIS	04/09/07	06/11/07	0.500	0	0	0	-	0
NFRAP	07/07/06	09/19/06	Adjoining*	0	0	0	-	0
CORRACTS	06/26/06	09/19/06	1.000	0	0	0	0	0
RCRA TSD	06/11/07	10/24/07	0.500	0	0	0	-	0
RCRA	06/11/07	10/24/07	Adjoining*	1	1	-	-	2
IC/EC (AUL)	Various	09/19/06	Property	0	-	-	-	0
ERNS	01/31/06	09/19/06	Property	0	-	-	-	0
State and Tribal Sites								
SPL	06/29/07	09/19/07	1.000	0	0	0	0	0
SCL	06/29/07	09/19/07	0.500	0	0	0	-	0
IOP	06/29/07	10/08/07	Adjoining*	0	0	-	-	0
VCP	06/29/07	10/08/07	0.500	0	0	0	-	0
SWLF	07/07/06	09/19/06	0.500	0	0	0	-	0
CLI	01/14/05	09/19/06	0.500	0	0	0	-	0
LPST	06/04/07	06/11/07	0.500	0	0	8	-	8
UST	06/11/07	10/24/07	Adjoining*	0	2	-	-	2
AST	06/11/07	10/24/07	Adjoining*	0	0	-	-	0
IC/EC (AUL)	Various	10/24/07	Property	0	-	-	-	0
BROWNFIELD	06/29/07	08/25/08	0.500	0	0	0	-	0
Supplemental Databases								
MSD	06/04/07	06/11/07	1.000	0	0	0	0	0
DRY CLEANER	06/01/07	06/11/07	0.500	0	1	4	-	5
IHW	06/11/07	06/11/07	Adjoining*	1	1	-	-	2

*Adjoining properties are defined as being within a search radius of 0.125 mi. from the subject property boundaries.

Site Summary

Map ID	Type	Facility ID	Facility Name	Address	Distance
1	IHW	84791	American Coatings	10625 Mahaffey Rd Tomball, TX 77375	ON SITE 0
2	RCRA	TXR000018994	AMERICAN COATINGS MANAGEMENT INC	10625 MAHAFFEY RD TOMBALL, T X 77375	ON SITE 0
3	DRY CLEANER	RN104028097	1.50 TOMBALL CLEANERS	28145 TOMBALL PKWY TOMBALL, T X 77375	W 0.040
4	UST	73770	WALTERS QUIK STOP	15222 FM 2920 TOMBALL, T X 77377	W 0.092
5	RCRA	TXD070145362	TOMBALL FORD	28310 FM 149 TOMBALL, T X 77375	W 0.102
6	IHW	74093	Tomball Ford	28310 FM 149 Tomball, TX 77375	W 0.102
7	UST	497	HANDIP LUS 5	28102 HWY 249 TOMBALL, T X 77375	W 0.105
8	DRY CLEANER	RN104895586	TOMBALL DRY CLEAN EXPRESS	27910 TOMBALL PKWY TOMBALL, T X 77375	W 0.240
9	LPST	100791	PARKWAY CHEVROLET	27909 HWY 149 TOMBALL, T X 77375	W 0.252
10	DRY CLEANER	RN104153663	4 CORNERS CLEANERS	28527 TOMBALL PKWY TOMBALL, T X 77375	W 0.258
11	LPST	99102	STOP N GO STORE 3692	28531 TOMBALL PKWY TOMBALL, T X 77375	W 0.262
12	LPST	115925	STOP N GO 2603	28531 HWY 249 TOMBALL, T X 77375	W 0.262
13	DRY CLEANER	RN103962957	NESBITS CLEANERS 13005	14027 FM 2920 RD TOMBALL, T X 77377	W 0.345
14	LPST	108378	FOUR CORNERS SHOPPING CENTER	14099 FM 2920 TOMBALL, T X 77337	W 0.348
15	DRY CLEANER	RN104872460	MW CLEANERS 13005	14020 FM 2920 RD TOMBALL, T X 77377	W 0.363
16	LPST	115967	FORMER ALBERTSON 2776 FORMER TEXACO	28631 HWY 249 TOMBALL, T X 77375	W 0.374
17	LPST	114898	FORMER EXXON	28631 TOMBALL PKWY TOMBALL, T X 77375	W 0.374
18	LPST	108155	TOMBALL TEXACO	1301 W MAIN TOMBALL, T X 77375	W 0.405
19	LPST	107311	KLEIN SUPERMARKET	1200 W MAIN TOMBALL, T X 77375	NW 0.489

MAP ID 1	HAZARD TYPE: IHW	FACILITY ADDRESS: 10625 Mahaffey Rd
	DISTANCE: 0 ON SITE	Tomball, TX 77375

FACILITY INFORMATION:

TCEQ Registration ID: 84791	Waste Transporter: No
EPA ID: TXR000018994	Waste Transfer Facility: No
TCEQ ID: 104656	Industrial Waste Permit: None Reported
Initial Registration Notification Date: 1996/11/06	Municipal Waste Permit: None Reported
Registration Status Change: 1996/11/06	Hazardous Waste Permit: None Reported
Registration Last Amendment: 2005/11/29	Maguiladora: No
Facility Status: Active	Generator Type: Large Quantity Generator
Facility Name: American Coatings	Type of Generator: Industrial
Facility Address: 10625 Mahaffey Rd Tomball TX 77375	Corrective Action Status: N/A
County: HARRIS	CA Project Manager: N/A
Waste Generator: Yes	Non-Notifier: No
Waste Receiver: No	STEERS Reporter: Yes
Standard Industrial Classification: Manufacturing (Paints & Allied Products)	Recycler Activity: No
Activity Information: Activity type/description unknown	Monthly Reporting: No
North American Industry Classification: Manufacturing (Paint and Coating Manufacturing)	Submits Annual Waste Summary: Yes
Additional Information: Paint manufacturing	Last Data Update: 2005/12/01

OWNER INFORMATION:

Owner Name: American Coatings Management In	Owner Type: Unknown
Mailing Address: PO Box 1426 Tomball TX 77377 1426	Owner Tax ID: 17601381308
Primary Contact: Morrison Jim	Bankruptcy: No
Primary Phone: 281-351-1776	OperatorName: American Coatings Managem Corporation
	OperatorType: Corporation

WASTE INFORMATION:

Waste ID:	Waste Code (*old Code):	Waste Status:	Generator Description:
207927	0013403H	Active	Hazardous Solid Waste, N.O.S., NA3077
207926	0012606H	Active	Waste Resin Solution, UN1866
157482	00113072	Active	Scrap steel (palletized). See overall plant process description in Section 2 (p
157481	00103082	Active	Empty 5 to 55 gallon containers. See overall plant process description in Secti
157314	00083073	Inactive	Scrap steel (palletized). See overall plant process description in Section 2 (p
157313	00073921	Active	Dust collector filters from the fabric filter air pollution control device (Cont
157312	00063921	Active	Dust collector dust from the fabric filter air pollution control device. (Conta
157311	0005310H	Active	Mop heads from clean-up potential spills (containerized). See overall plant
157310	0004310H	Active	Cleanup absorbent from potential spills (containerized). See overall plant proc
155087	00033083	Inactive	Empty 5 to 55 gallon containers. See overall plant process description in Secti
155086	00029992	Active	General plant production refuse/plant refuse systems/ See overall plant process
155083	0001203H	Inactive	Tank cleaning solvent, waste paint, and sand mill (pigment, solvent) waste. Gen

MAP ID 2	HAZARD TYPE: RCRA	FACILITY ADDRESS: 10625 MAHAFFEY RD
	DISTANCE: 0 ON SITE	TOMBALL, TX 77375

FACILITY INFORMATION:

Handler ID: TXR000018994
Handler Name: AMERICAN COATINGS MANAGEMENT INC
Receive Date: 03/01/06
Last Change: 10/31/06
Facility Address: 10625 MAHAFFEY RD, TOMBALL, TX 77375
Site Name: AMERICAN COATINGS MANAGEMENT INC
Non Notifier: Data Unavailable
Region: 06 **State District:** 12
Full Enforcement: Does Not Apply
Operating TSDF: Does Not Apply
Significant Non-Complier: No
Land Type:
Permit Progress: Does Not Apply

North American Industry Classification System (NAICS) Codes

- Paint and Coating Manufacturing

Government Performance and Results Act

Permit: No
Post-Closure: No
Corrective Action: No
Compliance (Groundwater) Monitoring Evaluation: No
Permit Workload: Does Not Apply
Closure Workload: Does Not Apply
Post-Closure Workload: Does Not Apply
Subject to Corrective Action: No
Corrective Action Workload: No

GENERATOR INFORMATION:

Generator Status: LQG	Transporter: No
Importer: No	Used Oil Transporter Facility: Unknown
Used Oil Transporter: Unknown	Used Oil Marketing: Unknown
Used Oil Processor: Unknown	Used Oil Fuel Marketer to Burner: Unknown
Universal Waste: No	Used Oil Refiner: Unknown
Used Oil Recycler: No	Used Oil Fuel Burner: Unknown
On-Site Burner Exempt: No	Mixed Waste Generator: No
Furnace Exemption: No	Underground Injection: No

OWNER/OPERATOR INFORMATION:

Owner (Owner Type): AMERICAN COATINGS MANAGEMENT INC (PUBLIC)	Contact Address: PO BOX 1426 TOMBALL, TX 77377
Contact: JIM MORRISON	Contact E mail: Data Unavailable
Contact Phone: 2813511776	

VIOLATION ENFORCEMENT DETAILS:

Citation/Violation:	None Reported
Enforcement Type/Description:	None Reported
Citation/Violation:	01/16/97 - FR - 335.62/335.503a1/262.11 / 262.A : Generators - General
Enforcement Type/Description:	11/13/1996 - 110 / VERBAL INFORMAL

MAP ID 3	HAZARD TYPE: DRY CLEANER FACILITY ADDRESS: 28145 TOMBALL PKWY DISTANCE: 0.040 W TOMBALL, TX 77375
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FACILITY INFORMATION

Regulated Entity ID: RN104028097
Customer ID: CN602903494
Name: 1.50 TOMBALL CLEANERS
Uses Perc (Perchloroethylene): YES
Type: DRY CLEANING CONDUCTED ON-SITE
Address: 28145 STATE HIGHWAY 249 STE 1
TOMBALL, TX 77375 -3325
County: HARRIS
Owner: DONG LOI LLC
Registered with TCEQ: FY2007

Dry Cleaner Remediation Program

MAP ID 4	HAZARD TYPE: UST	FACILITY ADDRESS: 15222 FM 2920
	DISTANCE: 0.092 W	TOMBALL, TX 77377

FACILITY INFORMATION:

Facility ID: 73770	Facility Type: Retail
Facility Name: WALTERS QUICK STOP	Facility Manager: PIYAR ALI
UST's Installed: 2 AST's Installed: 0	Phone: 281-290-9931
Date Registered: 01/04/01	Signature Name: John Rumfolo (Owner)

OWNER INFORMATION:

Owner Name: NOORJI INC	Owner ID: 66114	Bankruptcy: Unknown
Owner Address: 15222 FM 2920 STE A TOMBALL, TX 77377	Amendment: Owner Billing Address Changed	
Owner Contact: PIYAR ALI	Amendment Date: 04/17/07	
Contact Phone: 281-290-9931	Owner Tax ID: Not Reported	
	Owner Type: Corporation	

OPERATOR INFORMATION:

Operator Name: NOORJI INC	Operator ID: 146327	Effective: 5/01/06
Operator Address: 15222 FM 2920 STE A TOMBALL	Operator Contact: PIYAR ALI	
	Contact Phone: 281-290-9931	

TANK DETAILS:

Tank ID: 1	Unit ID: 00195677	Tank Material: Composite (Steel w/external FRP Cladding)
Date Installed: 7/12/1998	Tank Capacity: 12000 Gallons	Other Material: -
Date Registered: 1/04/2001	Status Date:	Corrosion Protection: Composite Tank (Steel w/FRP External Laminate)
Tank Status: In Use		Protection II: Composite Tank (Steel w/FRP External Laminate)
Tank Design: Single Wall		Other Protection:
Tank Design II: -		Interior Lining: -

PIPING DETAILS:

Piping Design: Double Wall	Connectors/Valves: Flexible connectors (ate nds of piping)
Piping Type: Pressurized	Connectors/Valves II: Shear/ImpactV alves (under dispenser)
Piping Material: Nonmetallic Flexible Piping	Corrosion Protection: Nonmetallic Flexible Piping
Other Material: -	

VAPOR RECOVERY:

Stage 1: Two-Point System or Coaxial System Type
Stage 2: Two-Point System or Coaxial System Type
Date Installed: Unknown

INSTALLER INFORMATION:

Contractor: -	Tank Tested:
Installer Name: -	
Installer License: -	

COMPARTMENT DETAILS:

Release Detection: -	Letter: A	Capacity: -
Detection II: -	Substance Stored: Gasoline	
Other Detection: Auto Tank Gauging & inv. contr	Other Substance: -	
Spill/Overfill Prevention: Automatic Flow Restrictor Valve	Pipe Release Detection: Annual Piping Tightness Test(@ 0.1 gph)	
Prevention II: Factory-BuiltS pill Container/Bucket/Sump	Detection II: Automatic Line Leak Detector (3.0 gph for pressure piping)	
Prevention III: Tight-Fill Fitting	Other Detection: Auto Tank Gauging & inv.c ontr	

MAP ID 4	HAZARD TYPE: UST	FACILITY ADDRESS: 15222 FM 2920
	DISTANCE: 0.092 W	TOMBALL, TX 77377

TANK DETAILS:

Tank ID: 2	Unit ID: 00195678	Tank Material: Composite (Steelw /external FRP Cladding)
Date Installed: 7/12/1998	Tank Capacity: 12000 Gallons	Other Material: -
Date Registered: 1/04/2001	Status Date:	Corrosion Protection: Composite Tank (Steel w/FRP External Laminate)
Tank Status: In Use		Protection II: Composite Tank (Steel w/FRP External Laminate)
Tank Design: Single Wall		Other Protection:
Tank Design II: -		Interior Lining: -

PIPING DETAILS:

Piping Design: Double Wall	Connectors/Valves: Flexible connectors (ate nds of piping)
Piping Type: Pressurized	Connectors/Valves II: Shear/ImpactV alves (under despenser)
Piping Material: Nonmetallic Flexible Piping	Corrosion Protection: Nonmetallic Flexible Piping
Other Material: -	

VAPOR RECOVERY:

Stage 1: Two-Point System or Coaxial System Type
Stage 2: Not Reported
Date Installed: Unknown

INSTALLER INFORMATION:

Contractor: -
Installer Name: -
Installer License: - **Tank Tested:**

COMPARTMENT DETAILS:

Release Detection: -	Letter: A	Capacity: 7000
Detection II: -	Substance Stored: Gasoline	
Other Detection: Auto Tank Gauging & inv. contr	Other Substance: -	
Spill/Overfill Prevention: Automatic Flow Restrictor Valve	Pipe Release Detection: Annual Piping Tightness Test(@ 0.1 gph)	
Prevention II: Factory-BuiltS pill Container/Bucket/Sump	Detection II: Automatic Line Leak Detector (3.0 gph for pressure piping)	
Prevention III: Tight-Fill Fitting	Other Detection: Auto Tank Gauging & inv.c ontr	

MAP ID 5	HAZARD TYPE: RCRA	FACILITY ADDRESS: 28310 FM 149
	DISTANCE: 0.102 W	TOMBALL, TX 77375

FACILITY INFORMATION:

Handler ID:	TXD070145362	North American Industry Classification System (NAICS) Codes	-
Handler Name:	TOMBALL FORD INC		
Receive Date:	02/01/07		
Last Change:	02/20/07		
Facility Address:	28310 FM 149, TOMBALL, TX 77375		
Site Name:	TOMBALL FORD INC	Government Performance and Results Act	
Non Notifier:	Data Unavailable	Permit:	No
Region: 06	State District: 12	Post-Closure:	No
Full Enforcement:	Does Not Apply	Corrective Action:	No
Operating TSDF:	Does Not Apply	Compliance (Groundwater) Monitoring Evaluation:	No
Significant Non-Complier:	No	Permit Workload:	Does Not Apply
Land Type:		Closure Workload:	Does Not Apply
Permit Progress:	Does Not Apply	Post-Closure Workload:	Does Not Apply
		Subject o Corrective Action:	No
		Corrective Action Workload:	No

GENERATOR INFORMATION:	Generator Status:	CEG	Transporter:	No	
Importer:	No	Used Oil Transporter Facility:	Unknown	Used Oil Marketing:	Unknown
Used Oil Transporter:	Unknown	Used Oil Processor:	Unknown	Used Oil Fuel Marketer to Burner:	Unknown
Universal Waste:	No	Used Oil Refiner:	Unknown	Mixed Waste Generator:	No
Used Oil Recycler:	No	Used Oil Fuel Burner:	Unknown	Underground Injection:	No
On-Site Burner Exempt:	No	Furnace Exemption:	No		

OWNER/OPERATOR INFORMATION:

Owner (Owner Type):	TOMBALL FORD INC (PUBLIC)	ContactA ddress:	22702 STATE HIGHWAY 249 TOMBALL, TX 77375
Contact:	RICK BOEN	ContactE mail:	Data Unavailable
Contact Phone:	713-351-5427		

VIOLATION ENFORCEMENT DETAILS:

Citation/Violation:	None Reported
Enforcement Type/Description:	9/12/1988 - 120 / WRITTEN INFORMAL
Citation/Violation:	08/23/91 - SR - 335.9A2/3 / XXS : State Statute or Regulation
Enforcement Type/Description:	7/25/1991 - 120 / WRITTEN INFORMAL

MAP ID 6	HAZARD TYPE: IHW	FACILITY ADDRESS: 28310 FM 149
	DISTANCE: 0.102 W	Tomball, TX 77375

FACILITY INFORMATION:

TCEQ Registration ID: 74093	Waste Transporter: No
EPA ID: TXD070145362	Waste Transfer Facility: No
TCEQ ID: 28488	Industrial Waste Permit: None Reported
Initial Registration Notification Date: 1987/06/27	Municipal Waste Permit: None Reported
Registration Status Change: Not Reported	Hazardous Waste Permit: None Reported
Registration Last Amendment: 2007/01/19	Maguiladora: No
Facility Status: Active	Generator Type: Conditionally Exempt Small Quantity Generator
Facility Name: Tomball Ford	Type of Generator: Industrial
Facility Address: 28310 FM 149 Tomball TX 77375	Corrective Action Status: N/A
County: HARRIS	CA Project Manager: N/A
Waste Generator: Yes	Non-Notifier: No
Waste Receiver: No	STEERS Reporter: No
Standard Industrial Classification: Retail Trade (New And Used Car Dealers)	Recycler Activity: No
Activity Information: Activity type/description unknown	Monthly Reporting: No
North American Industry Classification: Retail Trade (New Car Dealers)	Submits Annual Waste Summary: Yes
Additional Information: Not Reported	Last Data Update: 2007/02/01

OWNER INFORMATION:

Owner Name: Tomball Ford Inc	Owner Type: Unknown
Mailing Address: 22702 State Highway 249 Tomball TX 77375 8240	Owner Tax ID: None Reported
Primary Contact: Boen Rick	Bankruptcy: No
Primary Phone: 713-351-5427	OperatorName: Tomball Ford Inc Corporation
	OperatorType: Corporation

WASTE INFORMATION:

Waste ID:	Waste Code (*old Code):	Waste Status:	Generator Description:
139913	14763101	Active	USED FILTERS
139912	0566203H	Active	IMMERSION CLEANER
139911	0523211H	Active	PAINT WASTE
139910	0501203H	Active	SPENT SOLVENT
78557	0638310H	Active	Paint booth filters spray painting.
55269	910110*	Inactive	Not Reported
55268	991002*	Inactive	Not Reported
55267	990001*	Inactive	Not Reported

MAP ID 7	HAZARD TYPE: UST	FACILITY ADDRESS: 28102 HWY 249
	DISTANCE: 0.105 W	TOMBALL, TX 77375

FACILITY INFORMATION:

Facility ID: 497	Facility Type: Retail
Facility Name: HANDI PLUS 5	Facility Manager: DANNY DHANANI GM
UST's Installed: 3	AST's Installed: 0
Date Registered: 05/08/86	Phone: 713-671-2338
	Signature Name: J D WOOLSEY (PRES.)

OWNER INFORMATION:

Owner Name: TRISTAR CONVENIENCE STORES INC	Owner ID: 55990	Bankruptcy: Unknown
Owner Address: 6671 SOUTHWEST FWY STE 440 HOUSTON, TX 77074	Amendment: Owner Contact Changed	
Owner Contact: DANNY DHANANI	Amendment Date: 10/12/04	
Contact Phone: 713-776-1515	Owner Tax ID: 17606069064	
	Owner Type: Corporation	

OPERATOR INFORMATION:

Operator Name: UNIVERSAL ENTERPRISES INC	Operator ID: 70756	Effective: 5/24/00
Operator Address: 6671 SOUTHWEST FWY STE 440 HOUSTON	Operator Contact: DANNY DHANANI	
	Contact Phone: 713-776-1515	

TANK DETAILS:

Tank ID: 2	Unit ID: 00001133	Tank Material: Steel
Date Installed: 1/01/1980	Tank Capacity: 10000 Gallons	Other Material: -
Date Registered: 5/08/1986	Status Date:	Corrosion Protection: Cathodic Protection - Field Installation
Tank Status: In Use		Protection II: Cathodic Protection - Field Installation
Tank Design: Single Wall		Other Protection:
Tank Design II: -		Interior Lining: -

PIPING DETAILS:

Piping Design: Single Wall	Connectors/Valves: Shear/ImpactV alves (under dispenser)
Piping Type: Pressurized	Connectors/Valves II: -
Piping Material: FRP (Fiberglass-Reinforced Plastic)	Corrosion Protection: FRP Tank or Piping (Noncorrodible)
Other Material: -	

VAPOR RECOVERY:

Stage 1: Two-Point System or Coaxial System Type
Stage 2: Two-Point System or Coaxial System Type
Date Installed: 12/07/1994

INSTALLER INFORMATION:

Contractor: -	Tank Tested:
Installer Name: -	
Installer License: -	

COMPARTMENT DETAILS:

Release Detection: SIR (Stat. Inventory Reconciliation) & Inventory Control	Letter: A	Capacity: -
Detection II: -	Substance Stored: Gasoline	
Other Detection:	Other Substance: -	
Spill/Overfill Prevention: Automatic Delivery Shut-Off Valve	Pipe Release Detection: Automatic Line Leak Detector (3.0 gph for pressure piping)	
Prevention II: Factory-BuiltS pill Container/Bucket/Sump	Detection II: SIR (Stat. Inventory Reconciliation) & Inventory Control	
Prevention III: Tight-Fill Fitting	Other Detection:	

MAP ID 7	HAZARD TYPE: UST	FACILITY ADDRESS: 28102 HWY 249
	DISTANCE: 0.105 W	TOMBALL, TX 77375

TANK DETAILS:

Tank ID: 1	Unit ID: 00001134	Tank Material: Steel
Date Installed: 1/01/1980	Tank Capacity: 8000 Gallons	Other Material: -
Date Registered: 5/08/1986	Status Date:	Corrosion Protection: Cathodic Protection - Field Installation
Tank Status: In Use		Protection II: Cathodic Protection - Field Installation
Tank Design: Single Wall		Other Protection:
Tank Design II: -		Interior Lining: -

PIPING DETAILS:

Piping Design: Single Wall	Connectors/Valves: Shear/ImpactV alves (under dispenser)
Piping Type: Pressurized	Connectors/Valves II: -
Piping Material: FRP (Fiberglass-Reinforced Plastic)	Corrosion Protection: FRP Tank or Piping (Noncorrodible)
Other Material: -	

VAPOR RECOVERY:

Stage 1: Two-Point System or Coaxial System Type
Stage 2: Two-Point System or Coaxial System Type
Date Installed: 12/07/1994

INSTALLER INFORMATION:

Contractor: -
Installer Name: -
Installer License: - **Tank Tested:**

COMPARTMENT DETAILS:

Release Detection: SIR (Stat. Inventory Reconciliation) & Inventory Control	Letter: A	Capacity: -
Detection II: -	Substance Stored: Gasoline	
Other Detection:	Other Substance: -	
Spill/Overfill Prevention: Automatic Delivery Shut-Off Valve	Pipe Release Detection: Automatic Line Leak Detector (3.0 gph for pressure piping)	
Prevention II: Factory-BuiltS pill Container/Bucket/Sump	Detection II: SIR (Stat. Inventory Reconciliation) & Inventory Control	
Prevention III: Tight-Fill Fitting	Other Detection:	

TANK DETAILS:

Tank ID: 3	Unit ID: 00001135	Tank Material: Steel
Date Installed: 1/01/1980	Tank Capacity: 10000 Gallons	Other Material: -
Date Registered: 5/08/1986	Status Date:	Corrosion Protection: Cathodic Protection - Field Installation
Tank Status: In Use		Protection II: Cathodic Protection - Field Installation
Tank Design: Single Wall		Other Protection:
Tank Design II: -		Interior Lining: -

PIPING DETAILS:

Piping Design: Single Wall	Connectors/Valves: Shear/ImpactV alves (under dispenser)
Piping Type: Pressurized	Connectors/Valves II: -
Piping Material: FRP (Fiberglass-Reinforced Plastic)	Corrosion Protection: FRP Tank or Piping (Noncorrodible)
Other Material: -	

VAPOR RECOVERY:

Stage 1: Two-Point System or Coaxial System Type
Stage 2: Two-Point System or Coaxial System Type
Date Installed: 12/07/1994

INSTALLER INFORMATION:

Contractor: -
Installer Name: -
Installer License: - **Tank Tested:**

COMPARTMENT DETAILS:

Release Detection: SIR (Stat. Inventory Reconciliation) & Inventory Control	Letter: A	Capacity: -
Detection II: -	Substance Stored: Gasoline	
Other Detection:	Other Substance: -	
Spill/Overfill Prevention: Automatic Delivery Shut-Off Valve	Pipe Release Detection: Automatic Line Leak Detector (3.0 gph for pressure piping)	
Prevention II: Factory-BuiltS pill Container/Bucket/Sump	Detection II: SIR (Stat. Inventory Reconciliation) & Inventory Control	
Prevention III: Tight-Fill Fitting	Other Detection:	

MAP ID 8	HAZARD TYPE: DRY CLEANER FACILITY ADDRESS: 27910 TOMBALL PKWY DISTANCE: 0.240 W TOMBALL, TX 77375
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FACILITY INFORMATION

Regulated Entity ID: RN104895586
Customer ID: CN602990608
Name: TOMBALL DRY CLEAN EXPRESS
Uses Perc (Perchloroethylene): YES
Type: DRY CLEANING CONDUCTED ON-SITE
Address: 27910 STATE HIGHWAY 249 STE 106
TOMBALL, TX 77375 -6571
County: HARRIS
Owner: TOMBALL DRY CLEAN EXPRESS INC
Registered with TCEQ: FY2007

Dry Cleaner Remediation Program

MAP ID 9	HAZARD TYPE: LPST	FACILITY ADDRESS: 27909 HWY 149
	DISTANCE: 0.252 W	TOMBALL, TX 77375

LPST INFORMATION:

LPST ID: 100791 **Facility ID:** **Priority Code:** 5 - Minor Soil Contamination - Does Not Require a Remedial Assessment Plan

Reported: 9/26/1991 **Date Entered:** 12/3/1991 **Status Code:** 6A Final Concurrence Issued, Case Closed

Facility Name: PARKWAY CHEVROLET **COORDINATORS:**

TCEQ Region: HOUSTON **Primary:** 2 **RPR:** HMW **PST:** HMW

PRIMARY RESPONSIBLE PARTY:

Name: PARKWAY CHEVROLET

Address: 27909 HWY 149
TOMBALL, TX 77375

Contact Name: SAM MCMANUS

Contact Phone: 713/351-8211

NO ASSOCIATED UST FACILITY

MAP ID 10	HAZARD TYPE: DRY CLEANER FACILITY ADDRESS: 28527 TOMBALL PKWY DISTANCE: 0.258 W TOMBALL, TX 77375
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FACILITY INFORMATION

Regulated Entity ID: RN104153663
Customer ID: CN602564593
Name: 4 CORNERS CLEANERS
Uses Perc (Perchloroethylene): YES
Type: DRY CLEANING CONDUCTED ON-SITE
Address: 28527 STATE HIGHWAY 249
TOMBALL, TX 77375 -4545
County: HARRIS
Owner: MARK A HARRIS DBA 4 CORNERS CLEANERS
Registered with TCEQ: FY2006

Dry Cleaner Remediation Program

MAP ID 11	HAZARD TYPE: LPST	FACILITY ADDRESS: 28531 TOMBALL PKWY
	DISTANCE: 0.262 W	TOMBALL, TX 77375

LPST INFORMATION:

LPST ID: 99102 **Facility ID:** 35124 **Priority Code:** 4.1 - Groundwater Impacted, No Apparent Threats or Impacts to Receptors

Reported: 5/15/1991 **Date Entered:** 5/30/1991 **Status Code:** 6A - Final Concurrence Issued, Case Closed

Facility Name: STOP N GO STORE 3692 **COORDINATORS:**

TCEQ Region: HOUSTON **Primary:** 1P/1/1P/1/ **RPR:** JBH **PST:** AES/SKV/A

ASSOCIATED UST FACILITY

FACILITY INFORMATION:

Facility ID: 35124 **Facility Type:** Retail

Facility Name: STOP N GO 2603 **Facility Manager:** Hankins (O&E)

UST's Installed: 3 **AST's Installed:** 0 **Phone:** 713-812-3041

Date Registered: 05/08/86 **Signature Name:** JL SESSION (MGR)

OWNER INFORMATION:

Owner Name: DIAMOND SHAMROCK REFINING AND MARKETING COMPANY **Owner ID:** 21599 **Bankruptcy:** Unknown

Owner Address: SAN ANTONIO, TX 78269 6000 **Amendment:** Owner Contact Changed

Owner Contact: TERRY HANKINS **Amendment Date:** 07/26/06

Contact Phone: 713-812-3041 **Owner Tax ID:** 17425053794

Owner Type: Corporation

TANK DETAILS:

Tank ID:	Unit ID:	Date Installed:	Tank Capacity:	Substance Stored:	Tank Status:
2	00092870	5/01/1983	12000 Gallons	Gasoline	Removed From Ground
1	00092871	5/01/1983	12000 Gallons	Gasoline	Removed From Ground
3	00092872	5/01/1983	12000 Gallons	Gasoline	Removed From Ground

MAP ID 12	HAZARD TYPE: LPST	FACILITY ADDRESS: 28531 HWY 249
	DISTANCE: 0.262 W	TOMBALL, TX 77375

LPST INFORMATION:

LPST ID: 115925 **Facility ID:** 35124 **Priority Code:** 2.5 - Groundwater Impact, Public / Domestic Water Supply Well Impact
Reported: 10/18/2002 **Date Entered:** 4/13/2004 **Status Code:** 1 - Preassessment/Release Determination
Facility Name: STOP N GO 2603 **COORDINATORS:**
TCEQ Region: Houston **Primary:** 1P/1 **RPR:** ES2 **PST:** ES2/PPC/S

ASSOCIATED UST FACILITY

FACILITY INFORMATION:

Facility ID: 35124 **Facility Type:** Retail
Facility Name: STOP N GO 2603 **Facility Manager:** Hankins (O&E)
UST's Installed: 3 **AST's Installed:** 0 **Phone:** 713-812-3041
Date Registered: 05/08/86 **Signature Name:** JL SESSION (MGR)

OWNER INFORMATION:

Owner Name: DIAMOND SHAMROCK REFINING AND MARKETING COMPANY **Owner ID:** 21599 **Bankruptcy:** Unknown
Owner Address: SAN ANTONIO, TX 78269 6000 **Amendment:** Owner Contact Changed
Owner Contact: TERRY HANKINS **Amendment Date:** 07/26/06
Contact Phone: 713-812-3041 **Owner Tax ID:** 17425053794
Owner Type: Corporation

TANK DETAILS:

Tank ID:	Unit ID:	Date Installed:	Tank Capacity:	Substance Stored:	Tank Status:
2	00092870	5/01/1983	12000 Gallons	Gasoline	Removed From Ground
1	00092871	5/01/1983	12000 Gallons	Gasoline	Removed From Ground
3	00092872	5/01/1983	12000 Gallons	Gasoline	Removed From Ground

MAP ID 13	HAZARD TYPE: DRY CLEANER FACILITY ADDRESS: 14027 FM 2920 RD DISTANCE: 0.345 W TOMBALL, TX 77377
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FACILITY INFORMATION

Regulated Entity ID: RN103962957
Customer ID: CN602704405
Name: MW CLEANERS 13005
Uses Perc (Perchloroethylene): NOT REPORTED
Type: DROP STATION
Address: 14027 FM 2920 RD
TOMBALL, TX 77377 -5501
County: HARRIS
Owner: MWDC TEXAS INC
Registered with TCEQ: FY2006

Dry Cleaner Remediation Program

MAP ID 15	HAZARD TYPE: DRY CLEANER FACILITY ADDRESS: 14020 FM 2920 RD DISTANCE: 0.363 W TOMBALL, TX 77377
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FACILITY INFORMATION

Regulated Entity ID: RN104872460
Customer ID: CN602704405
Name: MW CLEANERS 13005
Uses Perc (Perchloroethylene): NOT REPORTED
Type: DROP STATION
Address: 14020 FM 2920 RD STE A
TOMBALL, TX 77377 -5502
County: HARRIS
Owner: MWDC TEXAS INC
Registered with TCEQ: FY2006

Dry Cleaner Remediation Program

MAP ID 16	HAZARD TYPE: LPST	FACILITY ADDRESS: 28631 HWY 249
	DISTANCE: 0.374 W	TOMBALL, TX 77375

LPST INFORMATION:

LPST ID: 115967 **Facility ID:** **Priority Code:** 4.0 - Assessment Incomplete, No Apparent Receptors Impacted
Reported: 5/23/2002 **Date Entered:** 5/11/2004 **Status Code:** 1 Preassessment/Release Determination
Facility Name: FORMER ALBERTSON 2776 FORMER TEXACO **COORDINATORS:**
TCEQ Region: Houston **Primary:** 1P **RPR:** DB2 **PST:** DB2/PPC

PRIMARY RESPONSIBLE PARTY:

Name: KROGER TEXAS LP
Address: 16770 IMPERIAL VALLEY DR
HOUSTON, TX 77060
Contact Name: CURIS BURNETT
Contact Phone: 713/507-4847

NO ASSOCIATED UST FACILITY

MAP ID 17	HAZARD TYPE: LPST	FACILITY ADDRESS: 28631 TOMBALL PKWY
	DISTANCE: 0.374 W	TOMBALL, TX 77375

LPST INFORMATION:

LPST ID: 114898 **Facility ID:** **Priority Code:** 4.1 - Groundwater Impacted, No Apparent Threats or Impacts to Receptors

Reported: 2/24/2000 **Date Entered:** 3/17/2000 **Status Code:** 6A Final Concurrence Issued, Case Closed

Facility Name: FORMER EXXON **COORDINATORS:**

TCEQ Region: Houston **Primary:** 1 **RPR:** MAO **PST:** MAO

PRIMARY RESPONSIBLE PARTY:

Name: ALBERTSONS INC

Address: 150 PARKCENTER BLVD
BOISE, ID 83706

Contact Name: MARK LINDER

Contact Phone: 208/395-5913

NO ASSOCIATED UST FACILITY

MAP ID 18	HAZARD TYPE: LPST	FACILITY ADDRESS: 1301 W MAIN
	DISTANCE: 0.405 W	TOMBALL, TX 77375

LPST INFORMATION:

LPST ID: 108155 **Facility ID:** 38834 **Priority Code:** 4.1 - Groundwater Impacted, No Apparent Threats or Impacts to Receptors
Reported: 4/28/1994 **Date Entered:** 6/10/1994 **Status Code:** 6A - Final Concurrence Issued, Case Closed
Facility Name: TOMBALL TEXACO **COORDINATORS:**
TCEQ Region: HOUSTON **Primary:** 2 **RPR:** HMW **PST:** HMW

ASSOCIATED UST FACILITY

FACILITY INFORMATION:

Facility ID: 38834 **Facility Type:** Wholesale
Facility Name: MIDTEX OIL TOMBALL WAREHOUSE 93 **Facility Manager:** McNulty (MANAGER)
UST's Installed: 6 **AST's Installed:** 0 **Phone:** 281-351-5050
Date Registered: 05/08/86 **Signature Name:** GLENN E WILSON (SEC)

OWNER INFORMATION:

Owner Name: MIDTEX OIL LP **Owner ID:** 13009 **Bankruptcy:** Unknown
Owner Address: NEW BRAUNFELS, TX 78131 0339 **Amendment:** Owner Billing Address Changed
Owner Contact: Rodney Fischer **Amendment Date:** 09/29/06
Contact Phone: 830-625-4214 **Owner Tax ID:** 17418649418
Owner Type: Private or Corporate

TANK DETAILS:

Tank ID:	Unit ID:	Date Installed:	Tank Capacity:	Substance Stored:	Tank Status:
5	00102548	8/31/1987	3000 Gallons	Diesel	Permanently Filled in Place
4	00102549	8/31/1987	8000 Gallons	Diesel	In Use
3	00102550	8/31/1987	7000 Gallons	Diesel	In Use
2	00102551	8/31/1987	6000 Gallons	Gasoline	In Use
1	00102552	8/31/1987	6000 Gallons	Gasoline	In Use
6	00102553	2/01/1965	0 Gallons	Used Oil	Removed From Ground

Ungeocodables

The following sites were not geocoded due to mapping and/or database limitations. These sites are believed to be within the subject sites zip code or in an adjacent zip code within 1/2 mile of the subject property, but due to database inaccuracies, no guarantees can be made that these sites actually exist within the zip code nor can it be guaranteed that the listed sites are the only sites in the zip code.

The following ZIP codes have been searched for ungeocodables: 77375

Facility ID	Type	Facility Name	Street Address
Ungeocoded sites within 77375:			
72280	AST	CONTRACT CONSTRUCTION	KUHKEYNDAL RD
60964	AST	BUSSELL & SONS	23710 STATE HIGHWAY 249
36726	IHW	J D Reid Lease SWD Well	Lat30.3.370Lon95.38.14
TXD980749675	NFRAP	BULL OIL & CHEMICAL TRANSPORT	SYCAMORE & EAST MAIN
TXD074207150	NFRAP	THOMAS WHITFIELD HAULING SERVICE	10511 CARTER RD
TXD980749675	NFRAP	BULL OIL & CHEMICAL TRANSPORT	SYCAMORE & EAST MAIN
TXD074207150	NFRAP	THOMAS WHITFIELD HAULING SERVICE	10511 CARTER RD
TXR000076125	RCRA	WAL-MART SUPERCENTER 5045	22605 TOMBALL PKWY
TXD000839852	RCRA	SUN OIL CO METZLER E A	1M E
TXD000782888	RCRA	EXXON MOBIL CORPORATION	LAT30.3.370LON95.38.14
48370	UST	THREE LAKES MUD 1	10727 AMISTAD
47965	UST	NONE	1726 KUYKENDAHL HUFFSMITH RD
3356	UST	ROBERTS CEMTARY RD COMP STA	ROBERTS CEMETARY RD

DATABASE DEFINITIONS

FEDERAL ASTM STANDARD DATABASES SEARCHED

NPL: National Priorities List (Superfund)

The NPL, a subset of CERCLIS, compiled by the EPA includes uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. A site must meet or surpass a predetermined hazard ranking system score, be chosen as a state's top priority site, or meet three specific criteria set jointly by the US Department of Health and Human Services and the US EPA in order to become a NPL site. This dataset includes sites currently on the NPL, proposed, and delisted NPL facilities. Tribal NPL facilities, if any, are included in this database.
Source: US EPA

CERCLIS: Comprehensive Environmental Response, Compensation and Liability Information System

A list compiled by EPA that EPA has investigated or is currently investigating for potential hazardous substance contamination for possible inclusion on the National Priorities List. Tribal CERCLIS facilities, if any, are included in this database.
Source: US EPA

NFRAP: No Further Remedial Action Planned

A list compiled by EPA consisting of former CERCLIS sites where no further remedial action is planned under CERCLA. NFRAP sites may be sites where following the initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL inclusion. Tribal NFRAP facilities, if any, are included in this database.
Source: US EPA

RCRA: Resource Conservation Recovery Act

A list compiled by EPA of those persons or entities that generate hazardous waste as defined and regulated by RCRA. RCRA includes sites which generate, transport, or handle hazardous waste as defined and regulated by RCRA. This list includes those facilities defined as Conditionally Exempt Small Quantity Generators (CEG), Small Quantity Generators (SQG), Large Quantity Generators (LQG), Transporters and Handlers. CEG facilities generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. SQG facilities generate between 100 kg to 1,000 kg of hazardous waste per month. LQG facilities generate over 1,000 kg of hazardous waste or over 1 kg of acutely hazardous waste per month. Transporters are those that transport hazardous waste from the generator to a facility that can recycle, treat, store or dispose of the waste. Tribal RCRA facilities, if any, are included in this database.
Source: US EPA

RCRA TSD: Resource Conservation Recovery Act Treatment, Storage, Disposal

A list compiled by EPA which identifies and tracks hazardous waste from the point of generation to the point of disposal. RCRA TSD facilities are those which treat, store, and/or dispose of hazardous waste. Tribal RCRA TSD facilities, if any, are included in this database.
Source: US EPA

CORRACTS: Corrective Action Sites

A list maintained by EPA of hazardous waste treatment, storage, or disposal facilities and other RCRA-regulated facilities (due to a past interim status or storage of hazardous waste beyond 90 days) that have been notified by the EPA to undertake corrective action. Tribal CORRACTS facilities, if any, are included in this database.
Source: US EPA

ERNS: Emergency Response Notification System

EPA's emergency response notification system lists reported CERCLA hazardous substance releases or spills in quantities greater than the reportable quantity, as maintained at the National Response Center. Notification requirements for such releases or spills are codified in 40 CFR Parts 302 and 355. Tribal ERNS facilities, if any, are included in this database.
Source: National Response Center

IC/EC - Institutional/Engineering Controls - Activity and Use Limitation (AUL)

The term AUL is taken from Guide E 2091 to include both legal (institutional) and physical (engineering) controls. AULs are an indication of a past or present release of hazardous substance or petroleum products and are an explicit recognition by a federal, tribal, state or local regulatory agency that residual levels of hazardous substances or petroleum products may be present on a property, and that unrestricted use of the property may not be acceptable.
CORRACTS, CERCLIS, NPL, NFRAP are Federal Programs currently reporting AULs. If one of these facilities is located onsite, specific engineering and/or institutional control data can be found within that particular hazard report.
Source: US EPA

DATABASE DEFINITIONS

STATE ASTM STANDARD DATABASES SEARCHED

SPL: State Superfund Registry

State list of hazardous waste sites, the states' equivalent to NPL. Under the Texas Solid Waste Disposal Act, Texas Health and Safety Code, Chapter 361 (the Act), the TCEQ is required to identify, to the extent feasible, and evaluate facilities which may constitute an imminent and substantial endangerment to public health and safety or to the environment due to a release or threatened release of hazardous substances into the environment. Available information varies by state. Tribal UST facilities, if any, are included in this database.

Source: TCEQ

VCP: Voluntary Cleanup Program

The Texas Voluntary Cleanup Program was established to provide administrative, technical, and legal incentives to encourage the cleanup of contaminated sites in Texas. VCP site cleanups follow a streamlined approach to reduce future human and environmental risk to safe levels. This program can be used as a redevelopment tool or as a tool to add value to a contaminated property. Tribal VCP facilities, if any, are included in this database.

Source: TCEQ

SCL - State CERCLIS

The Texas Commission on Environmental Quality (TCEQ) maintains a database of state equivalent CERCLIS sites all of which are included in the TCEQ's Superfund Registry. The TCEQ does not maintain a separate CERCLIS listing. The information on each site includes a history of all pre-remedial, remedial, removal and community relations activities or events at the site, financial funding information for the events and unrestricted enforcement activities.

IOP: Innocent Owner or Operator Program

The Texas Innocent Owner or Operator Program was created by House Bill 2776 of the 75th Legislature, provides a certificate to an innocent owner or operator if their property is contaminated as a result of a release or migration of contaminants from a source or sources not located on the property, and they did not cause or contribute to the source or sources of contamination. This program can be used as a redevelopment tool or as a tool to add value to a contaminated property. Tribal IOP facilities, if any, are included in this database.

Source: TCEQ

AST: Aboveground Storage Tank

State list of registered aboveground storage required to be registered under Subtitle I, Section 9002 of RCRA.

Source: TCEQ

UST: Underground Storage Tanks

State list of underground storage tanks required to be registered under Subtitle I, Section 9002 of RCRA. A UST is any tank, including underground piping connected to the tank, that is or has been used to contain hazardous substances or petroleum products and the volume of which is 10% or more beneath the surface of the ground. Tribal UST facilities, if any, are included in this database.

Source: TCEQ, U.S. EPA

LPST: Leaking Petroleum Storage Tanks

State list of leaking underground storage tank sites. Section 9003(h) of Subtitle I of RCRA gives EPA and states, under cooperative agreements with EPA, authority to clean up releases from UST systems or require owners and operators to do so. Tribal UST facilities, if any, are included in this database.

Source: TCEQ

SWLF: Municipal Solid Waste Landfills

State list of permitted active, inactive, and closed municipal solid waste landfills, solid waste disposal sites, waste transfer stations and incinerators operating in compliance with the Texas Solid Waste Disposal Act. Tribal Landfill facilities, if any, are included in this database.

Source: TCEQ

CLI: Closed Landfill Inventory

Promulgated in the 73rd legislative session in 1993, House Bill 2537, enacted as Texas Health and Safety Code (THSC) Section 363.064, provided a mandate to the Council of Government (COGs) to inventory the closed (permitted), unauthorized, and abandoned landfills across the state of Texas. Unauthorized sites have no permit and are considered abandoned. This was completed by TCEQ under contract with Texas State University, and in cooperation with the 24 COGs in the State.

Source: TCEQ

BROWNFIELD: Brownfield Site Assessment

State list of completed and ongoing Brownfield Site Assessment. Brownfields are former industrial and commercial sites where redevelopment may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Tribal UST facilities, if any, are included in this database.

Source: TCEQ

IC/EC (State) - Institutional/Engineering Controls - Activity and Use Limitation (AUL)

DATABASE DEFINITIONS

The term AUL is taken from Guide E 2091 to include both legal (institutional) and physical (engineering) controls. AULs are an indication of a past or present release of hazardous substance or petroleum products and are an explicit recognition by a federal, tribal, state or local regulatory agency that residual levels of hazardous substances or petroleum products may be present on a property, and that unrestricted use of the property may not be acceptable.

SPL, VCP, BROWNFIELDS, and MSD are State Programs currently reporting AULs. If one of these facilities is located onsite, specific engineering and/or institutional control data can be found within that particular hazard report.

Source: TCEQ

SUPPLEMENTAL STATE DATABASES SEARCHED

DRY CLEANER:

House Bill 1366 requires all dry cleaning facilities, including drop stations to register with the TCEQ and implement new performance standards at their facilities as appropriate. It also requires distributors of dry cleaning solvents to collect fees on the sale of dry cleaning solvents at certain facilities.

Source: TCEQ

IHW: Industrial and Hazardous Waste Registration and Reporting Facilities

State list containing information submitted by industrial and hazardous waste transporters, receivers, generators, and shippers used to track industrial and hazardous waste generation and management activities in the state of Texas.

Source: TCEQ

MSD (Municipal Setting Designations):

State list of municipalities setting designations used in conjunction with other state and federal cleanup programs such as the Texas VCP, which affords landowners an alternative to spending large sums to cleanup groundwater that is not a drinking water resource in order to satisfy conservative drinking water standards.

Source: TCEQ

DISCLAIMER

Notice of Disclaimer

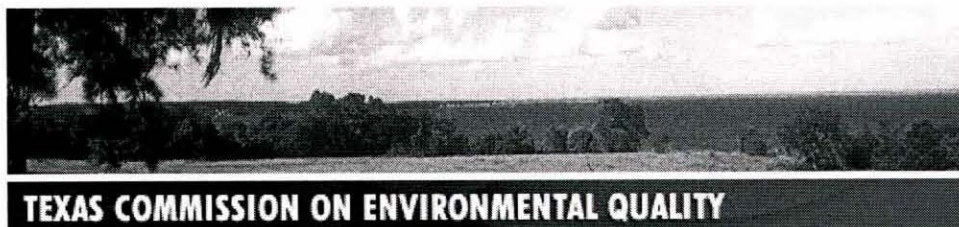
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Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to AAI Environmental Data, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in AAI Environmental Data's databases. All Sites are depicted by a point representing their approximate location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

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PST Registration Database Query Results

Facility Information	
Facility ID:	79503
Facility name:	CHERRY LANE FOOD MART
Address:	1525 S CHERRY LN TOMBALL TX 77375-
Date registered:	09/29/08
TCEQ region:	12, Houston
County:	Harris
Facility type:	Retail
Non-attainment area:	Yes
Number of USTs:	0002
Number of ASTs:	0000
Manager/Title:	KARIM ALI, MGR
Phone:	832-559-7550
Signature/Title:	ZULFIKARALI MAKNOJIA, R
Date signed:	08/11/08
Owner Effective Begin Date:	07/05/08

Financial Assurance Information	
Financial assurance information is not currently available for this facility. Inactive facilities will may not have financial assurance information or the registration has not been submitted or entered into the database as of the last update.	

Owner Information	
Owner ID:	69092
Name:	ORBIT DEVELOPMENT INC
Address:	1525 S CHERRY ST TOMBALL TX 77375-
Owner Type:	Corporation
Contact:	ZULFIKARALI MAKNOJIA
Phone:	832-559-7550
Mail Undeliverable?:	No
Bankruptcy:	No
Total Number of Registered Facilities:	0001

Operator Information	
Operator ID:	154604
Name:	GOLDEN FIFTY BUSINESS INC
Address:	1525 S CHERRY ST TOMBALL TX 77375-

Operator Phone:	
Contact Name/Title:	MAKNOJIA, PRES
Contact Phone:	832-559-7550
Operator Type:	Corporation
Effective Date:	07/15/08

Self-Certification Information	
Signature/Title:	ZULFIKARALI MAKNOJIA, PRES
Signature Type:	Owner
Date:	08/11/08
Registration:	Yes
Fees:	Yes
Financial Assurance:	Yes
Technical Standards:	Yes
UST Delivery Certificate Expires:	02/2009
Our records indicate that a UST Delivery Certificate with an expiration date of 02/2009 has been or will be mailed (within three business days) to you . If you have not received your Delivery Certificate please contact the PST Registration Team at 512-239-2160 for assistance.	
UST Compartment Self-certification Information	
Tank ID/Compartment Letter:	1 A
Self-certification Date:	08/11/08
Tank ID/Compartment Letter:	2 A
Self-certification Date:	08/11/08
Tank ID/Compartment Letter:	2 B
Self-certification Date:	08/11/08

Underground Storage Tanks	
Tank ID: 1	
Status/Status Date:	In Use / //
Installed/Registered:	07/05/2008 / 09/29/2008
Capacity/Empty:	0012000 / No
	Tank
Material:	Jacketed (steel w/external nonmetallic jacket)
Other Material:	
Design and External Containment	
I:	Factory-built nonmetallic jacket
II:	Single wall
III:	
IV:	
Internal Protection Date:	00/00/0000
Corrosion Protection	
I:	External nonmetallic jacket
II:	Composite Tank (steel w/FRP external laminate)
III:	
Other:	
Variance :	No variance(2)
	Piping
Type of Piping:	Pressurized
Piping Material:	Nonmetallic flexible piping

Other Piping Material:	
Design and External Containment	
I:	Double wall
II:	
III:	
IV:	
Connectors and Valves	
I:	Flexible connectors (at ends of piping)
II:	Steel swing-joints (at ends of piping)
III:	Sheer/Impact valves (under dispenser)
Corrosion Protection	
I:	Nonmetallic flexible piping
II:	
III:	
Other:	
Variance:	No variance Vapor Recovery
Stage 1 Equipment Status:	Two-point system or coaxial system type
Installed:	08/05/2008
Stage 2 Equipment Status:	Balance system or assist system type
Installed:	08/05/2008
Installer Information	
Installer Company:	GEO Enviro. Consul.
Contractor Registration Number:	001276
Installer Name:	ANTHONY RAY LEE
Installer License #:	002323
Tank Tested:	Yes
Compartments	
Compartment Letter:	A
Capacity:	0000000
Substance Stored:	Gasoline
Other Substance Stored:	
Tank Release Detection	
I:	
II:	
III:	
Other:	Auto Tank Gauging & inv. contr
Variance:	No variance
Pipe Release Detection	
I:	Automatic line leak detector (3.0 gph for pressure piping)
II:	Annual Tightness test (@ 0.1 gph)
III:	
Other:	
Variance:	No variance
Spill and Overfill Prevention	
I:	Auto flow restrictor valve
II:	Factory-built spill container/bucket/sump
III:	Tight-fill fitting
Variance:	No variance

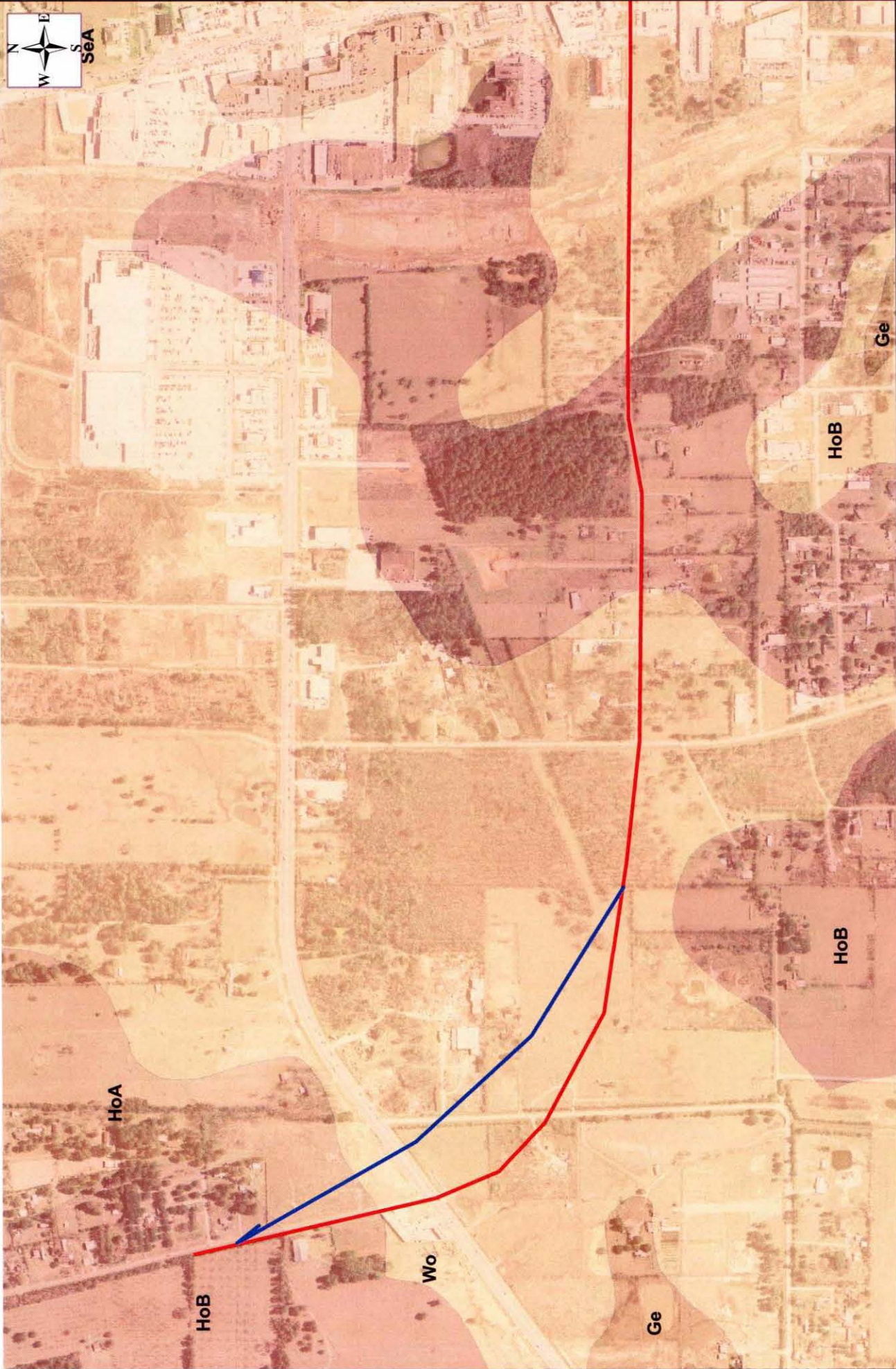
Tank ID:	2
Status/Status Date:	In Use //
Installed/Registered:	07/05/2008 / 09/29/2008
Capacity/Empty:	0012000 / No
	Tank
Material:	Jacketed (steel w/external nonmetallic jacket)
Other Material:	
Design and External Containment	
I:	Factory-built nonmetallic jacket
II:	Single wall
III:	
IV:	
Internal Protection Date:	00/00/0000
Corrosion Protection	
I:	External nonmetallic jacket
II:	Composite Tank (steel w/FRP external laminate)
III:	
Other:	
Variance :	No variance(2)
	Piping
Type of Piping:	Pressurized
Piping Material:	Nonmetallic flexible piping
Other Piping Material:	
Design and External Containment	
I:	Double wall
II:	
III:	
IV:	
Connectors and Valves	
I:	Flexible connectors (at ends of piping)
II:	Steel swing-joints (at ends of piping)
III:	Sheer/Impact valves (under dispenser)
Corrosion Protection	
I:	Nonmetallic flexible piping
II:	
III:	
Other:	
Variance:	No variance
	Vapor Recovery
Stage 1 Equipment Status:	Two-point system or coaxial system type
Installed:	08/05/2008
Stage 2 Equipment Status:	Balance system or assist system type
Installed:	08/05/2008
Installer Information	
Installer Company:	GEO Enviro. Consul.
Contractor Registration Number:	001276
Installer Name:	ANTHONY RAY LEE
Installer License #:	002323
Tank Tested:	Yes
	Compartments
Compartment Letter:	A

Capacity:	0006000
Substance Stored:	Gasoline
Other Substance Stored:	
Tank Release Detection	
I:	
II:	
III:	
Other:	Auto Tank Gauging & inv. contr
Variance:	No variance
Pipe Release Detection	
I:	Automatic line leak detector (3.0 gph for pressure piping)
II:	Annual Tightness test (@ 0.1 gph)
III:	
Other:	
Variance:	No variance
Spill and Overfill Prevention	
I:	Auto flow restrictor valve
II:	Factory-built spill container/bucket/sump
III:	Tight-fill fitting
Variance:	No variance
	Compartments
Compartment Letter:	B
Capacity:	0006000
Substance Stored:	Diesel
Other Substance Stored:	
Tank Release Detection	
I:	
II:	
III:	
Other:	Auto Tank Gauging & inv. contr
Variance:	No variance
Pipe Release Detection	
I:	Automatic line leak detector (3.0 gph for pressure piping)
II:	Annual Tightness test (@ 0.1 gph)
III:	
Other:	
Variance:	No variance
Spill and Overfill Prevention	
I:	Auto flow restrictor valve
II:	Factory-built spill container/bucket/sump
III:	Tight-fill fitting
Variance:	No variance

Contact us if you have any questions.

Last Modified: April 16, 2008

APPENDIX D
PHYSICAL SETTING INFORMATION

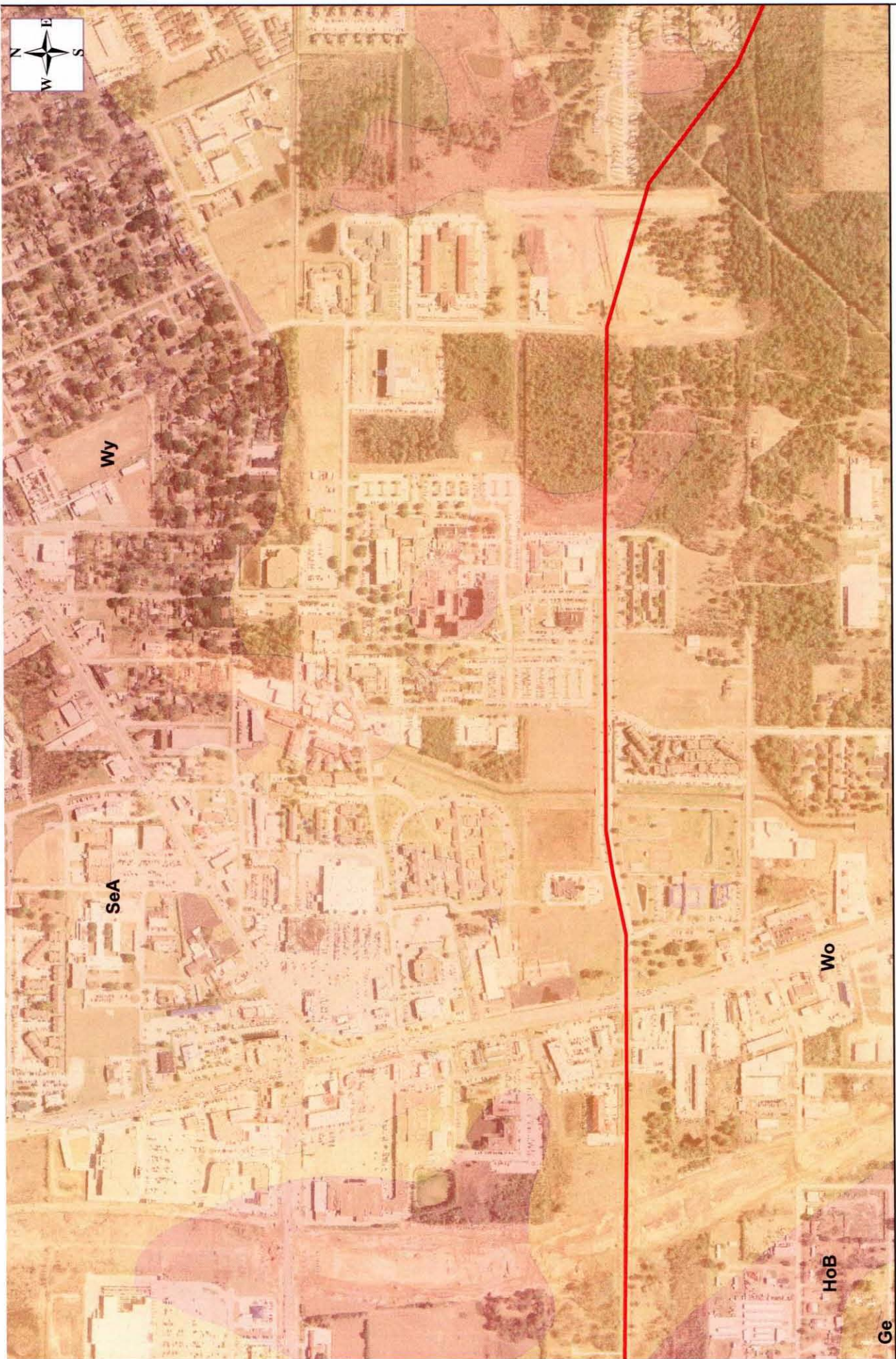


U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCE CONSERVATION SERVICE
SOILS OF HARRIS COUNTY, TEXAS



Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920

Aerial Photographic Delineation

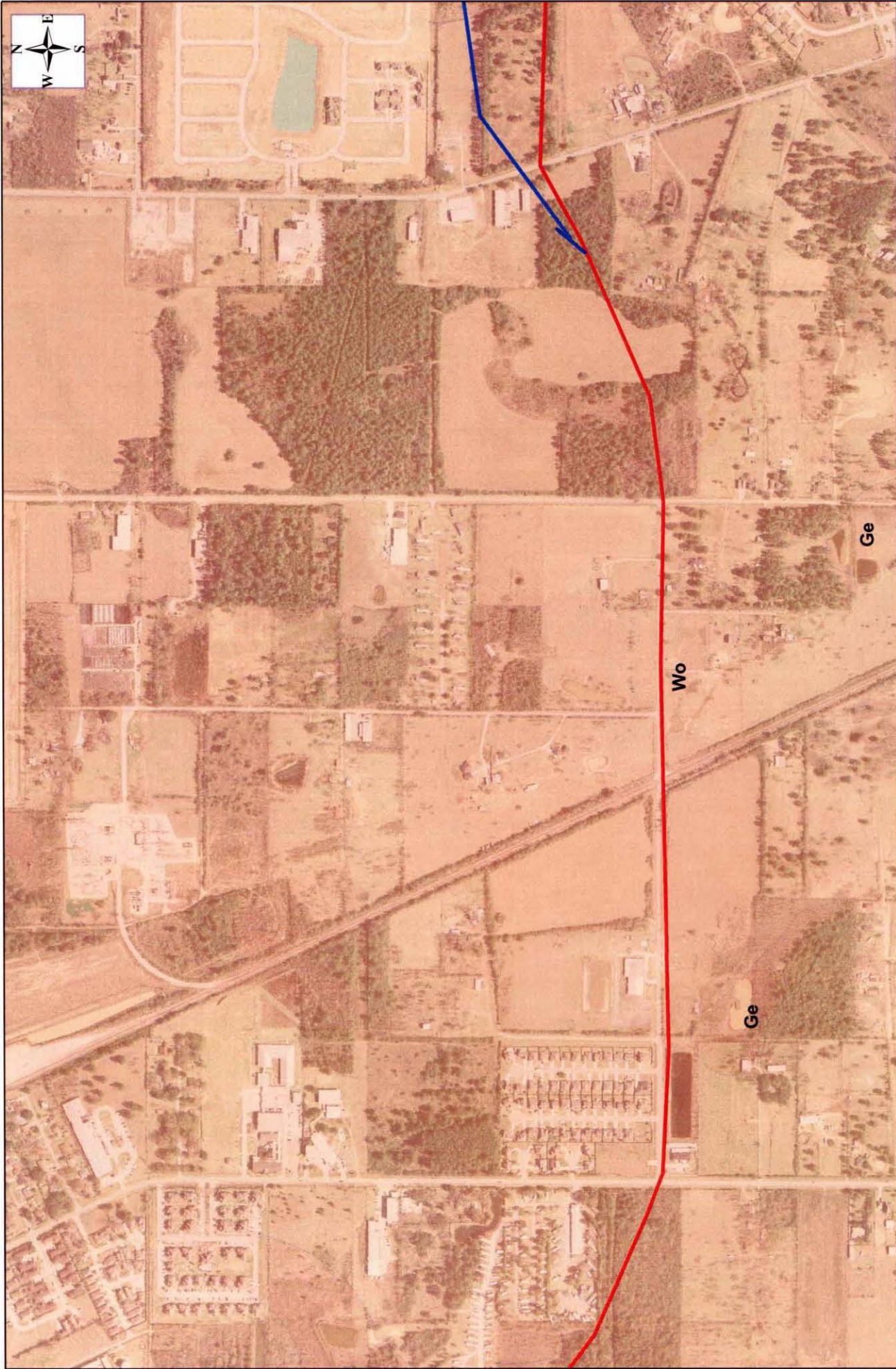


U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCE CONSERVATION SERVICE
SOILS OF HARRIS COUNTY, TEXAS



Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920

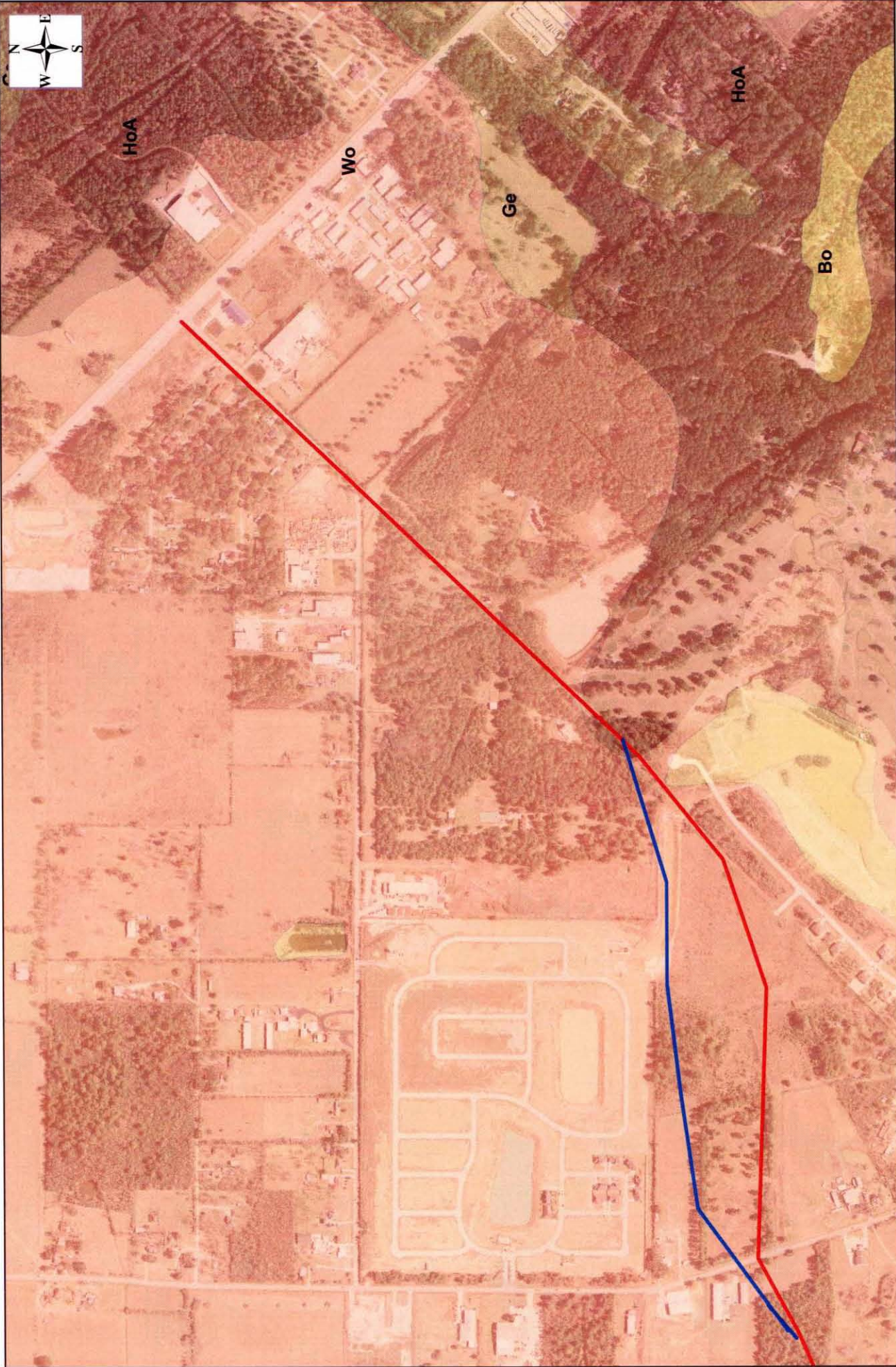
Aerial Photographic Delineation



U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCE CONSERVATION SERVICE
SOILS OF HARRIS COUNTY, TEXAS

Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920

Aerial Photographic Delineation

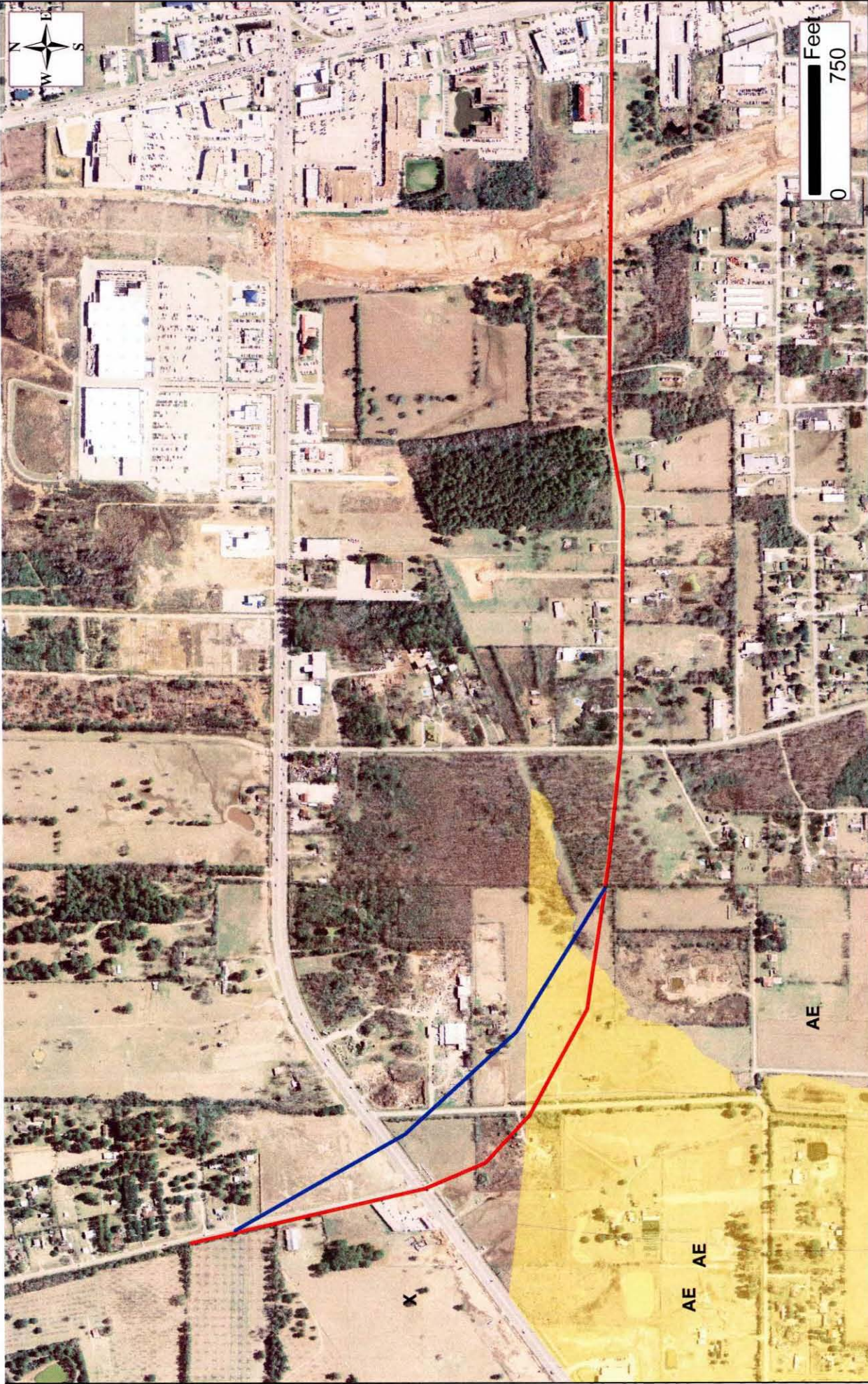


U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCE CONSERVATION SERVICE
SOILS OF HARRIS COUNTY, TEXAS

0 750
Feet

Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920

Aerial Photographic Delineation



Legend

FEDERAL EMERGENCY MANAGEMENT AGENCY

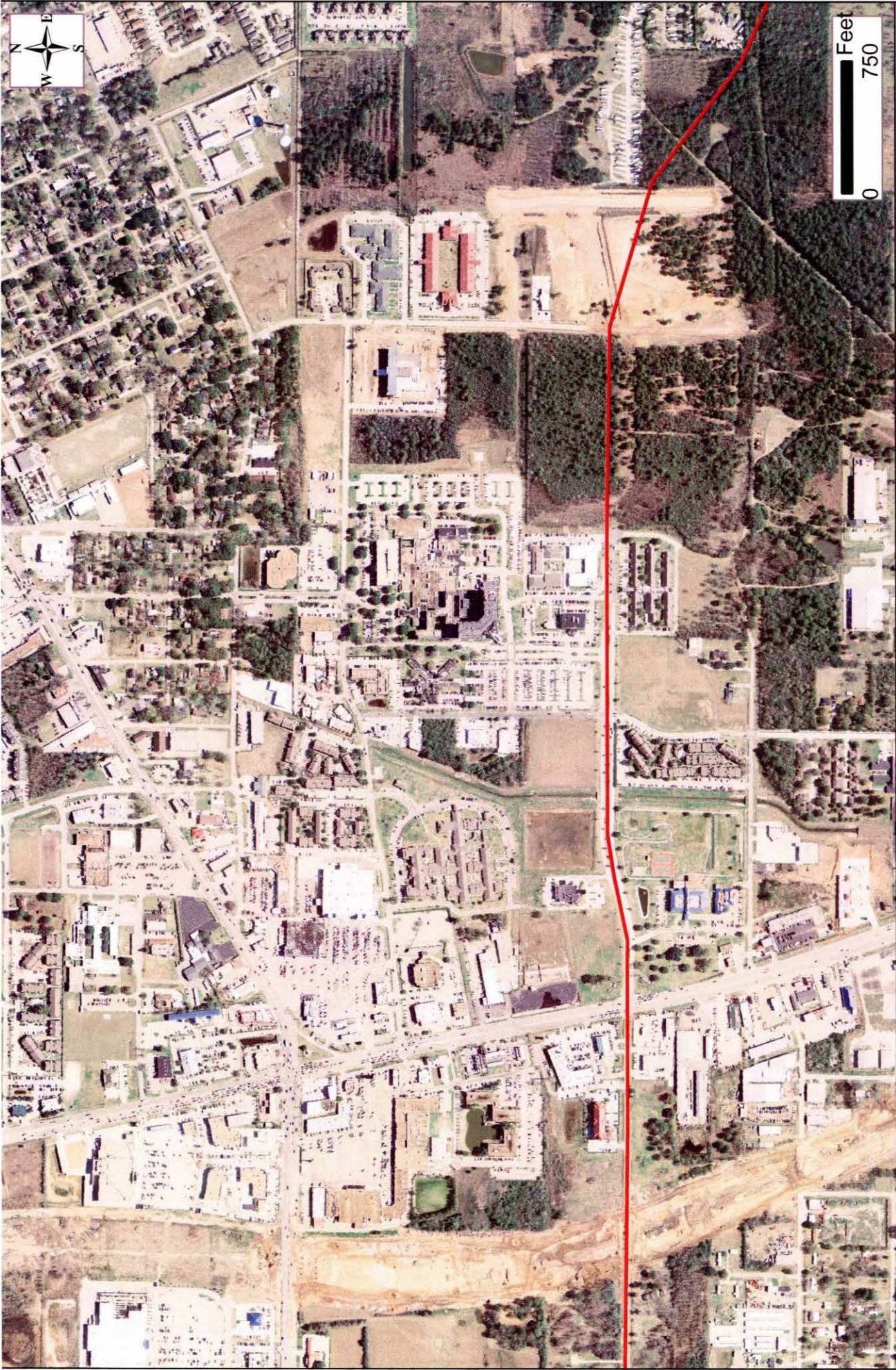
FEMA

- A 100-YEAR FLOODPLAIN
- AE 100-YEAR FLOODPLAIN
- X DOES NOT LIE WITHIN FLOODPLAIN

HARRIS COUNTY, TEXAS

Client: Cobb, Fendley & Associates, Inc.

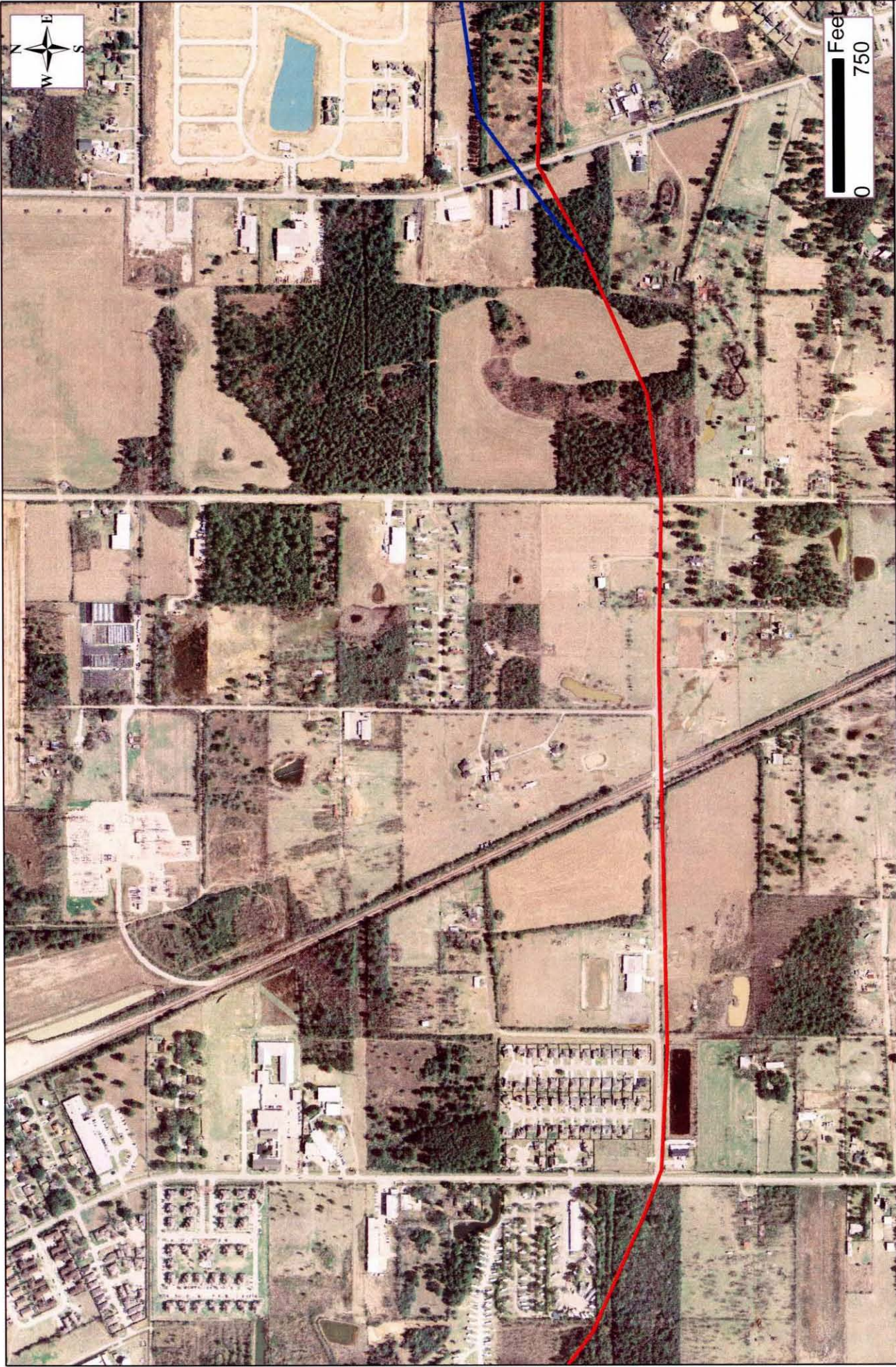
Location: FM 2920



Note: The subject property does not appear to lie within the 100/500 year floodplain.

FEDERAL EMERGENCY MANAGEMENT AGENCY
HARRIS COUNTY, TEXAS

Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920



Note: The subject property does not appear to lie within the 100/500 year floodplain.

FEDERAL EMERGENCY MANAGEMENT AGENCY
HARRIS COUNTY, TEXAS

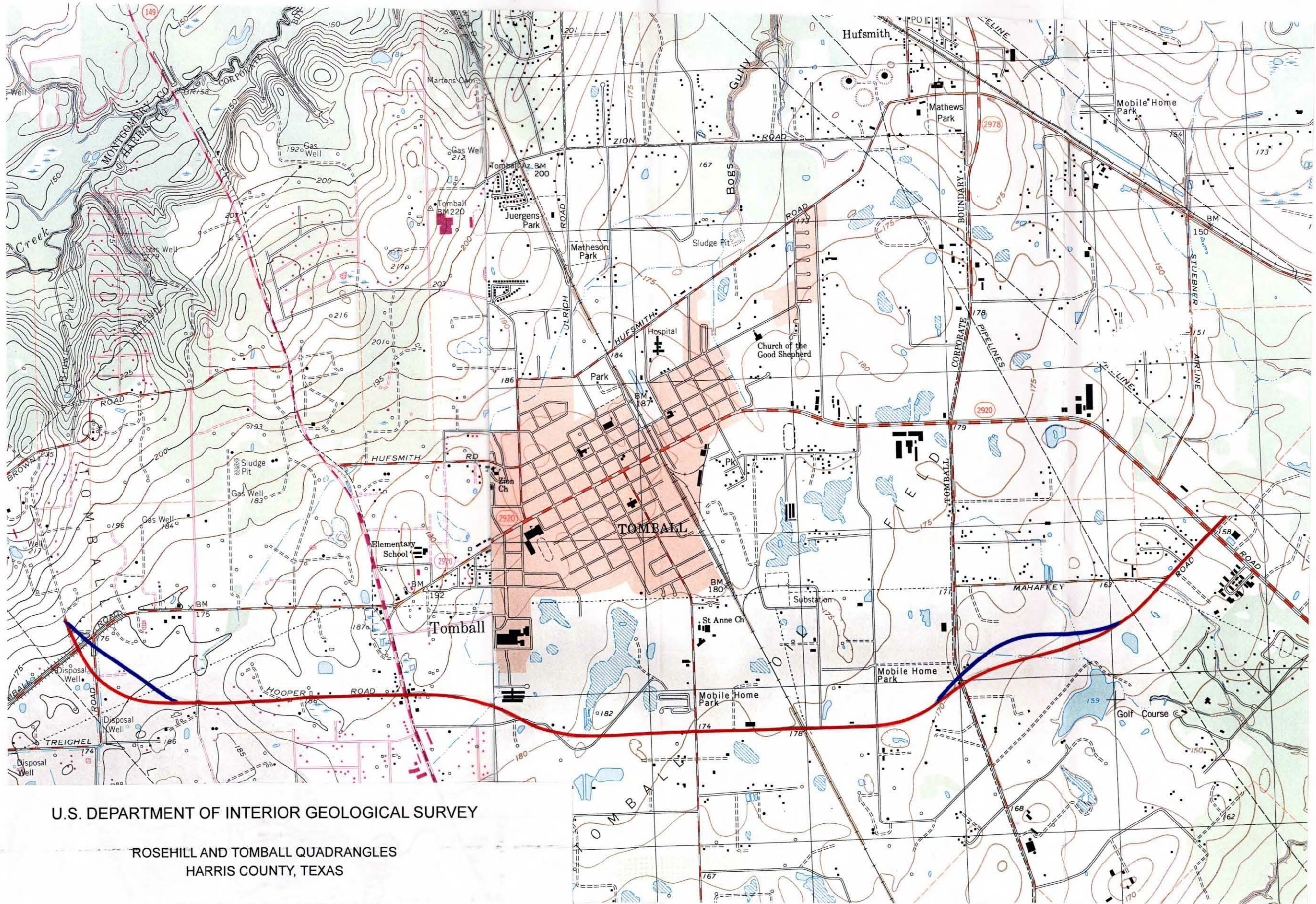
Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920



Legend

- A 100-YEAR FLOODPLAIN
- AE 100-YEAR FLOODPLAIN
- X DOES NOT LIE WITHIN FLOODPLAIN

Client: Cobb, Fendley & Associates, Inc. FEDERAL EMERGENCY MANAGEMENT AGENCY
 Location: FM 2920
 HARRIS COUNTY, TEXAS



U.S. DEPARTMENT OF INTERIOR GEOLOGICAL SURVEY

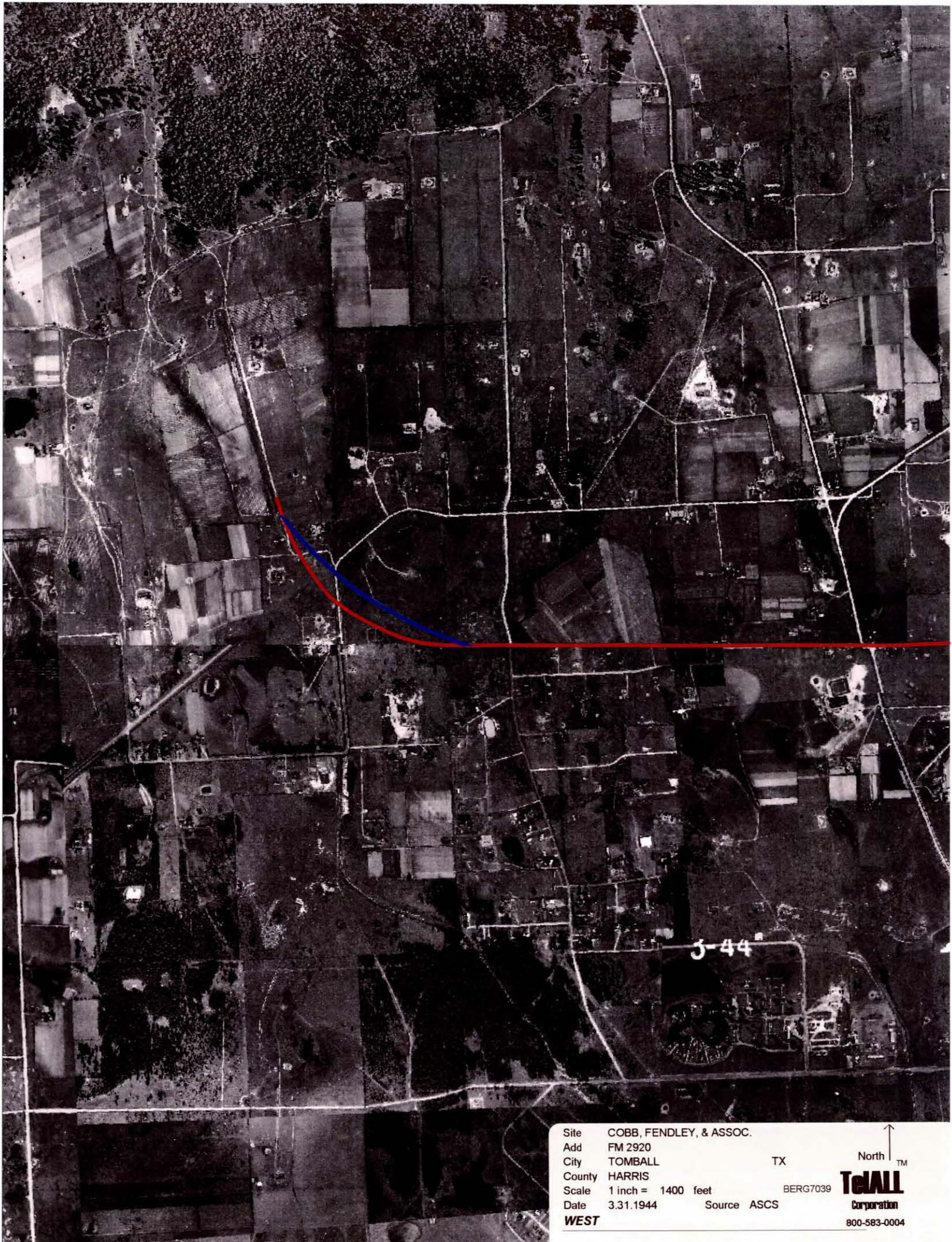
ROSEHILL AND TOMBALL QUADRANGLES
HARRIS COUNTY, TEXAS

7.5 MINUTE SERIES (TOPOGRAPHIC)

APPENDIX E
LEGAL DESCRIPTION AND CHAIN-OF-TITLE

The proposed project area consists of approximately 5 lineal miles of property across multiple ownership. The time and expense involved in review of a fifty year chain-of-title do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard, and a chain of title review was not performed. The absence of chain of title information is not considered a significant data gap due to the availability of other historical resources.

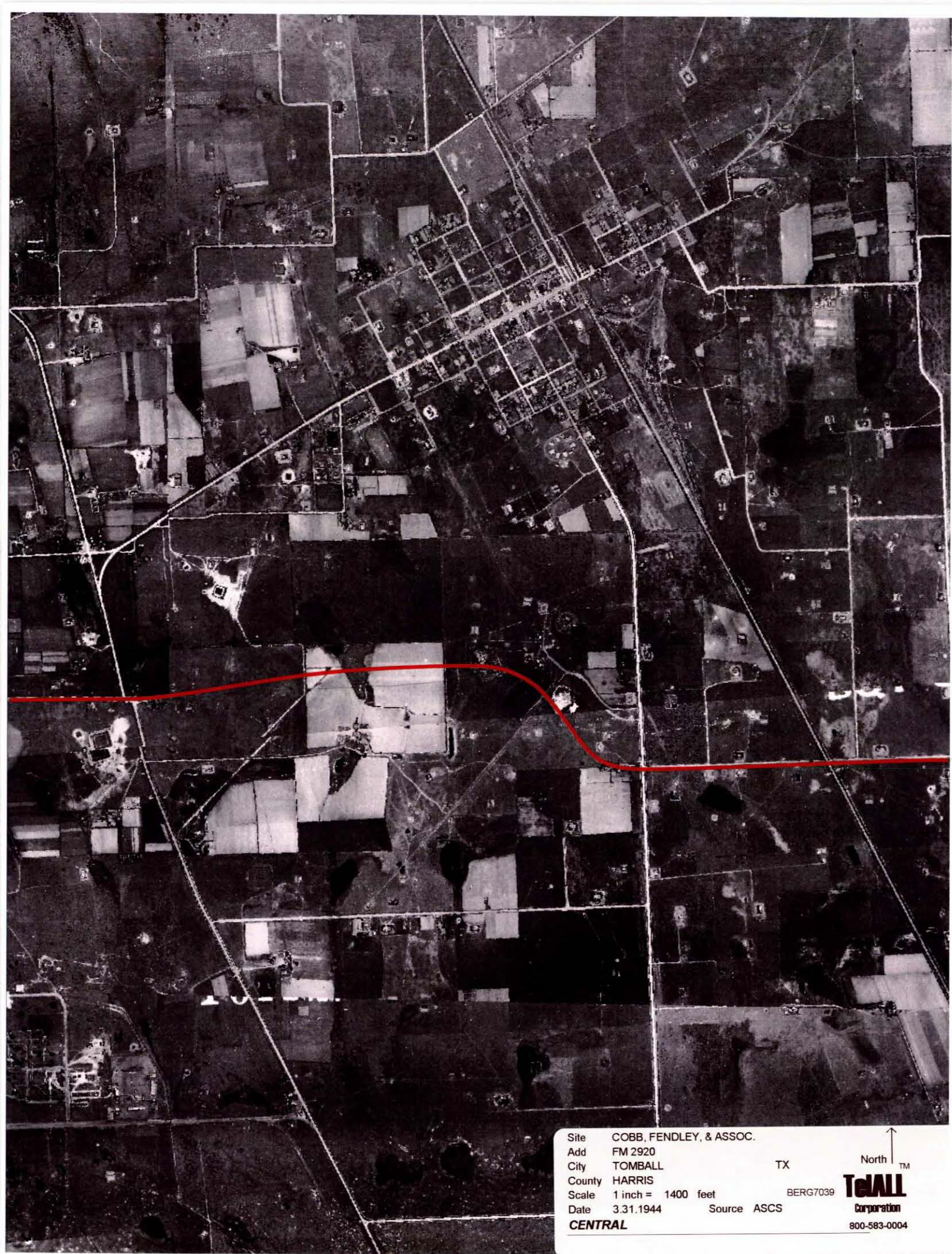
APPENDIX F
HISTORICAL AERIAL PHOTOGRAPHS



Site COBB, FENDLEY, & ASSOC.
 Add FM 2920
 City TOMBALL TX
 County HARRIS
 Scale 1 inch = 1400 feet
 Date 3.31.1944 Source ASCS
WEST

North ↑
 TM
TcALL
 Corporation
 800-583-0004

3-44



Site COBB, FENDLEY, & ASSOC.
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City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet
Date 3.31.1944 Source ASCS

North ↑

Tetall
Corporation

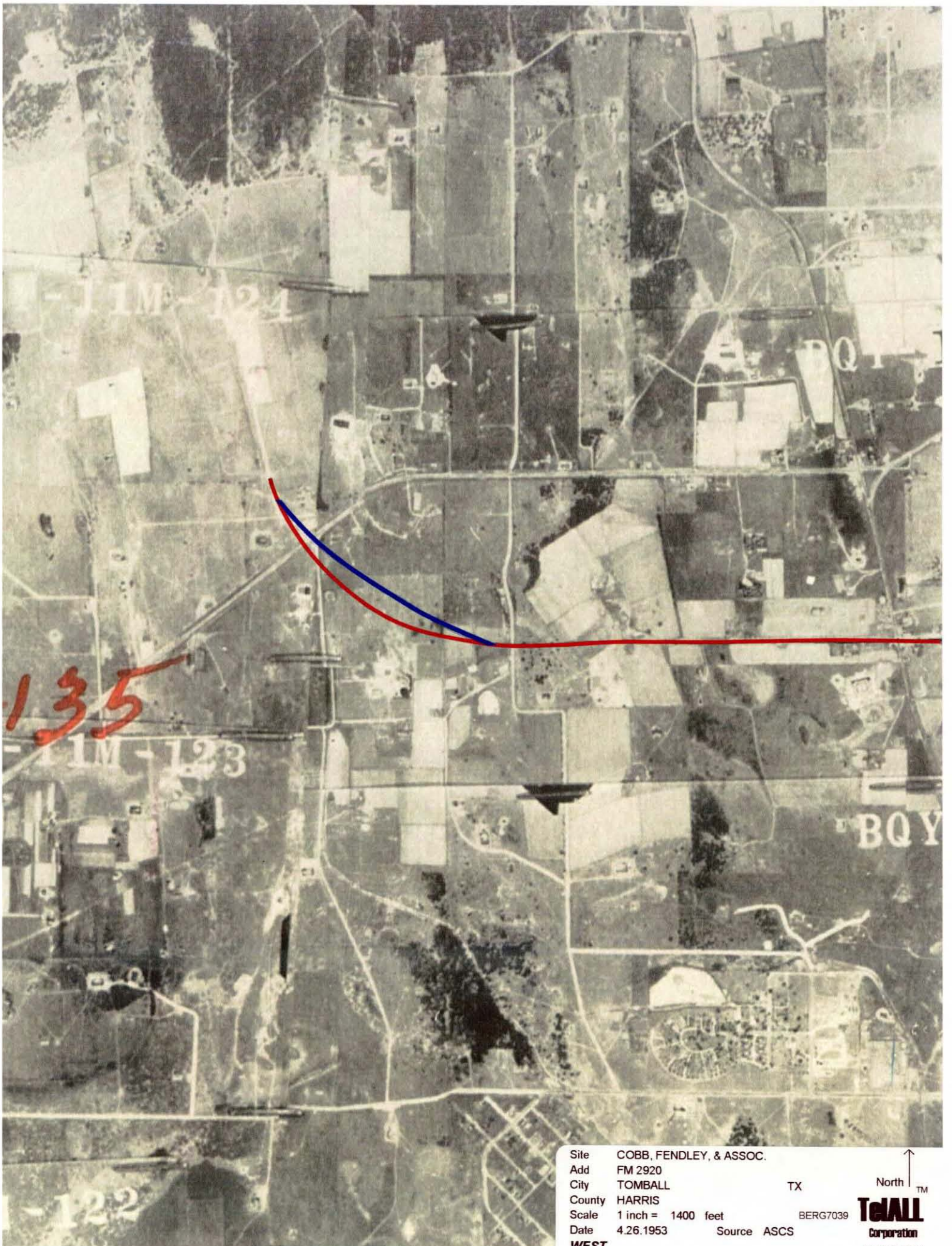
800-583-0004

CENTRAL



Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet
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EAST

North ↑
TM
TelALL
Corporation
800-583-0004



135

11M-124

11M-123

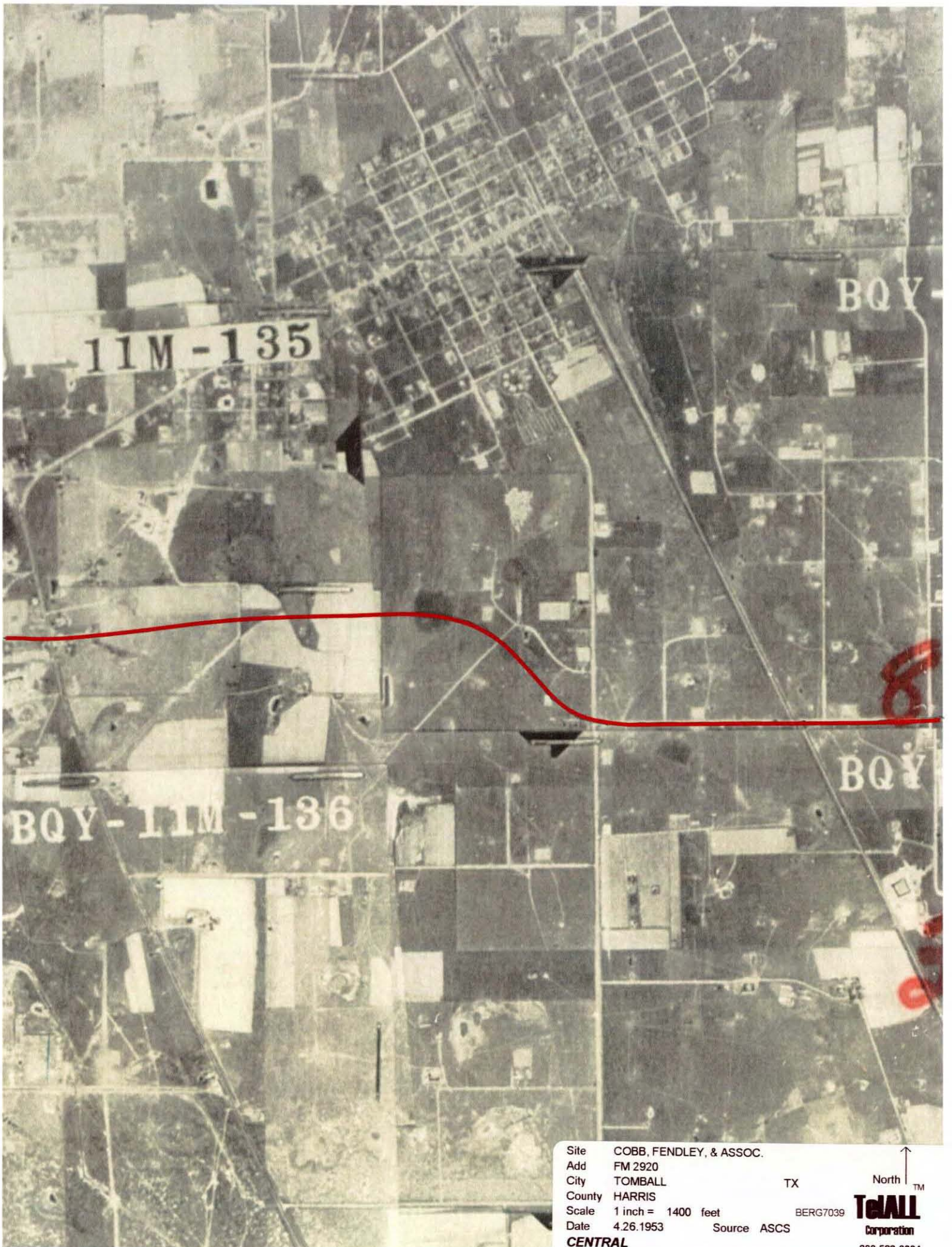
122

A P Q Y

B Q Y

Site COBB, FENDLEY, & ASSOC.
 Add FM 2920
 City TOMBALL TX
 County HARRIS
 Scale 1 inch = 1400 feet BERG7039
 Date 4.26.1953 Source ASCS
WEST

North ↑
TcALLTM
 Corporation
 800-583-0004



11M-135

BQY

BQY-11M-136

BQY

Site COBB, FENDLEY, & ASSOC.

Add FM 2920

City TOMBALL

TX

County HARRIS

Scale 1 inch = 1400 feet

BERG7039

Date 4.26.1953

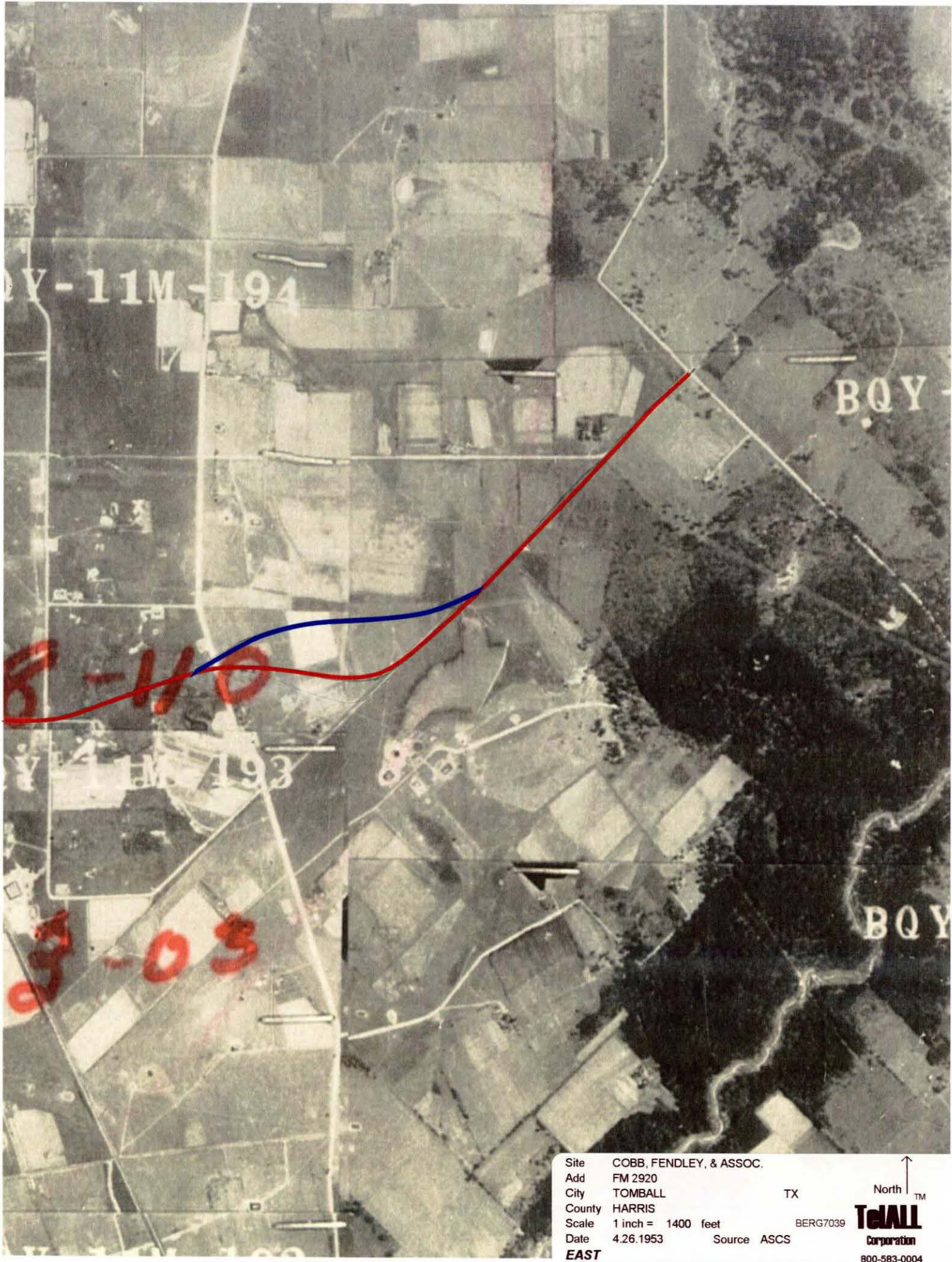
Source ASCS

North

TdM
Corporation

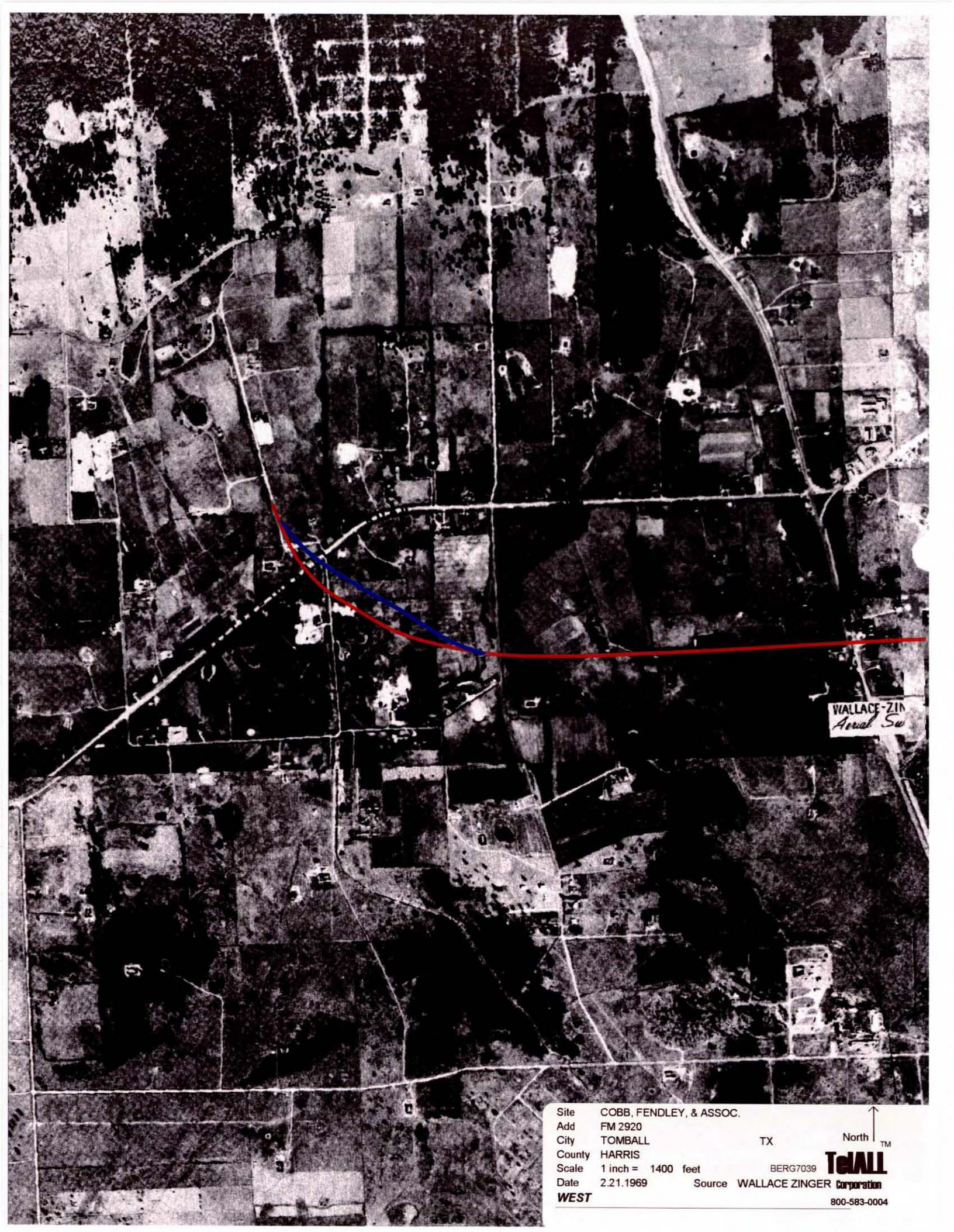
CENTRAL

800-583-0004



Site COBB, FENDLEY, & ASSOC.
 Add FM 2920
 City TOMBALL TX
 County HARRIS
 Scale 1 inch = 1400 feet
 Date 4.26.1953 Source ASCS
EAST

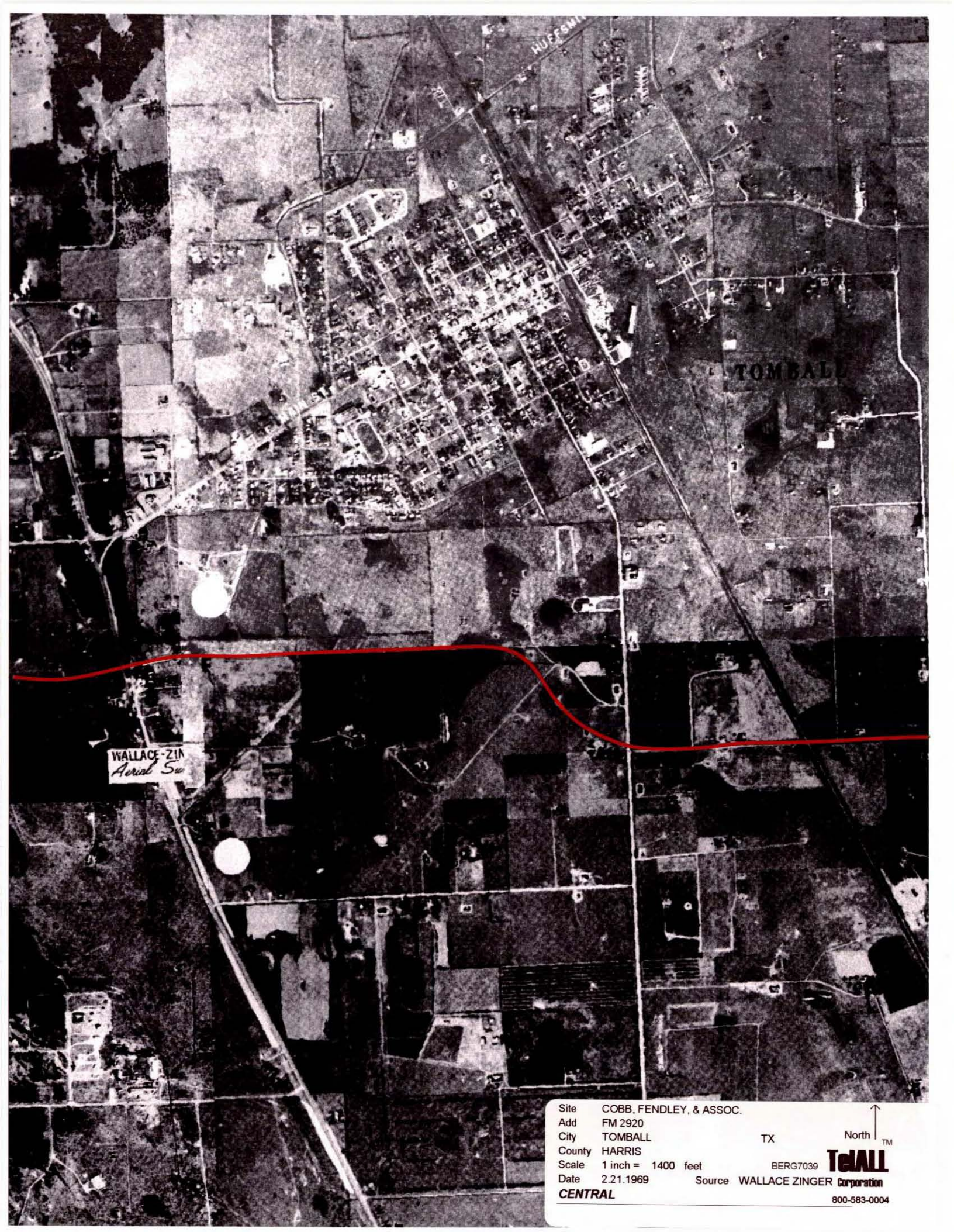
North ↑
 TeALLTM
 Corporation
 800-583-0004



WALLACE-ZIN
Aerial Sw

Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet
Date 2.21.1969 Source WALLACE ZINGER Corporation
WEST

North ↑
TM
Toll
BERG7039
800-583-0004

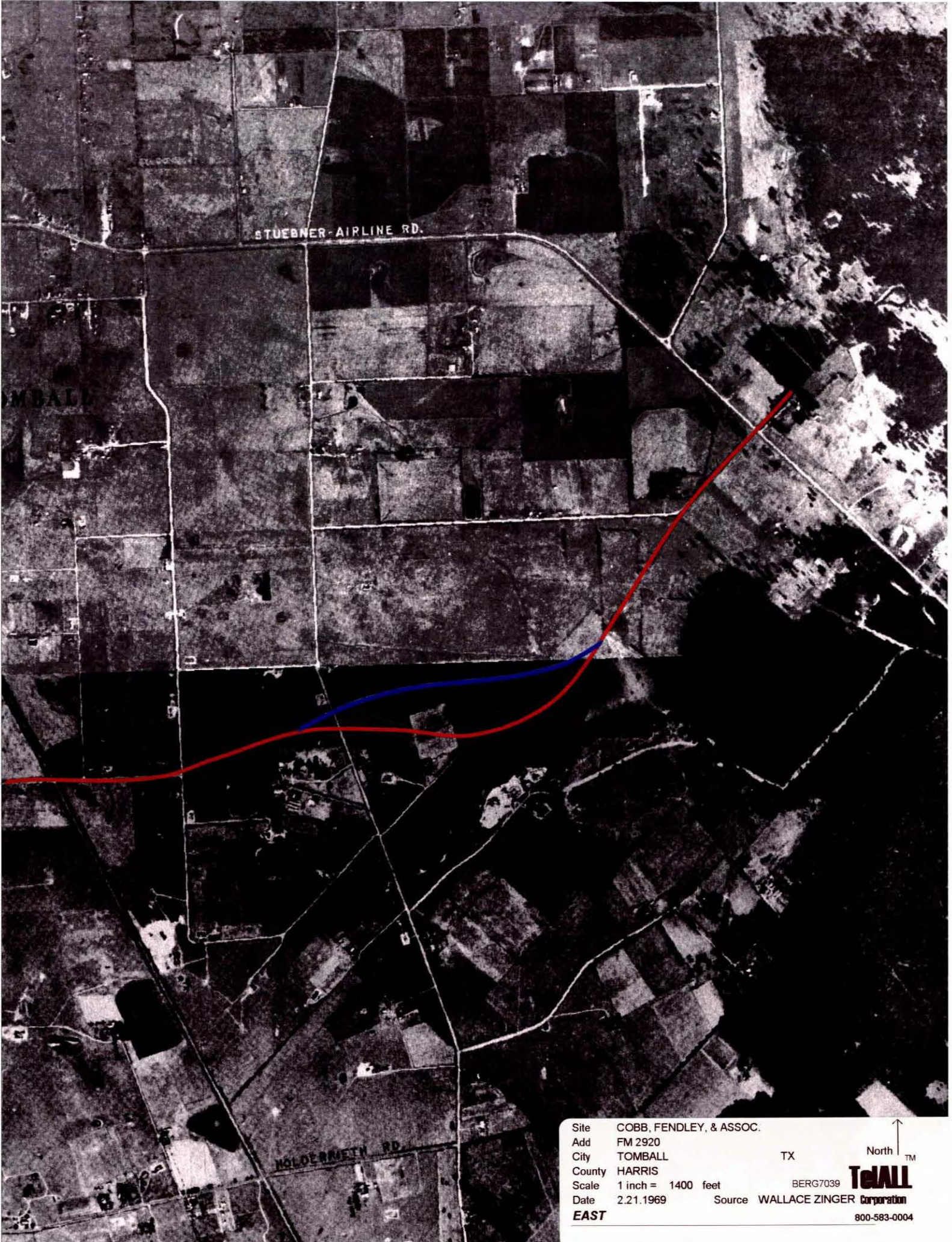


HUFFSMITH

TOMBALL

WALLACE-ZIN
Aerial Sur

Site	COBB, FENDLEY, & ASSOC.		
Add	FM 2920		
City	TOMBALL	TX	North ↑
County	HARRIS		TM
Scale	1 inch = 1400 feet	BERG7039	TcALL
Date	2.21.1969	Source	WALLACE ZINGER Corporation
CENTRAL			800-583-0004



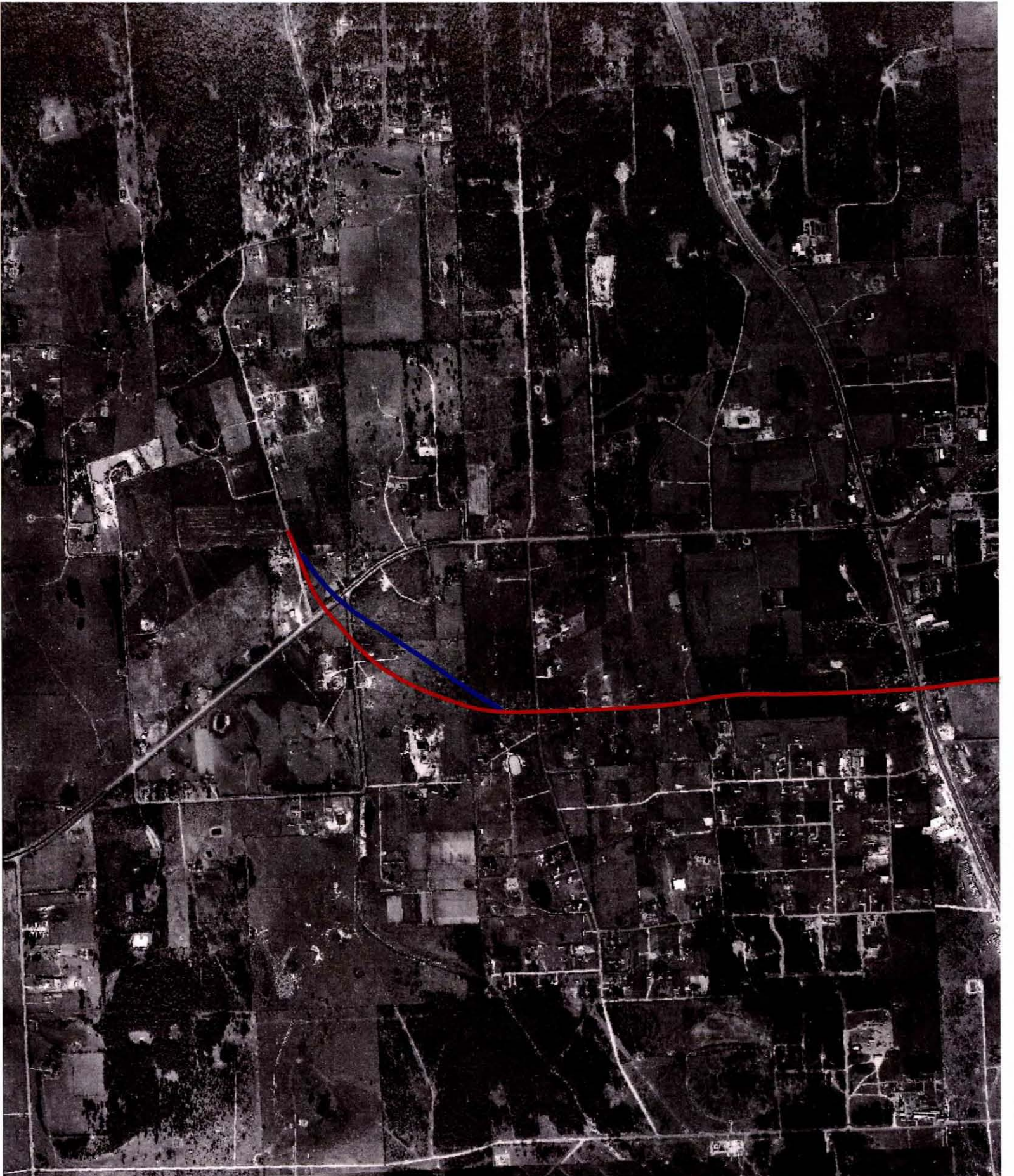
STUEBNER-AIRLINE RD.

TOMBALL

HOLDBRITH RD.

Site COBB, FENDLEY, & ASSOC.
 Add FM 2920
 City TOMBALL TX
 County HARRIS
 Scale 1 inch = 1400 feet BERG7039
 Date 2.21.1969 Source WALLACE ZINGER Corporation
EAST **TOMALL**
 800-583-0004

North ↑



Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet BERG7039
Date 12.12.1978 Source TXDOT
WEST

North ↑
Tetall™
Corporation
800-583-0004



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Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet
Date 12.12.1978 Source TXDOT

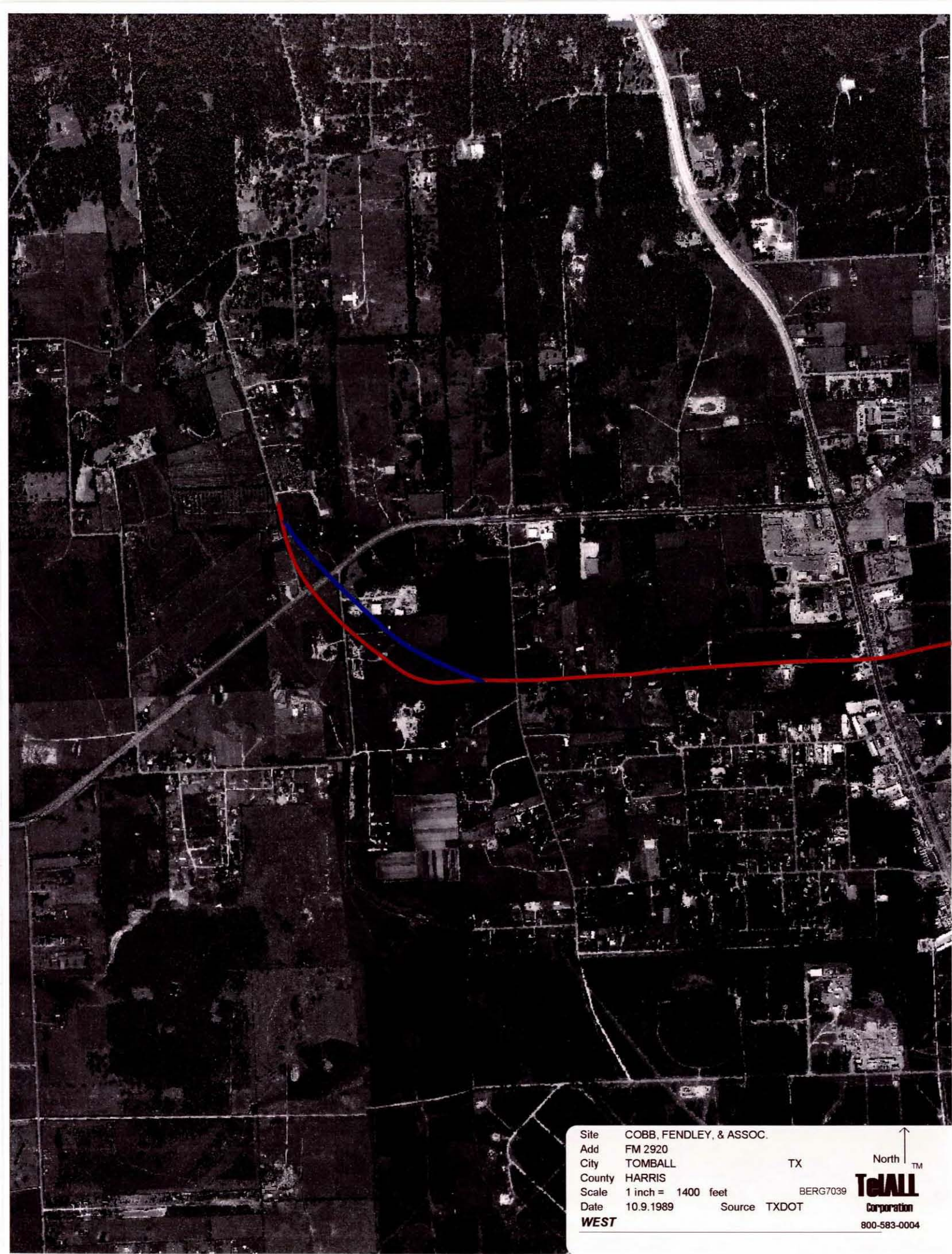
North ↑
TelALLTM
Corporation
800-583-0004

CENTRAL



Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet BERG7039
Date 12.12.1978 Source TXDOT
EAST

North ↑
TcALL™
Corporation
800-583-0004



Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet
Date 10.9.1989 Source TXDOT

WEST

North ↑
TeALL™
Corporation
800-583-0004



Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet BERG7039
Date 10.9.1989 Source TXDOT

CENTRAL

North ↑
TeALL™
Corporation
800-583-0004



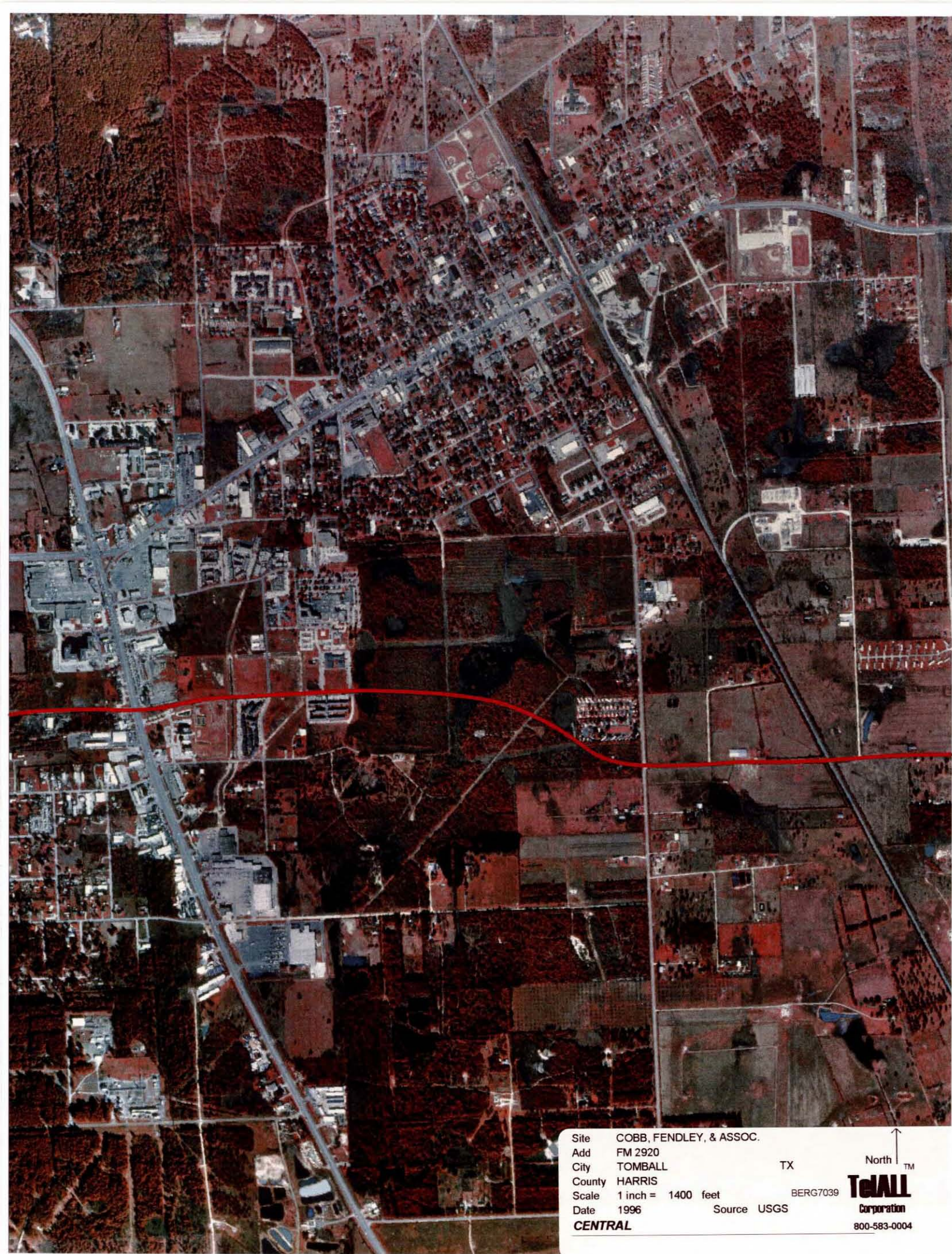
Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet BERG7039
Date 10.9.1989 Source TXDOT
EAST

North ↑
TelALL™
Corporation
800-583-0004



Site COBB, FENDLEY, & ASSOC.
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City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet BERG7039
Date 1996 Source USGS
WEST

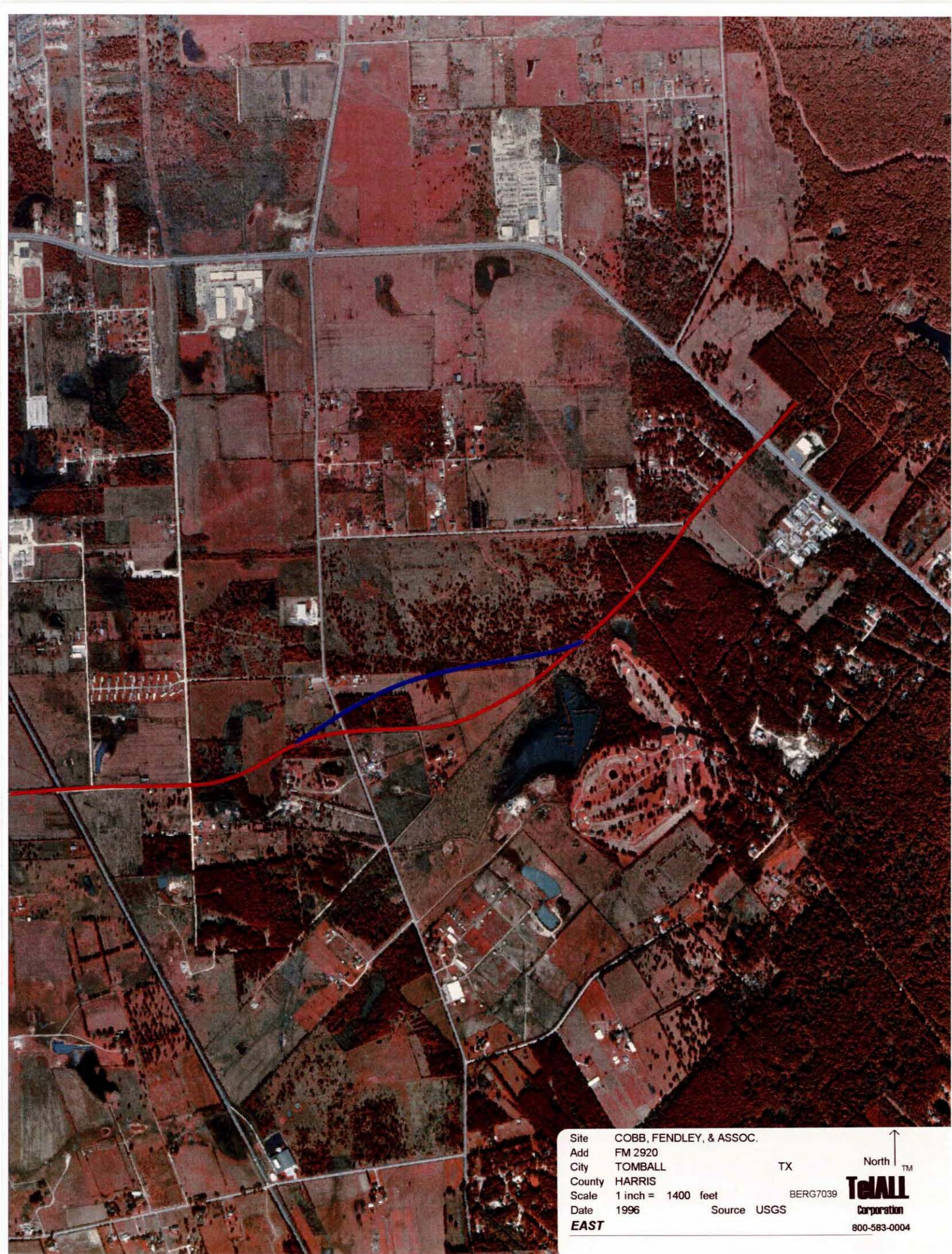
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Tell™
Corporation
800-583-0004



Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet
Date 1996 Source USGS
CENTRAL

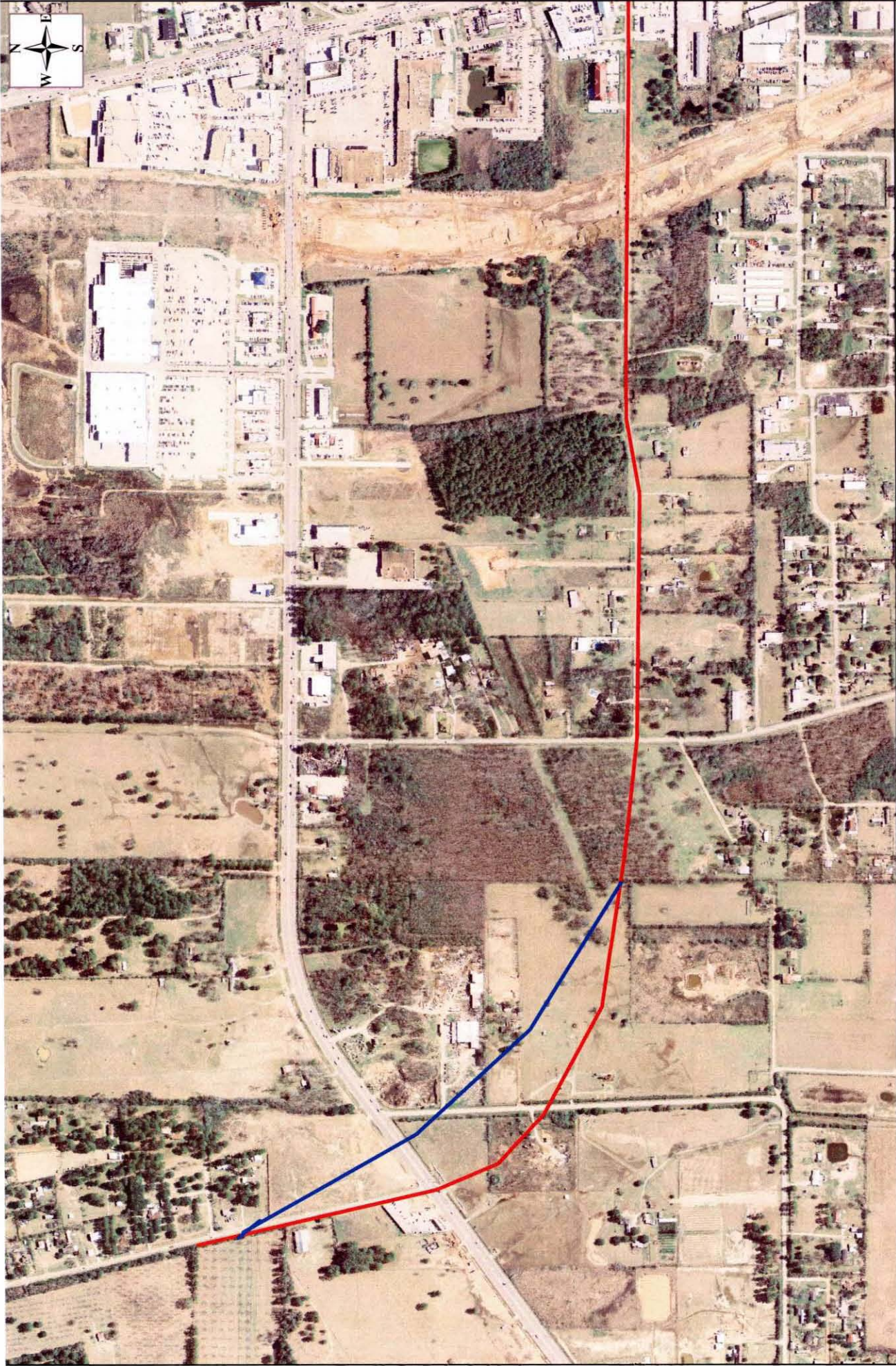
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TM
Tetall
Corporation
800-583-0004

BERG7039



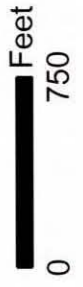
Site COBB, FENDLEY, & ASSOC.
Add FM 2920
City TOMBALL TX
County HARRIS
Scale 1 inch = 1400 feet
Date 1996 Source USGS
EAST

North ↑
TM
TcALL
Corporation
800-583-0004

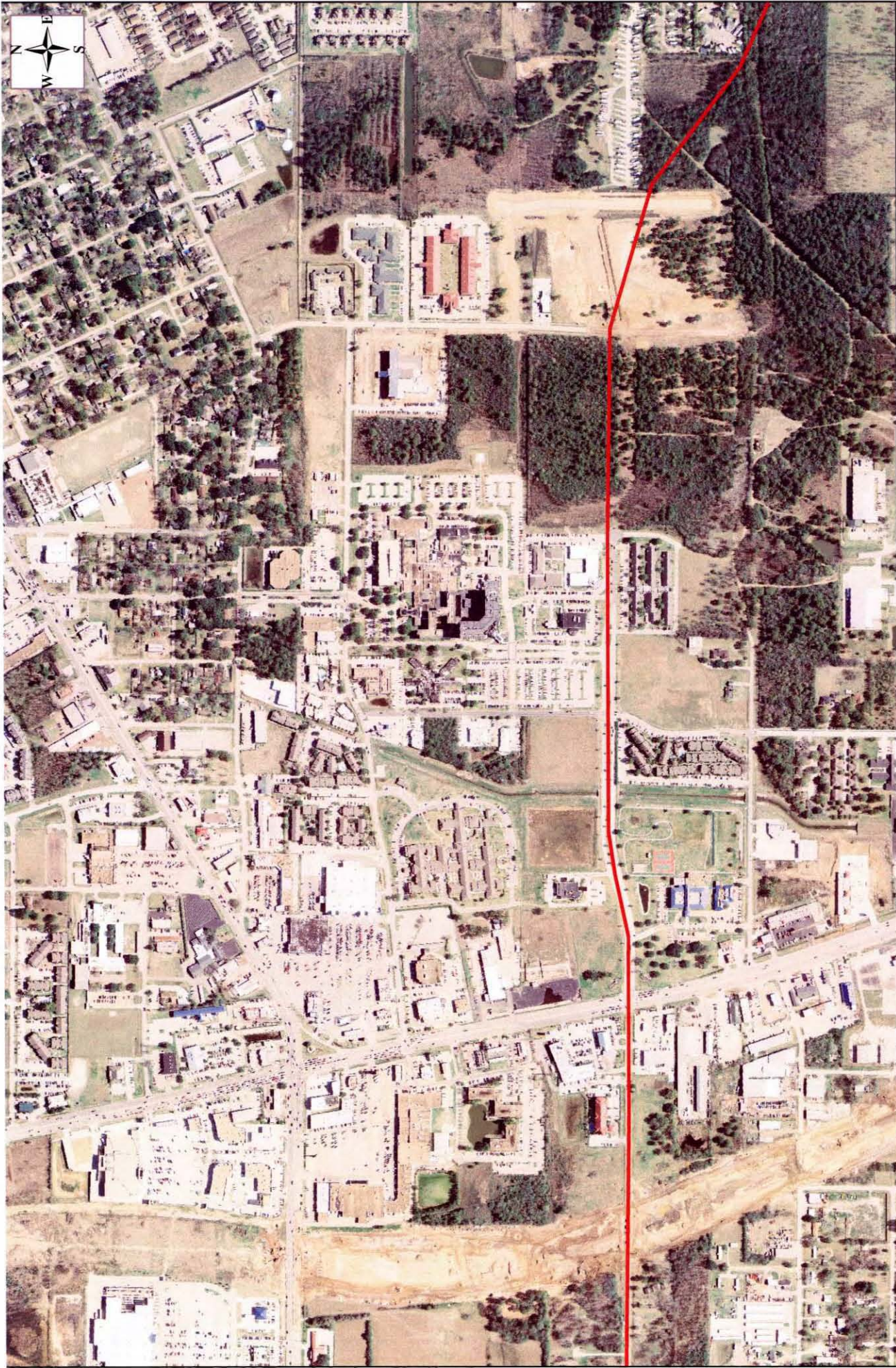


2006 Aerial

Source: H-GAC
Tomball, Harris County, Texas

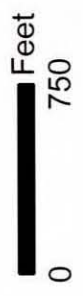


Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920

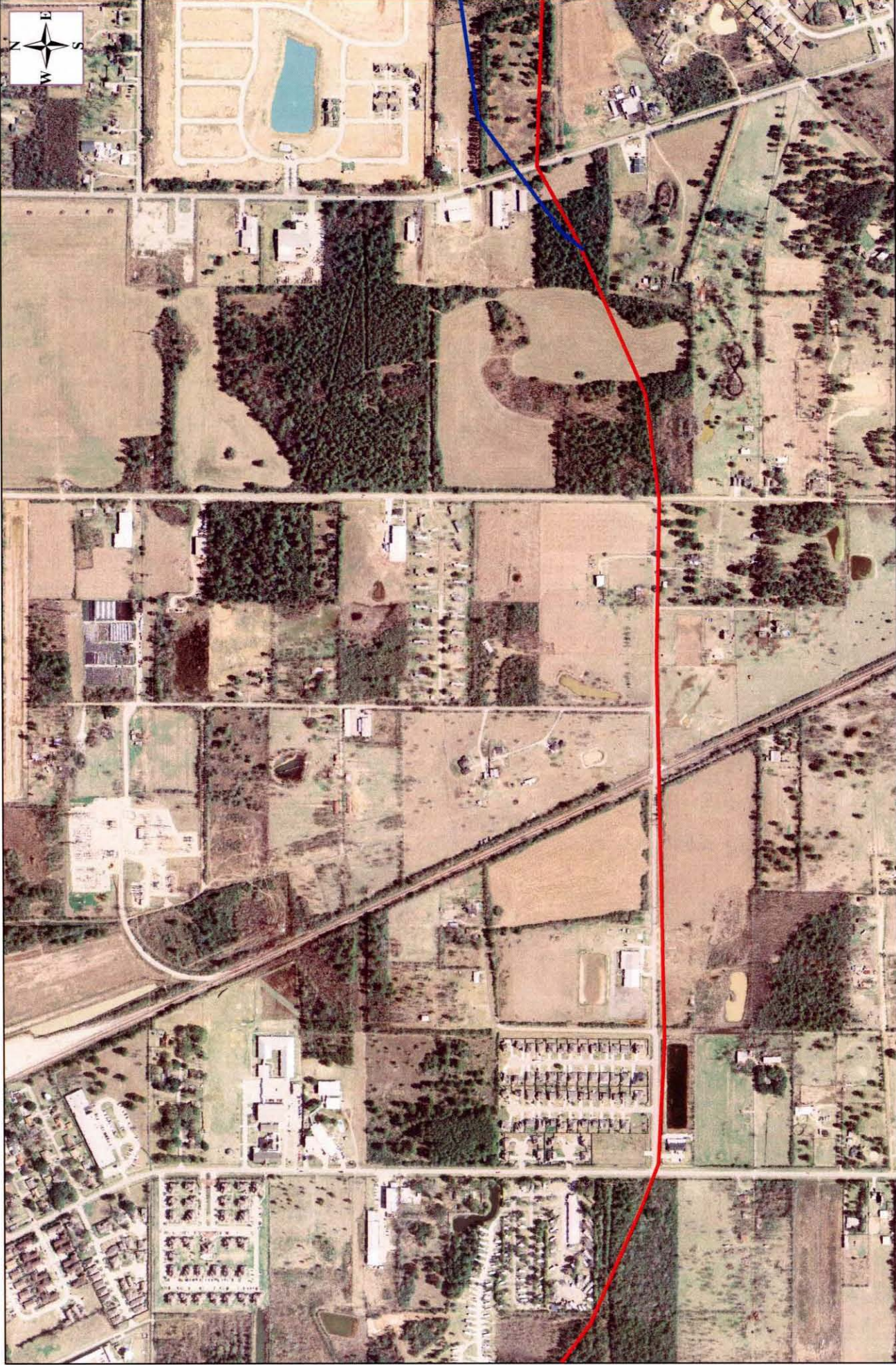


2006 Aerial

Source: H-GAC
Tomball, Harris County, Texas



Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920



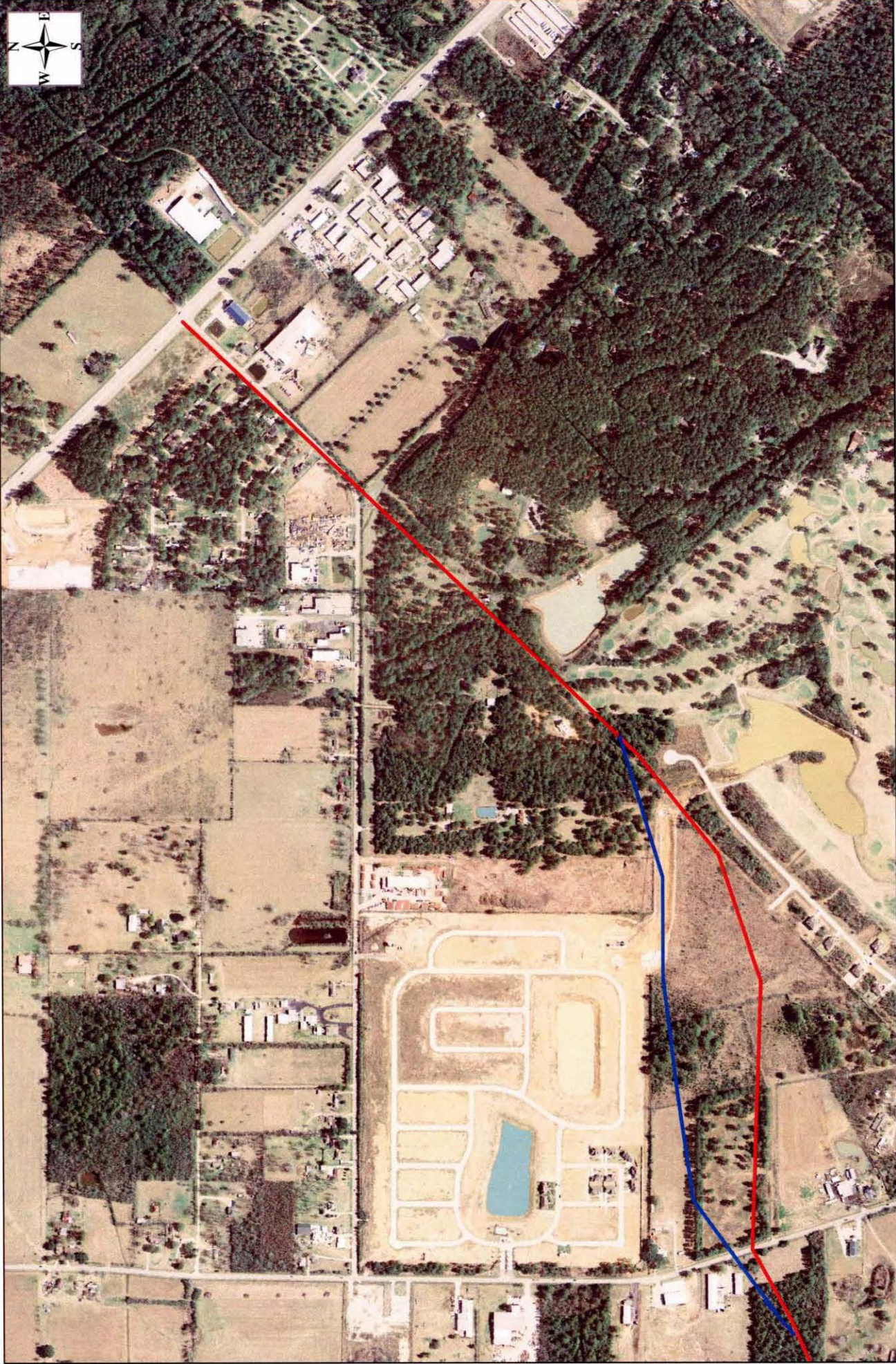
2006 Aerial

Source: H-GAC

Tomball, Harris County, Texas

0 750 Feet

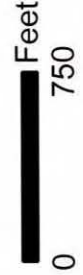
Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920



2006 Aerial

Source: H-GAC

Tomball, Harris County, Texas



Client: Cobb, Fendley & Associates, Inc.
Location: FM 2920

APPENDIX G
OWNER/OCCUPANT QUESTIONNAIRE

The proposed project area consists of approximately 5 lineal miles of property across multiple ownership. The time and expense involved in obtaining owner/occupant information do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard. The absence of owner/occupant information is not considered a significant data gap due to the availability of other historical resources.

APPENDIX H
SANBORN FIRE INSURANCE MAPS

AAI Data

AAI Environmental Data

PO Box 70438, Houston, Texas 77270
Ph: (713) 933-0596 Fax: (713) 868-9796

Historical Map Research

Date:	October 24, 2008
AAI Job #:	8238
Client:	Berg-Oliver and Associates
Project Name:	Cobb, Fendley and Associates
Site:	Hopper Rd and Agg Rd, Tomball, TX

According to the Houston Public Library's electronic database of fire insurance rate maps, the following results were produced:

No Historical Maps Available

Notice of Disclaimer

All materials and services are provided on an "as is" and "as available" basis without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchant ability or fitness for a particular purpose, or the warranty of non-infringement.

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to AAI Environmental Data, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in AAI Environmental Data's databases. All Sites are depicted by a point representing their approximate location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although AAI Environmental Data uses its best efforts to research the actual location of each site, AAI Environmental Data does not and cannot warrant the accuracy of these sites with regard to exact location and size. All authorized users of AAI Environmental Data's services are signifying an understanding of AAI Environmental Data's searching and mapping conventions and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Your exclusive remedy and AAI Environmental Data's entire liability, if any, for any claims, other than those waived above arising out of these terms of use and your use of this information shall be limited to the amount paid for the database report giving rise to the liability. In no event shall AAI Environmental Data or its affiliates be liable to you or any third party for any special, punitive, incidental, indirect or consequential damages of any kind, or any damages whatsoever, including, without limitation, those resulting from loss of use, data or profits, whether or not AAI Environmental Data has been advised of the possibility of such damages, and on any theory of liability, arising out of or in connection with the use of his data.

APPENDIX I
HISTORICAL CITY DIRECTORIES

The proposed project area consists of approximately 5 lineal miles of property across multiple ownership. The time and expense involved in obtaining city directory information do not meet the criteria for reasonably ascertainable information as defined by the ASTM Standard. The absence of city directory information is not considered a significant data gap due to the availability of other historical resources.

APPENDIX J
RAILROAD COMMISSION DATA

APPENDIX K
SITE PHOTOGRAPHS



Unimproved property northwest of Treichel and FM 2920 Intersection.



Active oil/gas site near Treichel Road crossing.



Unimproved property located west of Hooper.



Existing right of way on Hooper, view facing east from Calvert.



Dry Cleaners located at southwest corner of Medical Complex Dr. and 249 Business.



Existing Medical Complex Dr. located east of SH 249 bypass.



Unimproved property located east of eastern terminus of existing Medical Complex Dr.



Existing portion of Medical Complex Dr. located east of Business 249. View is facing west from end of existing paved roadway.



View facing west along Agg Rd. from S. Persimmon.



Convenience store located at northeast corner of Agg Rd. and S. Cherry.



Unimproved property to south of Willow Creek Estates subdivision.



Wastewater treatment plant (WWTP) in residential subdivision east of Huffsmith-Kohrvill. WWTP is just north of proposed alignment.



Unimproved property in Country Club Greens subdivision.



Warehouse space near intersection of proposed alignment and Huffsmith-Kohrville.



Acreage residential site located southwest of Mahaffey.



Existing Mahaffey Rd., view facing southwest from FM 2920.

APPENDIX L
INTERVIEWS

An inquiry was submitted to the Tomball Fire Department HazMat Response Team for information on hazardous materials response calls in the area of the subject tract. However, results of the search were not returned in time to be included in this report.

WETLAND ASSESSMENT

JURISDICTIONAL WATERS
OF THE UNITED STATES

**5 MILE RIGHT OF WAY FOR THE EXTENSION OF MEDICAL COMPLEX DRIVE
FROM FM 2920 EAST OF FM 2978 TO FM 2920 WEST OF SH 249
TOMBALL, HARRIS COUNTY, TEXAS**



**PREPARED FOR
COBB, FENDLEY, & ASSOCIATES, INC.
HOUSTON, TEXAS**

**BERG ♦ OLIVER ASSOCIATES, INC.
ENVIRONMENTAL SCIENCE, ENGINEERING AND LAND USE CONSULTANTS
HOUSTON, TEXAS
REPORT NO: 7020WD08
December 2008**

SUMMARY

INTRODUCTION

AUTHORIZATION

SITE LOCATION

SCOPE OF WORK

1. Vegetation Indicators
2. Soil Indicators
3. Hydrology Indicators
4. Historical Characteristics

METHODOLOGY/INVESTIGATIVE WORK

1. Soil Survey Evaluation
2. Floodplain Evaluation
3. Topography Evaluation
4. Aerial Photography Evaluation
5. Transects
6. Site Reconnaissance
7. Jurisdictional Boundary Documentation and GPS Methodology

FINDINGS

1. Geology and Soils
2. Topography and Hydrology
3. Vegetation

CONCLUSIONS

APPENDICES

- A. Location Maps
- B. Geological Maps
- C. Aerial Photography
- D. Site Photography
- E. U.S. Army Corps of Engineers Routine Data Forms
- F. Wetland Delineation Map
- G. GPS Attribute Table

SUMMARY

A Wetland Assessment and Delineation was performed for the 5 mile right-of-way (ROW) for the extension of Medical Complex Drive from FM 2920 east of FM 2978 to FM 2920 west of SH 249 located in Tomball, Harris County, Texas.

The subject property was evaluated for its content of jurisdictional wetlands, based on criteria set forth in the Corps of Engineers Wetland Delineation Manual – Technical Report Y-87-1 within publically accessed portions of the project area. Using interpretation of historical aerial photography, topographic maps, hydrology indicators, and field evaluation of hydric soils, hydrology, and hydrophytic vegetation, wetlands were identified and delineated as accurately as possible. Only publically accessed portions of the project area were field verified due to the fact we were not given right of entry for much of the project area. All privately owned land was delineated using true color aerial photography (2006/2008), infrared aerial imaging (1995) and the National Wetland Inventory Map (NWI) (1993). The NWI map was used to locate potential wetland areas, but was not used as the sole tool in deciding where wetlands were located within privately owned land.

Topographical information published by the United States Geological Survey (USGS) indicates a nearly level landscape with stormwater runoff flowing generally towards the south. The Federal Emergency Management Agency (FEMA) floodplain maps published on September 30, 1992 indicate that portions of the subject property lie within the 100-year floodplain of Willow Creek.

The Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service, Soil Survey of Harris County were, for the most part, reasonably accurate in identifying the basic soil types on the property as Gessner loam (Ge), Hockley fine sandy loam, 0 to 1 percent slopes (HoA), Hockley fine sandy loam, 1 to 4 percent slopes (HoB), Kenney loamy fine sand (Kn), and Wockley fine sandy loam (Wo). These mappings were verified by field soil surveys, which identified previously unmapped hydric areas as well.

Vegetation communities were evaluated and documented to further delineate wetland and upland boundaries. In upland areas, the subject property is dominated by a cover of bahia grass (*Paspalum notatum*), carpetgrass (*Axonopus affinis*), and vasey grass (*Paspalum urvillei*). The upland observation points were taken within publically accessed portions of the project along the existing right-of-ways for various roads. The vegetation within the potential wetland areas and the vegetation within privately owned upland areas were not documented due to lack of access to these areas.

Based on the results of our delineation there are approximately 4.78 acres of potential wetlands located within the proposed right-of-way for the extension of Medical Complex Drive. These potential wetlands areas are located on privately owned land within the proposed ROW; therefore, the boundaries of these areas were not field verified. The wetland areas in question are not located within any mapped 100-year floodplain of a Jurisdictional Water of the U.S. However, there still could be a surface connection to Jurisdictional Waters of the U.S., but BOA was not able to access the private property to make this determination.

In order accurately access the wetland/non-wetland status of the areas BOA needs access to these areas so that we can assess the areas in the field according the Atlantic and Gulf Coast Plain Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual. Without access to the areas we cannot determine whether or not wetlands actually do exist within the proposed project boundary. Again, the wetland boundaries depicted on the wetland delineation map were derived by interpretation of aerial photographs and Department of the Interior National Wetland Inventory Maps.



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JURISDICTIONAL WATERS OF THE UNITED STATES WETLAND ASSESSMENT DETERMINATION AND DELINEATION

*

5 MILE RIGHT-OF-WAY FOR THE EXTENSION OF MEDICAL COMPLEX DRIVE FROM FM 2920 EAST OF FM 2978 TO FM 2920 WEST OF SH 249 TOMBALL, HARRIS COUNTY, TEXAS

INTRODUCTION

The study reported herein is a Wetland Determination and Delineation Study for Cobb, Fendley, & Associates, Inc. on the site of a proposed right-of-way. The subject property consists of a 140 foot wide proposed road right-of-way five miles long extending from FM 2920 east of FM 2978 to FM 2920 west of SH 249 in Tomball, Harris County, Texas.

AUTHORIZATION

This study was performed as authorized by Charles Eastland on behalf of Cobb, Fendley, & Associates, Inc.

SITE LOCATION

The subject property extends from F.M. 2920 east of F.M. 2978 to F.M. 2920 west of S.H. 249 in Tomball, Harris County, Texas. The subject property is depicted more specifically in the site maps located in the appendices of this report.

SCOPE OF WORK

The objective of this Wetland Determination and Delineation Study was to evaluate the subject property for jurisdictional wetlands in accordance with Section 404 of the Clean Water Act and current regulations and policies of the U. S. Army Corps of Engineers (USACE). The following evaluations were performed for this project:

1. Vegetation Indicators: Evaluation for the presence or absence of hydrophytic vegetation (waterplants) that is typically adapted to wetlands and determine the vegetative patterns that are prevalent within the site, or specific areas within the site.
2. Soil Indicators: Determination for the presence or absence of soils that would be classified as hydric.

3. Hydrology Indicators: Evaluation of the hydrological features of the site with respect to water accumulation and wetland development.
4. Historical Characteristics: Evaluation of historical information to determine the existence and development of wetland features over extended periods of time.

METHODOLOGY/INVESTIGATIVE WORK

Wetland Analysis and Delineation work consisted of reviews of published historical information, as well as detailed site reconnaissance of the publically accessed portions of the project area, to evaluate the subject property for the presence or absence of jurisdictional wetlands according to criteria set forth in the Corp of Engineers Wetland Delineation Manual – Technical Report Y-87-1. The following activities were undertaken to perform the wetland delineation: 1) review county soil maps; 2) review Federal Emergency Management Agency (FEMA) floodplain maps; 3) review United States Geological Survey (USGS) topographic maps; 4) interpret current and historical aerial photography; and 5) perform site reconnaissance of the publically accessed areas to evaluate and document soil, hydrology, and vegetation indicators.

1. Soil Survey Evaluation:

Prior to site reconnaissance activities, the Soil Survey of Harris County, Texas (1976) was reviewed to determine the types of soils that would most likely be present on the subject property. The soil delineation indicated that the dominant soils on the site were of the Wockley-Gessner, and Segno-Hockley Associations. Specifically, these soils were identified as Gessner loam (Ge), Hockley fine sandy loam, 0 to 1 percent slopes (HoA), Hockley fine sandy loam, 1 to 4 percent slopes (HoB), Kenney loamy fine sand (Kn), and Wockley fine sandy loam (Wo).

Gessner loam (Ge) consists of nearly level soils found in broad, irregular areas and in small, round depressions on coastal prairies. The surface is plane to slightly concave and may remain wet or ponded for long periods after heavy rains. The surface layer is friable, slightly acid, dark grayish brown loam to about seven inches deep, underlain with loam layers to approximately fifty-three inches in depth. These soils are poorly drained and are generally saturated in wet periods. Surface run-off is very slow to ponded and the internal drainage is slow. Permeability is moderate and the available water capacity is high. Gessner loam (Ge) is considered a hydric soil and may often be associated with a "wetland."

Hockley fine sandy loam, 0 to 1 percent slopes (HoA) is on low hills on coastal plains. The parent material consists of loamy fluviomarine deposits of late Pliocene and early Pleistocene age. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R150AY535TX Loamy Prairie Pe 31-44 ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria and is typically not associated with a "wetland".

Hockley fine sandy loam, 1 to 4 percent slopes (HoB), is on low hills on coastal plains. The parent material consists of loamy fluviomarine deposits of late Pliocene and early Pleistocene age. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R150AY535TX Loamy Prairie Pe 31-44 ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria and is typically not associated with a "wetland".

Kenney loamy fine sand (Kn) are gently sloping, sandy soils on forested uplands and along ridges and natural drainageways. The surface layers are very friable, dark grayish brown loamy fine sand in the upper fine inches and loose, dark brown loamy fine sand in the lower four inches. Subsurface layers are loamy fine sand and sandy clay loam from fifty-six to eighty inches deep. These soils are well drained and surface run-off tends to be very slow. Internal drainage is rapid, permeability is moderately rapid, and the available water capacity is low. Most of the soils associated with the Kenney series are used for woodland grazing with limited use for timber, improved pasture, and cultivated crops. Urbanization potential is generally considered very high. Kenney loamy fine sands are not considered Hydric Soils and are not normally associated with a "wetland".

Wockley fine sandy loam (Wo) consists of nearly level loam soils in broad areas of prairies and forests. The surface layer is friable, strongly acid, dark grayish brown fine sandy loam to about seven inches deep and is underlain with fine sandy loam and sandy clay loam layers to approximately sixty inches. This soil is somewhat poorly drained and surface run-off is slow. Permeability is moderately slow and the available water capacity is high. Wockley fine sandy loam (Wo) is not considered a hydric soil and is not normally associated with a "wetland".

Given the criteria and techniques employed by the Natural Resources Conservation Service (NRCS), formerly known as the Soil Conservation Service, for the survey process, it was considered probable that the boundaries depicted on the survey could contain certain inaccuracies. The minimum mapping area for any given soil in the NRCS survey is ten (10) acres, with the probability of imprecise boundary delineation being relatively high. Therefore, as part of site reconnaissance activities, on-site soil evaluations were performed to describe, classify, and document the hydric, or non-hydric, characteristics of the primary soils on the subject property.

2. Floodplain Evaluation:

To assess the hydrological characteristics of the site, current published FEMA maps were evaluated to determine if the property lies within, or adjacent to, the 100 and/or 500-year floodplain. Due to the low topographic grades found on the Gulf Coast, periodic floods are common along rivers, creeks and bayous. These floods, along with rainfall and subsurface flow, are the primary sources of hydrology for wetlands located inland of immediate coastal areas.

In addition to FEMA maps, probable flow patterns and evidence of inundation and/or periods of saturation in potential wetland areas were evaluated on-site.

3. Topography Evaluation:

Investigative activities also included observations of the property's general topography and the location of landscape features such as depressions, ridges, and levees. These features could determine wetland patterns and their associated hydrological functions. Topography was evaluated by reviewing: 1) topographical information published by the USGS; 2) aerial photography; and 3) on-site observations.

4. Aerial Photography:

Wetlands generally occur as historical features on the landscape and usually maintain their basic configurations and appearances over a long period of time. However, vegetation communities naturally progress through several stages of predominance as wetlands age and mature. Additionally, topographical and hydrological characteristics may be changed by natural processes or by man-induced alterations in or near wetland areas. While field verification remains essential to wetland identification and delineation, historical aerial photography can play a vital role in the evaluation of wetland features and the variations, which may occur over extended periods of time. Aerial photography was used extensively in the evaluations made on the subject property. A variety of sources were used to provide photographic coverage of the area, including large-scale infrared photographs, color photographs, and black and white photographs.

1. Infrared Photography: High-altitude infrared photographs provide views of the subject property as a complete unit where areas and systems of high water content become more easily defined. Such areas are slightly cooler than the surrounding areas and will appear on the false color imagery as variations in shading.
2. Color Photography: Color photographs provide contrasts in shading from lower altitudes that can assist in the identification of vegetation patterns and development that should be verified in the field.
3. Methodology of Interpretation: Color photographs from 2006 and 2008 were analyzed for vegetation patterns that might distinguish wetland areas. Finally, all photographs were compared with infrared photography from 1995. Areas which consistently appeared as possible wetlands were marked for field confirmation. The same process also identified areas that appeared as marginal or upland. From these photographic interpretations, a preliminary "rough" delineation pattern was established and incorporated into planned field reconnaissance.

5. Transects:

Based upon methodology described on page 63 of the Corp of Engineers Wetland Delineation Manual – Technical Report Y-87-1, transects must be performed on properties greater than five (5) acres in size. With the use of aerial photography, topographic maps and a boundary survey, a baseline was determined parallel to the major watercourse and/or to the hydrologic gradient. A single transect was established and ran along the centerline of the proposed right-of-way. Observation points were taken along this transect within the publically accessed portions of the project area.

6. Site Reconnaissance:

The primary method of wetland identification and delineation, within the publically accessed areas, was site reconnaissance activity that would identify and document the conditions that existed on the subject property as related to jurisdictional wetlands. The site visits were performed to target the following specific areas: 1) soil surveys and geology; 2) topography and hydrology; and 3) vegetation. Privately owned portions of the project areas were assessed in the field because BOA did not right-of-entry access to the areas.

Publically accessed portions of the project area were visited on December 2, 2008 by personnel from Berg♦Oliver Associates, Inc. Using the diagnostic criteria set forth in the Corp of Engineers Wetland Delineation Manual – Technical Report Y-87-1 for sampling hydrology, soils and vegetation, the site was evaluated for the presence of wetlands that would be classified as Jurisdictional Waters of the United States. As part of a comprehensive assessment of the property, upland (non-wetland) areas were identified and sampled according to the Corp of Engineers Wetland Delineation Manual – Technical Report Y-87-1 as well.

Soil samples were documented and fully described according to NRCS staff (1991) criteria and were classified as either hydric or non-hydric. Numerous additional undocumented observations were made to define and establish trends or to verify aerial photo interpretation and/or NRCS mappings.

During site survey activities for soil identification, dominant plant life and vegetation communities were sampled, identified and documented for correlation with soil and hydrology data. As each soil description was made, dominant vegetation was recorded for the respective area. Representative samples were collected as necessary for specific sites and were identified. Attempts were made to comprehensively observe and document plant communities and species for all publically accessed areas of the property, with special focus on those plants that would be considered associated with wetlands.

Site reconnaissance activities also included observations of the general topography of the property and the landscape positions of depressions, ridges, levees, and other features that could determine wetland patterns and their associated hydrological features. A total of (8) samples, within the publically accessed areas, were documented and fully described according to the Corp of Engineers Wetland Delineation Manual – Technical Report Y-87-1.

FINDINGS

1. Geology and Soils:

The Lissie Formation was formed during the Pleistocene era, this formation crops out extensively throughout Harris County. The Lissie Formation is characterized by a gently sloping relief and punctuated by shallow, undrained depressions of varying sizes. Hydric soils on the Lissie Formation are generally confined to these depressions and other large, less frequently occurring depressional flats.

Documentation of soil descriptions and classifications from each of the sample areas are presented in the Data Forms contained in Appendix E of this report.

2. Topography and Hydrology:

USGS maps indicate a nearly level landscape with stormwater runoff flowing generally towards the south. FEMA maps display the documented flood zones of various water bodies. FEMA information published on September 30, 1992 indicates that portions of the subject property do lie within the 100-year floodplain of Willow Creek.

Copies of these maps are included in Appendix B.

3. Vegetation:

Vegetation communities were evaluated and documented to further delineate wetland and upland boundaries. In upland areas, the subject property is dominated by a cover of bahia grass (*Paspalum notatum*), carpetgrass (*Axonopus affinis*), and vasey grass (*Paspalum urvill*). The upland observation points were taken within publically accessed portions of the project along the existing right-of-ways for various roads. The vegetation within the potential wetland areas and the vegetation within privately owned upland areas were not documented due to lack of access to these areas.

As with the methods employed during soil survey activities, specific documentation was made in order to identify representative vegetation patterns within certain areas. Records of plant descriptions and classifications from each

of the sample areas are presented in the Data Forms contained in Appendix E of this report.

CONCLUSIONS

Based on the results of our delineation there are approximately 4.78 acres of potential wetlands located within the proposed right-of-way for the extension of Medical Complex Drive. These potential wetlands areas are located on privately owned land within the proposed ROW; therefore, the boundaries of these areas were not field verified. The wetland areas in question are not located within any mapped 100-year floodplain of a Jurisdictional Water of the U.S. However, there still could be a surface connection to Jurisdictional Waters of the U.S., but BOA was not able to access the private property to make this determination. If such a connection does exist between a wetland and a Jurisdictional Water of the U.S., then the wetland would most likely be considered jurisdictional and subject to regulation under Section 404 of the Clean Water Act.

In order accurately access the wetland/non-wetland status of the areas BOA needs access to these areas so that we can assess the areas in the field according the Atlantic and Gulf Coast Plain Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual. Without access to the areas we cannot determine whether or not wetlands actually do exist within the proposed project boundary. Again, the wetland boundaries depicted on the wetland delineation map were derived by interpretation of aerial photographs and Department of the Interior National Wetland Inventory Maps.

Alistair Lord
Ecologist

Keith Morgan
Project Manager

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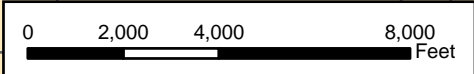
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**APPENDIX A
LOCATION MAPS**



Location: Harris County, Texas
 Image Source: USGS
 Projection: UTM Zone 15N
 GIS Contact: Nancy Shackelford (nshackelford@bergoliver.com)

SITE VICINITY MAP

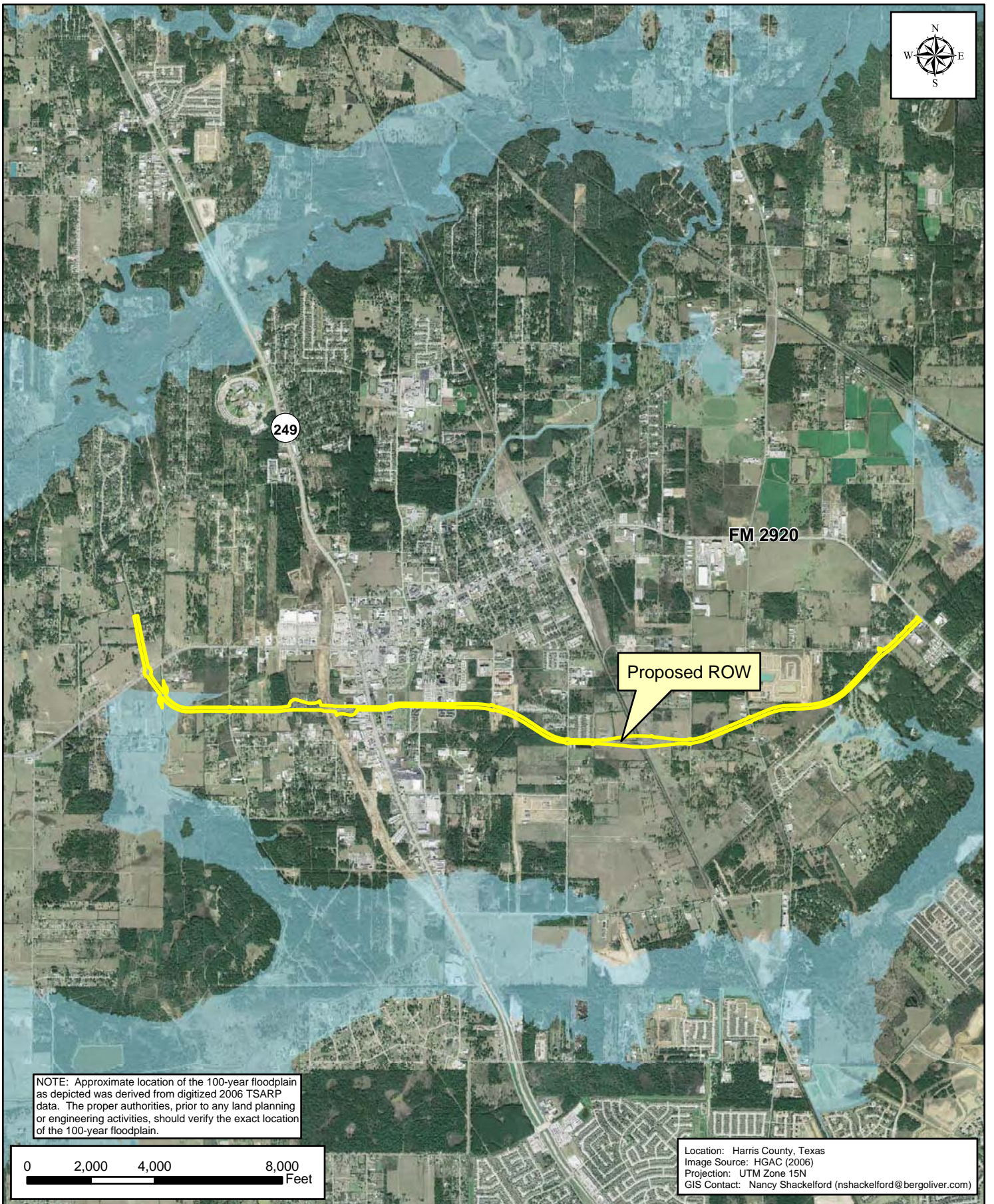
Project #: 7020
 For: Cobb, Fendley, & Associates, Inc.
 Location: FM 2920 & E. Main
Tomball, Harris County, Texas

REVISIONS
October 28, 2008, by NAS

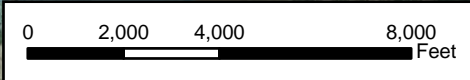
BERG* OLIVER ASSOCIATES, INC.
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APPENDIX B
GEOLOGICAL MAPS



NOTE: Approximate location of the 100-year floodplain as depicted was derived from digitized 2006 TSARP data. The proper authorities, prior to any land planning or engineering activities, should verify the exact location of the 100-year floodplain.



Location: Harris County, Texas
 Image Source: HGAC (2006)
 Projection: UTM Zone 15N
 GIS Contact: Nancy Shackelford (nshackelford@bergoliver.com)

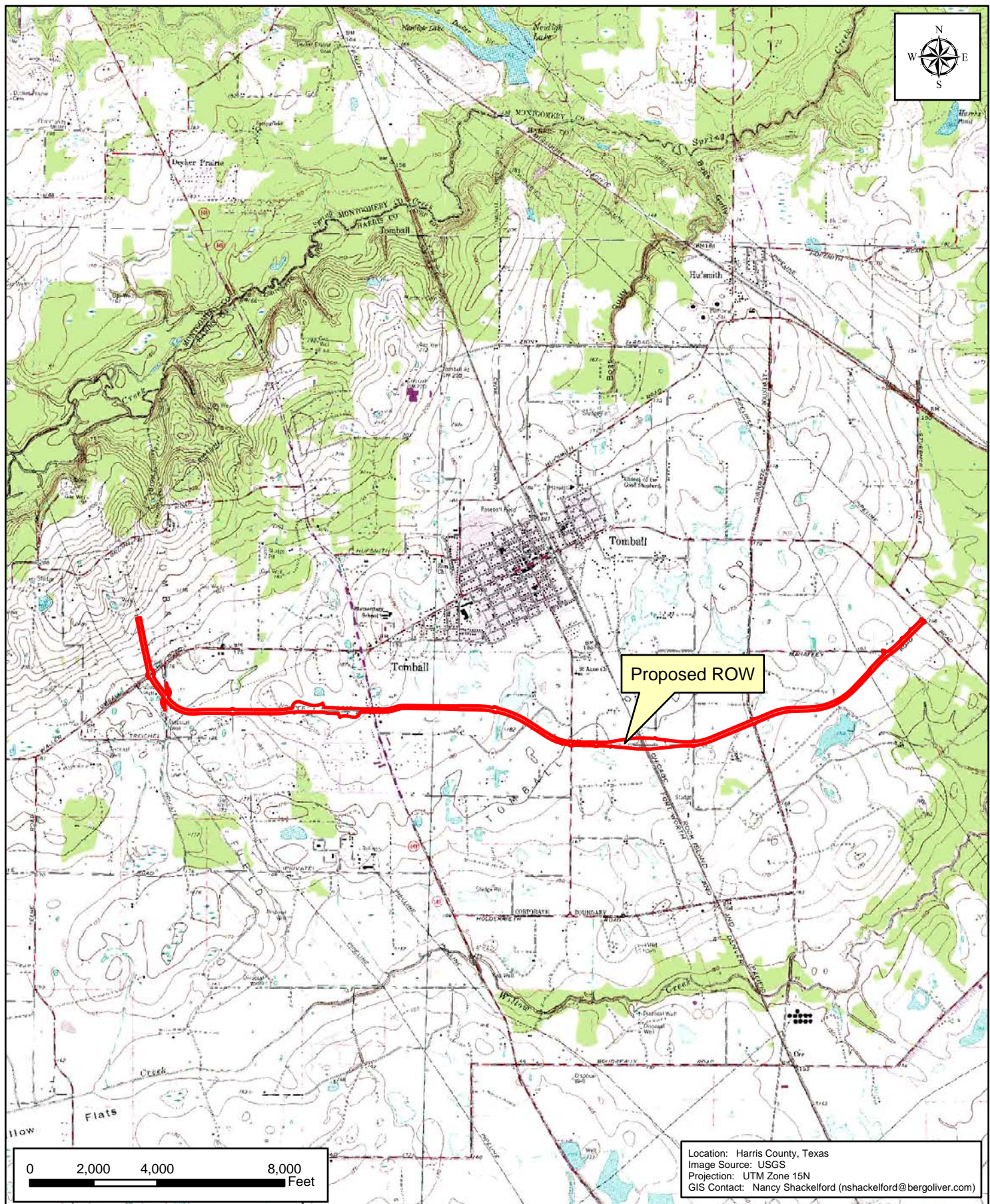
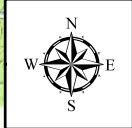
**FEMA 100 YR FLOODPLAIN ON HGAC 2006 AERIAL
 SITE LOCATION MAP**

Project #: 7020
 For: Cobb, Fendley, & Associates, Inc.
 Location: FM 2920 & E. Main
Tomball, Harris County, Texas

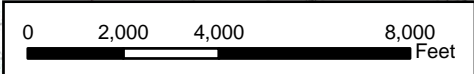
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Proposed ROW



Location: Harris County, Texas
Image Source: USGS
Projection: UTM Zone 15N
GIS Contact: Nancy Shackelford (nshackelford@bergoliver.com)

USGS TOPOGRAPHIC SITE LOCATION MAP

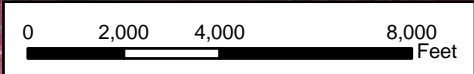
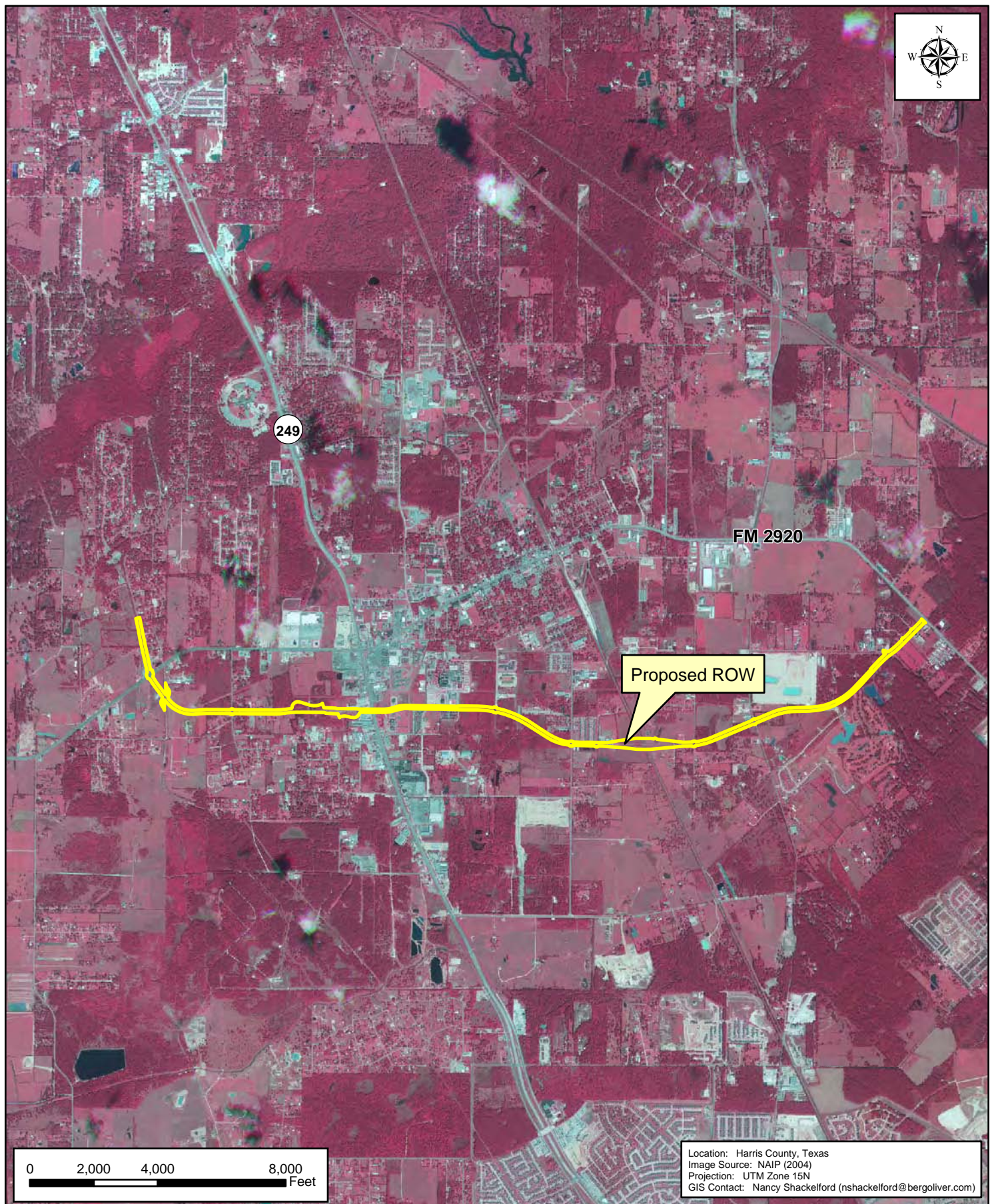
Project #: 7020
For: Cobb, Fendley, & Associates, Inc.
Location: FM 2920 & E. Main
Tomball, Harris County, Texas

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APPENDIX C
AERIAL PHOTOGRAPHY



Location: Harris County, Texas
 Image Source: NAIP (2004)
 Projection: UTM Zone 15N
 GIS Contact: Nancy Shackelford (nshackelford@bergoliver.com)

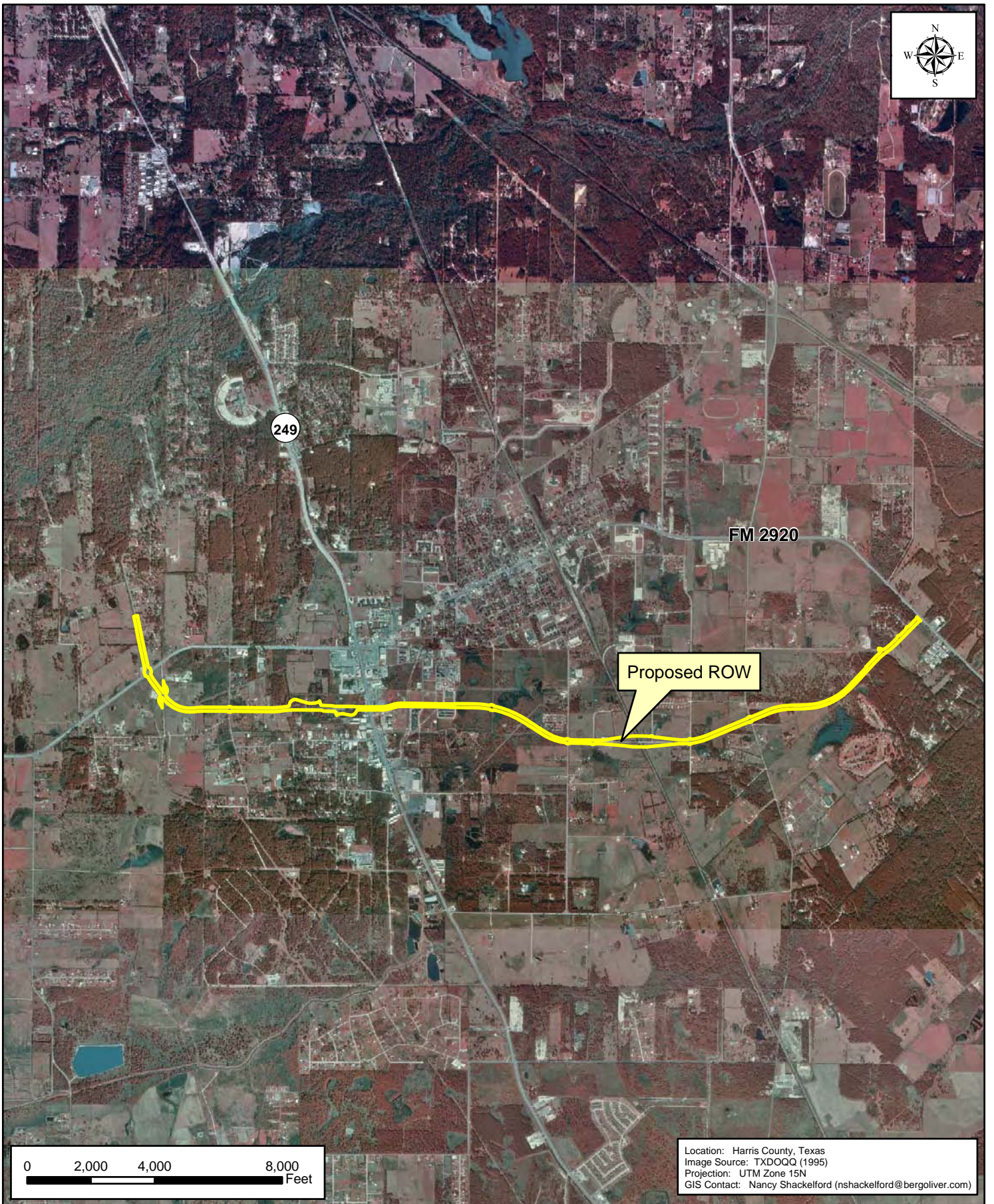
**2004 NAIP INFRARED AERIAL
 SITE LOCATION MAP**

Project #: 7020
 For: Cobb, Fendley, & Associates, Inc.
 Location: FM 2920 & E. Main
Tomball, Harris County, Texas

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October 28, 2008, by NAS

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**1995 TXDOQQ INFRARED AERIAL
SITE LOCATION MAP**

Project #: 7020
For: Cobb, Fendley, & Associates, Inc.
Location: FM 2920 & E. Main
Tomball, Harris County, Texas

REVISIONS	
October 28, 2008, by NAS	

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APPENDIX D
SITE PHOTOGRAPHY



Typical view of paved roadway and upland right-of-way within the project area.



Typical view of upland right-of-way along paved roads.

APPENDIX E
U.S. ARMY CORPS OF ENGINEERS ROUTINE DATA FORMS

BERG-OLIVER ASSOCIATES, INC.

ROUTINE WETLAND DETERMINATION

DATA FORM

Project Site: <u>5 mile road extension</u>	Date: <u>12/2/2008</u>
Applicant/Owner: <u>Cobb, Fendley & Associates</u>	County: <u>Harris</u>
Investigator: <u>Berg-Oliver Associates, Inc.</u>	State: <u>Texas</u>

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Community I.D. <u>Up</u>
Is the site significantly disturbed? (Atypical Sit.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Subdivision I.D. _____
Is the area a potential Problem Area?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Plot I.D. <u>T1-1</u>

VEGETATION

	<u>Dominant Plant</u>	<u>Stratum</u>	<u>Indicator Status</u>
1	<u>Paspalum notatum</u>	<u>Herb</u>	<u>FAC</u>
2	<u>Axonopus affinis</u>	<u>Herb</u>	<u>FAC</u>
3	<u>Paspalum urvillei</u>	<u>Herb</u>	<u>FAC</u>
4	<u>Verbena brasiliensis</u>	<u>Herb</u>	<u>NI</u>
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) = 75%

Other indicators: Hydrophytic vegetation: Yes

Remarks: Listed vegetation is typically associated with upland areas in this ecosystem.

Investigator: KM, AL

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p><u>95 IR</u> Stream, Lake, or Tide Gauge</p> <p><u>95 IR</u> Aerial Photographs</p> <p>Other _____</p> <p>No Recorded Data Available _____</p> <p>Field Observations:</p> <p>Depth of Surface Water: <u>None</u> (in.)</p> <p>Depth to Free Water in Pit: <u>None</u> (in.)</p> <p>Depth to Saturated Soil: <u>None</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><u>No</u> Inundated</p> <p><u>No</u> Saturated in Upper 12 Inches</p> <p><u>No</u> Water Marks</p> <p><u>No</u> Drift Lines</p> <p><u>No</u> Sediment Deposits</p> <p><u>No</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p><u>No</u> Oxidized Root Channels in Upper 12 in.</p> <p><u>No</u> Water-Stained Leaves</p> <p><u>No</u> Local Soil Survey Data</p> <p><u>No</u> FAC-Neutral Test</p> <p><u>No</u> Other (Explain in Remarks)</p>
---	---

Remarks: Lacks sufficient indicators of wetland hydrology.

Investigator: KM, AL

SOILS

Plot I.D. # T1-1

Map Unit Name: <u>HoB</u>		Drainage Class: <u>somewhat poorly drained</u>	
(Series and Phase) <u>Hockley fine sandy loam , 0 to 1 percent slopes</u>			
Taxonomy (Subgroup): <u>Plinthic Paleudalfs</u>		Confirm Mapped Type?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<u>Profile Description:</u>			
<u>Depth</u> <u>Inches</u>	<u>Horizon</u>	<u>Munsell</u> <u>Matrix Color</u>	<u>Mottle</u> <u>Color</u>
0-14	_____	10YR 4/6	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
		<u>Mottle</u> <u>Abundance</u>	<u>Texture</u> <u>Loam</u>
		_____	_____
		_____	_____
		_____	_____
<u>Hydric Soil Indicators:</u>			
<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils	
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on National Hydric Soils List	
<input type="checkbox"/> Aquic Moisture	<input type="checkbox"/> High Organic Content-Sandy Surface	<input type="checkbox"/> Other (Explain in Remarks)	
Remarks: <u>Soil sample not taken, sample point located within right of way on private property.</u>			

Investigator: KM, AL			

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is sample point within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Hydric Soils Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: <u>Sample point lacks sufficient indicators of hydric soils and hydrology.</u>			

Director: Susan Alford			

BERG-OLIVER ASSOCIATES, INC.

ROUTINE WETLAND DETERMINATION

DATA FORM

Project Site: <u>5 mile road extension</u>	Date: <u>12/2/2008</u>
Applicant/Owner: <u>Cobb, Fendley & Associates</u>	County: <u>Harris</u>
Investigator: <u>Berg-Oliver Associates, Inc.</u>	State: <u>Texas</u>

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Community I.D. <u>Up</u>
Is the site significantly disturbed? (Atypical Sit.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Subdivision I.D. _____
Is the area a potential Problem Area?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Plot I.D. <u>T1-2</u>

VEGETATION

	<u>Dominant Plant</u>	<u>Stratum</u>	<u>Indicator Status</u>
1	<u>Cynodon dactylon</u>	<u>Herb</u>	<u>FACU</u>
2	<u>Sorghum halepense</u>	<u>Herb</u>	<u>FAC</u>
3	<u>Eupatorium compositifolium</u>	<u>Herb</u>	<u>FACU</u>
4	<u>Trifolium repens</u>	<u>Herb</u>	<u>FACU</u>
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) = 25%

Other indicators: _____ Hydrophytic vegetation: No

Remarks: Wetland vegetation does not exceed 50% of species composition.

Investigator: KM, AL

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>Stream, Lake, or Tide Gauge</p> <p><u>95 IR</u> Aerial Photographs</p> <p>Other _____</p> <p>No Recorded Data Available _____</p> <p>Field Observations:</p> <p>Depth of Surface Water: <u>None</u> (in.)</p> <p>Depth to Free Water in Pit: <u>None</u> (in.)</p> <p>Depth to Saturated Soil: <u>None</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><u>No</u> Inundated</p> <p><u>No</u> Saturated in Upper 12 Inches</p> <p><u>No</u> Water Marks</p> <p><u>No</u> Drift Lines</p> <p><u>No</u> Sediment Deposits</p> <p><u>No</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p><u>No</u> Oxidized Root Channels in Upper 12 in.</p> <p><u>No</u> Water-Stained Leaves</p> <p><u>No</u> Local Soil Survey Data</p> <p><u>No</u> FAC-Neutral Test</p> <p><u>No</u> Other (Explain in Remarks)</p>
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Remarks: Lacks sufficient indicators of wetland hydrology.

Investigator: KM, AL

SOILS

Plot I.D. # T1-2

Map Unit Name:	<u>Wo</u>		
(Series and Phase)	<u>Wockley fine sandy loam</u>	Drainage Class:	<u>somewhat poorly drained</u>
Taxonomy (Subgroup):	<u>Plinthaquic Paleudalfs</u>	Confirm Mapped Type?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Profile Description:

Depth Inches	Horizon	Munsell Matrix Color	Mottle Color	Mottle Abundance	Texture
0-14		10YR 4/3			Loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Aquic Moisture	<input type="checkbox"/> High Organic Content-Sandy Surface	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soil sample not taken, sample point located within right of way on private property.

Investigator: KM, AL

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No <input checked="" type="checkbox"/>	Is sample point within a Wetland?	Yes	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes	No <input checked="" type="checkbox"/>			

Remarks: Sample point lacks all three wetland criteria.

Director: Susan Alford

BERG-OLIVER ASSOCIATES, INC.

ROUTINE WETLAND DETERMINATION

DATA FORM

Project Site: <u>5 mile road extension</u>	Date: <u>12/2/2008</u>
Applicant/Owner: <u>Cobb, Fendley & Associates</u>	County: <u>Harris</u>
Investigator: <u>Berg-Oliver Associates, Inc.</u>	State: <u>Texas</u>

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Community I.D. <u>Up</u>
Is the site significantly disturbed? (Atypical Sit.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Subdivision I.D. _____
Is the area a potential Problem Area?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Plot I.D. <u>T1-3</u>

VEGETATION

	<u>Dominant Plant</u>	<u>Stratum</u>	<u>Indicator Status</u>
1	<u>Paspalum notatum</u>	<u>Herb</u>	<u>FAC</u>
2	<u>Axonopus affinis</u>	<u>Herb</u>	<u>FAC</u>
3	<u>Paspalum urvillei</u>	<u>Herb</u>	<u>FAC</u>
4	<u>Verbena brasiliensis</u>	<u>Herb</u>	<u>NI</u>
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) = 75%

Other indicators: _____ Hydrophytic vegetation: Yes

Remarks: Listed vegetation is typically associated with upland areas in this ecosystem.

Investigator: KM, AL

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>Stream, Lake, or Tide Gauge</p> <p><u>95 IR</u> Aerial Photographs</p> <p>Other _____</p> <p>No Recorded Data Available _____</p> <p>Field Observations:</p> <p>Depth of Surface Water: <u>None</u> (in.)</p> <p>Depth to Free Water in Pit: <u>None</u> (in.)</p> <p>Depth to Saturated Soil: <u>None</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><u>No</u> Inundated</p> <p style="padding-left: 20px;"><u>No</u> Saturated in Upper 12 Inches</p> <p style="padding-left: 20px;"><u>No</u> Water Marks</p> <p style="padding-left: 20px;"><u>No</u> Drift Lines</p> <p style="padding-left: 20px;"><u>No</u> Sediment Deposits</p> <p style="padding-left: 20px;"><u>No</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p style="padding-left: 20px;"><u>No</u> Oxidized Root Channels in Upper 12 in.</p> <p style="padding-left: 20px;"><u>No</u> Water-Stained Leaves</p> <p style="padding-left: 20px;"><u>No</u> Local Soil Survey Data</p> <p style="padding-left: 20px;"><u>No</u> FAC-Neutral Test</p> <p style="padding-left: 20px;"><u>No</u> Other (Explain in Remarks)</p>
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Remarks: Lacks sufficient indicators of wetland hydrology.

Investigator: KM, AL

SOILS

Plot I.D. # T1-3

Map Unit Name:	<u>HoB</u>	
(Series and Phase)	<u>Hockley fine sandy loam , 0 to 1 percent slopes</u>	Drainage Class: <u>somewhat poorly drained</u>
Taxonomy (Subgroup):	<u>Plinthic Paleudalfs</u>	Confirm Mapped Type? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Description:

Depth Inches	Horizon	Munsell Matrix Color	Mottle Color	Mottle Abundance	Texture
0-14		10YR 4/6			Loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Aquic Moisture	<input type="checkbox"/> High Organic Content-Sandy Surface	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soil sample not taken, sample point located within right of way on private property.

Investigator: KM, AL

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is sample point within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Sample point lacks sufficient indicators of hydric soils and hydrology.

Director: Susan Alford

BERG-OLIVER ASSOCIATES, INC.

ROUTINE WETLAND DETERMINATION

DATA FORM

Project Site: <u>5 mile road extension</u>	Date: <u>12/2/2008</u>
Applicant/Owner: <u>Cobb, Fendley & Associates</u>	County: <u>Harris</u>
Investigator: <u>Berg-Oliver Associates, Inc.</u>	State: <u>Texas</u>

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Community I.D. <u>Up</u>
Is the site significantly disturbed? (Atypical Sit.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Subdivision I.D. _____
Is the area a potential Problem Area?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Plot I.D. <u>T1-4</u>

VEGETATION

	<u>Dominant Plant</u>	<u>Stratum</u>	<u>Indicator Status</u>
1	<u>Baccharis halimifolia</u>	<u>Tree</u>	<u>FACW</u>
2	<u>Sesbania drummondii</u>	<u>Shrub</u>	<u>FACW</u>
3	<u>Solidago canadensis</u>	<u>Herb</u>	<u>FACU</u>
4	<u>Rubus trivialis</u>	<u>Herb</u>	<u>FAC</u>
5	<u>Juncus effusus</u>	<u>Herb</u>	<u>OBL</u>
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) = 80%

Other indicators: _____ Hydrophytic vegetation: Yes

Remarks: Listed vegetation is typically associated with upland areas in this ecosystem.

Investigator: KM, AL

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>Stream, Lake, or Tide Gauge</p> <p><u>95 IR</u> Aerial Photographs</p> <p>Other</p> <p>No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 40px;"><u>No</u> Inundated</p> <p style="padding-left: 40px;"><u>No</u> Saturated in Upper 12 Inches</p> <p style="padding-left: 40px;"><u>No</u> Water Marks</p> <p style="padding-left: 40px;"><u>No</u> Drift Lines</p> <p style="padding-left: 40px;"><u>No</u> Sediment Deposits</p> <p style="padding-left: 40px;"><u>No</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p style="padding-left: 40px;"><u>No</u> Oxidized Root Channels in Upper 12 in.</p> <p style="padding-left: 40px;"><u>No</u> Water-Stained Leaves</p> <p style="padding-left: 40px;"><u>No</u> Local Soil Survey Data</p> <p style="padding-left: 40px;"><u>No</u> FAC-Neutral Test</p> <p style="padding-left: 40px;"><u>No</u> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>None</u> (in.)</p> <p>Depth to Free Water in Pit: <u>None</u> (in.)</p> <p>Depth to Saturated Soil: <u>None</u> (in.)</p>	
<p>Remarks: <u>Lacks sufficient indicators of wetland hydrology.</u></p> <p style="text-align: right;">Investigator: <u>KM, AL</u></p>	

SOILS

Plot I.D. # T1-4

Map Unit Name:	<u>Wo</u>		
(Series and Phase)	<u>Wockley fine sandy loam</u>	Drainage Class:	<u>somewhat poorly drained</u>
Taxonomy (Subgroup):	<u>Plinthaquic Paleudalfs</u>	Confirm Mapped Type?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Profile Description:

Depth Inches	Horizon	Munsell Matrix Color	Mottle Color	Mottle Abundance	Texture
0-14		10YR 4/3			Loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Aquic Moisture	<input type="checkbox"/> High Organic Content-Sandy Surface	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soil sample not taken, sample point located within right of way on private property.

Investigator: KM, AL

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is sample point within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Sample point lacks sufficient indicators of hydric soils and hydrology.

Director: Susan Alford

BERG-OLIVER ASSOCIATES, INC.

ROUTINE WETLAND DETERMINATION

DATA FORM

Project Site: <u>5 mile road extension</u>	Date: <u>12/2/2008</u>
Applicant/Owner: <u>Cobb, Fendley & Associates</u>	County: <u>Harris</u>
Investigator: <u>Berg-Oliver Associates, Inc.</u>	State: <u>Texas</u>

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Community I.D. <u>Up</u>
Is the site significantly disturbed? (Atypical Sit.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Subdivision I.D. _____
Is the area a potential Problem Area?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Plot I.D. <u>T1-5</u>

VEGETATION

	<u>Dominant Plant</u>	<u>Stratum</u>	<u>Indicator Status</u>
1	<u>Paspalum notatum</u>	<u>Herb</u>	<u>FAC</u>
2	<u>Axonopus affinis</u>	<u>Herb</u>	<u>FAC</u>
3	<u>Paspalum urvillei</u>	<u>Herb</u>	<u>FAC</u>
4	<u>Verbena brasiliensis</u>	<u>Herb</u>	<u>NI</u>
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) = 75%

Other indicators: _____ Hydrophytic vegetation: Yes

Remarks: Listed vegetation is typically associated with upland areas in this ecosystem.

Investigator: KM, AL

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>Stream, Lake, or Tide Gauge</p> <p><u>95 IR</u> Aerial Photographs</p> <p>Other _____</p> <p>No Recorded Data Available _____</p> <p>Field Observations:</p> <p>Depth of Surface Water: <u>None</u> (in.)</p> <p>Depth to Free Water in Pit: <u>None</u> (in.)</p> <p>Depth to Saturated Soil: <u>None</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 40px;"><u>No</u> Inundated</p> <p style="padding-left: 40px;"><u>No</u> Saturated in Upper 12 Inches</p> <p style="padding-left: 40px;"><u>No</u> Water Marks</p> <p style="padding-left: 40px;"><u>No</u> Drift Lines</p> <p style="padding-left: 40px;"><u>No</u> Sediment Deposits</p> <p style="padding-left: 40px;"><u>No</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p style="padding-left: 40px;"><u>No</u> Oxidized Root Channels in Upper 12 in.</p> <p style="padding-left: 40px;"><u>No</u> Water-Stained Leaves</p> <p style="padding-left: 40px;"><u>No</u> Local Soil Survey Data</p> <p style="padding-left: 40px;"><u>No</u> FAC-Neutral Test</p> <p style="padding-left: 40px;"><u>No</u> Other (Explain in Remarks)</p>
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Remarks: Lacks sufficient indicators of wetland hydrology.

Investigator: KM, AL

SOILS

Plot I.D. # T1-5

Map Unit Name:	<u>Wo</u>		
(Series and Phase)	<u>Wockley fine sandy loam</u>	Drainage Class:	<u>somewhat poorly drained</u>
Taxonomy (Subgroup):	<u>Plinthaquic Paleudalfs</u>	Confirm Mapped Type?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Profile Description:

Depth Inches	Horizon	Munsell Matrix Color	Mottle Color	Mottle Abundance	Texture
0-14		10YR 4/3			Loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Aquic Moisture	<input type="checkbox"/> High Organic Content-Sandy Surface	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soil sample not taken, sample point located within right of way on private property.

Investigator: KM, AL

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is sample point within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Sample point lacks sufficient indicators of hydric soils and hydrology.

Director: Susan Alford

BERG-OLIVER ASSOCIATES, INC.

ROUTINE WETLAND DETERMINATION

DATA FORM

Project Site: <u>5 mile road extension</u>	Date: <u>12/2/2008</u>
Applicant/Owner: <u>Cobb, Fendley & Associates</u>	County: <u>Harris</u>
Investigator: <u>Berg-Oliver Associates, Inc.</u>	State: <u>Texas</u>

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No		Community I.D. <u>Up</u>
Is the site significantly disturbed? (Atypical Sit.)	Yes	No <input checked="" type="checkbox"/>		Subdivision I.D. _____
Is the area a potential Problem Area?	Yes	No <input checked="" type="checkbox"/>		Plot I.D. <u>T1-6</u>

VEGETATION

	<u>Dominant Plant</u>	<u>Stratum</u>	<u>Indicator Status</u>
1	<u>Cynodon dactylon</u>	<u>Herb</u>	<u>FACU</u>
2	<u>Paspalum urvillei</u>	<u>Herb</u>	<u>FAC</u>
3	<u>Paspalum notatum</u>	<u>Herb</u>	<u>FAC</u>
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) = 66%

Other indicators: Hydrophytic vegetation: Yes

Remarks: Listed vegetation is typically associated with upland areas in this ecosystem. Investigator: KM, AL

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>Stream, Lake, or Tide Gauge</p> <p><u>95 IR</u> Aerial Photographs</p> <p>Other</p> <p>No Recorded Data Available</p> <p>Field Observations:</p> <p>Depth of Surface Water: <u>None</u> (in.)</p> <p>Depth to Free Water in Pit: <u>None</u> (in.)</p> <p>Depth to Saturated Soil: <u>None</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 40px;"><u>No</u> Inundated</p> <p style="padding-left: 40px;"><u>No</u> Saturated in Upper 12 Inches</p> <p style="padding-left: 40px;"><u>No</u> Water Marks</p> <p style="padding-left: 40px;"><u>No</u> Drift Lines</p> <p style="padding-left: 40px;"><u>No</u> Sediment Deposits</p> <p style="padding-left: 40px;"><u>No</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p style="padding-left: 40px;"><u>No</u> Oxidized Root Channels in Upper 12 in.</p> <p style="padding-left: 40px;"><u>No</u> Water-Stained Leaves</p> <p style="padding-left: 40px;"><u>No</u> Local Soil Survey Data</p> <p style="padding-left: 40px;"><u>No</u> FAC-Neutral Test</p> <p style="padding-left: 40px;"><u>No</u> Other (Explain in Remarks)</p>
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Remarks: Lacks sufficient indicators of wetland hydrology. Investigator: KM, AL

SOILS

Plot I.D. # T1-6

Map Unit Name:	<u>Wo</u>		
(Series and Phase)	<u>Wockley fine sandy loam</u>	Drainage Class:	<u>somewhat poorly drained</u>
Taxonomy (Subgroup):	<u>Plinthaquic Paleudalfs</u>	Confirm Mapped Type?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Profile Description:

Depth Inches	Horizon	Munsell Matrix Color	Mottle Color	Mottle Abundance	Texture
0-14		10YR 4/3			Loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Aquic Moisture	<input type="checkbox"/> High Organic Content-Sandy Surface	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soil sample not taken, sample point located within right of way on private property.

Investigator: KM, AL

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is sample point within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Sample point lacks sufficient indicators of hydric soils and hydrology.

Director: Susan Alford

BERG-OLIVER ASSOCIATES, INC.

ROUTINE WETLAND DETERMINATION

DATA FORM

Project Site: <u>5 mile road extension</u>	Date: <u>12/2/2008</u>
Applicant/Owner: <u>Cobb, Fendley & Associates</u>	County: <u>Harris</u>
Investigator: <u>Berg-Oliver Associates, Inc.</u>	State: <u>Texas</u>

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Community I.D. <u>Up</u>
Is the site significantly disturbed? (Atypical Sit.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Subdivision I.D. _____
Is the area a potential Problem Area?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Plot I.D. <u>T1-7</u>

VEGETATION

	<u>Dominant Plant</u>	<u>Stratum</u>	<u>Indicator Status</u>
1	<u>Paspalum notatum</u>	<u>Herb</u>	<u>FAC</u>
2	<u>Axonopus affinis</u>	<u>Herb</u>	<u>FAC</u>
3	<u>Paspalum urvillei</u>	<u>Herb</u>	<u>FAC</u>
4	<u>Verbena brasiliensis</u>	<u>Herb</u>	<u>NI</u>
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) = 75%

Other indicators: _____ Hydrophytic vegetation: Yes

Remarks: Listed vegetation is typically associated with upland areas in this ecosystem.

Investigator: KM, AL

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>Stream, Lake, or Tide Gauge</p> <p><u>95 IR</u> Aerial Photographs</p> <p>Other _____</p> <p>No Recorded Data Available _____</p> <p>Field Observations:</p> <p>Depth of Surface Water: <u>None</u> (in.)</p> <p>Depth to Free Water in Pit: <u>None</u> (in.)</p> <p>Depth to Saturated Soil: <u>None</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 40px;"><u>No</u> Inundated</p> <p style="padding-left: 40px;"><u>No</u> Saturated in Upper 12 Inches</p> <p style="padding-left: 40px;"><u>No</u> Water Marks</p> <p style="padding-left: 40px;"><u>No</u> Drift Lines</p> <p style="padding-left: 40px;"><u>No</u> Sediment Deposits</p> <p style="padding-left: 40px;"><u>No</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p style="padding-left: 40px;"><u>No</u> Oxidized Root Channels in Upper 12 in.</p> <p style="padding-left: 40px;"><u>No</u> Water-Stained Leaves</p> <p style="padding-left: 40px;"><u>No</u> Local Soil Survey Data</p> <p style="padding-left: 40px;"><u>No</u> FAC-Neutral Test</p> <p style="padding-left: 40px;"><u>No</u> Other (Explain in Remarks)</p>
--	---

Remarks: Lacks sufficient indicators of wetland hydrology.

Investigator: KM, AL

SOILS

Plot I.D. # T1-7

Map Unit Name:	<u>Wo</u>		
(Series and Phase)	<u>Wockley fine sandy loam</u>	Drainage Class:	<u>somewhat poorly drained</u>
Taxonomy (Subgroup):	<u>Plinthaquic Paleudalfs</u>	Confirm Mapped Type?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Profile Description:

Depth Inches	Horizon	Munsell Matrix Color	Mottle Color	Mottle Abundance	Texture
0-14		10YR 4/4			Loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Aquic Moisture	<input type="checkbox"/> High Organic Content-Sandy Surface	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soil sample not taken, sample point located within right of way on private property.

Investigator: KM, AL

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is sample point within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Sample point lacks sufficient indicators of hydric soils and hydrology.

Director: Susan Alford

BERG-OLIVER ASSOCIATES, INC.

ROUTINE WETLAND DETERMINATION

DATA FORM

Project Site: <u>5 mile road extension</u>	Date: <u>12/2/2008</u>
Applicant/Owner: <u>Cobb, Fendley & Associates</u>	County: <u>Harris</u>
Investigator: <u>Berg-Oliver Associates, Inc.</u>	State: <u>Texas</u>

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Community I.D. <u>Up</u>
Is the site significantly disturbed? (Atypical Sit.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Subdivision I.D. _____
Is the area a potential Problem Area?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Plot I.D. <u>T1-8</u>

VEGETATION

	<u>Dominant Plant</u>	<u>Stratum</u>	<u>Indicator Status</u>
1	<u>Cynodon dactylon</u>	<u>Herb</u>	<u>FACU</u>
2	<u>Stenotaphrum secundatum</u>	<u>Herb</u>	<u>FAC+</u>
3	<u>Trifolium repens</u>	<u>Herb</u>	<u>FACU</u>
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) = 33%

Other indicators: Hydrophytic vegetation: No

Remarks: Wetland vegetation does not exceed 50% of species composition. Investigator: KM, AL

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>Stream, Lake, or Tide Gauge</p> <p><u>95 IR</u> Aerial Photographs</p> <p>Other</p> <p>No Recorded Data Available</p> <p>Field Observations:</p> <p>Depth of Surface Water: <u>None</u> (in.)</p> <p>Depth to Free Water in Pit: <u>None</u> (in.)</p> <p>Depth to Saturated Soil: <u>None</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="margin-left: 40px;"><u>No</u> Inundated</p> <p style="margin-left: 40px;"><u>No</u> Saturated in Upper 12 Inches</p> <p style="margin-left: 40px;"><u>No</u> Water Marks</p> <p style="margin-left: 40px;"><u>No</u> Drift Lines</p> <p style="margin-left: 40px;"><u>No</u> Sediment Deposits</p> <p style="margin-left: 40px;"><u>No</u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p style="margin-left: 40px;"><u>No</u> Oxidized Root Channels in Upper 12 in.</p> <p style="margin-left: 40px;"><u>No</u> Water-Stained Leaves</p> <p style="margin-left: 40px;"><u>No</u> Local Soil Survey Data</p> <p style="margin-left: 40px;"><u>No</u> FAC-Neutral Test</p> <p style="margin-left: 40px;"><u>No</u> Other (Explain in Remarks)</p>
--	--

Remarks: Lacks sufficient indicators of wetland hydrology. Investigator: KM, AL

SOILS

Plot I.D. # T1-8

Map Unit Name:	<u>Wo</u>		
(Series and Phase)	<u>Wockley fine sandy loam</u>	Drainage Class:	<u>somewhat poorly drained</u>
Taxonomy (Subgroup):	<u>Plinthaquic Paleudalfs</u>	Confirm Mapped Type?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Profile Description:

Depth Inches	Horizon	Munsell Matrix Color	Mottle Color	Mottle Abundance	Texture
0-14		10YR 4/3			Loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Aquic Moisture	<input type="checkbox"/> High Organic Content-Sandy Surface	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soil sample not taken, sample point located within right of way on private property.

Investigator: KM, AL

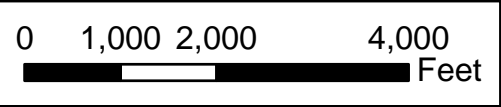
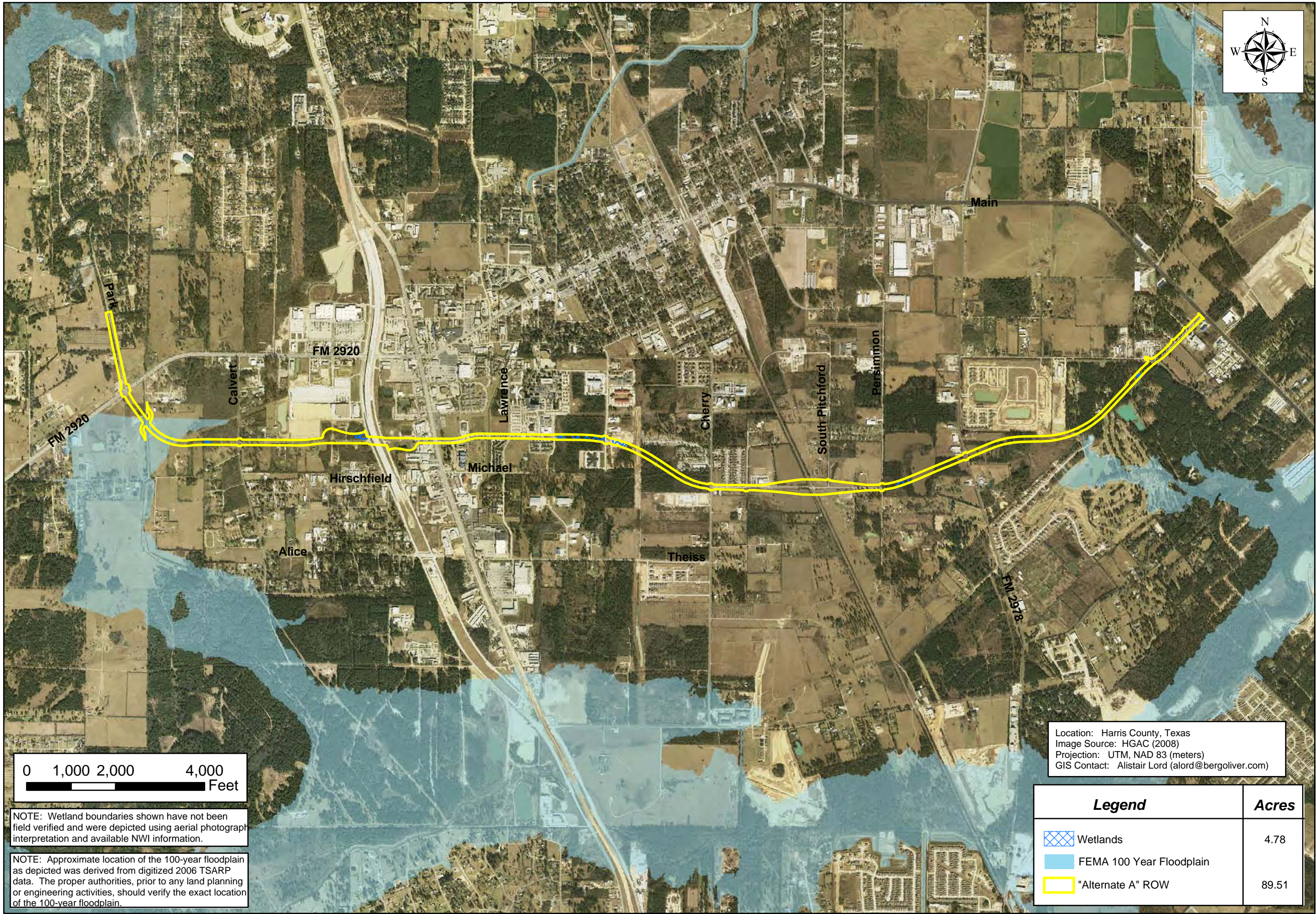
WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No <input checked="" type="checkbox"/>	Is sample point within a Wetland?	Yes	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes	No <input checked="" type="checkbox"/>			

Remarks: Sample point lacks all three wetland criteria.

Director: Susan Alford

APPENDIX F
WETLAND DELINEATION MAP



NOTE: Wetland boundaries shown have not been field verified and were depicted using aerial photograph interpretation and available NWI information.

NOTE: Approximate location of the 100-year floodplain as depicted was derived from digitized 2006 TSARP data. The proper authorities, prior to any land planning or engineering activities, should verify the exact location of the 100-year floodplain.

Location: Harris County, Texas
 Image Source: HGAC (2008)
 Projection: UTM, NAD 83 (meters)
 GIS Contact: Alistair Lord (alord@bergoliver.com)

Legend	Acres
Wetlands	4.78
FEMA 100 Year Floodplain	
"Alternate A" ROW	89.51

WETLAND DETERMINATION AND CLASSIFICATION OVERVIEW

REVISIONS
December 3, 2008 by AVL

Project #: 7020
For: Cobb, Fendley & Associates
Location: 5 mile right of way, FM 2920 & E. Main
 Tomball, Harris County, Texas

BERG OLIVER ASSOCIATES, INC.
 ENVIRONMENTAL SCIENCE, ENGINEERING
 & LAND USE CONSULTANTS
 14701 ST. MARY'S LANE, SUITE 400
 HOUSTON, TEXAS 77079 PHONE (281)589-0898 <http://www.bergoliver.com>



APPENDIX G
GPS ATTRIBUTE TABLE

7020 Cobb, Fendley & Associates**GPS Attributes Table****Coordinates: NAD 83, UTM, Zone 15 N**

Easting	Northing	Comment	Max_PDOP	GPS_Date	GPS_Time	Horz_Prec	Point_ID	Distance between points (feet)
244242.875	3331575.000	T1-1	3.7	12/2/2008	10:38:14am	1.2	1	
245145.781	3331029.149	T1-2	4.2	12/2/2008	10:45:45am	0.9	2	3461.55
245145.969	3331028.452	T1-3	4.2	12/2/2008	10:47:57am	0.9	3	2.37
245425.110	3331040.750	T1-4	3.5	12/2/2008	10:53:35am	0.8	4	916.71
245778.164	3331033.428	T1-5	5.5	12/2/2008	10:57:29am	1.5	5	1158.56
246095.386	3331035.565	T1-6	4.2	12/2/2008	11:11:36am	0.8	6	1040.78
248686.006	3330717.603	T1-7	3.3	12/2/2008	11:29:21am	0.7	7	8563.19
251117.997	3331386.296	T1-8	3.4	12/2/2008	11:36:43am	1.3	8	8275.09

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY DRAFT REPORT

Prepared for:

CITY OF TOMBALL



Submitted To:



Interim Review Only

Document Incomplete:

Not intended for permit or Construction

Engineer: **David H. Yazhari., P.E.**

P.E. Serial No. 64312

Date: February 26, 2009

Firm: **GUNDA CORPORATION, INC.**

Registration No. F-3531



**MEDICAL COMPLEX DRIVE
TRAFFIC STUDY**

DRAFT REPORT

Prepared for:

CITY OF TOMBALL

Submitted To:

***COBB, FENDLEY &
ASSOCIATES, INC.***

GUNDA CORPORATION INC.

7322 Southwest Freeway, Suite 1802

Houston, TX 77056

(713) 541-3530

Fax (713) 541-0032

February 26, 2009

MEDICAL COMPLEX DRIVE TRAFFIC STUDY

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MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

APPENDICES

- A. TMC's and 24 Hour Counts at the Study Intersections
- B. Existing Conditions Signal Timing at the Study Intersections
- C. SYNCHRO Level of Service and Delay Analysis

Executive Summary

This report summarizes the result of a traffic study conducted by GUNDA CORPORATION, INC. to evaluate the existing and future traffic operation conditions following the completion of the proposed Medical Complex Drive in the City of Tomball.

The proposed Medical Complex Drive will be an east-west oriented four-lane Boulevard, which will begin in the vicinity of the intersection of FM 2920 and Mahaffey Road and extend west to the vicinity of the intersection of FM 2920 and Park Road, in the City of Tomball, Texas.

It is anticipated that the addition of the proposed Medical Complex Drive to the traffic circulation system in Tomball will result in alteration of traffic circulation within the study corridor. It is further conceivable that some traffic volumes from FM 2920 would be diverted to the proposed Medical Complex Drive, and consequently, traffic circulation at the intersecting roadways, such as Calvert Road, Tomball Parkway, and SH 249, will be affected.

A comprehensive scope of services was developed to not only to evaluate the existing and future traffic operations following the completion of the proposed Medical Complex Drive, but also to project and evaluate the impacts of the anticipated traffic diversion and re-circulation on the roadway system within the study corridor.

The purpose of this traffic study is to project the future traffic conditions in the study area, and to evaluate and document the traffic conditions under the two project scenarios of Build and No-Build, for the Years 2011 and 2035, to ensure efficient traffic operations subsequent to the completion of the project, and to provide appropriate design and operations guidelines to be incorporated into the roadway operations and design plans.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

GUNDA CORPORATION was authorized to conduct a traffic study to evaluate the proposed project. Consulting responsibilities for the preparation of this report consisted of collection of traffic data and performing the traffic analysis as well as preparation of the draft and final traffic documents.

A comprehensive field study was conducted to observe traffic operations in the study area. As part of the field study, traffic operations and intersection lane configurations were collected and documented for the study intersections along Medical Complex Drive, within the proposed roadway alignment, and along FM 2920. Additionally, existing signal timing for all the signalized intersections was collected.

A total of 20 study area key signalized and unsignalized intersections were evaluated to determine existing and future traffic operations within the study corridor. Included in the 20 study intersections are a total of 4 unsignalized intersections.

Anticipated future Years 2011 and 2035 traffic conditions, for the two scenarios of Build and No-Build, were projected based on the anticipated growth rates and the GIS Shape Files obtained from Houston Galveston Area Council (H-GAC). The Shape Files and growth rates were used to obtain the projected AM and PM peak hour traffic data for both No-Build and Build scenarios, for the Years 2011 and 2035 traffic conditions.

Level of service analysis were conducted to evaluate the levels of service of the analysis intersections using the SYNCHRO software in accordance with the procedures set forth and recommended by the *Highway Capacity Manual (HCM)* level of service methodology for evaluation of intersections. Utilizing the existing and projected future traffic volumes for the study intersections, the existing and future AM and PM peak hour levels of service for the study intersections were calculated.

Traffic engineering analysis in the area indicates that a satisfactory improvement plan can be developed and applied to accommodate the existing and anticipated Years 2011 and 2035 traffic volumes on Medical Complex Drive. The following proposed improvements are presented for the purpose of improving future traffic operations along Medical Complex Drive corridor.

Year 2011 Improvement Analysis

The result of traffic engineering analysis conducted in this report indicate that by the Year 2011, the following five intersections along the proposed Medical Complex Drive are anticipated to be signalized due to the projected heavy traffic volumes at the study intersections:

- Medical Complex Drive at Calvert Road
- Medical Complex Drive at SH 249 WSR
- Medical Complex Drive at SH 249 ESR
- Medical Complex Drive at South Cherry Street
- Medical Complex Drive (Mahaffey) at FM 2920

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Additionally, following the installation of traffic signals at the five above intersections, and with the exception of the Medical Complex Drive/Tomball Parkway intersection (operating at Level of Service F), all the other study intersections along the proposed Medical Complex Drive would be operating at acceptable Levels of Service D or better.

To improve traffic operations at the Medical Complex Drive/Tomball Parkway intersection, considerations should be given to construct additional northbound and southbound left turn storage lanes at this intersection. Additionally, the existing eastbound and westbound approaches of the intersection should be reconstructed to provide one left and right turn storage lanes, as well as two through lanes. Level of service analysis indicate that following the implementation of the proposed improvements, this intersection would be operating at acceptable level of services D or better.

Additionally, the three intersections of FM 2920 with Tomball Parkway, Cherry Street and Hufsmith-Kohrville Road would be operating at levels of service E or F during AM or PM peak hours. Optimization of signal timing at these intersections will improve levels of service to acceptable levels.

The above recommended improvements for the Year 2011 were evaluated by using the SYNCHRO model. A new level of service analysis was completed for all the study intersections to determine anticipated levels of services at the study intersections. Year 2011 recommended condition for the AM and PM peak hour Levels of Service of the study intersections is summarized in Table ES1, while detailed level of service analyses for all the intersections is included in Appendix C of this report. As shown in Table ES1, following the implementation of the recommended roadway capacity improvements, the study intersections would be operating at acceptable Level of Service of D or better.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Table ES1				
LOS of Study Intersections - Recommended Conditions (2011)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex Drive @ Calvert Road	A	8.6	A	8.5
Medical Complex Drive @ SH 249 WSR	B	17.8	C	24.8
Medical Complex Drive @ SH 249 ESR	B	19.1	C	23.6
Medical Complex Drive @ Tomball Parkway	C	30.4	D	47.9
Medical Complex Drive @ S. Cherry Street	A	9	A	9.4
Medical Complex Dr @ Hufsmith Kohnville	B	10.3	A	9.8
Medical Complex Drive @ FM 2920	C	19.6	C	31.2
Medical Complex Drive - Park Rd @ FM 2920	D	51.8	D	54.8
Calvert Road @ FM 2920	A	3.9	A	4.8
Wood Forest Drive @ FM 2920	B	12.2	C	21.2
SH 249 WSR @ FM 2920	C	20.2	B	15.3
SH 249 ESR @ FM 2920	B	14.6	C	20.9
Tomball Parkway @ FM 2920	D	48.5	C	26.2
Buvinghausen Street @ FM 2920	A	6.8	A	8.2
Quinn Road @ FM 2920	B	11.2	B	18.6
Holderrieth Boulevard @ FM 2920	B	18.3	B	15.9
Vernon Avenue @ FM 2920	A	4.4	A	4.8
Baker Drive @ FM 2920	A	4.6	A	6.4
Pine Street @ FM 2920	A	4.6	A	7.1
Cherry Street @ FM 2920	D	43	C	31.1
Concordia/Willow Street @ FM 2920	C	22.3	A	9.7
Hufsmith Kohrville Road @ FM 2920	D	43.1	D	40.4
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				

Year 2035 Recommended Improvements

The result of analysis indicate that by the Year 2035 most of the intersections within the study corridor will be operating at level of service F and will require roadway or signal timing improvements.

Medical Complex Drive – Year 2035 Recommended Improvements

To improve traffic operations at the intersections along Medical Complex Drive considerations should be given to the following roadway and traffic signal timing improvements:

- ◆ Improve traffic operations at the intersection of Medical Complex Drive at SH 249 West Service Road, by reconstructing the southbound approach to provide one left turn storage lane, one shared left turn/through lane and one exclusive through lane; and also by constructing an additional westbound left turn storage lane;
- ◆ Improve traffic operations at the northbound approach of the intersection of Medical Complex Drive at SH 249 East Service Road to provide an exclusive left turn lane, one shared left turn/through lane, one shared through/right turn lane and one right turn storage lane;
- ◆ Improve traffic operations at the intersection of Medical Complex Drive at Tomball Parkway by constructing new northbound and southbound right turn storage lanes;
- ◆ Improve traffic operations at the intersection of Medical Complex Drive - Park Road at FM 2920 by constructing new eastbound, westbound and northbound left turn storage lanes as well as a new westbound right turn storage lane;
- ◆ Perform signal timing optimization for all the study intersections in the study corridor.

Year 2035 Suggested Improvements

The following roadway improvements, although not located along the Medical Complex Drive, however if implemented would improve traffic conditions within the study corridor:

- ◆ Improve traffic operations at the intersection of Tomball Parkway at FM 2920 by constructing two new eastbound left turn storage lanes, new westbound left and right turn storage lanes, and restriping the existing eastbound and westbound shared left turn/through lane to exclusive through lanes;

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

- ◆ Improve traffic operations at the intersection of Holderrieth Boulevard at FM 2920 by reconstructing the northbound approach of the intersection to provide one left turn/through lane and one right turn storage lane;
- ◆ Improve traffic operations at the intersection of Pine Street at FM 2920 by reconstructing the northbound approach to provide one left turn storage lane and a shared through/right turn lane;
- ◆ Improve traffic operations at the intersection of Cherry Street at FM 2920 by reconstructing the northbound, southbound, eastbound and westbound approaches to provide one left turn storage lane, one through lane and one shared through/right turn lane;
- ◆ Improve traffic operations at the intersection of Hufsmith Kohrville Road at FM 2920 by constructing an additional southbound and eastbound left turn storage lanes and a new westbound right turn storage lane;
- ◆ Improve traffic operations at the intersection of Mahaffey Road at FM 2920 by constructing a new northbound left turn storage lane, southbound right turn storage lane, and also by reconstructing the eastbound approach to provide two left turn storage lanes and one exclusive right turn lane.

The above recommend improvements for the Year 2035 were evaluated by using the SYNCHRO model. A new level of service analysis was completed for all the study intersections to determine anticipated levels of services at the study intersections. Year 2035 recommended conditions for the AM and PM peak hour Levels of Service of the study intersections is summarized in Table ES2, while detailed level of service analyses for all the intersections is included in Appendix C of this report.

As shown in Table ES2, following the implementation of the recommended signal timing optimizations as well as roadway capacity improvements, the study intersections would be operating at acceptable Levels of Service D or better.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Table ES2				
LOS of Study Intersections - Recommended Conditions (2035)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex Drive @ Calvert Road	B	13.0	B	12.8
Medical Complex Drive @ SH 249 WSR	B	19.4	D	40.6
Medical Complex Drive @ SH 249 ESR	D	37.9	C	31.9
Medical Complex Drive @ Tomball Parkway	E	63.2	F	116
Medical Complex Drive @ S. Cherry Street	C	20.8	B	18.7
Medical Complex Dr @ Hufsmith Kohnville	C	27.3	D	36.6
Medical Complex Drive @ FM 2920	C	21.9	D	51.3
Medical Complex Drive - Park Rd @ FM 2920	D	51.2	D	52.3
Calvert Road @ FM 2920	B	12.8	A	6.0
Wood Forest Drive @ FM 2920	D	36.2	C	34
SH 249 WSR @ FM 2920	C	32.6	C	23.8
SH 249 ESR @ FM 2920	C	25.9	C	26.8
Tomball Parkway @ FM 2920	D	47.7	D	52.4
Buvinghausen Street @ FM 2920	B	15.1	D	54.6
Quinn Road @ FM 2920	B	16.7	D	39.4
Holderrieth Boulevard @ FM 2920	D	48.6	D	35.2
Vernon Avenue @ FM 2920	D	43.7	B	11.8
Baker Drive @ FM 2920	D	52.2	D	41.0
Pine Street @ FM 2920	A	8.9	D	48.8
Cherry Street @ FM 2920	C	28.9	D	52.8
Concordia/Willow Street @ FM 2920	D	50.5	D	45.1
Hufsmith Kohrville Road @ FM 2920	D	54.3	D	43.5
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				

Conclusions and Recommendations

Field reconnaissance, traffic counting programs, data collection, and traffic engineering analyses assisted in developing an accurate picture of existing and projected future roadway conditions and traffic operations on Medical Complex Drive and other major roadways within the study corridor. The anticipated traffic volumes for the proposed Medical Complex Drive were forecasted and evaluated based upon accepted travel characteristics and guidelines recommended by the Institute of Transportation Engineers, City of Tomball and TxDOT.

The anticipated weekday AM and PM peak period traffic volumes for the Years 2011 and 2035 were projected and assigned to the roadway system. The anticipated future roadway conditions were analyzed to determine roadway adequacy and improvement requirements. Recommendations were developed and evaluated to improve the anticipated Years 2011 and 2035 traffic conditions within the study corridor.

Recommendations

The study area circulation system was analyzed for adequacy with respect to the Build and No Build alternative scenarios for the Years 2011 and 2035 traffic conditions, and adjacent roadway system. The primary goal was to identify possible deficiencies in the future roadway system that would hinder efficient traffic operations. In order to provide maximum safety and operating measures, the following improvements are recommended:

Medical Complex Drive Year 2011 Recommended Improvements

- ◆ At the intersection of Medical Complex Drive and Tomball Parkway, construct additional northbound and southbound left turn storage lanes. Additionally, reconstruct the existing eastbound and westbound approaches of the intersection to provide one left and right turn storage lanes, as well as two through lanes.

- ◆ Install traffic signals at the following intersections:
 - Medical Complex Drive at Calvert Road
 - Medical Complex Drive at SH 249 WSR
 - Medical Complex Drive at SH 249 ESR
 - Medical Complex Drive at South Cherry Street
 - Medical Complex Drive (Mahaffey) at FM 2920

Medical Complex Drive Year 2035 Recommended Improvements

To improve traffic operations at the intersections along Medical Complex Drive considerations should be given to the following roadway and traffic signal timing improvements:

- ◆ Improve traffic operations at the intersection of Medical Complex Drive at SH 249 West Service Road, by reconstructing the southbound approach to provide one left turn storage lane, one shared left turn/through lane and one exclusive through lane; and also by constructing an additional westbound left turn storage lane;
- ◆ Improve traffic operations at the northbound approach of the intersection of Medical Complex Drive at SH 249 East Service Road to provide an exclusive left turn lane, one shared left turn/through lane, one shared through/right turn lane and one right turn storage lane;
- ◆ Improve traffic operations at the intersection of Medical Complex Drive at Tomball Parkway by constructing new northbound and southbound right turn storage lanes;
- ◆ Improve traffic operations at the intersection of Medical Complex Drive - Park Road at FM 2920 by constructing new eastbound, westbound and northbound left turn storage lanes as well as a new westbound right turn storage lane;
- ◆ Perform signal timing optimization for all the study intersections in the study corridor;
- ◆ All the City of Tomball and TxDOT traffic engineering and design standards should be met.

Additional Suggested Improvements

The following suggested signal timing and roadway improvements, although not located along the Medical Complex Drive, however if implemented would improve traffic conditions within the study corridor:

Year 2011 Suggested Improvements

- ◆ Perform signal timing optimization at the three intersections of FM 2920 with Tomball Parkway, Cherry Street and Hufsmith-Kohrville Road.

Year 2035 Suggested Improvements

- ◆ Improve traffic operations at the intersection of Tomball Parkway at FM 2920 by constructing two new eastbound left turn storage lanes, new westbound left and right turn storage lanes, and restriping the existing eastbound and westbound shared left turn/through lane to exclusive through lanes;
- ◆ Improve traffic operations at the intersection of Holderrieth Boulevard at FM 2920 by reconstructing the northbound approach of the intersection to provide one left turn/through lane and one right turn storage lane;
- ◆ Improve traffic operations at the intersection of Pine Street at FM 2920 by reconstructing the northbound approach to provide one left turn storage lane and a shared through/right turn lane;
- ◆ Improve traffic operations at the intersection of Cherry Street at FM 2920 by reconstructing the northbound, southbound, eastbound and westbound approaches to provide one left turn storage lane, one through lane and one shared through/right turn lane;
- ◆ Improve traffic operations at the intersection of Hufsmith Kohrville Road at FM 2920 by constructing an additional southbound and eastbound left turn storage lanes and a new westbound right turn storage lane;
- ◆ Improve traffic operations at the intersection of Mahaffey Road at FM 2920 by constructing a new northbound left turn storage lane, southbound right turn storage lane, and also by reconstructing the eastbound approach to provide two left turn storage lanes and one exclusive right turn lane.

Chapter 1

Introduction

This report summarizes the result of a traffic study conducted by GUNDA CORPORATION, INC. to evaluate the existing and future traffic operation conditions following the completion of the proposed Medical Complex Drive in the City of Tomball.

Project Description

The proposed Medical Complex Drive will be an east-west oriented four-lane Boulevard, which will begin in the vicinity of the intersection of FM 2920 and Mahaffey Road and extend west to the vicinity of the intersection of FM 2920 and Park Road, in the City of Tomball, Texas.

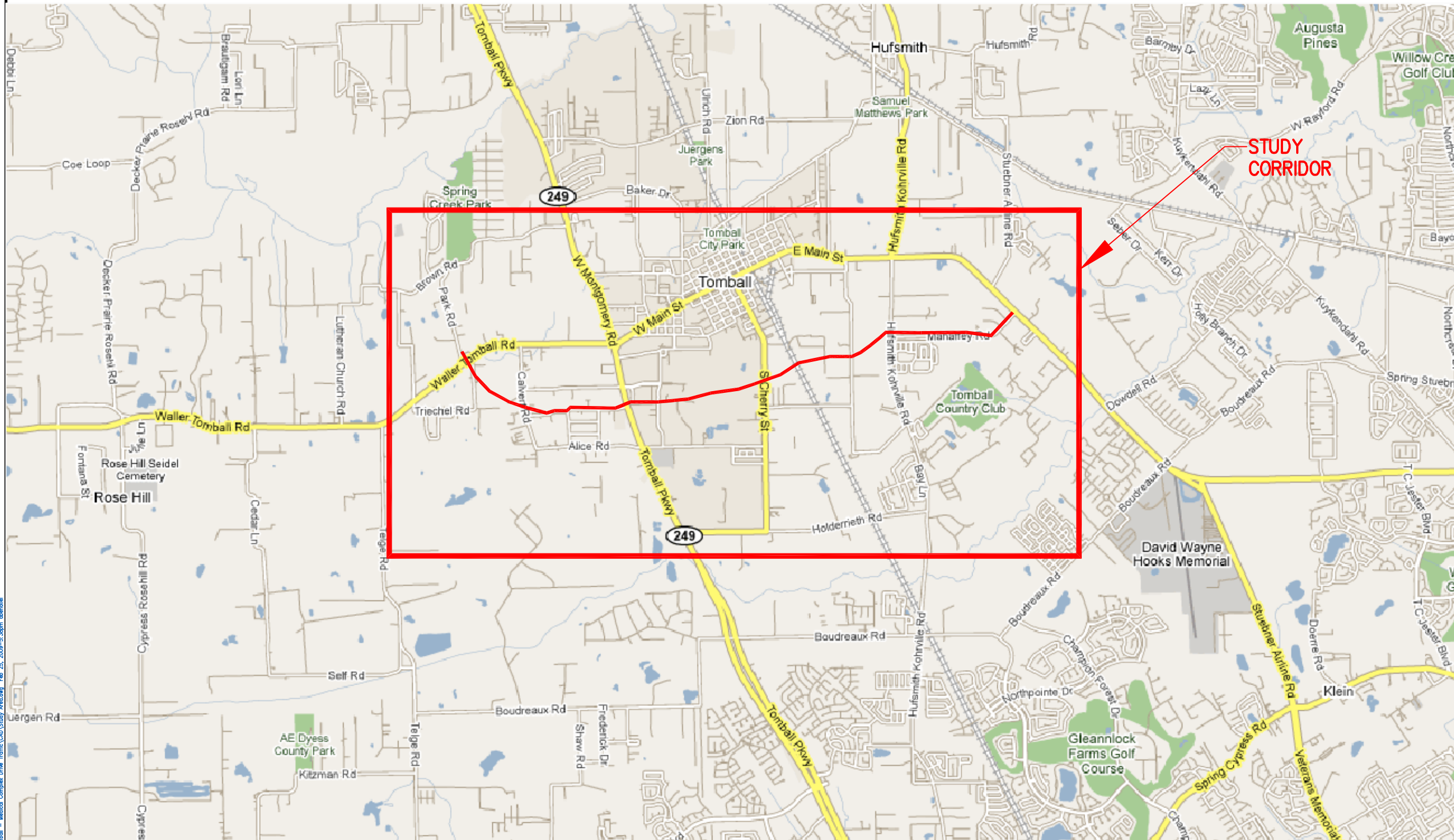
The existing Medical Complex Drive intersects Tomball Parkway, SH 249 West Service Road, SH 249 East Service Road, and Calvert Road. The location of the proposed alignment is presented in Figure 1.

It is anticipated that the addition of the proposed Medical Complex Drive to the traffic circulation system in Tomball will result in alteration of traffic circulation within the study corridor. It is further conceivable that some traffic volumes from FM 2920 would be diverted to the proposed Medical Complex Drive, and consequently, traffic circulation on the intersecting roadways, such as Calvert Road, Tomball Parkway, and SH 249, will be affected.

The following comprehensive scope of services was prepared to not only evaluate the existing and future traffic operations following the completion of the proposed Medical Complex Drive, but also to project and evaluate the impacts of the anticipated traffic diversion and re-circulation on the roadway system within the study corridor.



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PROJECT NAME:

**TOMBALL MEDICAL
COMPLEX DRIVE
TRAFFIC STUDY**

SHEET TITLE:

**FIGURE 1
STUDY
CORRIDOR**

GCI PROJ. NO.:
08022-00

DATE:
FEB., 2009

SHEET NO.

2

Scope of Services

The purpose of this traffic study is to project the future traffic conditions in the study area, and to evaluate and document the traffic conditions under the two project scenarios of Build and No-Build, for the Years 2011 and 2035, to ensure efficient traffic operations subsequent to the completion of the project, and to provide appropriate design and operation guidelines to be incorporated into the operations and design plans.

GUNDA CORPORATION was authorized to conduct a traffic study to evaluate the proposed project. Consulting responsibilities for the preparation of this report consisted of collection of traffic data and performing the traffic analysis as well as preparation of the draft and final traffic documents. The scope of project is presented in the following paragraphs:

Traffic Data Collection

- Collection of the AM and PM peak period turning movement counts at the following intersections along the corridor:
 - Medical Complex Drive and Tomball Parkway
 - Medical Complex Drive and SH 249 West Service Road
 - Medical Complex Drive and SH 249 East Service Road
 - FM 2920 and Park Road
 - FM 2920 and Calvert Road
 - FM 2920 and SH 249 West Service Road
 - FM 2920 and SH 249 East Service Road
 - FM 2920 and Tomball Parkway
 - FM 2920 and FM 2978/Hufsmith Kohrville Road

- Collection of bi-directional 24-hour counts for one weekday along the following roadway segments:
 - Medical Complex Drive at SH 249
 - Medical Complex Drive at SH 249 West Service Road
 - Medical Complex Drive at SH 249 East Service Road
 - South Cherry Street north of Agg Road
 - Agg Road east of South Cherry
 - Hufsmith-Kohrville Road north of Holderrieth
 - Mahaffey Road west of FM 2920
 - FM 2920 at Mahaffey
 - FM 2920 west of Treichel
 - Calvert Road at Hooper Road

- Obtaining the existing turning movement and 24-hour traffic counts along FM 2920 from H-GAC.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

- Collection of Transportation System Data such as lane configuration, traffic signal timing and speed limits for the study intersections listed above.

Traffic Analysis

- Coordination with H-GAC and obtaining travel demand modeling runs for the opening year and Year 2035 for the two project scenarios of Build and No Build.
- Development of a planning model for the corridor for the opening day conditions during AM and PM peak hours, utilizing SYNCHRO traffic software for Medical Complex Drive and FM 2920.
- Development of a planning model for the corridor for the Year 2035 conditions during AM and PM peak hours, utilizing SYNCHRO traffic software for Medical Complex Drive and FM 2920.
- Analyzing the existing and proposed levels of service at the intersections with FM 2920, Calvert Road, Tomball Parkway, SH 249, S. Cherry Street and Hufsmith-Kohrville Road.
- Development of a No-Build model during AM and PM peak hours, utilizing SYNCHRO traffic software for the existing Medical Complex Drive and FM 2920.
- Development of a No-Build model for the corridor for the Year 2035 conditions during AM and PM peak hours, utilizing SYNCHRO traffic software for FM 2920, assuming Medical Complex Drive will not be improved.
- Comparing the Build and No-Build scenarios for the opening day and the Year 2035.
- Preparation of draft traffic report, summarizing traffic analysis and findings.
- Meeting with City of Tomball staff and present findings.
- Incorporating the comments from City of Tomball in a final report.

Study Approach

Traffic analyses were performed in accordance with the accepted traffic engineering procedures and the requirements set forth by the Institute of Transportation Engineers (ITE) and TxDOT guidelines. The following steps were followed in the conducting of the traffic analysis:

1. **Field Reconnaissance** - The physical characteristics of the proposed alignment and the parallel roadway system as well as other major roadways within the study corridor were reviewed to identify existing roadway cross-sections, intersection lane configurations, traffic control devices, and other roadway characteristics.
2. **Collection of Traffic Data** - Existing AM peak period (7.00 AM to 9.00 AM) and PM peak period (4.00 PM to 6.00 PM) turning movement counts for the existing study intersections were collected. Also, bi-directional 24-hour machine counts were conducted for one weekday along the major roadways within the study corridor. Additionally, the existing turning movement counts and 24-hour traffic counts along FM 2920 were obtained from H-GAC.
3. **Evaluation of Existing Traffic Conditions** - Existing AM and PM peak hour traffic operations of the study area intersections were evaluated. The levels of service of the intersections were evaluated by utilizing the SYNCHRO software, which is based on guidelines recommended by the Highway Capacity Manual (HCM).
4. **Projection and Evaluation of Year 2011 No-Build Traffic Conditions** - anticipated Year 2011 peak hour trips were projected and assigned to the study area analysis intersections. The anticipated traffic volumes were analyzed to determine roadway adequacy and improvement requirements. Level-of-Service analyses were performed to evaluate the Year 2011 operating conditions and levels of service of the analysis intersections during the AM and PM peak hours.
5. **Projection and Evaluation of Year 2035 No-Build Traffic Conditions** - anticipated Year 2035 peak hour trips were projected and assigned to the study area analysis intersections. The anticipated traffic volumes were analyzed to determine roadway adequacy and improvement requirements. Level-of-Service analyses were performed to evaluate the Year 2035 operating conditions and levels of service of the analysis intersections during the AM and PM peak hours.
6. **Projection and Evaluation of Year 2011 Build Traffic Conditions** - anticipated Year 2011 peak hour trips were projected and assigned to the study area analysis intersections under the proposed build scenario. The anticipated traffic volumes were analyzed to determine roadway adequacy and improvement requirements. Level-of-Service analyses were performed to evaluate the Year 2011 operating

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

- conditions and levels of service of the analysis intersections during the AM and PM peak hours.
7. ***Projection and Evaluation of Year 2035 Build Traffic Conditions*** - anticipated Year 2035 peak hour trips were projected and assigned to the study area analysis intersections under the proposed build scenario. The anticipated traffic volumes were analyzed to determine roadway adequacy and improvement requirements. Level-of-Service analyses were performed to evaluate the Year 2035 operating conditions and levels of service of the analysis intersections during the AM and PM peak hours.
 8. ***Comparison of the Build and No-Build Project Scenarios*** – Level of service of the study area intersections for the two project scenarios of Build and No-Build were tabulated and compared to determine roadway adequacy and improvement requirements.
 9. ***Description of Recommendations*** - Based on the results of the level of service analyses, the adequacy of the roadway segments and intersections were identified and described. Recommendations were developed and evaluated that identify the locations and types of improvements or modifications necessary to improve traffic operations within the study area.

Definition of Technical Terms

In order to clarify the meaning of certain specialized traffic engineering terms that may be used in this report, the following definitions are offered:

- ❑ **Trip** is a one-way movement to or from a site. One car entering and leaving a site constitutes two trips.
- ❑ **Traffic Generation** is the actual number of vehicle movements that may reasonably be expected to be attracted and produced by a specific development. Usually, traffic generation is expressed as a number of trips.
- ❑ **Average Daily Traffic (ADT)** is the total traffic generation of a development on a typical working weekday.
- ❑ **Peak Hour Generation** is the maximum traffic generation that may be anticipated during the highest volume hour of the adjacent roadway system for the particular land use. This analysis parameter may vary as to the time of day, and to the type of facility proposed.
- ❑ **Trip Distribution** is the process of determining the proportions of the generated trips that can be expected to originate or terminate at any location.
- ❑ **Trip Assignment** is the process of assigning the trips that have been distributed from the various points of origin to the roadway system that would provide the most direct route between points of origin and destination.
- ❑ **Capacity and Level of Service (LOS)** are terms utilized to describe the ability of a roadway or intersection to accommodate its traffic assignment.
- ❑ **Reserve Capacity** is the difference between the maximum available volume and the demand volume.
- ❑ **Background Condition** is defined as the condition of traffic at the time of project implementation, without the trips from the proposed project.
- ❑ **Project Condition** is defined as the condition of traffic following the implementation of the project.
- ❑ **Queuing Analyses** is defined as the study of the instantaneous number of vehicles in a standing or slowly moving queue.

Level of Service Definitions

Level of service (LOS) is a qualitative measure describing driver satisfaction with a number of factors that influence the degree of traffic congestion. These factors include speed and travel time, traffic interruption, freedom to maneuver, safety, driving comfort and convenience, and delays. Levels of service as applied to roadway links are explained below.

- ✿ **Level of Service A**, which is the highest level of service, describes a condition of free flow with low volumes. There is little or no restriction in maneuverability due to the presence of other vehicles and drivers can maintain their desired speeds with little or no delay. This occurs when vehicle progression is extremely favorable.
- ✿ **Level of Service B** represents a stable traffic flow with operating speeds beginning to be restricted somewhat by traffic conditions, although drivers still have reasonable freedom to select their speed and lane operations. This generally occurs with good vehicle progression.
- ✿ **Level of Service C**, which is normally utilized for design purposes, describes a stable condition of traffic operation. It entails moderately restricted movements due to higher traffic volumes, but flow conditions are not objectionable for motorists.
- ✿ **Level of Service D**, which is acceptable for traffic operation in urban environments and during peak hours of traffic flow, reflects a more restrictive movement for motorists. Queues and delays may occur during short peaks, but lower demands occur often enough to permit clearance of developing queues, thus preventing excessive backup. At Level of Service D, the influence of congestion becomes more noticeable.
- ✿ **Level of Service E** is defined as the actual capacity of the roadway and involves delay to all motorists due to congestion. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor vehicle progression.
- ✿ **Level of Service F**, the lowest level of service, is described as forced flow and is characterized by volumes greater than the roadway capacity. Under this service condition, complete congestion occurs. In an extreme case, the volume passing a given point drops to zero. This is considered unacceptable travel operation.

Signalized Intersections

Levels of Service at signalized intersections are defined in terms of average stopped delay duration for the intersection as a whole. Here, delay is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. More specifically, level of service criteria for signalized intersections are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period. These criteria are furnished in the *Highway Capacity Manual*.

Delay may be measured in the field, but is usually estimated using procedures presented in the *Highway Capacity Manual*. Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the volume/capacity (v/c) ratio for the lane group or approach of interest. On the basis of these delay values, signalized intersection levels of service are defined in the following paragraphs and presented in Table 1:

- ✿ **Level of Service A** - Describes operations with very low control delay, up to 10 seconds per vehicle. This LOS occurs when progression is extremely favorable, and when most vehicles arrive during the green phase. In fact, most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
- ✿ **Level of Service B** - Describes operations with CONTROL delay in the range of 10.1 to 20.0 seconds per vehicle. This LOS generally occurs with good progression and/or short cycle lengths. More vehicles stop than under LOS A conditions, causing higher levels of delay.
- ✿ **Level of Service C** - Describes operations with control delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delay values may result from fair progression and/or longer cycle lengths, and individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this service condition, although many still pass through the intersection without stopping.
- ✿ **Level of Service D** - Describes operations with control delay in the range of 35.1 to 55.0 seconds per vehicle. At level of service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping steadily declines. Individual cycle failures also become more noticeable.
- ✿ **Level of Service E** - Describes operations with control delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures occur frequently under LOS E conditions.

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- ✿ **Level of Service F** - Describes operations with control delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation of the intersection, i.e., when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

Table 1 Level Of Service Definitions Signalized Intersections		
Level Of Service	Vehicle Delay (Seconds)	Description
A	<10.0	Free Flow/Insignificant Delays: No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.
B	10.1-20.0	Stable Operation/Minimal Delays: An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles
C	20.1-35.0	Stable Operation/Acceptable Delays: Major approach phases fully utilized. Most drivers feel somewhat restricted.
D	35.1-55.0	Approaching Unstable/Tolerable Delays: Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly without excessive delays.
E	55.1-80.0	Unstable Operation/Significant Delays: Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
F	>80.0	Forced Flow/Excessive Delays: Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.

Unsignalized Intersections

Unsignalized intersections are evaluated using the criteria presented in the latest edition of the *Highway Capacity Manual*. All-way stop-controlled (AWSC) intersections require that every vehicle stop at the intersection before proceeding. This requirement provides a framework for studying traffic operations at AWSC intersections. Since each driver must stop, the judgment as to whether to proceed into the intersection is a function of the traffic conditions on the other approaches. If no traffic is present on the other

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approaches, a driver can proceed immediately after the stop is made. If there is traffic on one or more of the other approaches, a driver proceeds only after determining that there are no vehicles currently in the intersection (i.e., it is safe) and that it is his or her turn to proceed. For all-way stop-controlled intersections the overall intersection level of service is calculated, as delays are similar for all movements.

The level of service, of the two-way stop-controlled intersections, is evaluated using a different procedure also using the criteria presented in the latest edition of the *Highway Capacity Manual*. Capacity at two-way stop-controlled (TWSC) intersections depends on a clear description and understanding of the interaction of drivers on the minor or stop-controlled approach with drivers or vehicles on the major street. Both gap acceptance and empirical models have been developed as a means to describe this interaction.

For two-way stop-controlled intersections, the level of service is calculated for each movement that must yield to one or more of other movements. Total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position. The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation.

TWSC intersections assign the right of way among conflicting traffic streams according to a hierarchy described in the latest edition of the *Highway Capacity Manual*. Generally, the level of service at two-way stop-controlled intersections is defined as the level of service for the movement with the lowest level of service. For this report, both overall intersection and critical movement levels of service are calculated, however, only the lowest levels of service are presented. Level of Service criteria for unsignalized intersections is presented in Table 2.

Table 2 Level Of Service Criteria For Unsignalized Intersections	
Level Of Service	Control Delay (Sec/Veh)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Chapter 2

Existing Traffic Conditions

A comprehensive field study was conducted to observe traffic operations in the study area. As part of the field study, traffic operations and intersection lane configurations were collected and documented for the study intersections along the proposed roadway alignment of Medical Complex Drive, along FM 2920 and other major roadways in the study corridor. Additionally, existing signal timing for all the signalized intersections was collected. The existing intersection lane configurations are presented in Figures 2A and 2B. The signal timing data is presented in Appendix B of this report.

A total of 20 study area key signalized and unsignalized intersections were evaluated to determine existing traffic operations within the study corridor. Included in the 20 study intersections are a total of 4 unsignalized intersections. The locations of the unsignalized and signalized study intersections are presented in Tables 3 and 4, respectively.

Turning movement counts (TMC's) were conducted during the AM and PM peak periods, between the hours of 7:00 to 9:00 AM and 4:00 to 6:00 PM. Bi-directional 24-hour machine counts were conducted along Medical Complex Drive, S. Cherry Street, Agg Road, Hufsmith-Kohrville Road, Mahaffey Road, Colvert Road, and FM 2920.

Additionally, recent AM and PM peak hour as well as 24-hour traffic data, for several intersections and roadway segments along FM 2920, were obtained from H-GAC. The TMCs and 24-hour traffic count data for the study intersections are presented in Appendix A of this report.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

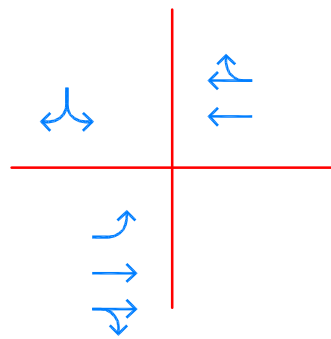
Table 3
Unsignalized Study Intersections
Medical Complex Drive – Traffic Study

Number #	Location
1	Medical Complex Drive @ Calvert Road
2	Medical Complex Drive @ SH 249 West Service Road
3	Medical Complex Drive @ SH 249 East Service Road
4	Medical Complex Drive (Mahaffey Road) @ FM 2920

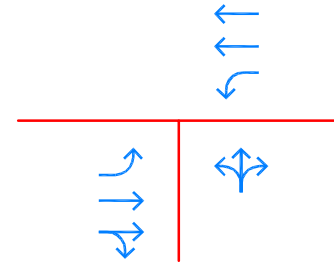
Table 4
Signalized Study Intersections
Medical Complex Drive – Traffic Study

Number #	Location
1	Medical Complex Drive @ Tomball Parkway
2	Calvert Road @ FM 2920
3	Wood Forest Drive / Lowe's - Tomball Center @ FM 2920
4	SH 249 West Service Road @ FM 2920
5	SH 249 East Service Road @ FM 2920
6	Tomball Parkway @ FM 2920
7	Joe B Street/ Buvinghausen Street @ FM 2920
8	Quinn Road/ Ella Street @ FM 2920
9	Holderrieth Boulevard @ FM 2920
10	Vernon Avenue @ FM 2920
11	Baker Drive @ FM 2920
12	Pine Street @ FM 2920
13	Cherry Street @ FM 2920
14	Concordia/Willow Street @ FM 2920
15	FM 2978/ Hufsmith Kohrville Road @ FM 2920
16	Park Rd @ FM 2920

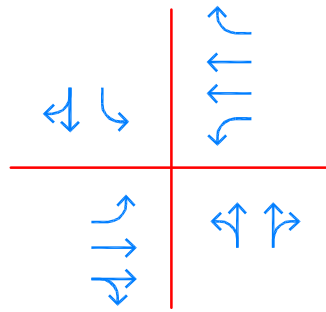
PARK RD @
FM 2920



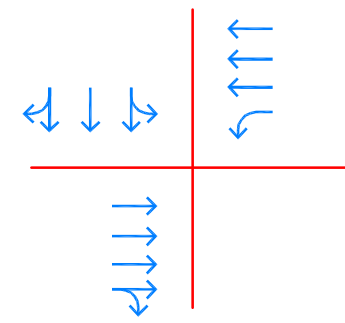
① CALVERT RD @
FM 2920



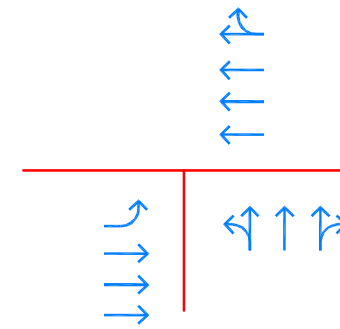
② WOOD FOREST DR/ LOWE'S TOMBALL
CENTER @ FM 2920



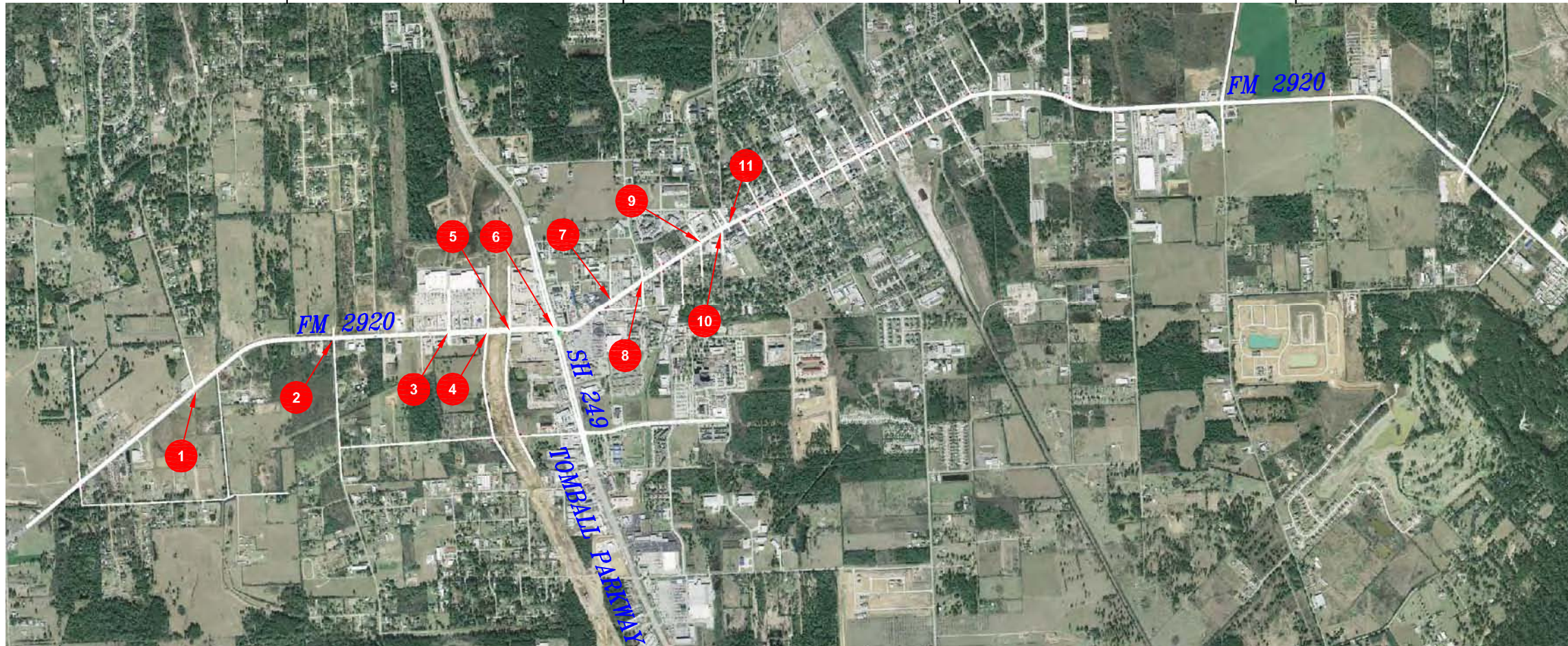
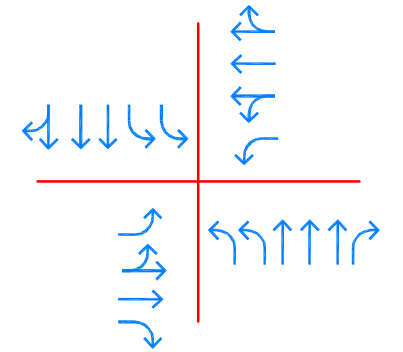
③ SH249 WSR @
FM 2920



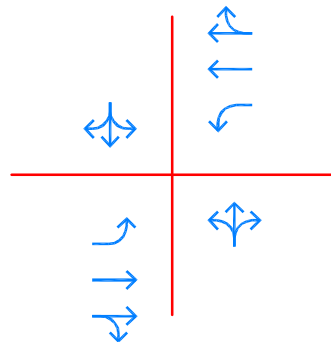
④ SH 249 ESR @
FM 2920



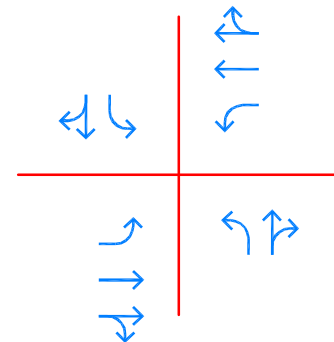
⑤ TOMBALL PARKWAY @
FM 2920



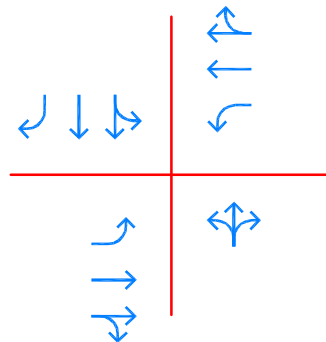
⑦ JOE B ST/ BUVINGHAUSEN ST @
FM 2920



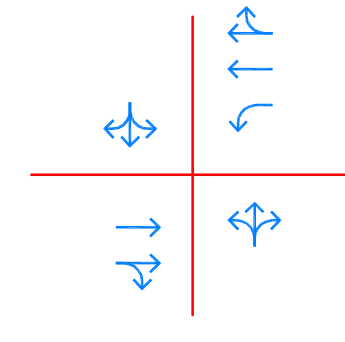
⑧ QUINN RD/ ELLA ST @
FM 2920



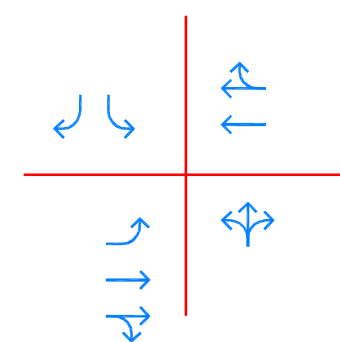
⑨ HOLDERRIETH BLVD @
FM 2920



⑩ VERNON AVE @
FM 2920



⑪ BAKER DR @
FM 2920



LEGEND

- DIRECTION
- LOCATION #



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CobbFendley

PROJECT NAME:

**TOMBALL MEDICAL
COMPLEX DRIVE
TRAFFIC STUDY**

SHEET TITLE:

**EXISTING CONDITION
LANE CONFIGURATION
FIGURE - 2A**

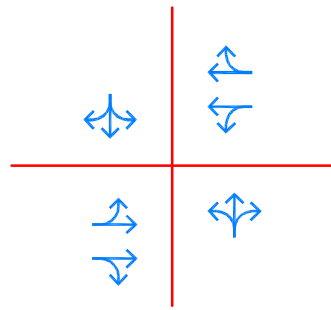
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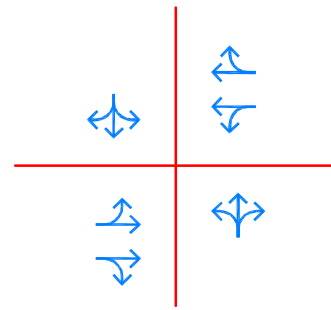
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14

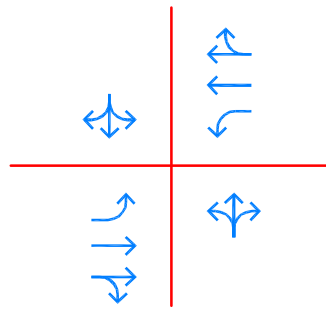
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FM 2920



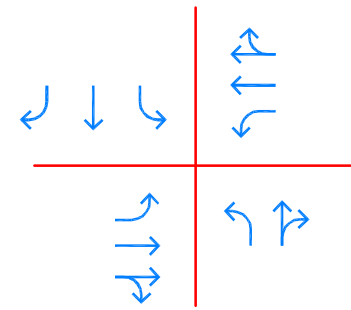
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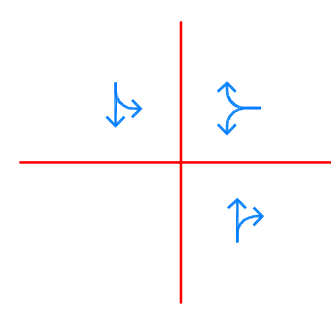
13 CONCORDIA/ WILLOW ST @
FM 2920



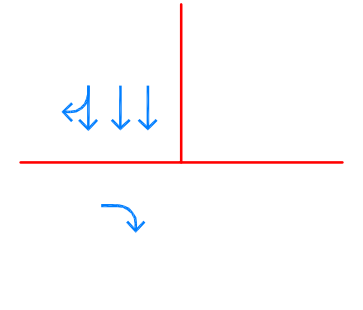
14 FM 2978/ HUFSMITH KOHRVILLE RD
@ FM 2920



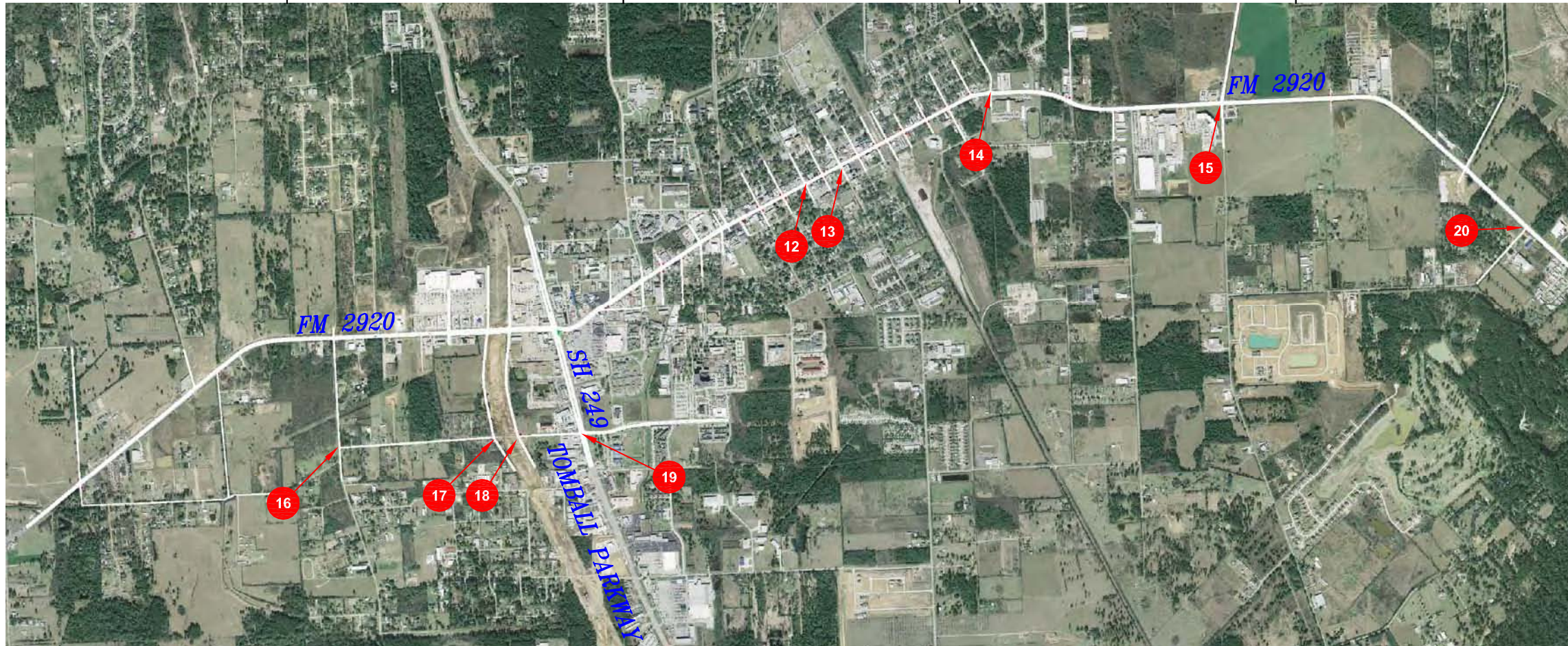
15 CALVERT RD @
MEDICAL COMPLEX DR



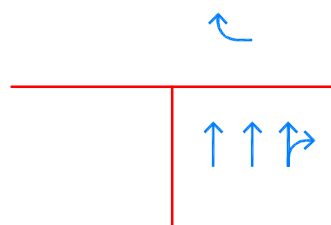
16 SH 249 WSR @
MEDICAL COMPLEX DR



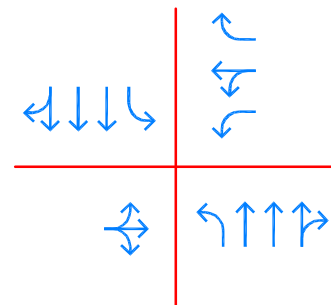
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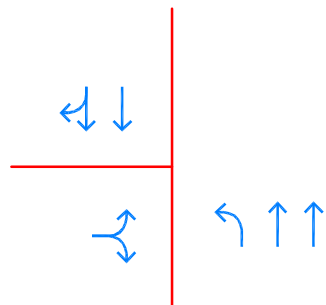
18 SH 249 ESR @
MEDICAL COMPLEX DR



19 TOMBALL PARKWAY @
MEDICAL COMPLEX DR



20 MAHAFFEY RD/ MEDICAL
COMPLEX DR @ FM 2920



20

LEGEND

- DIRECTION
- LOCATION #



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CobbFendley

PROJECT NAME:

**TOMBALL MEDICAL
COMPLEX DRIVE
TRAFFIC STUDY**

SHEET TITLE:

**EXISTING CONDITION
LANE CONFIGURATION
FIGURE - 2B**

GCI PROJ. NO.:
08022-00

DATE:
FEB., 2009

SHEET NO.

15

Existing Levels of Service

Existing levels of service for the analysis intersections were calculated using the SYNCHRO software in accordance with the procedures set forth and recommended by the *Highway Capacity Manual (HCM)* level of service methodology for evaluation of signalized and unsignalized intersections. Utilizing the existing traffic data for the study intersections, the existing AM and PM peak hour levels of service for the study intersections were calculated.

The existing AM and PM peak hour Levels of Service of the unsignalized intersections is summarized in Table 5, while detailed level of service analyses for the unsignalized intersections are included in Appendix C of this report. Existing AM and PM peak volumes are presented in Figures 3 and 4, respectively.

For the unsignalized intersections, Level of Service represents the worst approach. As shown in Table 5, with the exception of the Medical Complex Drive (Mahaffey Road) at FM 2920 intersection (presently operating at Level of Service E during PM peak hours), all the other unsignalized intersections are presently operating at acceptable Levels of Service of C or better during the AM and PM peak hours.

Table 5				
LOS of Unsignalized Study Intersections - Existing Conditions (2008)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	Worst Approach LOS	Delay (s/v)	Worst Approach LOS	Delay (s/v)
Medical Complex Drive @ Calvert Rd.	A	9.2	A	9.5
Medical Complex Drive @ SH 249 WSR	A	9.3	A	8.7
Medical Complex Drive @ SH 249 ESR	A	9.1	B	10
Medical Complex Drive/FM 2920	C	22.1	E	38.4
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				
Level of Service represents the worst approach of the intersection				

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

The existing AM and PM peak hour Levels of Service of the signalized intersections within the study corridor are summarized in Table 6, while detailed level of service analyses for the project are included in Appendix C of this report. As shown in Tables 6, with the exception of the intersections of FM 2920 with Tomball Parkway and Cherry Street and Hufsmith-Kohrville Road (presently operating at Levels of Service E or F), all the other signalized intersections are presently operating at acceptable Levels of Service of D or better during the AM and PM peak hours.

Table 6				
LOS of Signalized Study Intersections - Existing Conditions (2008)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex Dr. @ Tomball Parkway	C	22.4	D	39.4
Calvert Road @ FM 2920	A	4.9	A	4.2
Wood Forest Drive @ FM 2920	B	12.2	C	20.4
SH 249 WSR @ FM 2920	C	24.4	B	16.2
SH 249 ESR @ FM 2920	B	16.1	C	23.7
Tomball Parkway @ FM 2920	F	183.2	E	71.7
Buvinghausen Street @ FM 2920	A	7.5	A	9.9
Quinn Road @ FM 2920	B	12.7	B	17.4
Holderrieth Boulevard @ FM 2920	C	21.4	C	21
Vernon Avenue @ FM 2920	C	22.2	B	19.6
Baker Drive @ FM 2920	B	15.9	C	23.3
Pine Street @ FM 2920	A	4.6	A	7.4
Cherry Street @ FM 2920	E	65.6	E	58.4
Willow Street @ FM 2920	C	34.5	C	30.2
Hufsmith-Kohrville Road @ FM 2920	E	61.6	E	61.2
Park Rd @ FM 2920	A	8.0	A	9.4
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				

Figure 3A
Existing Condition (AM Peak TMC's)

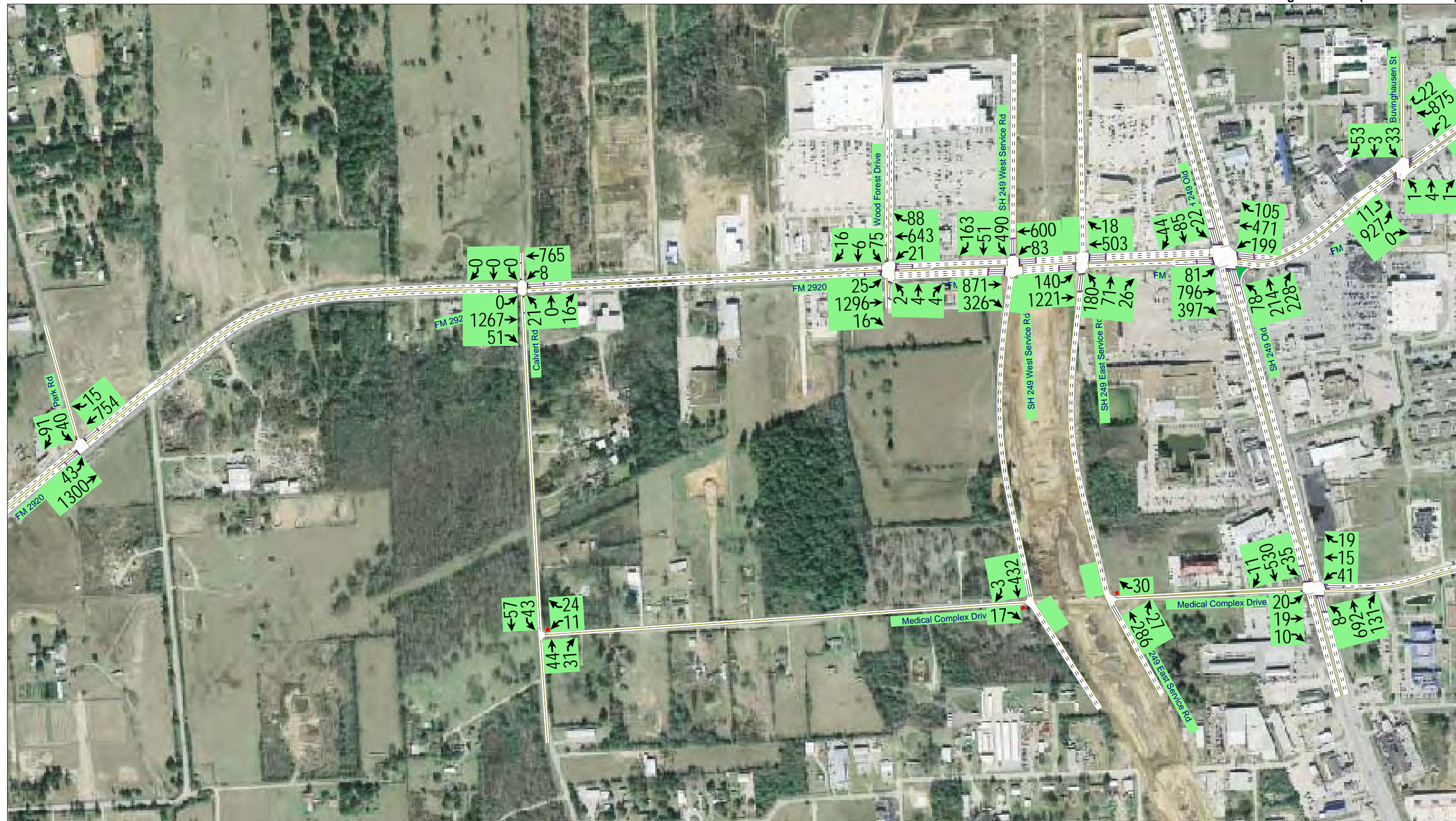


Figure 3B
Existing Condition (AM Peak TMC's)



Figure 3C
Existing Condition (AM Peak TMC's)

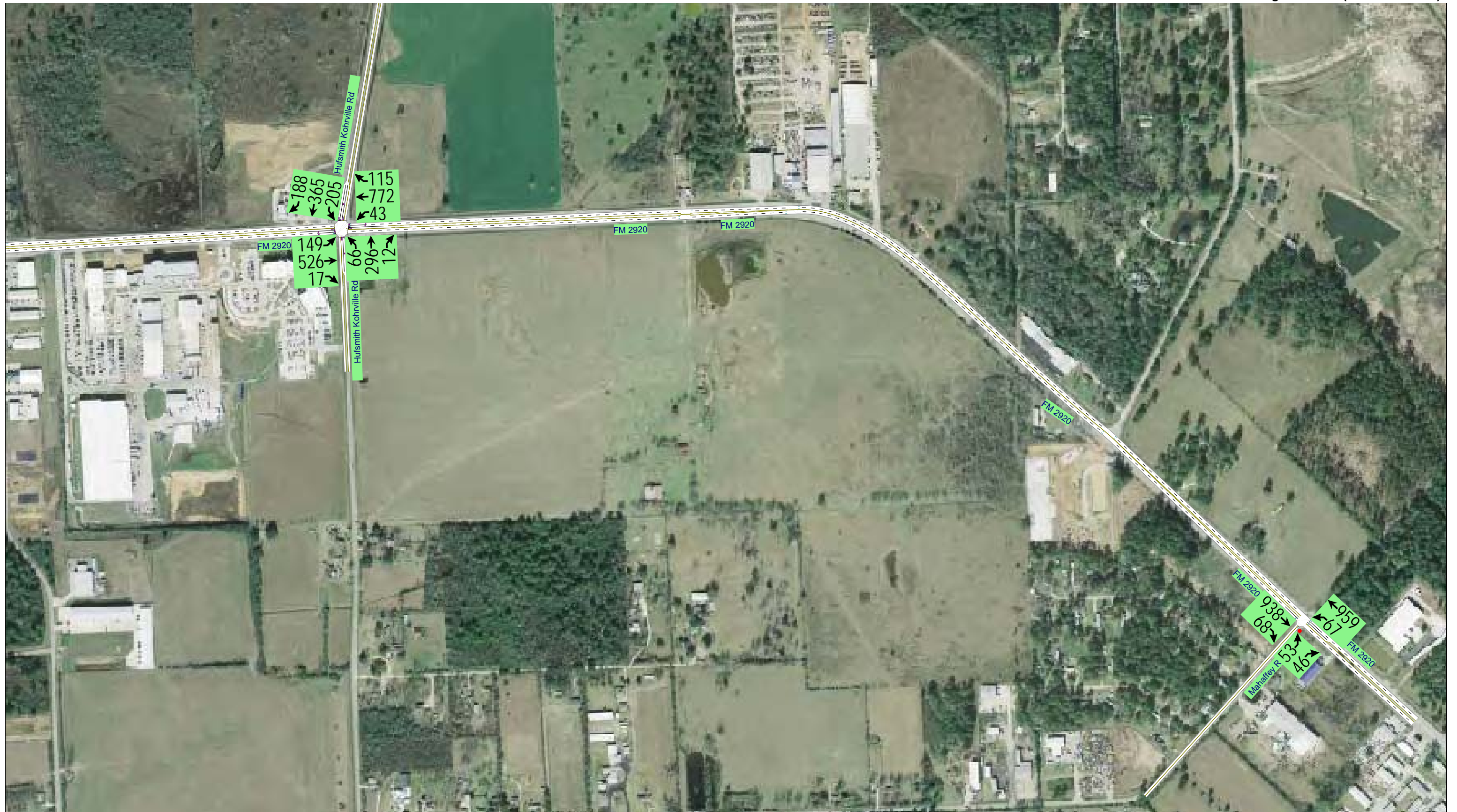


Figure 4A
Existing Condition (PM Peak TMC's)

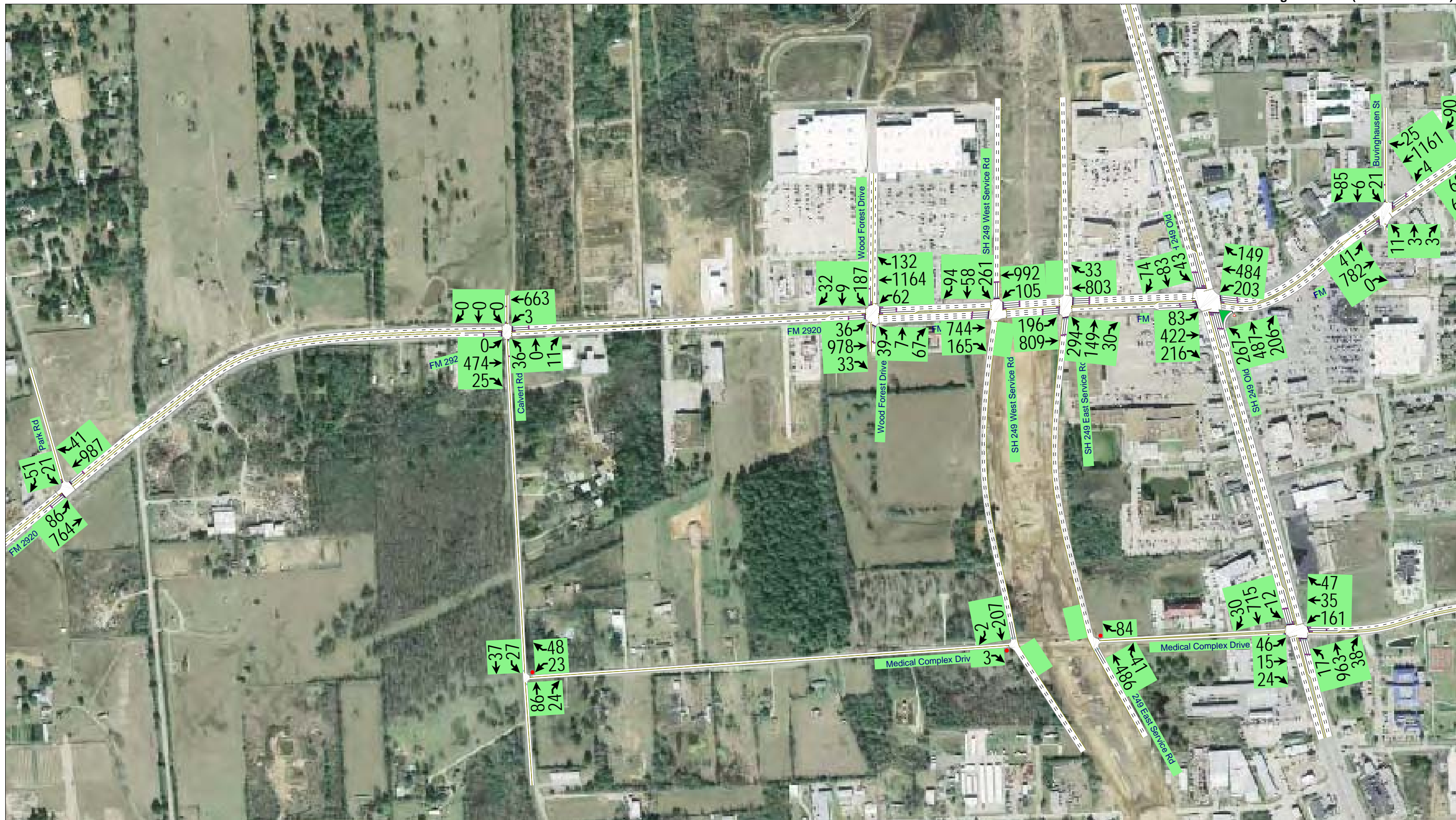


Figure 4B
Existing Condition (PM Peak TMC's)

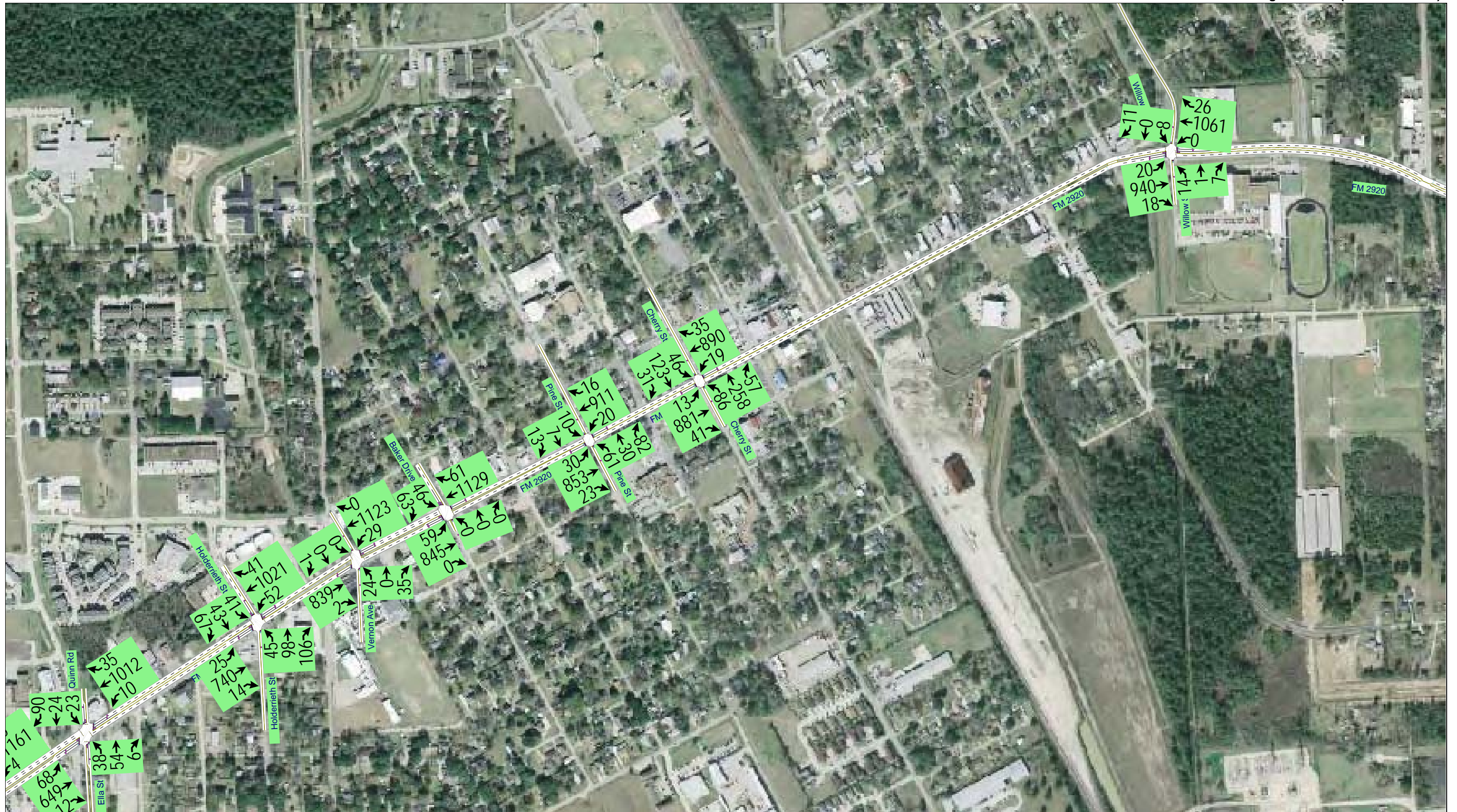
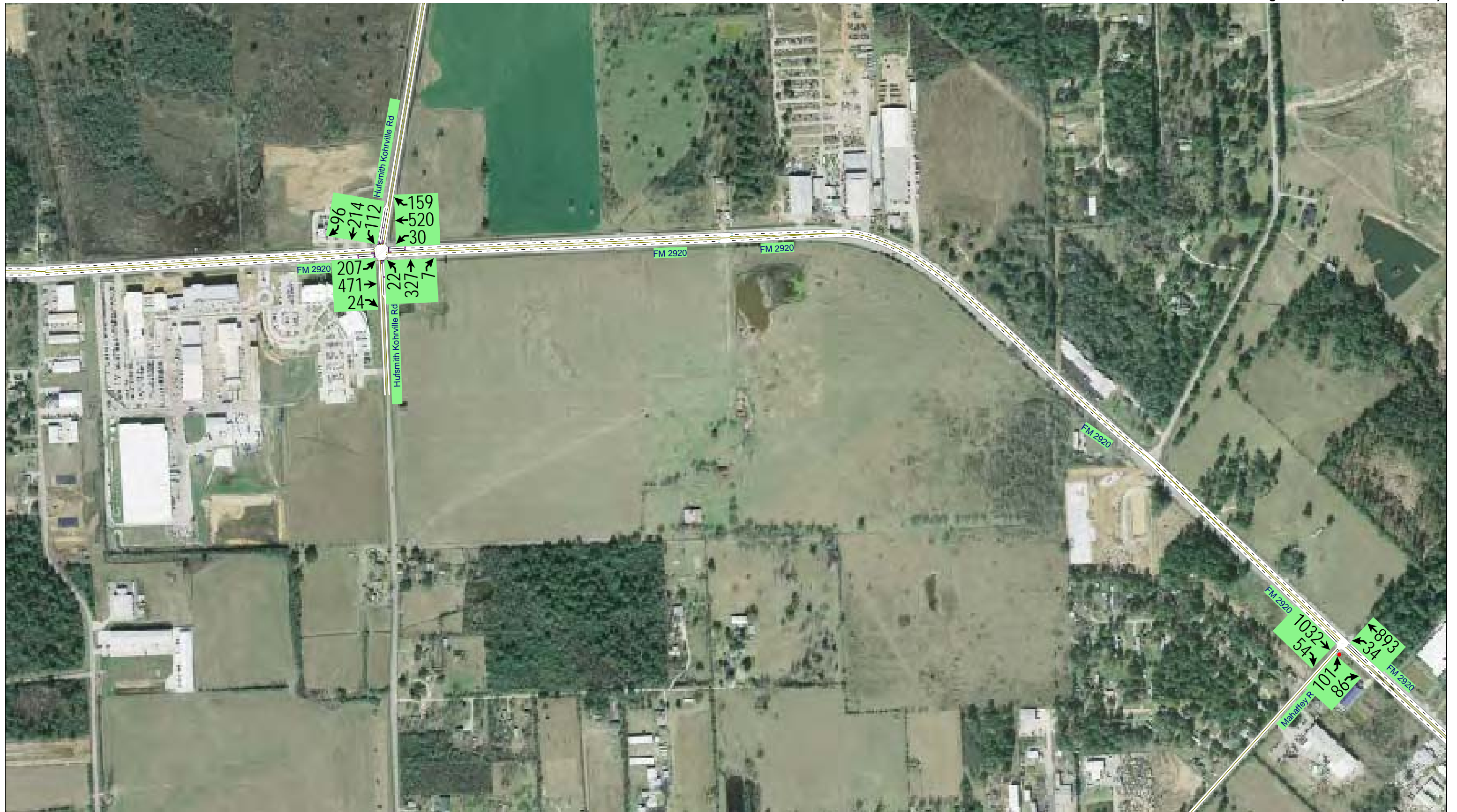


Figure 4C
Existing Condition (PM Peak TMC's)



Chapter 3

Year 2011 No-Build Traffic Conditions

Projection of Future Traffic Conditions

Anticipated future Years 2011 and 2035 traffic conditions, for the two scenarios of Build and No-Build, were projected based on the anticipated growth rates and the GIS Shape Files obtained from Houston Galveston Area Council (H-GAC).

The Shape Files and growth rates were used to obtain the projected AM and PM peak hour traffic data for both No-Build and Build scenarios, for the Years 2011 and 2035 traffic conditions. Separate annual growth rates were computed for FM 2920, Medical Complex Drive, as well as all the streets intersecting FM 2920 and Medical Complex Drive in the study corridor.

The following paragraphs describe the anticipated traffic conditions for the two scenarios of Build and No-Build, for the analysis Years 2011 and 2035. The following analyses take into consideration the impacts of the anticipated traffic diversion and re-circulation on the roadway system within the study corridor.

Year 2011 No-Build Traffic Conditions - Levels of Service Analysis

Year 2011 No-Build traffic condition levels of service for the analysis intersections were calculated using the SYNCHRO software in accordance with the procedures set forth and recommended by the *Highway Capacity Manual (HCM)* level of service methodology for evaluation of signalized and unsignalized intersections. The existing volumes were projected to the Year 2011 No-Build conditions. Utilizing the projected volumes, the

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Year 2011 No-Build conditions AM and PM peak hour levels of service for the study intersections were calculated.

Year 2011 AM and PM peak hour No-Build Levels of Service of the unsignalized study intersections is summarized in Table 7, while detailed level of service analyses for the unsignalized intersections is included in Appendix C of this report. Year 2011 AM and PM peak hour No-Build volumes are presented in Figures 5 and 6, respectively.

For unsignalized intersections, Level of Service represents the worst approach of the intersection. As shown in Table 7, with the exception of the Medical Complex Drive (Mahaffey Road)/FM 2920 intersection (operating at Level of Service F, all the other unsignalized intersections would be operating at acceptable Levels of Service of B or better during the AM and PM peak hours.

Table 7 LOS of Unsignalized Study Intersections – No Build Conditions (2011) Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	Worst Approach LOS	Delay (s/v)	Worst Approach LOS	Delay (s/v)
Medical Complex Drive @ Calvert Rd.	A	9.3	A	9.7
Medical Complex Drive @ SH 249 WSR	A	9.4	A	8.8
Medical Complex Drive @ SH 249 ESR	A	9.2	B	10.2
Medical Complex Drive/FM 2920	E	41.7	F	172.2
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				
Level of Service represents the worst approach of the intersection				

Year 2011 AM and PM peak hour No-Build Levels of Service of the signalized study intersections is summarized in Table 8, while detailed level of service analyses for the project are included in Appendix C of this report. As shown in Tables 8, with the exception of the intersections of FM 2920 with Tomball Parkway, Cherry Street, and Hufsmith-Kohrville Road (operating at Level of Service E or F), all the other signalized intersections would be operating at acceptable Levels of Service of D or better during the AM and PM peak hours.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Table 8
LOS of Signalized Study Intersections - No Build Conditions (2011)
Medical Complex Drive – Traffic Study

Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex Dr. @ Tomball Parkway	C	22.8	C	31.2
Calvert Road @ FM 2920	A	5.7	A	4.7
Wood Forest Drive @ FM 2920	B	16.8	C	23.4
SH 249 WSR @ FM 2920	C	25.4	B	16.7
SH 249 ESR @ FM 2920	B	16.4	C	24.1
Tomball Parkway @ FM 2920	F	330.1	F	167.9
Buvinghausen Street @ FM 2920	A	7.7	B	10.5
Quinn Road @ FM 2920	B	13.2	B	18.3
Holderrieth Boulevard @ FM 2920	C	22.9	C	22.6
Vernon Avenue @ FM 2920	C	27.3	A	8.3
Baker Drive @ FM 2920	B	18.2	B	11.3
Pine Street @ FM 2920	A	5.5	A	8.6
Cherry Street @ FM 2920	F	102.6	E	74.8
Willow Street @ FM 2920	D	45.3	D	39.1
Hufsmith-Kohrville Road @ FM 2920	F	87.2	F	71.9
Park Road @ FM 2920	A	9.7	B	10.8
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				

Figure 5A
2011 No-Build Condition (AM Peak TMC's)



Figure 5B
2011 No-Build Condition (AM Peak TMC's)

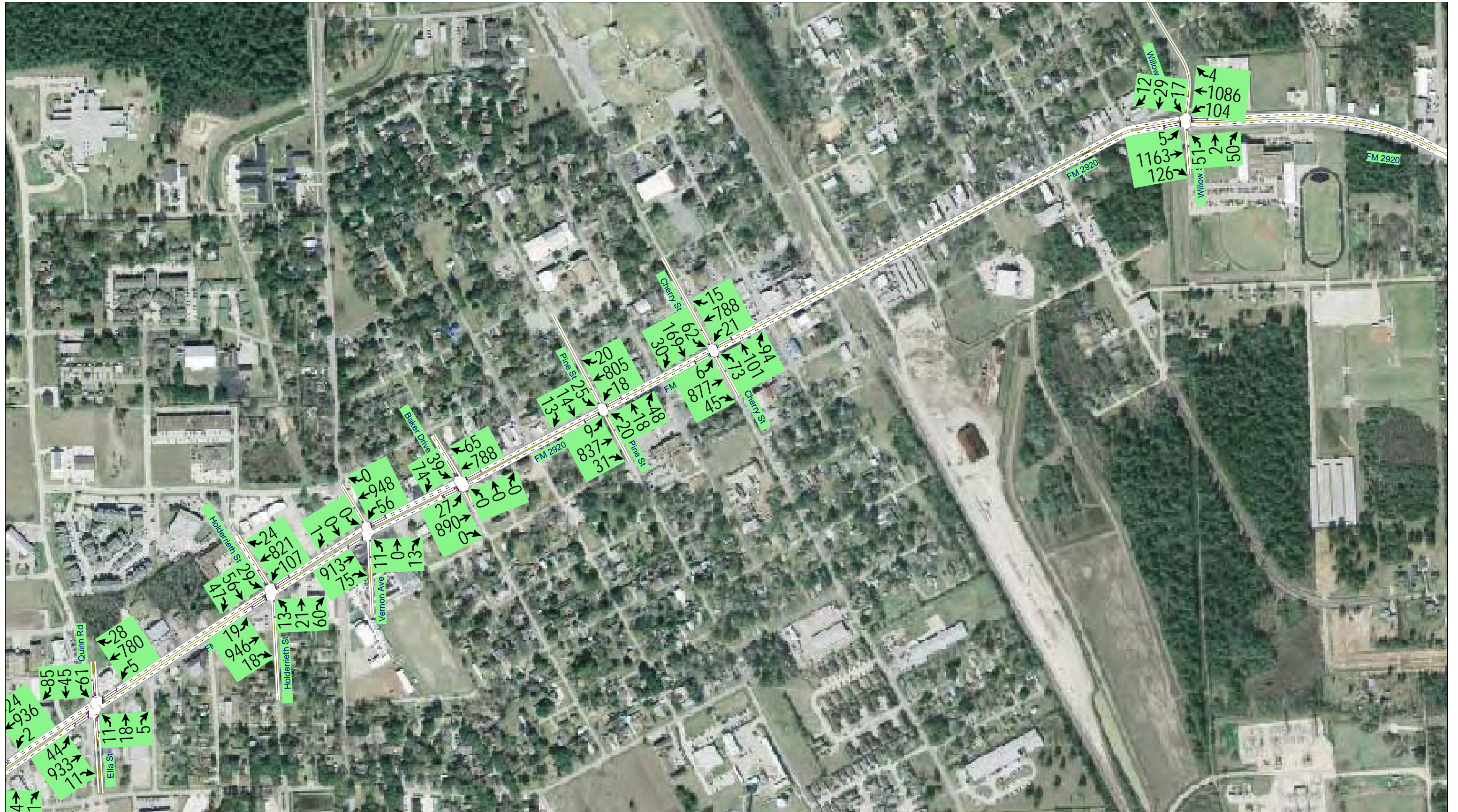


Figure 5C
2011 No-Build Condition (AM Peak TMC's)

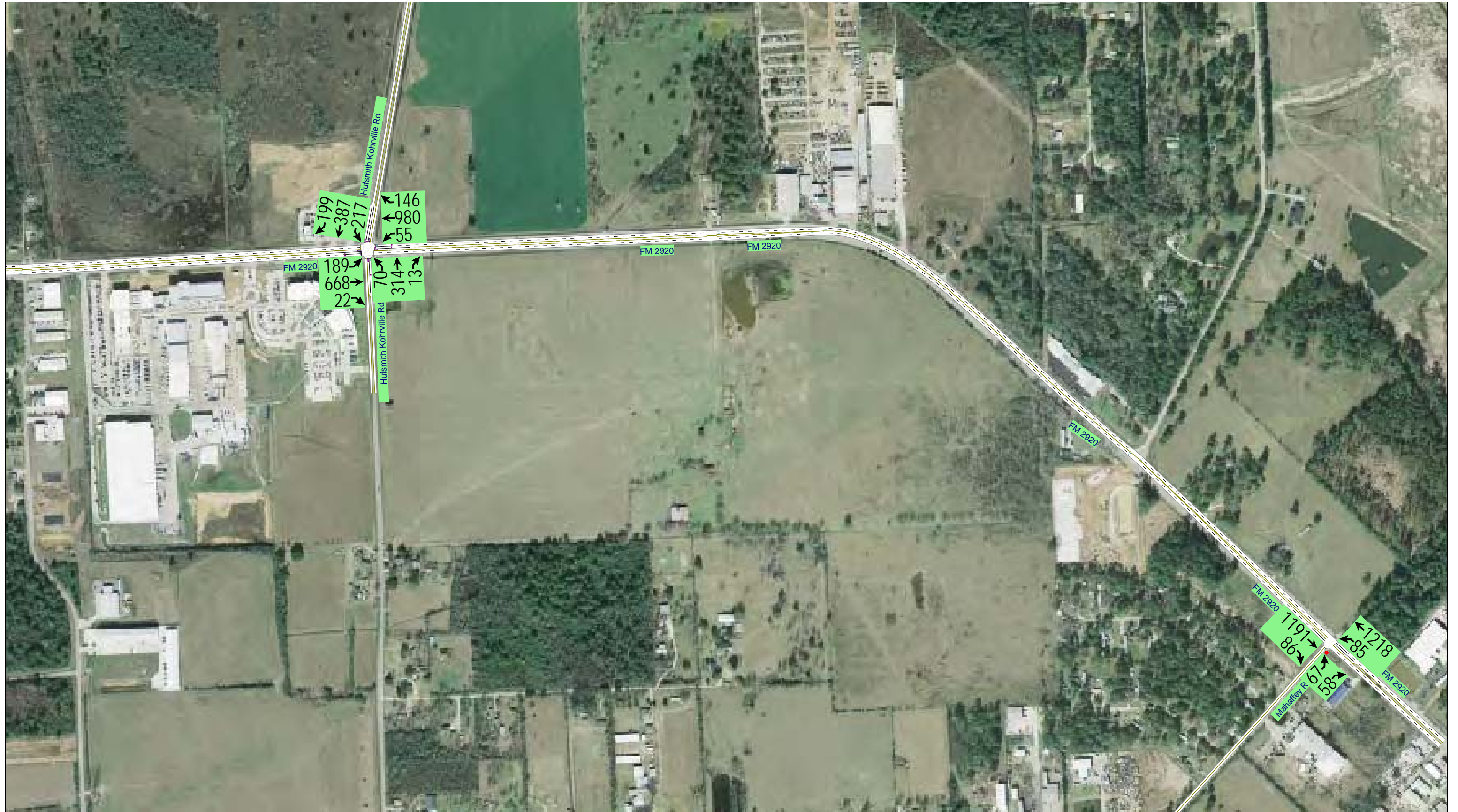


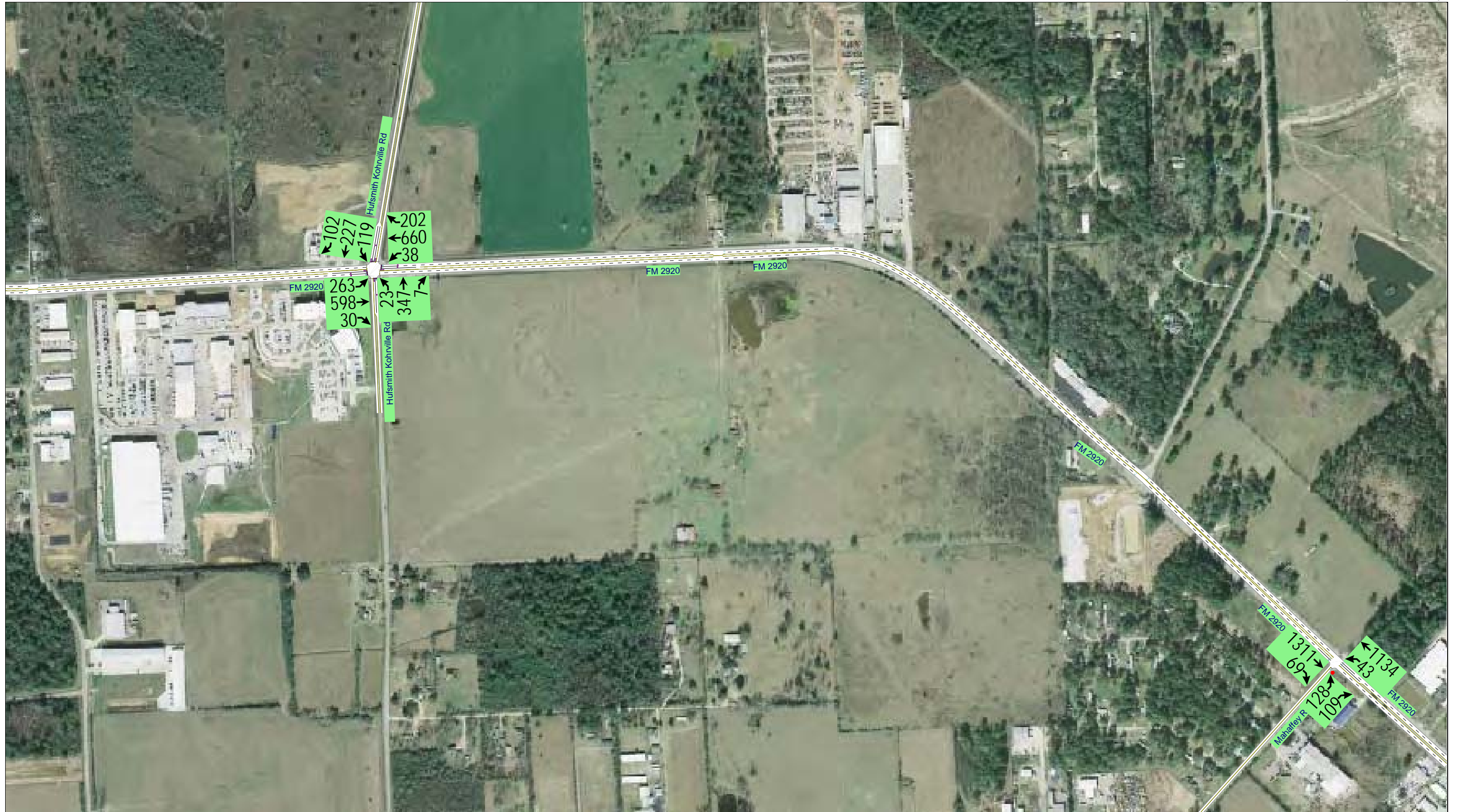
Figure 6A
2011 No-Build Condition (PM Peak TMC's)



Figure 6B
2011 No-Build Condition (PM Peak TMC's)



Figure 6C
2011 No-Build Condition (PM Peak TMC's)



Chapter 4

Year 2035 No-Build Traffic Conditions

Year 2035 AM and PM peak hour No-Build traffic conditions levels of service for the analysis intersections were calculated using the SYNCHRO software in accordance with the procedures set forth and recommended by the *Highway Capacity Manual (HCM)* level of service methodology for evaluation of signalized and unsignalized intersections.

The existing volumes were projected to the Year 2035 No-Build traffic conditions. Utilizing the projected traffic volumes, the Year 2035 levels of service for the AM and PM peak hour traffic conditions were calculated for the Year 2035 No-Build conditions.

Year 2035 No-Build condition AM and PM peak hour Levels of Service for the unsignalized intersections is summarized in Table 9, while detailed level of service analyses for the unsignalized intersections is included in Appendix C of this report. Year 2035 No-Build conditions AM and PM peak volumes are presented in Figures 7 and 8, respectively.

As shown in Table 9, with the exception of the Medical Complex Drive (Mahaffey Road)/FM 2920 intersection (operating at Level of Service F during the peak hours), all other unsignalized intersections would be operating at acceptable Levels of Service B or better during the AM and PM peak hours.

Anticipated Year 2035 levels of service for the AM and PM peak hours for the No-Build traffic conditions for the signalized intersections are summarized in Table 10, while detailed level of service analyses for the project are included in Appendix C of this report. As presented in Table 10, by the Year 2035 and under the No Build scenario, all the signalized study intersections would be operating at Level of Services F.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Table 9 LOS of Unsignalized Study Intersections - No Build Conditions (2035) Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	Worst Approach LOS	Delay (s/v)	Worst Approach LOS	Delay (s/v)
Medical Complex Drive @ Calvert Road	B	10.0	B	11.2
Medical Complex Drive @ SH 249 WSR	B	10.1	A	9.0
Medical Complex Drive @ SH 249 ESR	A	9.9	B	13.3
Medical Complex Drive/FM 2920	F	463.3	F	227.7
Note: s/v - Seconds per vehicle LOS - Level of Service Level of Service represents the worst approach of the intersection				

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Table 10				
LOS of Signalized Study Intersections - No Build Conditions (2035)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex @ Tomball Parkway	C	29.6	F	161.4
Calvert Road @ FM 2920	F	154.7	A	8.4
Wood Forest Drive @ FM 2920	F	264.3	F	287.2
SH 249 WSR @ FM 2920	F	174.2	E	65.6
SH 249 ESR @ FM 2920	F	107.9	E	56.5
Tomball Parkway @ FM 2920	F	1482.9	F	890.8
Buvinghausen Street @ FM 2920	E	64.8	F	213.5
Quinn Road @ FM 2920	F	126.9	F	299.8
Holderrieth Boulevard @ FM 2920	F	326	F	355.3
Vernon Avenue @ FM 2920	F	88.7	F	391.1
Baker Drive @ FM 2920	C	33.5	F	457.1
Pine Street @ FM 2920	F	89.3	F	460.1
Cherry Street @ FM 2920	F	1090.9	F	951
Willow Street @ FM 2920	F	376.1	F	396.5
Hufsmith-Kohrville Road @ FM 2920	F	407.8	F	315.7
Park Road @ FM 2920	F	169.3	F	146.8
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				

Figure 7A
2035 No-Build Condition (AM Peak TMC's)



Figure 7B
2035 No-Build Condition (AM Peak TMC's)



Figure 7C
2035 No-Build Condition (AM Peak TMC's)

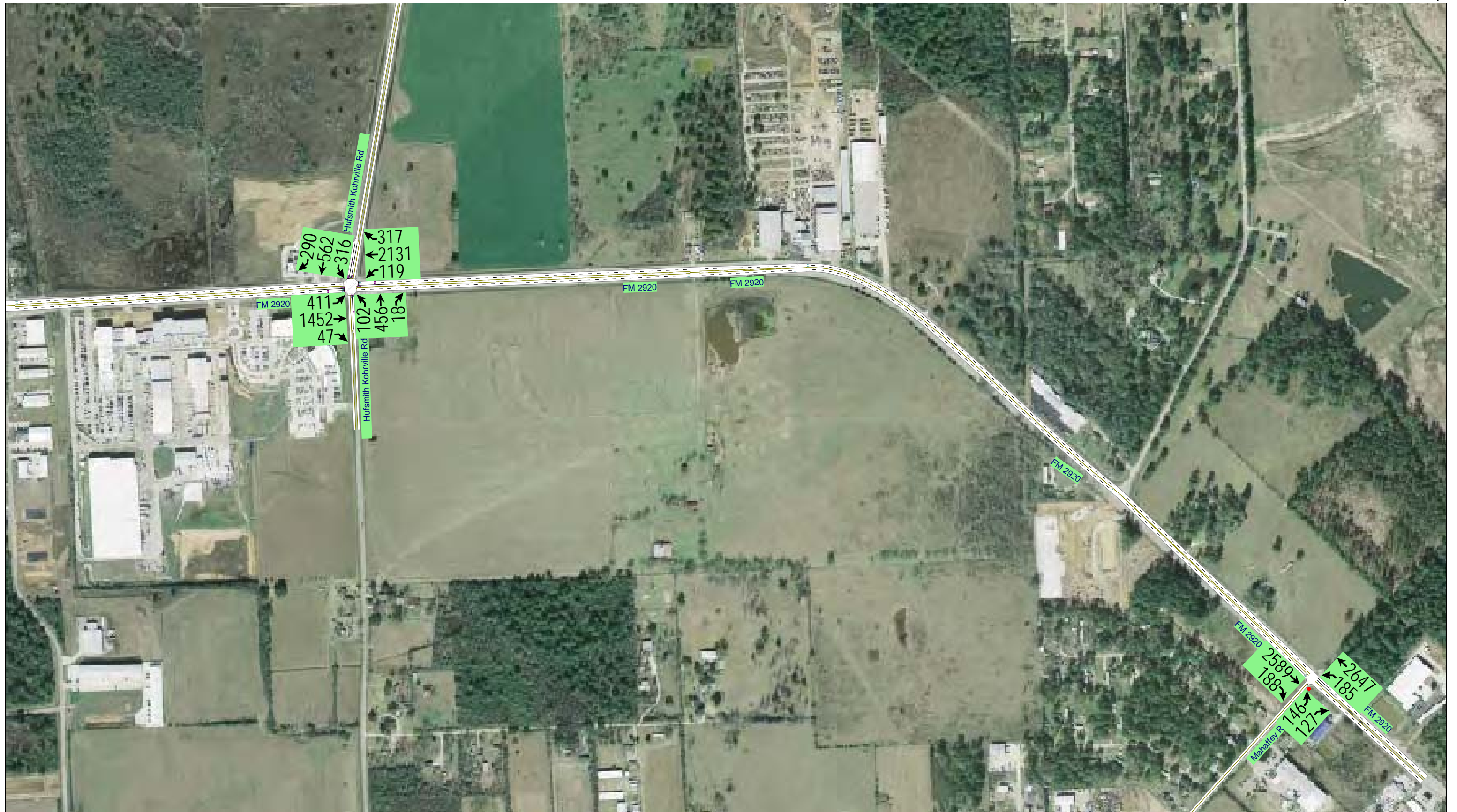


Figure 8A
2035 No-Build Condition (PM Peak TMC's)

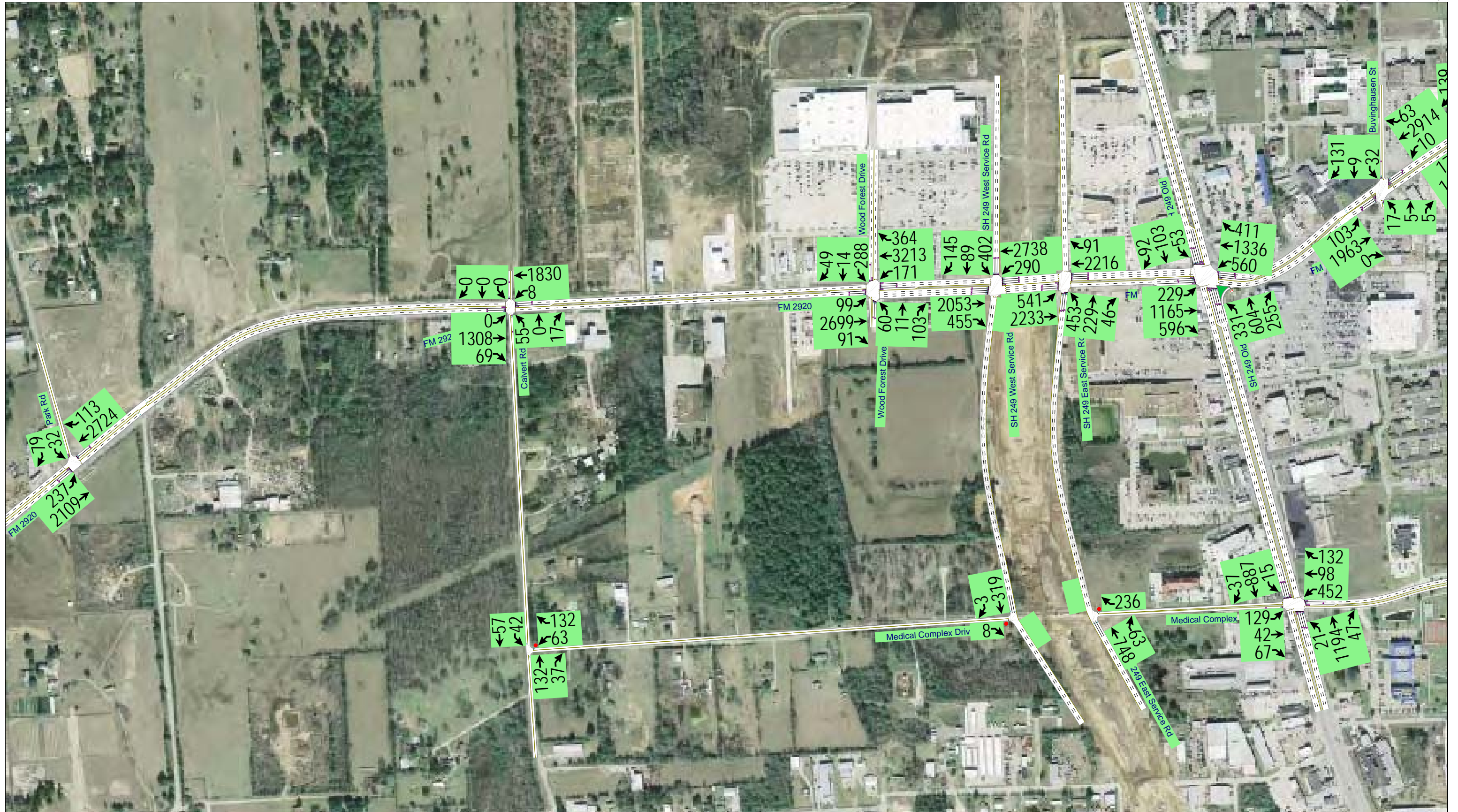
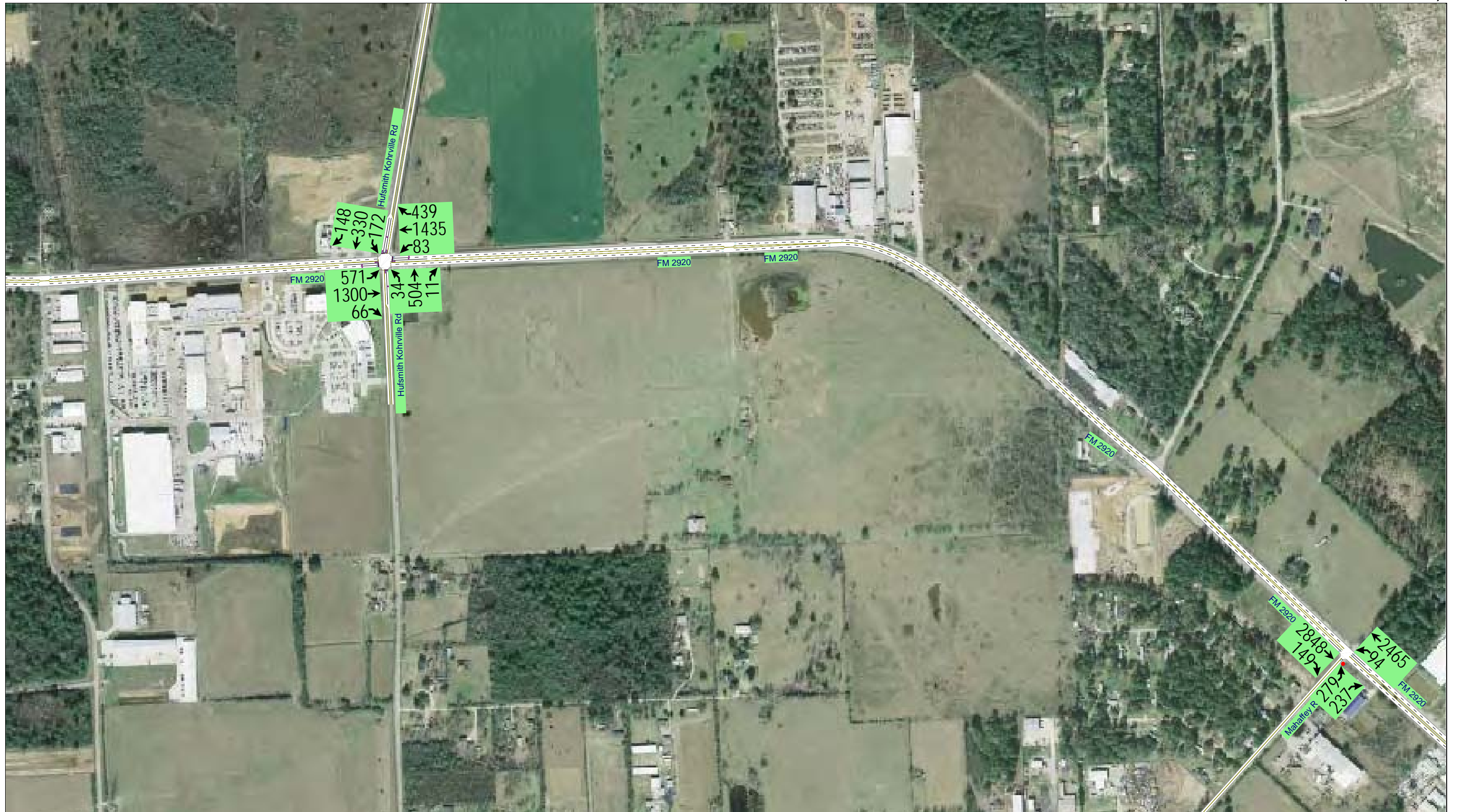


Figure 8B
2035 No-Build Condition (PM Peak TMC's)



Figure 8C
2035 No-Build Condition (PM Peak TMC's)



Chapter 5

Year 2011 Build Traffic Conditions

The proposed Medical Complex Drive will be an east-west oriented four-lane Boulevard, which will begin in the vicinity of the intersection of FM 2920 and Mahaffey Road and traversing west to the vicinity of the intersection of Park Road and FM 2920, in the City of Tomball, Texas. By the Year 2011, all the major intersections along the proposed Medical Complex Drive are anticipated to be signalized due to the projected heavy traffic volumes at the study intersections. The proposed Medical Complex Drive is presented in Figure 9 and the proposed lane configurations are presented in Figure 10.

Year 2011 Build condition levels of service for the analysis intersections were calculated using the SYNCHRO software in accordance with the procedures set forth and recommended by the *Highway Capacity Manual (HCM)* level of service methodology for evaluation of signalized intersections. The existing traffic volumes were projected based on the anticipated growth rates and the GIS Shape Files obtained from Houston Galveston Area Council (H-GAC). Utilizing the projected traffic volumes, the anticipated Year 2011 Build conditions levels of service for the AM and PM peak hours were calculated.

Year 2011 Build conditions AM and PM peak hour Levels of Service of the study intersections is summarized in Table 11, while detailed level of service analyses for all the study intersections is included in Appendix C of this report. Year 2011 Build condition AM and PM peak hour volumes are presented in Figures 11 and 12, respectively.

As presented in Table 11, with the exception of the intersection of Tomball Parkway at Medical Complex Drive (operating at Level of Service F), all the other study intersections along the proposed Medical Complex Drive, would be operating at acceptable Levels of Service D or better. Improvements to the intersection of Tomball

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

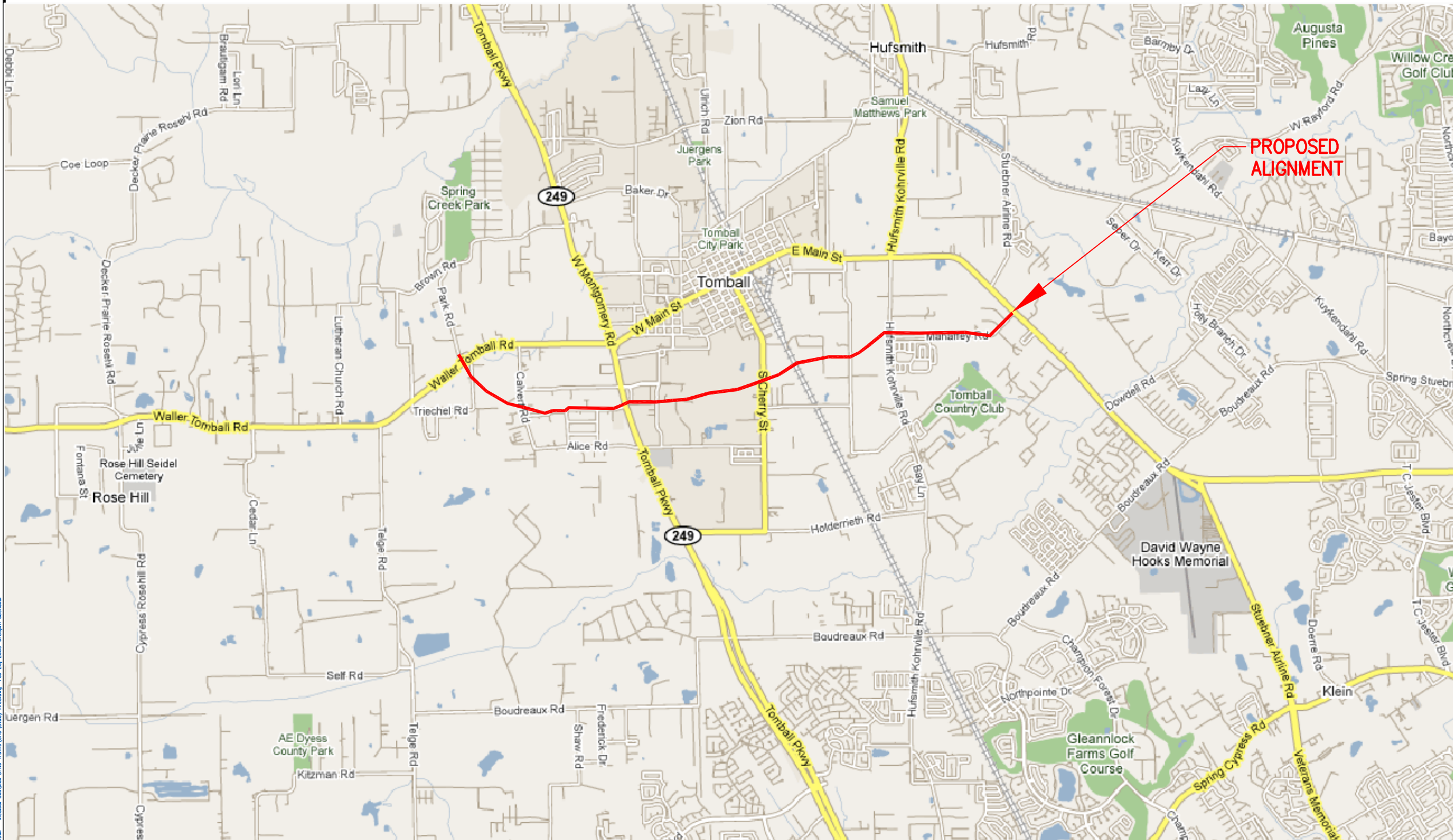
Parkway at Medical Complex Drive would be necessary to improve traffic operations and level of services at this intersection.

Additionally, the three intersections of FM 2920 with Tomball Parkway, Cherry Street and Hufsmith-Kohrville Road would be operating at levels of service E or F during AM or PM peak hours. Signal timing optimization at these intersections will improve levels of service to acceptable levels.

Table 11				
LOS of Study Intersections - Build Conditions (2011)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex Drive @ Calver Road	A	8.6	A	8.5
Medical Complex Drive @ SH 249 WSR	C	20.8	C	31.3
Medical Complex Drive @ SH 249 ESR	B	15.4	C	23.3
Medical Complex Drive @ Tomball Parkway	F	705.7	F	596
Medical Complex Drive @ South Cherry Street	A	9	A	9.4
Medical Complex Dr. @ Hufsmith Kohnville Rd	A	9.4	A	8.6
Medical Complex Dr. (Mahaffey) @ FM 2920	C	25.2	D	50.4
Medical Complex Drive - Park Road @ FM 2920	D	51.8	D	54.8
Calvert Road @ FM 2920	A	4.2	A	4.5
Wood Forest Drive @ FM 2920	B	10.9	C	20.5
SH 249 WSR @ FM 2920	C	21	B	14.8
SH 249 ESR @ FM 2920	B	15.3	C	22.8
Tomball Parkway @ FM 2920	F	87	D	45.9
Buvinghausen Street @ FM 2920	A	6.9	A	8.1
Quinn Road @ FM 2920	B	12.1	B	15.5
Holderrieth Boulevard @ FM 2920	B	16.9	B	16.1
Vernon Avenue @ FM 2920	A	4.6	A	7
Baker Drive @ FM 2920	A	5	A	8.8
Pine Street @ FM 2920	A	4.6	A	7.2
Cherry Street @ FM 2920	C	34.9	E	59.6
Concordia/Willow Street @ FM 2920	C	30	C	25.5
Hufsmith Kohrville Road @ FM 2920	E	58.3	E	59.7
Note:				
s/v - Seconds per vehicle				
LOS - Level of Service				



N.T.S.



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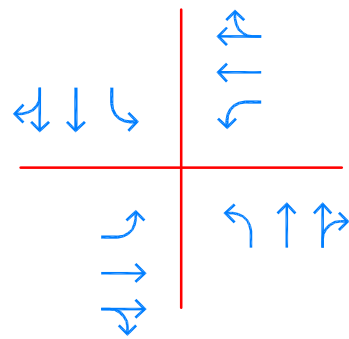
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COMPLEX DRIVE
TRAFFIC STUDY**

SHEET TITLE:
**FIGURE 9
PROPOSED
MEDICAL COMPLEX DRIVE
ALIGNMENT**

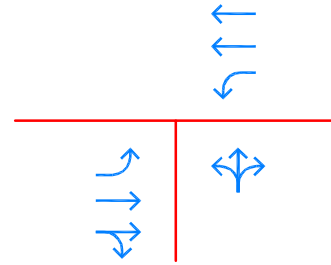
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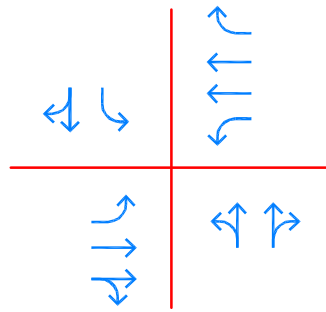
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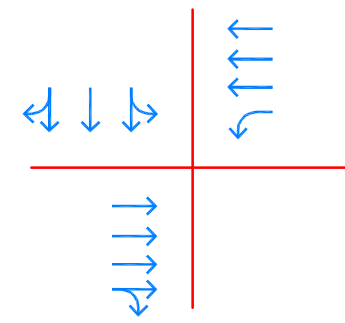
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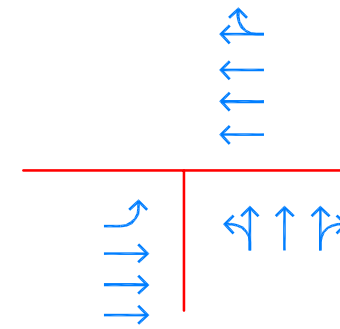
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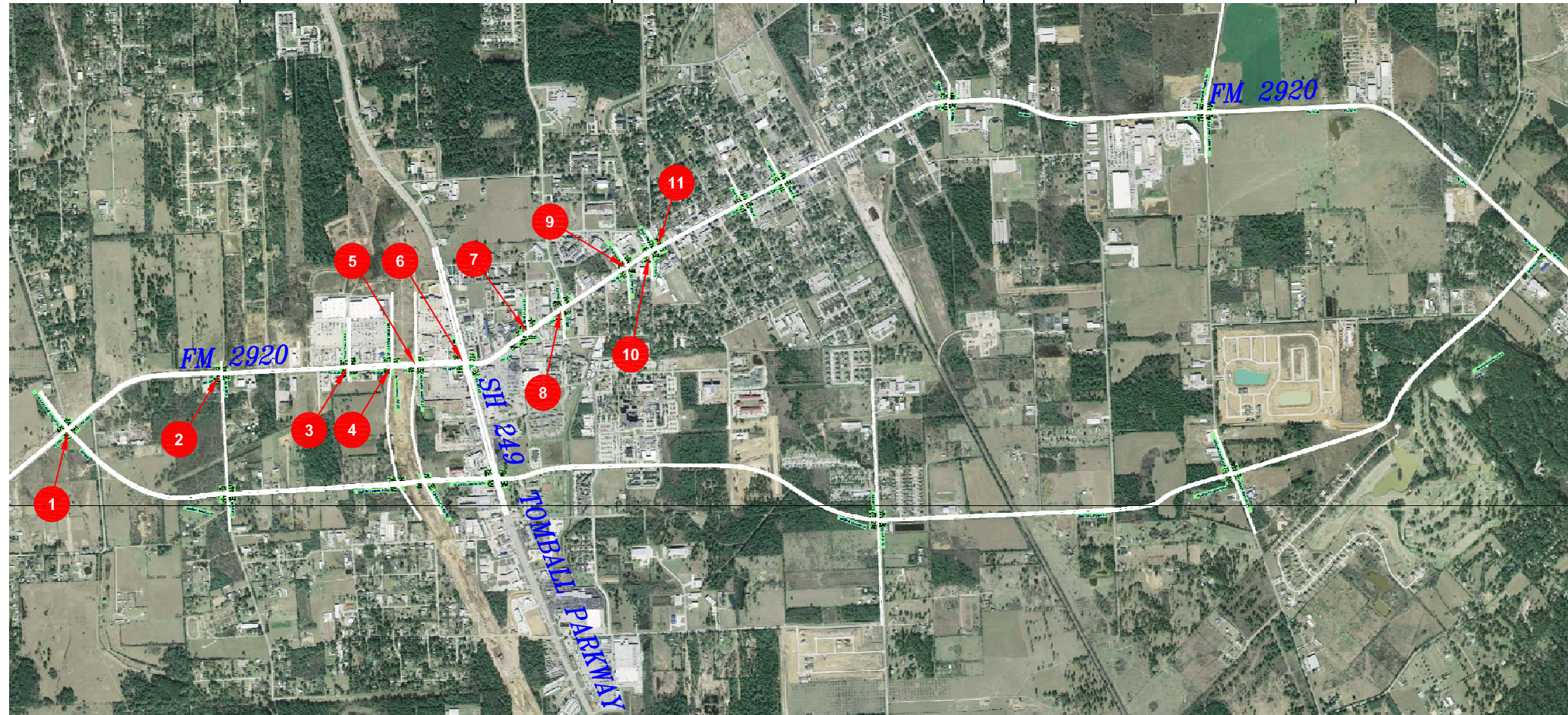
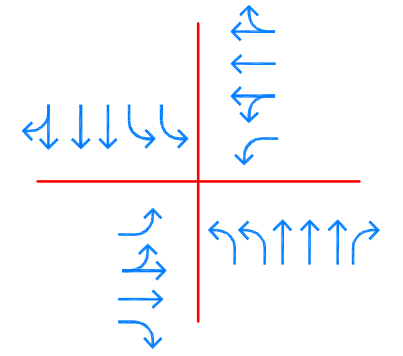
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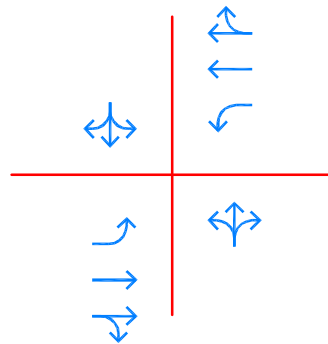
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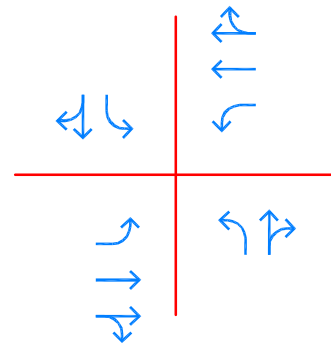
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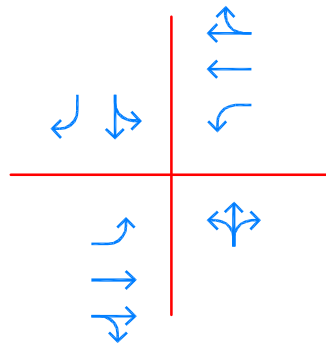
⑦ JOE B ST/ BUVINGHAUSEN ST @
FM 2920



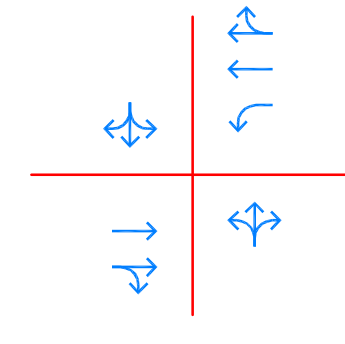
⑧ QUINN RD/ ELLA ST @
FM 2920



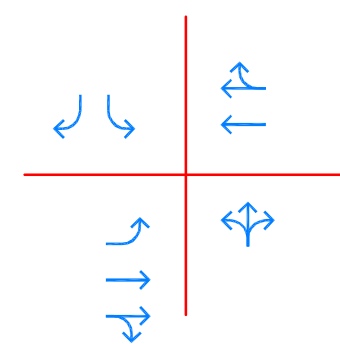
⑨ HOLDERRIETH BLVD @
FM 2920



⑩ VERNON AVE @
FM 2920



⑪ BAKER DR @
FM 2920



LEGEND

- DIRECTION
- LOCATION #



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CobbFendley

PROJECT NAME:

**TOMBALL MEDICAL
COMPLEX DRIVE
TRAFFIC STUDY**

SHEET TITLE:

**PROPOSED CONDITION
LAND CONFIGURATION
FIGURE - 10A**

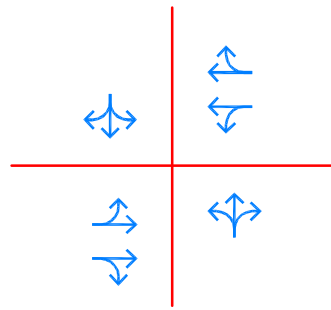
GCI PROJ. NO.:
08022-00

DATE:
FEB., 2009

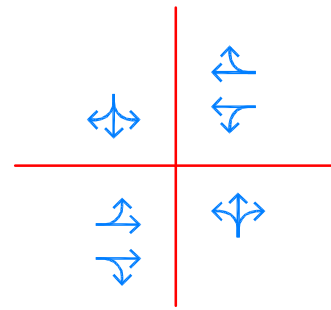
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45

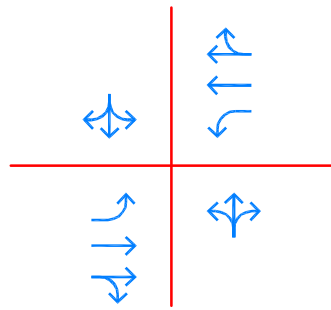
PINE ST @
FM 2920



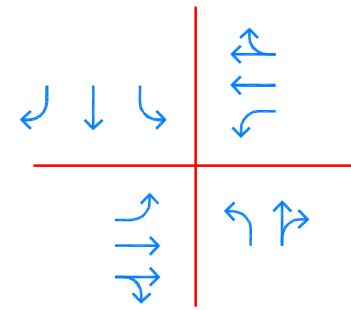
12 CHERRY ST @
FM 2920



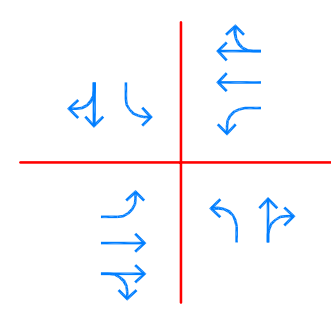
13 CONCORDIA/ WILLOW ST @
FM 2920



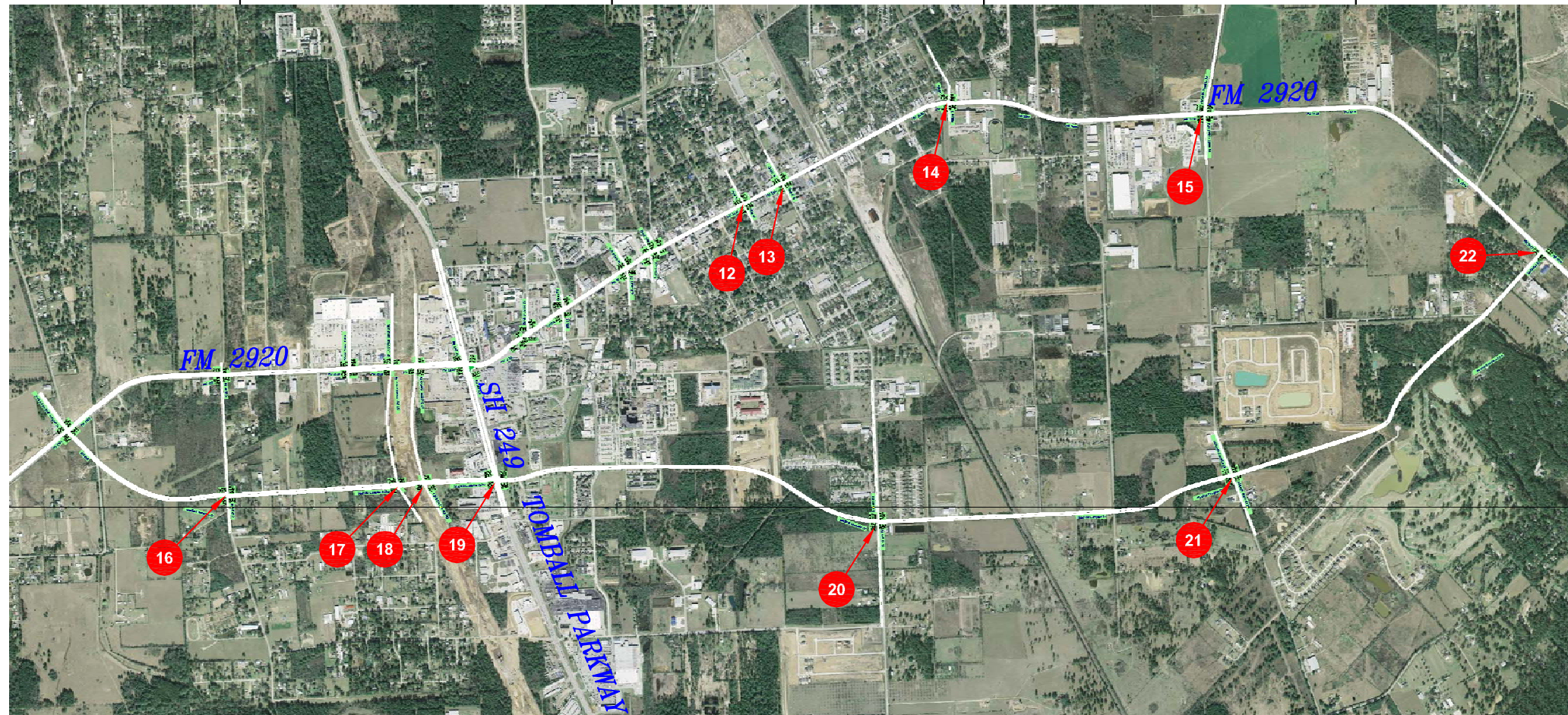
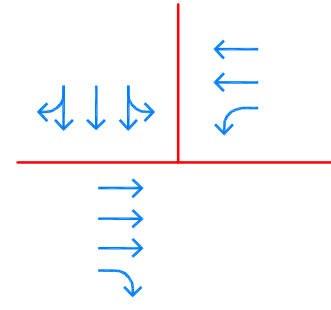
14 FM 2978/ HUFSMITH KOHRVILLE RD
@ FM 2920



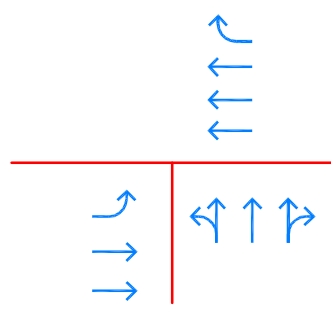
15 CALVERT RD @
MEDICAL COMPLEX DR



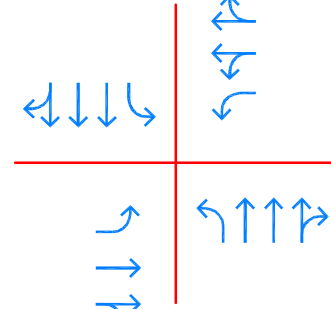
16 SH 249 WSR @
MEDICAL COMPLEX DR



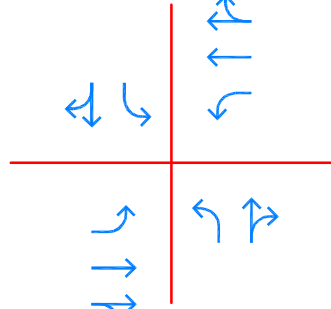
16 SH 249 ESR @
MEDICAL COMPLEX DR



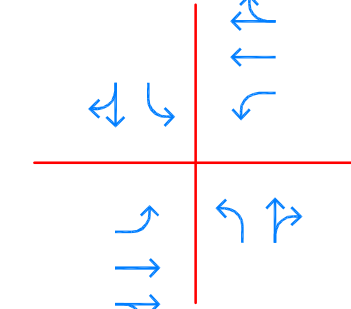
18 TOMBALL PARKWAY @
MEDICAL COMPLEX DR



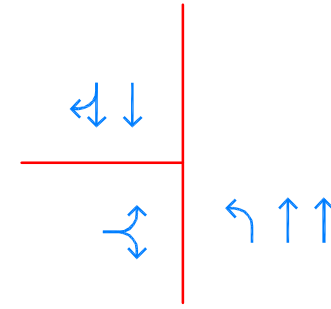
19 SOUTH CHERRY ST @
MEDICAL COMPLEX DR



20 FM2978/HUFSMITH KOHNVILLE RD @
MEDICAL COMPLEX DR



21 MAHAFFEY RD/ MEDICAL
COMPLEX DR @ FM 2920



22 PROJECT NAME:
**TOMBALL MEDICAL
COMPLEX DRIVE
TRAFFIC STUDY**

SHEET TITLE:
**PROPOSED CONDITION
LANE CONFIGURATION
FIGURE - 10B**

GCI PROJ. NO.:
08022-00

DATE:
FEB., 2009

SHEET NO.

46

LEGEND

- DIRECTION
- LOCATION #



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Figure 11A
2011 Build Condition (AM Peak TMC's)



Figure 11B
2011 Build Condition (AM Peak TMC's)

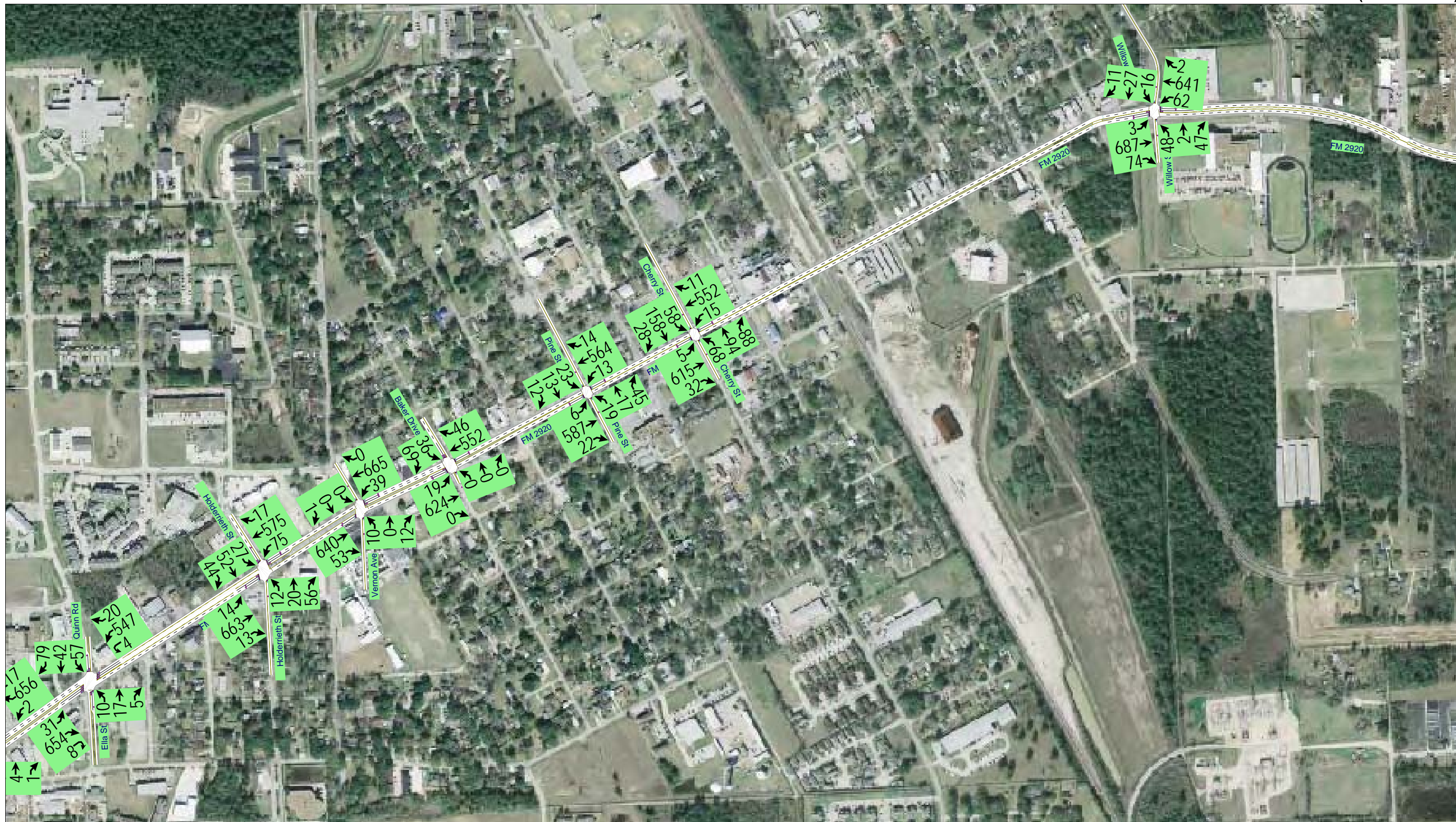


Figure 11C
2011 Build Condition (AM Peak TMC's)

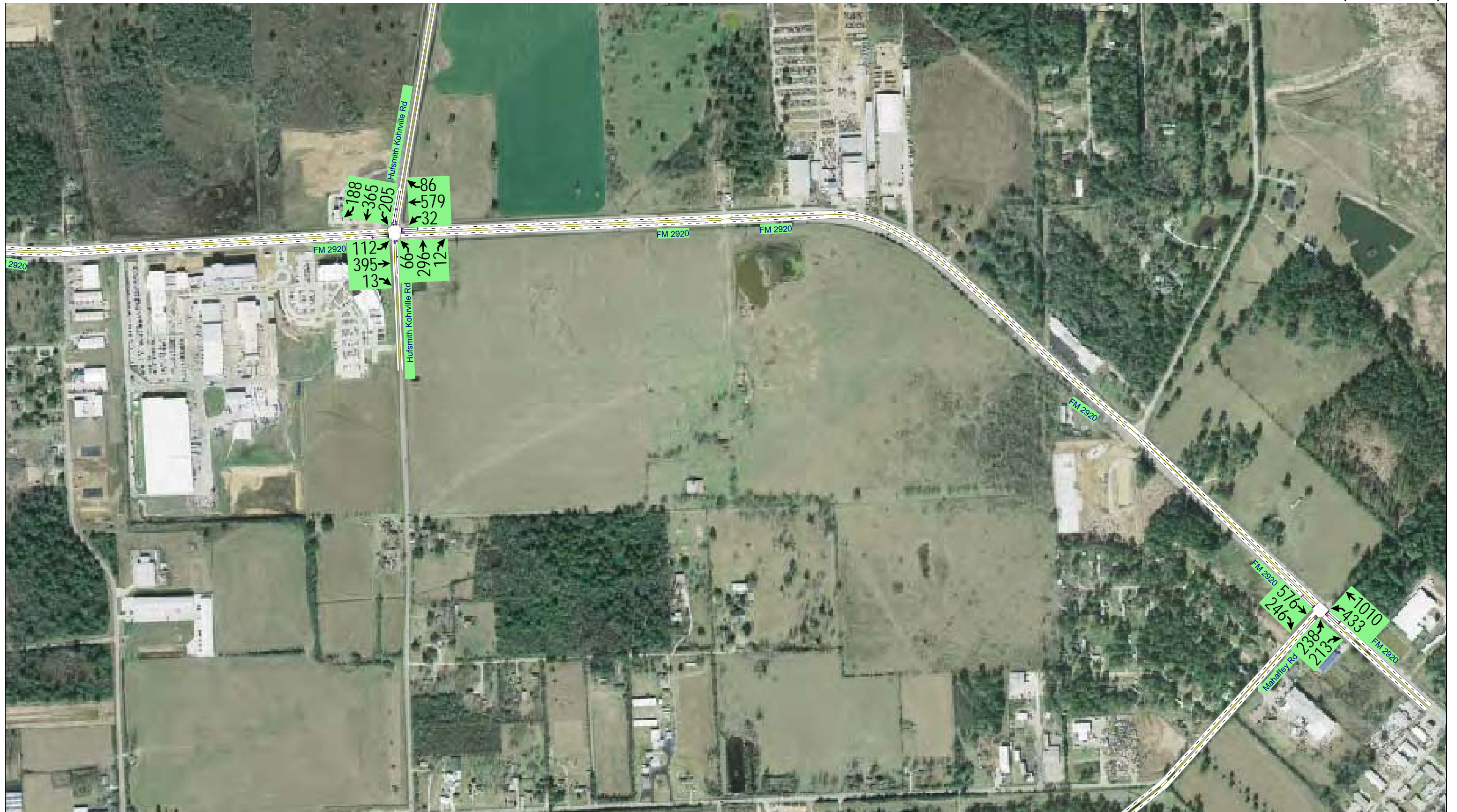


Figure 11D
2011 Build Condition (AM Peak TMC's)

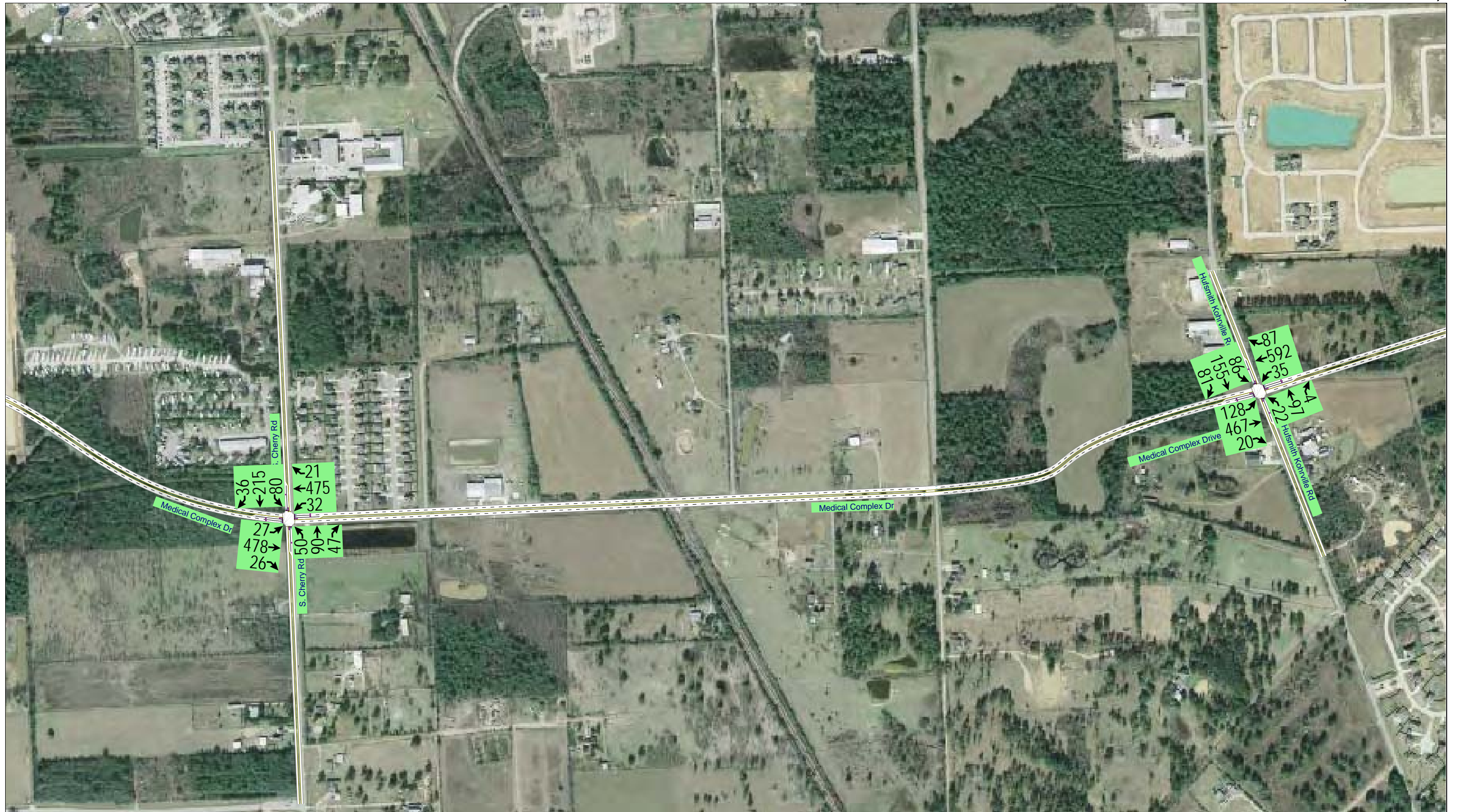


Figure 12A
2011 Build Condition (PM Peak TMC's)



Figure 12B
2011 Build Condition (PM Peak TMC's)

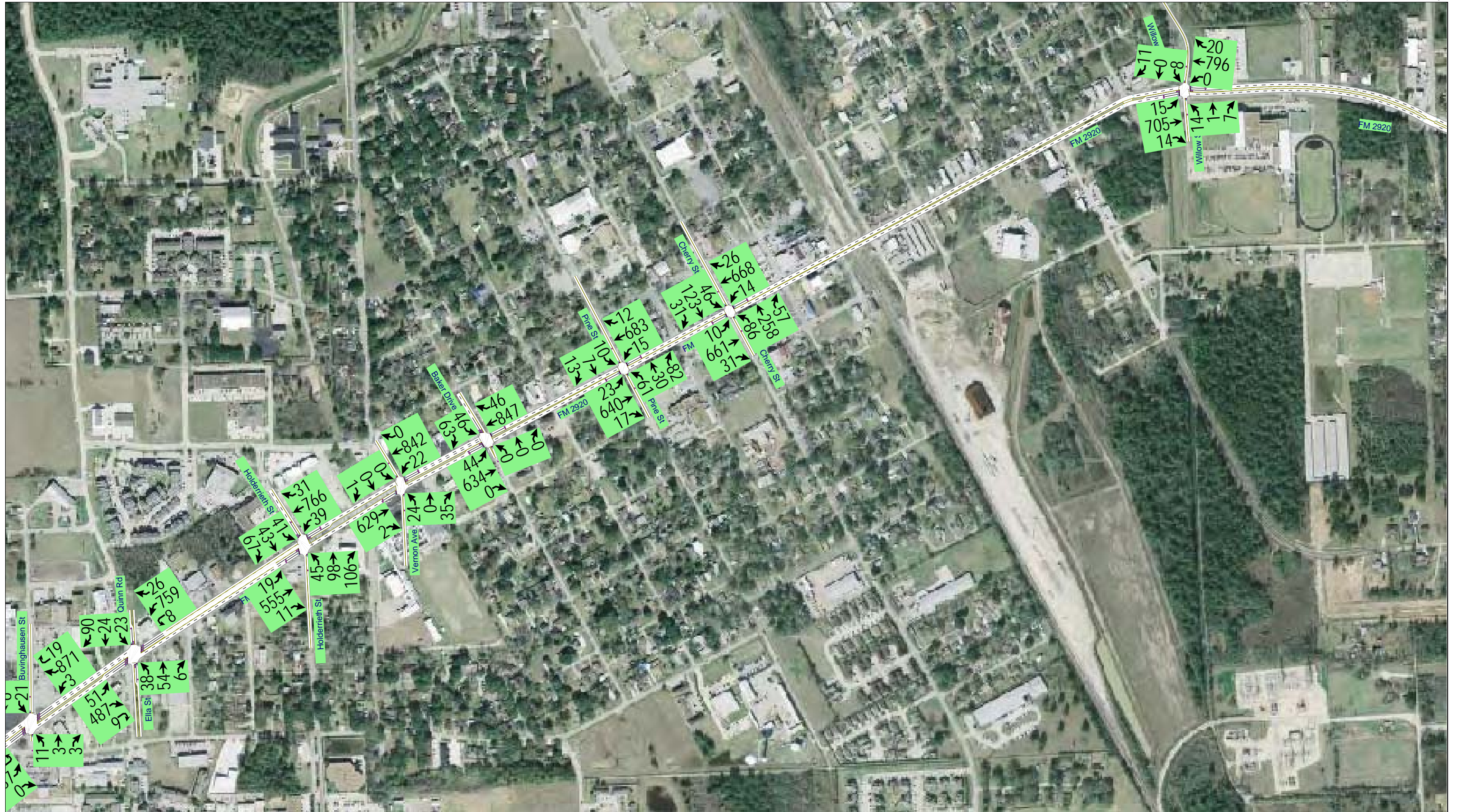


Figure 12C
2011 Build Condition (PM Peak TMC's)

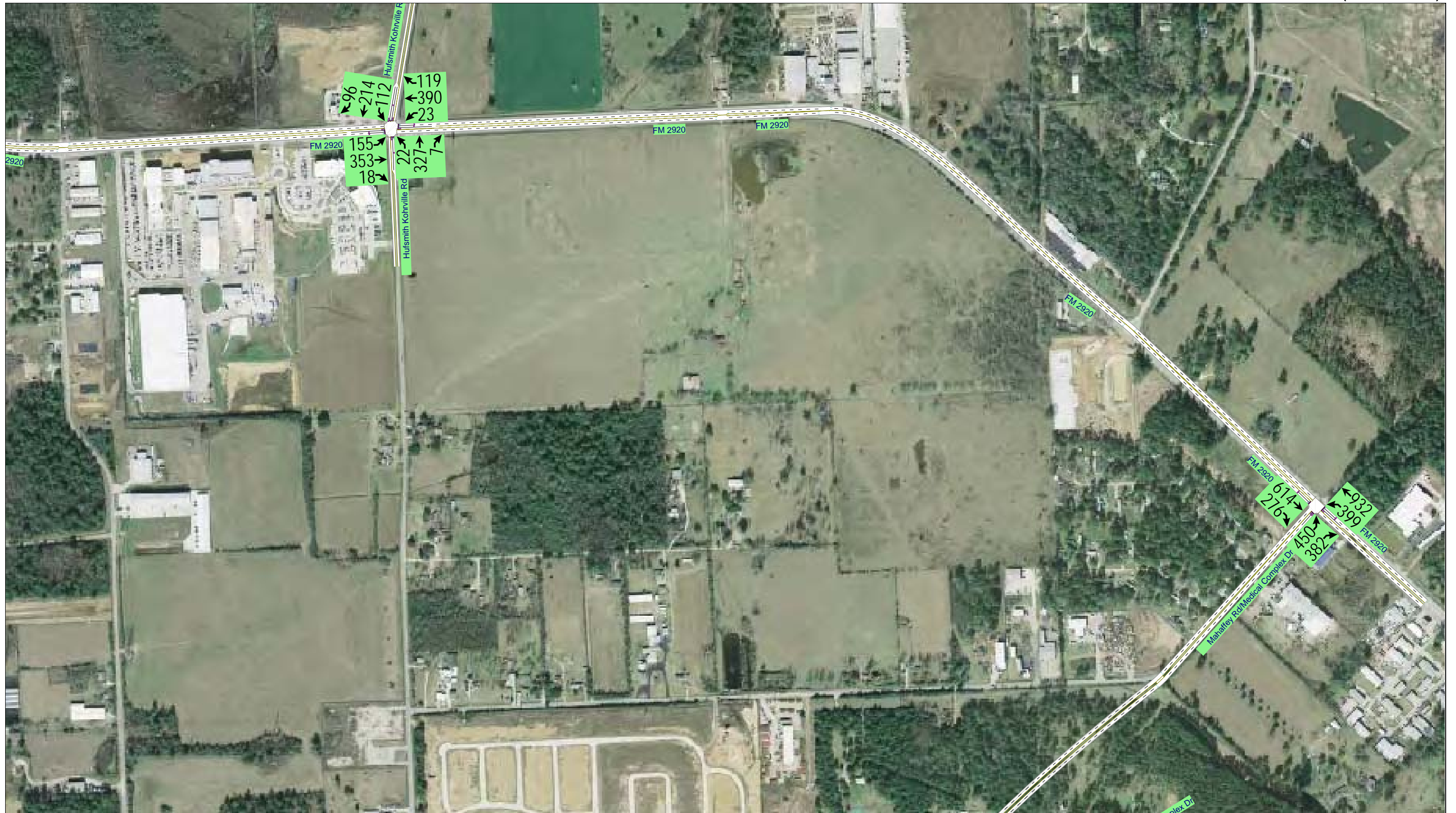
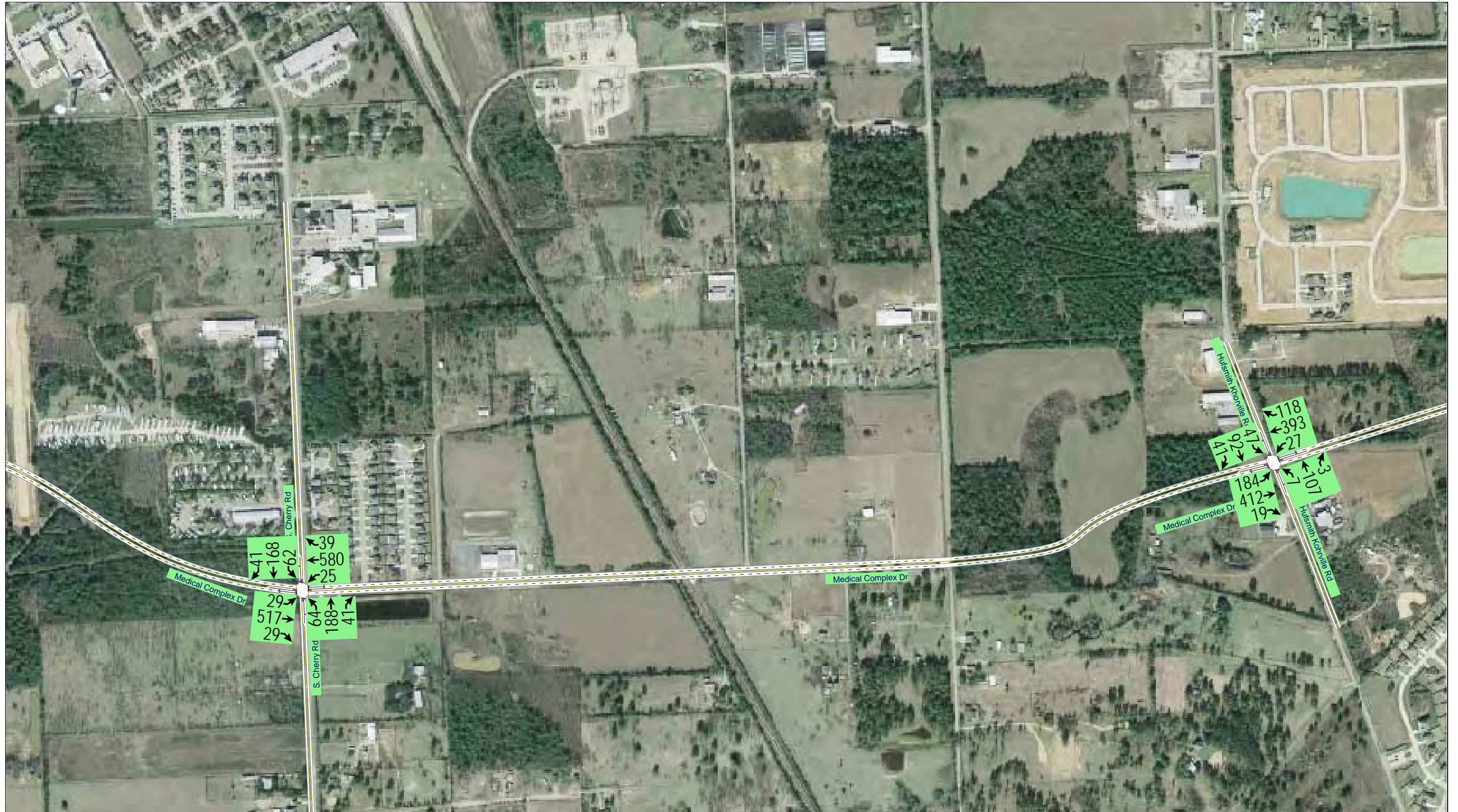


Figure 12D
2011 Build Condition (PM Peak TMC's)



Chapter 6

Year 2035 Build Traffic Conditions

Year 2035 Build traffic condition levels of service for the analysis intersections were calculated using the SYNCHRO software in accordance with the procedures set forth and recommended by the *Highway Capacity Manual (HCM)* level of service methodology for evaluation of signalized intersections. The existing volumes were projected to the Year 2035 Build conditions. Utilizing the anticipated Build conditions traffic volumes, the Year 2035 AM and PM peak hour levels of service were calculated. Year 2035 Build condition AM and PM peak hour traffic volumes are presented in Figures 13 and 14, respectively.

The anticipated Year 2035 Build conditions AM and PM peak hour Levels of Service of the study intersections are summarized in Table 12, while detailed level of service analyses for the project are included in Appendix C of this report. As shown in Table 12, with the exception of the intersections of Medical Complex Drive with Calvert Road, South Cherry Street, and Hufsmith Kohnville Road, all the other study intersections along Medical Complex Drive would be operating at level of services F.

Additionally, level of service analysis conducted for the intersections along FM 2920 indicate that most of the intersections along FM 2920 would also be operating at level of service F.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Table 12				
LOS of Study Intersections - Build Conditions (2035)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex Drive @ Calvert Road	B	13.0	B	12.8
Medical Complex Drive @ SH 249 WSR	F	111.0	F	115.1
Medical Complex Drive @ SH 249 ESR	F	117.6	F	191.0
Medical Complex Drive @ Tomball Parkway	F	1890	F	1392.6
Medical Complex Drive @ S. Cherry Street	B	12.8	B	13.9
Medical Complex Dr. @ Hufsmith Kohnville Rd	D	39.7	C	27.2
Medical Complex Dr. (Mahaffey) @ FM 2920	F	400.3	F	365.6
Medical Complex Drive - Park Rd @ FM 2920	F	297.1	F	260.9
Calvert Road @ FM 2920	C	20.5	A	6.3
Wood Forest Drive @ FM 2920	F	86.6	F	87.1
SH 249 WSR @ FM 2920	E	66	C	23.9
SH 249 ESR @ FM 2920	B	19	C	32.3
Tomball Parkway @ FM 2920	F	784.4	F	423
Buvinghausen Street @ FM 2920	C	21.8	F	138.5
Quinn Road @ FM 2920	E	56	F	209.4
Holderrieth Boulevard @ FM 2920	F	218.3	F	243.4
Vernon Avenue @ FM 2920	F	522.5	F	237.9
Baker Drive @ FM 2920	F	412.5	F	305.5
Pine Street @ FM 2920	B	15.6	F	274.9
Cherry Street @ FM 2920	F	820.6	F	721.2
Concordia/Willow Street @ FM 2920	F	146.9	F	151.3
Hufsmith Kohrville Road @ FM 2920	F	227.8	F	171.4
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				

Figure 13A
2035 Build Condition (AM Peak TMC's)

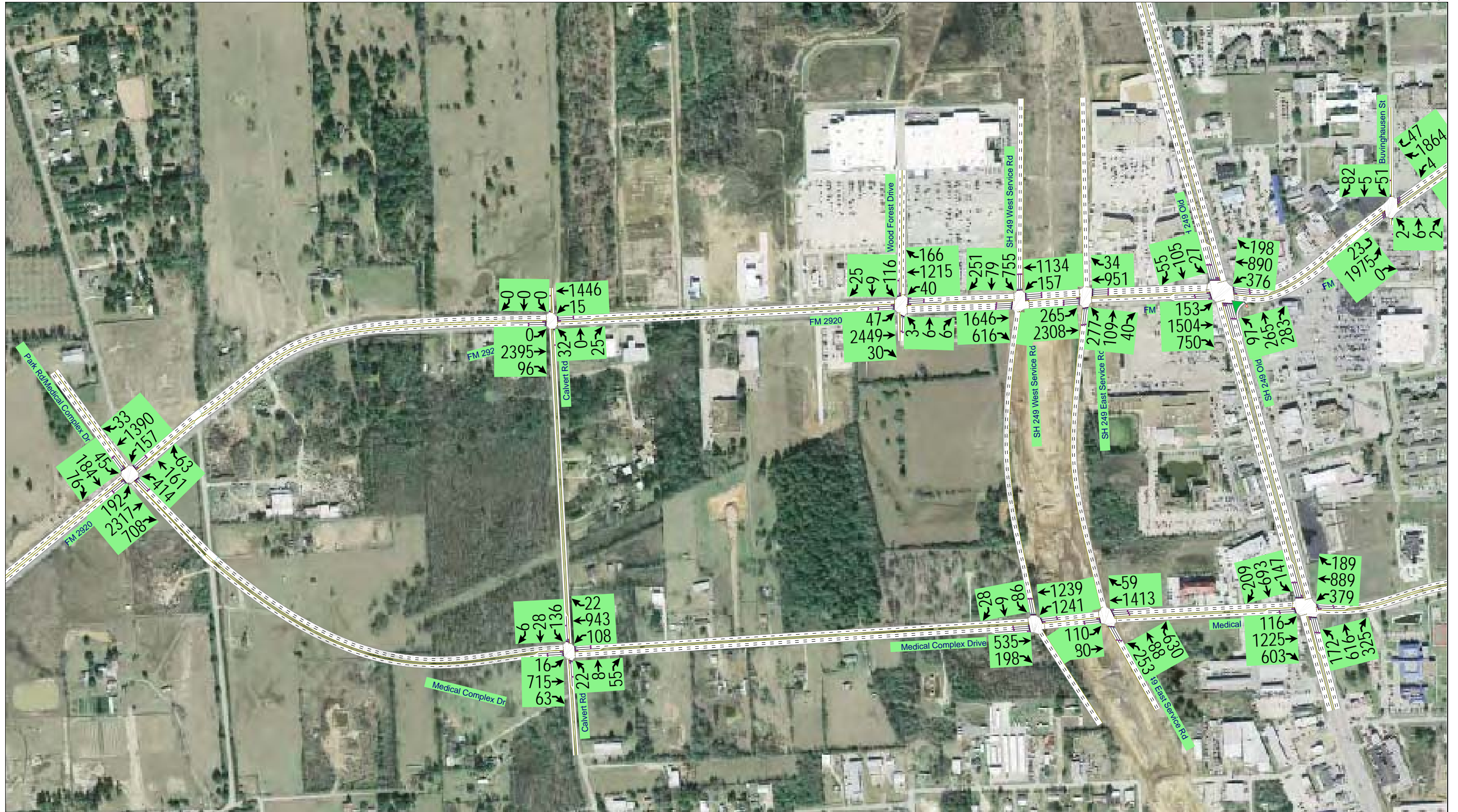


Figure 13B
2035 Build Condition (AM Peak TMC's)

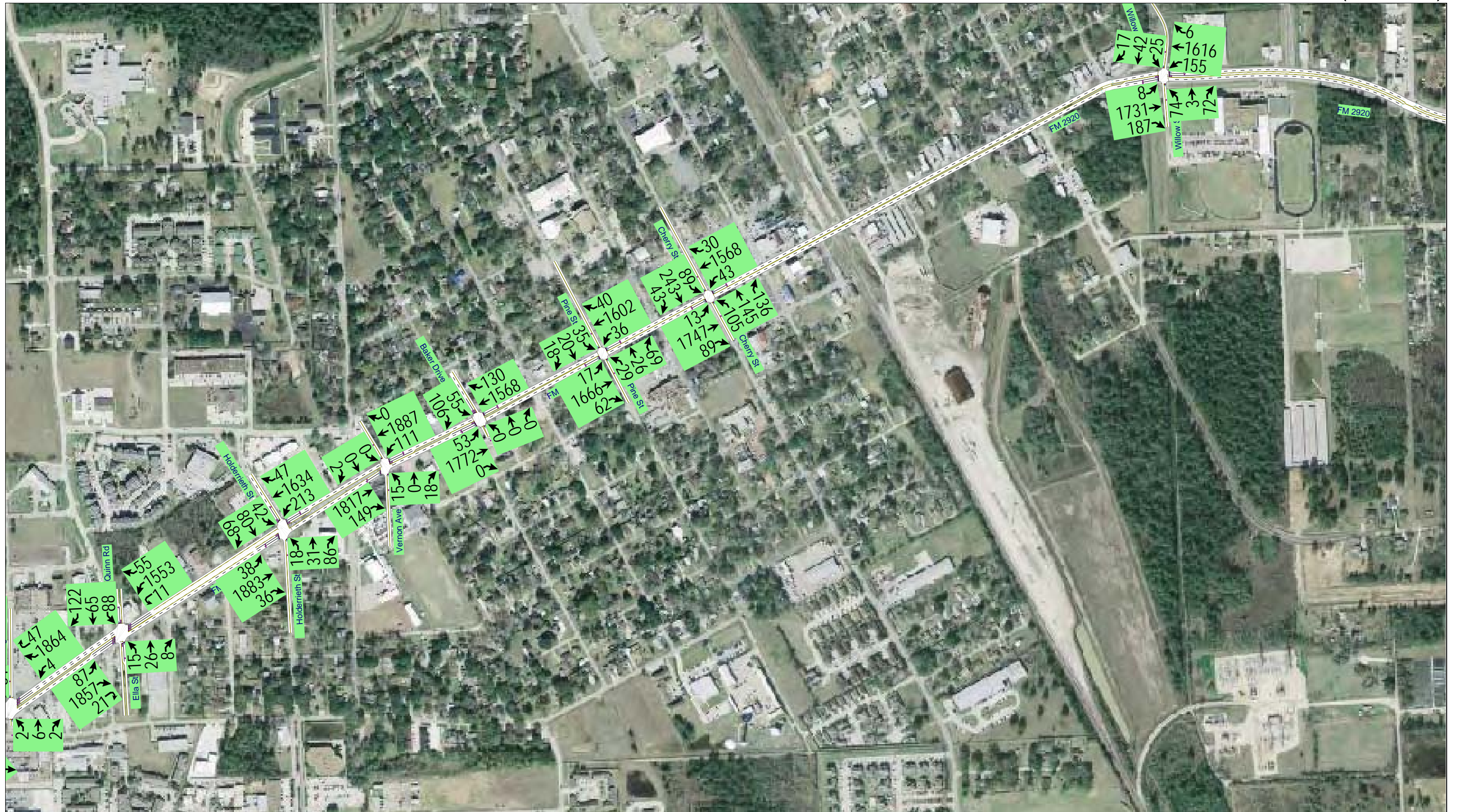


Figure 13C
2035 Build Condition (AM Peak TMC's)



Figure 13D
2035 Build Condition (AM Peak TMC's)

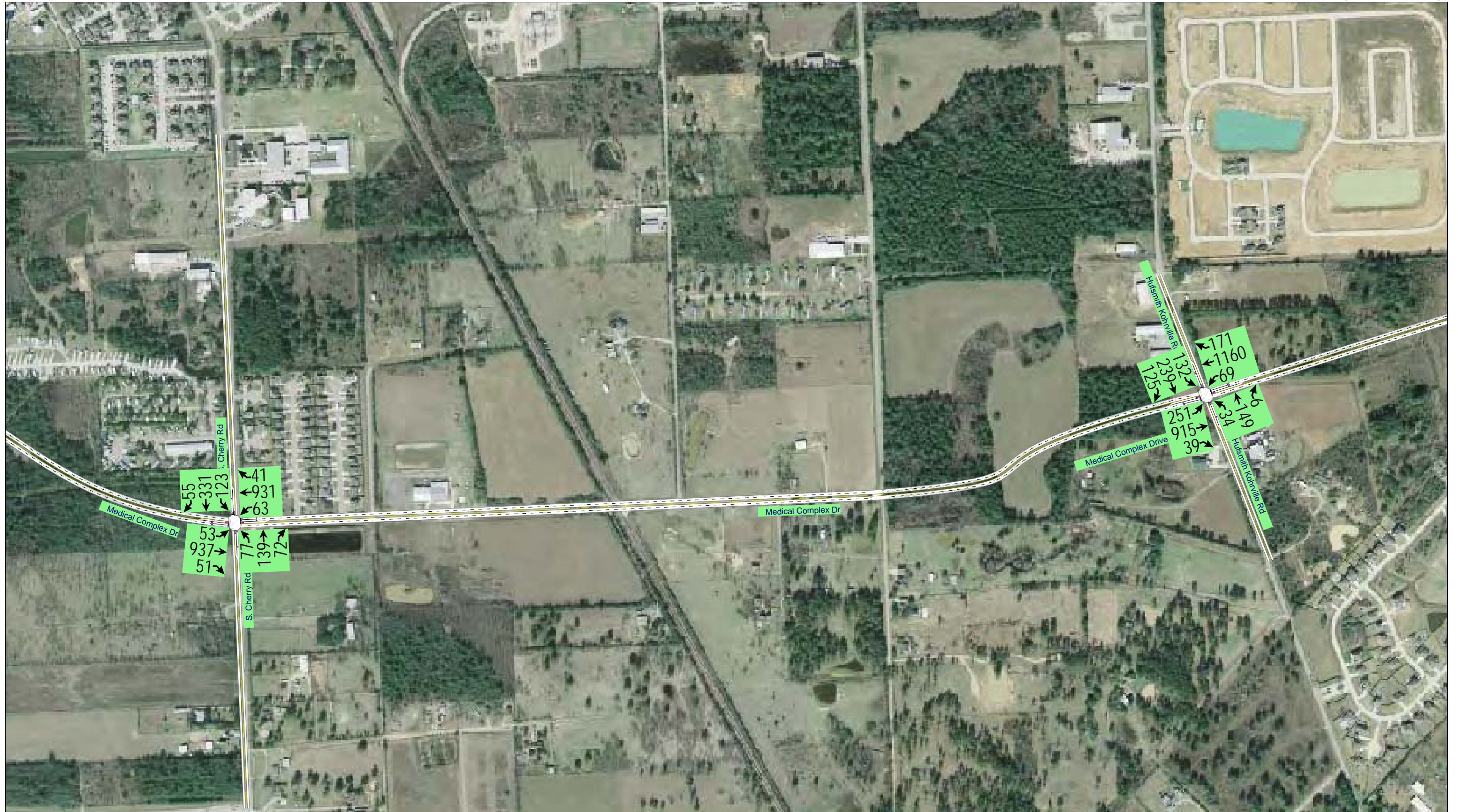


Figure 14A
2035 Build Condition (PM Peak TMC's)



Figure 14B
2035 Build Condition (PM Peak TMC's)

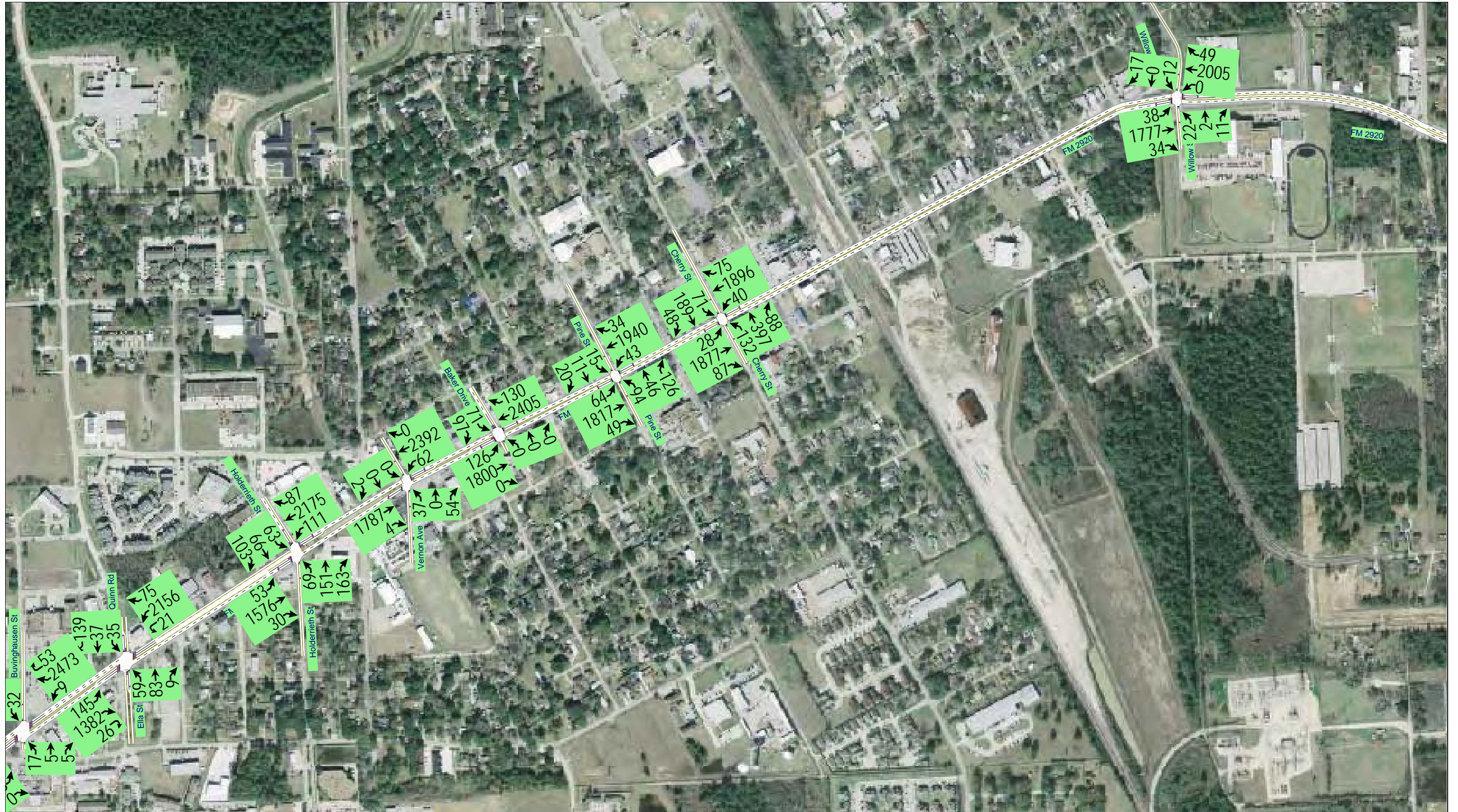


Figure 14C
2035 Build Condition (PM Peak TMC's)

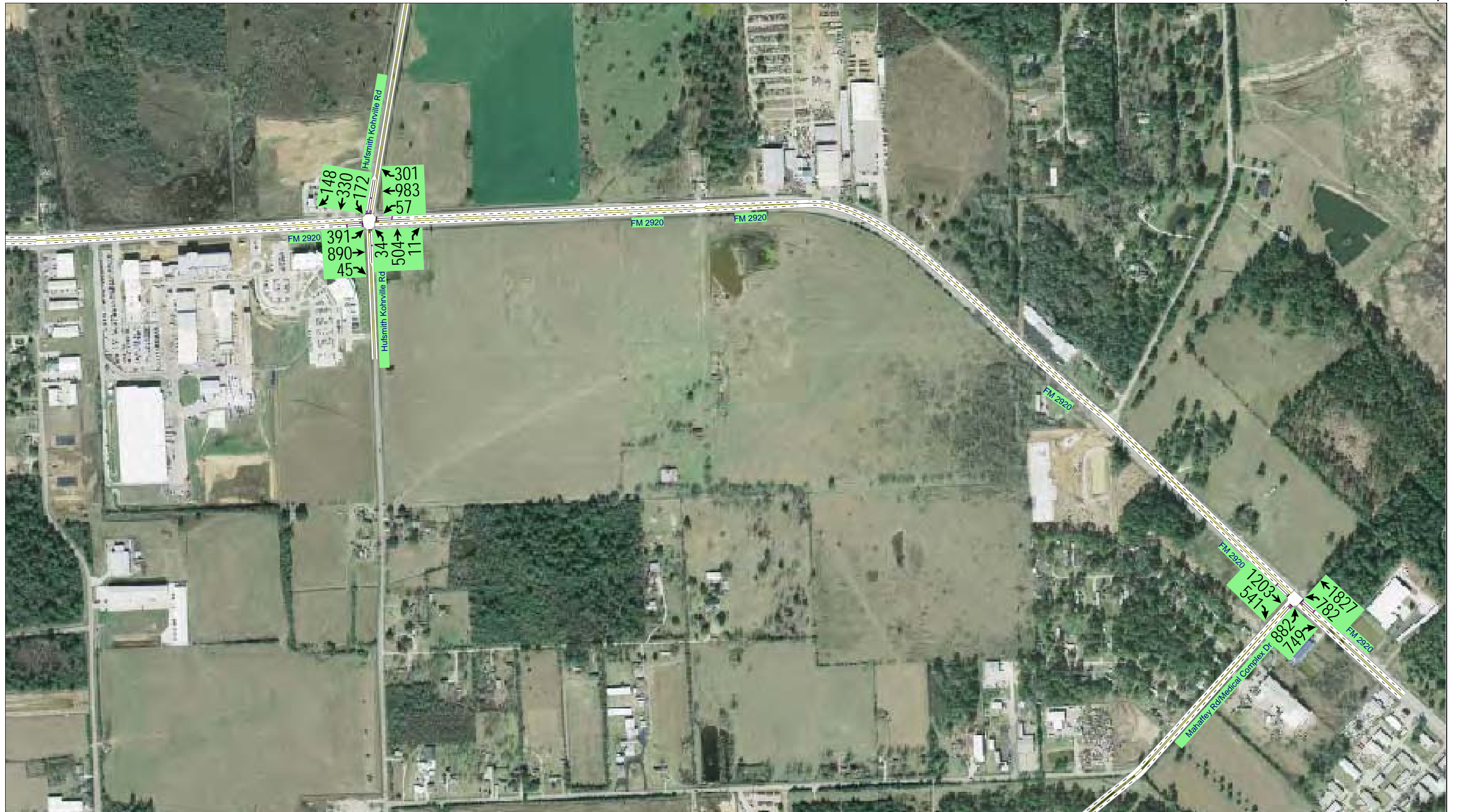
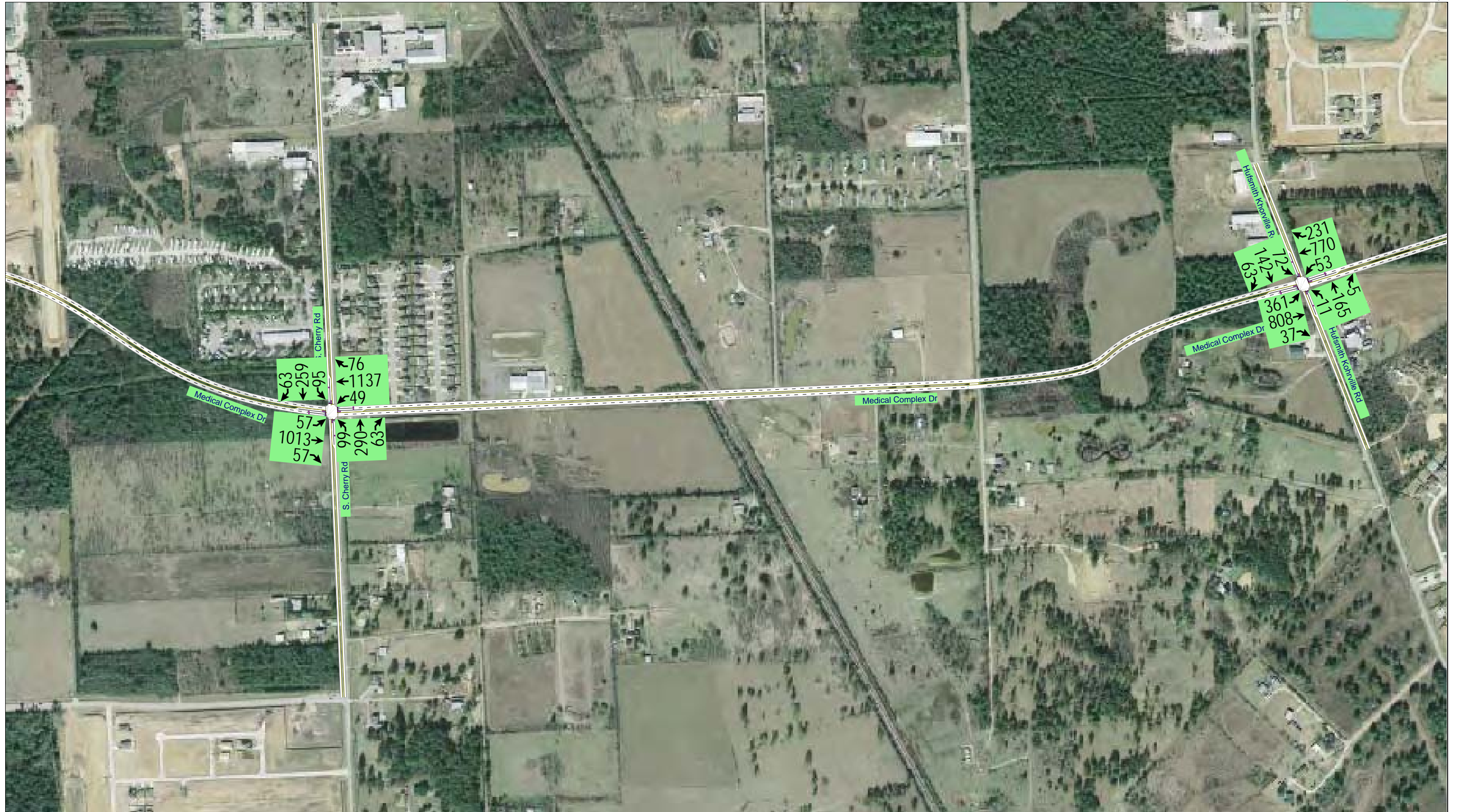


Figure 14D
2035 Build Condition (PM Peak TMC's)



Chapter 7

Recommended Improvement Plan

Traffic engineering analysis in the area indicates that a satisfactory improvement plan can be developed and applied to accommodate the existing and anticipated Years 2011 and 2035 traffic volumes on Medical Complex Drive. The following proposed improvements are presented for the purpose of improving future traffic operations along Medical Complex Drive corridor.

Year 2011 Improvement Analysis

The result of analysis conducted in Chapter 5 of this report indicate that by the Year 2011, the following five intersections along the proposed Medical Complex Drive are anticipated to be signalized due to the projected heavy traffic volumes at the study intersections:

- Medical Complex Drive at Calvert Road
- Medical Complex Drive at SH 249 WSR
- Medical Complex Drive at SH 249 ESR
- Medical Complex Drive at South Cherry Street
- Medical Complex Drive (Mahaffey) at FM 2920

Additionally, following the installation of traffic signals at the five above intersections, and with the exception of the Medical Complex Drive/Tomball Parkway intersection (operating at Level of Service F), all the other study intersections along the proposed Medical Complex Drive would be operating at acceptable Levels of Service D or better.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

To improve traffic operations at the Medical Complex Drive/Tomball Parkway intersection, considerations should be given to construct additional northbound and southbound left turn storage lanes at this intersection. Additionally, the existing eastbound and westbound approaches of the intersection should be reconstructed to provide one left and right turn storage lanes, as well as two through lanes. Level of service analysis indicate that following the implementation of the proposed improvements, this intersection would be operating at acceptable level of services D or better.

Additionally, the three intersections of FM 2920 with Tomball Parkway, Cherry Street and Hufsmith-Kohrville Road would be operating at levels of service E or F during AM or PM peak hours. Optimization of signal timing at these intersections will improve levels of service to acceptable levels.

The above recommend improvements for the Year 2011 were evaluated by using the SYNCHRO model. A new level of service analysis was completed for all the study intersections to determine anticipated levels of services at the study intersections. Year 2011 recommended condition for the AM and PM peak hour levels of service of the study intersections is summarized in Table 13, while detailed level of service analyses for all the intersections is included in Appendix C of this report.

As shown in Table 13, following the implementation of the recommended roadway capacity improvements, the study intersections would be operating at acceptable Level of Service D or better.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Table 13				
LOS of Study Intersections - Recommended Conditions (2011)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex Drive @ Calvert Road	A	8.6	A	8.5
Medical Complex Drive @ SH 249 WSR	B	17.8	C	24.8
Medical Complex Drive @ SH 249 ESR	B	19.1	C	23.6
Medical Complex Drive @ Tomball Parkway	C	30.4	D	47.9
Medical Complex Drive @ S. Cherry Street	A	9	A	9.4
Medical Complex Dr @ Hufsmith Kohnville	B	10.3	A	9.8
Medical Complex Drive @ FM 2920	C	19.6	C	31.2
Medical Complex Drive - Park Rd @ FM 2920	D	51.8	D	54.8
Calvert Road @ FM 2920	A	3.9	A	4.8
Wood Forest Drive @ FM 2920	B	12.2	C	21.2
SH 249 WSR @ FM 2920	C	20.2	B	15.3
SH 249 ESR @ FM 2920	B	14.6	C	20.9
Tomball Parkway @ FM 2920	D	48.5	C	26.2
Buvinghausen Street @ FM 2920	A	6.8	A	8.2
Quinn Road @ FM 2920	B	11.2	B	18.6
Holderrieth Boulevard @ FM 2920	B	18.3	B	15.9
Vernon Avenue @ FM 2920	A	4.4	A	4.8
Baker Drive @ FM 2920	A	4.6	A	6.4
Pine Street @ FM 2920	A	4.6	A	7.1
Cherry Street @ FM 2920	D	43	C	31.1
Concordia/Willow Street @ FM 2920	C	22.3	A	9.7
Hufsmith Kohrville Road @ FM 2920	D	43.1	D	40.4
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				

Year 2035 Recommended Improvements

The result of analysis conducted in Chapter 6 of this report indicate that by the Year 2035 and following implementation of the Year 2011 recommendations identified in this report, most of the intersections within the study corridor will be operating at level of service F and will require additional roadway or signal timing improvements to accommodate the anticipated Year 2035 traffic volumes.

Medical Complex Drive – Year 2035 Recommended Improvements

To improve traffic operations at the intersections along Medical Complex Drive considerations should be given to the following roadway and traffic signal timing improvements:

- ◆ Improve traffic operations at the intersection of Medical Complex Drive at SH 249 West Service Road, by reconstructing the southbound approach to provide one left turn storage lane, one shared left turn/through lane and one exclusive through lane; and also by constructing an additional westbound left turn storage lane;
- ◆ Improve traffic operations at the northbound approach of the intersection of Medical Complex Drive at SH 249 East Service Road to provide an exclusive left turn lane, one shared left turn/through lane, one shared through/right turn lane and one right turn storage lane;
- ◆ Improve traffic operations at the intersection of Medical Complex Drive at Tomball Parkway by constructing new northbound and southbound right turn storage lanes;
- ◆ Improve traffic operations at the intersection of Medical Complex Drive - Park Road at FM 2920 by constructing new eastbound, westbound and northbound left turn storage lanes as well as a new westbound right turn storage lane;
- ◆ Perform signal timing optimization for all the study intersections in the study corridor.

Year 2035 Suggested Improvements

The following roadway improvements, although not located along the Medical Complex Drive, however if implemented would improve traffic conditions within the study corridor:

- ◆ Improve traffic operations at the intersection of Tomball Parkway at FM 2920 by constructing two new eastbound left turn storage lanes, new westbound left and right turn storage lanes, and restriping the existing eastbound and westbound shared left turn/through lane to exclusive through lanes;

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

- ◆ Improve traffic operations at the intersection of Holderrieth Boulevard at FM 2920 by reconstructing the northbound approach of the intersection to provide one left turn/through lane and one right turn storage lane;
- ◆ Improve traffic operations at the intersection of Pine Street at FM 2920 by reconstructing the northbound approach to provide one left turn storage lane and a shared through/right turn lane;
- ◆ Improve traffic operations at the intersection of Cherry Street at FM 2920 by reconstructing the northbound, southbound, eastbound and westbound approaches to provide one left turn storage lane, one through lane and one shared through/right turn lane;
- ◆ Improve traffic operations at the intersection of Hufsmith Kohrville Road at FM 2920 by constructing an additional southbound and eastbound left turn storage lanes and a new westbound right turn storage lane;
- ◆ Improve traffic operations at the intersection of Mahaffey Road at FM 2920 by constructing a new northbound left turn storage lane, southbound right turn storage lane, and also by reconstructing the eastbound approach to provide two left turn storage lanes and one exclusive right turn lane.

The above recommend improvements for the Year 2035 were evaluated by using the SYNCHRO model. A new level of service analysis was completed for all the study intersections to determine anticipated levels of services at the study intersections. Year 2035 recommended conditions for the AM and PM peak hour Levels of Service of the study intersections is summarized in Table 14, while detailed level of service analyses for all the intersections is included in Appendix C of this report.

Year 2035 recommended condition AM and PM peak hour Levels of Service of the study intersections is summarized in Table 14, while detailed level of service analyses for all the study intersections is included in Appendix C of this report. As shown in Table 14, following the implementation of the recommended signal timing optimizations as well as roadway capacity improvements, the study intersections would be operating at acceptable Levels of Service of D or better.

MEDICAL COMPLEX DRIVE – TRAFFIC STUDY

Table 14				
LOS of Study Intersections - Recommended Conditions (2035)				
Medical Complex Drive – Traffic Study				
Intersection Name	AM		PM	
	LOS	Delay (s/v)	LOS	Delay (s/v)
Medical Complex Drive @ Calvert Road	B	13.0	B	12.8
Medical Complex Drive @ SH 249 WSR	B	19.4	D	40.6
Medical Complex Drive @ SH 249 ESR	D	37.9	C	31.9
Medical Complex Drive @ Tomball Parkway	E	63.2	F	116
Medical Complex Drive @ S. Cherry Street	C	20.8	B	18.7
Medical Complex Dr @ Hufsmith Kohnville	C	27.3	D	36.6
Medical Complex Drive @ FM 2920	C	21.9	D	51.3
Medical Complex Drive - Park Rd @ FM 2920	D	51.2	D	52.3
Calvert Road @ FM 2920	B	12.8	A	6.0
Wood Forest Drive @ FM 2920	D	36.2	C	34
SH 249 WSR @ FM 2920	C	32.6	C	23.8
SH 249 ESR @ FM 2920	C	25.9	C	26.8
Tomball Parkway @ FM 2920	D	47.7	D	52.4
Buvinghausen Street @ FM 2920	B	15.1	D	54.6
Quinn Road @ FM 2920	B	16.7	D	39.4
Holderrieth Boulevard @ FM 2920	D	48.6	D	35.2
Vernon Avenue @ FM 2920	D	43.7	B	11.8
Baker Drive @ FM 2920	D	52.2	D	41.0
Pine Street @ FM 2920	A	8.9	D	48.8
Cherry Street @ FM 2920	C	28.9	D	52.8
Concordia/Willow Street @ FM 2920	D	50.5	D	45.1
Hufsmith Kohrville Road @ FM 2920	D	54.3	D	43.5
Notes:				
s/v - Seconds per vehicle				
LOS - Level of Service				

Chapter 8

Conclusions and Recommendations

Conclusions

Field reconnaissance, traffic counting programs, data collection, and traffic engineering analyses assisted in developing an accurate picture of existing and projected future roadway conditions and traffic operations on Medical Complex Drive. The anticipated traffic volumes for the proposed Medical Complex Drive were forecasted and evaluated based upon accepted travel characteristics and guidelines recommended by the Institute of Transportation Engineers, City of Tomball and TxDOT.

The anticipated weekday AM and PM peak period traffic volumes for the Years 2011 and 2035 were projected and assigned to the roadway system. The anticipated future roadway conditions were analyzed to determine roadway adequacy and improvement requirements. Recommendations were developed and evaluated to improve the anticipated Years 2011 and 2035 traffic conditions within the study corridor.

Recommendations

The study area circulation system was analyzed for adequacy with respect to the Build and No-Build alternative scenarios for the Years 2011 and 2035 traffic conditions, and adjacent roadway system. The primary goal was to identify possible deficiencies in the future roadway system that would hinder efficient traffic operations. Recommended lane configurations for the Years 2011 and 2035 are presented in Table 15. In order to provide maximum safety and operating measures, the following improvements are recommended:

Medical Complex Drive Year 2011 Recommended Improvements

- ◆ At the intersection of Medical Complex Drive and Tomball Parkway, construct additional northbound and southbound left turn storage lanes. Additionally, reconstruct the existing eastbound and westbound approaches of the intersection to provide one left and right turn storage lanes, as well as two through lanes.
- ◆ Install traffic signals at the following intersections:
 - Medical Complex Drive at Calvert Road
 - Medical Complex Drive at SH 249 WSR
 - Medical Complex Drive at SH 249 ESR
 - Medical Complex Drive at South Cherry Street
 - Medical Complex Drive (Mahaffey) at FM 2920

Medical Complex Drive Year 2035 Recommended Improvements

To improve traffic operations at the intersections along Medical Complex Drive considerations should be given to the following roadway and traffic signal timing improvements:

- ◆ Improve traffic operations at the intersection of Medical Complex Drive at SH 249 West Service Road, by reconstructing the southbound approach to provide one left turn storage lane, one shared left turn/through lane and one exclusive through lane; and also by constructing an additional westbound left turn storage lane;
- ◆ Improve traffic operations at the northbound approach of the intersection of Medical Complex Drive at SH 249 East Service Road to provide an exclusive left turn lane, one shared left turn/through lane, one shared through/right turn lane and one right turn storage lane;
- ◆ Improve traffic operations at the intersection of Medical Complex Drive at Tomball Parkway by constructing new northbound and southbound right turn storage lanes;
- ◆ Improve traffic operations at the intersection of Medical Complex Drive - Park Road at FM 2920 by constructing new eastbound, westbound and northbound left turn storage lanes as well as a new westbound right turn storage lane;
- ◆ Perform signal timing optimization for all the study intersections in the study corridor;
- ◆ All the City of Tomball and TxDOT traffic engineering and design standards should be met.

Table 15A Lane Configuration for Existing, Proposed and Recommended Improvements Medical Complex Drive - Traffic Study					
Intersection Location	Direction	Existing Condition (2008)	Proposed Condition (2011)	Recommended Improvements (2011)	Recommended Improvements (2035)
Medical Complex Drive/Park Rd @ FM 2920	Northbound				
	Southbound				
	Eastbound				
	Westbound				
Medical Complex Drive @ Calvert Road	Northbound				
	Southbound				
	Eastbound				
	Westbound				
Medical Complex Drive @ SH 249 West Service Road	Southbound				
	Eastbound				
	Westbound				
Medical Complex Drive @ SH 249 East Service Road	Northbound				
	Eastbound				
	Westbound				

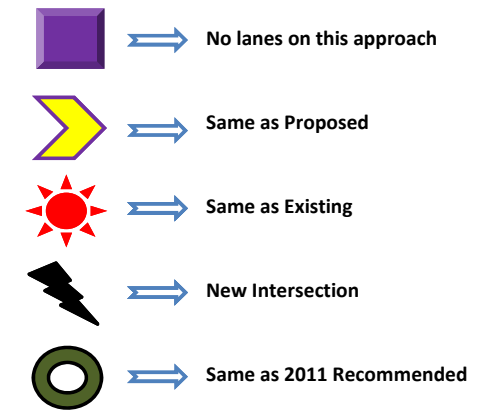


Table 15B Lane Configuration for Existing, Proposed and Recommended Improvements Medical Complex Drive - Traffic Study					
Intersection Location	Direction	Existing Condition (2008)	Proposed Condition (2011)	Recommended Improvements (2011)	Recommended Improvements (2035)
Medical Complex Drive @ Tomball Parkway	Northbound				
	Southbound				
	Eastbound				
	Westbound				
Medical Complex Drive @ South Cherry Street	Northbound				
	Southbound				
	Eastbound				
	Westbound				
Medical Complex Drive @ FM 2978/Hufsmith Kohnville Road	Northbound				
	Southbound				
	Eastbound				
	Westbound				
Medical Complex Drive/Mahaffey Road @ FM 2920	Northbound				
	Southbound				
	Eastbound				

- No lanes on this approach
- Same as Proposed
- Same as Existing
- New Intersection
- Same as 2011 Recommended

Additional Suggested Improvements

The following suggested signal timing and roadway improvements, although not located along the Medical Complex Drive, however if implemented would improve traffic conditions within the study corridor:

Year 2011 Suggested Improvements

- ◆ Perform signal timing optimization at the three intersections of FM 2920 with Tomball Parkway, Cherry Street and Hufsmith-Kohrville Road.

Year 2035 Suggested Improvements

- ◆ Improve traffic operations at the intersection of Tomball Parkway at FM 2920 by constructing two new eastbound left turn storage lanes, new westbound left and right turn storage lanes, and restriping the existing eastbound and westbound shared left turn/through lane to exclusive through lanes;
- ◆ Improve traffic operations at the intersection of Holderrieth Boulevard at FM 2920 by reconstructing the northbound approach of the intersection to provide one left turn/through lane and one right turn storage lane;
- ◆ Improve traffic operations at the intersection of Pine Street at FM 2920 by reconstructing the northbound approach to provide one left turn storage lane and a shared through/right turn lane;
- ◆ Improve traffic operations at the intersection of Cherry Street at FM 2920 by reconstructing the northbound, southbound, eastbound and westbound approaches to provide one left turn storage lane, one through lane and one shared through/right turn lane;
- ◆ Improve traffic operations at the intersection of Hufsmith-Kohrville Road at FM 2920 by constructing an additional southbound and eastbound left turn storage lanes and a new westbound right turn storage lane;
- ◆ Improve traffic operations at the intersection of Mahaffey Road at FM 2920 by constructing a new northbound left turn storage lane, southbound right turn storage lane, and also by reconstructing the eastbound approach to provide two left turn storage lanes and one exclusive right turn lane.

APPENDIX A

TMC'S AND 24 HOUR COUNTS AT THE STUDY INTERSECTIONS

TURNING MOVEMENT COUNTS

FM 2920 at Park Rd.
November 18, 2008
Turning Movement Count

Time	From North					From East					From South					From West				
	Park Rd.					FM 2920					FM 2920					FM 2920				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	7	0	14	0	0	0	137	2	0	0	0	0	0	0	0	10	308	0	0	0
6:45	13	0	12	0	0	0	113	1	0	0	0	0	0	0	9	323	0	0	0	
Hr. Total:	20	0	26	0	0	0	250	3	0	0	0	0	0	0	19	631	0	0	0	

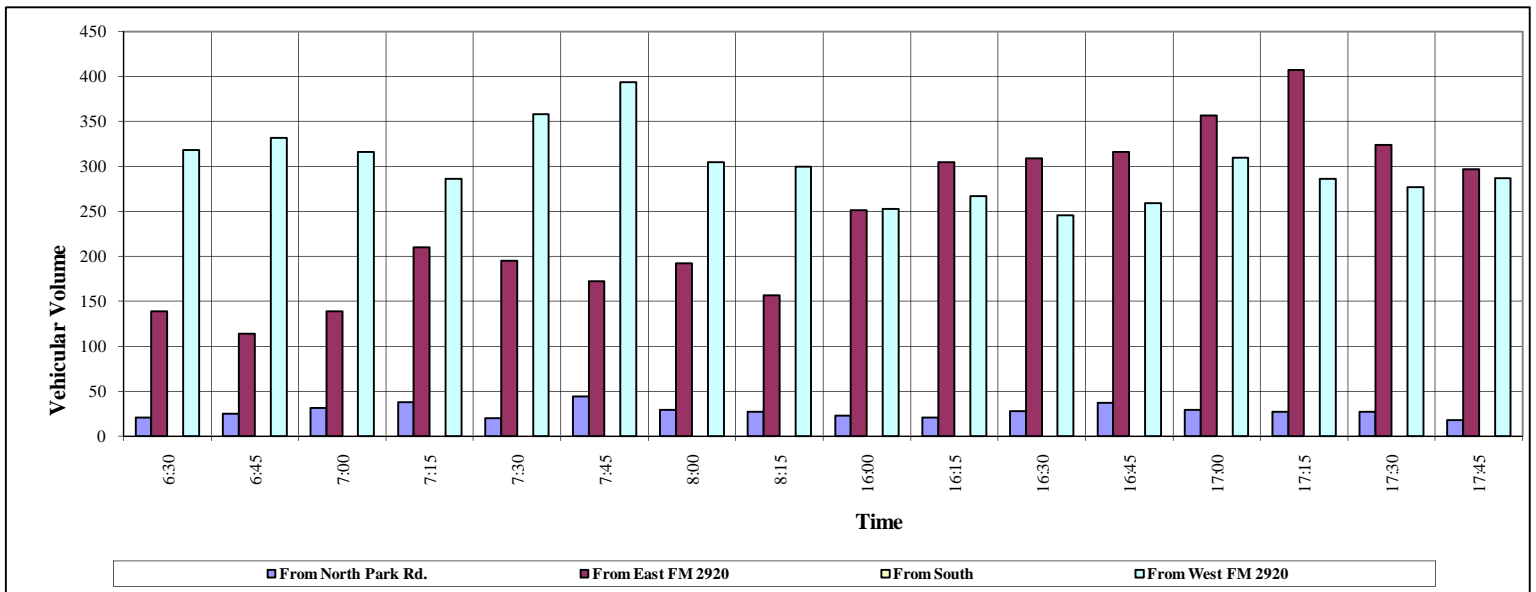
7:00	17	0	14	0	0	0	138	1	0	0	0	0	0	0	12	304	0	0	0
7:15	16	0	22	0	0	0	208	2	0	0	0	0	0	0	16	270	0	0	0
7:30	8	0	12	0	0	0	191	4	0	0	0	0	0	0	9	349	0	0	0
7:45	12	0	32	0	0	0	169	3	0	0	0	0	0	0	12	382	0	0	0
Hr. Total:	53	0	80	0	0	0	706	10	0	0	0	0	0	0	49	1305	0	0	0

8:00	4	0	25	0	0	0	186	6	0	0	0	0	0	0	6	299	0	0	0
8:15	14	0	13	0	0	0	157	0	0	0	0	0	0	0	8	292	0	0	0
Hr. Total:	18	0	38	0	0	0	343	6	0	0	0	0	0	0	14	591	0	0	0

16:00	6	0	17	0	0	0	239	12	0	0	0	0	0	0	28	225	0	0	0
16:15	7	0	14	0	0	0	285	20	0	0	0	0	0	0	28	239	0	0	0
16:30	11	0	17	0	0	0	295	14	0	0	0	0	0	0	23	223	0	0	0
16:45	7	0	30	0	0	0	306	10	0	0	0	0	0	0	25	234	0	0	0
Hr. Total:	31	0	78	0	0	0	1125	56	0	0	0	0	0	0	104	921	0	0	0

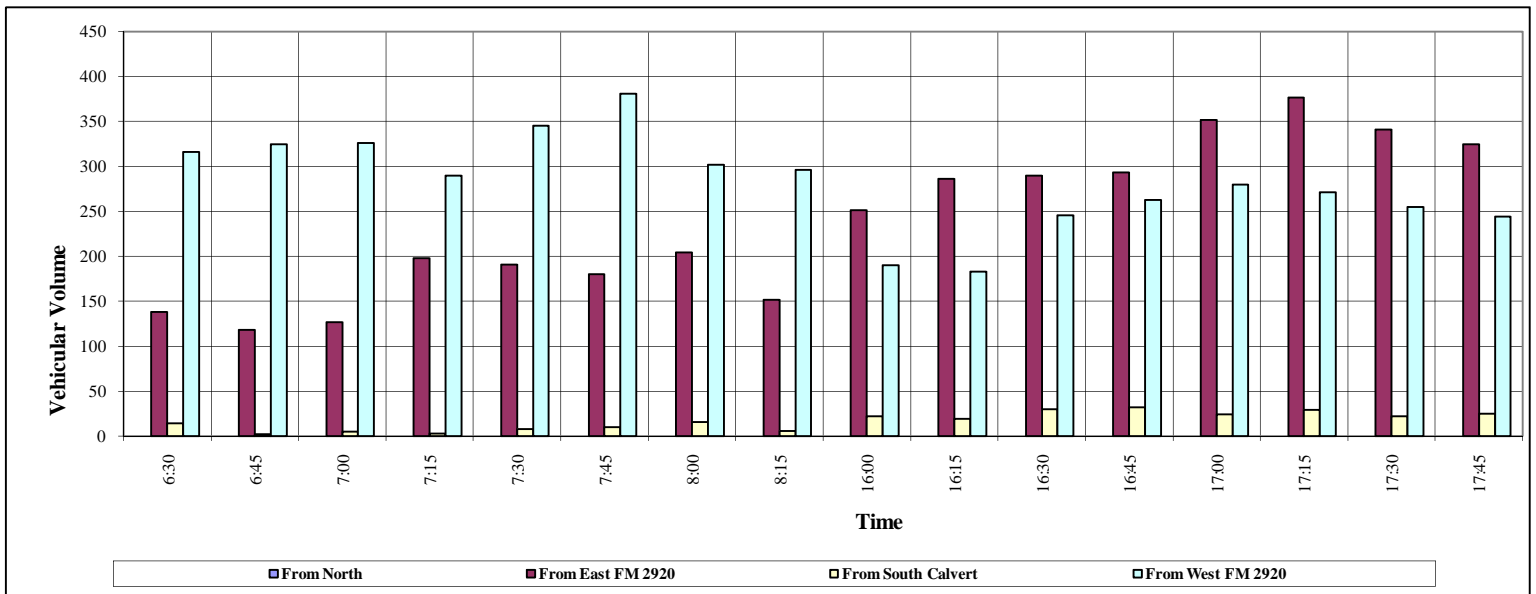
17:00	8	0	21	0	0	0	344	13	0	0	0	0	0	0	34	276	0	0	0
17:15	10	0	17	0	0	0	393	14	0	0	0	0	0	0	23	263	0	0	0
17:30	6	0	21	0	0	0	315	9	0	0	0	0	0	0	25	252	0	0	0
17:45	5	0	13	0	0	0	279	18	0	0	0	0	0	0	38	249	0	0	0
Hr. Total:	29	0	72	0	0	0	1331	54	0	0	0	0	0	0	120	1040	0	0	0

Gr. Total	151	0	294	0	0	0	3755	129	0	0	0	0	0	0	306	4488	0	0	0	
% of Tot.	2%	0%	3%	0%	0%	0%	41%	1%	0%	0%	0%	0%	0%	0%	3%	49%	0%	0%	0%	
Apprch%	5%					43%					0%					53%				
% of Apprch	34%	0%	66%	0%	0%	0%	97%	3%	0%	0%	####	####	####	####	####	6%	94%	0%	0%	0%
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
	Park Rd.					FM 2920					FM 2920					FM 2920				
	From North					From East					From South					From West				



FM 2920 at Calvert
November 18, 2008
Turning Movement Count

Time	From North					From East					From South					From West				
						FM 2920					Calvert					FM 2920				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	0	0	0	0	0	4	134	0	0	0	8	0	6	0	0	0	310	6	0	0
6:45	0	0	0	0	0	0	118	0	0	0	0	0	2	0	0	0	320	5	0	0
Hr. Total:	0	0	0	0	0	4	252	0	0	0	8	0	8	0	0	0	630	11	0	0
7:00	0	0	0	0	0	7	120	0	0	0	4	0	1	0	0	0	308	18	0	0
7:15	0	0	0	0	0	0	198	0	0	0	0	0	3	0	0	0	283	7	0	0
7:30	0	0	0	0	0	1	190	0	0	0	5	0	3	0	0	0	331	14	0	0
7:45	0	0	0	0	0	4	176	0	0	0	7	0	3	0	0	0	364	17	0	0
Hr. Total:	0	0	0	0	0	12	684	0	0	0	16	0	10	0	0	0	1286	56	0	0
8:00	0	0	0	0	0	3	201	0	0	0	9	0	7	0	0	0	289	13	0	0
8:15	0	0	0	0	0	0	152	0	0	0	2	0	4	0	0	0	283	13	0	0
Hr. Total:	0	0	0	0	0	3	353	0	0	0	11	0	11	0	0	0	572	26	0	0
16:00	0	0	0	0	0	0	251	0	0	0	20	0	2	0	0	0	181	9	0	0
16:15	0	0	0	0	0	2	284	0	0	0	17	0	2	0	0	0	178	5	0	0
16:30	0	0	0	0	0	1	289	0	0	0	26	0	4	0	0	0	233	13	0	0
16:45	0	0	0	0	0	1	292	0	0	0	29	0	3	0	0	0	247	16	0	0
Hr. Total:	0	0	0	0	0	4	1116	0	0	0	92	0	11	0	0	0	839	43	0	0
17:00	0	0	0	0	0	2	350	0	0	0	19	0	5	0	0	0	266	14	0	0
17:15	0	0	0	0	0	1	376	0	0	0	24	0	5	0	0	0	261	10	0	0
17:30	0	0	0	0	0	1	340	0	0	0	16	0	6	0	0	0	241	14	0	0
17:45	0	0	0	0	0	2	323	0	0	0	20	0	5	0	0	0	233	11	0	0
Hr. Total:	0	0	0	0	0	6	1389	0	0	0	79	0	21	0	0	0	1001	49	0	0
Gr. Total	0	0	0	0	0	29	3794	0	0	0	206	0	61	0	0	0	4328	185	0	0
% of Tot.	0%	0%	0%	0%	0%	0%	44%	0%	0%	0%	2%	0%	1%	0%	0%	0%	50%	2%	0%	0%
Apprch%	0%					44%					3%					52%				
% of Apprch	####	#####	####	####	####	1%	99%	0%	0%	0%	77%	0%	23%	0%	0%	0%	96%	4%	0%	0%
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
	From North					From East					From South					From West				



FM 2920 at Wood Forest

September 25, 2007

Turning Movement Count

Time	From North				From East				From South				From West			
	Wood Forest				FM 2920				Wood Forest				FM 2920			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
6:30	7	0	1	0	7	109	10	0	1	0	3	0	3	327	3	0
6:45	3	0	2	0	5	142	18	0	0	0	0	0	2	350	1	0
Hr. Total:	10	0	3	0	12	251	28	0	1	0	3	0	5	677	4	0

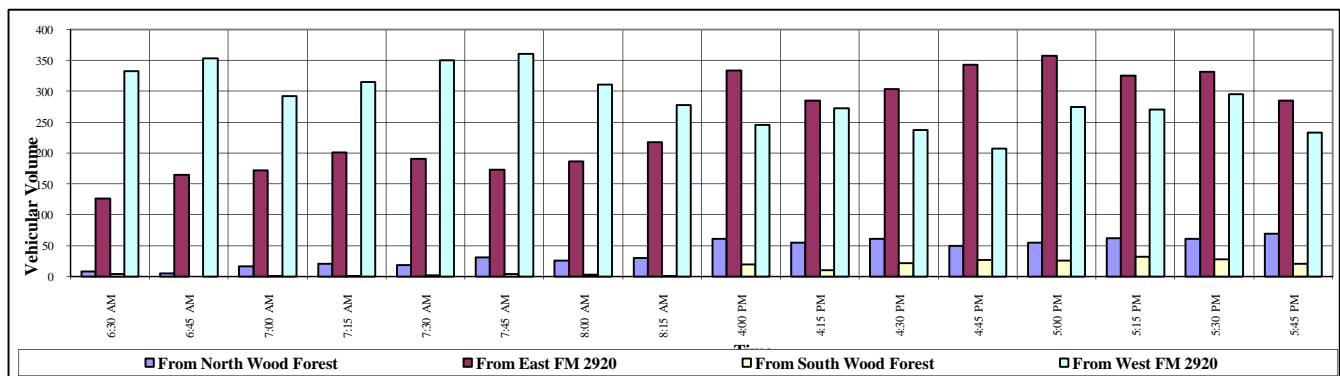
7:00	12	1	4	0	3	161	8	0	0	1	0	0	4	285	3	0
7:15	16	3	2	0	8	181	12	0	0	1	0	0	3	311	1	0
7:30	15	0	4	0	6	165	20	0	1	1	0	0	2	345	3	0
7:45	24	2	5	0	5	150	18	0	1	0	3	0	8	350	3	0
Hr. Total:	67	6	15	0	22	657	58	0	2	3	3	0	17	1291	10	0

8:00	20	1	5	0	2	147	38	0	0	2	1	0	12	290	9	0
8:15	22	1	7	0	7	180	31	0	0	1	0	0	9	264	5	0
Hr. Total:	42	2	12	0	9	327	69	0	0	3	1	0	21	554	14	0

16:00	48	6	7	0	16	287	31	0	5	4	11	0	11	224	11	0
16:15	42	5	8	0	15	249	21	0	4	0	6	0	10	256	7	0
16:30	44	6	11	0	15	259	30	0	4	0	18	0	8	221	8	0
16:45	40	1	9	0	20	290	33	0	11	3	13	0	8	191	8	0
Hr. Total:	174	18	35	0	66	1085	115	0	24	7	48	0	37	892	34	0

17:00	47	3	5	0	6	315	37	0	11	2	13	0	5	263	7	0
17:15	53	1	8	0	25	264	36	0	11	1	20	0	13	249	8	0
17:30	47	4	10	0	11	295	26	0	6	1	21	0	10	275	10	0
17:45	61	3	5	0	9	240	36	0	8	1	12	0	13	214	6	0
Hr. Total:	208	11	28	0	51	1114	135	0	36	5	66	0	41	1001	31	0

Gr. Total	501	37	93	0	160	3434	405	0	63	18	121	0	121	4415	93	0
% of Tot.	5%	0%	1%	0%	2%	36%	4%	0%	1%	0%	1%	0%	1%	47%	1%	0%
Apprch%	7%				42%				2%				49%			
% of Apprch	79%	6%	15%	0%	4%	86%	10%	0%	31%	9%	60%	0%	3%	95%	2%	0%
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
	Wood Forest				FM 2920				Wood Forest				FM 2920			
	From North				From East				From South				From West			



SH 249 Southbound Frontage Rd. at FM 2920

November 12, 2008

Turning Movement Count

Time	From North					From East					From South					From West				
	SH 249					FM 2920					FM 2920					FM 2920				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	81	5	29	14	0	17	105	0	0	0	0	0	0	0	0	0	186	89	0	0
6:45	122	14	31	48	0	16	98	0	0	0	0	0	0	0	0	0	231	77	0	0
Hr. Total:	203	19	60	62	0	33	203	0	0	0	0	0	0	0	0	0	417	166	0	0

7:00	132	15	37	43	0	19	138	0	0	0	0	0	0	0	0	0	207	94	0	0
7:15	94	8	44	30	0	22	169	0	0	0	0	0	0	0	0	0	208	71	0	0
7:30	130	16	38	26	0	25	148	0	0	0	0	0	0	0	0	0	246	74	0	0
7:45	134	12	44	26	0	17	145	0	0	0	0	0	0	0	0	0	210	87	0	0
Hr. Total:	490	51	163	125	0	83	600	0	0	0	0	0	0	0	0	0	871	326	0	0

8:00	90	10	31	31	0	29	155	0	0	0	0	0	0	0	0	0	221	74	0	0
8:15	93	9	38	26	0	22	133	0	0	0	0	0	0	0	0	0	213	67	0	0
Hr. Total:	183	19	69	57	0	51	288	0	0	0	0	0	0	0	0	0	434	141	0	0

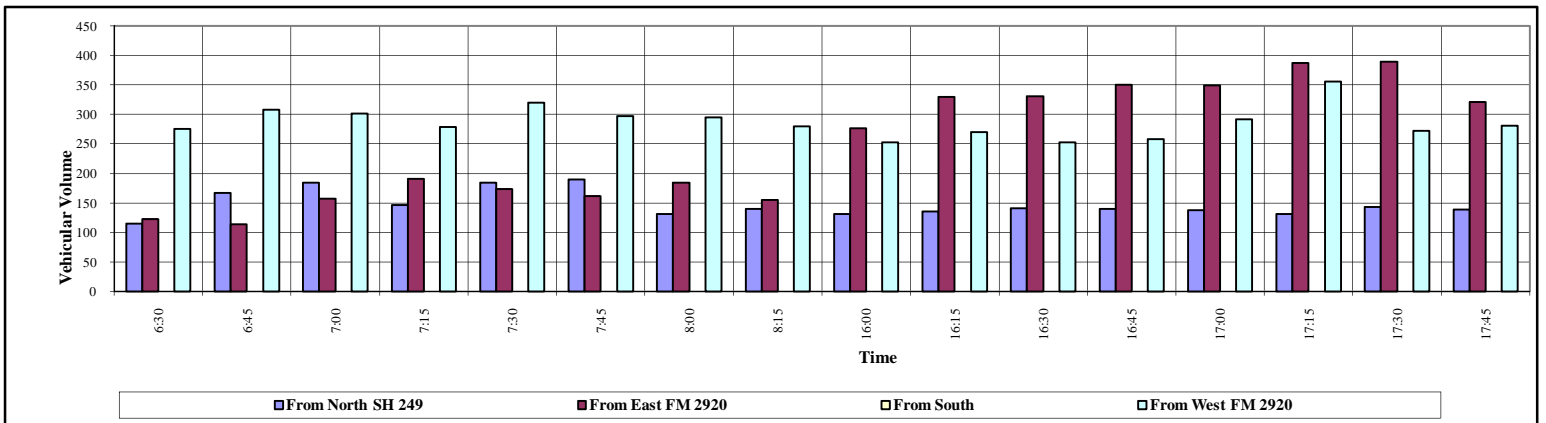
16:00	80	17	34	53	0	21	255	0	0	0	0	0	0	0	0	0	200	53	0	0
16:15	93	17	25	70	0	32	298	0	0	0	0	0	0	0	0	0	227	43	0	0
16:30	87	24	30	51	0	25	306	0	0	0	0	0	0	0	0	0	208	45	0	0
16:45	86	24	30	42	0	28	322	0	0	0	0	0	0	0	0	0	209	49	0	0
Hr. Total:	346	82	119	216	0	106	1181	0	0	0	0	0	0	0	0	0	844	190	0	0

17:00	90	17	31	58	0	28	321	0	0	0	0	0	0	0	0	0	231	61	0	0
17:15	86	18	27	53	0	38	349	0	0	0	0	0	0	0	0	0	294	62	0	0
17:30	89	17	37	47	0	37	352	0	0	0	0	0	0	0	0	0	219	53	0	0
17:45	86	23	30	61	0	30	291	0	0	0	0	0	0	0	0	0	231	50	0	0
Hr. Total:	351	75	125	219	0	133	1313	0	0	0	0	0	0	0	0	0	975	226	0	0

Gr. Total	1573	246	536	679	0	406	3585	0	0	0	0	0	0	0	0	0	3541	1049	0	0
% of Tot.	14%	2%	5%	6%	0%	3%	31%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	9%	0%	0%

Apprch%	26%					34%					0%					40%				
% of Apprch	52%	8%	18%	22%	0%	10%	90%	0%	0%	0%	####	####	####	####	####	0%	77%	23%	0%	0%

Time	From North					From East					From South					From West				
	SH 249					FM 2920					FM 2920					FM 2920				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds



SH 249 Northbound Frontage Rd. at FM 2920

November 12, 2008

Turning Movement Count

Time	From North					From East					From South					From West				
						FM 2920					SH 249					FM 2920				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	0	0	0	0	0	0	85	2	0	0	37	26	6	4	0	44	223	0	0	0
6:45	0	0	0	0	0	0	80	1	0	0	34	26	3	3	0	64	289	0	0	0
Hr. Total:	0	0	0	0	0	0	165	3	0	0	71	52	9	7	0	108	512	0	0	0

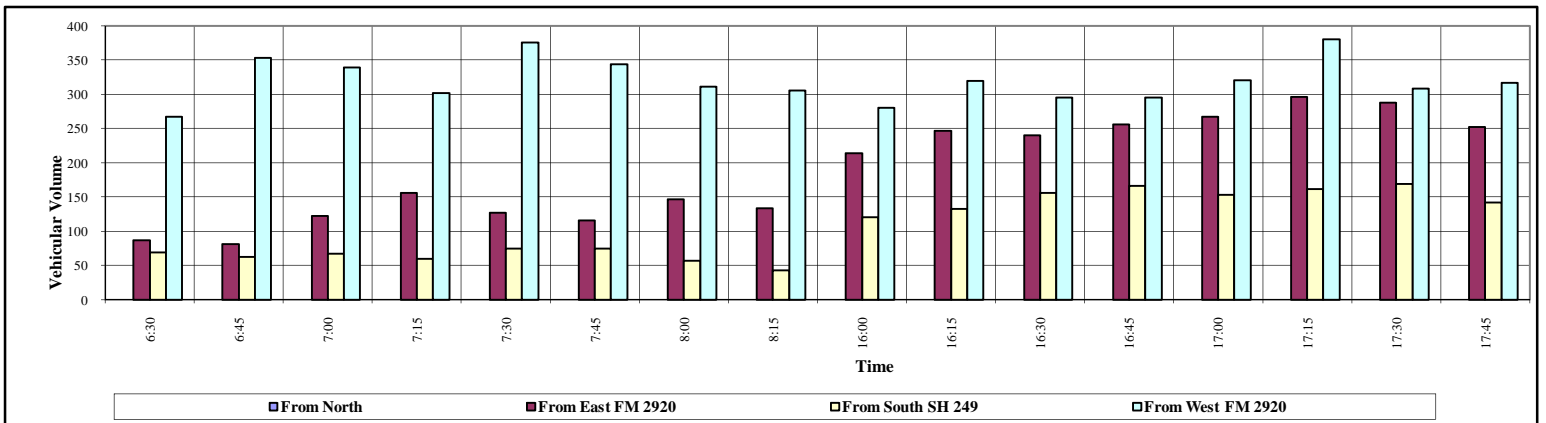
7:00	0	0	0	0	0	0	117	5	0	0	40	25	2	5	0	42	297	0	0	0
7:15	0	0	0	0	0	0	148	8	0	1	43	11	6	8	0	28	274	0	0	0
7:30	0	0	0	0	0	0	123	4	0	0	50	16	9	5	0	41	335	0	0	0
7:45	0	0	0	0	0	0	115	1	0	0	47	19	9	4	0	29	315	0	0	0
Hr. Total:	0	0	0	0	0	0	503	18	0	1	180	71	26	22	0	140	1221	0	0	0

8:00	0	0	0	0	0	0	143	4	0	0	41	13	3	2	0	31	280	0	0	0
8:15	0	0	0	0	0	0	127	7	0	0	28	13	2	2	0	37	269	0	0	0
Hr. Total:	0	0	0	0	0	0	270	11	0	0	69	26	5	4	0	68	549	0	0	0

16:00	0	0	0	0	0	0	208	6	0	0	68	43	10	4	0	51	229	0	0	0
16:15	0	0	0	0	0	0	240	7	0	0	90	33	10	5	0	65	255	0	0	0
16:30	0	0	0	0	0	0	232	8	0	0	99	48	9	5	0	57	238	0	0	1
16:45	0	0	0	0	0	0	247	9	0	0	103	48	15	7	0	65	230	0	0	0
Hr. Total:	0	0	0	0	0	0	927	30	0	0	360	172	44	21	0	238	952	0	0	1

17:00	0	0	0	0	0	0	251	16	0	0	98	42	13	2	0	74	247	0	0	0
17:15	0	0	0	0	0	0	282	14	0	0	105	49	8	1	0	79	301	0	0	0
17:30	0	0	0	0	0	0	277	11	0	0	112	48	9	1	0	57	251	0	0	0
17:45	0	0	0	0	0	0	244	8	0	0	77	52	13	9	0	60	257	0	0	0
Hr. Total:	0	0	0	0	0	0	1054	49	0	0	392	191	43	13	0	270	1056	0	0	0

Gr. Total	0	0	0	0	0	0	2919	111	0	1	1072	512	127	67	0	824	4290	0	0	1
% of Tot.	0%	0%	0%	0%	0%	0%	29%	1%	0%	0%	11%	5%	1%	1%	0%	8%	43%	0%	0%	0%
Apprch%	0%					31%					18%					52%				
% of Apprch	####	####	####	####	####	0%	96%	4%	0%	0%	60%	29%	7%	4%	0%	16%	84%	0%	0%	0%
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
						FM 2920					SH 249					FM 2920				
	From North					From East					From South					From West				



FM 2920 at Old SH 249 (Bus. 249)

November 18, 2008

Turning Movement Count

Time	From North					From East					From South					From West				
	Old SH 249 (Bus 249)					FM 2920					Old SH 249 (Bus 249)					FM 2920				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	0	11	3	0	0	36	75	21	0	0	10	48	41	0	0	10	165	56	0	0
6:45	2	9	12	0	0	44	77	20	0	0	1	54	53	0	0	31	175	50	0	0
Hr. Total:	2	20	15	0	0	80	152	41	0	0	11	102	94	0	0	41	340	106	0	0

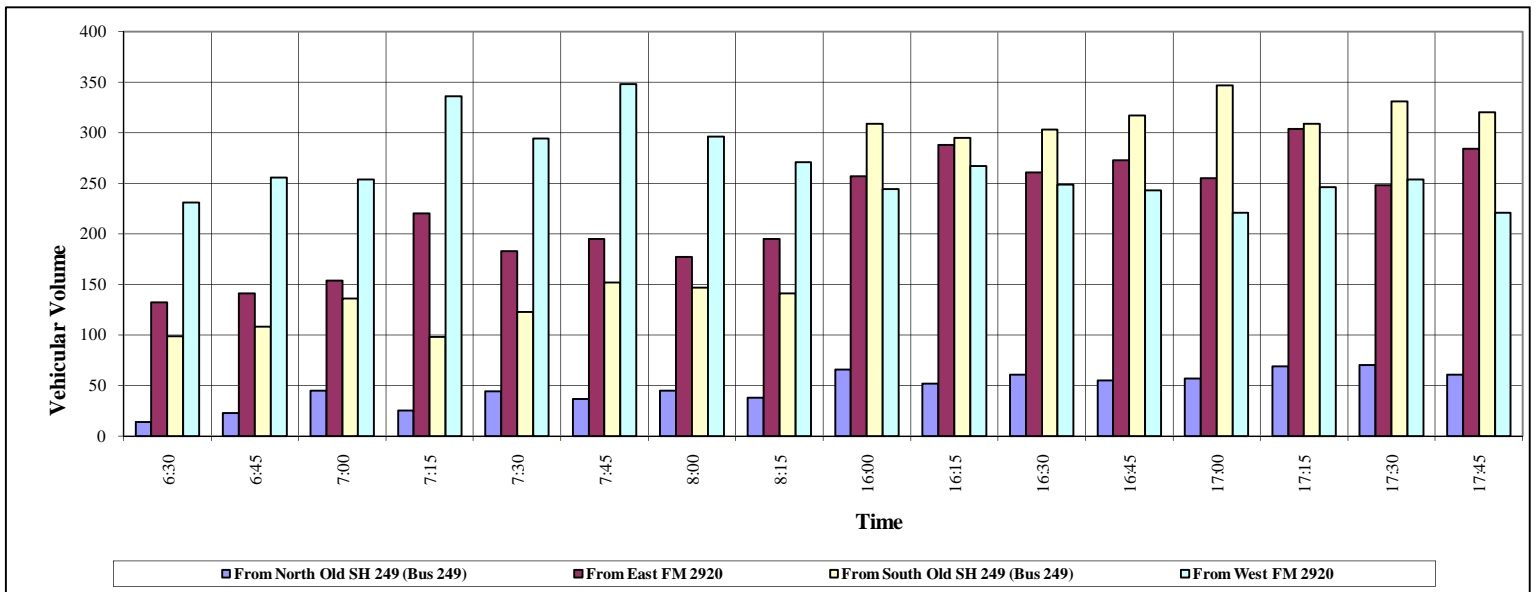
7:00	6	26	13	0	0	50	93	11	0	0	14	69	53	0	0	16	180	58	0	0
7:15	2	14	9	0	0	56	145	19	0	0	15	40	43	0	0	18	229	89	0	0
7:30	4	23	17	0	0	47	105	31	0	0	17	59	47	0	0	15	184	95	0	0
7:45	6	21	10	0	0	57	106	32	0	0	21	54	77	0	0	29	213	106	0	0
Hr. Total:	18	84	49	0	0	210	449	93	0	0	67	222	220	0	0	78	806	348	0	0

8:00	10	27	8	0	0	39	115	23	0	0	25	61	61	0	0	19	170	107	0	0
8:15	3	24	11	0	0	66	96	33	0	0	27	60	54	0	0	16	157	98	0	1
Hr. Total:	13	51	19	0	0	105	211	56	0	0	52	121	115	0	0	35	327	205	0	1

16:00	15	35	16	0	0	77	134	46	0	0	86	139	84	0	0	36	133	75	0	0
16:15	11	18	23	0	0	85	149	54	0	0	82	137	76	0	0	20	159	88	0	0
16:30	9	28	24	0	0	80	142	39	0	0	76	159	68	0	0	22	123	104	0	1
16:45	9	19	27	0	0	72	164	37	0	0	98	149	70	0	0	28	149	66	0	0
Hr. Total:	44	100	90	0	0	314	589	176	0	0	342	584	298	0	0	106	564	333	0	1

17:00	14	26	17	0	0	57	158	40	0	0	115	169	63	0	0	33	114	74	0	0
17:15	11	28	30	0	0	76	171	57	0	0	96	137	76	0	0	26	154	66	0	0
17:30	16	24	30	0	0	59	143	46	0	0	88	178	65	0	0	39	131	84	0	0
17:45	16	31	14	0	0	68	170	46	0	0	83	172	65	0	0	18	137	66	0	0
Hr. Total:	57	109	91	0	0	260	642	189	0	0	382	656	269	0	0	116	536	290	0	0

Gr. Total	134	364	264	0	0	969	2043	555	0	0	854	1685	996	0	0	376	2573	1282	0	2
% of Tot.	1%	3%	2%	0%	0%	8%	17%	5%	0%	0%	7%	14%	8%	0%	0%	3%	21%	11%	0%	0%
Apprch%	6%					29%					29%					35%				
% of Apprch	18%	48%	35%	0%	0%	27%	57%	16%	0%	0%	24%	48%	28%	0%	0%	9%	61%	30%	0%	0%
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
	Old SH 249 (Bus 249)					FM 2920					Old SH 249 (Bus 249)					FM 2920				
	From North					From East					From South					From West				



FM 2920 at Bovinghausen

September 26, 2007

Turning Movement Count

Time	From North Bovinghasuen				From East FM 2920				From South Gas Station Driveway				From West FM 2920			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
6:30	2	0	16	0	0	155	3	0	1	0	0	0	4	173	0	0
6:45	6	2	12	0	1	122	4	0	1	0	1	0	3	204	0	0
Hr. Total:	8	2	28	0	1	277	7	0	1	0	1	0	7	377	0	0

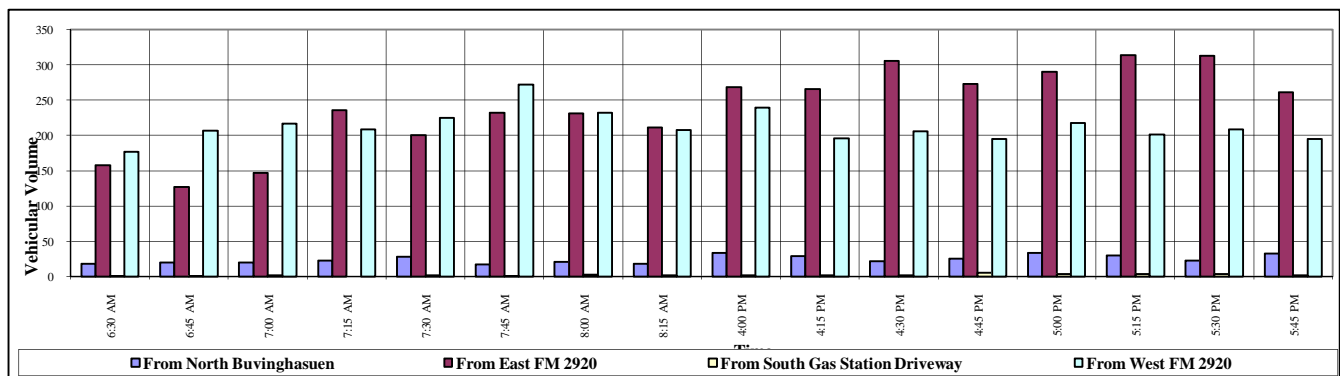
7:00	6	1	13	0	0	143	4	0	0	1	1	0	0	217	0	0
7:15	4	2	17	0	0	234	2	0	0	0	0	0	1	208	0	0
7:30	9	0	19	0	1	195	4	0	0	1	1	0	1	224	0	0
7:45	11	0	6	0	0	224	8	0	1	0	0	0	5	267	0	0
Hr. Total:	30	3	55	0	1	796	18	0	1	2	2	0	7	916	0	0

8:00	9	1	11	0	1	222	8	0	0	3	0	0	4	228	0	0
8:15	13	0	5	0	1	200	10	0	1	0	1	0	1	207	0	0
Hr. Total:	22	1	16	0	2	422	18	0	1	3	1	0	5	435	0	0

16:00	14	0	20	0	1	261	6	0	1	0	1	0	9	230	0	0
16:15	8	0	21	0	0	261	5	1	0	1	1	0	8	188	0	0
16:30	9	1	12	0	1	295	10	1	0	1	1	0	12	194	0	0
16:45	3	0	22	0	2	265	6	0	3	1	1	0	7	188	0	0
Hr. Total:	34	1	75	0	4	1082	27	2	4	3	4	0	36	800	0	0

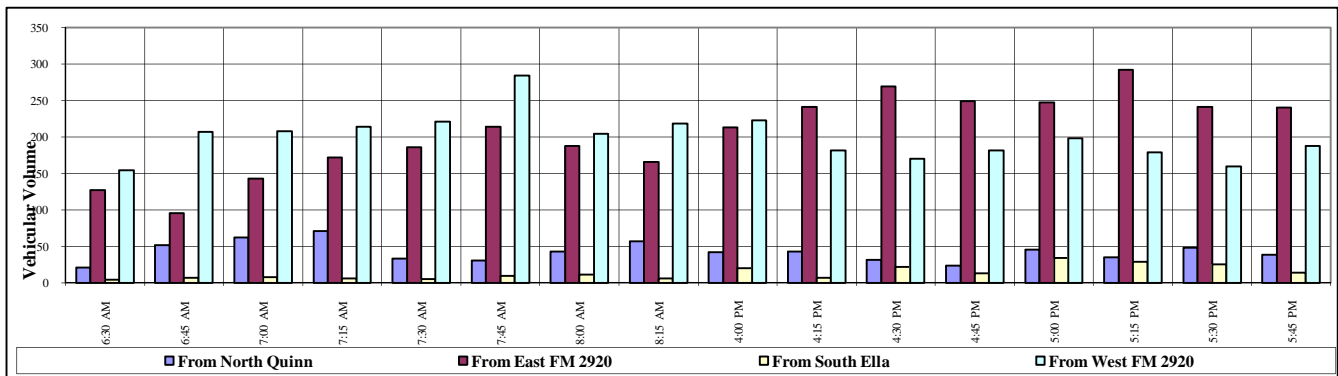
17:00	7	1	26	0	1	284	5	0	3	1	0	0	9	209	0	0
17:15	5	2	23	0	1	306	7	0	4	0	0	0	14	187	0	0
17:30	6	3	14	0	0	306	7	0	1	1	2	0	11	198	0	0
17:45	12	0	21	0	0	259	2	0	2	0	0	0	9	186	0	0
Hr. Total:	30	6	84	0	2	1155	21	0	10	2	2	0	43	780	0	0

Gr. Total	124	13	258	0	10	3732	91	2	17	10	10	0	98	3308	0	0
% of Tot.	2%	0%	3%	0%	0%	49%	1%	0%	0%	0%	0%	0%	1%	43%	0%	0%
Apprch%	5%				50%				0%				44%			
% of Apprch	31%	3%	65%	0%	0%	97%	2%	0%	46%	27%	27%	0%	3%	97%	0%	0%
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
	Bovinghasuen				FM 2920				Gas Station Driveway				FM 2920			
	From North				From East				From South				From West			



FM 2920 at Quinn
September 26, 2007
Turning Movement Count

Time	From North				From East				From South				From West			
	Quinn				FM 2920				Ella				FM 2920			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
6:30	5	1	15	0	6	120	1	0	3	0	1	0	16	138	0	0
6:45	10	9	33	0	2	92	2	0	6	1	0	0	17	189	1	0
Hr. Total:	15	10	48	0	8	212	3	0	9	1	1	0	33	327	1	0
7:00	26	6	30	0	0	135	8	0	3	3	2	0	30	177	1	0
7:15	19	13	39	0	1	160	11	0	1	5	0	0	8	206	0	0
7:30	11	6	16	1	0	180	6	0	3	2	0	0	11	207	3	0
7:45	12	11	8	0	1	211	2	0	3	5	2	0	10	269	5	0
Hr. Total:	68	36	93	1	2	686	27	0	10	15	4	0	59	859	9	0
8:00	15	12	16	0	3	178	7	0	3	5	3	0	12	190	2	0
8:15	19	18	20	0	4	156	6	0	1	3	2	0	8	209	1	0
Hr. Total:	34	30	36	0	7	334	13	0	4	8	5	0	20	399	3	0
16:00	15	8	19	0	0	201	12	0	5	13	2	0	13	208	2	0
16:15	7	5	31	0	0	231	10	0	2	4	1	0	17	151	14	0
16:30	5	5	22	0	5	259	5	0	7	11	4	0	16	151	3	0
16:45	7	4	13	0	3	235	11	0	5	8	0	0	16	163	3	0
Hr. Total:	34	22	85	0	8	926	38	0	19	36	7	0	62	673	22	0
17:00	6	9	31	0	0	240	7	0	14	19	1	0	16	178	4	0
17:15	5	6	24	0	2	278	12	0	12	16	1	0	20	157	2	0
17:30	13	12	23	0	2	235	4	0	8	17	0	0	11	148	1	0
17:45	15	5	19	0	0	233	7	0	9	5	0	0	22	164	2	0
Hr. Total:	39	32	97	0	4	986	30	0	43	57	2	0	69	647	9	0
Gr. Total	190	130	359	1	29	3144	111	0	85	117	19	0	243	2905	44	0
% of Tot.	3%	2%	5%	0%	0%	43%	2%	0%	1%	2%	0%	0%	3%	39%	1%	0%
Apprch%	9%				45%				3%				43%			
% of Apprch	28%	19%	53%	0%	1%	96%	3%	0%	38%	53%	9%	0%	8%	91%	1%	0%
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
	Quinn				FM 2920				Ella				FM 2920			
	From North				From East				From South				From West			



FM 2920 at Holderrith

September 27, 2007

Turning Movement Count

Time	From North					From East					From South					From West				
	Holderrith					FM 2920					Holderrith					FM 2920				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	5	12	9	0	2	16	120	2	0	0	0	2	11	0	0	1	167	3	0	0
6:45	8	10	3	0	0	18	103	3	0	0	3	8	7	0	0	6	197	3	0	0
Hr. Total:	13	22	12	0	2	34	223	5	0	0	3	10	18	0	0	7	364	6	0	0

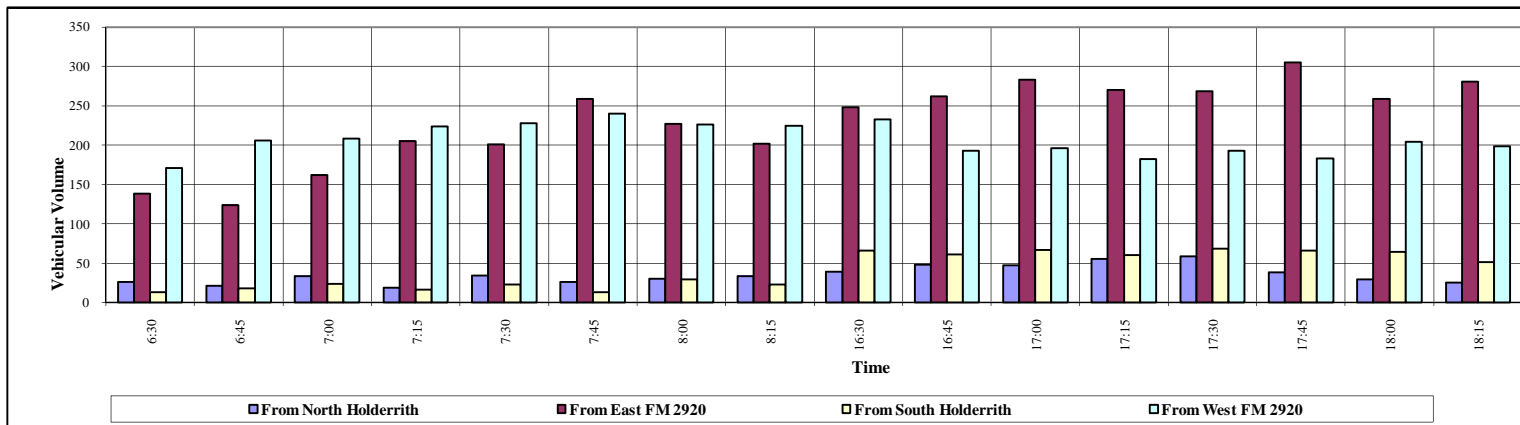
7:00	8	18	7	0	1	16	141	5	0	0	4	8	12	0	0	2	203	3	0	0
7:15	6	7	6	0	0	21	181	3	0	0	3	6	7	0	0	7	213	4	0	0
7:30	9	17	8	0	0	18	180	3	0	0	2	7	14	0	0	5	221	2	0	0
7:45	5	9	12	0	0	32	221	6	0	0	0	2	11	0	0	3	231	6	0	0
Hr. Total:	28	51	33	0	1	87	723	17	0	0	9	23	44	0	0	17	868	15	0	0

8:00	6	14	10	0	0	30	194	3	0	0	6	6	17	0	0	5	214	7	0	0
8:15	7	12	14	0	0	20	172	10	0	0	4	5	14	0	0	5	218	2	0	0
Hr. Total:	13	26	24	0	0	50	366	13	0	0	10	11	31	0	0	10	432	9	0	0

16:30	9	19	11	0	0	13	223	12	0	0	17	29	20	0	0	12	217	4	0	0
16:45	8	16	24	0	0	13	234	15	0	0	14	19	28	0	0	9	181	3	0	0
17:00	8	13	26	0	0	24	247	12	0	0	13	27	27	0	0	7	187	2	0	0
17:15	13	14	28	0	1	14	244	12	0	0	8	24	28	0	0	8	169	5	0	0
Hr. Total:	38	62	89	0	1	64	948	51	0	0	52	99	103	0	0	36	754	14	0	0

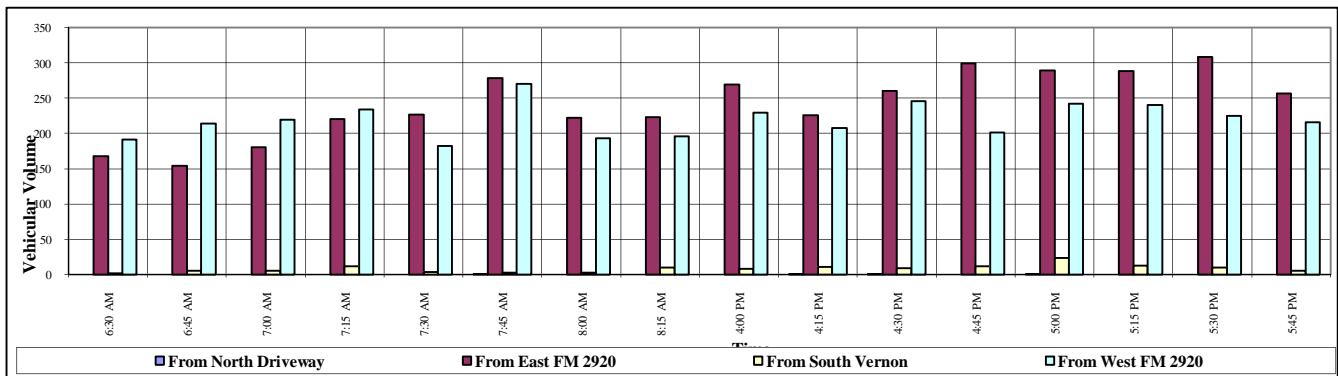
17:30	18	15	26	0	0	10	249	10	0	0	12	27	29	0	0	8	179	6	0	0
17:45	11	13	14	0	0	18	272	15	0	0	13	26	27	0	1	9	173	1	0	0
18:00	8	4	17	0	0	5	242	12	0	0	11	27	26	0	0	3	195	6	0	0
18:15	4	11	10	0	0	19	258	4	0	0	9	18	24	0	0	5	193	1	0	0
Hr. Total:	41	43	67	0	0	52	1021	41	0	0	45	98	106	0	1	25	740	14	0	0

Gr. Total	133	204	225	0	4	287	3281	127	0	0	119	241	302	0	1	95	3158	58	0	0
% of Tot.	2%	2%	3%	0%	0%	3%	40%	2%	0%	0%	1%	3%	4%	0%	0%	1%	38%	1%	0%	0%
Apprch%	7%					45%					8%					40%				
% of Apprch	23%	36%	40%	0%	1%	8%	89%	3%	0%	0%	18%	36%	46%	0%	0%	3%	95%	2%	0%	0%
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
	Holderrith					FM 2920					Holderrith					FM 2920				
	From North					From East					From South					From West				



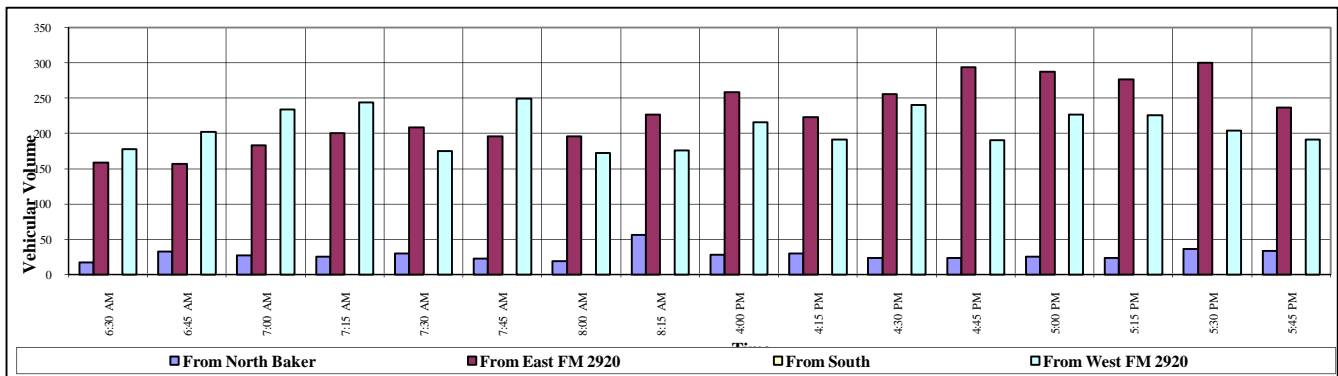
FM 2920 at Vernon
September 26, 2007
Turning Movement Count

Time	From North				From East				From South				From West			
	Driveway				FM 2920				Vernon				FM 2920			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
6:30	0	0	0	0	0	160	8	0	0	0	2	0	11	180	0	0
6:45	0	0	0	0	0	145	9	0	0	0	5	0	13	201	0	0
Hr. Total:	0	0	0	0	0	305	17	0	0	0	7	0	24	381	0	0
7:00	0	0	0	0	0	170	10	0	2	0	3	0	20	199	0	0
7:15	0	0	0	0	0	210	10	0	6	0	6	0	12	222	0	0
7:30	0	0	0	0	0	214	13	0	2	0	2	0	4	178	0	0
7:45	0	0	1	0	0	256	22	0	2	0	1	0	5	264	1	0
Hr. Total:	0	0	1	0	0	850	55	0	12	0	12	0	41	863	1	0
8:00	0	0	0	0	0	206	16	0	0	0	3	0	4	189	0	0
8:15	0	0	0	0	0	208	15	0	0	0	10	0	12	184	0	0
Hr. Total:	0	0	0	0	0	414	31	0	0	0	13	0	16	373	0	0
16:00	0	0	0	0	1	254	14	0	0	0	8	3	12	217	0	0
16:15	0	0	1	0	0	210	16	0	3	0	8	6	13	195	0	0
16:30	1	0	0	0	0	250	10	0	4	0	5	4	10	236	0	0
16:45	0	0	0	0	0	288	11	0	6	0	6	4	20	181	0	0
Hr. Total:	1	0	1	0	1	1002	51	0	13	0	27	17	55	829	0	0
17:00	0	0	1	0	0	270	19	0	9	0	15	3	17	225	0	0
17:15	0	0	0	0	0	273	15	0	7	0	6	5	21	219	0	0
17:30	0	0	0	0	0	292	16	0	2	0	8	4	11	214	0	0
17:45	0	0	0	0	0	234	23	0	2	0	3	7	12	204	0	0
Hr. Total:	0	0	1	0	0	1069	73	0	20	0	32	19	61	862	0	0
Gr. Total	1	0	3	0	1	3640	227	0	45	0	91	36	197	3308	1	0
% of Tot.	0%	0%	0%	0%	0%	48%	3%	0%	1%	0%	1%	0%	3%	44%	0%	0%
Apprch%	0%				51%				2%				46%			
% of Apprch	25%	0%	75%	0%	0%	94%	6%	0%	26%	0%	53%	21%	6%	94%	0%	0%
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
	Driveway				FM 2920				Vernon				FM 2920			
	From North				From East				From South				From West			



FM 2920 at Baker
September 26, 2007
Turning Movement Count

Time	From North				From East				From South				From West			
	Baker				FM 2920				FM 2920				FM 2920			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
6:30	4	0	13	0	10	149	0	0	0	0	0	0	0	175	3	0
6:45	8	0	25	0	17	140	0	0	0	0	0	0	0	182	20	0
Hr. Total:	12	0	38	0	27	289	0	0	0	0	0	0	0	357	23	0
7:00	6	0	21	0	19	164	0	4	0	0	0	0	0	199	35	0
7:15	9	0	16	2	16	184	0	1	0	0	0	0	0	215	29	0
7:30	14	0	16	0	8	201	0	0	0	0	0	0	0	171	4	0
7:45	7	0	16	0	9	187	0	1	0	0	0	0	0	247	2	0
Hr. Total:	36	0	69	2	52	736	0	6	0	0	0	0	0	832	70	0
8:00	3	0	16	0	10	186	0	0	0	0	0	0	0	171	1	0
8:15	15	0	41	0	20	207	0	0	0	0	0	0	0	176	0	0
Hr. Total:	18	0	57	0	30	393	0	0	0	0	0	0	0	347	1	0
16:00	14	0	14	0	5	253	0	0	0	0	0	0	0	214	2	0
16:15	13	0	17	0	5	218	0	0	0	0	0	0	0	191	0	0
16:30	10	0	14	0	9	247	0	0	0	0	0	0	0	232	8	0
16:45	13	0	11	0	10	284	0	0	0	0	0	0	0	190	0	0
Hr. Total:	50	0	56	0	29	1002	0	0	0	0	0	0	0	827	10	0
17:00	8	0	17	1	4	283	0	0	0	0	0	0	0	225	2	0
17:15	10	0	14	0	9	268	0	0	0	0	0	0	0	226	0	0
17:30	15	0	21	0	6	294	0	0	0	0	0	0	0	204	0	0
17:45	9	0	25	0	5	232	0	0	0	0	0	0	0	191	0	0
Hr. Total:	42	0	77	1	24	1077	0	0	0	0	0	0	0	846	2	0
Gr. Total	158	0	297	3	162	3497	0	6	0	0	0	0	0	3209	106	0
% of Tot.	2%	0%	4%	0%	2%	47%	0%	0%	0%	0%	0%	0%	0%	43%	1%	0%
Apprch%	6%				49%				0%				45%			
% of Apprch	34%	0%	65%	1%	4%	95%	0%	0%	#####	#####	#####	#####	0%	97%	3%	0%
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
	Baker				FM 2920				From South				FM 2920			
	From North				From East				From South				From West			



FM 2920 at Pine
September 26, 2007
Turning Movement Count

Time	From North				From East				From South				From West			
	Pine				FM 2920				Pine				FM 2920			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
6:30	2	2	2	0	7	125	0	0	5	4	13	0	0	140	4	0
6:45	2	3	4	0	7	135	3	0	8	7	14	0	4	157	5	0
Hr. Total:	4	5	6	0	14	260	3	0	13	11	27	0	4	297	9	0

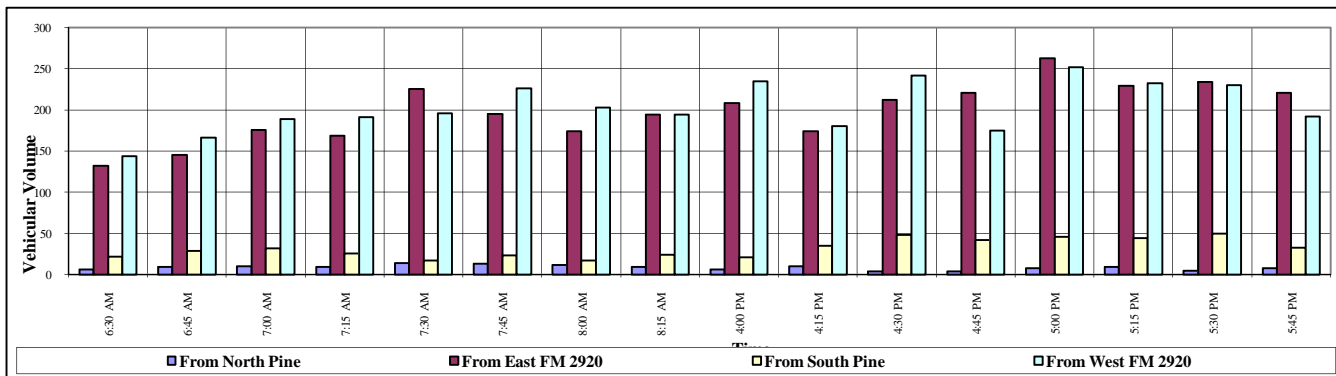
7:00	5	4	1	0	6	168	2	0	9	5	18	0	5	183	1	0
7:15	5	2	2	0	3	156	10	0	9	2	15	0	1	188	2	0
7:30	9	2	3	0	4	208	13	0	3	6	8	0	1	191	4	0
7:45	8	3	2	0	4	188	3	0	5	6	12	1	2	220	4	0
Hr. Total:	27	11	8	0	17	720	28	0	26	19	53	1	9	782	11	0

8:00	3	3	6	0	4	168	2	0	4	3	10	0	3	200	0	0
8:15	3	5	1	0	5	188	1	0	7	2	15	0	2	171	21	0
Hr. Total:	6	8	7	0	9	356	3	0	11	5	25	0	5	371	21	0

16:00	3	1	2	0	1	205	2	0	8	3	10	0	0	232	3	0
16:15	3	6	1	0	3	170	1	0	19	2	14	0	1	170	9	0
16:30	1	1	2	0	2	206	4	0	13	12	23	0	1	234	7	0
16:45	1	1	2	0	4	213	4	0	11	7	24	0	2	170	3	0
Hr. Total:	8	9	7	0	10	794	11	0	51	24	71	0	4	806	22	0

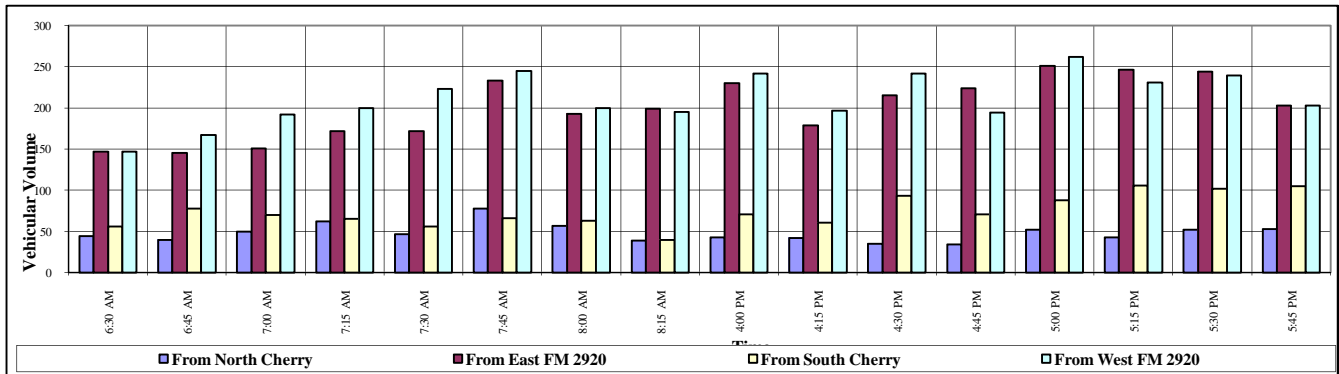
17:00	1	4	3	0	4	250	9	0	16	12	18	0	6	242	4	0
17:15	4	1	4	0	1	225	3	0	13	7	24	0	6	222	4	0
17:30	2	0	3	0	1	231	2	0	20	7	23	0	7	213	10	0
17:45	3	2	3	0	14	205	2	0	12	4	17	0	11	176	5	0
Hr. Total:	10	7	13	0	20	911	16	0	61	30	82	0	30	853	23	0

Gr. Total	55	40	41	0	70	3041	61	0	162	89	258	1	52	3109	86	0
% of Tot.	1%	1%	1%	0%	1%	43%	1%	0%	2%	1%	4%	0%	1%	44%	1%	0%
Apprch%	2%				45%				7%				46%			
% of Apprch	40%	29%	30%	0%	2%	96%	2%	0%	32%	17%	51%	0%	2%	96%	3%	0%
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
	Pine				FM 2920				Pine				FM 2920			
	From North				From East				From South				From West			



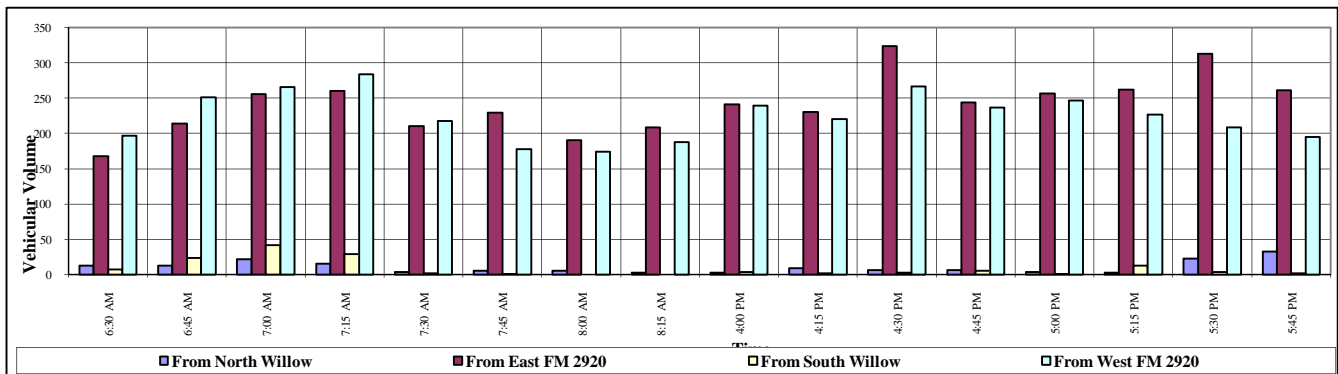
FM 2920 at Cherry
September 25, 2007
Turning Movement Count

Time	From North				From East				From South				From West			
	Cherry				FM 2920				Cherry				FM 2920			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
6:30	12	29	3	0	5	139	3	0	10	41	5	0	0	144	3	0
6:45	8	27	5	0	2	134	9	0	7	66	5	0	2	161	4	0
Hr. Total:	20	56	8	0	7	273	12	0	17	107	10	0	2	305	7	0
7:00	14	34	2	0	7	141	3	0	5	62	3	0	5	184	3	0
7:15	14	44	4	0	3	167	2	0	6	36	23	0	1	190	9	0
7:30	9	33	5	0	6	163	3	0	17	13	26	0	1	213	9	0
7:45	18	51	9	0	5	225	3	0	23	24	19	0	1	235	9	0
Hr. Total:	55	162	20	0	21	696	11	0	51	135	71	0	8	822	30	0
8:00	17	30	10	0	6	181	6	0	22	21	20	0	3	182	15	0
8:15	7	25	7	0	9	185	5	0	23	9	8	0	1	178	16	0
Hr. Total:	24	55	17	0	15	366	11	0	45	30	28	0	4	360	31	0
16:00	8	21	14	0	7	217	6	0	17	43	11	0	4	235	3	0
16:15	9	23	10	0	6	165	8	0	13	31	17	0	4	179	14	0
16:30	9	18	8	0	6	205	4	0	18	67	8	0	2	235	5	0
16:45	5	24	5	0	3	216	5	0	14	43	14	0	2	183	9	0
Hr. Total:	31	86	37	0	22	803	23	0	62	184	50	0	12	832	31	0
17:00	14	32	6	0	0	248	3	0	19	49	20	0	3	250	9	0
17:15	11	26	6	0	7	224	15	0	22	75	9	0	0	223	8	0
17:30	13	31	8	0	6	228	10	0	23	68	11	0	2	222	15	0
17:45	8	34	11	0	6	190	7	0	22	66	17	0	8	186	9	0
Hr. Total:	46	123	31	0	19	890	35	0	86	258	57	0	13	881	41	0
Gr. Total	176	482	113	0	84	3028	92	0	261	714	216	0	39	3200	140	0
% of Tot.	2%	6%	1%	0%	1%	35%	1%	0%	3%	8%	3%	0%	0%	37%	2%	0%
Apprch%	9%				37%				14%				40%			
% of Apprch	23%	63%	15%	0%	3%	95%	3%	0%	22%	60%	18%	0%	1%	95%	4%	0%
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
	Cherry				FM 2920				Cherry				FM 2920			
	From North				From East				From South				From West			



FM 2920 at Willow
September 26, 2007
Turning Movement Count

Time	From North				From East				From South				From West			
	Willow				FM 2920				Willow				FM 2920			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
6:30	2	3	8	0	8	160	0	0	5	0	2	0	1	186	10	0
6:45	4	7	2	0	30	184	0	0	13	0	11	0	0	222	29	0
Hr. Total:	6	10	10	0	38	344	0	0	18	0	13	0	1	408	39	0
7:00	7	12	3	0	30	225	1	0	22	2	18	0	1	226	39	0
7:15	4	8	3	0	22	238	0	0	13	0	16	0	1	253	30	0
7:30	1	0	3	0	0	208	2	0	0	0	2	0	2	215	1	0
7:45	2	0	3	0	0	229	0	0	1	0	0	0	0	176	2	0
Hr. Total:	14	20	12	0	52	900	3	0	36	2	36	0	4	870	72	0
8:00	2	0	3	0	0	190	0	0	0	0	0	0	4	169	1	0
8:15	1	0	2	0	0	208	1	0	0	0	0	0	1	186	1	0
Hr. Total:	3	0	5	0	0	398	1	0	0	0	0	0	5	355	2	0
16:00	1	0	2	0	3	238	0	0	2	0	2	0	0	239	0	0
16:15	3	1	5	0	0	229	1	0	2	0	0	0	4	215	1	0
16:30	3	0	3	1	0	320	4	0	2	0	1	0	3	259	5	0
16:45	3	0	3	0	0	240	4	0	5	0	0	0	7	228	2	0
Hr. Total:	10	1	13	1	3	1027	9	0	11	0	3	0	14	941	8	0
17:00	1	0	3	0	0	248	9	0	0	0	1	0	3	241	3	0
17:15	1	0	2	0	0	253	9	0	7	1	5	0	7	212	8	0
17:30	6	3	14	0	0	306	7	0	1	1	2	0	11	198	0	0
17:45	12	0	21	0	0	259	2	0	2	0	0	0	9	186	0	0
Hr. Total:	20	3	40	0	0	1066	27	0	10	2	8	0	30	837	11	0
Gr. Total	53	34	80	1	93	3735	40	0	75	4	60	0	54	3411	132	0
% of Tot.	1%	0%	1%	0%	1%	48%	1%	0%	1%	0%	1%	0%	1%	44%	2%	0%
Apprch%	2%				50%				2%				46%			
% of Apprch	32%	20%	48%	1%	2%	97%	1%	0%	54%	3%	43%	0%	2%	95%	4%	0%
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
	Willow				FM 2920				Willow				FM 2920			
	From North				From East				From South				From West			



FM 2920 at FM 2978

November 18, 2008

Turning Movement Count

Time	From North					From East					From South					From West				
	FM 2978					FM 2920					FM 2978					FM 2920				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	35	85	37	0	0	6	148	25	0	0	2	52	6	0	0	32	110	3	0	0
6:45	44	93	41	0	0	5	144	22	0	0	5	48	4	0	0	30	85	8	0	0
Hr. Total:	79	178	78	0	0	11	292	47	0	0	7	100	10	0	0	62	195	11	0	0

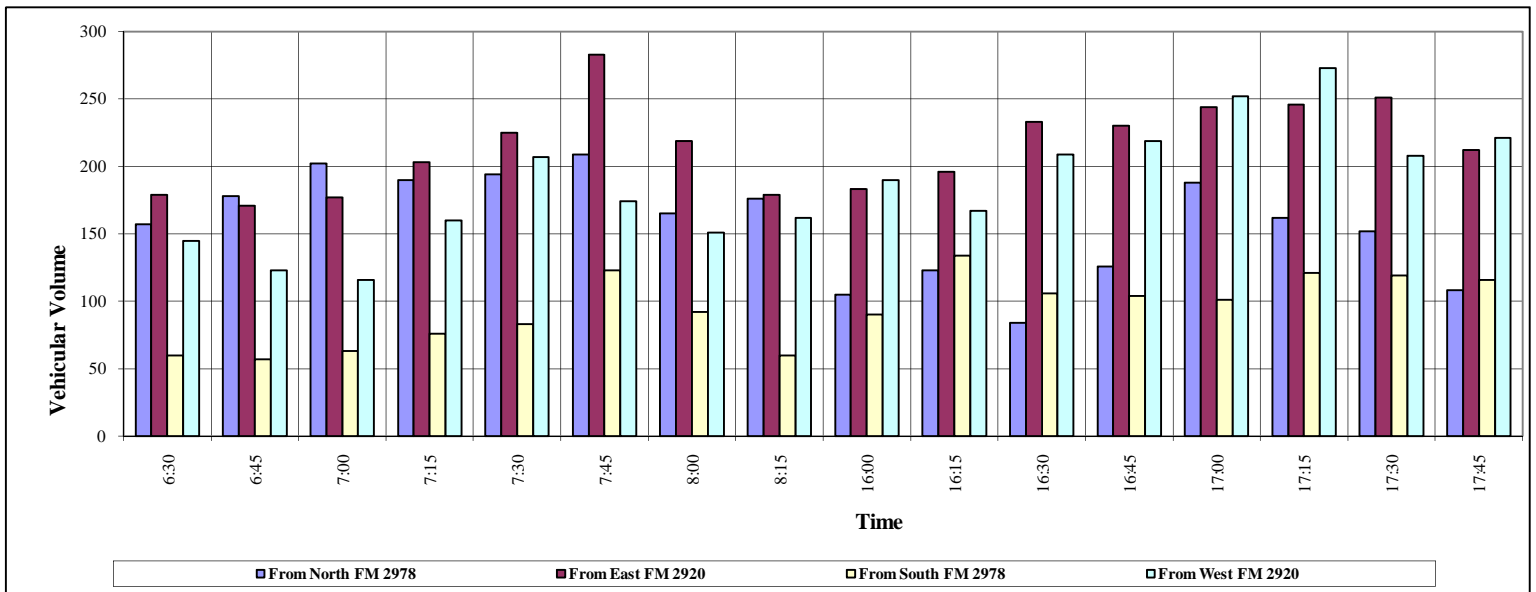
7:00	53	112	37	0	0	11	144	22	0	0	6	51	6	0	0	26	86	4	0	0
7:15	54	103	33	0	0	15	170	18	0	0	11	63	2	0	0	24	135	1	0	0
7:30	54	89	51	0	0	11	190	24	0	0	17	61	5	0	0	25	176	6	0	0
7:45	50	100	59	0	0	9	234	40	0	0	23	96	4	0	0	46	120	8	0	0
Hr. Total:	211	404	180	0	0	46	738	104	0	0	57	271	17	0	0	121	517	19	0	0

8:00	47	73	45	0	0	8	178	33	0	0	15	76	1	0	0	54	95	2	0	0
8:15	43	95	38	0	0	5	150	24	0	0	8	50	2	0	0	26	135	1	0	0
Hr. Total:	90	168	83	0	0	13	328	57	0	0	23	126	3	0	0	80	230	3	0	0

16:00	29	43	33	0	0	10	140	33	0	0	9	76	5	0	0	38	144	8	0	0
16:15	31	54	38	0	0	8	149	39	0	0	4	128	2	0	0	69	92	6	0	0
16:30	16	44	24	0	0	13	176	44	0	0	7	95	4	0	0	62	144	3	0	0
16:45	37	69	20	0	0	11	172	47	0	0	8	94	2	0	0	64	151	4	0	0
Hr. Total:	113	210	115	0	0	42	637	163	0	0	28	393	13	0	0	233	531	21	0	0

17:00	60	102	26	0	0	9	177	58	0	0	0	100	1	0	0	63	186	3	0	0
17:15	34	85	43	0	0	6	189	51	0	0	6	112	3	0	0	61	204	8	0	0
17:30	50	71	31	0	0	12	178	61	0	0	7	110	2	0	0	53	143	12	0	0
17:45	28	58	22	0	0	12	153	47	0	0	9	105	2	0	0	93	124	4	0	0
Hr. Total:	172	316	122	0	0	39	697	217	0	0	22	427	8	0	0	270	657	27	0	0

Gr. Total	665	1276	578	0	0	151	2692	588	0	0	137	1317	51	0	0	766	2130	81	0	0
% of Tot.	6%	12%	6%	0%	0%	1%	26%	6%	0%	0%	1%	13%	0%	0%	0%	7%	20%	1%	0%	0%
Apprch%	24%					33%					14%					29%				
% of Apprch	26%	51%	23%	0%	0%	4%	78%	17%	0%	0%	9%	88%	3%	0%	0%	26%	72%	3%	0%	0%
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
	FM 2978					FM 2920					FM 2978					FM 2920				
	From North					From East					From South					From West				

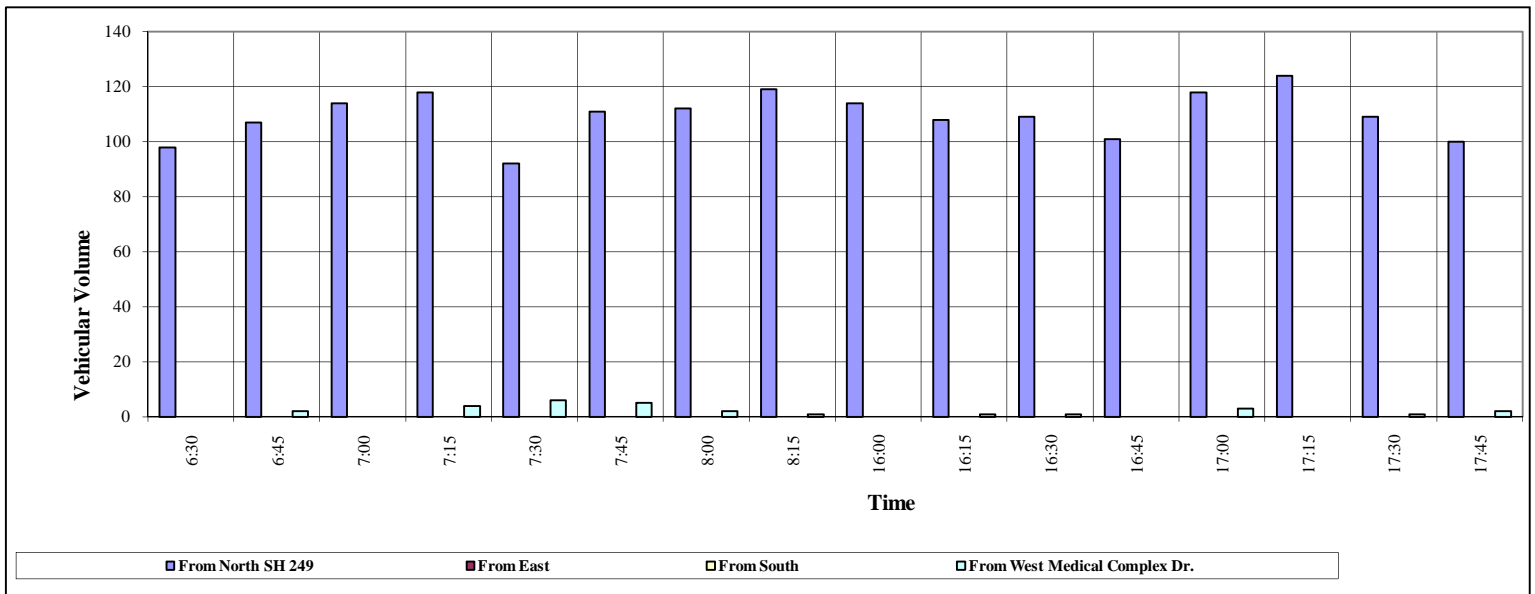


Southbound SH 249 at Medical Complex Dr.

November 18, 2008

Turning Movement Count

Time	From North					From East					From South					From West				
	SH 249															Medical Complex Dr.				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	0	97	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45	0	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Hr. Total:	0	204	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
7:00	0	113	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	116	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
7:30	0	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0
7:45	0	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
Hr. Total:	0	432	3	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0
8:00	0	111	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
8:15	0	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Hr. Total:	0	230	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
16:00	0	113	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	107	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:30	0	108	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:45	0	97	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr. Total:	0	425	7	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
17:00	0	117	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
17:15	0	124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	108	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:45	0	99	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Hr. Total:	0	448	3	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0
Gr. Total	0	1739	15	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0
% of Tot.	0%	98%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%
Apprch%	98%					0%					0%					2%				
% of Apprch	0%	99%	1%	0%	0%	####	####	####	####	####	####	####	####	####	####	0%	0%	100%	0%	0%
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
	SH 249															Medical Complex Dr.				
	From North					From East					From South					From West				



Northbound SH 249 at Medical Complex Dr.

November 18, 2008

Turning Movement Count

Time	From North					From East Medical Complex Dr.					From South SH 249					From West				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	0	0	0	0	0	0	0	4	0	0	0	62	1	0	0	0	0	0	0	0
6:45	0	0	0	0	0	0	0	1	0	0	0	72	4	0	0	0	0	0	0	0
Hr. Total:	0	0	0	0	0	0	0	5	0	0	0	134	5	0	0	0	0	0	0	0

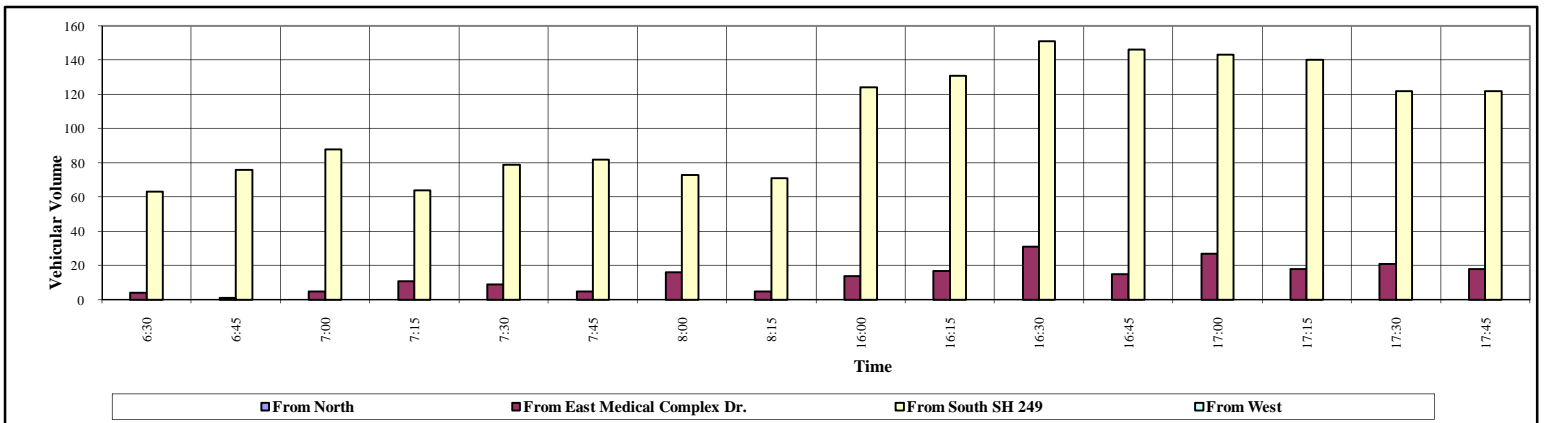
7:00	0	0	0	0	0	0	0	5	0	0	0	79	9	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	11	0	0	0	58	6	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	9	0	0	0	76	3	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	5	0	0	0	73	9	0	0	0	0	0	0	0
Hr. Total:	0	0	0	0	0	0	0	30	0	0	0	286	27	0	0	0	0	0	0	0

8:00	0	0	0	0	0	0	0	16	0	0	0	62	11	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	5	0	0	0	65	6	0	0	0	0	0	0	0
Hr. Total:	0	0	0	0	0	0	0	21	0	0	0	127	17	0	0	0	0	0	0	0

16:00	0	0	0	0	0	0	0	14	0	0	0	115	9	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	17	0	0	0	120	11	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	31	0	0	0	141	10	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	15	0	0	0	136	10	0	0	0	0	0	0	0
Hr. Total:	0	0	0	0	0	0	0	77	0	0	0	512	40	0	0	0	0	0	0	0

17:00	0	0	0	0	0	0	0	27	0	0	0	128	15	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	18	0	0	0	133	7	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	21	0	0	0	112	10	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	18	0	0	0	113	9	0	0	0	0	0	0	0
Hr. Total:	0	0	0	0	0	0	0	84	0	0	0	486	41	0	0	0	0	0	0	0

Gr. Total	0	0	0	0	0	0	0	217	0	0	0	1545	130	0	0	0	0	0	0	0
% of Tot.	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	0%	82%	7%	0%	0%	0%	0%	0%	0%	0%
Apprch%	0%					11%					89%					0%				
% of Apprch	####	####	####	####	####	0%	0%	100%	0%	0%	0%	92%	8%	0%	0%	####	####	####	####	####
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
	From North					From East					From South					From West				

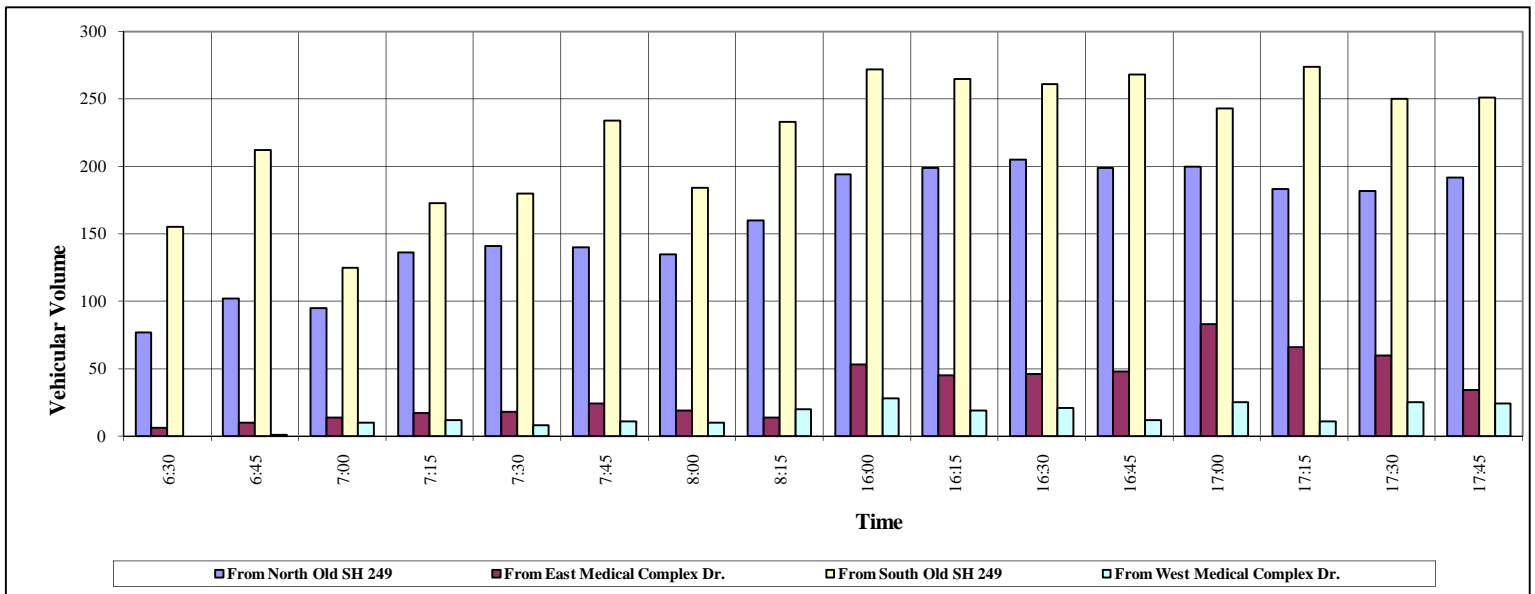


Old SH 249 at Medical Complex Dr.

November 18, 2008

Turning Movement Count

Time	From North					From East					From South					From West				
	Old SH 249					Medical Complex Dr.					Old SH 249					Medical Complex Dr.				
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
6:30	3	74	0	0	0	2	2	2	0	0	1	130	24	0	0	0	0	0	0	0
6:45	1	101	0	0	0	7	0	3	0	0	0	185	27	0	0	1	0	0	0	0
Hr. Total:	4	175	0	0	0	9	2	5	0	0	1	315	51	0	0	1	0	0	0	0
7:00	6	89	0	0	0	9	2	3	0	0	0	112	13	0	0	2	7	1	0	0
7:15	11	125	0	0	1	7	3	7	0	0	4	146	23	0	0	6	2	4	0	0
7:30	6	134	1	0	0	9	2	7	0	0	1	151	28	0	0	5	3	0	0	0
7:45	7	130	3	0	0	14	5	5	0	1	0	194	40	0	0	3	6	2	0	0
Hr. Total:	30	478	4	0	1	39	12	22	0	1	5	603	104	0	0	16	18	7	0	0
8:00	10	125	0	0	0	9	7	3	0	0	1	153	30	0	0	2	6	2	0	0
8:15	12	141	7	0	0	9	1	4	0	0	6	194	33	0	0	10	4	6	0	0
Hr. Total:	22	266	7	0	0	18	8	7	0	0	7	347	63	0	0	12	10	8	0	0
16:00	8	179	7	0	0	38	7	8	0	0	2	255	15	0	0	16	6	6	0	0
16:15	7	191	1	0	0	23	5	17	0	0	5	254	6	0	0	7	5	7	0	0
16:30	6	194	5	0	0	26	6	14	0	0	6	248	7	0	0	15	1	5	0	0
16:45	5	182	12	0	0	32	5	11	0	0	1	253	14	0	0	8	0	4	0	0
Hr. Total:	26	746	25	0	0	119	23	50	0	0	14	1010	42	0	0	46	12	22	0	0
17:00	6	185	9	0	0	59	13	11	0	0	2	226	15	0	0	15	5	5	0	0
17:15	2	174	7	0	0	41	10	15	0	0	5	262	7	0	0	5	2	4	0	0
17:30	2	172	8	0	0	39	5	16	0	0	6	238	6	0	0	12	5	8	0	0
17:45	2	184	6	0	0	22	7	5	0	0	4	237	10	0	0	14	3	7	0	0
Hr. Total:	12	715	30	0	0	161	35	47	0	0	17	963	38	0	0	46	15	24	0	0
Gr. Total	94	2380	66	0	1	346	80	131	0	1	44	3238	298	0	0	121	55	61	0	0
% of Tot.	1%	34%	1%	0%	0%	5%	1%	2%	0%	0%	1%	47%	4%	0%	0%	2%	1%	1%	0%	0%
Apprch%	37%					8%					52%					3%				
% of Apprch	4%	94%	3%	0%	0%	62%	14%	23%	0%	0%	1%	90%	8%	0%	0%	51%	23%	26%	0%	0%
	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds	Left	Thru	Right	U-turn	Peds
	Old SH 249					Medical Complex Dr.					Old SH 249					Medical Complex Dr.				
	From North					From East					From South					From West				



24 HOUR COUNTS

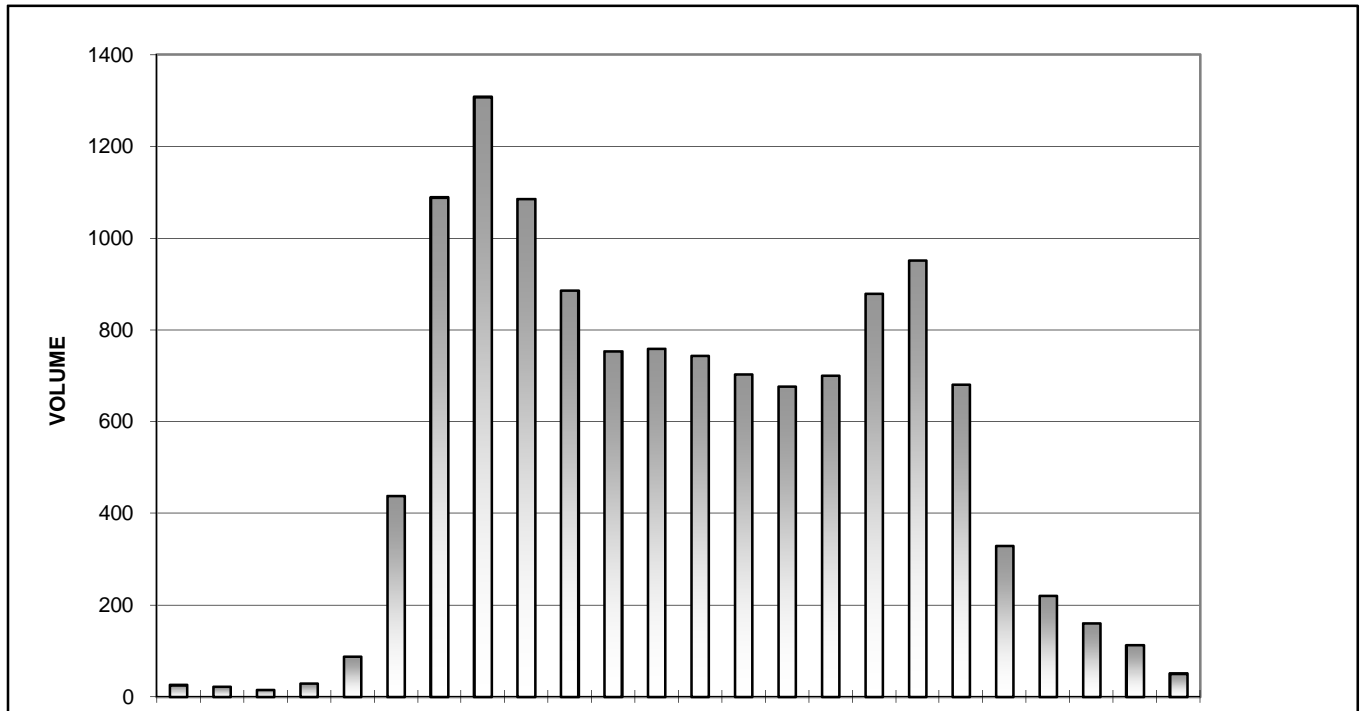
EB FM 2920 West of Treichel

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	12	5	6	3	26
1:00	5	5	8	4	22
2:00	3	5	3	4	15
3:00	6	7	5	11	29
4:00	9	16	23	40	88
5:00	56	80	110	192	438
6:00	174	250	334	331	1089
7:00	300	294	341	373	1308
8:00	295	255	274	262	1086
9:00	226	220	225	215	886
10:00	186	194	193	181	754
11:00	187	174	212	186	759
12:00	186	176	192	190	744
13:00	216	164	167	156	703
14:00	174	164	169	170	677
15:00	168	205	154	173	700
16:00	209	206	234	230	879
17:00	234	238	250	230	952
18:00	202	200	142	137	681
19:00	107	83	80	59	329
20:00	72	70	42	36	220
21:00	35	44	53	28	160
22:00	36	28	28	21	113
23:00	16	15	12	8	51

TOTAL: 12709

The A.M. peak hour from 7:00 to 8:00 is 1308
The P.M. peak hour from 17:00 to 18:00 is 952



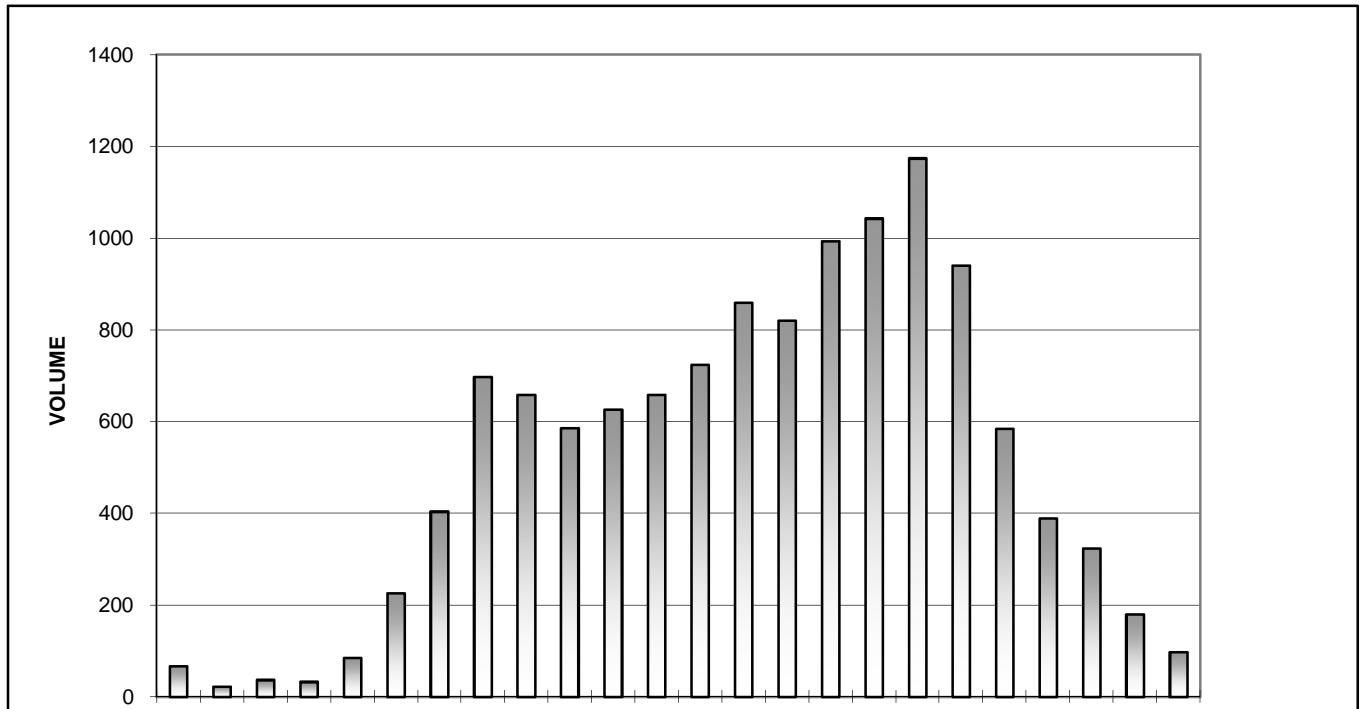
WB FM 2920 West of Treichel

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	16	24	11	16	67
1:00	8	8	4	3	23
2:00	4	14	10	9	37
3:00	3	14	8	8	33
4:00	16	19	18	32	85
5:00	46	58	50	72	226
6:00	65	104	117	118	404
7:00	142	196	181	179	698
8:00	167	178	146	168	659
9:00	142	136	154	154	586
10:00	150	136	158	182	626
11:00	162	162	165	170	659
12:00	168	168	192	196	724
13:00	211	201	229	218	859
14:00	180	192	200	248	820
15:00	228	275	246	245	994
16:00	239	262	272	270	1043
17:00	292	318	282	282	1174
18:00	272	236	238	195	941
19:00	188	163	130	104	585
20:00	118	95	92	84	389
21:00	77	96	83	68	324
22:00	74	37	31	38	180
23:00	34	30	22	12	98

TOTAL: 12234

The A.M. peak hour from 7:15 to 8:15 is 723
The P.M. peak hour from 17:00 to 18:00 is 1174



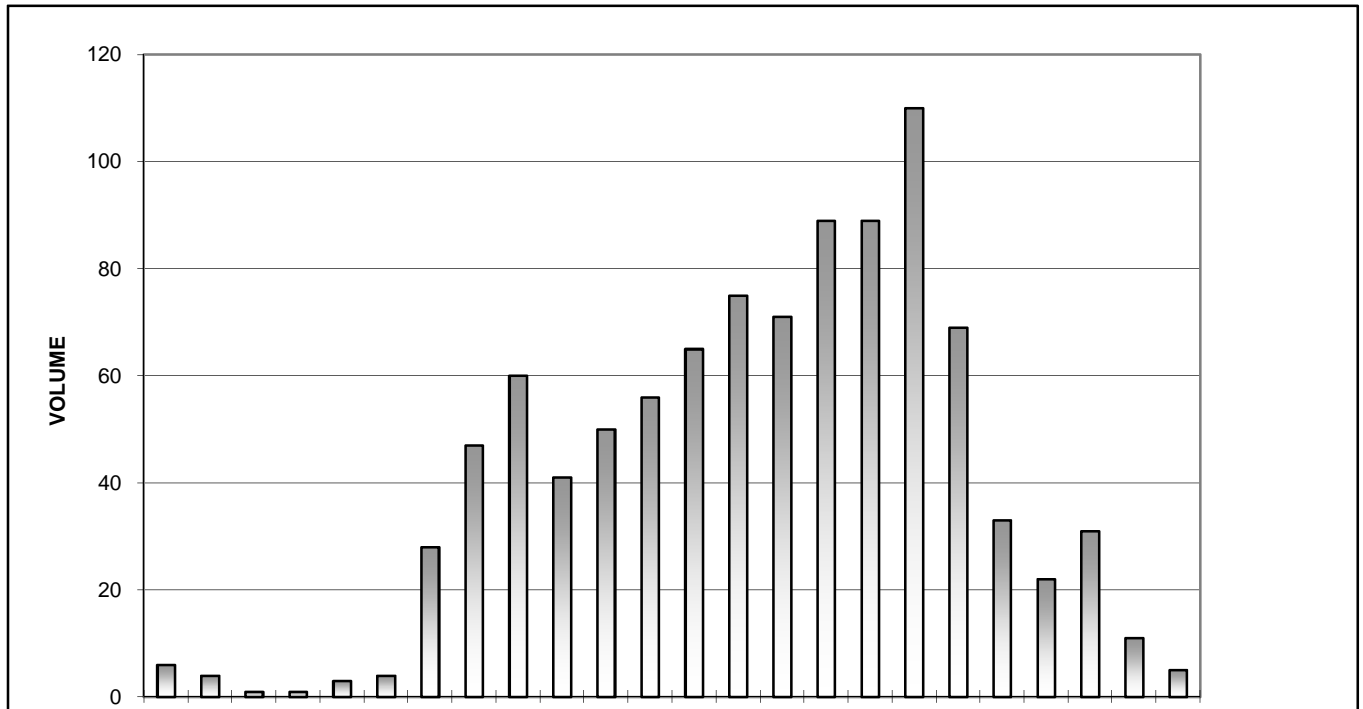
NB Calvert Rd. North of Hopper

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	0	4	0	2	6
1:00	1	0	3	0	4
2:00	0	1	0	0	1
3:00	0	1	0	0	1
4:00	1	2	0	0	3
5:00	0	0	1	3	4
6:00	1	7	8	12	28
7:00	8	6	19	14	47
8:00	20	22	6	12	60
9:00	8	14	8	11	41
10:00	12	9	20	9	50
11:00	20	10	10	16	56
12:00	15	20	14	16	65
13:00	20	20	18	17	75
14:00	21	9	19	22	71
15:00	14	26	26	23	89
16:00	26	18	26	19	89
17:00	38	26	27	19	110
18:00	14	20	19	16	69
19:00	9	8	12	4	33
20:00	5	8	4	5	22
21:00	8	7	3	13	31
22:00	6	2	1	2	11
23:00	3	0	2	0	5

TOTAL: 971

The A.M. peak hour from 7:30 to 8:30 is 75
The P.M. peak hour from 17:00 to 18:00 is 110



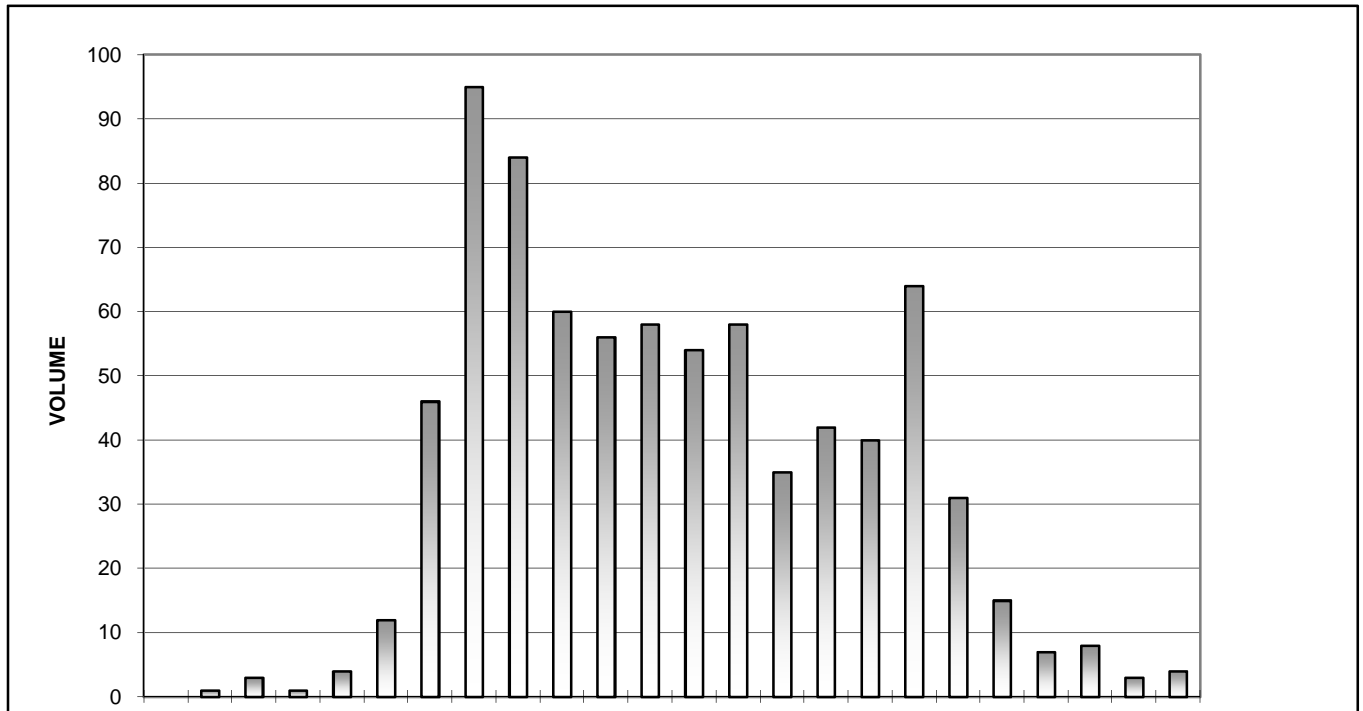
SB Calvert Rd. North of Hopper

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	0	0	0	0	0
1:00	0	0	0	1	1
2:00	0	3	0	0	3
3:00	0	0	1	0	1
4:00	1	0	1	2	4
5:00	2	2	3	5	12
6:00	5	15	12	14	46
7:00	19	21	24	31	95
8:00	24	21	23	16	84
9:00	15	21	15	9	60
10:00	15	16	14	11	56
11:00	12	15	13	18	58
12:00	11	15	10	18	54
13:00	20	9	19	10	58
14:00	7	8	9	11	35
15:00	16	10	7	9	42
16:00	9	10	11	10	40
17:00	10	15	23	16	64
18:00	9	10	6	6	31
19:00	3	6	2	4	15
20:00	6	0	1	0	7
21:00	1	1	3	3	8
22:00	1	0	1	1	3
23:00	2	0	1	1	4

TOTAL: 781

The A.M. peak hour from 7:30 to 8:30 is 100
The P.M. peak hour from 17:00 to 18:00 is 64

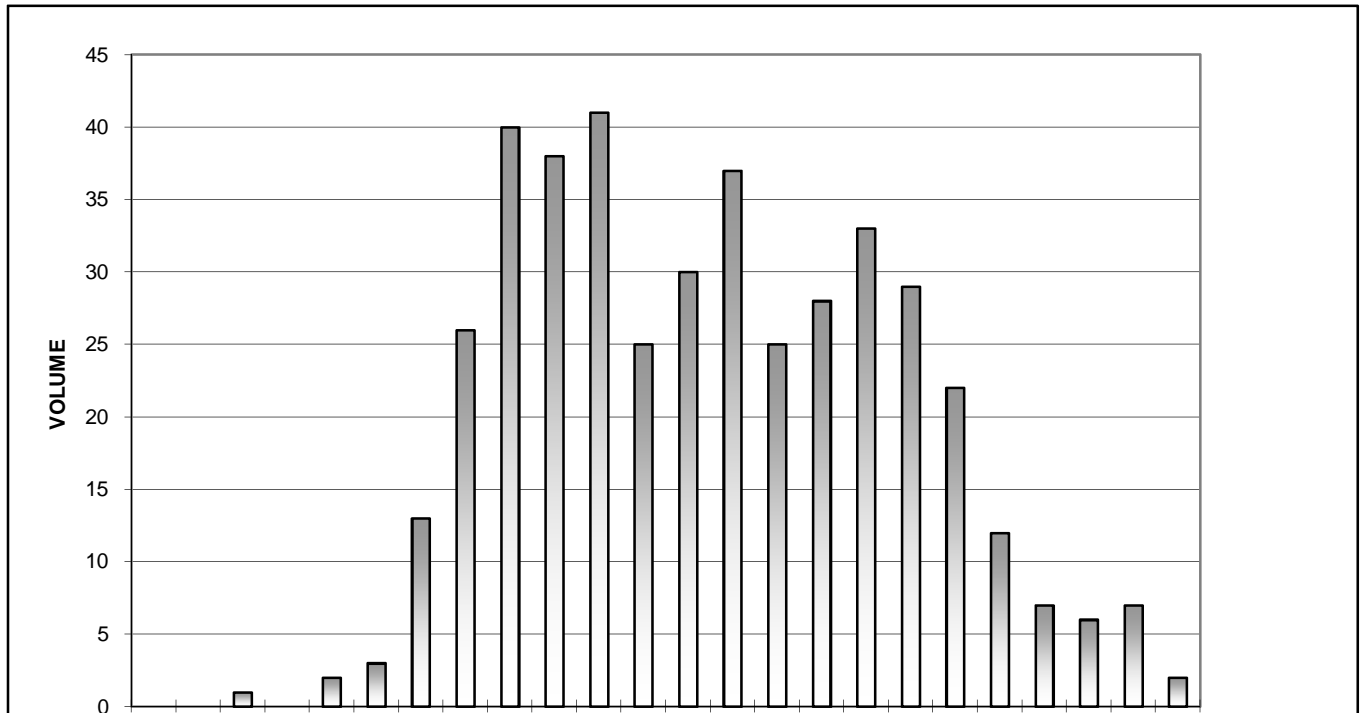


EB Medical Complex Dr. East of SH 249

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	1	0	1
3:00	0	0	0	0	0
4:00	1	0	0	1	2
5:00	1	0	2	0	3
6:00	2	4	3	4	13
7:00	7	6	5	8	26
8:00	13	10	7	10	40
9:00	5	17	8	8	38
10:00	10	11	12	8	41
11:00	9	3	6	7	25
12:00	6	8	7	9	30
13:00	7	14	7	9	37
14:00	4	8	7	6	25
15:00	8	1	11	8	28
16:00	5	7	11	10	33
17:00	11	5	5	8	29
18:00	7	4	4	7	22
19:00	2	3	5	2	12
20:00	1	1	2	3	7
21:00	4	2	0	0	6
22:00	1	1	2	3	7
23:00	1	0	0	1	2
TOTAL:					427

The A.M. peak hour from 9:15 to 10:15 is 43
The P.M. peak hour from 16:15 to 17:15 is 39



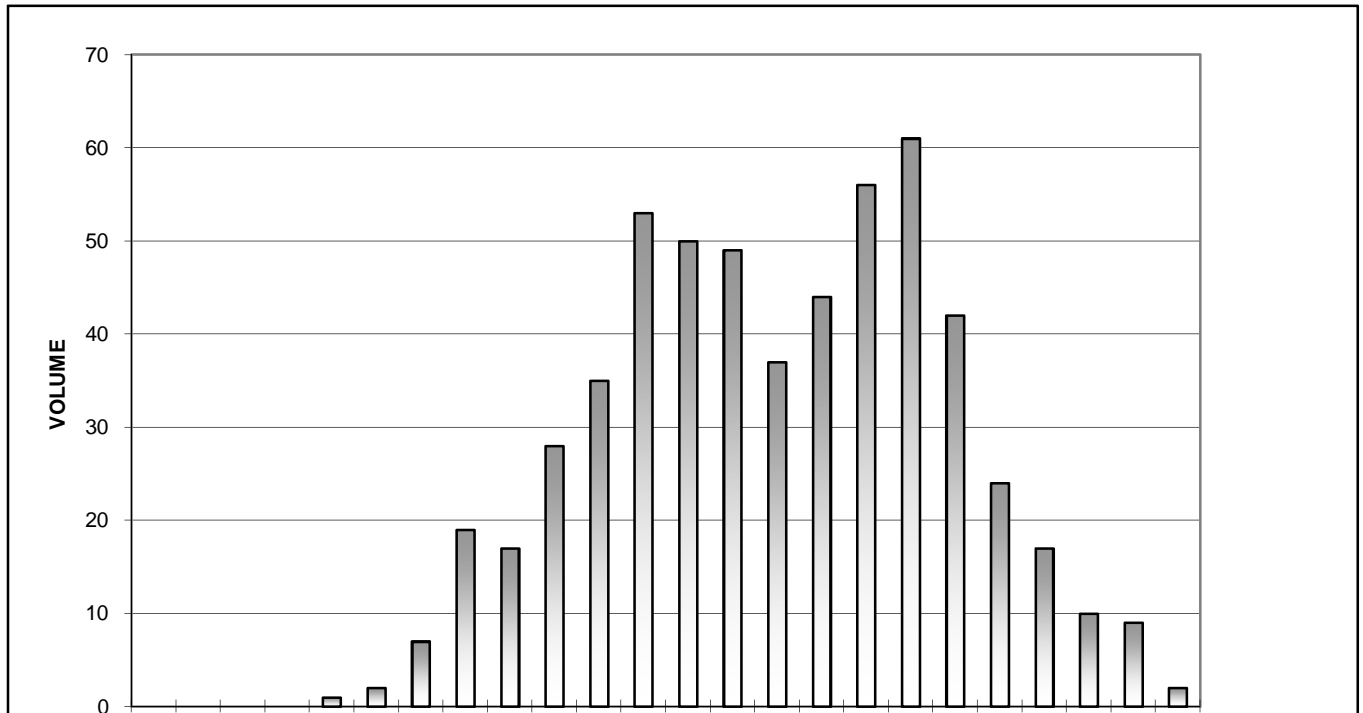
WB Medical Complex Dr. East of SH 249

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	0	0	0	1	1
5:00	1	0	0	1	2
6:00	0	1	2	4	7
7:00	3	8	4	4	19
8:00	4	5	4	4	17
9:00	7	6	7	8	28
10:00	14	6	12	3	35
11:00	12	9	15	17	53
12:00	18	14	8	10	50
13:00	16	10	9	14	49
14:00	11	9	6	11	37
15:00	9	15	13	7	44
16:00	11	17	17	11	56
17:00	26	17	9	9	61
18:00	10	11	11	10	42
19:00	9	5	7	3	24
20:00	7	2	1	7	17
21:00	5	3	2	0	10
22:00	3	3	2	1	9
23:00	0	2	0	0	2

TOTAL: 563

The A.M. peak hour from 9:15 to 10:15 is 35
The P.M. peak hour from 16:30 to 17:30 is 71



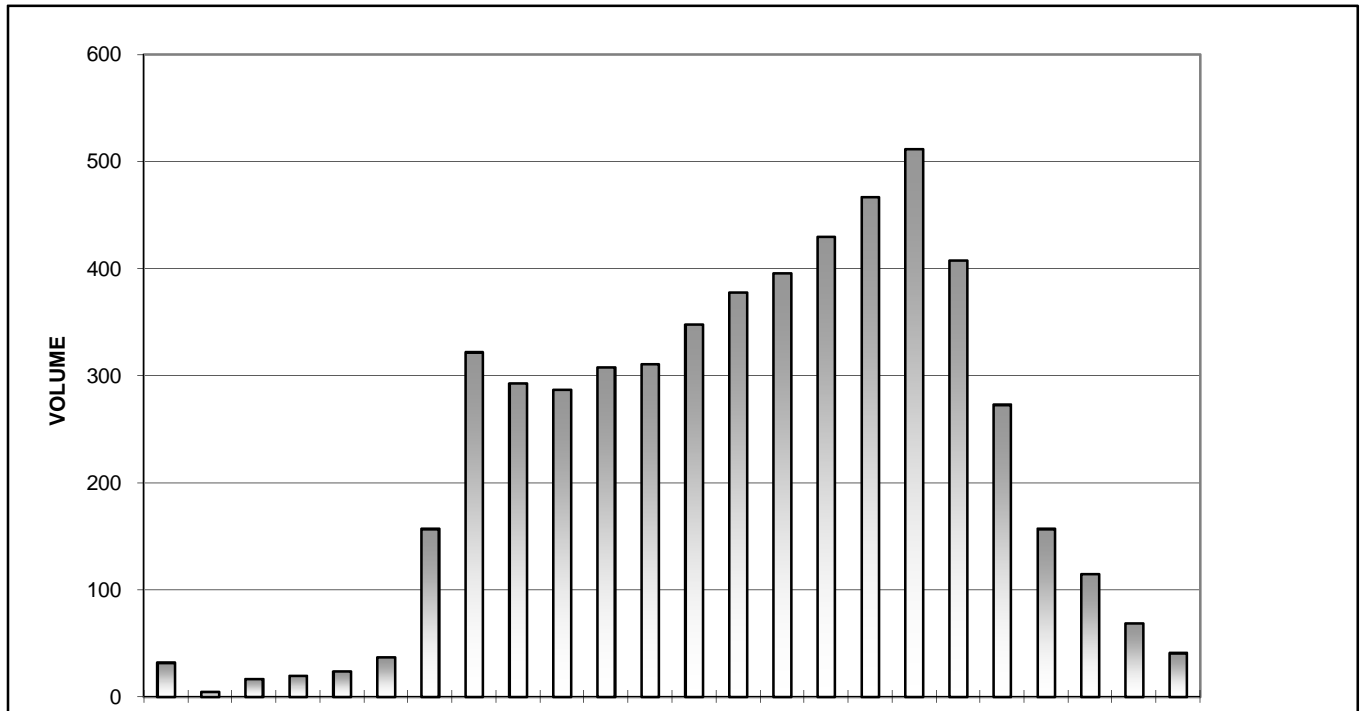
SH 249 East Service Rd. South of Medical Complex Dr.

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	7	10	12	3	32
1:00	1	4	0	0	5
2:00	4	6	4	3	17
3:00	2	6	5	7	20
4:00	6	6	4	8	24
5:00	6	12	7	12	37
6:00	14	37	54	52	157
7:00	78	76	84	84	322
8:00	82	70	56	85	293
9:00	76	73	67	71	287
10:00	66	76	82	84	308
11:00	82	78	80	71	311
12:00	102	86	64	96	348
13:00	108	94	94	82	378
14:00	90	100	112	94	396
15:00	114	102	108	106	430
16:00	104	114	133	116	467
17:00	138	144	106	124	512
18:00	130	86	100	92	408
19:00	88	76	61	48	273
20:00	44	32	41	40	157
21:00	37	34	28	16	115
22:00	24	11	16	18	69
23:00	16	11	6	8	41

TOTAL: 5407

The A.M. peak hour from 7:15 to 8:15 is 326
The P.M. peak hour from 16:30 to 17:30 is 531



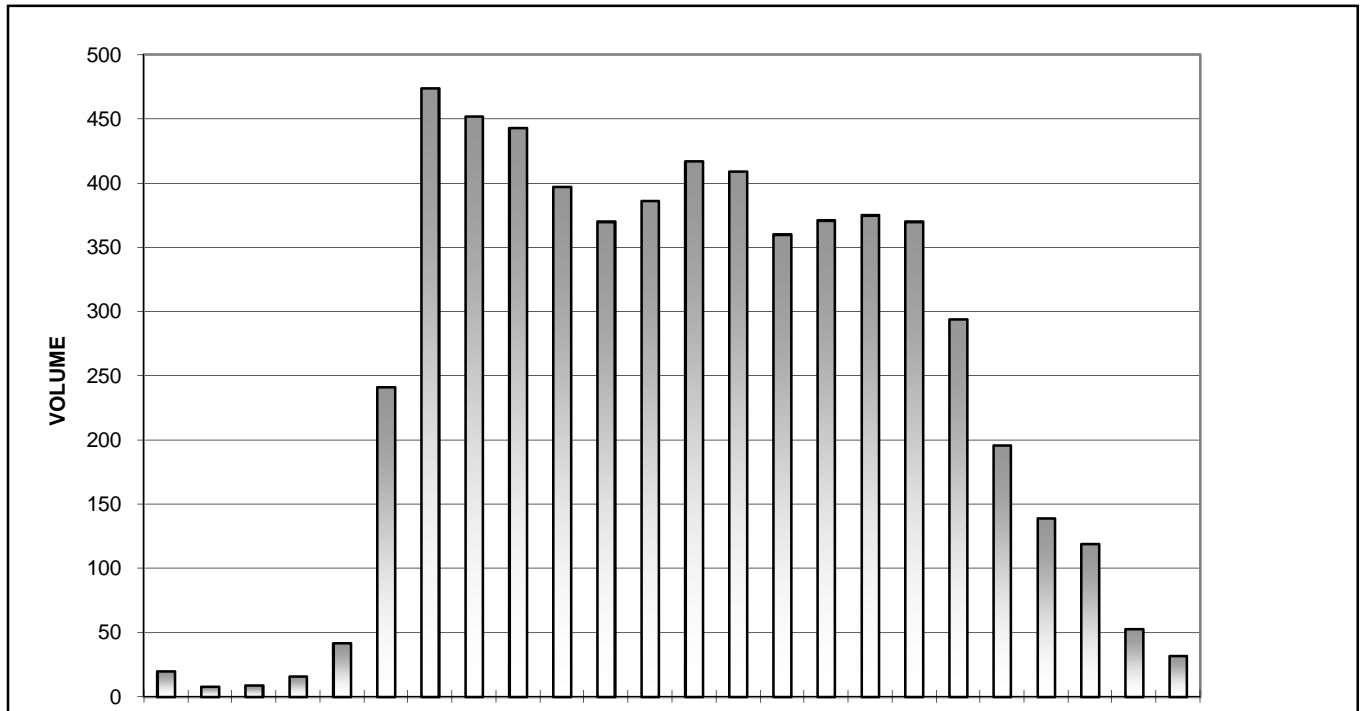
SH 249 West Service Rd. North of Medical Complex Dr.

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	3	3	8	6	20
1:00	3	1	0	4	8
2:00	1	4	0	4	9
3:00	2	8	3	3	16
4:00	4	10	13	15	42
5:00	31	48	54	108	241
6:00	118	122	108	126	474
7:00	102	112	126	112	452
8:00	114	116	103	110	443
9:00	106	111	93	87	397
10:00	82	78	104	106	370
11:00	88	94	100	104	386
12:00	90	96	111	120	417
13:00	122	98	94	95	409
14:00	90	92	78	100	360
15:00	86	108	97	80	371
16:00	91	106	92	86	375
17:00	108	86	88	88	370
18:00	94	73	62	65	294
19:00	46	66	42	42	196
20:00	51	38	28	22	139
21:00	29	27	28	35	119
22:00	9	20	14	10	53
23:00	13	10	4	5	32

TOTAL: 5993

The A.M. peak hour from 6:00 to 7:00 is 474
The P.M. peak hour from 16:15 to 17:15 is 397



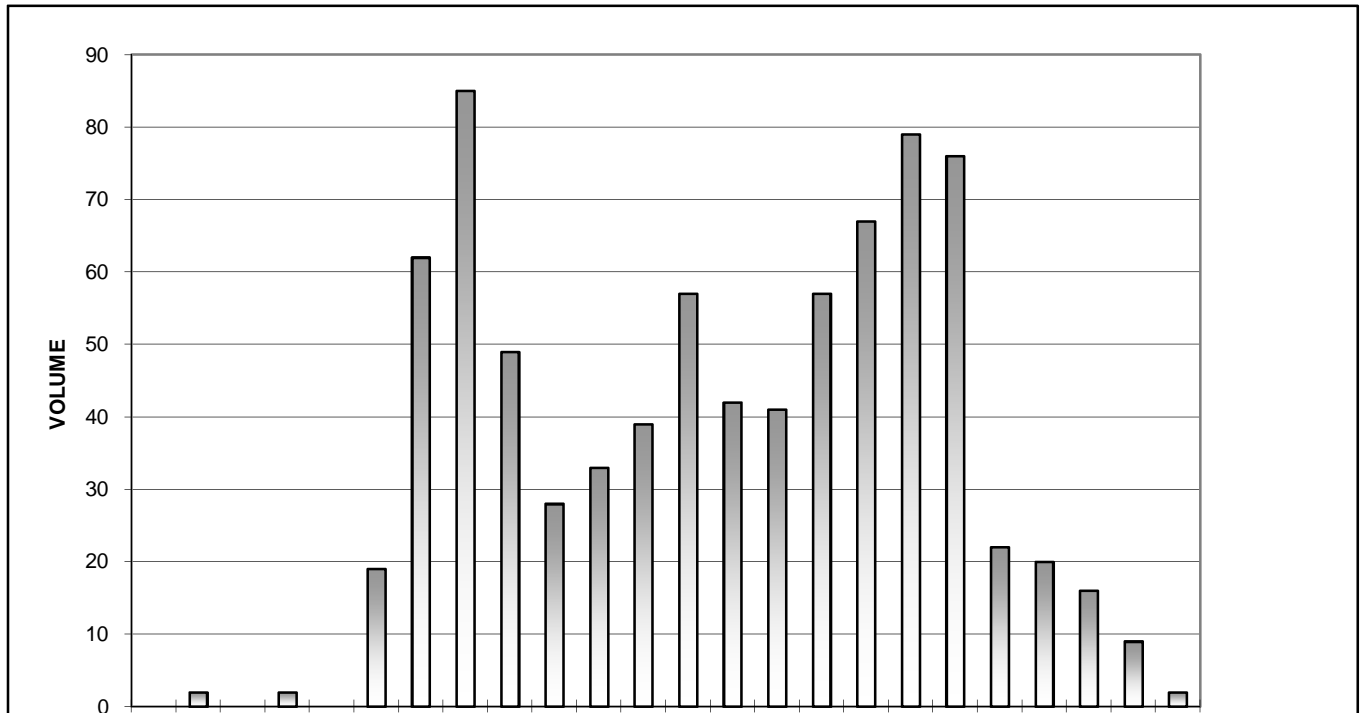
EB Agg Rd. East of S. Cherry

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	0	0	0	0	0
1:00	0	1	0	1	2
2:00	0	0	0	0	0
3:00	2	0	0	0	2
4:00	0	0	0	0	0
5:00	0	1	8	10	19
6:00	10	11	19	22	62
7:00	24	21	14	26	85
8:00	16	9	12	12	49
9:00	12	6	7	3	28
10:00	12	8	9	4	33
11:00	5	10	9	15	39
12:00	18	16	15	8	57
13:00	10	10	16	6	42
14:00	7	10	10	14	41
15:00	14	16	14	13	57
16:00	12	18	17	20	67
17:00	19	21	20	19	79
18:00	19	26	17	14	76
19:00	12	0	6	4	22
20:00	8	6	4	2	20
21:00	8	4	2	2	16
22:00	2	2	2	3	9
23:00	0	1	1	0	2

TOTAL: 807

The A.M. peak hour from 6:30 to 7:30 is 86
The P.M. peak hour from 17:30 to 18:30 is 84



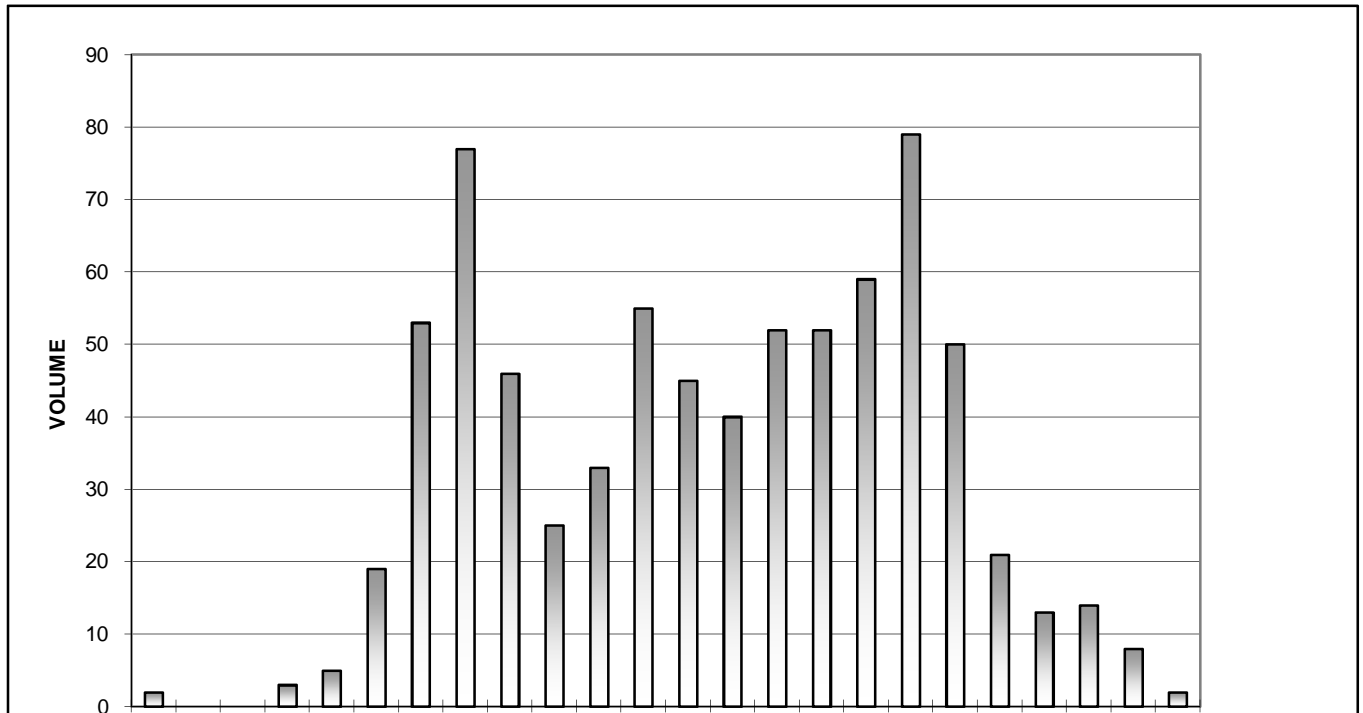
WB Agg Rd. East of S. Cherry

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	0	0	2	0	2
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	1	0	0	2	3
4:00	2	0	0	3	5
5:00	2	2	6	9	19
6:00	12	12	12	17	53
7:00	22	16	15	24	77
8:00	16	6	10	14	46
9:00	7	7	8	3	25
10:00	5	12	5	11	33
11:00	12	5	20	18	55
12:00	14	12	10	9	45
13:00	7	12	8	13	40
14:00	12	12	13	15	52
15:00	10	12	16	14	52
16:00	14	14	11	20	59
17:00	25	13	25	16	79
18:00	18	14	12	6	50
19:00	3	6	7	5	21
20:00	6	0	5	2	13
21:00	4	2	2	6	14
22:00	2	3	1	2	8
23:00	1	1	0	0	2

TOTAL: 753

The A.M. peak hour from 7:00 to 8:00 is 77
The P.M. peak hour from 16:45 to 17:45 is 83



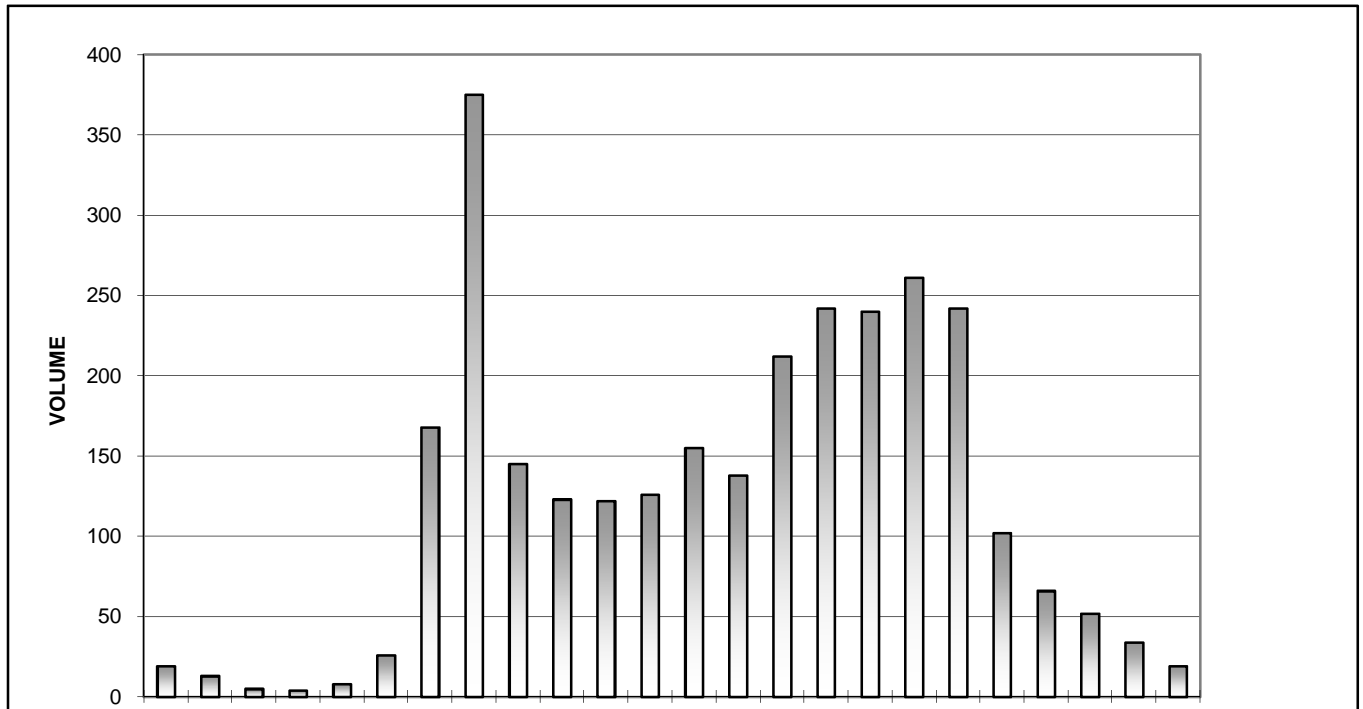
NB S. Cherry Rd. North of Agg Rd.

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	2	8	8	1	19
1:00	1	5	3	4	13
2:00	0	0	1	4	5
3:00	1	0	2	1	4
4:00	1	1	4	2	8
5:00	3	5	6	12	26
6:00	16	18	47	87	168
7:00	118	60	83	114	375
8:00	38	42	34	31	145
9:00	29	28	33	33	123
10:00	32	40	25	25	122
11:00	35	30	30	31	126
12:00	43	36	31	45	155
13:00	28	33	38	39	138
14:00	48	48	50	66	212
15:00	69	75	50	48	242
16:00	70	50	45	75	240
17:00	56	74	68	63	261
18:00	66	66	58	52	242
19:00	34	28	22	18	102
20:00	20	18	18	10	66
21:00	14	13	15	10	52
22:00	10	10	8	6	34
23:00	6	4	5	4	19

TOTAL: 2897

The A.M. peak hour from 7:00 to 8:00 is 375
The P.M. peak hour from 16:45 to 17:45 is 273



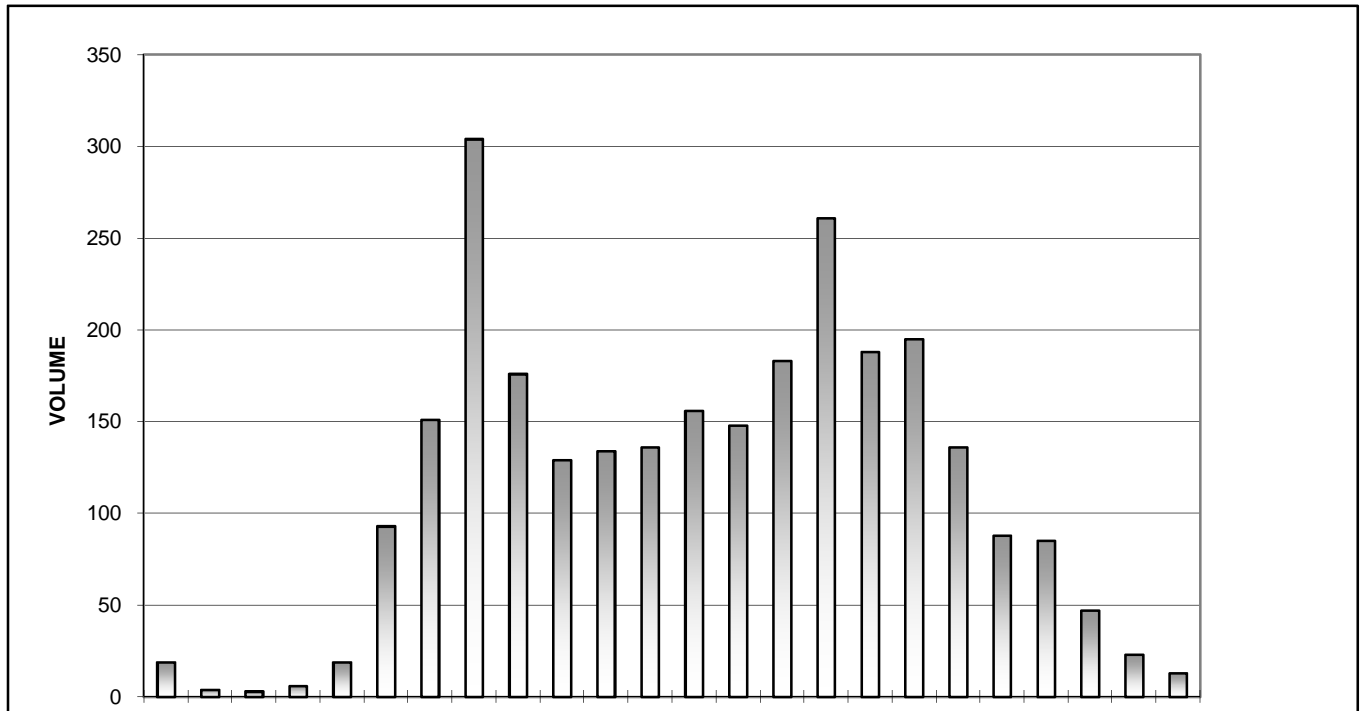
SB S. Cherry Rd. North of Agg Rd.

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	11	3	1	4	19
1:00	0	2	0	2	4
2:00	0	2	0	1	3
3:00	1	0	3	2	6
4:00	3	4	6	6	19
5:00	12	16	29	36	93
6:00	39	36	33	43	151
7:00	50	56	82	116	304
8:00	54	48	40	34	176
9:00	33	32	39	25	129
10:00	35	31	32	36	134
11:00	35	35	29	37	136
12:00	58	36	26	36	156
13:00	36	34	44	34	148
14:00	28	38	53	64	183
15:00	88	72	56	45	261
16:00	40	50	48	50	188
17:00	53	50	38	54	195
18:00	43	34	31	28	136
19:00	40	12	20	16	88
20:00	25	14	25	21	85
21:00	10	17	12	8	47
22:00	5	8	6	4	23
23:00	4	5	2	2	13

TOTAL: 2697

The A.M. peak hour from 7:15 to 8:15 is 308
The P.M. peak hour from 14:45 to 15:45 is 280



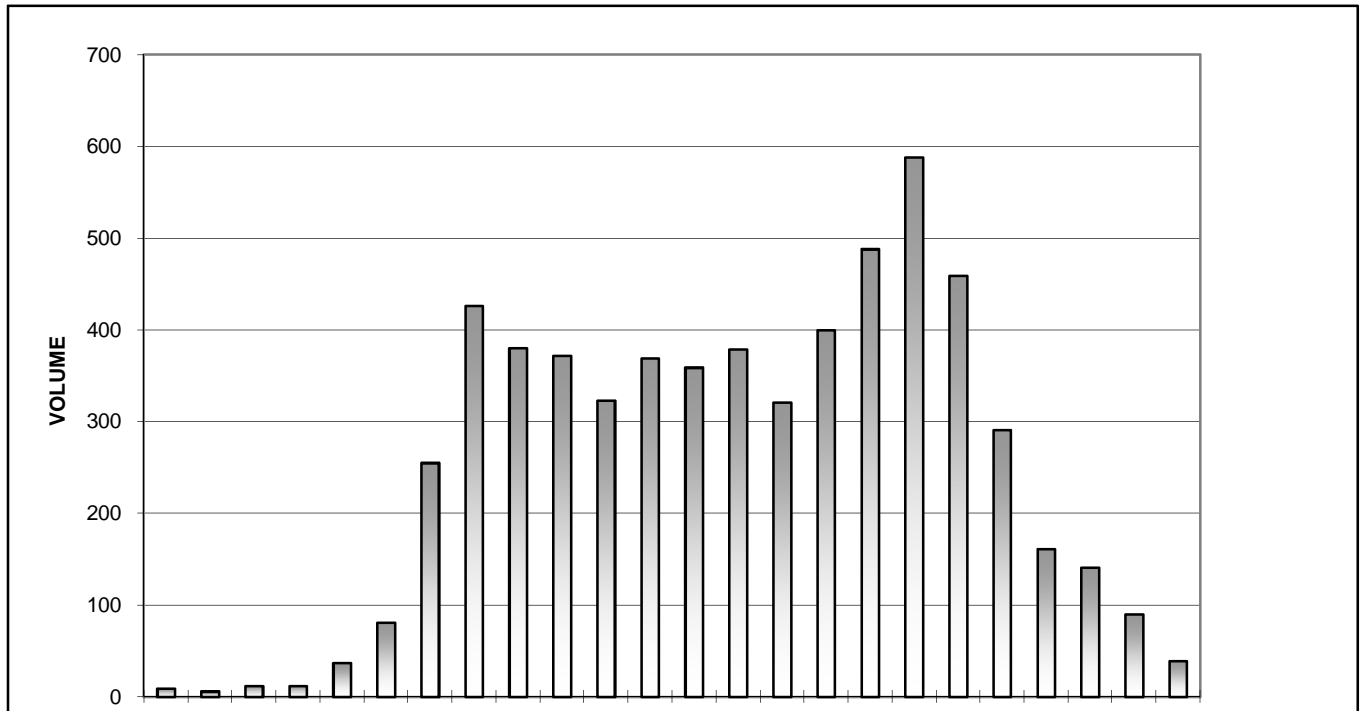
NB Hufsmith Kohrville North of Holderrieth

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	4	0	2	3	9
1:00	2	2	2	0	6
2:00	2	3	2	5	12
3:00	6	2	2	2	12
4:00	0	2	14	21	37
5:00	10	8	34	29	81
6:00	24	60	78	93	255
7:00	106	88	104	128	426
8:00	82	80	96	122	380
9:00	92	98	99	83	372
10:00	73	78	96	76	323
11:00	85	74	102	108	369
12:00	90	96	68	105	359
13:00	94	106	98	81	379
14:00	70	80	91	80	321
15:00	95	99	91	115	400
16:00	96	124	114	154	488
17:00	117	135	186	150	588
18:00	134	117	120	88	459
19:00	96	69	62	64	291
20:00	49	26	50	36	161
21:00	36	42	37	26	141
22:00	28	26	18	18	90
23:00	16	11	8	4	39

TOTAL: 5998

The A.M. peak hour from 7:00 to 8:00 is 426
The P.M. peak hour from 17:15 to 18:15 is 605



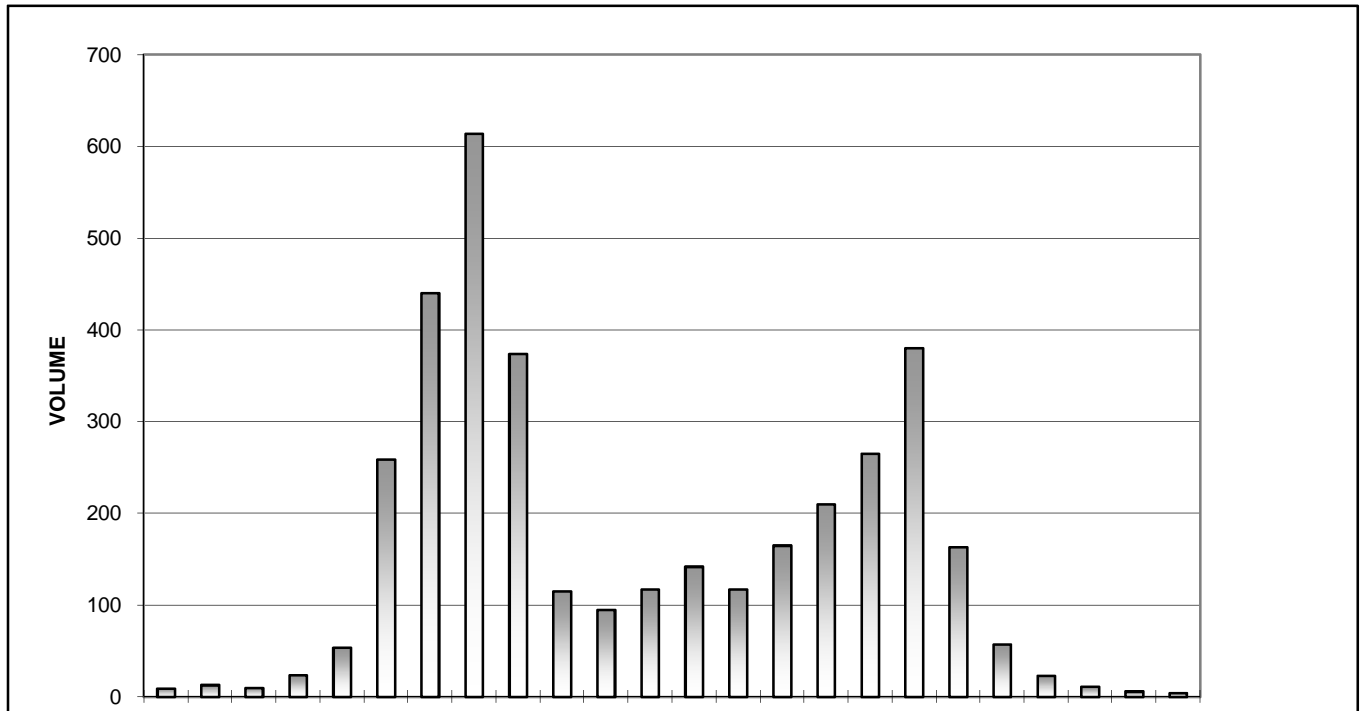
SB Hufsmith Kohrville North of Holderrieth

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	4	4	1	0	9
1:00	3	4	2	4	13
2:00	3	2	3	2	10
3:00	3	1	4	16	24
4:00	3	8	13	30	54
5:00	28	52	93	86	259
6:00	102	136	102	100	440
7:00	146	140	166	162	614
8:00	119	128	89	38	374
9:00	46	22	24	23	115
10:00	43	18	20	14	95
11:00	33	30	28	26	117
12:00	38	38	42	24	142
13:00	38	26	25	28	117
14:00	46	44	31	44	165
15:00	47	59	46	58	210
16:00	40	67	74	84	265
17:00	128	104	82	66	380
18:00	46	58	38	21	163
19:00	26	16	4	11	57
20:00	7	4	6	6	23
21:00	2	5	4	0	11
22:00	0	3	2	1	6
23:00	0	2	2	0	4

TOTAL: 3667

The A.M. peak hour from 7:00 to 8:00 is 614
The P.M. peak hour from 16:45 to 17:45 is 398



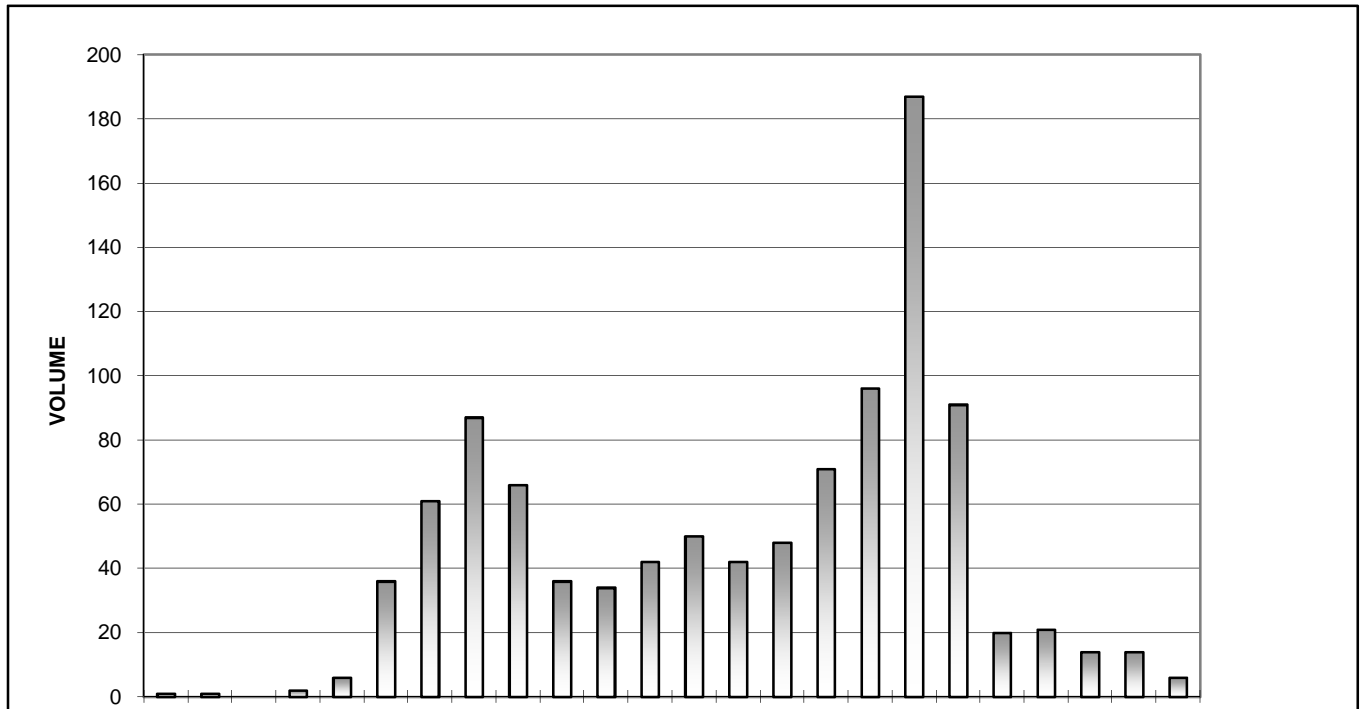
EB Mahaffey West of FM 2920

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	0	0	0	1	1
1:00	0	0	1	0	1
2:00	0	0	0	0	0
3:00	0	1	0	1	2
4:00	0	1	2	3	6
5:00	13	4	12	7	36
6:00	6	14	20	21	61
7:00	32	26	14	15	87
8:00	16	16	16	18	66
9:00	9	9	10	8	36
10:00	6	6	12	10	34
11:00	8	13	8	13	42
12:00	18	4	10	18	50
13:00	9	10	14	9	42
14:00	8	10	18	12	48
15:00	17	12	14	28	71
16:00	18	22	22	34	96
17:00	53	44	47	43	187
18:00	28	23	29	11	91
19:00	4	9	3	4	20
20:00	7	8	4	2	21
21:00	3	7	2	2	14
22:00	4	7	0	3	14
23:00	2	2	2	0	6

TOTAL: 1032

The A.M. peak hour from 6:30 to 7:30 is 99
The P.M. peak hour from 17:00 to 18:00 is 187



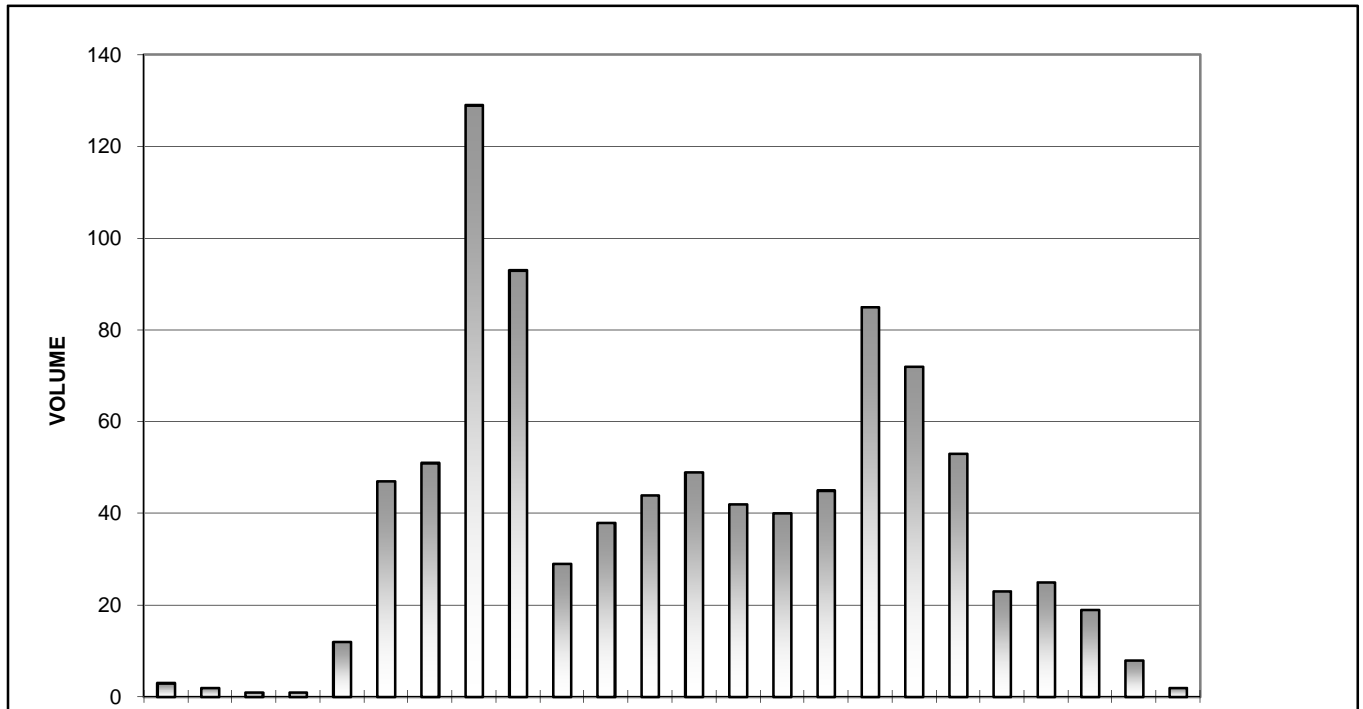
WB Mahaffey West of FM 2920

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	1	1	0	1	3
1:00	0	1	1	0	2
2:00	0	0	1	0	1
3:00	0	0	0	1	1
4:00	0	2	5	5	12
5:00	5	10	11	21	47
6:00	10	15	12	14	51
7:00	20	37	32	40	129
8:00	26	32	18	17	93
9:00	7	7	7	8	29
10:00	9	14	10	5	38
11:00	5	10	14	15	44
12:00	14	10	12	13	49
13:00	15	9	10	8	42
14:00	10	8	9	13	40
15:00	10	7	16	12	45
16:00	16	16	31	22	85
17:00	19	15	22	16	72
18:00	20	7	11	15	53
19:00	5	7	7	4	23
20:00	7	6	7	5	25
21:00	6	4	7	2	19
22:00	4	1	3	0	8
23:00	2	0	0	0	2

TOTAL: 913

The A.M. peak hour from 7:15 to 8:15 is 135
The P.M. peak hour from 16:15 to 17:15 is 88



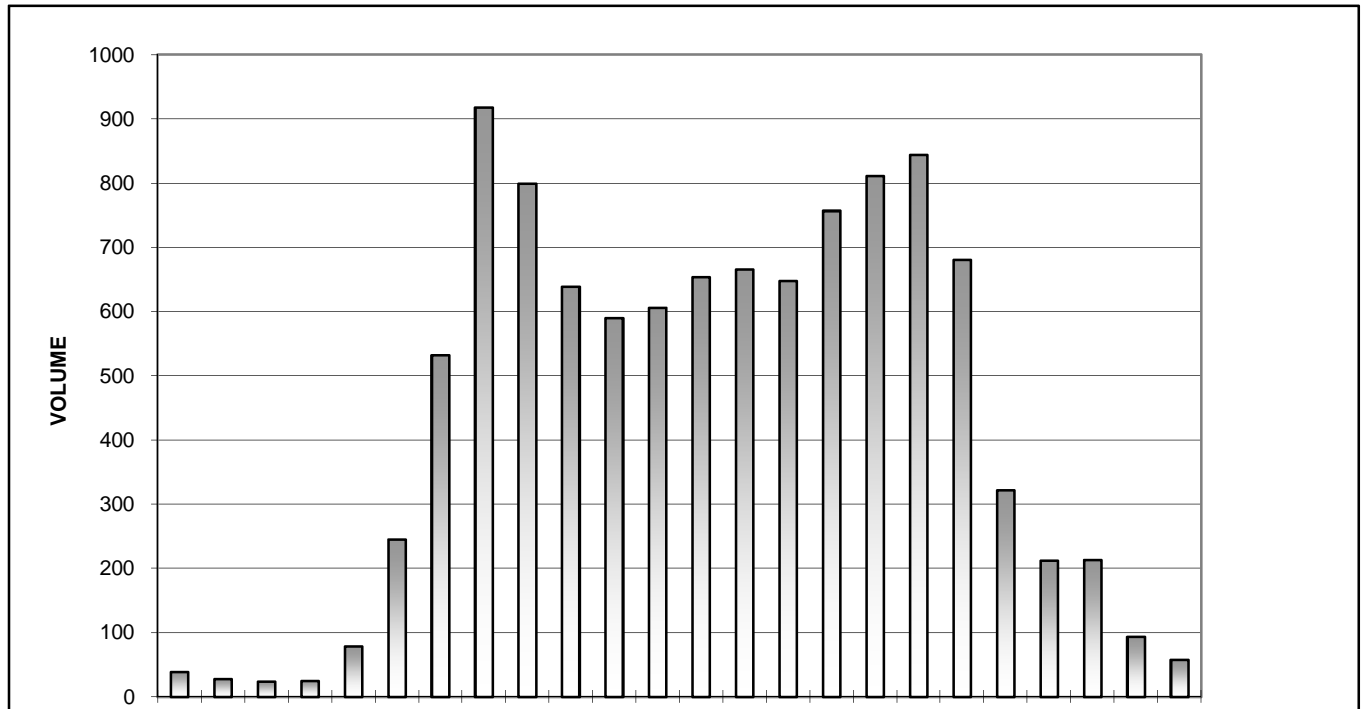
NB FM 2920 South of Mahaffey Rd.

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	15	8	6	10	39
1:00	3	8	11	6	28
2:00	2	10	7	5	24
3:00	6	8	5	6	25
4:00	4	13	20	42	79
5:00	32	38	62	113	245
6:00	72	122	148	190	532
7:00	157	224	275	262	918
8:00	198	201	206	194	799
9:00	181	156	150	152	639
10:00	140	149	149	152	590
11:00	136	149	166	155	606
12:00	190	152	164	148	654
13:00	152	184	174	156	666
14:00	142	156	164	186	648
15:00	194	190	174	199	757
16:00	176	189	212	234	811
17:00	220	227	193	204	844
18:00	196	194	161	130	681
19:00	108	72	72	70	322
20:00	51	66	49	46	212
21:00	62	68	32	51	213
22:00	34	20	20	20	94
23:00	20	14	11	13	58

TOTAL: 10484

The A.M. peak hour from 7:15 to 8:15 is 959
The P.M. peak hour from 16:30 to 17:30 is 893



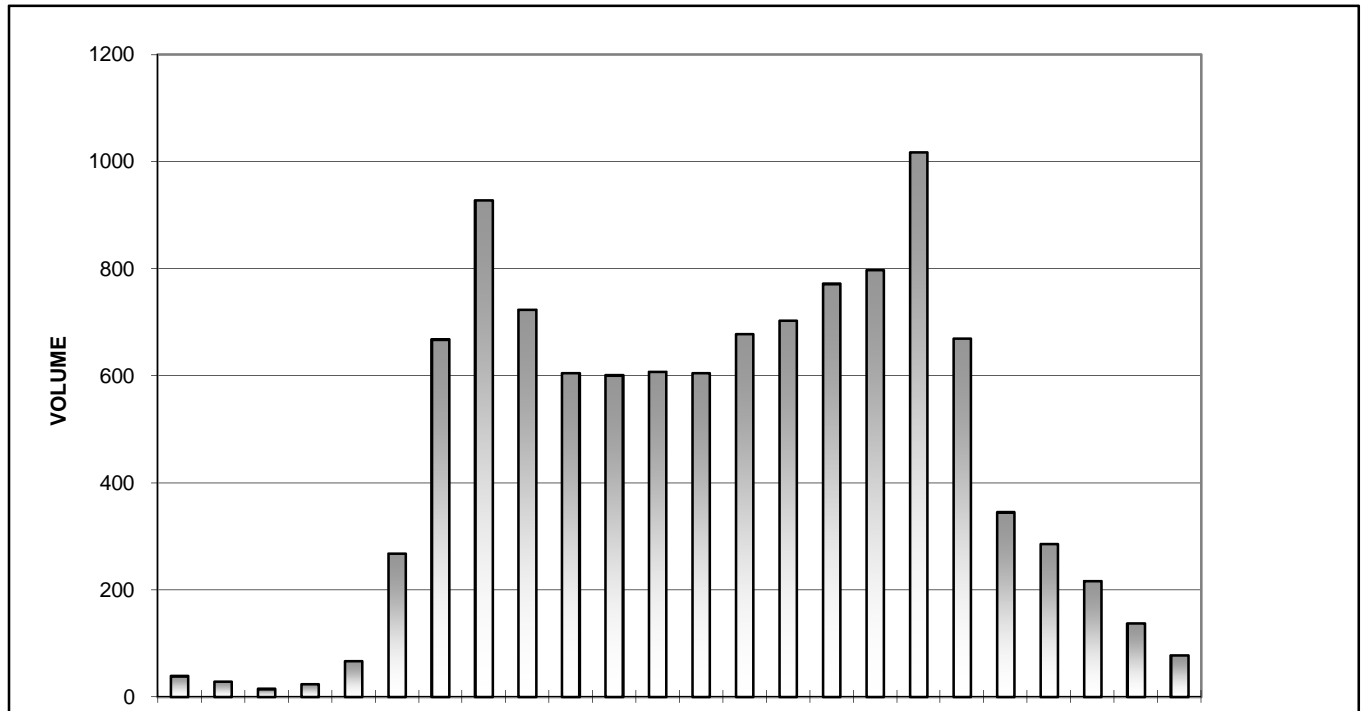
SB FM 2920 South of Mahaffey Rd.

Date Began:
11/11/2008

TIME	0:00	0:15	0:30	0:45	TOTAL
0:00	13	12	6	8	39
1:00	5	8	8	8	29
2:00	2	3	2	8	15
3:00	2	6	8	8	24
4:00	3	16	18	30	67
5:00	50	54	86	78	268
6:00	121	143	192	212	668
7:00	210	244	234	240	928
8:00	220	176	168	160	724
9:00	166	153	140	146	605
10:00	172	135	160	134	601
11:00	152	150	140	166	608
12:00	153	150	160	142	605
13:00	164	169	178	167	678
14:00	174	168	179	182	703
15:00	182	219	192	179	772
16:00	165	214	195	224	798
17:00	302	262	244	210	1018
18:00	190	197	170	113	670
19:00	96	86	69	94	345
20:00	96	66	60	64	286
21:00	54	53	68	42	217
22:00	54	28	30	26	138
23:00	24	24	18	12	78

TOTAL: 10884

The A.M. peak hour from 7:15 to 8:15 is 938
The P.M. peak hour from 16:45 to 17:45 is 1032



APPENDIX B

EXISTING CONDITION SIGNAL TIMING AT THE STUDY INTERSECTIONS

Address 24

Access Data

Date:
2/15/2005

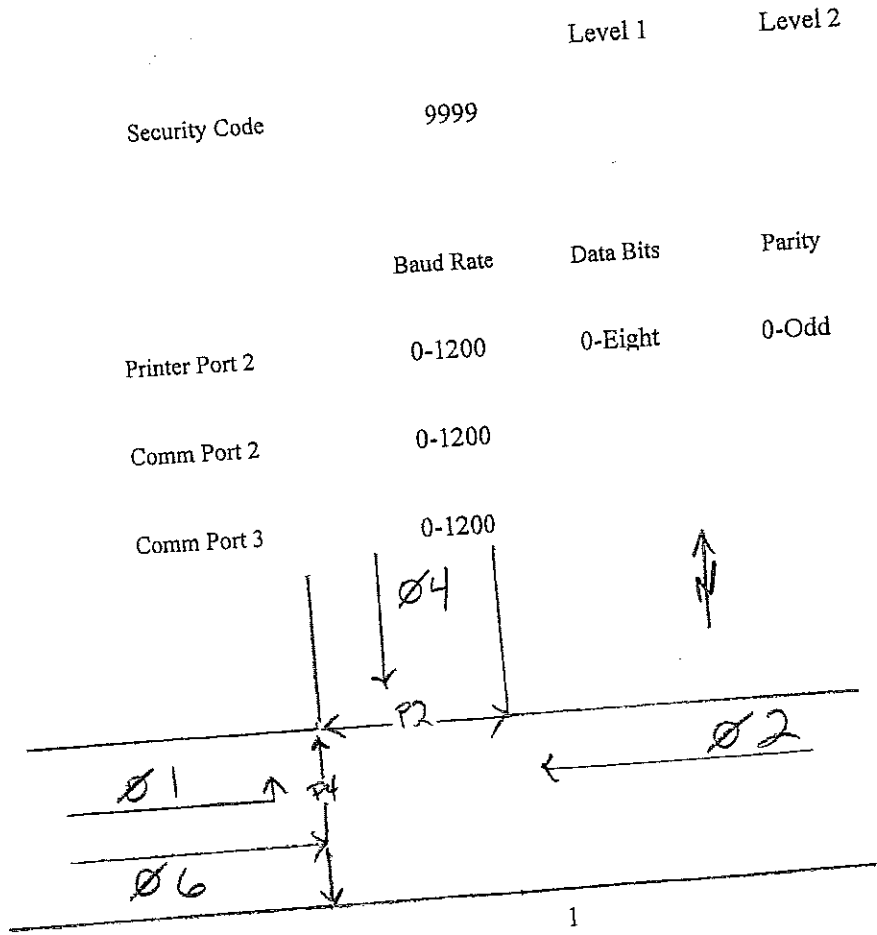
Time:
16:02:20

INST 5/22/06

Intersection Name : FM 2920 AT PARK

Source : Database

VIVID'S
PEDS
Comm. Panel



Address 24

Access Data

Date:
2/15/2005

Time:
16:02:20

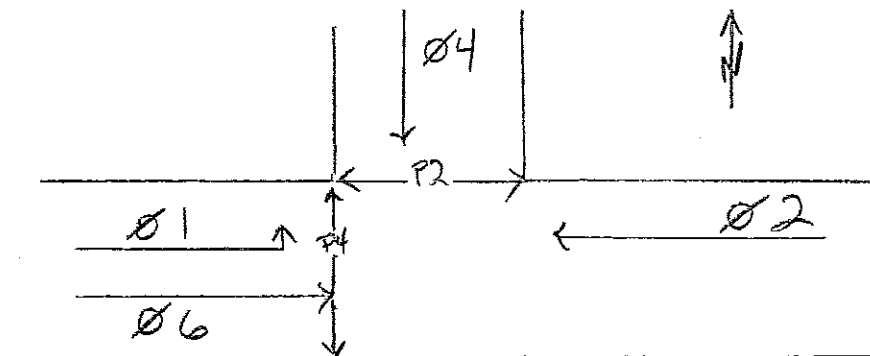
INST 5/22/06

Intersection Name : FM 2920 AT PARK

Source : Database

VIVID'S
PEDS
Comm. Panel

	Level 1	Level 2
Security Code	9999	
	Baud Rate	Data Bits Parity
Printer Port 2	0-1200	0-Eight 0-Odd
Comm Port 2	0-1200	
Comm Port 3	0-1200	



Phase General Control Data

Date 2/15/201

Time 16:02:53

Intersection Name FM 2920 AT PARK
 Source Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	0-None	1-Inactive	0-None	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry	0					
Flash Exit	-					

Phase	7	8	9	10	11	12
Initial	0-None	0-None	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry						
Flash Exit						

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0
Flash Entry				
Flash Exit				

Unit General Control Data

Date 2/15/2005

Time 4:03:23PM

Intersection Name FM 2920 AT PARK

Source Database

Startup Time 5

Ring	1	2	3	4
------	---	---	---	---

Startup State 1-All Red

Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Red Revert 4.0

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

Auto Ped Clear 0

I/O Modes	Input	Output
-----------	-------	--------

Stop Time reset 0

ABC Connector 0 0

Alternate Sequence 0

D Connector 0 0

Unit Port 1 Data

Intersection Name FM 2920 AT PARK Date 2/15/2005
Source Database Time 4:03:23PM

Description	Device Present	Msg40 Frame Enabled
0-T&F BIU #1 TS2	1	0
1-T&F BIU #2 TS2	1	0
2-T&F BIU #3 TS2	0	0
3-T&F BIU #4 TS2	0	0
4-T&F BIU #5 TS2 Reserved	0	0
5-T&F BIU #6 TS2 Reserved	0	0
6-T&F BIU #7 TS2 Mfg Use	0	0
7-T&F BIU #8 TS2 Mfg Use	0	0
8-DET BIU #1 TS2	1	0
9-DET BIU #2 TS2	1	0
10-DET BIU #3 TS2	0	0
11-DET BIU #4 TS2	0	0
12-DET BIU #5 Reserved	0	0
13-DET BIU #6 Reserved	0	0
14-DET BIU #7 Mfg Use	0	0
15-DET BIU #8 Mfg Use	0	0
16-Malfunction unit	1	0
17-Diagnostic (Msg 30)	0	0
18-Controller Unit	1	0
19-Undefined	0	0

Coordination Mode Data

Date 2/15/2005 Time 16:14

Intersection Name	FM 2920 AT PARK
Source	User
Operation Mode	0-Free
Mode (Normal)	1-Yield
Maximum	1-Max 1
Correction	2-Short Way
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

System Local Alarm Select Data

Date 2/15/2005

Time 16:10:11

Intersection Name FM 2920 AT PARK

Source Database

System Address 24

Revert to Backup 15

Area Code	Prefix	Number
-----------	--------	--------

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Access Data

Date:
10/11/2004

Time:
16:10:33

INST 5/9/05

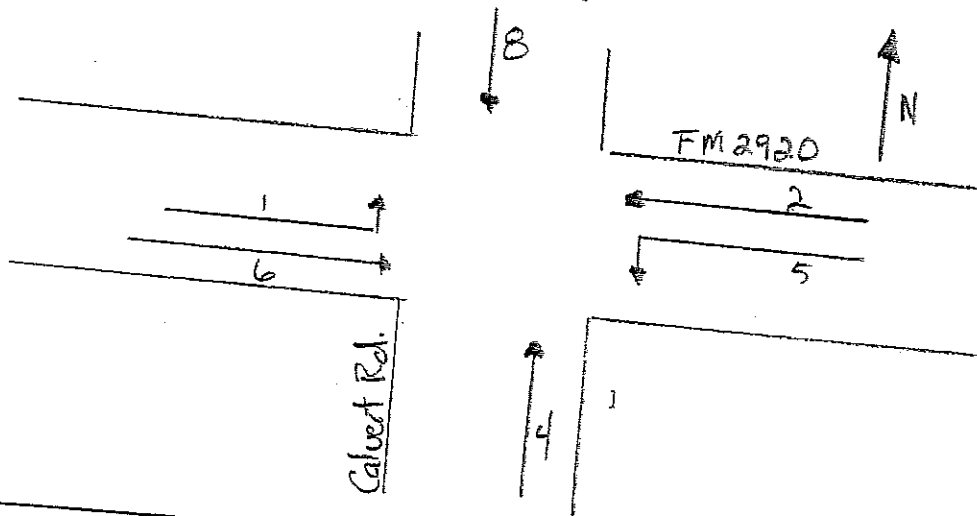
Intersection Name : FM 2920 at Calvert

Source : Database

Security Code 9999 Level 1 Level 2

	Baud Rate	Data Bits	Parity
Printer Port 2	0-1200	0-Eight	0-Odd
Comm Port 2	0-1200		
Comm Port 3	0-1200		

VIVID5
(Comm. Panel)



Phase Vehicle Basic Timing Data

Date 10/11/21 Time 16:12:18

Intersection Name

FM 2920 at Calvert

Source

User

Phase	1	2	3	4	5	6	7	8
Minimum Green	5	20	0	5	5	20	0	5
Passage	2.0	1.5	0.0	2.0	2.0	1.5	0.0	2.0
Maximum 1	10	60	0	25	25	60	0	10
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	5.0	5.0	3.0	3.5	5.0	5.0	3.0	3.5
Red Clearance	1.0	1.0	0.0	2.0	1.0	1.0	0.0	2.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase General Control Data

Date 10/11/20

Time 16:12:18

Intersection Name
Source

FM 2920 at Calvert
User

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	0-None	1-Inactive	1-Inactive	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry	0					
Flash Exit	^					

Phase	7	8	9	10	11	12
Initial	0-None	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry						
Flash Exit						

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0
Flash Entry				
Flash Exit				

Phase Miscellanenous Data

Date 5/10/201

Time 9:20:14

Intersection Name FM 2920 at Calvert

Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 5/10/201

Time 9:20:14

Intersection Name FM 2920 at Calvert

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	2	6	1	5	4	8	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	3	3	9	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	2	6	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 10/11/2004

Time 4:12:46PM

Intersection Name FM 2920 at Calvert

Source Database

Startup Time 5

Startup State 1-All Red

Red Revert 4.0

Auto Ped Clear 0

Stop Time reset 0

Alternate Sequence 0

Ring	1	2	3	4
------	---	---	---	---

Input Response	1-Ring 1	2-Ring 2	0-None	0-None
Output Select	1-Ring 1	2-Ring 2	0-None	0-None

I/O Modes	Input	Output
-----------	-------	--------

ABC Connector 0 0

D Connector 0 0

Unit Port 1 Data

Intersection Name FM 2920 at Calvert

Date 5/10/2005

Source Database

Time 9:21:14AM

Description	Device Present	Msg40 Frame Enabled
0-T&F BIU #1 TS2	1	0
1-T&F BIU #2 TS2	0	0
2-T&F BIU #3 TS2	0	0
3-T&F BIU #4 TS2	0	0
4-T&F BIU #5 TS2 Reserved	0	0
5-T&F BIU #6 TS2 Reserved	0	0
6-T&F BIU #7 TS2 Mfg Use	0	0
7-T&F BIU #8 TS2 Mfg Use	0	0
8-DET BIU #1 TS2	1	0
9-DET BIU #2 TS2	0	0
10-DET BIU #3 TS2	0	0
11-DET BIU #4 TS2	0	0
12-DET BIU #5 Reserved	0	0
13-DET BIU #6 Reserved	0	0
14-DET BIU #7 Mfg Use	0	0
15-DET BIU #8 Mfg Use	0	0
16-Malfunction unit	1	0
17-Diagnostic (Msg 30)	0	0
18-Controller Unit	1	0
19-Undefined	0	0

Coordination Mode Data

Date 10/11/2004 Time 16:13

Intersection Name	FM 2920 at Calvert
Source	User
Operation Mode	0-Free
Mode (Normal)	1-Yield
Maximum	1-Max 1
Correction	2-Short Way
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Local TBC DST and Equate Data

Date 10/11/2004 Time 16:13:22

Intersection Name FM 2920 at Calvert

Source Database

	Month	Week
DST Begin	4	1

	Month	Week
DST End	10	5

	Hour	Minute
Cycle Zero Reference Time	24	0

Equate

Source	1	2	3	4	5	6	7
1	2	3	4	5	6	7	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Calvert

Date 10/11/2004

Source Database

Time 16:13:22

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	Free(OFF=4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

System Local Alarm Select Data

Date 10/11/2004

Time 16:14:00

Intersection Name FM 2920 at Calvert

Source Database

System Address 23

Revert to Backup 15

	Area Code	Prefix	Number
--	-----------	--------	--------

Auto Report 1

Auto Report 1

	Critical		Critical
--	----------	--	----------

Local Free	0	Cycle Failure	0
------------	---	---------------	---

Preemption	0	Coord Failure	0
------------	---	---------------	---

Special Status 6	0	Cycle Fault	0
------------------	---	-------------	---

Special Status 5	0	Coord Fault	0
------------------	---	-------------	---

Special Status 4	0	Local Flash	0
------------------	---	-------------	---

Special Status 3	0	Conflict Flash	0
------------------	---	----------------	---

Special Status 2	0	Remote Flash	0
------------------	---	--------------	---

Special Status 1	0	Voltage Monitor	0
------------------	---	-----------------	---

Access Data

INST 12/18/02

Date:
6/24/2003

Time:
13:21:20

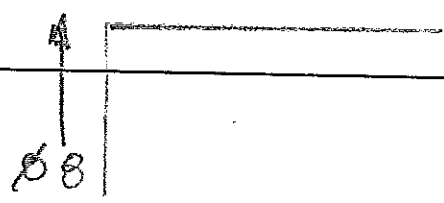
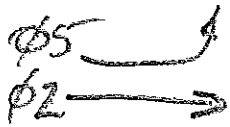
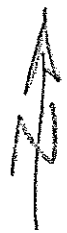
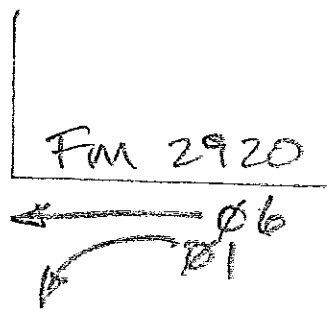
Woodforest Dr.

Intersection Name : FM 2920 at Lowe's / Tomball Ct

Source : Database

	Level 1	Level 2
Security Code	9999	
	Baud Rate	Data Bits Parity
Printer Port 2	0-1200	0-Eight 0-Odd
Comm Port 2	0-1200	
Comm Port 3	0-1200	

TOMBALL CENTER /
LOWE'S



Phase Vehicle Basic Timing Data

Date 6/24/201

Time 13:22:23

Intersection Name

FM 2920 at Lowe's / Tomball Ct

Source

Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	5	25	0	5	5	25	0	5
Passage	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Maximum 1	20	60	0	20	20	60	0	20
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	4.5	4.5	3.0	3.5	4.5	4.5	3.0	3.5
Red Clearance	1.5	1.5	0.0	2.0	1.5	1.5	0.0	2.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data

Date 6/24/201

Time 13:22:23

Intersection Name FM 2920 at Lowe's / Tomball Ct

Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	2	2	2	2	2	2	2	2
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data
 Date 6/24/201 Time 13:22:23

Intersection Name FM 2920 at Lowe's / Tomball Ct
 Source Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	0-None	1-Inactive	1-Inactive	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	7	8	9	10	11	12
Initial	0-None	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0

Phase Miscellanenous Data

Date 6/24/201

Time 13:22:23

Intersection Name FM 2920 at Lowe's / Tomball Ct
 Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 6/24/201

Time 13:22:23

Intersection Name FM 2920 at Lowe's / Tomball Ct

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 6/24/201

Time 13:22:23

Intersection Name

FM 2920 at Lowe's / Tomball Ct

Source

Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 6/24/2003

Time 1:24:11PM

Intersection Name FM 2920 at Lowe's / Tomball Ct

Source Database

Startup Time 5

Startup State 1-All Red

Red Revert 4.0

Auto Ped Clear 0

Stop Time reset 0

Alternate Sequence 0

Ring	1	2	3	4
------	---	---	---	---

Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

I/O Modes	Input	Output
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ABC Connector 0 0

D Connector 0 0

Unit Overlap Data

Intersection Name FM 2920 at Lowe's / Tomball Ct

Date 6/24/2003

Source Database

Time 1:24:11PM

	Phases																Green	Yellow	Red	Stop Green/ Yellow Phase	Start Green Phase	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16						
Overlap A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap H	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap J	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap K	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0

Unit Ring Data

Intersection Name FM 2920 at Lowe's / Tomball Ct

Date 6/24/2003

Source Database

Time 1:24:11PM

Concurrent Phases

Phase	Ring	Next	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
2	1	3	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
3	1	4	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
4	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
5	2	6	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
6	2	7	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7	2	8	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
8	2	5	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Unit Alt Sequence Data

Intersection Name FM 2920 at Lowe's / Tomball Ct

Date 6/24/2003

Source Database

Time 1:24:11PM

Alternate Sequence	Pair 1		Pair 2		Pair 3		Pair 4	
	1/1	1/2	2/1	2/2	3/1	3/2	4/1	4/2
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0

Unit Alt Sequence Data

Intersection Name FM 2920 at Lowe's / Tomball Ct

Date 6/24/2003

Source Database

Time 1:24:11PM

Alternate Sequence	Pair 5		Pair 6		Pair 7		Pair 8	
	5/1	5/2	6/1	6/2	7/1	7/2	8/1	8/2
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0

Coordination Mode Data

Date 6/24/2003 Time 13:25

Intersection Name	FM 2920 at Lowe's / Tomball Ct
Source	Database
Operation Mode	1-Auto
Mode (Normal)	0-Perm
Maximum	1-Max 1
Correction	3-Short Way+
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 6/24/200 Time 13:25

Intersection Nam FM 2920 at Lowe's / Tomba

Source Database

Cycle Length 0

Ring Sum Times 0 0 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	11	31	3	11	11	31	3	11
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	3
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	0	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 2 Split 1

Date 6/24/200 Time 13:25

Intersection Name FM 2920 at Lowe's / Tomb

Source Database

Cycle Length 0

Ring Sum Times 0 0 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	11	31	3	11	11	31	3	11
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	3
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	0	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 3 Split 1

Date 6/24/200 Time 13:25

Intersection Name FM 2920 at Lowe's / Tomba

Source Database

Cycle Length 0

Ring Sum Times 0 0 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	11	31	3	11	11	31	3	11
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	3
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 6/24/200 Time 13:25

Intersection Name FM 2920 at Lowe's / Toml

Source Database

Cycle Length 0

Ring Sum Times 0 0 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	11	31	3	11	11	31	3	11
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	3
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 6/24/2003 Time 13:28:27

Intersection FM 2920 at Lowe's / Tomball Ct

Source Database

DST Begin Month Week
 4 1

DST End Month Week
 10 5

Cycle Zero Hour Minute
Reference Time 24 0

Source	Equates						
	1	2	3	4	5	6	7
1	2	3	4	5	6	7	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Lowe's / Tomball Ct

Date 6/24/2003

Source Database

Time 13:28:27

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	6	0	Free(OFF=4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	20	0	Free(OFF=4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Local TBC Phase Function Data

Intersection FM 2920 at ~~MAX~~ **LOWE'S/**
TOMBALL CENTER
Date 6/24/2003
 Source Database Time 11:08:42

Function	Phase Functions															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase 1 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 2 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 3 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 4 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 5 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 6 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 7 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 8 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 9 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 10 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 11 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 12 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 13 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 14 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 15 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 16 Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Function	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase 1 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 2 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 3 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 4 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 5 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 6 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 7 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 8 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 9 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 10 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 11 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 12 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 13 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 14 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 15 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 16 Phase Omit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

System Local Alarm Select Data

Date 6/24/2003

Time 13:30:56

Intersection Name FM 2920 at Lowe's / Tomball Ct

Source Database

System Address 9

Revert to Backup 15

Area Code Prefix Number

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Access Data

Date:
1/23/2008

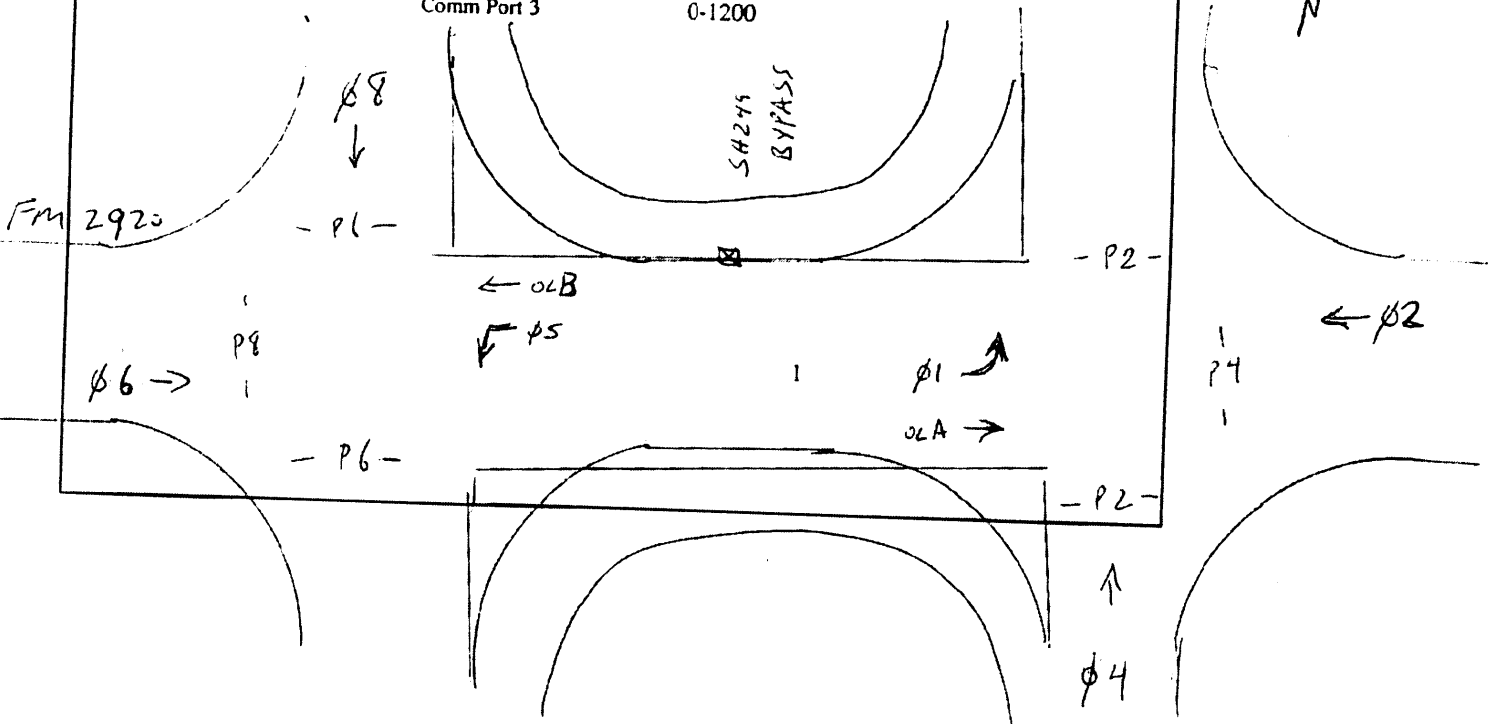
Time:
10:07:44

MAX

INST 1-16-08

Intersection Name : SH 249 at FM 2920 (NEW)
Source : BYPASS Database

	Level 1	Level 2
Security Code	9999	
	Baud Rate	Data Bits Parity
Printer Port 2	0-1200	0-Eight 0-Odd
Comm Port 2	0-1200	
Comm Port 3	0-1200	



Phase Vehicle Basic Timing Data

Date 1/23/2008 Time 9:28:07

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	5	20	0	5	5	20	0	5
Passage	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0
Maximum 1	30	50	0	25	30	50	0	25
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0
Red Clearance	2.5	2.5	0.0	3.0	2.5	2.5	0.0	3.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	5	5	0	0	5	5	0	0
Passage	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0
Maximum 1	30	30	0	0	30	30	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	4.0	4.0	3.0	3.0	4.0	4.0	3.0	3.0
Red Clearance	2.5	2.5	1.5	0.0	2.5	2.5	0.0	0.0

Phase Pedestrian Timing Data

Date 1/23/2008

Time 9:28:07

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	7	0	7	0	7	0	7
Pedestrian Clear	0	12	0	13	0	14	0	14
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	2	0	2	0	2	0	2
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 1/23/2008

Time 9:28:07

Intersection Name

SH 249 at FM 2920 (NEW)

Source

Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	5-Dark	1-Inactive	4-Green	1-Inactive
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry	0					
Flash Exit	0					

Phase	7	8	9	10	11	12
Initial	5-Dark	1-Inactive	5-Dark	1-Inactive	5-Dark	1-Inactive
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry						
Flash Exit						

Phase	13	14	15	16
Initial	5-Dark	1-Inactive	5-Dark	1-Inactive
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0
Flash Entry				
Flash Exit				

Phase Miscellanenous Data

Date 1/23/2008

Time 9:28:07

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	1	1	1	1	1	1	1
Dual Entry	1	0	0	0	1	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	1	1	1	1	1	1	1	1
Dual Entry	1	1	1	1	1	1	1	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 1/23/2008

Time 9:28:07

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 1/23/2008

Time 9:28:07

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

Detector	17	18	19	20	21	22	23	24
Assigned Phase	0	0	0	0	4	8	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Detector	25	26	27	28	29	30	31	32
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 1/23/2008

Time 9:28:07

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 1/23/2008

Time 10:04:20AM

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

Startup Time 5

Startup State 1-All Red

Red Revert 2.0

Auto Ped Clear 1

Stop Time reset 0

Alternate Sequence 17

Ring	1	2	3	4
------	---	---	---	---

Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

I/O Modes	Input	Output
-----------	-------	--------

ABC Connector 0 0

D Connector 0 0

Unit Overlap Data

Intersection Name SH 249 at FM 2920 (NEW)

Date 1/23/2008

Source Database

Time 10:04:20AM

	Phases																Green	Yellow	Red	Stop Green/ Yellow Phase	Start Green Phase
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
Overlap A	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4.0	2.5	0	0
Overlap B	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	4.0	2.5	0	0
Overlap C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.5	1.5	0	0
Overlap D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.5	1.5	0	0
Overlap E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.5	1.5	0	0
Overlap F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.5	1.5	0	0
Overlap G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.5	1.5	0	0
Overlap H	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.5	1.5	0	0
Overlap I	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4.0	2.5	0	0
Overlap J	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4.0	2.5	0	0
Overlap K	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	4.0	2.5	0	0
Overlap L	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	4.0	3.0	0	0
Overlap M	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	4.0	2.5	0	0
Overlap N	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	4.0	2.5	0	0
Overlap O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4.0	3.0	0	0
Overlap P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.5	1.5	0	0
																	0	3.5	1.5	0	0

Unit Ring Data

Intersection Name SH 249 at FM 2920 (NEW)

Date 1/23/2008

Source Database

Time 10:04:20AM

Phase	Ring	Next	Concurrent Phases															
			1	2	3	4	5	6	7	8	9	1	1	12	1	1	1	16
1	1	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
2	1	3	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
3	1	4	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
4	1	9	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
5	2	6	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
6	2	7	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7	2	8	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
8	2	13	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
9	1	10	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0
10	1	11	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0
11	1	12	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
13	2	14	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0
14	2	15	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0
15	2	16	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0
16	2	5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1

Unit Port 1 Data

Intersection Name SH 249 at FM 2920 (NEW)

Date 1/23/2008

Source Database

Time 10:04:20AM

Description	Device Present	Msg40 Frame Enabled
0-T&F BIU #1 TS2	1	0
1-T&F BIU #2 TS2	1	0
2-T&F BIU #3 TS2	0	0
3-T&F BIU #4 TS2	0	0
4-T&F BIU #5 TS2 Reserved	0	0
5-T&F BIU #6 TS2 Reserved	0	0
6-T&F BIU #7 TS2 Mfg Use	0	0
7-T&F BIU #8 TS2 Mfg Use	0	0
8-DET BIU #1 TS2	1	0
9-DET BIU #2 TS2	1	0
10-DET BIU #3 TS2	0	0
11-DET BIU #4 TS2	0	0
12-DET BIU #5 Reserved	0	0
13-DET BIU #6 Reserved	0	0
14-DET BIU #7 Mfg Use	0	0
15-DET BIU #8 Mfg Use	0	0
16-Malfunction unit	1	0
17-Diagnostic (Msg 30)	0	0
18-Controller Unit	1	0
19-Undefined	0	0

Unit Channel Output Data

Intersection Name SH 249 at FM 2920 (NEW)

Date 1/23/2008

Source Database

Time 10:04:20AM

Channel	Control	Hardware Pin
1-Phase 1 Vehicle	41-Overlap I	1-Phase 1 RYG
2-Phase 2 Vehicle	2-Veh Phase 2	2-Phase 2 RYG
3-Phase 3 Vehicle	42-Overlap J	3-Phase 3 RYG
4-Phase 4 Vehicle	43-Overlap K	4-Phase4 RYG
5-Phase 5 Vehicle	44-Overlap L	5-Phase 5 RYG
6-Phase 6 Vehicle	6-Veh Phase 6	6-Phase 6 RYG
7-Phase 7 Vehicle	45-Overlap M	7-Phase 7 RYG
8-Phase 8 Vehicle	46-Overlap N	8-Phase 8 RYG
9-Phase 9 Vehicle	33-Overlap A	17-Overlap A RYG
10-Phase 10 Vehicle	34-Overlap B	18-Overlap B RYG
11-Phase 11 Vehicle	35-Overlap C	19-Overlap C RYG
12-Phase 12 Vehicle	36-Overlap D	20-Overlap D RYG

Unit Channel Output Data

Intersection Name	SH 249 at FM 2920 (NEW)	Date	1/23/2008
Source	Database	Time	10:04:20AM

Channel	Control	Hardware Pin
13-Overlap A Vehicle	18-Ped Phase 2	10-Phase 2 DPW
14-Overlap B Vehicle	20-Ped Phase 4	12-Phase 4 DPW
15-Overlap C Vehicle	22-Ped Phase 6	14-Phase 6 DPW
16-Overlap D Vehicle	24-Ped Phase 8	16-Phase 8 DPW
17-Phase 1 Ped	17-Ped Phase 1	9-Phase 1 DPW
18-Phase 3 Ped	19-Ped Phase 3	11-Phase 3 DPW
19-Phase 5 Ped	21-Ped Phase 5	13-Phase 5 DPW
20-Phase 7 Ped	23-Ped Phase 7	15-Phase 7 DPW
21-Overlap E Vehicle	0-None	0-None
22-Overlap F Vehicle	0-None	0-None
23-Overlap G Vehicle	0-None	0-None
24-Overlap H Vehicle	0-None	0-None

Coordination Mode Data

Date 1/23/2008 Time 10:06

Intersection Name	SH 249 at FM 2920 (NEW)
Source	Database
Operation Mode	0-Free
Mode (Normal)	0-Perm
Maximum	1-Max 1
Correction	0-Dwell
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Local TBC DST and Equate Data

Date 1/23/2008 Time 10:07:01

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

	Month	Week
DST Begin	3	2

	Month	Week
DST End	11	1

	Hour	Minute
Cycle Zero Reference Time	24	0

	Equates						
Source	1	2	3	4	5	6	7
1	2	3	4	5	6	7	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection SH 249 at FM 2920 (NEW)

Date 1/23/2008

Source Database

Time 10:07:01

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	Free(OFF=4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	

System Local Alarm Select Data

Date 1/23/2008

Time 10:08:21

Intersection Name SH 249 at FM 2920 (NEW)

Source Database

System Address 0

Revert to Backup 15

Area Code	Prefix	Number
-----------	--------	--------

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Intersection Configuration

Date 1/23/2008

Time 10:08

Intersection Name	SH 249 at FM 2920 (NEW)	Alias	0
Source Intersection	New SH 249 at FM 2920	Connection Type	Direct-Serial
Group Identifier	Isolated Group 1	Control Method	Solo
Phone Number		Baud Rate	Solo
Protocol	ECOM	Controller Type	EPAC
Owning Agency	Root	Auto Reports	Yes
		Version	3.33b
		System Control	Yes
Page Number	10		
Port Number	1	Lock Dialing Out	No
Address Number	0		
Port Server Name	LocalHost		

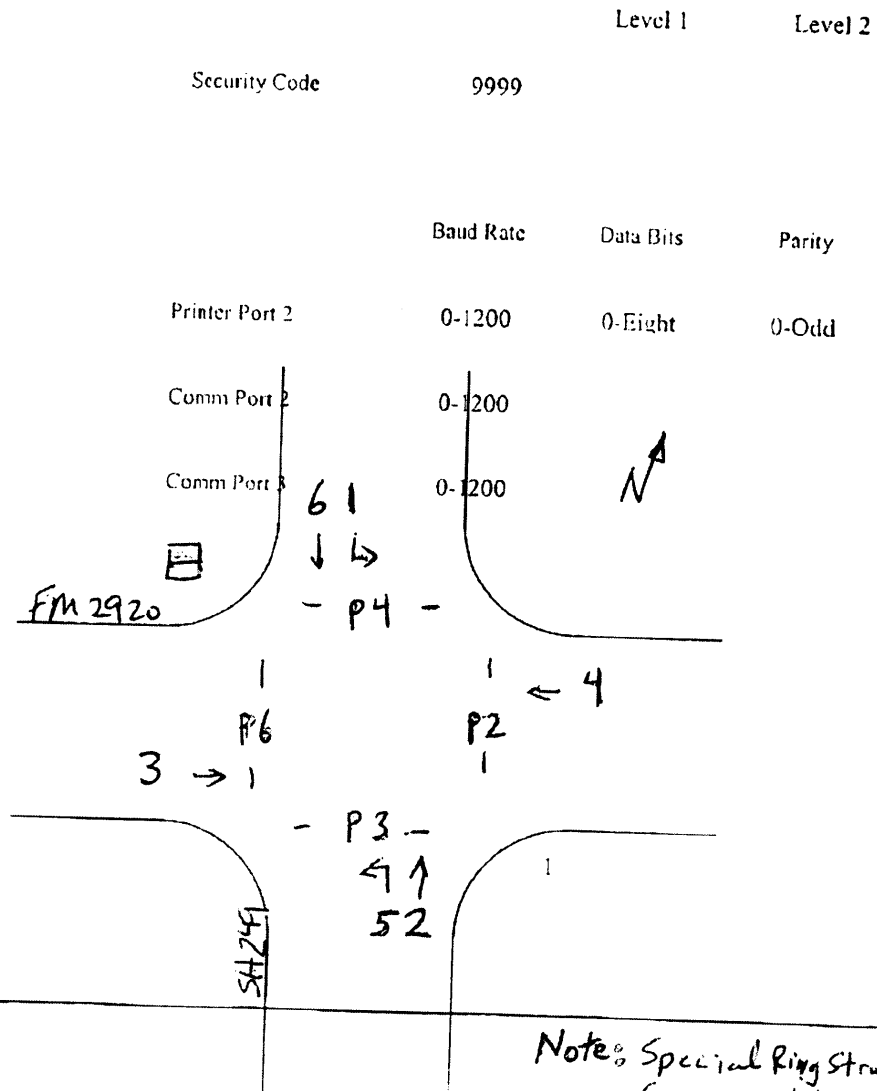
Access Data

Date:
5/23/2007

TIME:
14:36:56

INST 1-16-08

Intersection Name : ~~SH 249~~ at FM 2920
BS 24913
Source : Database



Note: Special Ring Structure
(Dual Left H/s)

Phase Vehicle Basic Timing Data

Date 1/23/2008 Time 9:32:06

Intersection Name SH 249 at FM 2920

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	5	10	6	10	6	10	0	0
Passage	1.0	3.0	1.0	1.0	1.0	3.0	0.0	0.0
Maximum 1	30	60	30	35	30	60	0	0
Maximum 2	40	70	40	40	45	70	0	0
Yellow Change	4.5	4.5	3.5	3.5	4.5	4.5	3.0	3.0
Red Clearance	2.5	2.5	2.0	2.0	2.5	2.5	0.0	0.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data

Date 1/23/2008

Time 9:32:06

Intersection Name SH 249 at FM 2920

Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	7	7	7	0	7	0	0
Pedestrian Clear	0	22	28	27	0	26	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	1	1	1	0	1	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 1/23/2008

Time 9:32:06

Intersection Name
Source

SH 249 at FM 2920
Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	1-Inactive	1-Inactive	3-Yellow	1-Inactive	1-Inactive
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry	0					
Flash Exit	~					

Phase	7	8	9	10	11	12
Initial	0-None	0-None	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry						
Flash Exit						

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0
Flash Entry				
Flash Exit				

Phase Miscellaneous Data

Date 1/23/2008

Time 9:32:06

Intersection Name SH 249 at FM 2920

Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 1/23/2008 Time 9:32:06

Intersection Name SH 249 at FM 2920

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 1/23/2008

Time 9:32:06

Intersection Name SH 249 at FM 2920

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 1/23/2008

Time 9:33:19AM

Intersection Name SH 249 at FM 2920

Source Database

Startup Time 5

Startup State 1-All Red

Red Revert 4.0

Auto Ped Clear 0

Stop Time reset 0

Alternate Sequence 1

Ring	1	2	3	4
------	---	---	---	---

Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

I/O Modes	Input	Output
-----------	-------	--------

ABC Connector 0 0

D Connector 0 0

Unit Ring Data

Intersection Name SH 249 at FM 2920

Date 1/23/2008

Source Database

Time 9:33:19AM

Concurrent Phases

Phase	Ring	Next	1	2	3	4	5	6	7	8	9	1	1	12	1	1	1	16
1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2	1	3	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
3	1	4	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
4	1	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
5	2	7	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
6	2	5	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7	2	8	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
8	2	6	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Unit Alt Sequence Data

Intersection Name SH 249 at FM 2920

Date 1/23/2008

Source Database

Time 9:33:19AM

Alternate Sequence	Pair 1		Pair 2		Pair 3		Pair 4	
	1/1	1/2	2/1	2/2	3/1	3/2	4/1	4/2
1	5	6	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0

Unit Channel Output Data

Intersection Name	SH 249 at FM 2920	Date	1/23/2008
Source	Database	Time	9:33:19AM

Channel	Control	Hardware Pin
1-Phase 1 Vehicle	1-Veh Phase 1	1-Phase 1 RYG
2-Phase 2 Vehicle	2-Veh Phase 2	2-Phase 2 RYG
3-Phase 3 Vehicle	3-Veh Phase 3	3-Phase 3 RYG
4-Phase 4 Vehicle	4-Veh Phase 4	4-Phase4 RYG
5-Phase 5 Vehicle	5-Veh Phase 5	5-Phase 5 RYG
6-Phase 6 Vehicle	6-Veh Phase 6	6-Phase 6 RYG
7-Phase 7 Vehicle	7-Veh Phase 7	7-Phase 7 RYG
8-Phase 8 Vehicle	8-Veh Phase 8	8-Phase 8 RYG
9-Phase 9 Vehicle	18-Ped Phase 2	10-Phase 2 DPW
10-Phase 10 Vehicle	20-Ped Phase 4	12-Phase 4 DPW
11-Phase 11 Vehicle	22-Ped Phase 6	14-Phase 6 DPW
12-Phase 12 Vehicle	24-Ped Phase 8	16-Phase 8 DPW

Unit Channel Output Data

Intersection Name	SH 249 at FM 2920	Date	1/23/2008
Source	Database	Time	9:33:19AM

Channel	Control	Hardware Pin
13-Overlap A Vehicle	33-Overlap A	17-Overlap A RYG
14-Overlap B Vehicle	34-Overlap B	18-Overlap B RYG
15-Overlap C Vehicle	35-Overlap C	19-Overlap C RYG
16-Overlap D Vehicle	36-Overlap D	20-Overlap D RYG
17-Phase 1 Ped	17-Ped Phase 1	9-Phase 1 DPW
18-Phase 3 Ped	19-Ped Phase 3	11-Phase 3 DPW
19-Phase 5 Ped	21-Ped Phase 5	13-Phase 5 DPW
20-Phase 7 Ped	23-Ped Phase 7	15-Phase 7 DPW
21-Overlap E Vehicle	0-None	0-None
22-Overlap F Vehicle	0-None	0-None
23-Overlap G Vehicle	0-None	0-None
24-Overlap H Vehicle	0-None	0-None

Coordination Mode Data

Date 1/23/2008 Time 9:43

Intersection Name	SH 249 at FM 2920
Source	Database
Operation Mode	1-Auto
Mode (Normal)	2-Perm Yld
Maximum	2-Max II
Correction	2-Short Way
Offset Mode	0-Beg Green
Force Mode	1-Cycle
Max Dwell Time	20
Yield Period	2
Manual Controls: Dial	4
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 1/23/200 Time 9:43

Intersection Name SH 249 at FM 2920

Source Database

Cycle Length 85

Ring Sum Times 85 45 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	30	20	20	19	26	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Veh Serv	13	18	12	16	14	18	0	0
Ph Min Ped Serv	0	30	36	35	0	34	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 2 Split 1

Date 1/23/200 Time 9:43

Intersection Name SH 249 at FM 2920

Source Database

Cycle Length 120

Ring Sum Times 120 50 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	35	44	26	17	33	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Veh Serv	13	18	12	16	14	18	0	0
Ph Min Ped Serv	0	30	36	35	0	34	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 3 Split 1

Date 1/23/200 Time 9:43

Intersection Name SH 249 at FM 2920

Source Database

Cycle Length 120

Ring Sum Times 120 64 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	14	50	30	26	37	27	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Vch Serv	13	18	12	16	14	18	0	0
Ph Min Ped Serv	0	30	36	35	0	34	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Vch Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 1/23/200 Time 9:43

Intersection Name SH 249 at FM 2920

Source Database

Cycle Length 105

Ring Sum Times 105 50 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	35	30	25	24	26	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Veh Serv	13	18	12	16	14	18	0	0
Ph Min Ped Serv	0	30	36	35	0	34	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 2

Date 1/23/200 Time 9:43

Intersection Name SH 249 at FM 2920

Source Database

Cycle Length 120

Ring Sum Times 120 62 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	47	31	27	26	36	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Veh Serv	13	18	12	16	14	18	0	0
Ph Min Ped Serv	0	30	36	35	0	34	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	0	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 1/23/2008 Time 9:56:48

Intersection Name SH 249 at FM 2920

Source Database

	Month	Week
DST Begin	3	2

	Month	Week
DST End	11	1

	Hour	Minute
Cycle Zero Reference Time	24	0

	Equates						
Source	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection SH 249 at FM 2920

Date 1/23/2008

Source Database

Time 9:56:48

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	1	8	0	4/2/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	1	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	2	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	2	5	0	2/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	2	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	2	16	0	3/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	2	20	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	2	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Preempt General Data

Date 1/23/2008 Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

	Ring1	Ring2	Ring3	Ring4
Min Green/Walk Time	5	5	5	5
FlashOverPreempts	1			
Preempt1OverPreempt2	1			
Preempt2OverPreempt3	1			
Preempt3OverPreempt4	1			
Preempt4OverPreempt5	1			
Preempt5OverPreempt6	1			

Preempt Pre 1 Time Data

Date 1/23/2008 Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

NonLock	0	SelPedClear	8
Link	0	SelRedClear	2.0
Delay	0	SelYelChange	4.0
Extend	0	TrackGreen	10
Duration	0	TrackPedClear	8
MaxCall	0	TrackRedClear	2.0
LockOut	0	TrackYelChange	4.0
		DwellGreen	10
		ReturnPedClear	8
		ReturnRedClear	2.0
		ReturnYelChange	4.0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ExitPhase	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
ExitCalls	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0

Preempt Load 1 Switch Data

Date 1/23/2008 Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Veh Track Status	0-Red	0-Red	0-Red	1-Green	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	0-Red	1-Green	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
Veh Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No

Preempt Pre 2 Time Data

Date 1/23/2008

Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

NonLock	1	SelPedClear	8
Link	0	SelRedClear	2.0
Delay	1	SelYelChange	4.0
Extend	0	TrackGreen	0
Duration	10	TrackPedClear	0
MaxCall	90	TrackRedClear	0.0
LockOut	0	TrackYelChange	0.0
		DwellGreen	10
		ReturnPedClear	8
		ReturnRedClear	2.0
		ReturnYelChange	4.0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ExitPhase	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
ExitCalls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Load 2 Switch Data

Date 1/23/2008

Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Veh Track Status	0-Red	1-Green	0-Red	0-Red	1-Green	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	1-Green	0-Red	0-Red	1-Green	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
Veh Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No

Preempt Pre 3 Time Data

Date 1/23/2008 Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

NonLock	1	SelPedClear	8
Link	0	SelRedClear	2.0
Delay	1	SelYelChange	4.0
Extend	0	TrackGreen	0
Duration	10	TrackPedClear	0
MaxCall	90	TrackRedClear	0.0
LockOut	0	TrackYelChange	0.0
		DwellGreen	10
		ReturnPedClear	8
		ReturnRedClear	2.0
		ReturnYelChange	4.0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ExitPhase	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
ExitCalls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Load 3 Switch Data

Date 1/23/2008 Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Veh Track Status	1-Green	0-Red	0-Red	0-Red	0-Red	1-Green	0-Red	0-Red
Veh Dwell Status	1-Green	0-Red	0-Red	0-Red	0-Red	1-Green	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
Veh Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No

Preempt Pre 4 Time Data

Date 1/23/2008 Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

NonLock	1	SelPedClear	8
Link	0	SelRedClear	2.0
Delay	1	SelYelChange	4.0
Extend	0	TrackGreen	0
Duration	10	TrackPedClear	0
MaxCall	90	TrackRedClear	0.0
LockOut	0	TrackYelChange	0.0
		DwellGreen	10
		ReturnPedClear	8
		ReturnRedClear	2.0
		ReturnYelChange	4.0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ExitPhase	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ExitCalls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Load 4 Switch Data

Date 1/23/2008 Time 10:01:16AM

Intersection Name SH 249 at FM 2920

Source Database

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Veh Track Status	0-Red	0-Red	1-Green	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	1-Green	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
Veh Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No

System Local Alarm Select Data

Date 1/23/2008

Time 10:02:56

Intersection Name SH 249 at FM 2920

Source Database

System Address 12

Revert to Backup 3

Area Code	Prefix	Number
-----------	--------	--------

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Intersection Configuration

Date 1/23/2008

Time 10:03

Intersection Name	SH 249 at FM 2920	Alias	0
Source Intersection	Default	Connection Type	Direct-Serial
Group Identifier	Isolated Group 1	Control Method	Solo
Phone Number		Baud Rate	Solo
Protocol	ECOM	Controller Type	EPAC
Owning Agency	Root	Auto Reports	Yes
		Version	3.32f
		System Control	Yes
Page Number	1		
Port Number	1	Lock Dialing Out	No
Address Number	12		
Port Server Name	LocalHost		

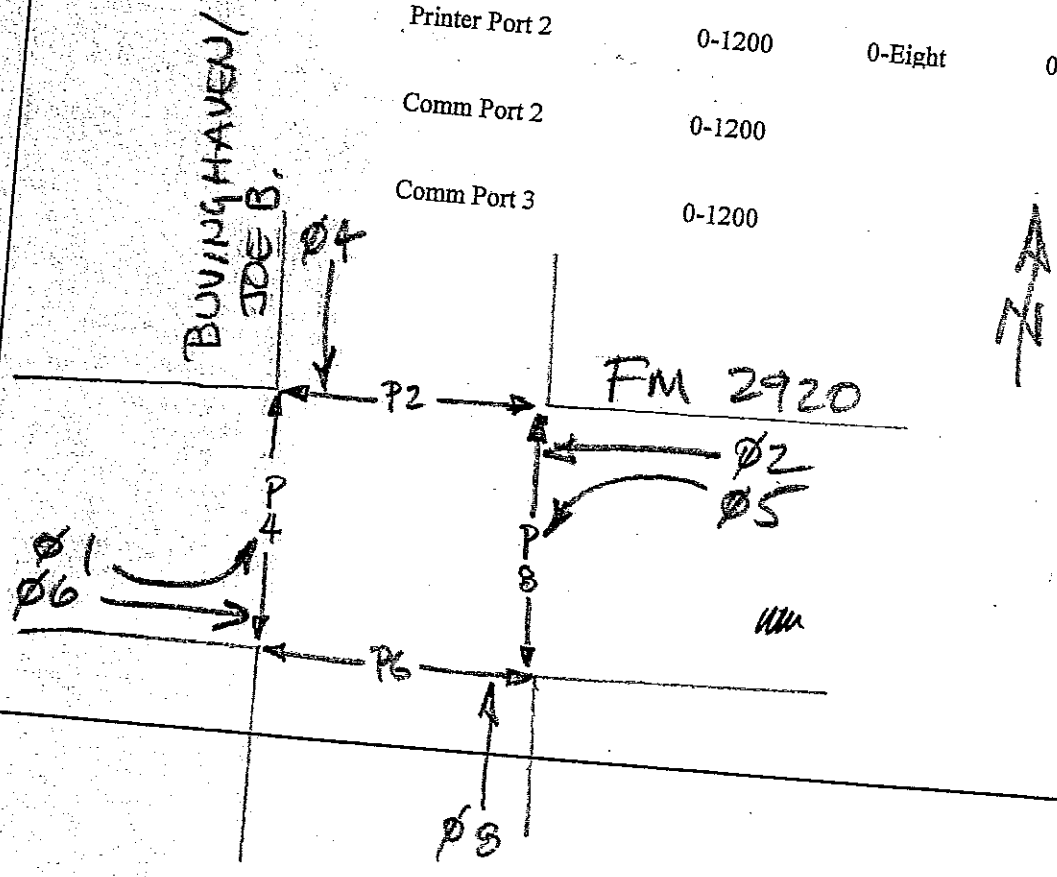
Access Da
INST 11-20-03

Date:
6/24/2003

12:45:19

Intersection Name : FM 2920 at Buvinghaven/Joe B
Source : Database

	Level 1	Level 2
Security Code	9999	
Printer Port 2	Baud Rate 0-1200	Data Bits 0-Eight Parity 0-Odd
Comm Port 2	0-1200	
Comm Port 3	0-1200	



Phase Vehicle Basic Timing Data

Date 6/24/201

Time 12:46:14

Intersection Name

FM 2920 at Buvinghaven/Joe B

Source

Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	7	15	0	7	7	15	0	7
Passage	2.0	3.5	0.0	2.0	2.0	3.5	0.0	2.0
Maximum 1	15	40	0	22	15	40	0	22
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.5	3.5	3.0	3.5	3.5	3.5	3.0	3.5
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data
 Date 6/24/201 Time 12:46:14

Intersection Name FM 2920 at Buvinghaven/Joe B
 Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	5	0	5	0	5	0	5
Pedestrian Clear	0	17	0	17	0	12	0	17
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	2	2	2	2	2	2	2	2
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 6/24/201

Time 12:46:14

Intersection Name
Source

FM 2920 at Buvinghaven/Joe B
Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	0-None	1-Inactive	1-Inactive	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	7	8	9	10	11	12
Initial	0-None	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0

Date 6/24/201

Phase Miscellanenous Data

Time 12:46:15

Intersection Name

FM 2920 at Buvinghaven/Joe B

Source

Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 6/24/201

Time 12:46:15

Intersection Name

FM 2920 at Buvinghaven/Joe B

Source

Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 6/24/201

Time 12:52:41

Intersection Name FM 2920 at Buvinghaven/Joe B
 Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 6/24/2003

Time 12:57:03PM

Intersection Name FM 2920 at Buvinghaven/Joe B

Source Database

Startup Time 5

Startup State 1-All Red

Red Revert 4.0

Auto Ped Clear 0

Stop Time reset 0

Alternate Sequence 0

Ring	1	2	3	4
Input Response	1-Ring 1	2-Ring 2	0-None	0-None
Output Select	1-Ring 1	2-Ring 2	0-None	0-None

I/O Modes	Input	Output
ABC Connector	0	0
D Connector	0	0

Coordination Mode Data

Date 6/24/2003 Time 13:08

Intersection Name	FM 2920 at Buvinghaven/Joe B
Source	Database
Operation Mode	1-Auto
Mode (Normal)	2-Perm Yld
Maximum	0-Inhibit
Correction	3-Short Way+
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 12/19/20 Time 16:25

Intersection Name	FM 2920 at Buvinghaven/J							
Source	Database							
Cycle Length	75							
Ring Sum Times	75	75	0	0				
Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	21	33	0	21	21	33	0	21
Mode	0-Actuated	1-Coord Ph	6-Ph Omit	0-Actuated	0-Actuated	1-Coord Ph	6-Ph Omit	0-Actuated
Ph Min Veh Serv	13	21	0	13	13	21	0	13
Ph Min Ped Serv	0	25	0	25	0	20	0	25

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	15	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 2 Split 1

Date 12/19/20 Time 16:25

Intersection Name FM 2920 at Buvinghaven/

Source Database

Cycle Length 75

Ring Sum Times 75 75 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	21	33	0	21	21	33	0	21
Mode	0-Actuated	1-Coord Ph	6-Ph Omit	0-Actuated	0-Actuated	1-Coord Ph	6-Ph Omit	0-Actuated
Ph Min Veh Serv	13	21	0	13	13	21	0	13
Ph Min Ped Serv	0	25	0	25	0	20	0	25

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	74	0	0
Mode	0-Normal	0-Normal	0
Alternate	1	0	0-Normal
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 3 Split 1

Date 12/19/20 Time 16:25

Intersection Name FM 2920 at Buvinghaven/J

Source Database

Cycle Length 80

Ring Sum Times 80 80 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	17	46	0	17	17	46	0	17
Mode	0-Actuated	1-Coord Ph	6-Ph Omit	0-Actuated	0-Actuated	1-Coord Ph	6-Ph Omit	0-Actuated
Ph Min Veh Serv	13	21	0	13	13	21	0	13
Ph Min Ped Serv	0	25	0	25	0	20	0	25

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	78	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 12/19/20 Time 16:25

Intersection Name FM 2920 at Buvinghaven/

Source Database

Cycle Length 75

Ring Sum Times 75 75 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	19	37	0	19	19	37	0	19
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	13	21	0	13	13	21	0	13
Ph Min Ped Serv	0	25	0	25	0	20	0	25

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	9	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 12/19/2006 Time 16:25:38

Intersection Name FM 2920 at Buvinghaven/Joe B

Source	Database	
	Month	Week
DST Begin	4	1
	Month	Week
DST End	10	5
	Hour	Minute
Cycle Zero Reference Time	24	0

Source	Equates						
	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Buvinghaven/Joe B

Source Database

Date 12/19/2006

Time 16:25:38

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	1	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	1	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	2	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	2	6	0	2/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	2	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	2	16	15	3/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	2	19	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	2	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	

System Local Alarm Select Data

Date 6/24/2003

Time 13:11:25

Intersection Name FM 2920 at Buvinghaven/Joe B

Source Database

System Address 8

Revert to Backup 15

Area Code Prefix Number

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Access D

INST 11-20-03

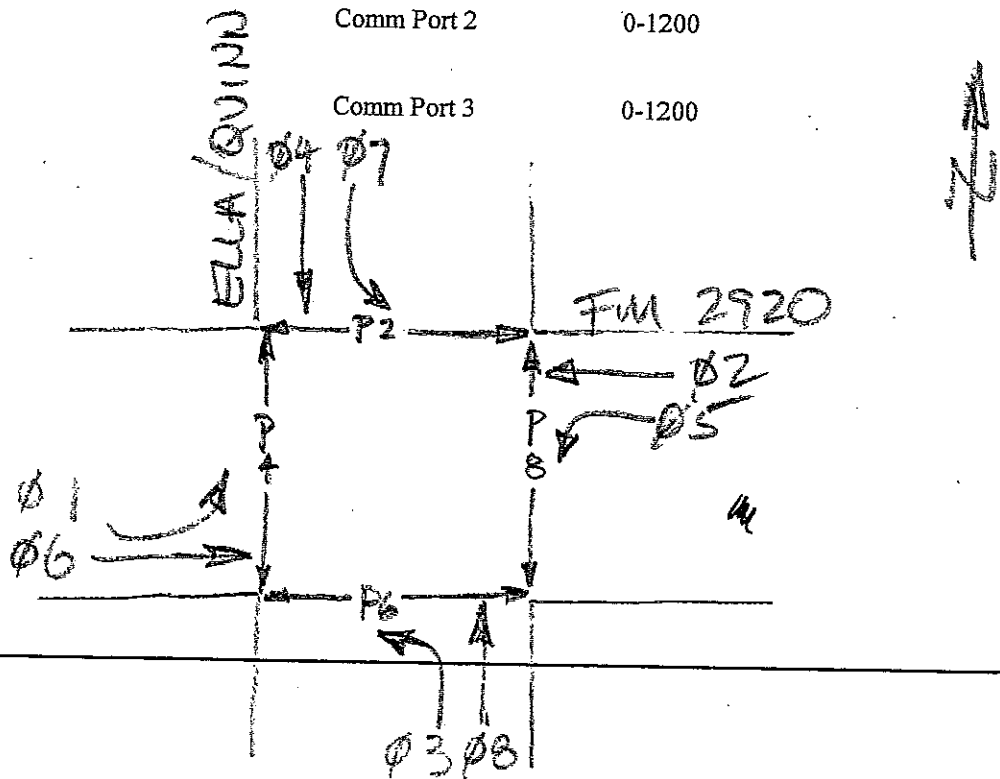
Date:
6/24/2003

Time:
11:53:33

Intersection Name : FM 2920 at Quinn / Ella

Source : Database

	Level 1	Level 2
Security Code	9999	
Baud Rate		
Data Bits		
Parity		
Printer Port 2	0-1200	0-Eight 0-Odd
Comm Port 2	0-1200	
Comm Port 3	0-1200	



Phase Vehicle Basic Timing Data

Date 6/24/201 Time 11:46:52

Intersection Name FM 2920 at Quinn / Ella

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	5	15	5	5	5	15	5	5
Passage	1.5	3.0	2.0	2.0	1.5	3.0	2.0	2.0
Maximum 1	20	60	20	30	20	60	20	30
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clearance	2.0	2.0	2.5	2.5	2.0	2.0	2.5	2.5

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data

Date 6/24/201

Time 11:46:52

Intersection Name FM 2920 at Quinn / Ella

Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	5	0	5	0	5	0	5
Pedestrian Clear	0	20	0	25	0	15	0	25
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	2	2	2	2	2	2	2	2
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 6/24/201

Time 11:46:52

Intersection Name
Source

FM 2920 at Quinn / Ella
Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	1-Inactive	1-Inactive	1-Inactive	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	3-Max	2-Min	0-None	0-None	3-Max	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	7	8	9	10	11	12
Initial	1-Inactive	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0

Phase Miscellanenous Data

Date 6/24/201

Time 11:46:52

Intersection Name FM 2920 at Quinn / Ella

Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 6/24/201

Time 11:46:52

Intersection Name FM 2920 at Quinn / Ella

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 6/24/201

Time 11:46:52

Intersection Name FM 2920 at Quinn / Ella

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 6/24/2003

Time 11:50:47AM

Intersection Name FM 2920 at Quinn / Ella

Source Database

Startup Time 5

Ring	1	2	3	4
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Startup State 1-All Red

Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Red Revert 4.0

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

Auto Ped Clear 0

I/O Modes	Input	Output
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Stop Time reset 0

ABC Connector 0 0

Alternate Sequence 0

D Connector 0 0

Coordination Mode Data

Date 6/24/2003 Time 11:55

Intersection Name	FM 2920 at Quinn / Ella
Source	Database
Operation Mode	1-Auto
Mode (Normal)	0-Perm
Maximum	1-Max 1
Correction	3-Short Way+
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 12/19/20 Time 16:24

Intersection Name FM 2920 at Quinn / Ella

Source Database

Cycle Length 75

Ring Sum Times 75 75 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	16	27	16	16	16	27	16	16
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	11	21	12	12	11	21	12	12
Ph Min Ped Serv	0	23	0	33	0	23	0	33

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	1	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 2 Split 1

Date 12/19/20 Time 16:24

Intersection Name FM 2920 at Quinn / Ella

Source Database

Cycle Length 75

Ring Sum Times 75 75 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	30	15	15	15	30	15	15
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	11	21	12	12	11	21	12	12
Ph Min Ped Serv	0	23	0	33	0	23	0	33

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	6	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 3 Split 1

Date 12/19/20 Time 16:24

Intersection Name FM 2920 at Quinn / Ella

Source Database

Cycle Length 80

Ring Sum Times 80 80 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	35	15	15	15	35	15	15
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	11	21	12	12	11	21	12	12
Ph Min Ped Serv	0	23	0	33	0	23	0	33

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	72	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 12/19/20 Time 16:24

Intersection Name FM 2920 at Quinn / Ella

Source Database

Cycle Length 75

Ring Sum Times 75 75 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	30	15	15	15	30	15	15
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	11	21	12	12	11	21	12	12
Ph Min Ped Serv	0	23	0	33	0	23	0	33

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	2	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 12/20/2006 Time 11:30:53

Intersection Name FM 2920 at Quinn / Ella

Source Database

	Month	Week
DST Begin	4	1

	Month	Week
DST End	10	5

	Hour	Minute
Cycle Zero Reference Time	24	0

Source	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Quinn / Ella

Date 12/20/2006

Source Database

Time 11:30:53

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	6	0	2/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2	16	15	3/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2	19	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

System Local Alarm Select Data

Date 6/24/2003

Time 11:58:04

Intersection Name FM 2920 at Quinn / Ella

Source Database

System Address 7

Revert to Backup 15

Area Code Prefix Number

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Access Data

INST 11-20-03

Date:
6/24/2003

11:28:25

Intersection Name : FM 2920 at Holdereith

Source : Database

	Level 1	Level 2
Security Code	9999	

	Baud Rate	Data Bits	Parity
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Printer Port 2	0-1200	0-Eight	0-Odd
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Comm Port 2	0-1200		
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Comm Port 3	0-1200		
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HOLDEREITH

Ø4

FM 2920

Ø2
Ø5

↑
N

Ø1
Ø6

↑

Ø3

Phase Vehicle Basic Timing Data

Date 6/24/201 Time 11:32:48

Intersection Name FM 2920 at Holdereith

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	7	20	0	7	7	20	0	7
Passage	2.0	3.0	0.0	2.0	2.0	3.0	0.0	2.0
Maximum 1	15	40	0	22	15	40	0	22
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.5	3.5	3.0	3.5	3.5	3.5	3.0	3.5
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data
 Date 10/1/200 Time 8:57:39

Intersection Name FM 2920 at Holdereith

Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	5	0	5	0	5	0	5
Pedestrian Clear	0	17	0	17	0	17	0	17
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	2	2	2	2	2	2	2	2
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 6/24/201

Time 11:32:48

Intersection Name FM 2920 at Holdereith
 Source Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	0-None	1-Inactive	1-Inactive	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	3-Max	0-None	0-None	0-None	3-Max
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	7	8	9	10	11	12
Initial	0-None	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0

Phase Miscellanenous Data

Date 6/24/201

Time 11:32:48

Intersection Name FM 2920 at Holdereith

Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 6/24/201

Time 11:32:48

Intersection Name FM 2920 at Holdereith

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 6/24/201

Time 11:32:48

Intersection Name

FM 2920 at Holdereith

Source

Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 6/24/2003

Time 11:35:40AM

Intersection Name FM 2920 at Holdereith

Source Database

Startup Time	5	<u>Ring</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Startup State	1-All Red	Input Response	1-Ring 1	2-Ring 2	0-None	0-None
Red Revert	4.0	Output Select	1-Ring 1	2-Ring 2	0-None	0-None
Auto Ped Clear	0	<u>I/O Modes</u>	<u>Input</u>	<u>Output</u>		
Stop Time reset	0	ABC Connector	0	0		
Alternate Sequence	0	D Connector	0	0		

Coordination Mode Data

Date 6/24/2003 Time 11:36

Intersection Name	FM 2920 at Holdereith
Source	Database
Operation Mode	1-Auto
Mode (Normal)	0-Perm
Maximum	1-Max 1
Correction	3-Short Way+
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 12/19/20 Time 16:19

Intersection Name FM 2920 at Holdereith

Source Database

Cycle Length 75

Ring Sum Times 75 45 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	30	15	15	15	30	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	13	26	13	13	13	26	0	0
Ph Min Ped Serv	0	25	25	25	0	25	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	34	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 2 Split 1

Date 12/19/20 Time 16:19

Intersection Name FM 2920 at Holdereith

Source Database

Cycle Length 75

Ring Sum Times 75 45 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	30	15	15	15	30	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	13	26	13	13	13	26	0	0
Ph Min Ped Serv	0	25	25	25	0	25	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	24	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 3 Split 1

Date 12/19/20 Time 16:19

Intersection Name FM 2920 at Holdereith

Source Database

Cycle Length 80

Ring Sum Times 80 48 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	33	17	15	15	33	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	13	26	13	13	13	26	0	0
Ph Min Ped Serv	0	25	25	25	0	25	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	34	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 12/19/20 Time 16:19

Intersection Name FM 2920 at Holdereith

Source Database

Cycle Length 75

Ring Sum Times 75 45 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	30	15	15	15	30	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	13	26	13	13	13	26	0	0
Ph Min Ped Serv	0	25	25	25	0	25	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	38	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 12/19/2006 Time 16:20:14

Intersection Name FM 2920 at Holdereith

Source Database

	Month	Week
DST Begin	4	1

	Month	Week
DST End	10	5

	Hour	Minute
Cycle Zero Reference Time	24	0

Source	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Holdereith

Date 12/19/2006

Source Database

Time 16:20:14

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	6	0	2/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2	16	15	3/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2	19	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

System Local Alarm Select Data

Date 6/24/2003

Time 11:43:26

Intersection Name FM 2920 at Holdereith

Source Database

System Address 6

Revert to Backup 15

Area Code Prefix Number

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Access Data

INST 11-20-03

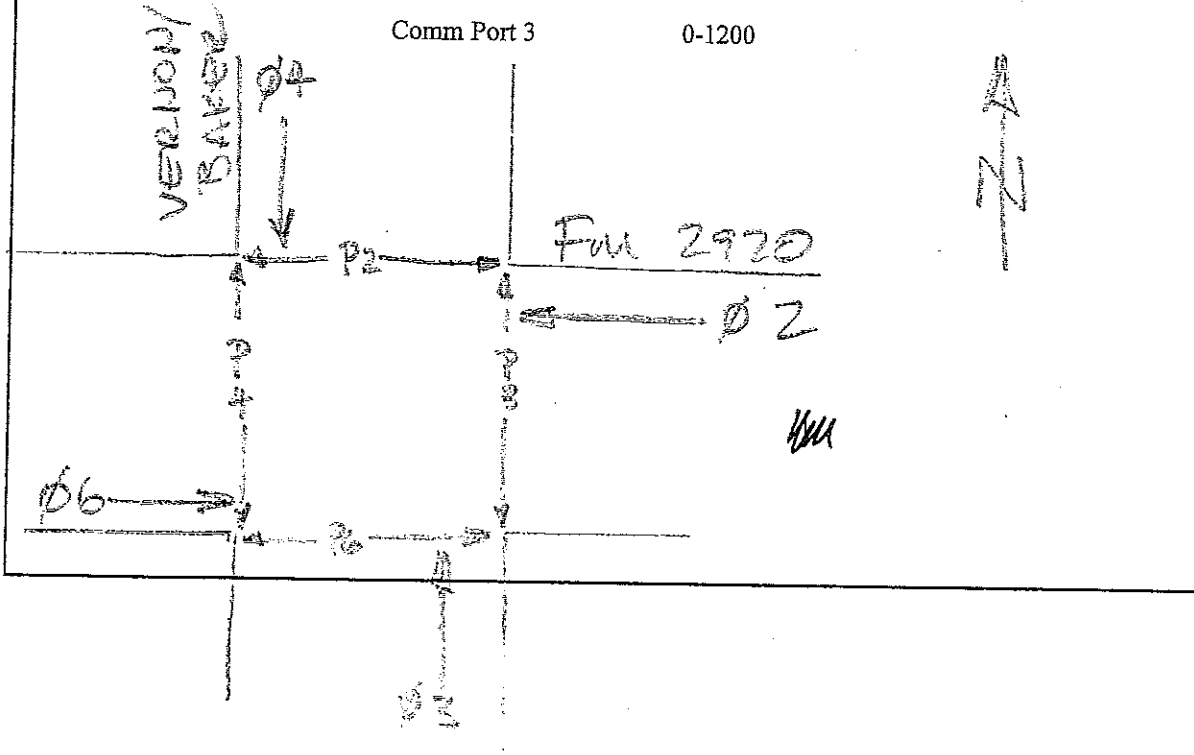
Date:
6/24/2003

Time:
13:53:30

Intersection Name : FM 2920 at Vernon Baker

Source : Database

	Level 1	Level 2
Security Code	9999	
	Baud Rate	Data Bits Parity
Printer Port 2	0-1200	0-Eight 0-Odd
Comm Port 2	0-1200	
Comm Port 3	0-1200	



Phase Vehicle Basic Timing Data

Date 6/24/201 Time 13:56:59

Intersection Name FM 2920 at Vernon Baker

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	7	22	7	7	7	22	0	0
Passage	2.0	3.0	2.0	2.0	2.0	3.0	0.0	0.0
Maximum 1	20	50	20	20	20	50	0	20
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	5.0	5.0	3.0	3.5	5.0	5.0	3.0	3.5
Red Clearance	1.5	0.5	2.0	2.5	1.5	0.5	2.0	2.5

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data

Date 6/24/201

Time 13:56:59

Intersection Name FM 2920 at Vernon Baker

Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	7	5	5	0	7	0	0
Pedestrian Clear	0	10	16	16	0	12	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	2	2	2	2	2	2	2	2
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 6/24/201

Time 13:56:59

Intersection Name
Source

FM 2920 at Vernon Baker
Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	1-Inactive	1-Inactive	1-Inactive	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	3-Max	0-None	0-None	0-None	3-Max
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	7	8	9	10	11	12
Initial	0-None	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0

Phase Miscellanenous Data

Date 6/24/200

Time 13:56:59

Intersection Name FM 2920 at Vernon Baker

Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	1	1	1	1	1	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 6/24/201

Time 13:56:59

Intersection Name FM 2920 at Vernon Baker

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 6/24/201

Time 13:56:59

Intersection Name

FM 2920 at Vernon Baker

Source

Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 6/24/2003

Time 2:00:59PM

Intersection Name FM 2920 at Vernon Baker

Source Database

Startup Time 5

Ring	1	2	3	4
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Startup State 1-All Red

Input Response	1-Ring 1	2-Ring 2	0-None	0-None
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Red Revert 4.0

Output Select	1-Ring 1	2-Ring 2	0-None	0-None
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Auto Ped Clear 0

I/O Modes	Input	Output
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Stop Time reset 0

ABC Connector	0	0
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Alternate Sequence 0

D Connector	0	0
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Coordination Mode Data

Date 6/24/2003 Time 14:02

Intersection Name	FM 2920 at Vernon Baker
Source	Database
Operation Mode	1-Auto
Mode (Normal)	0-Perm
Maximum	1-Max 1
Correction	3-Short Way+
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 12/19/20 Time 16:20

Intersection Name FM 2920 at Vernon Baker

Source Database

Cycle Length 75

Ring Sum Times 75 53 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	31	22	22	0	31	0	22
Mode	6-Ph Omit	1-Coord Ph	0-Actuated	0-Actuated	6-Ph Omit	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Veh Serv	14	28	13	14	14	28	0	12
Ph Min Ped Serv	0	23	24	18	0	23	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	54	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	0	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 2 Split 1

Date 12/19/20 Time 16:20

Intersection Name FM 2920 at Vernon Baker

Source Database

Cycle Length 75

Ring Sum Times 75 35 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	35	20	20	0	35	0	0
Mode	6-Ph Omit	1-Coord Ph	0-Actuated	0-Actuated	6-Ph Omit	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Veh Serv	14	28	13	14	14	28	0	12
Ph Min Ped Serv	0	23	24	18	0	23	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	32	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	0	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 3 Split 1

Date 12/19/20 Time 16:20

Intersection Name FM 2920 at Vernon Baker

Source Database

Cycle Length 80

Ring Sum Times 80 40 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	40	20	20	0	40	0	0
Mode	6-Ph Omit	1-Coord Ph	0-Actuated	0-Actuated	6-Ph Omit	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Veh Serv	14	28	13	14	14	28	0	12
Ph Min Ped Serv	0	23	24	18	0	23	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	37	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 12/19/20 Time 16:20

Intersection Name FM 2920 at Vernon Baker

Source Database

Cycle Length 75

Ring Sum Times 75 35 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	35	20	20	0	35	0	0
Mode	6-Ph Omit	1-Coord Ph	0-Actuated	0-Actuated	6-Ph Omit	1-Coord Ph	6-Ph Omit	6-Ph Omit
Ph Min Veh Serv	14	28	13	14	14	28	0	12
Ph Min Ped Serv	0	23	24	18	0	23	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	40	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 12/19/2006 Time 16:21:26

Intersection Name FM 2920 at Vernon Baker

Source Database

	Month	Week
DST Begin	4	1

	Month	Week
DST End	10	5

	Hour	Minute
Cycle Zero Reference Time	24	0

	Equates						
Source	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Vernon Baker

Date 12/19/2006

Source Database

Time 16:21:26

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	6	0	2/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2	16	15	3/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2	19	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

System Local Alarm Select Data

Date 6/24/2003

Time 14:04:45

Intersection Name FM 2920 at Vernon Baker

Source Database

System Address 5

Revert to Backup 15

Area Code Prefix Number

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Access Data

INST 11-20-03

Date:
6/24/2003

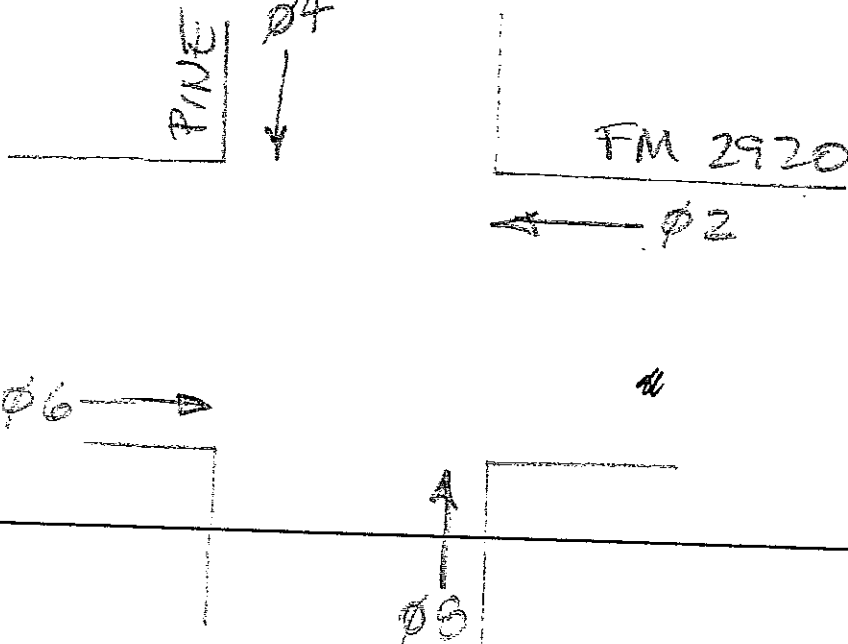
Time:
11:15:10

Intersection Name : FM 2920 at Pine

Source : Database

	Level 1	Level 2
Security Code	9999	

	Baud Rate	Data Bits	Parity
Printer Port 2	0-1200	0-Eight	0-Odd
Comm Port 2	0-1200		
Comm Port 3	0-1200		



Phase Vehicle Basic Timing Data

Date 6/24/201 Time 10:56:54

Intersection Name FM 2920 at Pine

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	0	20	0	7	0	20	0	7
Passage	0.0	3.0	0.0	2.0	0.0	3.0	0.0	2.0
Maximum 1	0	50	0	22	0	50	0	22
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.5	3.0	3.5	3.0	3.5	3.0	3.5
Red Clearance	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data

Date 6/24/201

Time 10:56:54

Intersection Name FM 2920 at Pine

Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	2	2	2	2	2	2	2	2
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 6/24/201

Time 10:56:54

Intersection Name FM 2920 at Pine
 Source Database

Phase	1	2	3	4	5	6
Initial	0-None	4-Green	0-None	1-Inactive	0-None	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	3-Max	0-None	0-None	0-None	3-Max
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	7	8	9	10	11	12
Initial	0-None	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0

Phase Miscellanenous Data

Date 6/24/201

Time 10:56:54

Intersection Name FM 2920 at Pine

Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 6/24/201

Time 12:02:12

Intersection Name FM 2920 at Pine

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 6/24/201

Time 10:56:54

Intersection Name FM 2920 at Pine

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 6/24/2003

Time 11:01:46AM

Intersection Name FM 2920 at Pine

Source Database

Startup Time 5

Startup State 1-All Red

Red Revert 4.0

Auto Ped Clear 0

Stop Time reset 0

Alternate Sequence 0

Ring	1	2	3	4
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Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

I/O Modes	Input	Output
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ABC Connector 0 0

D Connector 0 0

Unit Overlap Data

Intersection Name FM 2920 at Pine

Date 6/24/2003

Source Database

Time 11:01:46AM

	Phases																Green	Yellow	Red	Stop Green/ Yellow Phase	Start Green Phase
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
Overlap A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap H	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap J	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap K	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0
Overlap P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0	2.0	0	0

Unit Ring Data

Intersection Name FM 2920 at Pine

Date 6/24/2003

Source Database

Time 11:01:46AM

Concurrent Phases

Phase	Ring	Next	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
2	1	3	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
3	1	4	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
4	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
5	2	6	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
6	2	7	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7	2	8	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
8	2	5	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Unit Alt Sequence Data

Intersection Name FM 2920 at Pine

Date 6/24/2003

Source Database

Time 11:01:46AM

Alternate Sequence	Pair 1		Pair 2		Pair 3		Pair 4	
	1/1	1/2	2/1	2/2	3/1	3/2	4/1	4/2
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0

Unit Alt Sequence Data

Intersection Name FM 2920 at Pine

Date 6/24/2003

Source Database

Time 11:01:46AM

Alternate Sequence	Pair 5		Pair 6		Pair 7		Pair 8	
	5/1	5/2	6/1	6/2	7/1	7/2	8/1	8/2
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0

Coordination Mode Data

Date 6/24/2003 Time 11:04

Intersection Name	FM 2920 at Pine
Source	Database
Operation Mode	1-Auto
Mode (Normal)	0-Perm
Maximum	0-Inhibit
Correction	3-Short Way+
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 12/19/20 Time 16:23

Intersection Name FM 2920 at Pine

Source Database

Cycle Length 75

Ring Sum Times 75 41 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	41	17	17	0	41	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	0	26	13	13	0	26	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	1	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	0	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 2 Split 1

Date 12/19/20 Time 16:23

Intersection Name FM 2920 at Pine

Source Database

Cycle Length 75

Ring Sum Times 75 41 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	41	17	17	0	41	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	0	26	13	13	0	26	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	67	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	0	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 3 Split 1

Date 12/19/20 Time 16:23

Intersection Name FM 2920 at Pine

Source Database

Cycle Length 80

Ring Sum Times 80 42 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	42	19	19	0	42	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	0	26	13	13	0	26	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	75	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 12/19/20 Time 16:23

Intersection Name FM 2920 at Pine

Source Database

Cycle Length 75

Ring Sum Times 75 41 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	41	17	17	0	41	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	0	26	13	13	0	26	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	5	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 12/19/2006 Time 16:23:47

Intersection Name FM 2920 at Pine

Source Database

	Month	Week
DST Begin	4	1

	Month	Week
DST End	10	5

	Hour	Minute
Cycle Zero Reference Time	24	0

Source	Equates						
	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Pine

Date 12/19/2006

Source Database

Time 16:23:47

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	6	0	2/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2	16	15	3/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2	19	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

System Local Alarm Select Data

Date 6/24/2003

Time 11:13:12

Intersection Name FM 2920 at Pine

Source Database

System Address 4

Revert to Backup 15

Area Code	Prefix	Number
-----------	--------	--------

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Access Data

INST 11-20-03

Date:
6/24/2003

Time:
16:23:46

Intersection Name : FM 2920 at Cherry

Source : Database

	Level 1	Level 2
Security Code	9999	
	Baud Rate	Data Bits Parity
Printer Port 2	0-1200	0-Eight 0-Odd
Comm Port 2	0-1200	
Comm Port 3	0-1200	

CHERRY
Ø3
↓

FM 2920

← Ø2

Ø6 →

Ø4
↑

↑
N

W

Phase Vehicle Basic Timing Data

Date 6/24/2008 Time 16:24:16

Intersection Name FM 2920 at Cherry

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	0	15	5	5	0	15	0	0
Passage	0.0	3.0	2.0	2.0	0.0	3.0	0.0	0.0
Maximum 1	0	50	25	25	0	50	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.5	3.5	3.5	3.0	3.5	3.0	3.5
Red Clearance	0.0	2.0	2.5	2.5	0.0	2.0	0.0	2.5

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data

Date 6/24/201

Time 16:24:16

Intersection Name

FM 2920 at Cherry

Source

Database

Phase	1	2	3	4	5	6	7	8
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	2	2	2	2	2	2	2	2
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 6/24/201

Time 16:24:16

Intersection Name
Source

FM 2920 at Cherry
Database

Phase	1	2	3	4	5	6
Initial	0-None	4-Green	1-Inactive	1-Inactive	0-None	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	3-Max	0-None	0-None	0-None	3-Max
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	7	8	9	10	11	12
Initial	0-None	0-None	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0

Phase Miscellanenous Data

Date 6/24/201

Time 16:24:16

Intersection Name FM 2920 at Cherry

Source Database

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 6/24/201

Time 16:24:16

Intersection Name FM 2920 at Cherry

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 6/24/201

Time 16:24:16

Intersection Name FM 2920 at Cherry

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 6/24/2003

Time 4:24:40PM

Intersection Name FM 2920 at Cherry

Source Database

Startup Time 5

Ring	1	2	3	4
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Startup State 1-All Red

Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Red Revert 4.0

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

Auto Ped Clear 0

I/O Modes	Input	Output
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Stop Time reset 0

ABC Connector 0 0

Alternate Sequence 0

D Connector 0 0

Coordination Mode Data

Date 6/24/2003 Time 16:25

Intersection Name	FM 2920 at Cherry
Source	Database
Operation Mode	1-Auto
Mode (Normal)	0-Perm
Maximum	0-Inhibit
Correction	3-Short Way+
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 12/19/20 Time 16:22

Intersection Name FM 2920 at Cherry

Source Database

Cycle Length 75

Ring Sum Times 75 27 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	27	24	24	0	27	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	0	21	12	12	0	21	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	50	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	0	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 2 Split 1

Date 12/19/20 Time 16:22

Intersection Name FM 2920 at Cherry

Source Database

Cycle Length 75

Ring Sum Times 75 36 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	36	21	18	0	36	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	0	21	12	12	0	21	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	72	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	0	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 3 Split 1

Date 12/19/20 Time 16:22

Intersection Name FM 2920 at Cherry

Source Database

Cycle Length 80

Ring Sum Times 80 41 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	41	24	15	0	41	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	0	21	12	12	0	21	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	69	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 12/19/20 Time 16:22

Intersection Name FM 2920 at Cherry

Source Database

Cycle Length 75

Ring Sum Times 75 34 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	0	34	19	22	0	34	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	0	21	12	12	0	21	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	0	0	0	0	0	0	0	0
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	8	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 12/19/2006 Time 16:22:39

Intersection Name FM 2920 at Cherry

Source Database

	Month	Week
DST Begin	4	1

	Month	Week
DST End	10	5

	Hour	Minute
Cycle Zero Reference Time	24	0

	Equates						
Source	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Cherry

Date 12/19/2006

Source Database

Time 16:22:39

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	6	0	2/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2	16	15	3/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2	19	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

System Local Alarm Select Data

Date 6/24/2003

Time 16:26:24

Intersection Name FM 2920 at Cherry

Source Database

System Address 3

Revert to Backup 15

Area Code Prefix Number

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

INSTALLED
1/6/05
Access Data

Date:
8/21/2003

Time:
9:56:07

Intersection Name : FM 2920 at Concordia Lutheran

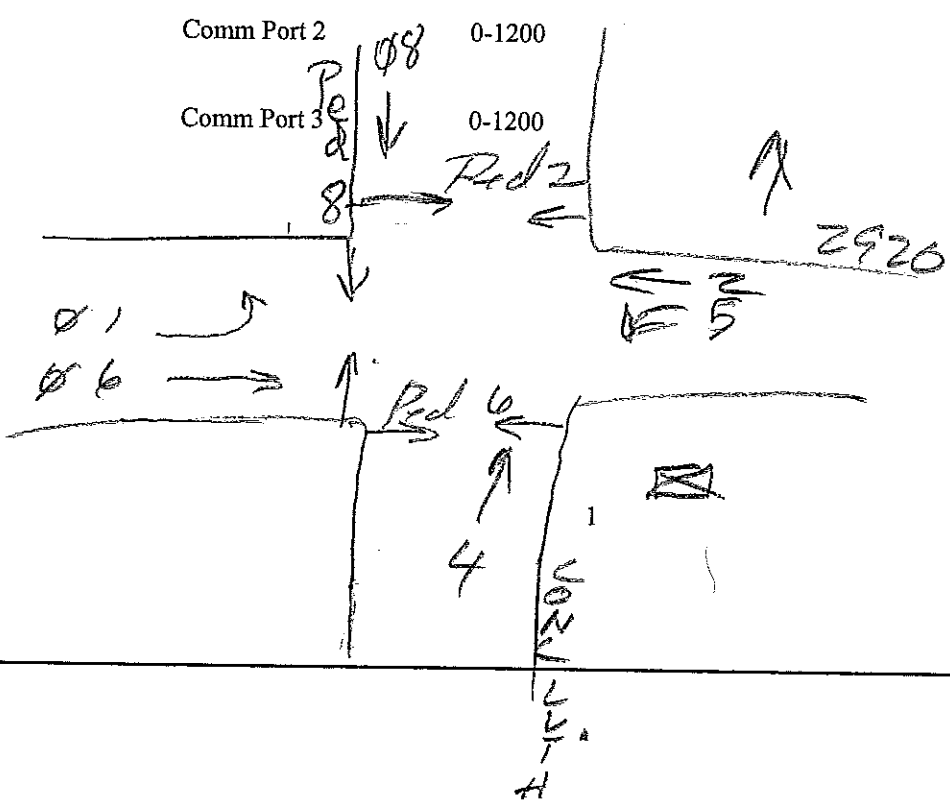
Source : Database Willow St.

	Level 1	Level 2
Security Code	9999	

	Baud Rate	Data Bits	Parity
Printer Port 2	0-1200	0-Eight	0-Odd

Comm Port 2 0-1200

Comm Port 3 0-1200



Phase Vehicle Basic Timing Data

Date 1/7/200: Time 12:42:41

Intersection Name FM 2920 at Concordia Lutheran

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	5	30	0	5	5	30	0	5
Passage	2.0	1.5	0.0	4.0	3.0	1.5	0.0	2.0
Maximum 1	20	70	0	60	60	70	0	20
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	5.0	5.0	3.0	4.0	5.0	5.0	3.0	4.0
Red Clearance	2.0	2.0	0.0	1.5	2.0	2.0	0.0	1.5

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Pedestrian Timing Data

Date 1/7/200:

Time 12:42:41

Intersection Name FM 2920 at Concordia Lutheran

Source Database

Phase	1	2	3	4	5	6	7	8
Walk	0	7	0	0	0	7	0	7
Pedestrian Clear	0	8	0	0	0	8	0	13
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	1	1	1	1	1	1	1	1
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0
Pedestrian Clear	0	0	0	0	0	0	0	0
Flashing Walk	0	0	0	0	0	0	0	0
Extended Ped Clear	0	0	0	0	0	0	0	0
Act Rest in Walk	0	0	0	0	0	0	0	0

Phase General Control Data

Date 1/7/200:

Time 12:42:41

Intersection Name
Source

FM 2920 at Concordia Lutheran
Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	3-Yellow	0-None	1-Inactive	1-Inactive	3-Yellow
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry	0					
Flash Exit	-					

Phase	7	8	9	10	11	12
Initial	0-None	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry						
Flash Exit						

Phase	13	14	15	16
Initial	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0
Flash Entry				
Flash Exit				

Phase Vehicle Detector Data

Date 1/7/200:

Time 12:42:41

Intersection Name

FM 2920 at Concordia Lutheran

Source

Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	5	0	0	0	5

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 8/21/200

Time 9:54:00

Intersection Name

FM 2920 at Concordia Lutheran

Source

Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 8/21/2003

Time 9:54:22AM

Intersection Name FM 2920 at Concordia Lutheran

Source Database

Startup Time 5

Ring	1	2	3	4
------	---	---	---	---

Startup State 1-All Red

Input Response	1-Ring 1	2-Ring 2	0-None	0-None
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Red Revert 4.0

Output Select	1-Ring 1	2-Ring 2	0-None	0-None
---------------	----------	----------	--------	--------

Auto Ped Clear 0

I/O Modes	Input	Output
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Stop Time reset 0

ABC Connector	0	0
---------------	---	---

Alternate Sequence 0

D Connector	0	0
-------------	---	---

Unit Remote Flash Data

Intersection Name FM 2920 at Concordia Lutheran

Date 8/21/2003

Source Database

Time 9:54:22AM

	Channel											
	1	2	3	4	5	6	7	8	9	10	11	12
Flash	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Alternate0	0	0	0	0	0	0	0	0	0	0	0	0

	Channel											
	13	14	15	16	17	18	19	20	21	22	23	24
Flash	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Alternate0	0	0	0	0	0	0	0	0	0	0	0	0

Test A=Flash 0

	Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Entry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flash Exit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unit Ring Data

Intersection Name: FM 2920 at Concordia Lutheran

Date: 8/21/2003

Source: Database

Time: 9:54:22AM

Concurrent Phases

Phase	Ring	Next	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
2	1	3	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
3	1	4	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
4	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
5	2	6	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
6	2	7	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7	2	8	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
8	2	5	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Coordination Mode Data

Date 8/21/2003 Time 9:54

Intersection Name	FM 2920 at Concordia Lutheran
Source	Database
Operation Mode	1-Auto
Mode (Normal)	0-Perm
Maximum	1-Max 1
Correction	2-Short Way
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Local TBC DST and Equate Data

Date 8/21/2003 Time 9:55:16

Intersection FM 2920 at Concordia Lutheran

Source Database

	Month	Week
DST Begin	4	1

	Month	Week
DST End	10	5

	Hour	Minute
Cycle Zero Reference Time	24	0

Source	1	2	3	Equates 4	5	6	7
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at Concordia Lutheran

Date 8/21/2003

Source Database

Time 9:55:16

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

System Local Alarm Select Data

Date 8/21/2003

Time 9:56:00

Intersection Name FM 2920 at Concordia Lutheran

Source Database

System Address 2

Revert to Backup 15

Area Code Prefix Number

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

INST
Access Data

9/24/04

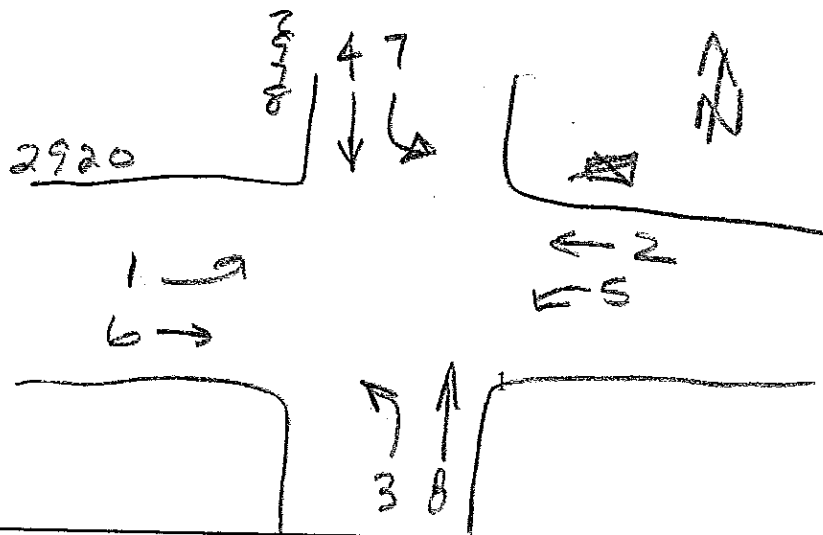
Date:
12/27/02

Time:
14:19:22

Intersection Name : FM 2920 at FM 2978

Source : Database

		Level 1	Level 2
Security Code	9999		
	Baud Rate	Data Bits	Parity
Printer Port 2	0-1200	0-Eight	0-Odd
Comm Port 2	0-1200		
Comm Port 3	0-1200		



Phase Vehicle Basic Timing Data

Date 10/12/20 Time 13:00:25

Intersection Name FM 2920 at FM 2978

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	5	30	5	5	5	30	5	5
Passage	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum 1	25	45	25	30	25	45	30	25
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	5.0	5.0	4.0	4.0	5.0	5.0	3.0	3.0
Red Clearance	1.5	1.5	2.0	2.0	1.5	1.5	2.0	2.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase General Control Data

Date 10/12/21

Time 13:00:25

Intersection Name
Source

FM 2920 at FM 2978
Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	1-Inactive	1-Inactive	1-Inactive	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry	0					
Flash Exit	~					
Phase	7	8	9	10	11	12
Initial	1-Inactive	1-Inactive	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry						
Flash Exit						
Phase	13	14	15	16		
Initial	0-None	0-None	0-None	0-None		
Non-Actuated Response	0-None	0-None	0-None	0-None		
Vehicle Recalls	0-None	0-None	0-None	0-None		
Ped Recalls	0-None	0-None	0-None	0-None		
Recall Delay	0	0	0	0		
Flash Entry						
Flash Exit						

Phase Miscellaneous Data

Date 12/27/02

Time 14:20:21

Intersection Name FM 2920 at FM 2978

Source User

Phase	1	2	3	4	5	6	7	8
Non-Locking Memory	1	0	1	1	1	0	1	1
Dual Entry	0	1	0	1	0	1	0	1
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase	9	10	11	12	13	14	15	16
Non-Locking Memory	0	0	0	0	0	0	0	0
Dual Entry	0	0	0	0	0	0	0	0
Last Car Passage	0	0	0	0	0	0	0	0
Conditional Service	0	0	0	0	0	0	0	0
No Simultaneous Gap Out	0	0	0	0	0	0	0	0

Phase Vehicle Detector Data

Date 10/12/21 Time 13:00:25

*HAS VIDEO
TSI CABINET*

Intersection Name FM 2920 at FM 2978

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	8	0	0	0	8

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 12/27/02 Time 2:20:35PM

Intersection Name FM 2920 at FM 2978

Source Database

Startup Time 5

Ring	1	2	3	4
------	---	---	---	---

Startup State 1-All Red

Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Red Revert 4.0

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

Auto Ped Clear 0

I/O Modes	Input	Output
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Stop Time reset 0

ABC Connector 0 0

Alternate Sequence 0

D Connector 0 0

Unit Ring Data

Intersection Name FM 2920 at FM 2978

Date 12/27/02

Source Database

Time 2:20:35PM

Concurrent Phases

Phase	Ring	Next	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
2	1	3	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
3	1	4	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
4	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
5	2	6	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
6	2	7	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7	2	8	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
8	2	5	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Coordination Mode Data

Date 12/27/02 Time 14:20

Intersection Name	FM 2920 at FM 2978
Source	Database
Operation Mode	0-Free
Mode (Normal)	0-Perm
Maximum	1-Max 1
Correction	2-Short Way
Offset Mode	0-Beg Green
Force Mode	0-Plan
Max Dwell Time	0
Yield Period	0
Manual Controls: Dial	1
Split	1
Offset	1

Local TBC DST and Equate Data

Date 12/27/02 Time 14:21:01

Intersection FM 2920 at FM 2978

Source Database

Month Week

DST Begin 4 1

Month Week

DST End 10 5

Hour Minute

Cycle Zero Reference Time 24 0

Source	Equates						
	1	2	3	4	5	6	7
1	2	3	4	5	6	7	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection FM 2920 at FM 2978

Date 12/27/02

Source Database

Time 14:21:01

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	Free(OFF=4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

System Local Alarm Select Data

Date 12/27/02

Time 14:21:26

Intersection Name FM 2920 at FM 2978

Source Database

System Address 1

Revert to Backup 15

Area Code Prefix Number

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Preempt Load 2 Switch Data

Date 3/14/2003 Time 11:49:26AM

Intersection Name FM 2920 at FM 2978

Source Database

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Veh Track Status	1-Green	0-Red	0-Red	0-Red	0-Red	1-Green	0-Red	0-Red
Veh Dwell Status								
Veh Cycle Status								
Ped Track Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Dwell Status								
Ped Cycle Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Overlap Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Overlap Dwell Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Cycle Status								
	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
Veh Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status								
Veh Cycle Status								
Ped Track Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Dwell Status								
Ped Cycle Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Overlap Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Overlap Dwell Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Cycle Status								

Preempt Pre 2 Time Data

Date 3/14/2003

Time 11:49:26AM

Intersection Name FM 2920 at FM 2978

Source Database

NonLock	0	SelPedClear	8
Link	0	SelRedClear	2.0
Delay	0	SelYelChange	4.0
Extend	0	TrackGreen	10
Duration	0	TrackPedClear	8
MaxCall	0	TrackRedClear	2.0
LockOut	0	TrackYelChange	4.0
		DwellGreen	10
		ReturnPedClear	8
		ReturnRedClear	2.0
		ReturnYelChange	4.0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ExitPhase	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
ExitCalls	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0

INST. 12-18-02

Access Data

Unit: T-1000
5-11-07

Date:
5/23/2007

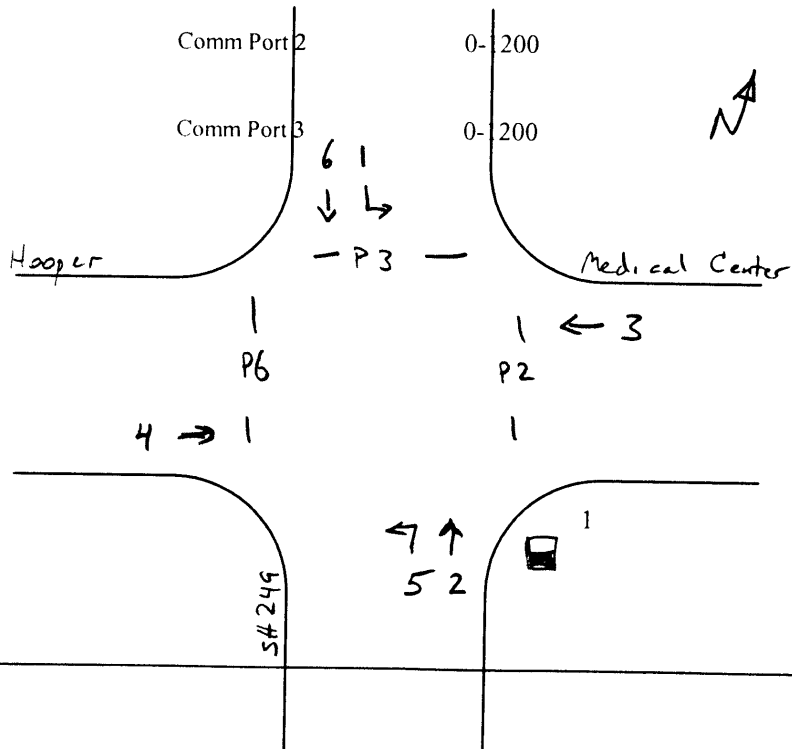
Time:
14:26:58

BS 249 B

Intersection Name : SH-249 at Hooper/Med Center

Source : Database

	Level 1	Level 2
Security Code	9999	
Baud Rate		
Data Bits		
Parity		
Printer Port 2	0-1200	0-Eight
Comm Port 2	0-200	0-Odd
Comm Port 3	0-200	



Phase General Control Data

Date 5/23/200

Time 14:24:37

Intersection Name
Source

SH 249 at Hooper/Med Center
Database

Phase	1	2	3	4	5	6
Initial	1-Inactive	4-Green	1-Inactive	1-Inactive	1-Inactive	4-Green
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	2-Min	0-None	0-None	0-None	2-Min
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry	0					
Flash Exit	0					
Phase	7	8	9	10	11	12
Initial	0-None	0-None	0-None	0-None	0-None	0-None
Non-Actuated Response	0-None	0-None	0-None	0-None	0-None	0-None
Vehicle Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Ped Recalls	0-None	0-None	0-None	0-None	0-None	0-None
Recall Delay	0	0	0	0	0	0
Flash Entry						
Flash Exit						
Phase	13	14	15	16		
Initial	0-None	0-None	0-None	0-None		
Non-Actuated Response	0-None	0-None	0-None	0-None		
Vehicle Recalls	0-None	0-None	0-None	0-None		
Ped Recalls	0-None	0-None	0-None	0-None		
Recall Delay	0	0	0	0		
Flash Entry						
Flash Exit						

Phase Vehicle Detector Data

Date 5/23/201

Time 14:24:37

Intersection Name SH 249 at Hooper/Med Center

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Detector	9	10	11	12	13	14	15	16
Assigned Phase	0	0	0	0	0	0	0	0
Operation Mode	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh	0-Veh
Switch	0	0	0	0	0	0	0	0
Extend/10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Phase Pedestrian Detector Data

Date 5/23/201

Time 14:24:37

Intersection Name SH 249 at Hooper/Med Center

Source Database

Detector	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Operation Mode	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped	1-Ped
Switch	0	0	0	0	0	0	0	0
Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay	0	0	0	0	0	0	0	0

Unit General Control Data

Date 5/23/2007

Time 2:25:08PM

Intersection Name SH 249 at Hooper/Med Center

Source Database

Startup Time 5

Ring	1	2	3	4
------	---	---	---	---

Startup State 1-All Red

Input Response 1-Ring 1 2-Ring 2 0-None 0-None

Red Revert 4.0

Output Select 1-Ring 1 2-Ring 2 0-None 0-None

Auto Ped Clear 0

I/O Modes	Input	Output
-----------	-------	--------

Stop Time reset 0

ABC Connector 0 0

Alternate Sequence 1

D Connector 0 0

Unit Ring Data

Intersection Name SH 249 at Hooper/Med Center

Date 5/23/2007

Source Database

Time 2:25:08PM

Concurrent Phases

Phase	Ring	Next	1	2	3	4	5	6	7	8	9	1	1	12	1	1	1	16
1	1	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
2	1	3	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
3	1	4	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
4	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
5	2	6	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
6	2	7	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7	2	8	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
8	2	5	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Unit Alt Sequence Data

Intersection Name SH 249 at Hooper/Med Center

Date 5/23/2007

Source Database

Time 4:16:24PM

Alternate Sequence	Pair 1		Pair 2		Pair 3		Pair 4	
	1/1	1/2	2/1	2/2	3/1	3/2	4/1	4/2
1	1	2	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0

Unit Channel Output Data

Intersection Name SH 249 at Hooper/Med Center **Date** 5/23/2007
Source Database **Time** 2:25:08PM

Channel	Control	Hardware Pin
1-Phase 1 Vehicle	1-Veh Phase 1	1-Phase 1 RYG
2-Phase 2 Vehicle	2-Veh Phase 2	2-Phase 2 RYG
3-Phase 3 Vehicle	3-Veh Phase 3	3-Phase 3 RYG
4-Phase 4 Vehicle	4-Veh Phase 4	4-Phase4 RYG
5-Phase 5 Vehicle	5-Veh Phase 5	5-Phase 5 RYG
6-Phase 6 Vehicle	6-Veh Phase 6	6-Phase 6 RYG
7-Phase 7 Vehicle	7-Veh Phase 7	7-Phase 7 RYG
8-Phase 8 Vehicle	8-Veh Phase 8	8-Phase 8 RYG
9-Phase 9 Vehicle	18-Ped Phase 2	10-Phase 2 DPW
10-Phase 10 Vehicle	20-Ped Phase 4	12-Phase 4 DPW
11-Phase 11 Vehicle	22-Ped Phase 6	14-Phase 6 DPW
12-Phase 12 Vehicle	24-Ped Phase 8	16-Phase 8 DPW

Unit Channel Output Data

Intersection Name	SH 249 at Hooper/Med Center	Date	5/23/2007
Source	Database	Time	2:25:08PM

Channel	Control	Hardware Pin
13-Overlap A Vehicle	33-Overlap A	17-Overlap A RYG
14-Overlap B Vehicle	34-Overlap B	18-Overlap B RYG
15-Overlap C Vehicle	35-Overlap C	19-Overlap C RYG
16-Overlap D Vehicle	36-Overlap D	20-Overlap D RYG
17-Phase 1 Ped	17-Ped Phase 1	9-Phase 1 DPW
18-Phase 3 Ped	19-Ped Phase 3	11-Phase 3 DPW
19-Phase 5 Ped	21-Ped Phase 5	13-Phase 5 DPW
20-Phase 7 Ped	23-Ped Phase 7	15-Phase 7 DPW
21-Overlap E Vehicle	0-None	0-None
22-Overlap F Vehicle	0-None	0-None
23-Overlap G Vehicle	0-None	0-None
24-Overlap H Vehicle	0-None	0-None

Coordination Mode Data

Date 5/23/2007 Time 14:25

Intersection Name	SH 249 at Hooper/Med Center
Source	Database
Operation Mode	1-Auto
Mode (Normal)	0-Perm
Maximum	2-Max II
Correction	2-Short Way
Offset Mode	0-Beg Green
Force Mode	1-Cycle
Max Dwell Time	20
Yield Period	5
Manual Controls: Dial	1
Split	1
Offset	1

Coordination Timing Plan Data - Dial 1 Split 1

Date 5/23/200 Time 14:25

Intersection Name SH 249 at Hooper/Med Cen

Source Database

Cycle Length 85

Ring Sum Times 85 51 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	36	17	17	15	36	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	12	32	12	12	12	32	3	3
Ph Min Ped Serv	0	27	31	0	0	14	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	8
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	82	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 2 Split 1

Date 5/23/200 Time 14:25

Intersection Name SH 249 at Hooper/Med C

Source Database

Cycle Length 120

Ring Sum Times 120 90 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	75	15	15	15	75	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	12	32	12	12	12	32	3	3
Ph Min Ped Serv	0	27	31	0	0	14	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	8
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	113	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate	1	0	0
Sequence	0	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time			

Coordination Timing Plan Data - Dial 3 Split 1

Date 5/23/200 Time 14:25

Intersection Name SH 249 at Hooper/Med Cen

Source Database

Cycle Length 120

Ring Sum Times 120 81 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	66	22	17	15	66	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	12	32	12	12	12	32	3	3
Ph Min Ped Serv	0	27	31	0	0	14	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	8
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	97	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 1

Date 5/23/200 Time 14:25

Intersection Name SH 249 at Hooper/Med C

Source Database

Cycle Length 105

Ring Sum Times 105 70 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	55	18	17	15	55	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	12	32	12	12	12	32	3	3
Ph Min Ped Serv	0	27	31	0	0	14	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	8
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	99	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Coordination Timing Plan Data - Dial 4 Split 2

Date 5/23/200 Time 14:25

Intersection Name SH 249 at Hooper/Med Ce

Source Database

Cycle Length 120

Ring Sum Times 120 80 0 0

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Time	15	65	22	18	15	65	0	0
Mode	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated	0-Actuated	1-Coord Ph	0-Actuated	0-Actuated
Ph Min Veh Serv	12	32	12	12	12	32	3	3
Ph Min Ped Serv	0	27	31	0	0	14	0	0

Phase	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Time	0	0	0	0	0	0	0	0
Mode	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated	0-Actuated
Ph Min Veh Serv	3	3	3	3	3	3	3	8
Ph Min Ped Serv	0	0	0	0	0	0	0	0

Offset	Offset 1	Offset 2	Offset 3
Time	103	0	0
Mode	0-Normal	0-Normal	0-Normal
Alternate Sequence	1	0	0
Ring 2 Lag Time	0	0	0
Ring 3 Lag Time	0	0	0
Ring 4 Lag Time	0	0	0

Local TBC DST and Equate Data

Date 5/23/2007 Time 14:26:16

Intersection Name SH 249 at Hooper/Med Center

Source Database

	Month	Week
DST Begin	3	2

	Month	Week
DST End	11	1

	Hour	Minute
Cycle Zero Reference Time	24	0

Source	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Local TBC Traffic Data

Intersection SH 249 at Hooper/Med Center

Date 5/23/2007

Source Database

Time 14:26:16

Day	HH	MM	Pattern	Phase Functions															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	8	0	4/2/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	0	1	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	5	0	2/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2	9	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2	16	0	3/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2	20	0	4/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2	23	0	1/1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt General Data

Date 5/23/2007

Time 2:26:47PM

Intersection Name SH 249 at Hooper/Med Center

Source Database

	Ring1	Ring2	Ring3	Ring4
Min Green/Walk Time	5	5	5	5
FlashOverPreempts	1			
Preempt1OverPreempt2	1			
Preempt2OverPreempt3	1			
Preempt3OverPreempt4	1			
Preempt4OverPreempt5	1			
Preempt5OverPreempt6	1			

Preempt Pre 2 Time Data

Date 5/23/2007

Time 2:26:47PM

Intersection Name SH 249 at Hooper/Med Center

Source Database

NonLock	0	SelPedClear	8
Link	0	SelRedClear	2.0
Delay	1	SelYelChange	4.0
Extend	0	TrackGreen	0
Duration	0	TrackPedClear	0
MaxCall	90	TrackRedClear	0.0
LockOut	0	TrackYelChange	0.0
		DwellGreen	0
		ReturnPedClear	8
		ReturnRedClear	2.0
		ReturnYelChange	4.0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ExitPhase	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
ExitCalls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Load 2 Switch Data

Date 5/23/2007 Time 2:26:47PM

Intersection Name SH 249 at Hooper/Med Center

Source Database

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Veh Track Status	1-Green	0-Red	0-Red	0-Red	0-Red	1-Green	0-Red	0-Red
Veh Dwell Status	1-Green	0-Red	0-Red	0-Red	0-Red	1-Green	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
Veh Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No

Preempt Pre 3 Time Data

Date 5/23/2007 Time 2:26:47PM

Intersection Name SH 249 at Hooper/Med Center

Source	Database		
NonLock	0	SelPedClear	8
Link	0	SelRedClear	2.0
Delay	0	SelYelChange	4.0
Extend	0	TrackGreen	0
Duration	10	TrackPedClear	0
MaxCall	0	TrackRedClear	0.0
LockOut	0	TrackYelChange	0.0
		DwellGreen	10
		ReturnPedClear	8
		ReturnRedClear	2.0
		ReturnYelChange	4.0

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ExitPhase	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
ExitCalls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Load 3 Switch Data

Date 5/23/2007 Time 2:26:47PM

Intersection Name SH 249 at Hooper/Med Center

Source Database

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Veh Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	1-Green	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
Veh Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Veh Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Ped Track Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Dwell Status	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk	0-Dont Walk
Ped Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No
Overlap Track Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Dwell Status	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red	0-Red
Overlap Cycle Status	0-No	0-No	0-No	0-No	0-No	0-No	0-No	0-No

System Local Alarm Select Data

Date 5/23/2007

Time 14:27:16

Intersection Name SH 249 at Hooper/Med Center

Source Database

System Address 10

Revert to Backup 15

Area Code	Prefix	Number
-----------	--------	--------

Auto Report 1

Auto Report 1

Local Alarms	Critical	Local Alarms	Critical
Local Free	0	Cycle Failure	0
Preemption	0	Coord Failure	0
Special Status 6	0	Cycle Fault	0
Special Status 5	0	Coord Fault	0
Special Status 4	0	Local Flash	0
Special Status 3	0	Conflict Flash	0
Special Status 2	0	Remote Flash	0
Special Status 1	0	Voltage Monitor	0

Intersection Configuration

Date 5/23/2007

Time 14:27



Intersection Name	SH 249 at Hooper/Med Center	Alias	0
Source Intersection	Default	Connection Type	Direct-Serial
Group Identifier	Tomball - FM 2920 / SH 249	Control Method	Marc
Phone Number		Baud Rate	Marc
Protocol	ECOM	Controller Type	EPAC
Owning Agency	Root	Auto Reports	Yes
		Version	3.32f
Page Number	1	System Control	Yes
Port Number	1	Lock Dialing Out	No
Address Number	10		
Port Server Name	LocalHost		



APPENDIX C

SYNCHRO LOS AND DELAY ANALYSES

EXISTING CONDITION ANALYSIS

[AM PEAK HOUR]

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Volume (vph)	0	1267	51	8	765	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt		0.994						0.943				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1707	0	0	1863	0
Flt Permitted				0.950				0.822				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1444	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						17				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1377	55	9	832	0	23	0	17	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1432	0	9	832	0	0	40	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8		8

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		59.8		5.2	62.2			6.0				
Actuated g/C Ratio		0.82		0.07	0.85			0.08				
v/c Ratio		0.50		0.07	0.28			0.30				
Control Delay		5.6		32.6	2.4			26.7				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		5.6		32.6	2.4			26.7				
LOS		A		C	A			C				
Approach Delay		5.6			2.8			26.7				
Approach LOS		A			A			C				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	73.3
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	4.9
Intersection Capacity Utilization:	50.4%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 1: FM 2920 &

Lanes, Volumes, Timings
2: Medical Complex Drive &



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	11	24	44	31	43	57
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.908		0.944			
Flt Protected	0.984					0.979
Satd. Flow (prot)	1664	0	1758	0	0	1824
Flt Permitted	0.984					0.979
Satd. Flow (perm)	1664	0	1758	0	0	1824
Link Speed (mph)	30		30			30
Link Distance (ft)	2831		624			1981
Travel Time (s)	64.3		14.2			45.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	26	48	34	47	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	82	0	0	109
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1296	16	21	643	88	2	4	4	75	6	16
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.998				0.850		0.940			0.894	
Flt Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	0	3294	0	1770	1665	0
Flt Permitted	0.950			0.950				0.923		0.751		
Satd. Flow (perm)	1770	3532	0	1770	3539	1583	0	3071	0	1399	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				96		4				17
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	1409	17	23	699	96	2	4	4	82	7	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	1426	0	23	699	96	0	10	0	82	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	8	8		4	4	

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009

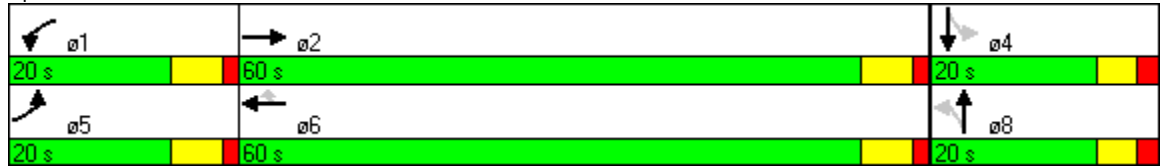


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effect Green (s)	6.0	54.3		5.9	54.2	54.2		14.6		14.6	14.6	
Actuated g/C Ratio	0.07	0.64		0.07	0.64	0.64		0.17		0.17	0.17	
v/c Ratio	0.22	0.63		0.19	0.31	0.09		0.02		0.34	0.08	
Control Delay	43.4	12.0		43.0	8.3	2.2		26.8		37.7	19.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	43.4	12.0		43.0	8.3	2.2		26.8		37.7	19.5	
LOS	D	B		D	A	A		C		D	B	
Approach Delay		12.6			8.6			26.8			33.6	
Approach LOS		B			A			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	85.2
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	12.2
Intersection LOS:	B
Intersection Capacity Utilization:	56.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd & FM 2920

Medical Complex Drive
1/14/2009



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	40	91	43	1300	754	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.906				0.997	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1662	0	1770	3539	3529	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1662	0	1770	3539	3529	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	97				3	
Link Speed (mph)	30			30	30	
Link Distance (ft)	737			1353	532	
Travel Time (s)	16.8			30.8	12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	99	47	1413	820	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	47	1413	836	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Prot			
Protected Phases	4		1	6	2	
Permitted Phases						
Detector Phase	4		1	6	2	

Lanes, Volumes, Timings
11: Park Rd & FM 2920

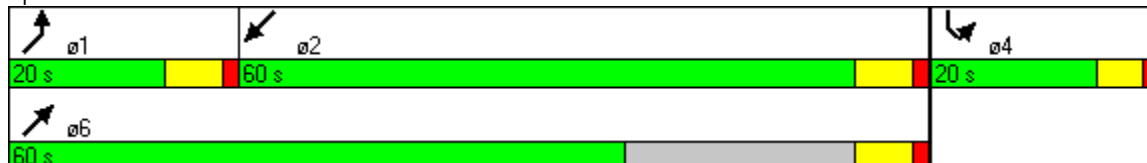


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		11.5	22.5	30.5	
Total Split (s)	20.0	0.0	20.0	60.0	60.0	0.0
Total Split (%)	20.0%	0.0%	20.0%	60.0%	60.0%	0.0%
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.0	6.5	6.5	6.5	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		2.0	1.5	1.5	
Recall Mode	None		None	Max	Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	7.5		6.8	62.3	54.3	
Actuated g/C Ratio	0.09		0.08	0.76	0.66	
v/c Ratio	0.59		0.32	0.53	0.36	
Control Delay	25.2		43.8	4.9	8.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	25.2		43.8	4.9	8.2	
LOS	C		D	A	A	
Approach Delay	25.2			6.2	8.2	
Approach LOS	C			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	82
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization:	53.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 11: Park Rd & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	796	397	199	471	105	78	214	228	22	85	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.977				0.850		0.949	
Flt Protected	0.950	0.999		0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1522	4662	0	3433	5085	1583	3433	4826	0
Flt Permitted	0.157	0.689		0.313	0.718		0.950			0.950		
Satd. Flow (perm)	266	2336	1583	501	3371	0	3433	5085	1583	3433	4826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			309		25				248		48	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	865	432	216	512	114	85	233	248	24	92	48
Shared Lane Traffic (%)	10%			50%								
Lane Group Flow (vph)	79	874	432	108	734	0	85	233	248	24	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1	6	
Permitted Phases	3		3	4					2			
Detector Phase	3	3	3	4	4		5	2	2	1	6	

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009

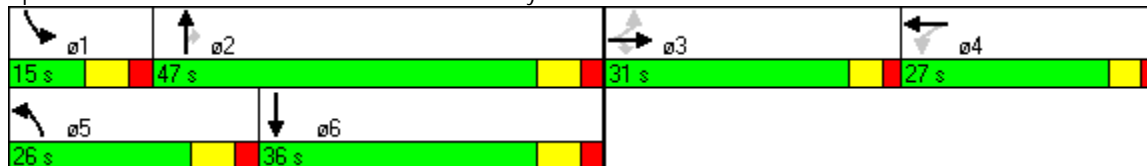


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0		22.0	22.0		26.0		
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0		
Act Effct Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.17	0.17		0.15	0.35	0.35	0.06	0.27	
v/c Ratio	1.44	1.82	0.76	1.24	1.21		0.16	0.13	0.34	0.11	0.11	
Control Delay	310.7	407.2	22.7	217.8	152.7		46.5	27.3	4.7	55.9	22.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	310.7	407.2	22.7	217.8	152.7		46.5	27.3	4.7	55.9	22.7	
LOS	F	F	C	F	F		D	C	A	E	C	
Approach Delay		281.8			161.0			20.3			27.6	
Approach LOS		F			F			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 124
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.82
 Intersection Signal Delay: 183.2
 Intersection LOS: F
 Intersection Capacity Utilization 67.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↙	↘	↗	↖	↑↑↑		↘	↑↑↑	
Volume (vph)	20	19	10	41	15	19	8	692	131	35	530	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	200		0	200		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.973				0.850		0.976			0.997	
Flt Protected		0.980		0.950	0.976		0.950			0.950		
Satd. Flow (prot)	0	1776	0	1681	1727	1583	1770	4963	0	1770	5070	0
Flt Permitted		0.853		0.482	0.638		0.950			0.950		
Satd. Flow (perm)	0	1546	0	853	1129	1583	1770	4963	0	1770	5070	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				21		45				3
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1193			2701			633				1959
Travel Time (s)		27.1			61.4			14.4				44.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	21	11	45	16	21	9	752	142	38	576	12
Shared Lane Traffic (%)				34%								
Lane Group Flow (vph)	0	54	0	30	31	21	9	894	0	38	588	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			3		5	2		1		6
Permitted Phases	4			3		3						
Detector Phase	4	4		3	3	3	5	2		1		6

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

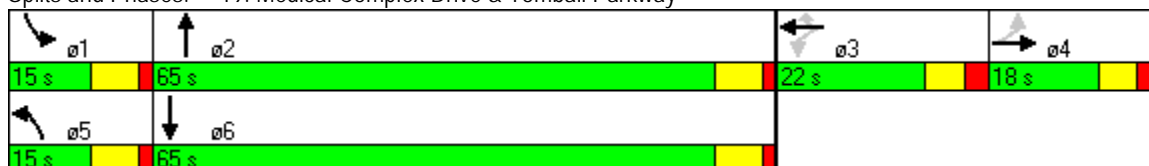


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	25.0		5.0	25.0	
Minimum Split (s)	11.5	11.5		34.5	34.5	34.5	11.5	31.5		11.5	31.5	
Total Split (s)	18.0	18.0	0.0	22.0	22.0	22.0	15.0	65.0	0.0	15.0	65.0	0.0
Total Split (%)	15.0%	15.0%	0.0%	18.3%	18.3%	18.3%	12.5%	54.2%	0.0%	12.5%	54.2%	0.0%
Maximum Green (s)	11.5	11.5		15.5	15.5	15.5	8.5	58.5		8.5	58.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	6.5	6.5	6.5	4.0	6.5	6.5	4.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		1.5	1.5	1.5	2.0	1.8		2.0	1.8	
Recall Mode	None	None		None	None	None	Max	C-Max		Max	C-Max	
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)				23.0	23.0	23.0		20.0			7.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effect Green (s)		8.2		9.3	9.3	9.3	22.6	58.5		22.6	58.5	
Actuated g/C Ratio		0.07		0.08	0.08	0.08	0.19	0.49		0.19	0.49	
v/c Ratio		0.48		0.45	0.36	0.15	0.03	0.37		0.11	0.24	
Control Delay		59.9		72.6	62.0	20.7	49.4	18.6		49.5	18.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		59.9		72.6	62.0	20.7	49.4	18.6		49.5	18.0	
LOS		E		E	E	C	D	B		D	B	
Approach Delay		59.9			55.3			18.9			20.0	
Approach LOS		E			E			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.48
Intersection Signal Delay:	22.4
Intersection LOS:	C
Intersection Capacity Utilization	49.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway



Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	872	10	5	729	26	10	17	5	57	42	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.995			0.967				0.902
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5			5				86
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	948	11	5	792	28	11	18	5	62	46	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	959	0	5	820	0	11	23	0	62	132	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane				Yes								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												
Detector Phase	1	6		5	2		3	8		7	4	

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	16.0	27.0	0.0	16.0	27.0	0.0	16.0	16.0	0.0	16.0	16.0	0.0
Total Split (%)	21.3%	36.0%	0.0%	21.3%	36.0%	0.0%	21.3%	21.3%	0.0%	21.3%	21.3%	0.0%
Maximum Green (s)	10.5	21.5		10.5	21.5		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	6.1	33.8		5.3	31.4		5.2	5.7		6.7	8.8	
Actuated g/C Ratio	0.11	0.62		0.10	0.58		0.10	0.11		0.12	0.16	
v/c Ratio	0.23	0.44		0.03	0.40		0.06	0.12		0.28	0.38	
Control Delay	29.2	10.3		29.8	12.6		29.3	26.1		28.6	14.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.2	10.3		29.8	12.6		29.3	26.1		28.6	14.2	
LOS	C	B		C	B		C	C		C	B	
Approach Delay		11.1			12.7			27.2			18.8	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 54.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.44
 Intersection Signal Delay: 12.7
 Intersection LOS: B
 Intersection Capacity Utilization 52.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
1/14/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↵	↑↑	↵	
Volume (vph)	938	68	67	959	53	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.990				0.937	
Flt Protected			0.950		0.974	
Satd. Flow (prot)	3504	0	1770	3539	1700	0
Flt Permitted			0.950		0.974	
Satd. Flow (perm)	3504	0	1770	3539	1700	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1368	
Travel Time (s)	35.3			19.7	31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1020	74	73	1042	58	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1094	0	73	1042	108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.6%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	526	17	43	772	115	66	296	12	205	365	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.981			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3472	0	1770	1852	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3522	0	1770	3472	0	1770	1852	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			14			1				165
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	572	18	47	839	125	72	322	13	223	397	204
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	590	0	47	964	0	72	335	0	223	397	204
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4
Detector Phase	1	6		5	2		3	8		7	4	4

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009

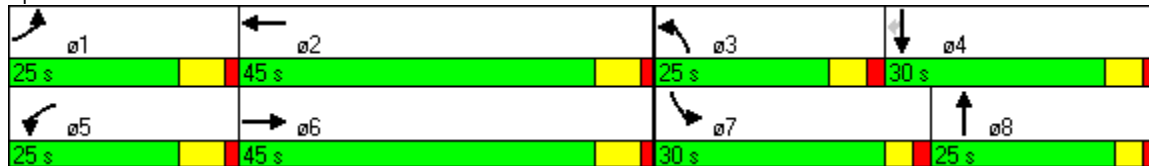


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effect Green (s)	14.7	47.9		7.7	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.12	0.39		0.06	0.32		0.16	0.16		0.21	0.20	0.20
v/c Ratio	0.75	0.42		0.42	0.87		0.26	1.09		0.61	1.08	0.46
Control Delay	73.1	28.6		66.1	48.3		48.8	126.0		52.6	114.9	14.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	73.1	28.6		66.1	48.3		48.8	126.0		52.6	114.9	14.4
LOS	E	C		E	D		D	F		D	F	B
Approach Delay		38.2			49.1			112.3			73.2	
Approach LOS		D			D			F			E	

Intersection Summary

Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	121.3
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.09
Intersection Signal Delay:	61.6
Intersection LOS:	E
Intersection Capacity Utilization:	80.1%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	916	99	82	855	3	48	2	47	16	27	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985						0.934			0.972	
Flt Protected	0.950			0.950				0.976			0.986	
Satd. Flow (prot)	1770	3486	0	1770	3539	0	0	1698	0	0	1785	0
Flt Permitted	0.950			0.950				0.839			0.917	
Satd. Flow (perm)	1770	3486	0	1770	3539	0	0	1460	0	0	1660	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						25			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	996	108	89	929	3	52	2	51	17	29	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1104	0	89	932	0	0	105	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane				Yes								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	

Lanes, Volumes, Timings
34: FM 2920 & Willow St

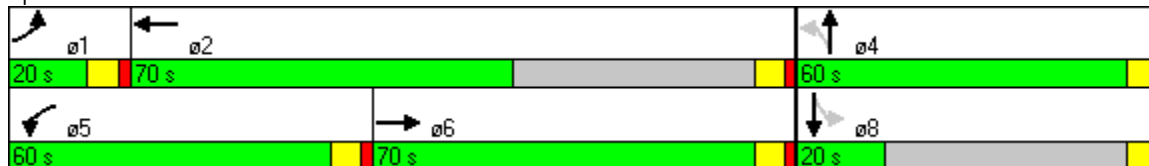


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.2	63.0		12.8	80.4			54.5			54.5	
Actuated g/C Ratio	0.03	0.42		0.09	0.54			0.36			0.36	
v/c Ratio	0.07	0.75		0.59	0.49			0.19			0.10	
Control Delay	73.8	40.9		81.6	23.5			26.3			29.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	73.8	40.9		81.6	23.5			26.3			29.0	
LOS	E	D		F	C			C			C	
Approach Delay		41.1			28.5			26.3			29.0	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	190
Actuated Cycle Length:	149.9
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	34.5
Intersection LOS:	C
Intersection Capacity Utilization:	58.8%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	6	820	42	20	736	14	68	94	88	58	158	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.997			0.952			0.985	
Flt Protected					0.999			0.987			0.988	
Satd. Flow (prot)	0	3514	0	0	3525	0	0	1750	0	0	1813	0
Flt Permitted		0.944			0.759			0.818			0.642	
Satd. Flow (perm)	0	3318	0	0	2678	0	0	1451	0	0	1178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			2			34			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	891	46	22	800	15	74	102	96	63	172	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	944	0	0	837	0	0	272	0	0	265	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
1/14/2009

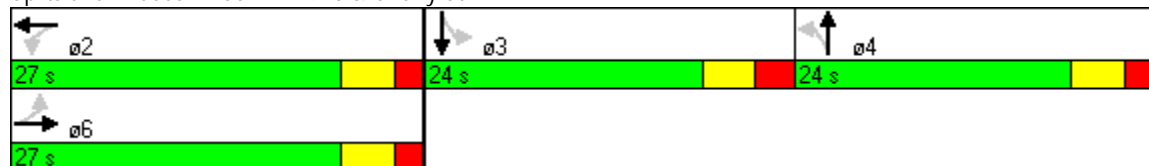


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	36.0%	36.0%	0.0%	36.0%	36.0%	0.0%	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%
Maximum Green (s)	21.5	21.5		21.5	21.5		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effect Green (s)		21.5			21.5			18.0			18.0	
Actuated g/C Ratio		0.29			0.29			0.24			0.24	
v/c Ratio		0.99			1.09			0.73			0.92	
Control Delay		54.6			87.4			36.1			65.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		54.6			87.4			36.1			65.8	
LOS		D			F			D			E	
Approach Delay		54.6			87.4			36.1			65.8	
Approach LOS		D			F			D			E	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	75
Offset:	0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.09
Intersection Signal Delay:	65.6
Intersection LOS:	E
Intersection Capacity Utilization	64.6%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	8	782	29	17	752	19	19	17	45	23	13	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.996			0.925			0.966	
Flt Protected		0.999			0.999			0.988			0.977	
Satd. Flow (prot)	0	3518	0	0	3522	0	0	1702	0	0	1758	0
Flt Permitted		0.947			0.932			0.902			0.826	
Satd. Flow (perm)	0	3335	0	0	3285	0	0	1554	0	0	1486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			49			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	850	32	18	817	21	21	18	49	25	14	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	891	0	0	856	0	0	88	0	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	

Lanes, Volumes, Timings
62: FM 2920 & Pine St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		41.1			41.1			7.5			7.5	
Actuated g/C Ratio		0.79			0.79			0.14			0.14	
v/c Ratio		0.34			0.33			0.33			0.23	
Control Delay		3.7			3.6			15.5			19.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.7			3.6			15.5			19.4	
LOS		A			A			B			B	
Approach Delay		3.7			3.6			15.5			19.4	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 58
 Actuated Cycle Length: 51.9
 Natural Cycle: 40
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 4.6
 Intersection Capacity Utilization 48.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	832	0	0	736	61	0	0	0	36	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3500	0	0	1863	0	1770	0	1583
Flt Permitted	0.182									0.950		
Satd. Flow (perm)	339	3539	0	0	3500	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12							75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	904	0	0	800	66	0	0	0	39	0	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	904	0	0	866	0	0	0	0	39	0	75
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Detector 1 Position(ft)	0	0			0		0	0		0		0
Detector 1 Size(ft)	20	6			6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4
Detector Phase	6	6			2		3	3		4		4

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009

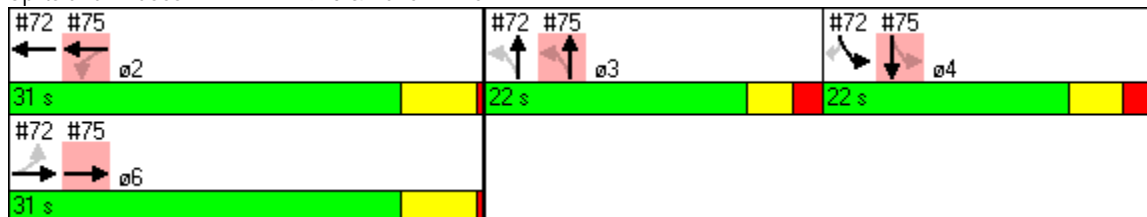


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	31.0	31.0	0.0	0.0	31.0	0.0	22.0	22.0	0.0	22.0	0.0	22.0
Total Split (%)	41.3%	41.3%	0.0%	0.0%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	0.0%	29.3%
Maximum Green (s)	25.5	25.5			25.5		17.0	17.0		16.0		16.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Recall Mode	Max	Max			C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	25.5	25.5			25.5					16.0		16.0
Actuated g/C Ratio	0.34	0.34			0.34					0.21		0.21
v/c Ratio	0.23	0.75			0.72					0.10		0.19
Control Delay	6.1	5.4			25.5					24.7		8.0
Queue Delay	2.8	1.6			0.0					0.0		2.4
Total Delay	9.0	7.0			25.5					24.7		10.4
LOS	A	A			C					C		B
Approach Delay		7.0			25.5							
Approach LOS		A			C							

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 15.9
 Intersection LOS: B
 Intersection Capacity Utilization 37.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	853	70	52	886	0	10	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.989						0.927			0.865	
Fl _t Protected				0.950				0.978				
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	1689	0	0	1611	0
Fl _t Permitted				0.157				0.417				
Satd. Flow (perm)	0	3500	0	292	3539	0	0	720	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12						13			424	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		464			112			489			304	
Travel Time (s)		10.5			2.5			11.1			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	927	76	57	963	0	11	0	13	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1003	0	57	963	0	0	24	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Detector 1 Position(ft)		0		0	0		0	0		0	0	
Detector 1 Size(ft)		6		20	6		20	6		20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94		94	94		94	94		94	94	
Detector 2 Size(ft)		6		6	6		6	6		6	6	
Detector 2 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3			4	
Permitted Phases				2			3			4		
Detector Phase		6		2	2		3	3		4	4	

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009

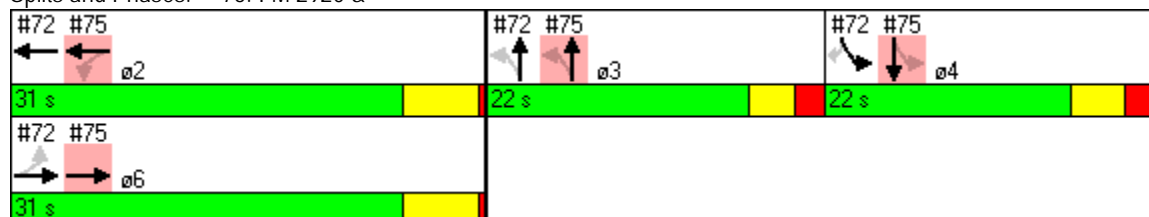


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	31.0	0.0	31.0	31.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	0.0%	41.3%	0.0%	41.3%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)		25.5		25.5	25.5		17.0	17.0		16.0	16.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode		Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		25.5		25.5	25.5		17.0	17.0		16.0	16.0	
Actuated g/C Ratio		0.34		0.34	0.34		0.23	0.23		0.21	0.21	
v/c Ratio		0.84		0.58	0.80		0.14	0.14		0.00	0.00	
Control Delay		30.4		29.0	11.0		17.8	17.8		0.0	0.0	
Queue Delay		0.1		3.4	2.0		0.7	0.7		0.0	0.0	
Total Delay		30.5		32.5	13.0		18.5	18.5		0.0	0.0	
LOS		C		C	B		B	B		A	A	
Approach Delay		30.5		14.1	14.1		18.5	18.5		0.0	0.0	
Approach LOS		C		B	B		B	B		A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 22.2
 Intersection LOS: C
 Intersection Capacity Utilization 59.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	884	17	100	767	22	12	20	56	27	52	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.996			0.914				0.850
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1770	3529	0	1770	3525	0	0	1691	0	0	1831	1583
Flt Permitted	0.950			0.950				0.964			0.898	
Satd. Flow (perm)	1770	3529	0	1770	3525	0	0	1641	0	0	1673	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			61				48
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1277			464			632			378	
Travel Time (s)		29.0			10.5			14.4			8.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	961	18	109	834	24	13	22	61	29	57	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	979	0	109	858	0	0	96	0	0	86	48
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		8	8		4	4	4

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.1	24.7		8.3	30.8			22.2			22.7	22.7
Actuated g/C Ratio	0.10	0.36		0.12	0.45			0.32			0.33	0.33
v/c Ratio	0.11	0.77		0.51	0.54			0.17			0.16	0.09
Control Delay	31.4	25.8		38.5	16.4			9.7			19.0	6.5
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	31.4	25.8		38.5	16.4			9.7			19.0	6.5
LOS	C	C		D	B			A			B	A
Approach Delay		25.9			18.9			9.7			14.5	
Approach LOS		C			B			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 68.8
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 21.4 Intersection LOS: C
 Intersection Capacity Utilization 56.4% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	927	0	2	875	22	1	4	1	33	3	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996			0.978			0.919	
Flt Protected	0.950			0.950				0.992			0.982	
Satd. Flow (prot)	1770	3539	0	1770	3525	0	0	1807	0	0	1681	0
Flt Permitted	0.950			0.950				0.948			0.875	
Satd. Flow (perm)	1770	3539	0	1770	3525	0	0	1727	0	0	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					4			1			58	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	1008	0	2	951	24	1	4	1	36	3	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	1008	0	2	975	0	0	6	0	0	97	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

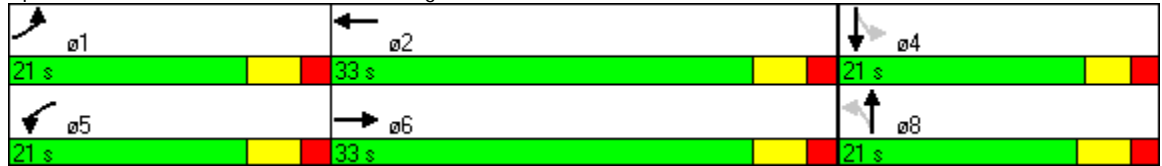


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	21.0	33.0	0.0	21.0	33.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	28.0%	44.0%	0.0%	28.0%	44.0%	0.0%	28.0%	28.0%	0.0%	28.0%	28.0%	0.0%
Maximum Green (s)	15.5	27.5		15.5	27.5		15.5	15.5		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.1	35.1		7.1	35.1			7.4			7.8	
Actuated g/C Ratio	0.14	0.68		0.14	0.68			0.14			0.15	
v/c Ratio	0.05	0.42		0.01	0.41			0.02			0.35	
Control Delay	20.9	7.1		20.5	6.9			18.8			14.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	20.9	7.1		20.5	6.9			18.8			14.3	
LOS	C	A		C	A			B			B	
Approach Delay		7.2			7.0			18.8			14.3	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	52
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	7.5
Intersection LOS:	A
Intersection Capacity Utilization	44.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 85: FM 2920 & Buvinghausen St





Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	202		890			276
Travel Time (s)	4.6		20.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1221	0	0	503	18	180	71	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Frt					0.995			0.986				
Flt Protected	0.950							0.968				
Satd. Flow (prot)	1770	5085	0	0	6376	0	0	4854	0	0	0	0
Flt Permitted	0.950							0.968				
Satd. Flow (perm)	1770	5085	0	0	6376	0	0	4854	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			14				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1955				1199
Travel Time (s)		8.3			18.8			44.4				27.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	1327	0	0	547	20	196	77	28	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	1327	0	0	567	0	0	301	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				
Minimum Split (s)	11.5				26.5		27.0	27.0				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009

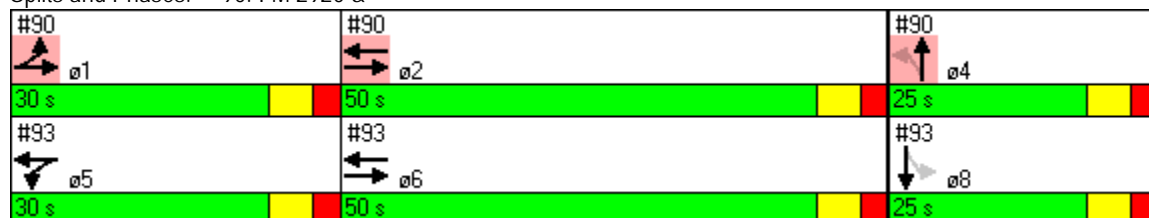


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	1.0				1.0		1.0		1.0			
Recall Mode	None				C-Max		None		None			
Walk Time (s)					7.0		7.0		7.0			
Flash Dont Walk (s)					12.0		13.0		13.0			
Pedestrian Calls (#/hr)					0		0		0			
Act Effct Green (s)	15.5	74.1			52.0				17.4			
Actuated g/C Ratio	0.15	0.71			0.50				0.17			
v/c Ratio	0.58	0.37			0.18				0.37			
Control Delay	54.7	6.9			15.2				38.3			
Queue Delay	0.0	0.1			0.0				0.0			
Total Delay	54.7	7.1			15.2				38.3			
LOS	D	A			B				D			
Approach Delay		12.0			15.2				38.3			
Approach LOS		B			B				D			

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	16.1
Intersection LOS:	B
Intersection Capacity Utilization	53.9%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑↑↑						↔↑↑↑	
Volume (vph)	0	871	326	83	600	0	0	0	0	490	51	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.959									0.965	
Flt Protected				0.950							0.966	
Satd. Flow (prot)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Flt Permitted				0.950							0.966	
Satd. Flow (perm)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110									63	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		735			367			1952			1208	
Travel Time (s)		16.7			8.3			44.4			27.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	947	354	90	652	0	0	0	0	533	55	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1301	0	90	652	0	0	0	0	0	765	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6						8	
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	
Minimum Split (s)		27.5		11.5						28.0	28.0	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		58.4		9.2	74.1						17.4	
Actuated g/C Ratio		0.56		0.09	0.71						0.17	
v/c Ratio		0.38		0.58	0.18						1.54dl	
Control Delay		12.6		65.5	5.6						55.6	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		12.6		65.5	5.6						55.6	
LOS		B		E	A						E	
Approach Delay		12.6			12.9						55.6	
Approach LOS		B			B						E	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 24.4
 Intersection LOS: C
 Intersection Capacity Utilization 53.9%
 ICU Level of Service A
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd

#90 ø1 30 s	#90 ø2 50 s	#90 ø4 25 s
#93 ø5 30 s	#93 ø6 50 s	#93 ø8 25 s

Lane Group	ø1	ø2	ø4
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	30	286	27	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.987			
Flt Protected						
Satd. Flow (prot)	0	1611	5019	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	5019	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	1193		636			1955
Travel Time (s)	27.1		14.5			44.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	33	311	29	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	33	340	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	17	0	0	432	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	5080	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	5080	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2831			714	1952	
Travel Time (s)	64.3			16.2	44.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	18	0	0	470	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	18	0	0	473	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1990				618				233		163	
Travel Time (s)	45.2				14.0				5.3		3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				12				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane	Yes				Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		9		15		9	
Sign Control	Free				Free				Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

EXISTING CONDITION ANALYSIS

[PM PEAK HOUR]

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	474	25	3	663	0	36	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		3	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.993						0.968				
Fl _t Protected				0.950				0.963				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1736	0	0	1863	0
Fl _t Permitted				0.950				0.776				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1399	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						12				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				207
Travel Time (s)		52.0			47.5			45.0				4.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	515	27	3	721	0	39	0	12	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	542	0	3	721	0	0	51	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8		8

Lanes, Volumes, Timings
1: FM 2920 &



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		60.1		5.0	62.3			6.7				
Actuated g/C Ratio		0.81		0.07	0.84			0.09				
v/c Ratio		0.19		0.03	0.24			0.37				
Control Delay		3.7		32.7	2.5			33.0				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		3.7		32.7	2.5			33.0				
LOS		A		C	A			C				
Approach Delay		3.7			2.6			33.0				
Approach LOS		A			A			C				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	73.9
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.37
Intersection Signal Delay:	4.2
Intersection LOS:	A
Intersection Capacity Utilization:	32.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Drive &



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	23	48	86	24	27	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.909		0.971			
Flt Protected	0.984					0.979
Satd. Flow (prot)	1666	0	1809	0	0	1824
Flt Permitted	0.984					0.979
Satd. Flow (perm)	1666	0	1809	0	0	1824
Link Speed (mph)	30		30			30
Link Distance (ft)	2831		624			1981
Travel Time (s)	64.3		14.2			45.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	52	93	26	29	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	119	0	0	69
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	978	33	62	1164	132	39	7	67	187	9	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Fr _t		0.995				0.850		0.911			0.883	
Fl _t Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	0	3169	0	1770	1645	0
Fl _t Permitted	0.950			0.950				0.840		0.674		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	0	2708	0	1255	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				143		73			35	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2090			735			216			806	
Travel Time (s)		47.5			16.7			4.9			18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1063	36	67	1265	143	42	8	73	203	10	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	1099	0	67	1265	143	0	123	0	203	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	8	8		4	4	

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009

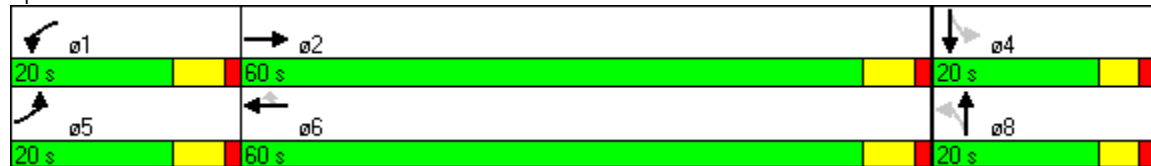


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effect Green (s)	6.7	54.3		8.0	57.8	57.8		14.6		14.6	14.6	
Actuated g/C Ratio	0.07	0.59		0.09	0.63	0.63		0.16		0.16	0.16	
v/c Ratio	0.30	0.53		0.44	0.57	0.14		0.25		1.02	0.16	
Control Delay	47.8	13.1		49.7	12.1	2.0		18.2		110.9	17.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	47.8	13.1		49.7	12.1	2.0		18.2		110.9	17.2	
LOS	D	B		D	B	A		B		F	B	
Approach Delay		14.3			12.8			18.2			93.9	
Approach LOS		B			B			B			F	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	91.9
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.02
Intersection Signal Delay:	20.4
Intersection LOS:	C
Intersection Capacity Utilization:	68.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd & FM 2920



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	21	51	86	764	987	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.905				0.994	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1660	0	1770	3539	3518	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1660	0	1770	3539	3518	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	55				6	
Link Speed (mph)	30			30	30	
Link Distance (ft)	737			1353	532	
Travel Time (s)	16.8			30.8	12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	55	93	830	1073	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	0	93	830	1118	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Prot			
Protected Phases	4		1	6	2	
Permitted Phases						
Detector Phase	4		1	6	2	

Lanes, Volumes, Timings
11: Park Rd & FM 2920

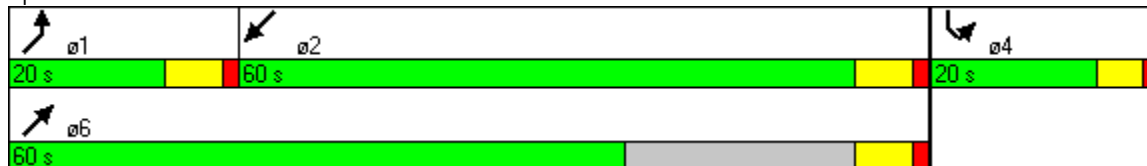


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		11.5	22.5	30.5	
Total Split (s)	20.0	0.0	20.0	60.0	60.0	0.0
Total Split (%)	20.0%	0.0%	20.0%	60.0%	60.0%	0.0%
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.0	6.5	6.5	6.5	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		2.0	1.5	1.5	
Recall Mode	None		None	Max	Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	6.5		8.9	71.6	58.8	
Actuated g/C Ratio	0.08		0.10	0.83	0.68	
v/c Ratio	0.45		0.51	0.28	0.47	
Control Delay	25.5		47.4	2.6	10.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	25.5		47.4	2.6	10.1	
LOS	C		D	A	B	
Approach Delay	25.5			7.1	10.1	
Approach LOS	C			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 86.2
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 9.4
 Intersection Capacity Utilization 53.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 11: Park Rd & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↙↘	↗	↘	↙↘↗		↘↗	↙↘↗	↗	↘↗	↙↘↗	
Volume (vph)	83	422	216	203	484	149	267	487	206	43	83	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.968				0.850		0.929	
Flt Protected	0.950	0.999		0.950	0.995		0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1522	4629	0	3433	5085	1583	3433	4724	0
Flt Permitted	0.157	0.689		0.474	0.816		0.950			0.950		
Satd. Flow (perm)	266	2336	1583	759	3796	0	3433	5085	1583	3433	4724	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			235		44				224		80	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	459	235	221	526	162	290	529	224	47	90	80
Shared Lane Traffic (%)	10%			37%								
Lane Group Flow (vph)	81	468	235	139	770	0	290	529	224	47	170	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1	6	
Permitted Phases	3		3	4					2			
Detector Phase	3	3	3	4	4		5	2	2	1	6	

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009

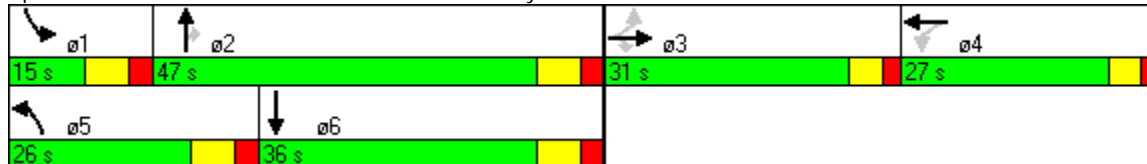


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0		22.0	22.0		26.0		
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0		
Act Effect Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.17	0.17		0.15	0.35	0.35	0.06	0.27	
v/c Ratio	1.47	0.97	0.46	1.05	1.11		0.55	0.29	0.32	0.21	0.13	
Control Delay	324.3	84.5	8.3	142.8	112.0		53.0	29.4	4.7	57.5	18.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	324.3	84.5	8.3	142.8	112.0		53.0	29.4	4.7	57.5	18.4	
LOS	F	F	A	F	F		D	C	A	E	B	
Approach Delay		86.4			116.7			30.7			26.9	
Approach LOS		F			F			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 124
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.47
 Intersection Signal Delay: 71.7
 Intersection Capacity Utilization 61.0%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service B

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗	↖	↖	↗		↖	↗	↖
Volume (vph)	46	15	24	161	35	47	17	963	38	12	715	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	200		0	200		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.962				0.850		0.994			0.994	
Flt Protected		0.974		0.950			0.950			0.950		
Satd. Flow (prot)	0	1745	0	1770	1863	1583	1770	5055	0	1770	5055	0
Flt Permitted		0.810		0.545			0.950			0.950		
Satd. Flow (perm)	0	1451	0	1015	1863	1583	1770	5055	0	1770	5055	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				51		7			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1193			2701			633			1959	
Travel Time (s)		27.1			61.4			14.4			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	16	26	175	38	51	18	1047	41	13	777	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	175	38	51	18	1088	0	13	810	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3		3						
Detector Phase	4	4		3	3	3	5	2		1	6	

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 1/14/2009

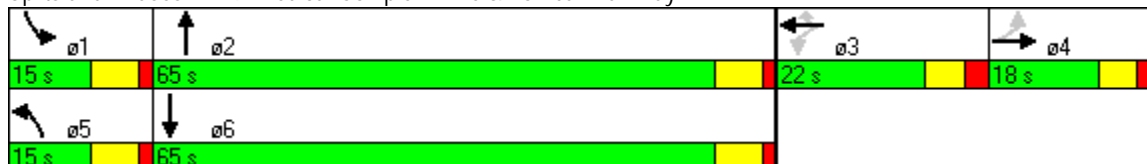


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	25.0		5.0	25.0	
Minimum Split (s)	11.5	11.5		34.5	34.5	34.5	11.5	31.5		11.5	31.5	
Total Split (s)	18.0	18.0	0.0	22.0	22.0	22.0	15.0	65.0	0.0	15.0	65.0	0.0
Total Split (%)	15.0%	15.0%	0.0%	18.3%	18.3%	18.3%	12.5%	54.2%	0.0%	12.5%	54.2%	0.0%
Maximum Green (s)	11.5	11.5		15.5	15.5	15.5	8.5	58.5		8.5	58.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	6.5	6.5	6.5	4.0	6.5	6.5	4.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		1.5	1.5	1.5	2.0	1.8		2.0	1.8	
Recall Mode	None	None		None	None	None	Max	C-Max		Max	C-Max	
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)				23.0	23.0	23.0		20.0			7.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effect Green (s)		9.7		15.5	15.5	15.5	10.3	58.5		10.3	58.5	
Actuated g/C Ratio		0.08		0.13	0.13	0.13	0.09	0.49		0.09	0.49	
v/c Ratio		0.71		1.34	0.16	0.20	0.12	0.44		0.09	0.33	
Control Delay		74.3		234.5	48.4	14.9	54.2	20.6		53.6	19.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		74.3		234.5	48.4	14.9	54.2	20.6		53.6	19.0	
LOS		E		F	D	B	D	C		D	B	
Approach Delay		74.3			165.2			21.2			19.6	
Approach LOS		E			F			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 60 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.34
 Intersection Signal Delay: 39.4 Intersection LOS: D
 Intersection Capacity Utilization 46.3% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway



Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	649	12	10	1012	35	38	54	6	23	24	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.984				0.881
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3522	0	1770	1833	0	1770	1641	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3522	0	1770	1833	0	1770	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6				98
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	705	13	11	1100	38	41	59	7	25	26	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	718	0	11	1138	0	41	66	0	25	124	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												
Detector Phase	1	6		5	2		3	8		7	4	

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009

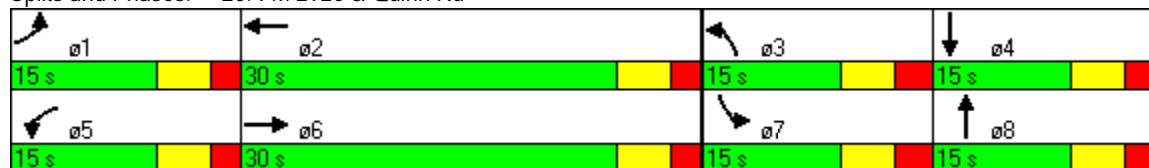


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	0.0
Total Split (%)	20.0%	40.0%	0.0%	20.0%	40.0%	0.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.0	9.0		9.0	9.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	6.9	37.0		5.4	31.9		6.2	9.0		5.7	6.5	
Actuated g/C Ratio	0.12	0.62		0.09	0.53		0.10	0.15		0.10	0.11	
v/c Ratio	0.36	0.33		0.07	0.61		0.22	0.23		0.15	0.47	
Control Delay	33.5	10.2		32.4	19.4		32.2	26.5		32.3	17.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.5	10.2		32.4	19.4		32.2	26.5		32.3	17.2	
LOS	C	B		C	B		C	C		C	B	
Approach Delay		12.4			19.5			28.7			19.8	
Approach LOS		B			B			C			B	

Intersection Summary

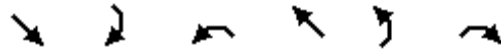
Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 59.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 17.4
 Intersection LOS: B
 Intersection Capacity Utilization 56.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
1/14/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↖	↑↑	↗	
Volume (vph)	1032	54	34	893	101	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.993				0.938	
Flt Protected			0.950		0.974	
Satd. Flow (prot)	3514	0	1770	3539	1702	0
Flt Permitted			0.950		0.974	
Satd. Flow (perm)	3514	0	1770	3539	1702	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1368	
Travel Time (s)	35.3			19.7	31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1122	59	37	971	110	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1181	0	37	971	203	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	471	24	30	520	159	22	327	7	112	214	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.965			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			33			1				104
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	225	512	26	33	565	173	24	355	8	122	233	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	538	0	33	738	0	24	363	0	122	233	104
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4
Detector Phase	1	6		5	2		3	8		7	4	4

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009

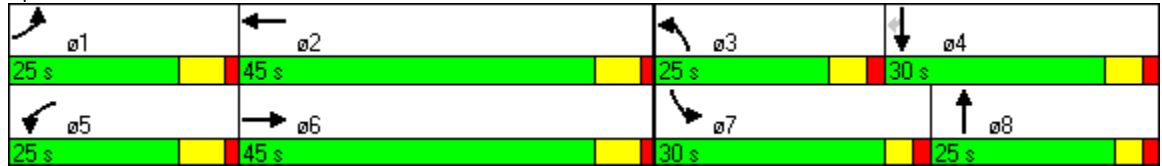


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effect Green (s)	17.6	54.0		6.9	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.14	0.43		0.06	0.31		0.15	0.16		0.20	0.19	0.19
v/c Ratio	0.89	0.35		0.33	0.68		0.09	1.21		0.34	0.65	0.27
Control Delay	87.6	25.2		65.2	39.7		46.7	165.5		46.0	55.8	9.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	87.6	25.2		65.2	39.7		46.7	165.5		46.0	55.8	9.8
LOS	F	C		E	D		D	F		D	E	A
Approach Delay		43.6			40.8			158.2			42.8	
Approach LOS		D			D			F			D	

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 124.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.21
 Intersection Signal Delay: 61.2
 Intersection LOS: E
 Intersection Capacity Utilization 73.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	940	18	0	1061	26	14	1	7	8	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.996			0.955			0.923	
Flt Protected	0.950							0.970			0.979	
Satd. Flow (prot)	1770	3529	0	1863	3525	0	0	1726	0	0	1683	0
Flt Permitted	0.950							0.886			0.931	
Satd. Flow (perm)	1770	3529	0	1863	3525	0	0	1576	0	0	1601	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			8			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1022	20	0	1153	28	15	1	8	9	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	1042	0	0	1181	0	0	24	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009

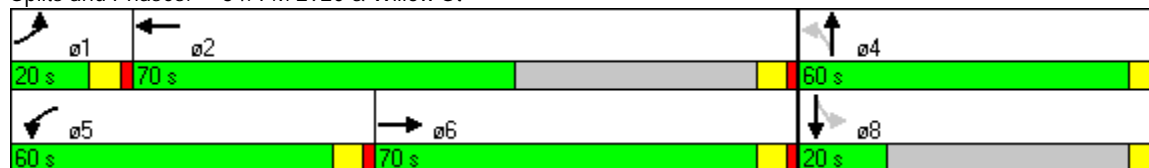


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)	6.3	71.3			63.2			54.6			54.6	
Actuated g/C Ratio	0.05	0.51			0.46			0.39			0.39	
v/c Ratio	0.27	0.57			0.73			0.04			0.03	
Control Delay	74.1	24.4			35.0			21.4			17.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	74.1	24.4			35.0			21.4			17.5	
LOS	E	C			D			C			B	
Approach Delay		25.4			35.0			21.4			17.5	
Approach LOS		C			D			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 138.5
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 30.2
 Intersection LOS: C
 Intersection Capacity Utilization 44.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
1/14/2009

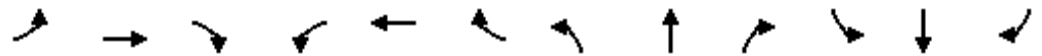


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	13	881	41	19	890	35	86	258	57	46	123	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.994			0.981			0.979	
Flt Protected		0.999			0.999			0.989			0.989	
Satd. Flow (prot)	0	3511	0	0	3514	0	0	1807	0	0	1804	0
Flt Permitted		0.931			0.884			0.865			0.618	
Satd. Flow (perm)	0	3272	0	0	3110	0	0	1581	0	0	1127	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			10			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	958	45	21	967	38	93	280	62	50	134	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1017	0	0	1026	0	0	435	0	0	218	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive

1/14/2009

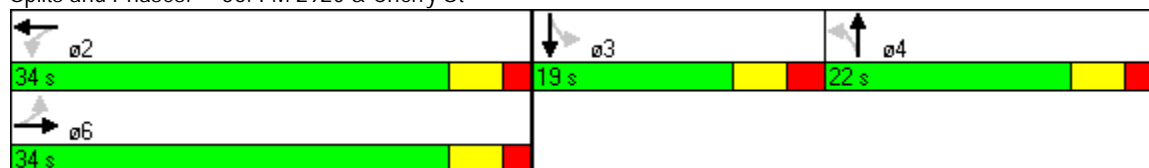


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	22.0	22.0	0.0	19.0	19.0	0.0
Total Split (%)	45.3%	45.3%	0.0%	45.3%	45.3%	0.0%	29.3%	29.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	28.5	28.5		28.5	28.5		16.0	16.0		13.0	13.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effect Green (s)		28.5			28.5			16.0			13.0	
Actuated g/C Ratio		0.38			0.38			0.21			0.17	
v/c Ratio		0.81			0.87			1.26			1.07	
Control Delay		27.4			30.9			167.4			115.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		27.4			30.9			167.4			115.2	
LOS		C			C			F			F	
Approach Delay		27.4			30.9			167.4			115.2	
Approach LOS		C			C			F			F	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	75
Offset:	0 (0%), Referenced to phase 2:WBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.26
Intersection Signal Delay:	58.4
Intersection LOS:	E
Intersection Capacity Utilization	77.4%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	30	853	23	20	911	16	61	30	82	10	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998			0.936			0.943	
Flt Protected		0.998			0.999			0.983			0.984	
Satd. Flow (prot)	0	3518	0	0	3529	0	0	1714	0	0	1728	0
Flt Permitted		0.898			0.925			0.870			0.824	
Satd. Flow (perm)	0	3166	0	0	3267	0	0	1517	0	0	1447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			5			70			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	927	25	22	990	17	66	33	89	11	8	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	985	0	0	1029	0	0	188	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	

Lanes, Volumes, Timings
62: FM 2920 & Pine St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		39.4		39.4	39.4		9.0	9.0		9.0	9.0	
Actuated g/C Ratio		0.71		0.71	0.71		0.16	0.16		0.16	0.16	
v/c Ratio		0.44		0.45	0.45		0.62	0.62		0.13	0.13	
Control Delay		5.8		5.8	5.8		23.2	23.2		15.5	15.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		5.8		5.8	5.8		23.2	23.2		15.5	15.5	
LOS		A		A	A		C	C		B	B	
Approach Delay		5.8		5.8	5.8		23.2	23.2		15.5	15.5	
Approach LOS		A		A	A		C	C		B	B	

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	55.7
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	7.4
Intersection LOS:	A
Intersection Capacity Utilization:	68.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	845	0	0	1129	61	0	0	0	46	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3511	0	0	1863	0	1770	0	1583
Flt Permitted	0.136									0.950		
Satd. Flow (perm)	253	3539	0	0	3511	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8							68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		112			1600			115			330	
Travel Time (s)		2.5			36.4			2.6			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	918	0	0	1227	66	0	0	0	50	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	918	0	0	1293	0	0	0	0	50	0	68
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Detector 1 Position(ft)	0	0			0		0	0		0		0
Detector 1 Size(ft)	20	6			6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4
Detector Phase	6	6			2		3	3		4		4

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009

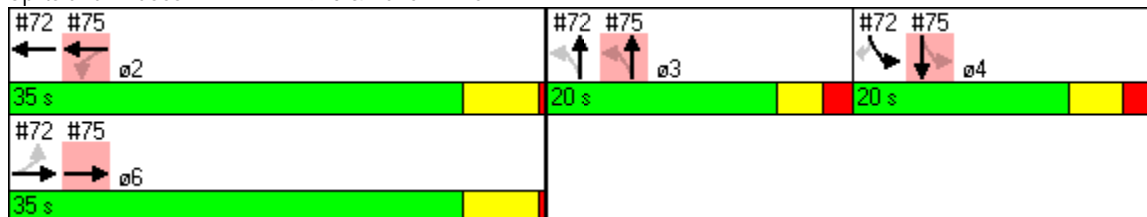


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	35.0	35.0	0.0	0.0	35.0	0.0	20.0	20.0	0.0	20.0	0.0	20.0
Total Split (%)	46.7%	46.7%	0.0%	0.0%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	0.0%	26.7%
Maximum Green (s)	29.5	29.5			29.5		15.0	15.0		14.0		14.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Recall Mode	Max	Max			C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	29.5	29.5			29.5					14.0		14.0
Actuated g/C Ratio	0.39	0.39			0.39					0.19		0.19
v/c Ratio	0.64	0.66			0.93					0.15		0.19
Control Delay	31.5	4.6			35.7					27.0		8.9
Queue Delay	0.7	0.2			0.9					0.0		0.3
Total Delay	32.2	4.8			36.6					27.0		9.2
LOS	C	A			D					C		A
Approach Delay		6.6			36.6							
Approach LOS		A			D							

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	75
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.93
Intersection Signal Delay:	23.3
Intersection LOS:	C
Intersection Capacity Utilization:	60.3%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	839	2	29	1123	0	24	0	35	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t								0.920			0.865	
Fl _t Protected				0.950				0.980				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1679	0	0	1611	0
Fl _t Permitted				0.195				0.224				
Satd. Flow (perm)	0	3539	0	363	3539	0	0	384	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								38			322	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		464			112			489			304	
Travel Time (s)		10.5			2.5			11.1			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	912	2	32	1221	0	26	0	38	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	914	0	32	1221	0	0	64	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Detector 1 Position(ft)		0		0	0		0	0		0	0	
Detector 1 Size(ft)		6		20	6		20	6		20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94		94	94		94	94		94	94	
Detector 2 Size(ft)		6		6	6		6	6		6	6	
Detector 2 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		
Detector Phase		6		2	2		3	3		4		4

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009

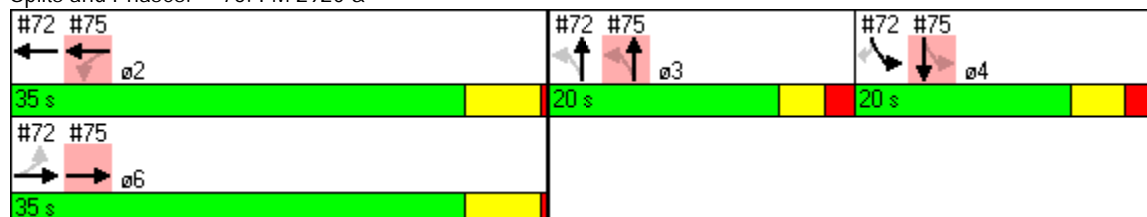


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	35.0	0.0	35.0	35.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	0.0%	46.7%	0.0%	46.7%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%
Maximum Green (s)		29.5		29.5	29.5		15.0	15.0		14.0	14.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode		Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		29.5		29.5	29.5		15.0	15.0		14.0	14.0	
Actuated g/C Ratio		0.39		0.39	0.39		0.20	0.20		0.19	0.19	
v/c Ratio		0.66		0.22	0.88		0.60	0.60		0.00	0.00	
Control Delay		21.4		5.4	8.5		40.6	40.6		0.0	0.0	
Queue Delay		0.0		3.7	9.0		0.5	0.5		0.0	0.0	
Total Delay		21.4		9.1	17.4		41.1	41.1		0.0	0.0	
LOS		C		A	B		D	D		A	A	
Approach Delay		21.4			17.2		41.1	41.1		0.0	0.0	
Approach LOS		C			B		D	D		A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 19.6
 Intersection Capacity Utilization 49.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	740	14	52	1021	41	45	98	106	41	43	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.994			0.943				0.850
Flt Protected	0.950			0.950				0.991			0.976	
Satd. Flow (prot)	1770	3529	0	1770	3518	0	0	1741	0	0	1818	1583
Flt Permitted	0.950			0.950				0.931			0.801	
Satd. Flow (perm)	1770	3529	0	1770	3518	0	0	1635	0	0	1492	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			8			53				73
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	804	15	57	1110	45	49	107	115	45	47	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	819	0	57	1155	0	0	271	0	0	92	73
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		8	8		4	4	4

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.2	24.8		7.7	27.6			22.2			22.8	22.8
Actuated g/C Ratio	0.11	0.38		0.12	0.42			0.34			0.35	0.35
v/c Ratio	0.14	0.61		0.28	0.78			0.46			0.18	0.12
Control Delay	31.0	20.2		32.0	22.6			18.1			18.4	5.7
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	31.0	20.2		32.0	22.6			18.1			18.4	5.7
LOS	C	C		C	C			B			B	A
Approach Delay		20.5			23.0			18.1			12.8	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 65.7
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 21.0
 Intersection LOS: C
 Intersection Capacity Utilization 69.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	782	0	4	1161	25	11	3	3	21	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.997			0.978			0.898	
Flt Protected	0.950			0.950				0.968			0.991	
Satd. Flow (prot)	1770	3539	0	1770	3529	0	0	1763	0	0	1658	0
Flt Permitted	0.950			0.950				0.750			0.930	
Satd. Flow (perm)	1770	3539	0	1770	3529	0	0	1366	0	0	1556	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			3			92	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	850	0	4	1262	27	12	3	3	23	7	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	850	0	4	1289	0	0	18	0	0	122	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	19.0	37.0	0.0	19.0	37.0	0.0	19.0	19.0	0.0	19.0	19.0	0.0
Total Split (%)	25.3%	49.3%	0.0%	25.3%	49.3%	0.0%	25.3%	25.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	13.5	31.5		13.5	31.5		13.5	13.5		14.0	14.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.3	42.1		7.1	37.2			7.5			7.9	
Actuated g/C Ratio	0.12	0.71		0.12	0.63			0.13			0.13	
v/c Ratio	0.21	0.34		0.02	0.58			0.10			0.42	
Control Delay	27.7	5.8		26.0	11.3			24.1			14.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	27.7	5.8		26.0	11.3			24.1			14.8	
LOS	C	A		C	B			C			B	
Approach Delay		6.9			11.4			24.1			14.8	
Approach LOS		A			B			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	58.9
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	9.9
Intersection Capacity Utilization	49.5%
Analysis Period (min)	15
Intersection LOS:	A
ICU Level of Service	A

Splits and Phases: 85: FM 2920 & Buvinghausen St





Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	190		890			276
Travel Time (s)	4.3		20.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	809	0	0	803	33	294	149	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Frt					0.994			0.990				
Flt Protected	0.950							0.970				
Satd. Flow (prot)	1770	5085	0	0	6369	0	0	4883	0	0	0	0
Flt Permitted	0.950							0.970				
Satd. Flow (perm)	1770	5085	0	0	6369	0	0	4883	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			9				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1955				1199
Travel Time (s)		8.3			18.8			44.4				27.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	879	0	0	873	36	320	162	33	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	213	879	0	0	909	0	0	515	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				
Minimum Split (s)	11.5				26.5		27.0	27.0				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	1.0				1.0		1.0		1.0			
Recall Mode	None				C-Max		None		None			
Walk Time (s)					7.0		7.0		7.0			
Flash Dont Walk (s)					12.0		13.0		13.0			
Pedestrian Calls (#/hr)					0		0		0			
Act Effct Green (s)	16.4	77.2			54.3			14.3				
Actuated g/C Ratio	0.16	0.74			0.52			0.14				
v/c Ratio	0.77	0.24			0.28			1.29dl				
Control Delay	71.1	4.6			15.5			50.8				
Queue Delay	0.0	0.1			0.0			0.0				
Total Delay	71.1	4.7			15.5			50.8				
LOS	E	A			B			D				
Approach Delay		17.7			15.5			50.8				
Approach LOS		B			B			D				

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 23.7
 Intersection LOS: C
 Intersection Capacity Utilization 53.7%
 ICU Level of Service A
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑↑						↔↑↑	
Volume (vph)	0	744	165	105	992	0	0	0	0	261	58	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.973									0.966	
Flt Protected				0.950							0.969	
Satd. Flow (prot)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Flt Permitted				0.950							0.969	
Satd. Flow (perm)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65									61	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		735			367			1952			1208	
Travel Time (s)		16.7			8.3			44.4			27.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	809	179	114	1078	0	0	0	0	284	63	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	988	0	114	1078	0	0	0	0	0	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6						8	
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	
Minimum Split (s)		27.5		11.5						28.0	28.0	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		58.9		11.8	77.2						14.3	
Actuated g/C Ratio		0.56		0.11	0.74						0.14	
v/c Ratio		0.28		0.57	0.29						0.97dl	
Control Delay		12.0		58.5	5.0						41.0	
Queue Delay		0.0		0.0	0.1						0.0	
Total Delay		12.0		58.5	5.1						41.0	
LOS		B		E	A						D	
Approach Delay		12.0			10.2						41.0	
Approach LOS		B			B						D	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 16.2
 Intersection LOS: B
 Intersection Capacity Utilization 53.7%
 ICU Level of Service A
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd

#90 ø1 30 s	#90 ø2 50 s	#90 ø4 25 s
#93 ø5 30 s	#93 ø6 50 s	#93 ø8 25 s

Lane Group	ø1	ø2	ø4
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	84	486	41	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.988			
Flt Protected						
Satd. Flow (prot)	0	1611	5024	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	5024	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	1193		636			1955
Travel Time (s)	27.1		14.5			44.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	91	528	45	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	91	573	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.2%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					 	
Volume (vph)	0	3	0	0	207	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	5080	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	5080	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2831			714	1952	
Travel Time (s)	64.3			16.2	44.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	3	0	0	225	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	3	0	0	227	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1990				618				233		163	
Travel Time (s)	45.2				14.0				5.3		3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				12				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane	Yes				Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		9		15		9	
Sign Control	Free				Free				Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

**2011 NO-BUILD CONDITION
ANALYSIS
[AM PEAK HOUR]**

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1267	51	8	765	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.994						0.942				
Fl _t Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1706	0	0	1863	0
Fl _t Permitted				0.950				0.823				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1444	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						18				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	0	1749	70	11	1056	0	24	0	18	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1819	0	11	1056	0	0	42	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		62.7		5.3	64.8			6.1				
Actuated g/C Ratio		0.83		0.07	0.85			0.08				
v/c Ratio		0.62		0.09	0.35			0.32				
Control Delay		6.7		36.2	2.6			29.2				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		6.7		36.2	2.6			29.2				
LOS		A		D	A			C				
Approach Delay		6.7			2.9			29.2				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 75.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 5.7
 Intersection LOS: A
 Intersection Capacity Utilization 60.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Drive &



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	11	24	44	31	43	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.907		0.944			
Flt Protected	0.985					0.979
Satd. Flow (prot)	1664	0	1758	0	0	1824
Flt Permitted	0.985					0.979
Satd. Flow (perm)	1664	0	1758	0	0	1824
Link Speed (mph)	30		30			30
Link Distance (ft)	2831		624			1981
Travel Time (s)	64.3		14.2			45.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	106%	106%	106%	106%
Adj. Flow (vph)	15	33	51	36	50	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	87	0	0	116
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.4%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1296	16	21	643	88	2	4	4	75	6	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.998				0.850		0.937			0.892	
Flt Protected	0.950			0.950				0.992		0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	0	3290	0	1770	1662	0
Flt Permitted	0.950			0.950				0.928		0.749		
Satd. Flow (perm)	1770	3532	0	1770	3539	1583	0	3077	0	1395	1662	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				121		5				18
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	35	1789	22	29	888	121	2	5	5	86	7	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	1811	0	29	888	121	0	12	0	86	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009

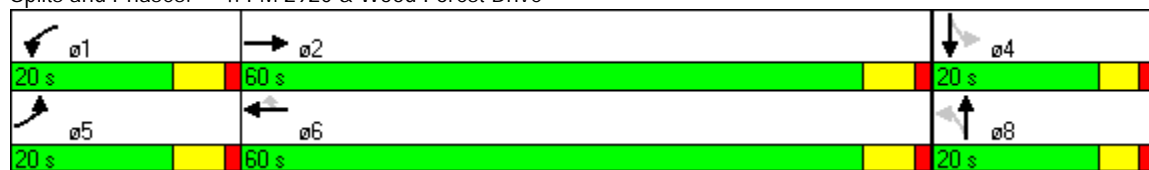


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effect Green (s)	6.4	54.3		6.1	54.1	54.1		14.6		14.6	14.6	
Actuated g/C Ratio	0.07	0.62		0.07	0.62	0.62		0.17		0.17	0.17	
v/c Ratio	0.27	0.83		0.23	0.41	0.12		0.02		0.37	0.09	
Control Delay	45.3	18.8		45.0	10.2	2.1		26.9		39.9	19.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	45.3	18.8		45.0	10.2	2.1		26.9		39.9	19.6	
LOS	D	B		D	B	A		C		D	B	
Approach Delay		19.3			10.3			26.9			35.3	
Approach LOS		B			B			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	87.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	16.8
Intersection LOS:	B
Intersection Capacity Utilization:	66.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd & FM 2920



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	40	91	43	1300	754	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.906				0.997	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1662	0	1770	3539	3529	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1662	0	1770	3539	3529	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	98				3	
Link Speed (mph)	30			30	30	
Link Distance (ft)	737			1353	532	
Travel Time (s)	16.8			30.8	12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	104%	106%	127%	127%	127%	127%
Adj. Flow (vph)	45	105	59	1795	1041	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	59	1795	1062	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Prot			
Protected Phases	4		1	6	2	
Permitted Phases						

Lanes, Volumes, Timings
11: Park Rd & FM 2920

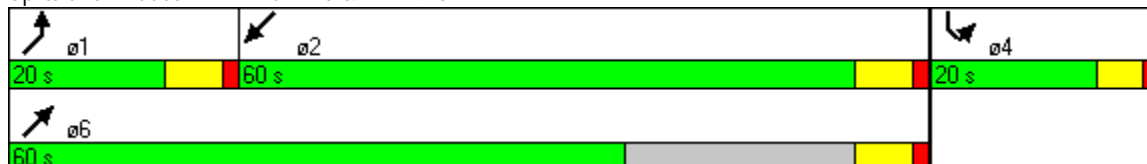


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		11.5	22.5	30.5	
Total Split (s)	20.0	0.0	20.0	60.0	60.0	0.0
Total Split (%)	20.0%	0.0%	20.0%	60.0%	60.0%	0.0%
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.0	6.5	6.5	6.5	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		2.0	1.5	1.5	
Recall Mode	None		None	Max	Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	7.9		7.4	65.3	54.1	
Actuated g/C Ratio	0.09		0.09	0.77	0.63	
v/c Ratio	0.62		0.38	0.66	0.47	
Control Delay	27.3		46.0	6.5	10.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	27.3		46.0	6.5	10.4	
LOS	C		D	A	B	
Approach Delay	27.3			7.8	10.4	
Approach LOS	C			A	B	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	85.3
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	9.7
Intersection LOS:	A
Intersection Capacity Utilization:	63.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 11: Park Rd & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↙↘	↘	↘	↙↘↗		↘↗	↙↘↗	↘	↘↗	↙↘↗	
Volume (vph)	81	796	397	199	471	105	78	214	228	22	85	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.977				0.850		0.949	
Flt Protected	0.950			0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3390	1583	1522	4662	0	3433	5085	1583	3433	4826	0
Flt Permitted	0.157	0.669		0.245	0.688		0.950			0.950		
Satd. Flow (perm)	266	2268	1583	392	3230	0	3433	5085	1583	3433	4826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			308		24				255		49	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	112	1099	548	275	650	145	87	240	255	25	95	49
Shared Lane Traffic (%)	10%			50%								
Lane Group Flow (vph)	101	1110	548	137	933	0	87	240	255	25	144	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1		6
Permitted Phases	3		3	4					2			

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009

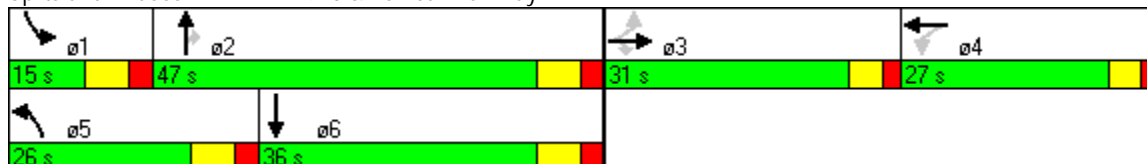


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.17	0.17		0.15	0.35	0.35	0.06	0.27	
v/c Ratio	1.84	2.38	0.96	2.01	1.61		0.17	0.13	0.35	0.11	0.11	
Control Delay	467.7	651.8	51.0	531.8	314.9		46.6	27.4	4.7	56.0	22.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	467.7	651.8	51.0	531.8	314.9		46.6	27.4	4.7	56.0	22.8	
LOS	F	F	D	F	F		D	C	A	E	C	
Approach Delay		454.0			342.7			20.3			27.7	
Approach LOS		F			F			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	124
Natural Cycle:	145
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.38
Intersection Signal Delay:	330.1
Intersection LOS:	F
Intersection Capacity Utilization:	76.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↙	↘	↗	↖	↑↑↑		↘	↑↑↑	
Volume (vph)	20	19	10	41	15	19	8	692	131	35	530	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	200		0	200		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.972				0.850		0.976			0.997	
Flt Protected		0.980		0.950	0.977		0.950			0.950		
Satd. Flow (prot)	0	1774	0	1681	1729	1583	1770	4963	0	1770	5070	0
Flt Permitted		0.852		0.465	0.637		0.950			0.950		
Satd. Flow (perm)	0	1543	0	823	1127	1583	1770	4963	0	1770	5070	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				22		45			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1193			2701			633			1959	
Travel Time (s)		27.1			61.4			14.4			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	23	22	12	48	18	22	9	812	154	41	622	13
Shared Lane Traffic (%)				33%								
Lane Group Flow (vph)	0	57	0	32	34	22	9	966	0	41	635	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3		3						

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	872	10	5	729	26	10	17	5	57	42	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.995			0.965				0.902
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3522	0	1770	1798	0	1770	1680	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3532	0	1770	3522	0	1770	1798	0	1770	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			5			6				92
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	48	1014	12	6	848	30	12	20	6	66	49	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	1026	0	6	878	0	12	26	0	66	141	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	16.0	27.0	0.0	16.0	27.0	0.0	16.0	16.0	0.0	16.0	16.0	0.0
Total Split (%)	21.3%	36.0%	0.0%	21.3%	36.0%	0.0%	21.3%	21.3%	0.0%	21.3%	21.3%	0.0%
Maximum Green (s)	10.5	21.5		10.5	21.5		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	6.2	33.9		5.3	31.4		5.2	5.7		6.8	8.9	
Actuated g/C Ratio	0.11	0.62		0.10	0.58		0.10	0.10		0.12	0.16	
v/c Ratio	0.24	0.47		0.03	0.43		0.07	0.13		0.30	0.40	
Control Delay	29.5	10.7		30.0	13.1		29.5	26.0		28.9	14.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.5	10.7		30.0	13.1		29.5	26.0		28.9	14.1	
LOS	C	B		C	B		C	C		C	B	
Approach Delay		11.6			13.2			27.1			18.8	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	54.4
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	13.2
Intersection LOS:	B
Intersection Capacity Utilization:	54.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
1/14/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Volume (vph)	938	68	67	959	53	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.990				0.937	
Flt Protected			0.950		0.974	
Satd. Flow (prot)	3504	0	1770	3539	1700	0
Flt Permitted			0.950		0.974	
Satd. Flow (perm)	3504	0	1770	3539	1700	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1368	
Travel Time (s)	35.3			19.7	31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%
Adj. Flow (vph)	1295	94	92	1324	73	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1389	0	92	1324	137	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.7%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	526	17	43	772	115	66	296	12	205	365	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.981			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3472	0	1770	1852	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3522	0	1770	3472	0	1770	1852	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			14			1				165
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	206	726	23	59	1066	159	76	341	14	236	421	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	206	749	0	59	1225	0	76	355	0	236	421	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

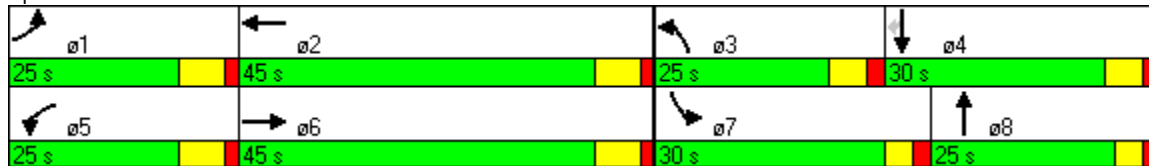


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effect Green (s)	16.8	49.2		8.6	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.14	0.40		0.07	0.31		0.15	0.16		0.20	0.19	0.19
v/c Ratio	0.85	0.53		0.48	1.12		0.28	1.18		0.66	1.16	0.49
Control Delay	82.1	31.0		68.0	105.7		49.9	154.3		55.5	142.9	16.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	82.1	31.0		68.0	105.7		49.9	154.3		55.5	142.9	16.6
LOS	F	C		E	F		D	F		E	F	B
Approach Delay		42.0			104.0			135.9			87.9	
Approach LOS		D			F			F			F	

Intersection Summary

Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	123.4
Natural Cycle:	120
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.18
Intersection Signal Delay:	87.2
Intersection LOS:	F
Intersection Capacity Utilization:	90.7%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	916	99	82	855	3	48	2	47	16	27	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.999			0.934			0.972	
Flt Protected	0.950			0.950				0.976			0.986	
Satd. Flow (prot)	1770	3486	0	1770	3536	0	0	1698	0	0	1785	0
Flt Permitted	0.950			0.950				0.835			0.914	
Satd. Flow (perm)	1770	3486	0	1770	3536	0	0	1453	0	0	1655	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						25			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	6	1264	137	113	1180	4	55	2	54	18	31	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	1401	0	113	1184	0	0	111	0	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive

1/14/2009

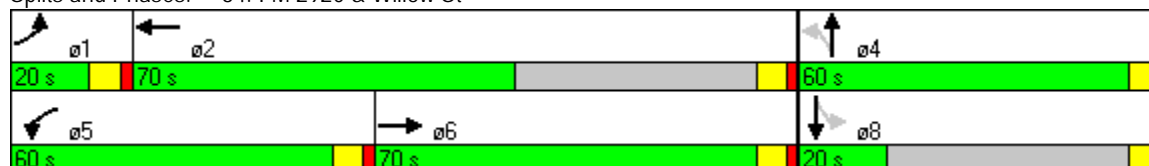


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.3	63.1		15.0	82.5			54.5			54.5	
Actuated g/C Ratio	0.03	0.41		0.10	0.54			0.36			0.36	
v/c Ratio	0.10	0.97		0.65	0.62			0.21			0.10	
Control Delay	75.8	60.3		83.2	26.2			27.9			30.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	75.8	60.3		83.2	26.2			27.9			30.3	
LOS	E	E		F	C			C			C	
Approach Delay		60.4			31.2			27.9			30.3	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	190
Actuated Cycle Length:	152.1
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	45.3
Intersection LOS:	D
Intersection Capacity Utilization:	68.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	6	820	42	20	736	14	68	94	88	58	158	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.997			0.953			0.984	
Flt Protected					0.999			0.987			0.988	
Satd. Flow (prot)	0	3514	0	0	3525	0	0	1752	0	0	1811	0
Flt Permitted		0.908			0.713			0.812			0.638	
Satd. Flow (perm)	0	3191	0	0	2516	0	0	1441	0	0	1169	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			2			34			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	7	954	49	23	856	16	79	109	102	67	184	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1010	0	0	895	0	0	290	0	0	284	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
1/14/2009

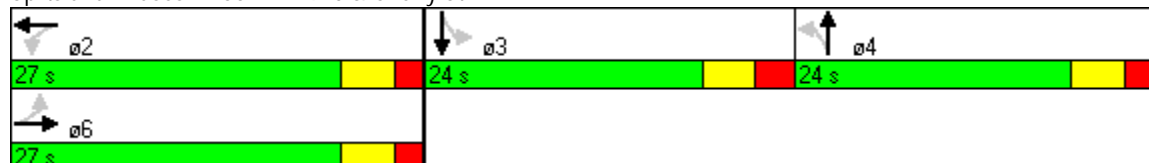


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	36.0%	36.0%	0.0%	36.0%	36.0%	0.0%	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%
Maximum Green (s)	21.5	21.5		21.5	21.5		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effect Green (s)		21.5			21.5			18.0			18.0	
Actuated g/C Ratio		0.29			0.29			0.24			0.24	
v/c Ratio		1.10			1.24			0.78			0.99	
Control Delay		88.0			145.9			40.2			82.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		88.0			145.9			40.2			82.1	
LOS		F			F			D			F	
Approach Delay		88.0			145.9			40.2			82.1	
Approach LOS		F			F			D			F	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 102.6
 Intersection LOS: F
 Intersection Capacity Utilization 68.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	8	782	29	17	752	19	19	17	45	23	13	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.996			0.925			0.966	
Flt Protected					0.999			0.988			0.976	
Satd. Flow (prot)	0	3522	0	0	3522	0	0	1702	0	0	1756	0
Flt Permitted		0.947			0.927			0.903			0.842	
Satd. Flow (perm)	0	3335	0	0	3268	0	0	1556	0	0	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			52			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	9	910	34	20	875	22	22	20	52	27	15	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	953	0	0	917	0	0	94	0	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		39.5		39.5	39.5		7.5	7.5		7.5	7.5	
Actuated g/C Ratio		0.72		0.72	0.72		0.14	0.14		0.14	0.14	
v/c Ratio		0.39		0.39	0.39		0.36	0.36		0.25	0.25	
Control Delay		4.6		4.6	4.6		15.8	15.8		19.8	19.8	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		4.6		4.6	4.6		15.8	15.8		19.8	19.8	
LOS		A		A	A		B	B		B	B	
Approach Delay		4.6		4.6	4.6		15.8	15.8		19.8	19.8	
Approach LOS		A		A	A		B	B		B	B	

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	54.5
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.39
Intersection Signal Delay:	5.5
Intersection LOS:	A
Intersection Capacity Utilization:	50.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	832	0	0	736	61	0	0	0	36	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3500	0	0	1863	0	1770	0	1583
Flt Permitted	0.157									0.950		
Satd. Flow (perm)	292	3539	0	0	3500	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12							80
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	29	968	0	0	856	71	0	0	0	42	0	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	968	0	0	927	0	0	0	0	42	0	80
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Detector 1 Position(ft)	0	0			0		0	0		0		0
Detector 1 Size(ft)	20	6			6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009

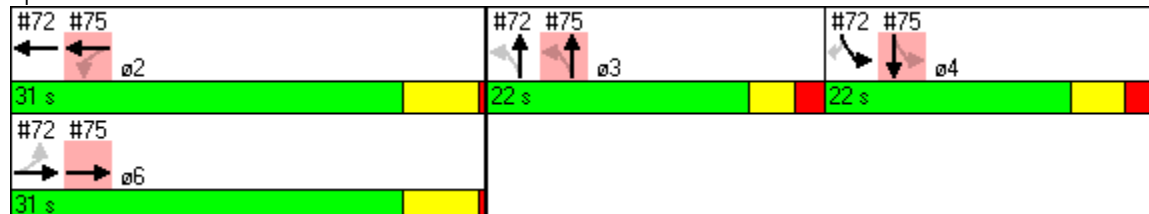


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	31.0	31.0	0.0	0.0	31.0	0.0	22.0	22.0	0.0	22.0	0.0	22.0
Total Split (%)	41.3%	41.3%	0.0%	0.0%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	0.0%	29.3%
Maximum Green (s)	25.5	25.5			25.5		17.0	17.0		16.0		16.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Recall Mode	Max	Max			C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	25.5	25.5			25.5					16.0		16.0
Actuated g/C Ratio	0.34	0.34			0.34					0.21		0.21
v/c Ratio	0.29	0.80			0.77					0.11		0.20
Control Delay	7.7	6.8			27.2					24.8		7.9
Queue Delay	3.1	3.3			0.0					0.0		2.9
Total Delay	10.9	10.0			27.2					24.8		10.8
LOS	B	B			C					C		B
Approach Delay		10.0			27.2							
Approach LOS		B			C							

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 18.2
 Intersection LOS: B
 Intersection Capacity Utilization 39.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	853	70	52	886	0	10	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.989						0.927				0.865
Fl _t Protected				0.950				0.977				
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	1687	0	0	1611	0
Fl _t Permitted				0.157				0.404				
Satd. Flow (perm)	0	3500	0	292	3539	0	0	698	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12						14				419
Link Speed (mph)		30			30			30				30
Link Distance (ft)		464			112			489				304
Travel Time (s)		10.5			2.5			11.1				6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	0	992	81	60	1030	0	12	0	14	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1073	0	60	1030	0	0	26	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009

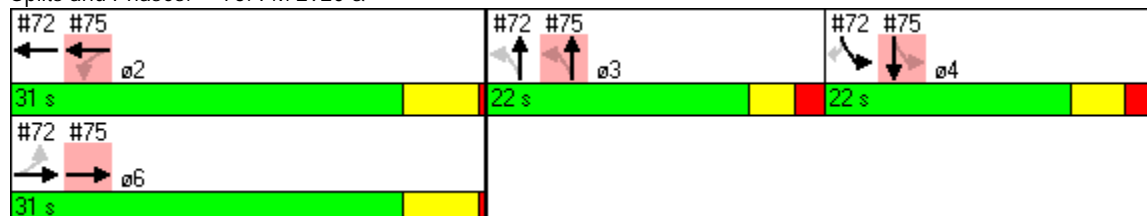


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		2	2		3	3		4	4	
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	31.0	0.0	31.0	31.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	0.0%	41.3%	0.0%	41.3%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)		25.5		25.5	25.5		17.0	17.0		16.0	16.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode		Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		25.5		25.5	25.5		17.0	17.0		16.0	16.0	
Actuated g/C Ratio		0.34		0.34	0.34		0.23	0.23		0.21	0.21	
v/c Ratio		0.90		0.61	0.86		0.15	0.15		0.00	0.00	
Control Delay		34.9		31.6	14.2		18.0	18.0		0.0	0.0	
Queue Delay		0.5		4.6	4.5		0.8	0.8		0.0	0.0	
Total Delay		35.3		36.2	18.6		18.8	18.8		0.0	0.0	
LOS		D		D	B		B	B		A	A	
Approach Delay		35.3			19.6		18.8	18.8		0.0	0.0	
Approach LOS		D			B		B	B		A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 27.3
 Intersection LOS: C
 Intersection Capacity Utilization 63.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	884	17	100	767	22	12	20	56	27	52	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.996			0.914				0.850
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1770	3529	0	1770	3525	0	0	1691	0	0	1831	1583
Flt Permitted	0.950			0.950				0.962			0.894	
Satd. Flow (perm)	1770	3529	0	1770	3525	0	0	1638	0	0	1665	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			65				51
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	21	1028	20	116	892	26	14	23	65	31	60	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	1048	0	116	918	0	0	102	0	0	91	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8		4			4

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009

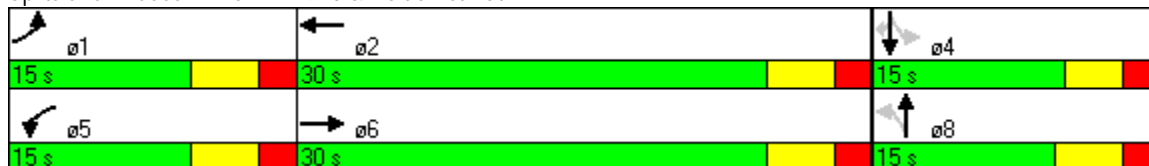


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.1	24.7		8.4	30.9			22.2			22.7	22.7
Actuated g/C Ratio	0.10	0.36		0.12	0.45			0.32			0.33	0.33
v/c Ratio	0.12	0.83		0.54	0.58			0.18			0.17	0.09
Control Delay	31.5	28.4		39.4	17.0			9.7			19.2	6.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	31.5	28.4		39.4	17.0			9.7			19.2	6.4
LOS	C	C		D	B			A			B	A
Approach Delay		28.5			19.5			9.7			14.6	
Approach LOS		C			B			A			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	68.9
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	22.9
Intersection LOS:	C
Intersection Capacity Utilization:	58.6%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	927	0	2	875	22	1	4	1	33	3	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996			0.981			0.919	
Flt Protected	0.950			0.950				0.993			0.982	
Satd. Flow (prot)	1770	3539	0	1770	3525	0	0	1815	0	0	1681	0
Flt Permitted	0.950			0.950				0.955			0.876	
Satd. Flow (perm)	1770	3539	0	1770	3525	0	0	1745	0	0	1500	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					4			1			62	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	13	1078	0	2	1018	26	1	5	1	38	3	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1078	0	2	1044	0	0	7	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009

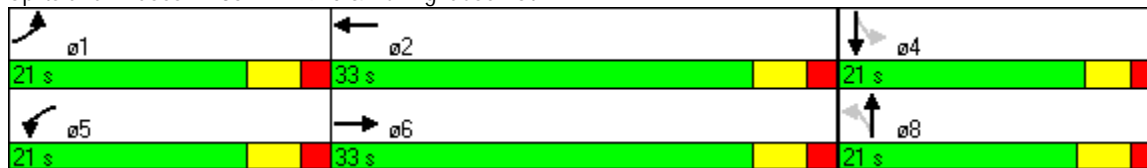


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	21.0	33.0	0.0	21.0	33.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	28.0%	44.0%	0.0%	28.0%	44.0%	0.0%	28.0%	28.0%	0.0%	28.0%	28.0%	0.0%
Maximum Green (s)	15.5	27.5		15.5	27.5		15.5	15.5		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.1	35.0		7.1	35.0			7.5			7.9	
Actuated g/C Ratio	0.14	0.67		0.14	0.67			0.14			0.15	
v/c Ratio	0.05	0.45		0.01	0.44			0.03			0.37	
Control Delay	21.0	7.4		20.5	7.2			18.8			14.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	21.0	7.4		20.5	7.2			18.8			14.3	
LOS	C	A		C	A			B			B	
Approach Delay		7.5			7.3			18.8			14.3	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 51.9
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 7.7
 Intersection LOS: A
 Intersection Capacity Utilization 47.1%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 85: FM 2920 & Buvinghausen St





Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	202		890			276
Travel Time (s)	4.6		20.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1221	0	0	503	18	180	71	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Frt					0.995			0.986				
Flt Protected	0.950							0.969				
Satd. Flow (prot)	1770	5085	0	0	6376	0	0	4859	0	0	0	0
Flt Permitted	0.950							0.969				
Satd. Flow (perm)	1770	5085	0	0	6376	0	0	4859	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			14				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1955				1199
Travel Time (s)		8.3			18.8			44.4				27.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	127%	127%	127%
Adj. Flow (vph)	193	1686	0	0	694	25	207	82	30	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	1686	0	0	719	0	0	319	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009

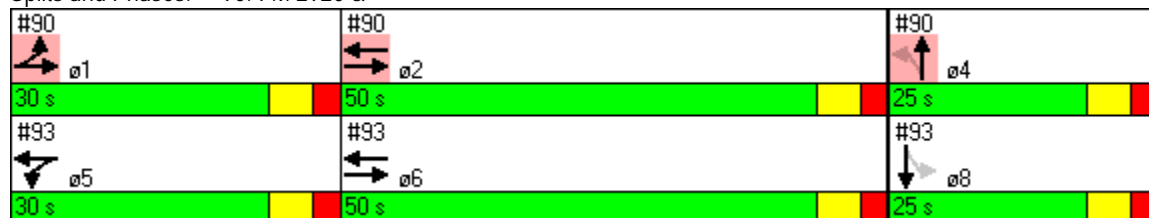


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	1.0				1.0		1.0		1.0			
Recall Mode	None				C-Max		None		None			
Walk Time (s)					7.0		7.0		7.0			
Flash Dont Walk (s)					12.0		13.0		13.0			
Pedestrian Calls (#/hr)					0		0		0			
Act Effect Green (s)	20.3	73.7			46.9				17.8			
Actuated g/C Ratio	0.19	0.70			0.45				0.17			
v/c Ratio	0.56	0.47			0.25				0.38			
Control Delay	53.4	7.0			18.7				38.4			
Queue Delay	0.0	0.1			0.0				0.0			
Total Delay	53.4	7.1			18.7				38.4			
LOS	D	A			B				D			
Approach Delay		11.8			18.7				38.4			
Approach LOS		B			B				D			

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	16.4
Intersection LOS:	B
Intersection Capacity Utilization:	60.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↑↑↑↑	
Volume (vph)	0	871	326	83	600	0	0	0	0	490	51	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.959									0.965	
Flt Protected				0.950							0.966	
Satd. Flow (prot)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Flt Permitted				0.950							0.966	
Satd. Flow (perm)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110									63	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		735			367			1952			1208	
Travel Time (s)		16.7			8.3			44.4			27.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	127%	127%	127%	106%	106%	106%
Adj. Flow (vph)	0	1202	450	115	828	0	0	0	0	565	59	188
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1652	0	115	828	0	0	0	0	0	812	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6						8	
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		56.2		11.0	73.7						17.8	
Actuated g/C Ratio		0.54		0.10	0.70						0.17	
v/c Ratio		0.49		0.62	0.23						1.60dl	
Control Delay		15.2		64.6	5.5						60.9	
Queue Delay		0.0		0.0	0.1						0.0	
Total Delay		15.2		64.6	5.6						60.9	
LOS		B		E	A						E	
Approach Delay		15.2			12.8						60.9	
Approach LOS		B			B						E	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 25.4
 Intersection LOS: C
 Intersection Capacity Utilization 60.9%
 ICU Level of Service B
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	30	286	27	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.987			
Flt Protected						
Satd. Flow (prot)	0	1611	5019	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	5019	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	1193		636			1955
Travel Time (s)	27.1		14.5			44.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	0	35	336	32	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	35	368	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.6%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	17	0	0	432	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	5080	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	5080	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2831			714	1952	
Travel Time (s)	64.3			16.2	44.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	0	20	0	0	507	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	0	0	511	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1990				618				233		163	
Travel Time (s)	45.2				14.0				5.3		3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				12				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane	Yes				Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		9		15		9	
Sign Control	Free				Free				Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

**2011 NO-BUILD CONDITION
ANALYSIS**

[PM PEAK HOUR]

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕			↕	
Volume (vph)	0	474	25	3	663	0	36	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		3	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.992						0.968				
Fl _t Protected				0.950				0.963				
Satd. Flow (prot)	1863	3511	0	1770	3539	0	0	1736	0	0	1863	0
Fl _t Permitted				0.950				0.778				
Satd. Flow (perm)	1863	3511	0	1770	3539	0	0	1403	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						13				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				207
Travel Time (s)		52.0			47.5			45.0				4.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	0	654	35	4	915	0	41	0	13	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	689	0	4	915	0	0	54	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		58.9		5.1	61.1			6.9				
Actuated g/C Ratio		0.77		0.07	0.80			0.09				
v/c Ratio		0.25		0.03	0.32			0.39				
Control Delay		4.3		33.0	3.2			33.7				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		4.3		33.0	3.2			33.7				
LOS		A		C	A			C				
Approach Delay		4.3			3.3			33.7				
Approach LOS		A			A			C				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	76.2
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.39
Intersection Signal Delay:	4.7
Intersection LOS:	A
Intersection Capacity Utilization:	37.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Drive &



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	23	48	86	24	27	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.909		0.970			
Flt Protected	0.984					0.979
Satd. Flow (prot)	1666	0	1807	0	0	1824
Flt Permitted	0.984					0.979
Satd. Flow (perm)	1666	0	1807	0	0	1824
Link Speed (mph)	30		30			30
Link Distance (ft)	2831		624			1981
Travel Time (s)	64.3		14.2			45.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	106%	106%	106%	106%
Adj. Flow (vph)	32	66	99	28	31	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	0	127	0	0	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.3%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	978	33	62	1164	132	39	7	67	187	9	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.995				0.850		0.911				0.882
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	0	3169	0	1770	1643	0
Flt Permitted	0.950			0.950				0.836		0.670		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	0	2695	0	1248	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				182		77				37
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	50	1350	46	86	1607	182	45	8	77	215	10	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	1396	0	86	1607	182	0	130	0	215	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8			4		

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effect Green (s)	7.2	54.3		8.9	58.3	58.3		14.6		14.6	14.6	
Actuated g/C Ratio	0.08	0.59		0.10	0.63	0.63		0.16		0.16	0.16	
v/c Ratio	0.36	0.68		0.51	0.72	0.17		0.27		1.10	0.16	
Control Delay	49.3	16.4		51.2	15.5	1.9		18.5		132.7	17.2	
Queue Delay	0.0	0.0		0.0	0.1	0.0		0.0		0.0	0.0	
Total Delay	49.3	16.4		51.2	15.6	1.9		18.5		132.7	17.2	
LOS	D	B		D	B	A		B		F	B	
Approach Delay		17.5			15.9			18.5			112.0	
Approach LOS		B			B			B			F	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	92.8
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.10
Intersection Signal Delay:	23.4
Intersection LOS:	C
Intersection Capacity Utilization:	77.3%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd & FM 2920



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	21	51	86	764	987	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.904				0.994	
Flt Protected	0.986		0.950			
Satd. Flow (prot)	1660	0	1770	3539	3518	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1660	0	1770	3539	3518	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	59				6	
Link Speed (mph)	30			30	30	
Link Distance (ft)	737			1353	532	
Travel Time (s)	16.8			30.8	12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	106%	106%	127%	127%	127%	127%
Adj. Flow (vph)	24	59	119	1055	1362	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	83	0	119	1055	1419	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Prot			
Protected Phases	4		1	6	2	
Permitted Phases						

Lanes, Volumes, Timings
11: Park Rd & FM 2920

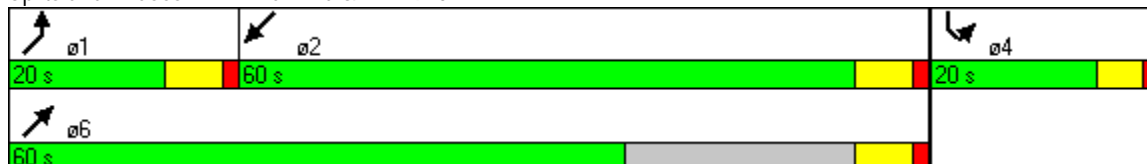


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		11.5	22.5	30.5	
Total Split (s)	20.0	0.0	20.0	60.0	60.0	0.0
Total Split (%)	20.0%	0.0%	20.0%	60.0%	60.0%	0.0%
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.0	6.5	6.5	6.5	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		2.0	1.5	1.5	
Recall Mode	None		None	Max	Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	6.6		9.9	69.9	56.8	
Actuated g/C Ratio	0.08		0.12	0.83	0.68	
v/c Ratio	0.45		0.57	0.36	0.60	
Control Delay	25.2		48.7	3.0	12.6	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	25.2		48.7	3.0	12.6	
LOS	C		D	A	B	
Approach Delay	25.2			7.6	12.6	
Approach LOS	C			A	B	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	84.1
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	10.8
Intersection LOS:	B
Intersection Capacity Utilization:	62.3%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 11: Park Rd & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↙↘	↗	↘	↙↘↗		↘↗	↙↘↗	↗	↘↗	↙↘↗	
Volume (vph)	83	422	216	203	484	149	267	487	206	43	83	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.969				0.850		0.929	
Flt Protected	0.950	0.998		0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3383	1583	1522	4624	0	3433	5085	1583	3433	4724	0
Flt Permitted	0.157	0.554		0.409	0.770		0.950			0.950		
Satd. Flow (perm)	266	1878	1583	655	3586	0	3433	5085	1583	3433	4724	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			298		41				231		83	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	115	583	298	280	668	206	299	545	231	48	93	83
Shared Lane Traffic (%)	25%			48%								
Lane Group Flow (vph)	86	612	298	146	1008	0	299	545	231	48	176	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1		6
Permitted Phases	3		3	4					2			

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009

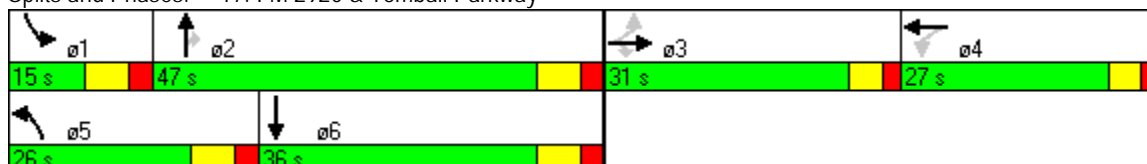


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.17	0.17		0.15	0.35	0.35	0.06	0.27	
v/c Ratio	1.56	1.59	0.53	1.28	1.54		0.57	0.30	0.32	0.22	0.13	
Control Delay	358.9	309.1	8.3	219.3	283.1		53.5	29.5	4.7	57.6	18.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	358.9	309.1	8.3	219.3	283.1		53.5	29.5	4.7	57.6	18.4	
LOS	F	F	A	F	F		D	C	A	E	B	
Approach Delay		223.4			275.0			30.8			26.8	
Approach LOS		F			F			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	124
Natural Cycle:	145
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.59
Intersection Signal Delay:	167.9
Intersection LOS:	F
Intersection Capacity Utilization:	67.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	15	24	161	35	47	17	963	38	12	715	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	200		0	200		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.962				0.850		0.994			0.994	
Flt Protected		0.974		0.950	0.969		0.950			0.950		
Satd. Flow (prot)	0	1745	0	1681	1715	1583	1770	5055	0	1770	5055	0
Flt Permitted		0.765		0.542	0.645		0.950			0.950		
Satd. Flow (perm)	0	1371	0	959	1141	1583	1770	5055	0	1770	5055	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				55		7			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1193			2701			633			1959	
Travel Time (s)		27.1			61.4			14.4			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	54	18	28	189	41	55	20	1130	45	14	839	35
Shared Lane Traffic (%)				40%								
Lane Group Flow (vph)	0	100	0	113	117	55	20	1175	0	14	874	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3		3						

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	649	12	10	1012	35	38	54	6	23	24	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.985				0.882
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3522	0	1770	1835	0	1770	1643	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3522	0	1770	1835	0	1770	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6				105
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	79	755	14	12	1177	41	44	63	7	27	28	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	769	0	12	1218	0	44	70	0	27	133	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009

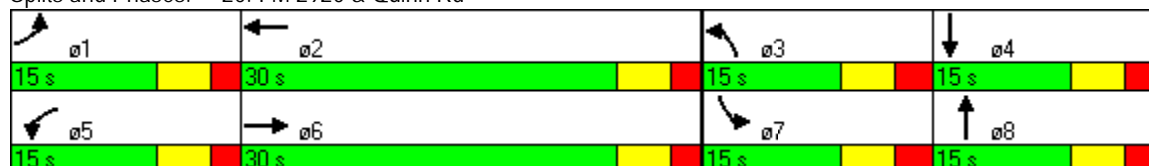


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	0.0
Total Split (%)	20.0%	40.0%	0.0%	20.0%	40.0%	0.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.0	9.0		9.0	9.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	7.0	37.1		5.4	31.9		6.3	9.1		5.8	6.6	
Actuated g/C Ratio	0.12	0.62		0.09	0.53		0.10	0.15		0.10	0.11	
v/c Ratio	0.38	0.35		0.07	0.65		0.24	0.25		0.16	0.49	
Control Delay	34.1	10.5		32.6	21.0		32.4	26.8		32.5	17.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.1	10.5		32.6	21.0		32.4	26.8		32.5	17.4	
LOS	C	B		C	C		C	C		C	B	
Approach Delay		12.7			21.1			29.0			19.9	
Approach LOS		B			C			C			B	

Intersection Summary

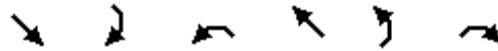
Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	60
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	18.3
Intersection LOS:	B
Intersection Capacity Utilization	65.5%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
1/14/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Volume (vph)	1032	54	34	893	101	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.992				0.938	
Flt Protected			0.950		0.974	
Satd. Flow (prot)	3511	0	1770	3539	1702	0
Flt Permitted			0.950		0.974	
Satd. Flow (perm)	3511	0	1770	3539	1702	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1368	
Travel Time (s)	35.3			19.7	31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%
Adj. Flow (vph)	1425	75	47	1233	139	119
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1500	0	47	1233	258	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.9%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	471	24	30	520	159	22	327	7	112	214	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.965			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			33			1				111
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	286	650	33	41	718	219	25	377	8	129	247	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	286	683	0	41	937	0	25	385	0	129	247	111
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

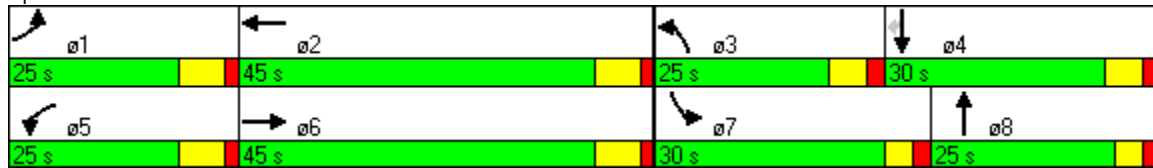


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effect Green (s)	18.5	51.8		7.5	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.15	0.41		0.06	0.31		0.15	0.16		0.20	0.19	0.19
v/c Ratio	1.09	0.47		0.39	0.87		0.09	1.29		0.36	0.69	0.28
Control Delay	131.6	28.7		66.3	49.6		46.7	196.0		46.6	58.2	9.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	131.6	28.7		66.3	49.6		46.7	196.0		46.6	58.2	9.6
LOS	F	C		E	D		D	F		D	E	A
Approach Delay		59.1			50.3			186.9			44.0	
Approach LOS		E			D			F			D	

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 125
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.29
 Intersection Signal Delay: 71.9
 Intersection LOS: E
 Intersection Capacity Utilization 83.7%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	940	18	0	1061	26	14	1	7	8	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.996			0.957			0.920	
Flt Protected	0.950							0.969			0.980	
Satd. Flow (prot)	1770	3529	0	1863	3525	0	0	1727	0	0	1679	0
Flt Permitted	0.950							0.881			0.933	
Satd. Flow (perm)	1770	3529	0	1863	3525	0	0	1571	0	0	1599	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			8			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	106%	106%	106%
Adj. Flow (vph)	28	1298	25	0	1465	36	16	1	8	9	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	1323	0	0	1501	0	0	25	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive

1/14/2009

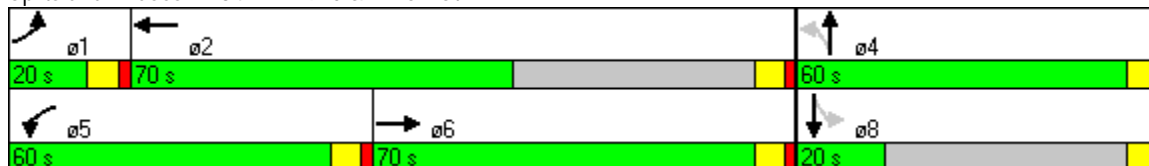


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)	6.8	71.7			63.2			54.6			54.6	
Actuated g/C Ratio	0.05	0.52			0.46			0.39			0.39	
v/c Ratio	0.32	0.73			0.94			0.04			0.03	
Control Delay	75.4	28.5			48.4			21.9			17.2	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	75.4	28.5			48.4			21.9			17.2	
LOS	E	C			D			C			B	
Approach Delay		29.5			48.4			21.9			17.2	
Approach LOS		C			D			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	190
Actuated Cycle Length:	138.9
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	39.1
Intersection LOS:	D
Intersection Capacity Utilization:	52.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	13	881	41	19	890	35	86	258	57	46	123	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.994			0.981			0.979	
Flt Protected		0.999			0.999			0.989			0.989	
Satd. Flow (prot)	0	3511	0	0	3514	0	0	1807	0	0	1804	0
Flt Permitted		0.890			0.846			0.860			0.616	
Satd. Flow (perm)	0	3128	0	0	2976	0	0	1572	0	0	1123	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			10			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	15	1025	48	22	1035	41	100	300	66	54	143	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1088	0	0	1098	0	0	466	0	0	233	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive

1/14/2009

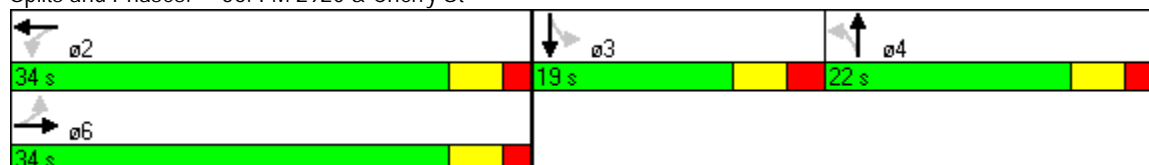


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	22.0	22.0	0.0	19.0	19.0	0.0
Total Split (%)	45.3%	45.3%	0.0%	45.3%	45.3%	0.0%	29.3%	29.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	28.5	28.5		28.5	28.5		16.0	16.0		13.0	13.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effect Green (s)		28.5			28.5			16.0			13.0	
Actuated g/C Ratio		0.38			0.38			0.21			0.17	
v/c Ratio		0.91			0.97			1.36			1.14	
Control Delay		35.2			44.4			207.0			138.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		35.2			44.4			207.0			138.2	
LOS		D			D			F			F	
Approach Delay		35.2			44.4			207.0			138.2	
Approach LOS		D			D			F			F	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.36
 Intersection Signal Delay: 74.8
 Intersection Capacity Utilization 82.2%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service E

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	30	853	23	20	911	16	61	30	82	10	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.997			0.936			0.942	
Flt Protected		0.998			0.999			0.983			0.983	
Satd. Flow (prot)	0	3518	0	0	3525	0	0	1714	0	0	1725	0
Flt Permitted		0.891			0.922			0.869			0.864	
Satd. Flow (perm)	0	3141	0	0	3253	0	0	1515	0	0	1516	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			5			69			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	35	992	27	23	1060	19	71	35	95	12	8	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1054	0	0	1102	0	0	201	0	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		35.7			35.7			9.2			9.2	
Actuated g/C Ratio		0.64			0.64			0.16			0.16	
v/c Ratio		0.53			0.53			0.65			0.13	
Control Delay		7.0			7.0			25.0			15.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.0			7.0			25.0			15.2	
LOS		A			A			C			B	
Approach Delay		7.0			7.0			25.0			15.2	
Approach LOS		A			A			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	55.9
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	8.6
Intersection LOS:	A
Intersection Capacity Utilization:	72.9%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	845	0	0	1129	61	0	0	0	46	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3511	0	0	1863	0	1770	0	1583
Flt Permitted	0.117									0.950		
Satd. Flow (perm)	218	3539	0	0	3511	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9							73
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	69	983	0	0	1313	71	0	0	0	54	0	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	983	0	0	1384	0	0	0	0	54	0	73
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Detector 1 Position(ft)	0	0			0		0	0		0		0
Detector 1 Size(ft)	20	6			6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009

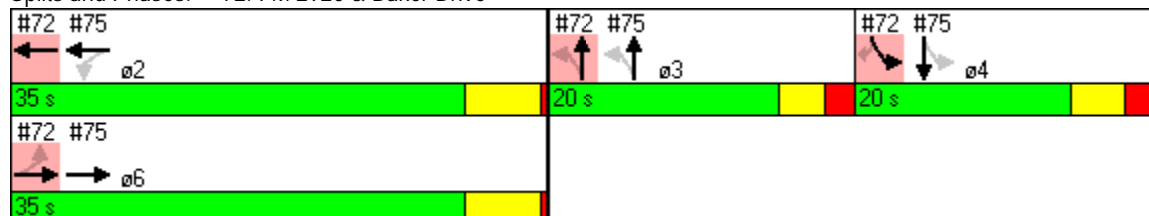


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	35.0	35.0	0.0	0.0	35.0	0.0	20.0	20.0	0.0	20.0	0.0	20.0
Total Split (%)	46.7%	46.7%	0.0%	0.0%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	0.0%	26.7%
Maximum Green (s)	29.5	29.5			29.5		15.0	15.0		14.0		14.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Recall Mode	None	None			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	45.4	45.4			45.4					7.6		7.6
Actuated g/C Ratio	0.61	0.61			0.61					0.10		0.10
v/c Ratio	0.52	0.46			0.65					0.30		0.32
Control Delay	24.2	2.5			15.9					35.4		12.5
Queue Delay	0.0	0.0			0.0					0.0		0.3
Total Delay	24.2	2.5			15.9					35.4		12.8
LOS	C	A			B					D		B
Approach Delay		3.9			15.9							
Approach LOS		A			B							

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 11.3
 Intersection LOS: B
 Intersection Capacity Utilization 63.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	839	2	29	1123	1	24	0	35	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t								0.920			0.865	
Fl _t Protected				0.950				0.980				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1679	0	0	1611	0
Fl _t Permitted				0.240				0.278				
Satd. Flow (perm)	0	3539	0	447	3539	0	0	476	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								41			315	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		464			112			489			304	
Travel Time (s)		10.5			2.5			11.1			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	0	976	2	34	1306	1	28	0	41	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	978	0	34	1307	0	0	69	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Detector 1 Position(ft)		0		0	0		0	0		0	0	
Detector 1 Size(ft)		6		20	6		20	6		20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94		94	94		94	94		94	94	
Detector 2 Size(ft)		6		6	6		6	6		6	6	
Detector 2 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3			4	
Permitted Phases				2			3			4		

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009

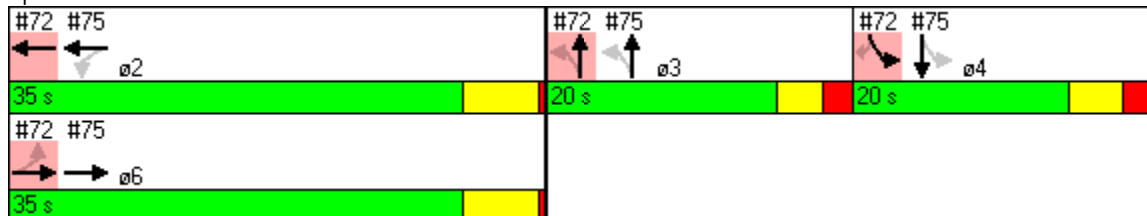


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		2	2		3	3		4	4	
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	35.0	0.0	35.0	35.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	0.0%	46.7%	0.0%	46.7%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%
Maximum Green (s)		29.5		29.5	29.5		15.0	15.0		14.0	14.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		45.4		45.4	45.4		11.5	11.5		7.6	7.6	
Actuated g/C Ratio		0.61		0.61	0.61		0.15	0.15		0.10	0.10	
v/c Ratio		0.46		0.13	0.61		0.64	0.64		0.00	0.00	
Control Delay		12.5		3.2	3.2		42.3	42.3		0.0	0.0	
Queue Delay		0.0		0.9	0.2		1.2	1.2		0.0	0.0	
Total Delay		12.5		4.1	3.3		43.5	43.5		0.0	0.0	
LOS		B		A	A		D	D		A	A	
Approach Delay		12.5			3.4		43.5	43.5		0.0	0.0	
Approach LOS		B			A		D	D			A	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 8.3
 Intersection Capacity Utilization 52.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

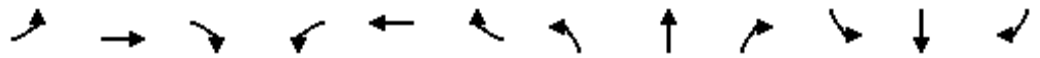
Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	740	14	52	1021	41	45	98	106	41	43	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.994			0.943				0.850
Flt Protected	0.950			0.950				0.991				0.976
Satd. Flow (prot)	1770	3529	0	1770	3518	0	0	1741	0	0	1818	1583
Flt Permitted	0.950			0.950				0.929				0.797
Satd. Flow (perm)	1770	3529	0	1770	3518	0	0	1632	0	0	1485	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			8			53				78
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	29	861	16	60	1187	48	52	114	123	48	50	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	877	0	60	1235	0	0	289	0	0	98	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009

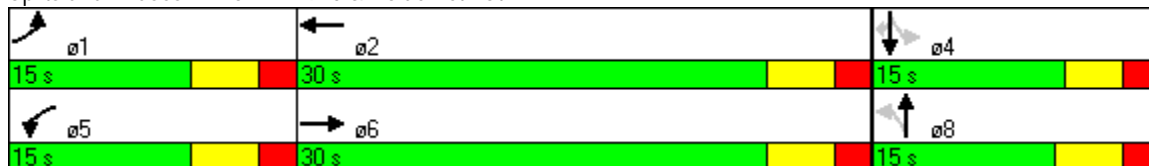


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.2	24.8		7.7	27.6			22.2			22.7	22.7
Actuated g/C Ratio	0.11	0.38		0.12	0.42			0.34			0.35	0.35
v/c Ratio	0.15	0.66		0.29	0.83			0.49			0.19	0.13
Control Delay	31.1	21.0		32.3	25.3			18.9			18.6	5.6
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	31.1	21.0		32.3	25.3			18.9			18.6	5.6
LOS	C	C		C	C			B			B	A
Approach Delay		21.4			25.6			18.9			12.8	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	65.7
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	22.6
Intersection LOS:	C
Intersection Capacity Utilization:	73.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	782	0	4	1161	25	11	3	3	21	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Flt					0.997			0.979				0.897
Flt Protected	0.950			0.950				0.967				0.991
Satd. Flow (prot)	1770	3539	0	1770	3529	0	0	1763	0	0	1656	0
Flt Permitted	0.950			0.950				0.716				0.931
Satd. Flow (perm)	1770	3539	0	1770	3529	0	0	1306	0	0	1556	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			3				99
Link Speed (mph)		30			30			30				30
Link Distance (ft)		276			698			93				609
Travel Time (s)		6.3			15.9			2.1				13.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%	107%
Adj. Flow (vph)	48	910	0	5	1350	29	13	3	3	24	7	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	910	0	5	1379	0	0	19	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4		4
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	19.0	37.0	0.0	19.0	37.0	0.0	19.0	19.0	0.0	19.0	19.0	0.0
Total Split (%)	25.3%	49.3%	0.0%	25.3%	49.3%	0.0%	25.3%	25.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	13.5	31.5		13.5	31.5		13.5	13.5		14.0	14.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.3	41.8		7.1	36.8			7.6			7.9	
Actuated g/C Ratio	0.12	0.71		0.12	0.63			0.13			0.13	
v/c Ratio	0.22	0.36		0.02	0.62			0.11			0.44	
Control Delay	27.8	6.0		26.0	12.3			24.4			14.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	27.8	6.0		26.0	12.3			24.4			14.7	
LOS	C	A		C	B			C			B	
Approach Delay		7.1			12.3			24.4			14.7	
Approach LOS		A			B			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 58.6
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 10.5
 Intersection LOS: B
 Intersection Capacity Utilization 52.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 85: FM 2920 & Buvinghausen St





Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	190		890			276
Travel Time (s)	4.3		20.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	809	0	0	803	33	294	149	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Frt					0.994			0.990				
Flt Protected	0.950							0.970				
Satd. Flow (prot)	1770	5085	0	0	6369	0	0	4883	0	0	0	0
Flt Permitted	0.950							0.970				
Satd. Flow (perm)	1770	5085	0	0	6369	0	0	4883	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			9				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1955				1199
Travel Time (s)		8.3			18.8			44.4				27.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	106%	106%	106%	127%	127%	127%
Adj. Flow (vph)	271	1117	0	0	1108	46	339	172	35	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	271	1117	0	0	1154	0	0	546	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009

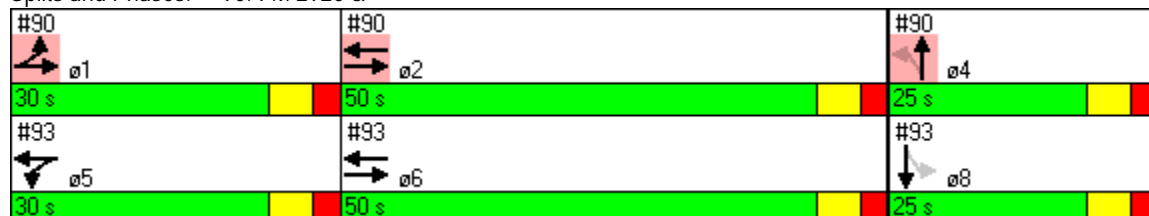


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	1.0				1.0		1.0		1.0			
Recall Mode	None				C-Max		None		None			
Walk Time (s)					7.0		7.0		7.0			
Flash Dont Walk (s)					12.0		13.0		13.0			
Pedestrian Calls (#/hr)					0		0		0			
Act Effct Green (s)	19.3	76.7			50.9				14.8			
Actuated g/C Ratio	0.18	0.73			0.48				0.14			
v/c Ratio	0.83	0.30			0.37				1.31dl			
Control Delay	74.2	4.6			18.3				51.1			
Queue Delay	0.2	0.1			0.0				0.0			
Total Delay	74.4	4.7			18.3				51.1			
LOS	E	A			B				D			
Approach Delay		18.3			18.3				51.1			
Approach LOS		B			B				D			

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 24.1
 Intersection LOS: C
 Intersection Capacity Utilization 57.2%
 ICU Level of Service B
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑↑↑						↔↑↑↑	
Volume (vph)	0	744	165	105	992	0	0	0	0	261	58	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.973									0.966	
Flt Protected				0.950							0.969	
Satd. Flow (prot)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Flt Permitted				0.950							0.969	
Satd. Flow (perm)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65									61	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		735			367			1952			1208	
Travel Time (s)		16.7			8.3			44.4			27.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	127%	127%	127%	127%	127%	127%	127%	127%	127%	106%	106%	106%
Adj. Flow (vph)	0	1027	228	145	1369	0	0	0	0	301	67	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1255	0	145	1369	0	0	0	0	0	476	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6						8	
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		55.0		15.1	76.7						14.8	
Actuated g/C Ratio		0.52		0.14	0.73						0.14	
v/c Ratio		0.38		0.57	0.37						1.00dl	
Control Delay		15.2		56.4	5.2						41.4	
Queue Delay		0.0		0.0	0.1						0.1	
Total Delay		15.2		56.4	5.3						41.5	
LOS		B		E	A						D	
Approach Delay		15.2			10.2						41.5	
Approach LOS		B			B						D	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 16.7
 Intersection LOS: B
 Intersection Capacity Utilization 57.2%
 ICU Level of Service B
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	84	486	41	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.988			
Flt Protected						
Satd. Flow (prot)	0	1611	5024	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	5024	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	1193		636			1955
Travel Time (s)	27.1		14.5			44.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	0	99	571	48	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	99	619	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.4%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑			↑↑↑	
Volume (vph)	0	3	0	0	207	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	5080	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	5080	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2831			714	1952	
Travel Time (s)	64.3			16.2	44.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	0	4	0	0	243	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	0	0	245	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.4%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1990				618				233		163	
Travel Time (s)	45.2				14.0				5.3		3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				12				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane	Yes				Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		9		15		9	
Sign Control	Free				Free				Stop		Stop	



















Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

**2035 NO-BUILD CONDITION
ANALYSIS
[AM PEAK HOUR]**

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1267	51	8	765	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.994						0.941				
Fl _t Protected				0.950				0.973				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1706	0	0	1863	0
Fl _t Permitted				0.950				0.825				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1446	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						27				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	154%	276%	276%
Adj. Flow (vph)	0	3801	153	24	2295	0	35	0	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3954	0	24	2295	0	0	62	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		58.9		5.8	63.5			6.7				
Actuated g/C Ratio		0.75		0.07	0.81			0.09				
v/c Ratio		1.49		0.18	0.80			0.42				
Control Delay		242.0		39.7	8.6			31.9				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		242.0		39.7	8.6			31.9				
LOS		F		D	A			C				
Approach Delay		242.0			9.0			31.9				
Approach LOS		F			A			C				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	78.3
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.49
Intersection Signal Delay:	154.7
Intersection LOS:	F
Intersection Capacity Utilization:	114.9%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Drive &



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	11	24	44	31	43	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.907		0.944			
Flt Protected	0.985					0.979
Satd. Flow (prot)	1664	0	1758	0	0	1824
Flt Permitted	0.985					0.979
Satd. Flow (perm)	1664	0	1758	0	0	1824
Link Speed (mph)	30		30			30
Link Distance (ft)	2831		624			1981
Travel Time (s)	64.3		14.2			45.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	154%	154%	154%	154%
Adj. Flow (vph)	33	72	74	52	72	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	126	0	0	167
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.4%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1296	16	21	643	88	2	4	4	75	6	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.998				0.850		0.938			0.891	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	0	3290	0	1770	1660	0
Flt Permitted	0.950			0.950				0.923		0.746		
Satd. Flow (perm)	1770	3532	0	1770	3539	1583	0	3064	0	1390	1660	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				224		7				27
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	75	3888	48	63	1929	264	3	7	7	126	10	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	3936	0	63	1929	264	0	17	0	126	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effect Green (s)	8.4	54.9		7.8	54.3	54.3		14.6		14.6	14.6	
Actuated g/C Ratio	0.09	0.59		0.08	0.59	0.59		0.16		0.16	0.16	
v/c Ratio	0.47	1.87		0.42	0.93	0.26		0.03		0.57	0.13	
Control Delay	50.4	415.2		49.8	28.1	3.0		26.7		49.2	18.9	
Queue Delay	0.0	0.0		0.0	0.3	0.0		0.0		0.0	0.0	
Total Delay	50.4	415.2		49.8	28.4	3.0		26.7		49.2	18.9	
LOS	D	F		D	C	A		C		D	B	
Approach Delay		408.4			26.0			26.7			42.4	
Approach LOS		F			C			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 92.3
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.87
 Intersection Signal Delay: 264.3
 Intersection LOS: F
 Intersection Capacity Utilization 122.9%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd & FM 2920

Medical Complex Drive
1/14/2009



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	40	91	43	1300	754	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.906				0.997	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1662	0	1770	3539	3529	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1662	0	1770	3539	3529	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	96				3	
Link Speed (mph)	30			30	30	
Link Distance (ft)	737			1353	532	
Travel Time (s)	16.8			30.8	12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	154%	154%	276%	276%	276%	276%
Adj. Flow (vph)	67	152	129	3900	2262	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	219	0	129	3900	2307	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Prot			
Protected Phases	4		1	6	2	
Permitted Phases						

Lanes, Volumes, Timings
11: Park Rd & FM 2920

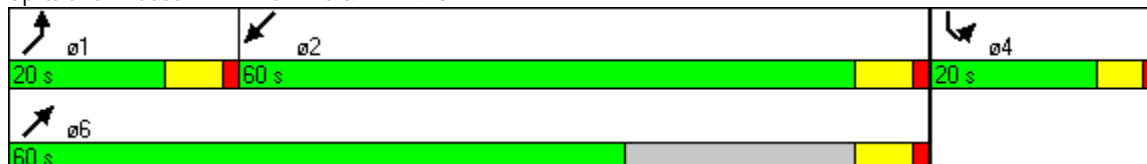


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		11.5	22.5	30.5	
Total Split (s)	20.0	0.0	20.0	60.0	60.0	0.0
Total Split (%)	20.0%	0.0%	20.0%	60.0%	60.0%	0.0%
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.0	6.5	6.5	6.5	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		2.0	1.5	1.5	
Recall Mode	None		None	Max	Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	10.8		10.6	70.9	53.7	
Actuated g/C Ratio	0.12		0.11	0.76	0.57	
v/c Ratio	0.79		0.64	1.46	1.14	
Control Delay	43.5		55.5	226.0	91.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	43.5		55.5	226.0	91.7	
LOS	D		E	F	F	
Approach Delay	43.5			220.5	91.7	
Approach LOS	D			F	F	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	93.7
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.46
Intersection Signal Delay:	169.3
Intersection LOS:	F
Intersection Capacity Utilization:	121.2%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 11: Park Rd & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	796	397	199	471	105	78	214	228	22	85	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.977				0.850		0.949	
Flt Protected	0.950	0.999		0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1522	4662	0	3433	5085	1583	3433	4826	0
Flt Permitted	0.157	0.500		0.186	0.679		0.950			0.950		
Satd. Flow (perm)	266	1695	1583	298	3188	0	3433	5085	1583	3433	4826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			306		24				307		59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	243	2388	1191	597	1413	315	105	288	307	30	115	59
Shared Lane Traffic (%)	18%			50%								
Lane Group Flow (vph)	199	2432	1191	298	2027	0	105	288	307	30	174	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3		4			5	2		1	6	
Permitted Phases	3		3	4					2			

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009

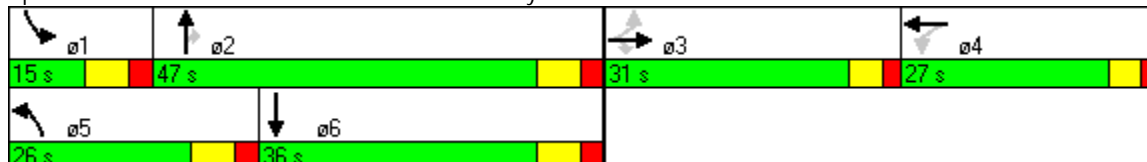


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effct Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.17	0.17		0.15	0.35	0.35	0.06	0.27	
v/c Ratio	3.62	6.97	2.09	5.73	3.88dl		0.20	0.16	0.40	0.14	0.13	
Control Delay	1237.6	2700.2	518.1	2180.2	1162.3		47.0	27.7	4.7	56.3	23.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	1237.6	2700.2	518.1	2180.2	1162.3		47.0	27.7	4.7	56.3	23.0	
LOS	F	F	F	F	F		D	C	A	E	C	
Approach Delay		1944.1			1292.8			20.5			27.9	
Approach LOS		F			F			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 124
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 6.97
 Intersection Signal Delay: 1482.9
 Intersection LOS: F
 Intersection Capacity Utilization 126.9%
 ICU Level of Service H
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

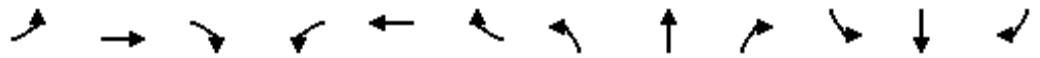
Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	19	10	41	15	19	8	692	131	35	530	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	200		0	200		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.972				0.850		0.976			0.997	
Flt Protected		0.980		0.950	0.976		0.950			0.950		
Satd. Flow (prot)	0	1774	0	1681	1727	1583	1770	4963	0	1770	5070	0
Flt Permitted		0.826		0.416	0.596		0.950			0.950		
Satd. Flow (perm)	0	1496	0	736	1055	1583	1770	4963	0	1770	5070	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				58		45				3
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1193			2701			633				1959
Travel Time (s)		27.1			61.4			14.4				44.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	281%	281%	281%	281%	281%	281%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	61	58	31	125	46	58	11	933	177	47	714	15
Shared Lane Traffic (%)				34%								
Lane Group Flow (vph)	0	150	0	82	89	58	11	1110	0	47	729	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			3		5	2		1		6
Permitted Phases	4			3		3						

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 1/14/2009

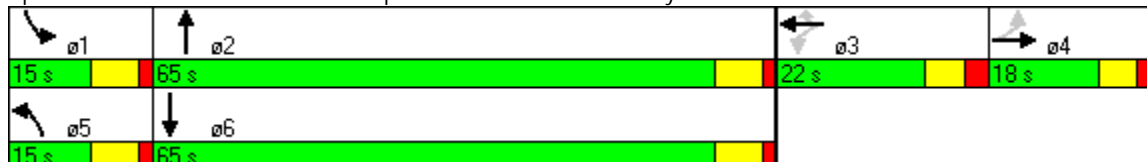


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	3	3	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	25.0		5.0	25.0	
Minimum Split (s)	11.5	11.5		34.5	34.5	34.5	11.5	31.5		11.5	31.5	
Total Split (s)	18.0	18.0	0.0	22.0	22.0	22.0	15.0	65.0	0.0	15.0	65.0	0.0
Total Split (%)	15.0%	15.0%	0.0%	18.3%	18.3%	18.3%	12.5%	54.2%	0.0%	12.5%	54.2%	0.0%
Maximum Green (s)	11.5	11.5		15.5	15.5	15.5	8.5	58.5		8.5	58.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	6.5	6.5	6.5	4.0	6.5	6.5	4.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		1.5	1.5	1.5	2.0	1.8		2.0	1.8	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)				23.0	23.0	23.0		20.0			7.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effect Green (s)		12.2		14.6	14.6	14.6	5.6	62.3		7.2	71.0	
Actuated g/C Ratio		0.10		0.12	0.12	0.12	0.05	0.52		0.06	0.59	
v/c Ratio		0.93		0.92	0.70	0.24	0.13	0.43		0.44	0.24	
Control Delay		106.3		127.2	77.8	14.4	58.1	18.3		67.3	12.5	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		106.3		127.2	77.8	14.4	58.1	18.3		67.3	12.5	
LOS		F		F	E	B	E	B		E	B	
Approach Delay		106.3			79.4			18.7			15.8	
Approach LOS		F			E			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 60 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 29.6
 Intersection LOS: C
 Intersection Capacity Utilization 55.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway



Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	872	10	5	729	26	10	17	5	57	42	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.995			0.967			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5			8			104	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		698			1277			499			262	
Travel Time (s)		15.9			29.0			11.3			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	112	2379	27	14	1989	71	17	28	8	95	70	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	2406	0	14	2060	0	17	36	0	95	202	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	16.0	27.0	0.0	16.0	27.0	0.0	16.0	16.0	0.0	16.0	16.0	0.0
Total Split (%)	21.3%	36.0%	0.0%	21.3%	36.0%	0.0%	21.3%	21.3%	0.0%	21.3%	21.3%	0.0%
Maximum Green (s)	10.5	21.5		10.5	21.5		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	7.8	35.6		5.4	26.9		5.4	6.0		7.7	10.0	
Actuated g/C Ratio	0.13	0.58		0.09	0.44		0.09	0.10		0.13	0.16	
v/c Ratio	0.50	1.18		0.09	1.34		0.11	0.20		0.43	0.56	
Control Delay	36.3	102.4		32.9	178.3		32.6	27.9		34.5	20.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.3	102.4		32.9	178.3		32.6	27.9		34.5	20.0	
LOS	D	F		C	F		C	C		C	B	
Approach Delay		99.5			177.3			29.4			24.6	
Approach LOS		F			F			C			C	

Intersection Summary

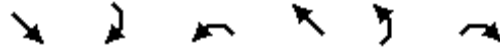
Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	61.5
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.34
Intersection Signal Delay:	126.9
Intersection LOS:	F
Intersection Capacity Utilization:	92.4%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
1/14/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	
Volume (vph)	938	68	67	959	53	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.990				0.937	
Flt Protected			0.950		0.974	
Satd. Flow (prot)	3504	0	1770	3539	1700	0
Flt Permitted			0.950		0.974	
Satd. Flow (perm)	3504	0	1770	3539	1700	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1368	
Travel Time (s)	35.3			19.7	31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%
Adj. Flow (vph)	2814	204	201	2877	159	138
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3018	0	201	2877	297	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	113.7%
ICU Level of Service	H
Analysis Period (min)	15

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	526	17	43	772	115	66	296	12	205	365	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.981			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3472	0	1770	1852	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3522	0	1770	3472	0	1770	1852	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			14			1				165
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	447	1578	51	129	2316	345	110	495	20	343	611	315
Shared Lane Traffic (%)												
Lane Group Flow (vph)	447	1629	0	129	2661	0	110	515	0	343	611	315
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effect Green (s)	18.5	43.6		13.4	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.15	0.35		0.11	0.31		0.15	0.16		0.20	0.19	0.19
v/c Ratio	1.71	1.32		0.68	2.47		0.41	1.73		0.97	1.71	0.72
Control Delay	366.4	185.4		71.1	684.0		53.1	376.1		90.5	361.6	32.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	366.4	185.4		71.1	684.0		53.1	376.1		90.5	361.6	32.5
LOS	F	F		E	F		D	F		F	F	C
Approach Delay		224.4			655.7			319.2			206.6	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	125
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.47
Intersection Signal Delay:	407.8
Intersection LOS:	F
Intersection Capacity Utilization:	153.6%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	916	99	82	855	3	48	2	47	16	27	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.999			0.934			0.973	
Flt Protected	0.950			0.950				0.976			0.985	
Satd. Flow (prot)	1770	3486	0	1770	3536	0	0	1698	0	0	1785	0
Flt Permitted	0.950			0.950				0.811			0.883	
Satd. Flow (perm)	1770	3486	0	1770	3536	0	0	1411	0	0	1600	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						25			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	12	2748	297	246	2565	9	80	3	79	27	45	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	3045	0	246	2574	0	0	162	0	0	90	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive

1/14/2009

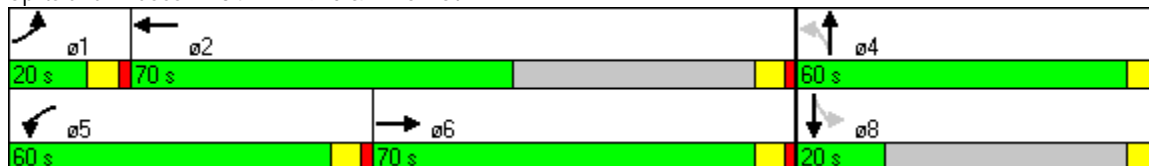


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.9	63.1		28.0	92.8			54.6			54.6	
Actuated g/C Ratio	0.04	0.38		0.17	0.56			0.33			0.33	
v/c Ratio	0.19	2.28		0.82	1.30			0.34			0.17	
Control Delay	86.5	603.3		87.6	169.3			38.4			38.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	86.5	603.3		87.6	169.3			38.4			38.6	
LOS	F	F		F	F			D			D	
Approach Delay		601.3			162.2			38.4			38.6	
Approach LOS		F			F			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	190
Actuated Cycle Length:	165.2
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.28
Intersection Signal Delay:	376.1
Intersection LOS:	F
Intersection Capacity Utilization:	122.0%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕				↕
Volume (vph)	6	820	42	20	736	14	68	94	88	58	158	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.997			0.953			0.984	
Flt Protected					0.999			0.987			0.988	
Satd. Flow (prot)	0	3514	0	0	3525	0	0	1752	0	0	1811	0
Flt Permitted		0.662			0.516			0.770			0.631	
Satd. Flow (perm)	0	2327	0	0	1821	0	0	1367	0	0	1157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			2			34			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	16	2237	115	55	2008	38	114	157	147	97	264	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2368	0	0	2101	0	0	418	0	0	408	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive

1/14/2009

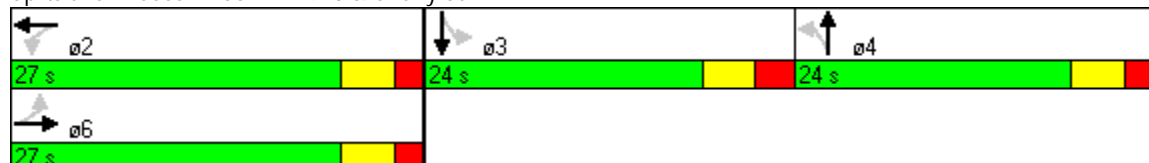


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	36.0%	36.0%	0.0%	36.0%	36.0%	0.0%	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%
Maximum Green (s)	21.5	21.5		21.5	21.5		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effect Green (s)		21.5			21.5			18.0			18.0	
Actuated g/C Ratio		0.29			0.29			0.24			0.24	
v/c Ratio		3.52			4.02			1.18			1.44	
Control Delay		1153.8			1375.2			134.3			242.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		1153.8			1375.2			134.3			242.1	
LOS		F			F			F			F	
Approach Delay		1153.8			1375.2			134.3			242.1	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 4.02
 Intersection Signal Delay: 1090.9
 Intersection LOS: F
 Intersection Capacity Utilization 128.4%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	8	782	29	17	752	19	19	17	45	23	13	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.996			0.925			0.966	
Flt Protected					0.999			0.988			0.977	
Satd. Flow (prot)	0	3522	0	0	3522	0	0	1702	0	0	1758	0
Flt Permitted		0.841			0.694			0.894			0.837	
Satd. Flow (perm)	0	2962	0	0	2446	0	0	1540	0	0	1506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			9			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	22	2134	79	46	2052	52	32	28	75	38	22	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2235	0	0	2150	0	0	135	0	0	80	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		39.6			39.6			9.0			9.0	
Actuated g/C Ratio		0.71			0.71			0.16			0.16	
v/c Ratio		1.06			1.24			0.53			0.32	
Control Delay		55.3			130.9			27.9			21.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		55.3			130.9			27.9			21.7	
LOS		E			F			C			C	
Approach Delay		55.3			130.9			27.9			21.7	
Approach LOS		E			F			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	56
Natural Cycle:	100
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.24
Intersection Signal Delay:	89.3
Intersection LOS:	F
Intersection Capacity Utilization:	101.3%
ICU Level of Service:	G
Analysis Period (min):	15

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	832	0	0	736	61	0	0	0	36	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3500	0	0	1863	0	1770	0	1583
Flt Permitted	0.087									0.950		
Satd. Flow (perm)	162	3539	0	0	3500	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12							116
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	251%	251%	251%	154%	251%	154%
Adj. Flow (vph)	68	2270	0	0	2008	166	0	0	0	60	0	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	2270	0	0	2174	0	0	0	0	60	0	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Detector 1 Position(ft)	0	0			0		0	0		0		0
Detector 1 Size(ft)	20	6			6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009

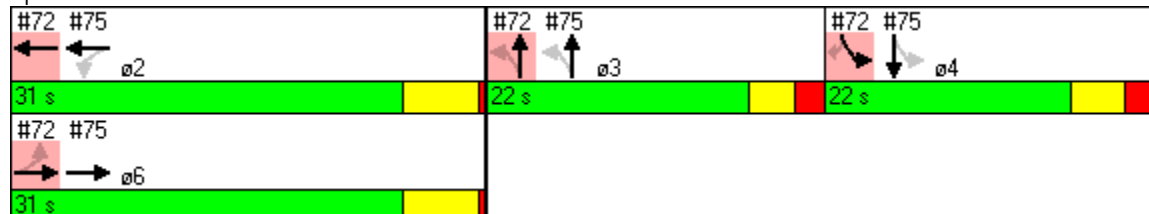


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	31.0	31.0	0.0	0.0	31.0	0.0	22.0	22.0	0.0	22.0	0.0	22.0
Total Split (%)	41.3%	41.3%	0.0%	0.0%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	0.0%	29.3%
Maximum Green (s)	25.5	25.5			25.5		17.0	17.0		16.0		16.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Recall Mode	None	None			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	50.4	50.4			50.4					7.8		7.8
Actuated g/C Ratio	0.67	0.67			0.67					0.10		0.10
v/c Ratio	0.62	0.95			0.92					0.33		0.43
Control Delay	17.1	11.7			25.3					35.8		12.1
Queue Delay	4.6	23.7			7.6					0.0		2.4
Total Delay	21.7	35.4			33.0					35.8		14.5
LOS	C	D			C					D		B
Approach Delay		35.0			33.0							
Approach LOS		C			C							

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.30
 Intersection Signal Delay: 33.5
 Intersection LOS: C
 Intersection Capacity Utilization 72.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	853	70	52	886	0	10	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.989						0.927				0.865
Fl _t Protected				0.950				0.978				
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	1689	0	0	1611	0
Fl _t Permitted				0.087				0.486				
Satd. Flow (perm)	0	3500	0	162	3539	0	0	839	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12						20				397
Link Speed (mph)		30			30			30				30
Link Distance (ft)		464			112			489				304
Travel Time (s)		10.5			2.5			11.1				6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	251%	154%
Adj. Flow (vph)	0	2327	191	142	2417	0	17	0	20	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2518	0	142	2417	0	0	37	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009

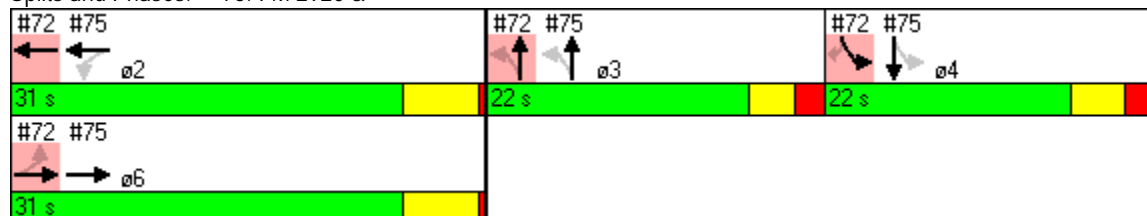


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		2	2		3	3		4	4	
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	31.0	0.0	31.0	31.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	0.0%	41.3%	0.0%	41.3%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)		25.5		25.5	25.5		17.0	17.0		16.0	16.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		50.4		50.4	50.4		8.8	8.8		7.8	7.8	
Actuated g/C Ratio		0.67		0.67	0.67		0.12	0.12		0.10	0.10	
v/c Ratio		1.07		1.30	1.02		0.32	0.32		0.00	0.00	
Control Delay		59.4		195.1	32.5		25.3	25.3		0.0	0.0	
Queue Delay		75.5		0.0	2.8		0.0	0.0		0.0	0.0	
Total Delay		134.9		195.1	35.3		25.3	25.3		0.0	0.0	
LOS		F		F	D		C	C		A	A	
Approach Delay		134.9			44.2		25.3	25.3		0.0	0.0	
Approach LOS		F			D		C	C		A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.30
 Intersection Signal Delay: 88.7
 Intersection LOS: F
 Intersection Capacity Utilization 105.1%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	884	17	100	767	22	12	20	56	27	52	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.996			0.914				0.850
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1770	3529	0	1770	3525	0	0	1691	0	0	1831	1583
Flt Permitted	0.950			0.950				0.953			0.866	
Satd. Flow (perm)	1770	3529	0	1770	3525	0	0	1623	0	0	1613	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			94				74
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	49	2412	46	273	2093	60	20	33	94	45	87	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	2458	0	273	2153	0	0	147	0	0	132	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive

1/14/2009

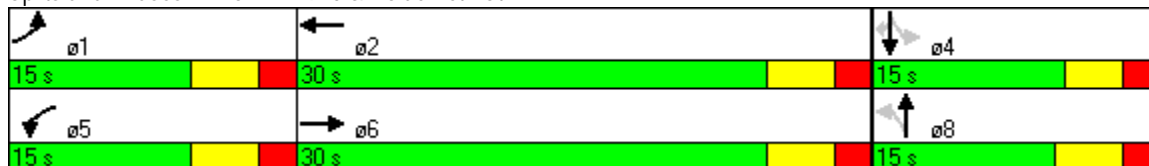


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.6	24.5		9.5	31.4			22.0			22.5	22.5
Actuated g/C Ratio	0.10	0.34		0.13	0.43			0.30			0.31	0.31
v/c Ratio	0.26	2.06		1.18	1.41			0.26			0.26	0.14
Control Delay	33.4	499.2		147.6	209.0			9.5			20.6	5.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	33.4	499.2		147.6	209.0			9.5			20.6	5.8
LOS	C	F		F	F			A			C	A
Approach Delay		490.1			202.1			9.5			15.3	
Approach LOS		F			F			A			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	72.5
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.06
Intersection Signal Delay:	326.0
Intersection LOS:	F
Intersection Capacity Utilization:	105.0%
ICU Level of Service:	G
Analysis Period (min):	15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	927	0	2	875	22	1	4	1	33	3	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996			0.975			0.919	
Flt Protected	0.950			0.950				0.991			0.982	
Satd. Flow (prot)	1770	3539	0	1770	3525	0	0	1800	0	0	1681	0
Flt Permitted	0.950			0.950				0.924			0.874	
Satd. Flow (perm)	1770	3539	0	1770	3525	0	0	1678	0	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					4			2			89	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	30	2529	0	5	2387	60	2	7	2	55	5	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	2529	0	5	2447	0	0	11	0	0	149	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009

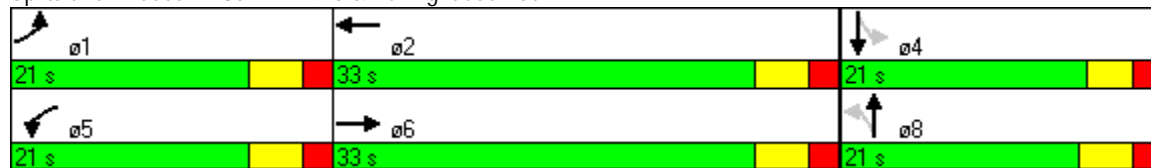


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	21.0	33.0	0.0	21.0	33.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	28.0%	44.0%	0.0%	28.0%	44.0%	0.0%	28.0%	28.0%	0.0%	28.0%	28.0%	0.0%
Maximum Green (s)	15.5	27.5		15.5	27.5		15.5	15.5		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.2	34.9		7.1	32.7			8.0			8.4	
Actuated g/C Ratio	0.14	0.67		0.14	0.63			0.15			0.16	
v/c Ratio	0.12	1.07		0.02	1.11			0.04			0.47	
Control Delay	24.2	57.6		23.6	76.0			19.8			15.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	24.2	57.6		23.6	76.0			19.8			15.9	
LOS	C	E		C	E			B			B	
Approach Delay		57.2			75.9			19.8			15.9	
Approach LOS		E			E			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 52.3
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 64.8
 Intersection LOS: E
 Intersection Capacity Utilization 87.8%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 85: FM 2920 & Buvinghausen St





Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	202		890			276
Travel Time (s)	4.6		20.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1221	0	0	503	18	180	71	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Flt					0.995			0.986				
Flt Protected	0.950							0.969				
Satd. Flow (prot)	1770	5085	0	0	6376	0	0	4859	0	0	0	0
Flt Permitted	0.950							0.969				
Satd. Flow (perm)	1770	5085	0	0	6376	0	0	4859	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			1				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1955				1199
Travel Time (s)		8.3			18.8			44.4				27.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	276%	276%	276%
Adj. Flow (vph)	420	3663	0	0	1509	54	301	119	44	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	420	3663	0	0	1563	0	0	464	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	1.0				1.0		1.0		1.0			
Recall Mode	None				C-Max		None		None			
Walk Time (s)					7.0		7.0		7.0			
Flash Dont Walk (s)					12.0		13.0		13.0			
Pedestrian Calls (#/hr)					0		0		0			
Act Effect Green (s)	23.5	73.5			43.5				18.0			
Actuated g/C Ratio	0.22	0.70			0.41				0.17			
v/c Ratio	1.06	1.03			0.59				0.99dl			
Control Delay	78.5	32.1			24.8				42.7			
Queue Delay	19.0	120.7			0.0				0.0			
Total Delay	97.5	152.8			24.8				42.7			
LOS	F	F			C				D			
Approach Delay		147.1			24.8				42.7			
Approach LOS		F			C				D			

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.40
 Intersection Signal Delay: 107.9 Intersection LOS: F
 Intersection Capacity Utilization 101.8% ICU Level of Service G
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↖↖	
Volume (vph)	0	871	326	83	600	0	0	0	0	490	51	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.959									0.965	
Flt Protected				0.950							0.966	
Satd. Flow (prot)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Flt Permitted				0.950							0.966	
Satd. Flow (perm)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110									34	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		735			367			1952			1208	
Travel Time (s)		16.7			8.3			44.4			27.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	276%	276%	276%	154%	154%	154%
Adj. Flow (vph)	0	2613	978	249	1800	0	0	0	0	820	85	273
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3591	0	249	1800	0	0	0	0	0	1178	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6						8	
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		45.4		21.6	73.5						18.0	
Actuated g/C Ratio		0.43		0.21	0.70						0.17	
v/c Ratio		1.32		0.68	0.51						2.47dl	
Control Delay		174.3		59.9	6.1						221.0	
Queue Delay		7.5		0.2	0.2						210.7	
Total Delay		181.8		60.1	6.3						431.8	
LOS		F		E	A						F	
Approach Delay		181.8			12.8						431.8	
Approach LOS		F			B						F	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.40
 Intersection Signal Delay: 174.2 Intersection LOS: F
 Intersection Capacity Utilization 101.8% ICU Level of Service G
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	30	286	27	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.987			
Flt Protected						
Satd. Flow (prot)	0	1611	5019	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	5019	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	1193		636			1955
Travel Time (s)	27.1		14.5			44.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	281%	281%	154%	154%	281%	281%
Adj. Flow (vph)	0	92	479	45	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	92	524	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.3%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009















Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	17	0	0	432	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	5080	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	5080	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2831			714	1952	
Travel Time (s)	64.3			16.2	44.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	281%	281%	281%	281%	154%	154%
Adj. Flow (vph)	0	52	0	0	723	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	52	0	0	728	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
1/14/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1990				618				233		163	
Travel Time (s)	45.2				14.0				5.3		3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				12				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane	Yes				Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		9		15		9	
Sign Control	Free				Free				Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

**2035 NO-BUILD CONDITION
ANALYSIS
[PM PEAK HOUR]**

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	474	25	3	663	0	36	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		3	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.992						0.969				
Fl _t Protected				0.950				0.963				
Satd. Flow (prot)	1863	3511	0	1770	3539	0	0	1738	0	0	1863	0
Fl _t Permitted				0.950				0.775				
Satd. Flow (perm)	1863	3511	0	1770	3539	0	0	1399	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						12				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				207
Travel Time (s)		52.0			47.5			45.0				4.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	0	1422	75	9	1989	0	60	0	18	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1497	0	9	1989	0	0	78	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		57.4		5.2	59.5			8.2				
Actuated g/C Ratio		0.76		0.07	0.78			0.11				
v/c Ratio		0.56		0.07	0.72			0.48				
Control Delay		7.5		36.1	7.7			38.1				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		7.5		36.1	7.7			38.1				
LOS		A		D	A			D				
Approach Delay		7.5			7.9			38.1				
Approach LOS		A			A			D				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	75.9
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	8.4
Intersection LOS:	A
Intersection Capacity Utilization:	64.3%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Drive &



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	23	48	86	24	27	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.909		0.971			
Flt Protected	0.984					0.979
Satd. Flow (prot)	1666	0	1809	0	0	1824
Flt Permitted	0.984					0.979
Satd. Flow (perm)	1666	0	1809	0	0	1824
Link Speed (mph)	30		30			30
Link Distance (ft)	2831		624			1981
Travel Time (s)	64.3		14.2			45.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	154%	154%	154%	154%
Adj. Flow (vph)	69	144	144	40	45	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	0	184	0	0	107
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.2%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	978	33	62	1164	132	39	7	67	187	9	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.995				0.850		0.911				0.883
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	0	3169	0	1770	1645	0
Flt Permitted	0.950			0.950				0.829		0.633		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	0	2673	0	1179	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				185		112				54
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	108	2934	99	186	3492	396	65	12	112	313	15	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	3033	0	186	3492	396	0	189	0	313	69	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8			4		

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effect Green (s)	10.2	54.0		12.8	56.6	56.6		14.5		14.5	14.5	
Actuated g/C Ratio	0.10	0.55		0.13	0.57	0.57		0.15		0.15	0.15	
v/c Ratio	0.59	1.57		0.81	1.72	0.40		0.39		1.81	0.24	
Control Delay	55.3	283.7		68.5	348.8	7.6		19.2		413.8	16.9	
Queue Delay	0.0	0.0		0.0	0.4	0.0		0.0		0.0	0.0	
Total Delay	55.3	283.7		68.5	349.2	7.6		19.2		413.8	16.9	
LOS	E	F		E	F	A		B		F	B	
Approach Delay		275.9			303.2			19.2			342.1	
Approach LOS		F			F			B			F	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 98.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.81
 Intersection Signal Delay: 287.2
 Intersection LOS: F
 Intersection Capacity Utilization 131.5%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd & FM 2920



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	21	51	86	764	987	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.904				0.994	
Flt Protected	0.986		0.950			
Satd. Flow (prot)	1660	0	1770	3539	3518	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1660	0	1770	3539	3518	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	85				6	
Link Speed (mph)	30			30	30	
Link Distance (ft)	737			1353	532	
Travel Time (s)	16.8			30.8	12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	154%	154%	276%	276%	276%	276%
Adj. Flow (vph)	35	85	258	2292	2961	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	258	2292	3084	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type			Prot			
Protected Phases	4		1	6	2	
Permitted Phases						

Lanes, Volumes, Timings
11: Park Rd & FM 2920

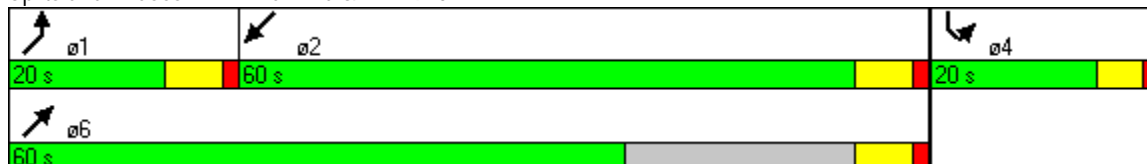


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		11.5	22.5	30.5	
Total Split (s)	20.0	0.0	20.0	60.0	60.0	0.0
Total Split (%)	20.0%	0.0%	20.0%	60.0%	60.0%	0.0%
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.0	6.5	6.5	6.5	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		2.0	1.5	1.5	
Recall Mode	None		None	Max	Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	7.3		13.5	73.5	53.5	
Actuated g/C Ratio	0.08		0.15	0.79	0.58	
v/c Ratio	0.58		1.00	0.82	1.52	
Control Delay	26.6		98.7	9.4	257.6	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	26.6		98.7	9.4	257.6	
LOS	C		F	A	F	
Approach Delay	26.6			18.4	257.6	
Approach LOS	C			B	F	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	92.8
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.52
Intersection Signal Delay:	146.8
Intersection LOS:	F
Intersection Capacity Utilization	114.1%
ICU Level of Service	H
Analysis Period (min)	15

Splits and Phases: 11: Park Rd & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	422	216	203	484	149	267	487	206	43	83	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.970				0.850		0.929	
Flt Protected	0.950	0.996		0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3377	1583	1522	4629	0	3433	5085	1583	3433	4724	0
Flt Permitted	0.157	0.515		0.186	0.667		0.950			0.950		
Satd. Flow (perm)	266	1746	1583	298	3109	0	3433	5085	1583	3433	4724	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295		40				278		100	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	249	1266	648	609	1452	447	360	656	278	58	112	100
Shared Lane Traffic (%)	41%			50%								
Lane Group Flow (vph)	147	1368	648	304	2204	0	360	656	278	58	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1		6
Permitted Phases	3		3	4					2			

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009

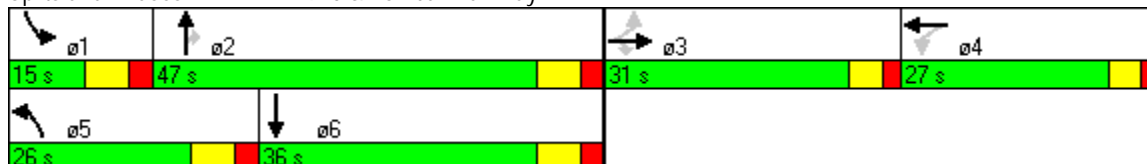


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effct Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.17	0.17		0.15	0.35	0.35	0.06	0.27	
v/c Ratio	2.67	3.81	1.16	5.85	3.85		0.68	0.36	0.38	0.26	0.16	
Control Delay	822.8	1286.5	113.9	2231.8	1302.9		57.1	30.3	4.7	58.4	18.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	822.8	1286.5	113.9	2231.8	1302.9		57.1	30.3	4.7	58.4	18.5	
LOS	F	F	F	F	F		E	C	A	E	B	
Approach Delay		903.7			1415.5			32.3			27.1	
Approach LOS		F			F			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	124
Natural Cycle:	145
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	5.85
Intersection Signal Delay:	890.8
Intersection LOS:	F
Intersection Capacity Utilization:	105.6%
ICU Level of Service:	G
Analysis Period (min):	15

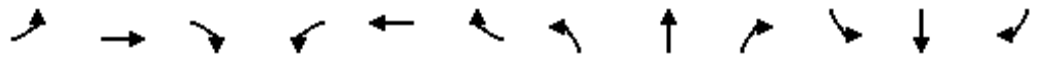
Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↖	↖	↖	↕↕↕		↖	↕↕↕	
Volume (vph)	46	15	24	161	35	47	17	963	38	12	715	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	200		0	200		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.962				0.850		0.994			0.994	
Flt Protected		0.974		0.950	0.969		0.950			0.950		
Satd. Flow (prot)	0	1745	0	1681	1715	1583	1770	5055	0	1770	5055	0
Flt Permitted		0.668		0.542	0.646		0.950			0.950		
Satd. Flow (perm)	0	1197	0	959	1143	1583	1770	5055	0	1770	5055	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				144		7			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1193			2701			633			1959	
Travel Time (s)		27.1			61.4			14.4			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	281%	281%	281%	281%	281%	281%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	140	46	73	492	107	144	23	1298	51	16	964	40
Shared Lane Traffic (%)				40%								
Lane Group Flow (vph)	0	259	0	295	304	144	23	1349	0	16	1004	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3		3						

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	3	3	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	25.0		5.0	25.0	
Minimum Split (s)	11.5	11.5		34.5	34.5	34.5	11.5	31.5		11.5	31.5	
Total Split (s)	18.0	18.0	0.0	22.0	22.0	22.0	15.0	65.0	0.0	15.0	65.0	0.0
Total Split (%)	15.0%	15.0%	0.0%	18.3%	18.3%	18.3%	12.5%	54.2%	0.0%	12.5%	54.2%	0.0%
Maximum Green (s)	11.5	11.5		15.5	15.5	15.5	8.5	58.5		8.5	58.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	6.5	6.5	6.5	4.0	6.5	6.5	4.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		1.5	1.5	1.5	2.0	1.8		2.0	1.8	
Recall Mode	None	None		None	None	None	Max	C-Max		Max	C-Max	
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)				23.0	23.0	23.0		20.0			7.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effect Green (s)		11.5		15.5	15.5	15.5	8.5	58.5		8.5	58.5	
Actuated g/C Ratio		0.10		0.13	0.13	0.13	0.07	0.49		0.07	0.49	
v/c Ratio		2.06		2.38	2.05	0.44	0.18	0.55		0.13	0.41	
Control Delay		527.8		668.5	524.3	12.1	56.2	22.4		54.9	20.1	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		527.8		668.5	524.3	12.1	56.2	22.4		54.9	20.1	
LOS		F		F	F	B	E	C		D	C	
Approach Delay		527.8			482.3			23.0			20.7	
Approach LOS		F			F			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 45 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.38
 Intersection Signal Delay: 161.4
 Intersection LOS: F
 Intersection Capacity Utilization 62.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway



Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Volume (vph)	68	649	12	10	1012	35	38	54	6	23	24	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.985				0.881
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3522	0	1770	1835	0	1770	1641	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3522	0	1770	1835	0	1770	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6				151
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	186	1771	33	27	2761	95	64	90	10	38	40	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	1804	0	27	2856	0	64	100	0	38	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009

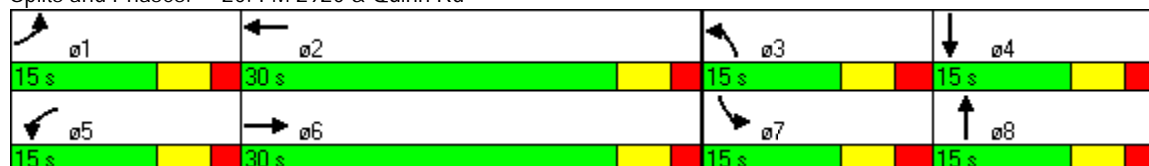


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	0.0
Total Split (%)	20.0%	40.0%	0.0%	20.0%	40.0%	0.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.0	9.0		9.0	9.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	9.1	36.0		5.6	25.5		6.8	7.7		6.1	7.1	
Actuated g/C Ratio	0.14	0.54		0.08	0.38		0.10	0.12		0.09	0.11	
v/c Ratio	0.77	0.95		0.18	2.12		0.36	0.46		0.24	0.62	
Control Delay	53.5	32.8		34.6	524.5		35.8	35.3		34.4	18.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.5	32.8		34.6	524.5		35.8	35.3		34.4	18.9	
LOS	D	C		C	F		D	D		C	B	
Approach Delay		34.7			519.9			35.5			21.5	
Approach LOS		C			F			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	66.7
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.12
Intersection Signal Delay:	299.8
Intersection LOS:	F
Intersection Capacity Utilization:	115.9%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive

1/14/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↖	↑↑	↘	
Volume (vph)	1032	54	34	893	101	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.993				0.938	
Flt Protected			0.950		0.974	
Satd. Flow (prot)	3514	0	1770	3539	1702	0
Flt Permitted			0.950		0.974	
Satd. Flow (perm)	3514	0	1770	3539	1702	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1368	
Travel Time (s)	35.3			19.7	31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%
Adj. Flow (vph)	3096	162	102	2679	303	258
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3258	0	102	2679	561	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	120.1%
ICU Level of Service	H
Analysis Period (min)	15

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	471	24	30	520	159	22	327	7	112	214	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.965			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			33			1				144
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	621	1413	72	90	1560	477	37	547	12	187	358	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	621	1485	0	90	2037	0	37	559	0	187	358	161
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effect Green (s)	18.5	46.3		10.7	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.15	0.37		0.09	0.31		0.15	0.16		0.20	0.19	0.19
v/c Ratio	2.37	1.14		0.59	1.89		0.14	1.88		0.53	1.00	0.38
Control Delay	652.4	109.1		70.1	432.8		47.5	436.5		51.0	98.2	12.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	652.4	109.1		70.1	432.8		47.5	436.5		51.0	98.2	12.0
LOS	F	F		E	F		D	F		D	F	B
Approach Delay		269.3			417.5			412.3			66.0	
Approach LOS		F			F			F			E	

Intersection Summary

Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	125
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.37
Intersection Signal Delay:	315.7
Intersection LOS:	F
Intersection Capacity Utilization:	141.2%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	940	18	0	1061	26	14	1	7	8	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.997			0.996			0.956			0.922	
Fl _t Protected	0.950							0.970			0.979	
Satd. Flow (prot)	1770	3529	0	1863	3525	0	0	1727	0	0	1681	0
Fl _t Permitted	0.950							0.863			0.918	
Satd. Flow (perm)	1770	3529	0	1863	3525	0	0	1537	0	0	1577	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			12			18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	60	2820	54	0	3183	78	23	2	12	13	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	2874	0	0	3261	0	0	37	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

Lanes, Volumes, Timings
34: FM 2920 & Willow St

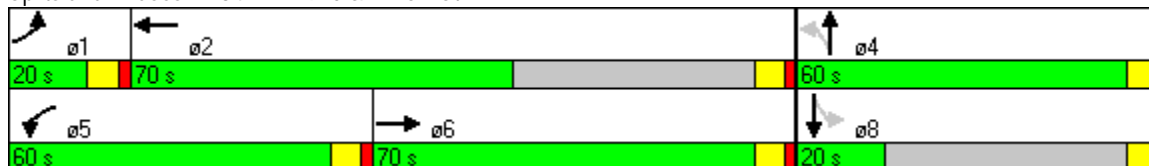


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)	9.3	76.6			63.2			54.6			54.6	
Actuated g/C Ratio	0.06	0.53			0.44			0.38			0.38	
v/c Ratio	0.53	1.53			2.10			0.06			0.05	
Control Delay	82.6	268.2			523.2			22.9			17.2	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	82.6	268.2			523.2			22.9			17.2	
LOS	F	F			F			C			B	
Approach Delay		264.4			523.2			22.9			17.2	
Approach LOS		F			F			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	190
Actuated Cycle Length:	143.8
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.10
Intersection Signal Delay:	396.5
Intersection LOS:	F
Intersection Capacity Utilization:	97.8%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	13	881	41	19	890	35	86	258	57	46	123	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.994			0.981			0.979	
Flt Protected		0.999			0.999			0.989			0.989	
Satd. Flow (prot)	0	3511	0	0	3514	0	0	1807	0	0	1804	0
Flt Permitted		0.606			0.555			0.831			0.618	
Satd. Flow (perm)	0	2130	0	0	1952	0	0	1519	0	0	1127	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			10			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	35	2404	112	52	2428	95	144	432	95	77	206	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2551	0	0	2575	0	0	671	0	0	335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive

1/14/2009

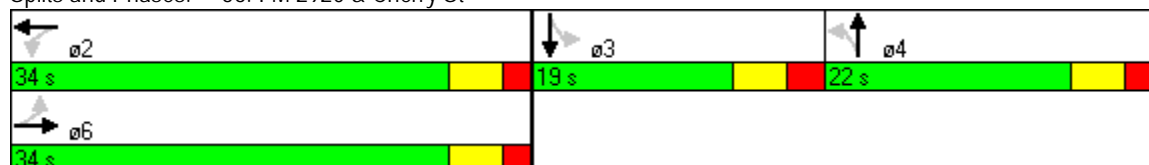


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	22.0	22.0	0.0	19.0	19.0	0.0
Total Split (%)	45.3%	45.3%	0.0%	45.3%	45.3%	0.0%	29.3%	29.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	28.5	28.5		28.5	28.5		16.0	16.0		13.0	13.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effect Green (s)		28.5			28.5			16.0			13.0	
Actuated g/C Ratio		0.38			0.38			0.21			0.17	
v/c Ratio		3.13			3.46			2.02			1.64	
Control Delay		978.9			1123.0			492.0			335.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		978.9			1123.0			492.0			335.4	
LOS		F			F			F			F	
Approach Delay		978.9			1123.0			492.0			335.4	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 3.46
 Intersection Signal Delay: 951.0
 Intersection Capacity Utilization 152.2%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	30	853	23	20	911	16	61	30	82	10	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.997			0.936			0.942	
Flt Protected		0.998			0.999			0.983			0.984	
Satd. Flow (prot)	0	3518	0	0	3525	0	0	1714	0	0	1727	0
Flt Permitted		0.548			0.600			0.862			0.825	
Satd. Flow (perm)	0	1932	0	0	2117	0	0	1503	0	0	1448	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			5			6			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	82	2327	63	55	2485	44	102	50	137	17	12	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2472	0	0	2584	0	0	289	0	0	51	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		35.5			35.5			11.5			11.5	
Actuated g/C Ratio		0.61			0.61			0.20			0.20	
v/c Ratio		2.08			1.99			0.95			0.18	
Control Delay		508.4			466.4			68.8			20.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		508.4			466.4			68.8			20.0	
LOS		F			F			E			B	
Approach Delay		508.4			466.4			68.8			20.0	
Approach LOS		F			F			E			B	

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	58
Natural Cycle:	130
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.08
Intersection Signal Delay:	460.1
Intersection LOS:	F
Intersection Capacity Utilization:	145.7%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	845	0	0	1129	61	0	0	0	46	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3511	0	0	1863	0	1770	0	1583
Flt Permitted	0.109									0.950		
Satd. Flow (perm)	203	3539	0	0	3511	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9							105
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	251%	154%
Adj. Flow (vph)	161	2305	0	0	3080	166	0	0	0	77	0	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	2305	0	0	3246	0	0	0	0	77	0	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Detector 1 Position(ft)	0	0			0		0	0		0		0
Detector 1 Size(ft)	20	6			6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive

1/14/2009

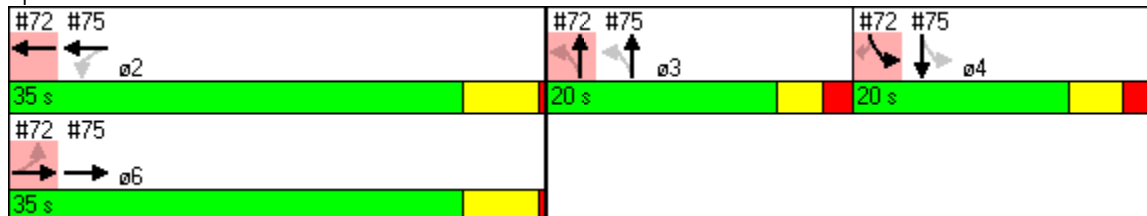


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	35.0	35.0	0.0	0.0	35.0	0.0	20.0	20.0	0.0	20.0	0.0	20.0
Total Split (%)	46.7%	46.7%	0.0%	0.0%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	0.0%	26.7%
Maximum Green (s)	29.5	29.5			29.5		15.0	15.0		14.0		14.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Recall Mode	None	None			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	37.8	37.8			37.8					8.3		8.3
Actuated g/C Ratio	0.50	0.50			0.50					0.11		0.11
v/c Ratio	1.58	1.29			1.83					0.39		0.39
Control Delay	282.5	146.3			396.0					36.6		11.4
Queue Delay	0.0	20.8			300.9					0.0		6.8
Total Delay	282.5	167.1			696.9					36.6		18.2
LOS	F	F			F					D		B
Approach Delay		174.7			696.9							
Approach LOS		F			F							

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.83
 Intersection Signal Delay: 457.7
 Intersection LOS: F
 Intersection Capacity Utilization 118.0%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	839	2	29	1123	0	24	0	35	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t								0.920				0.865
Fl _t Protected				0.950				0.980				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1679	0	0	1611	0
Fl _t Permitted				0.109				0.187				
Satd. Flow (perm)	0	3539	0	203	3539	0	0	320	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								59				285
Link Speed (mph)		30			30			30				30
Link Distance (ft)		464			112			489				304
Travel Time (s)		10.5			2.5			11.1				6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	0	2289	5	79	3064	0	40	0	59	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2294	0	79	3064	0	0	99	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009

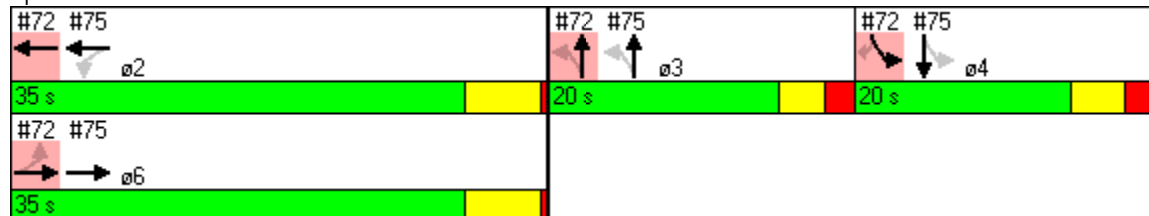


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		2	2		3	3		4	4	
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	35.0	0.0	35.0	35.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	0.0%	46.7%	0.0%	46.7%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%
Maximum Green (s)		29.5		29.5	29.5		15.0	15.0		14.0	14.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		37.8		37.8	37.8		15.0	15.0		8.3	8.3	
Actuated g/C Ratio		0.50		0.50	0.50		0.20	0.20		0.11	0.11	
v/c Ratio		1.29		0.77	1.72		0.89	0.89		0.00	0.00	
Control Delay		155.5		21.3	338.9		80.8	80.8		0.0	0.0	
Queue Delay		218.1		36.3	63.3		648.9	648.9		0.0	0.0	
Total Delay		373.6		57.6	402.1		729.7	729.7		0.0	0.0	
LOS		F		E	F		F	F		A	A	
Approach Delay		373.6		393.5	393.5		729.7	729.7		0.0	0.0	
Approach LOS		F		F	F		F	F		A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.83
 Intersection Signal Delay: 391.1
 Intersection Capacity Utilization 98.7%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service F

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	740	14	52	1021	41	45	98	106	41	43	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.994			0.943				0.850
Flt Protected	0.950			0.950				0.991			0.976	
Satd. Flow (prot)	1770	3529	0	1770	3518	0	0	1741	0	0	1818	1583
Flt Permitted	0.950			0.950				0.911			0.638	
Satd. Flow (perm)	1770	3529	0	1770	3518	0	0	1600	0	0	1188	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			8			53				112
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	68	2019	38	142	2786	112	75	164	177	69	72	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	2057	0	142	2898	0	0	416	0	0	141	112
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009

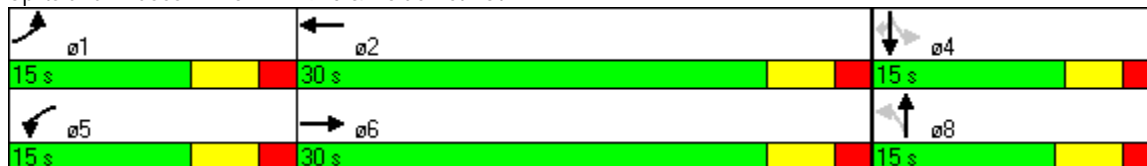


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.9	24.7		8.7	28.0			22.2			22.7	22.7
Actuated g/C Ratio	0.11	0.36		0.13	0.40			0.32			0.33	0.33
v/c Ratio	0.34	1.63		0.64	2.03			0.76			0.36	0.19
Control Delay	34.4	309.6		44.2	486.8			30.6			22.7	5.2
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	34.4	309.6		44.2	486.8			30.6			22.7	5.2
LOS	C	F		D	F			C			C	A
Approach Delay		300.7			466.1			30.6			14.9	
Approach LOS		F			F			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	69.2
Natural Cycle:	150
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	2.03
Intersection Signal Delay:	355.3
Intersection LOS:	F
Intersection Capacity Utilization:	122.1%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	782	0	4	1161	25	11	3	3	21	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frts					0.997			0.976			0.897	
Flt Protected	0.950			0.950				0.969			0.991	
Satd. Flow (prot)	1770	3539	0	1770	3529	0	0	1762	0	0	1656	0
Flt Permitted	0.950			0.950				0.542			0.928	
Satd. Flow (perm)	1770	3539	0	1770	3529	0	0	985	0	0	1551	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			5			142	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	251%	251%	251%	251%	251%	251%	154%	154%	154%	154%	154%	154%
Adj. Flow (vph)	112	2134	0	11	3168	68	18	5	5	35	10	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	2134	0	11	3236	0	0	28	0	0	187	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	19.0	37.0	0.0	19.0	37.0	0.0	19.0	19.0	0.0	19.0	19.0	0.0
Total Split (%)	25.3%	49.3%	0.0%	25.3%	49.3%	0.0%	25.3%	25.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	13.5	31.5		13.5	31.5		13.5	13.5		14.0	14.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	8.9	43.2		7.0	33.8			8.2			8.7	
Actuated g/C Ratio	0.14	0.67		0.11	0.52			0.13			0.13	
v/c Ratio	0.46	0.90		0.06	1.76			0.22			0.56	
Control Delay	32.8	18.4		29.1	362.1			27.1			16.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	32.8	18.4		29.1	362.1			27.1			16.0	
LOS	C	B		C	F			C			B	
Approach Delay		19.1			360.9			27.1			16.0	
Approach LOS		B			F			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 64.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.76
 Intersection Signal Delay: 213.5
 Intersection LOS: F
 Intersection Capacity Utilization 104.5%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 85: FM 2920 & Buvinghausen St





Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	190		890			276
Travel Time (s)	4.3		20.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑			↑↑↑			↙↑↑				
Volume (vph)	196	809	0	0	803	33	294	149	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Flt					0.994			0.991				
Flt Protected	0.950							0.970				
Satd. Flow (prot)	1770	5085	0	0	6369	0	0	4888	0	0	0	0
Flt Permitted	0.950							0.970				
Satd. Flow (perm)	1770	5085	0	0	6369	0	0	4888	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			9				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1955				1199
Travel Time (s)		8.3			18.8			44.4				27.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	154%	154%	154%	276%	276%	276%
Adj. Flow (vph)	588	2427	0	0	2409	99	492	249	50	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	588	2427	0	0	2508	0	0	791	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	1.0				1.0		1.0		1.0			
Recall Mode	None				C-Max		None		None			
Walk Time (s)					7.0		7.0		7.0			
Flash Dont Walk (s)					12.0		13.0		13.0			
Pedestrian Calls (#/hr)					0		0		0			
Act Effect Green (s)	23.7	73.7			43.5				17.8			
Actuated g/C Ratio	0.23	0.70			0.41				0.17			
v/c Ratio	1.47	0.68			0.95				1.60dl			
Control Delay	255.0	8.6			39.0				63.5			
Queue Delay	31.2	1.6			0.0				19.9			
Total Delay	286.1	10.2			39.1				83.4			
LOS	F	B			D				F			
Approach Delay		64.0			39.1				83.4			
Approach LOS		E			D				F			

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.47
 Intersection Signal Delay: 56.5
 Intersection LOS: E
 Intersection Capacity Utilization 94.9%
 ICU Level of Service F
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑↑						↔↑↑	
Volume (vph)	0	744	165	105	992	0	0	0	0	261	58	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.973									0.966	
Flt Protected				0.950							0.969	
Satd. Flow (prot)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Flt Permitted				0.950							0.969	
Satd. Flow (perm)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65									3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		735			367			1952			1208	
Travel Time (s)		16.7			8.3			44.4			27.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	276%	276%	276%	276%	276%	276%	276%	276%	276%	154%	154%	154%
Adj. Flow (vph)	0	2232	495	315	2976	0	0	0	0	437	97	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2727	0	315	2976	0	0	0	0	0	691	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6						8	
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		43.5		23.7	73.7						17.8	
Actuated g/C Ratio		0.41		0.23	0.70						0.17	
v/c Ratio		1.04		0.79	0.83						1.44dl	
Control Delay		59.4		56.4	15.8						53.6	
Queue Delay		31.9		1.4	15.9						60.0	
Total Delay		91.3		57.9	31.7						113.6	
LOS		F		E	C						F	
Approach Delay		91.3			34.2						113.6	
Approach LOS		F			C						F	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.47
 Intersection Signal Delay: 65.6
 Intersection LOS: E
 Intersection Capacity Utilization 94.9%
 ICU Level of Service F
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	84	486	41	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.988			
Flt Protected						
Satd. Flow (prot)	0	1611	5024	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	5024	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	1193		636			1955
Travel Time (s)	27.1		14.5			44.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	281%	281%	154%	154%	281%	281%
Adj. Flow (vph)	0	257	814	69	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	257	883	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑			↑↑↑	
Volume (vph)	0	3	0	0	207	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	5080	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	5080	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2831			714	1952	
Travel Time (s)	64.3			16.2	44.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	281%	281%	281%	281%	154%	154%
Adj. Flow (vph)	0	9	0	0	347	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	9	0	0	349	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.2%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1990				618				233		163	
Travel Time (s)	45.2				14.0				5.3		3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				12				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane	Yes				Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		9		15		9	
Sign Control	Free				Free				Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

2011 BUILD CONDITION ANALYSIS

[AM PEAK HOUR]

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1267	51	8	765	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994						0.943				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1707	0	0	1863	0
Flt Permitted				0.950				0.822				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1444	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						17				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1033	42	7	624	0	23	0	17	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1075	0	7	624	0	0	40	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8		8
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5		10.5
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		59.9		5.1	62.2			5.9				
Actuated g/C Ratio		0.82		0.07	0.85			0.08				
v/c Ratio		0.37		0.06	0.21			0.30				
Control Delay		4.4		32.5	2.2			27.0				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		4.4		32.5	2.2			27.0				
LOS		A		C	A			C				
Approach Delay		4.4			2.5			27.0				
Approach LOS		A			A			C				
Queue Length 50th (ft)		62		3	30			10				
Queue Length 95th (ft)		187		15	51			37				
Internal Link Dist (ft)		2210			2010			1901			120	
Turn Bay Length (ft)				200								
Base Capacity (vph)		2991		459	3420			397				
Starvation Cap Reductn		0		0	0			0				
Spillback Cap Reductn		0		0	0			0				
Storage Cap Reductn		0		0	0			0				
Reduced v/c Ratio		0.36		0.02	0.18			0.10				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 73.2
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 4.2
 Intersection Capacity Utilization 41.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	365	32	55	481	11	14	5	36	88	18	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.988			0.997			0.867			0.990	
Flt Protected	0.950			0.950			0.950			0.950	0.971	
Satd. Flow (prot)	1770	3497	0	1770	3529	0	1770	1615	0	1681	1701	0
Flt Permitted	0.440			0.501			0.716			0.728	0.867	
Satd. Flow (perm)	820	3497	0	933	3529	0	1334	1615	0	1288	1519	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			7			39			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2340			2815			624			1981	
Travel Time (s)		53.2			64.0			14.2			45.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	9	397	35	60	523	12	15	5	39	96	20	4
Shared Lane Traffic (%)										38%		
Lane Group Flow (vph)	9	432	0	60	535	0	15	44	0	60	60	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												

Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

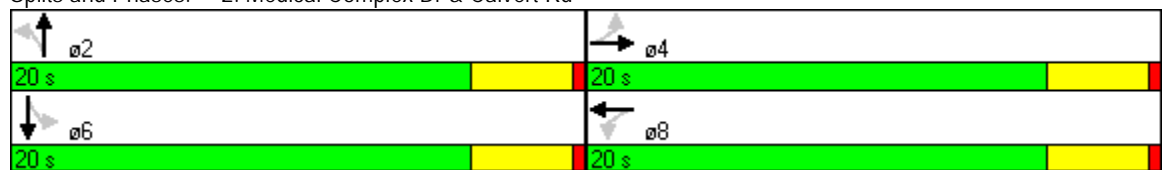


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.03	0.31		0.16	0.38		0.03	0.07		0.12	0.10	
Control Delay	7.6	8.4		9.1	9.3		7.6	4.0		8.3	7.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.6	8.4		9.1	9.3		7.6	4.0		8.3	7.7	
LOS	A	A		A	A		A	A		A	A	
Approach Delay		8.4			9.3			4.9				8.0
Approach LOS		A			A			A				A
Queue Length 50th (ft)	1	30		8	41		2	1		8	7	
Queue Length 95th (ft)	7	52		25	68		9	13		24	23	
Internal Link Dist (ft)		2260			2735			544				1901
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	328	1415		373	1416		534	669		515	610	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.31		0.16	0.38		0.03	0.07		0.12	0.10	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.38
Intersection Signal Delay:	8.6
Intersection LOS:	A
Intersection Capacity Utilization:	36.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 2: Medical Complex Dr & Calvert Rd



Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1296	16	21	643	88	2	4	4	75	6	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998				0.850		0.940			0.894	
Flt Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	0	3294	0	1770	1665	0
Flt Permitted	0.950			0.950				0.923		0.751		
Satd. Flow (perm)	1770	3532	0	1770	3539	1583	0	3071	0	1399	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				72		4			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2090			735			216			806	
Travel Time (s)		47.5			16.7			4.9			18.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	1057	13	17	524	72	2	4	4	82	7	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	1070	0	17	524	72	0	10	0	82	24	0
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009

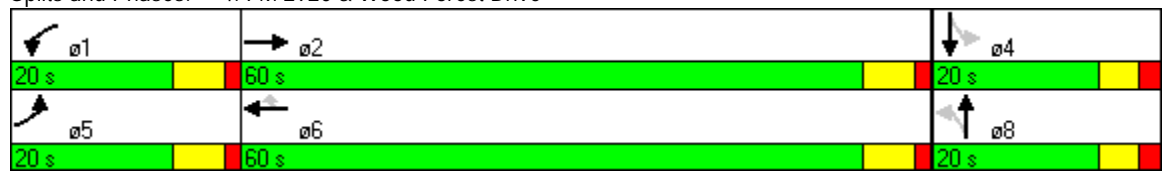


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effct Green (s)	5.7	54.3		5.6	54.2	54.2		14.6		14.6	14.6	
Actuated g/C Ratio	0.07	0.64		0.07	0.64	0.64		0.17		0.17	0.17	
v/c Ratio	0.17	0.47		0.15	0.23	0.07		0.02		0.34	0.08	
Control Delay	42.7	9.6		42.4	7.6	2.4		26.6		37.5	19.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	42.7	9.6		42.4	7.6	2.4		26.6		37.5	19.3	
LOS	D	A		D	A	A		C		D	B	
Approach Delay		10.2			8.0			26.6			33.4	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	10	112		8	45	0		1		36	3	
Queue Length 95th (ft)	34	237		30	102	17		8		90	26	
Internal Link Dist (ft)		2010			655			136			726	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	293	2256		293	2260	1037		530		240	300	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.07	0.47		0.06	0.23	0.07		0.02		0.34	0.08	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 85
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 10.9
 Intersection LOS: B
 Intersection Capacity Utilization 47.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 2/26/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	23	94	39	211	82	32	98	1182	361	80	709	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.956			0.958			0.965			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3383	0	1770	3391	0	1770	3415	0	1770	3529	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3383	0	1770	3391	0	1770	3415	0	1770	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			35			41			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		764			692			1353			532	
Travel Time (s)		17.4			15.7			30.8			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	102	42	229	89	35	107	1285	392	87	771	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	144	0	229	124	0	107	1677	0	87	789	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		4.0	4.0		5.0	15.0		4.0	15.0	
Minimum Split (s)	32.5	22.5		20.0	20.0		11.5	30.5		8.0	30.5	
Total Split (s)	32.6	26.6	0.0	26.0	20.0	0.0	22.2	71.4	0.0	11.0	60.2	0.0
Total Split (%)	24.1%	19.7%	0.0%	19.3%	14.8%	0.0%	16.4%	52.9%	0.0%	8.1%	44.6%	0.0%
Yellow Time (s)	4.0	5.0		3.5	3.5		5.0	5.0		3.5	5.0	
All-Red Time (s)	1.5	1.5		0.5	0.5		1.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	4.0	4.0	6.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	

Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 2/26/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	Max		None	None		None	Max		None	Max	
Act Effct Green (s)	6.5	20.1		20.3	39.2		12.0	64.9		7.0	57.4	
Actuated g/C Ratio	0.05	0.15		0.15	0.29		0.09	0.49		0.05	0.43	
v/c Ratio	0.29	0.27		0.85	0.12		0.67	1.00		0.94	0.52	
Control Delay	69.6	38.1		82.6	26.6		78.9	54.4		139.5	30.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	69.6	38.1		82.6	26.6		78.9	54.4		139.5	30.1	
LOS	E	D		F	C		E	D		F	C	
Approach Delay		42.7			62.9			55.8			40.9	
Approach LOS		D			E			E			D	
Queue Length 50th (ft)	22	43		195	31		92	~765		78	267	
Queue Length 95th (ft)	52	76		#324	58		154	#941		#188	344	
Internal Link Dist (ft)		684			612			1273			452	
Turn Bay Length (ft)							150					
Base Capacity (vph)	360	543		292	1021		209	1684		93	1521	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.07	0.27		0.78	0.12		0.51	1.00		0.94	0.52	

Intersection Summary

Area Type: Other
 Cycle Length: 135
 Actuated Cycle Length: 133.3
 Natural Cycle: 135
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 51.8 Intersection LOS: D
 Intersection Capacity Utilization 90.3% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 11: Park Rd/Medical Complex Dr & FM 2920

01	02	03	04
11 s	71.4 s	26 s	26.6 s
05	06	07	08
22.2 s	60.2 s	32.6 s	20 s

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	796	397	199	471	105	78	214	228	22	85	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor												
Frt			0.850		0.977				0.850		0.958	
Flt Protected	0.950	0.999		0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1522	4662	0	3433	5085	1583	3433	4872	0
Flt Permitted	0.157	0.712		0.391	0.755		0.950			0.950		
Satd. Flow (perm)	266	2414	1583	626	3545	0	3433	5085	1583	3433	4872	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			309		25				186		36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	100%	75%	75%	100%	75%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	649	324	162	384	86	64	233	186	18	92	36
Shared Lane Traffic (%)	10%			50%								
Lane Group Flow (vph)	59	656	324	81	551	0	64	233	186	18	128	0
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1	6	
Permitted Phases	3		3	4					2			
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

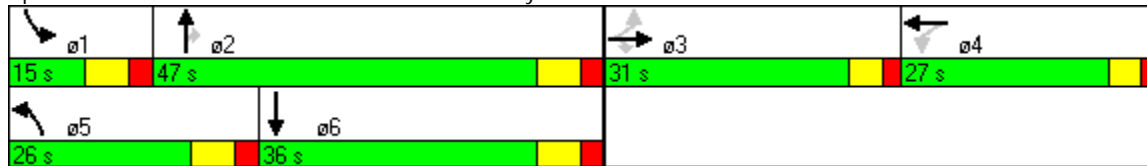


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Act Effct Green (s)	25.5	25.5	25.5	20.0	20.0		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.16	0.16		0.15	0.36	0.36	0.07	0.27	
v/c Ratio	1.07	1.31	0.56	0.79	0.92		0.12	0.13	0.27	0.08	0.10	
Control Delay	188.8	191.1	9.8	95.3	69.6		45.9	26.9	4.9	55.5	24.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	188.8	191.1	9.8	95.3	69.6		45.9	26.9	4.9	55.5	24.6	
LOS	F	F	A	F	E		D	C	A	E	C	
Approach Delay		134.4			72.9			20.9				28.4
Approach LOS		F			E			C				C
Queue Length 50th (ft)	~58	~373	10	72	161		23	46	0	7	20	
Queue Length 95th (ft)	#159	#501	95	#175	#229		44	66	49	20	37	
Internal Link Dist (ft)		747			810			1879			1881	
Turn Bay Length (ft)	200		200	200			200		200	200		
Base Capacity (vph)	55	502	574	110	643		532	1826	688	224	1339	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	1.07	1.31	0.56	0.74	0.86		0.12	0.13	0.27	0.08	0.10	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 122.6
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.31
 Intersection Signal Delay: 87.0
 Intersection LOS: F
 Intersection Capacity Utilization 50.5%
 ICU Level of Service A
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	875	431	271	635	135	156	560	295	134	630	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor												
Frt		0.951			0.978			0.948			0.965	
Flt Protected	0.950			0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1770	3366	0	1610	3292	0	1770	4821	0	1770	4907	0
Flt Permitted	0.348			0.258	0.565		0.950			0.950		
Satd. Flow (perm)	648	3366	0	437	1873	0	1770	4821	0	1770	4907	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			13			155			88	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1219			1696			633			1959	
Travel Time (s)		27.7			38.5			14.4			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	90	951	468	295	690	147	170	609	321	146	685	207
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	90	1419	0	147	985	0	170	930	0	146	892	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Detector Phase	4	4		3	3		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	25.0		5.0	5.0	
Minimum Split (s)	11.5	11.5		34.5	34.5		11.5	31.5		11.5	31.5	
Total Split (s)	18.0	18.0	0.0	22.0	22.0	0.0	15.0	65.0	0.0	15.0	65.0	0.0
Total Split (%)	15.0%	15.0%	0.0%	18.3%	18.3%	0.0%	12.5%	54.2%	0.0%	12.5%	54.2%	0.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0
Lead/Lag	Lag	Lag		Lead	Lead		Lead	Lag		Lead	Lag	

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		Max	C-Max		Max	C-Max	
Act Effect Green (s)	11.5	11.5		15.5	15.5		8.5	58.5		8.5	58.5	
Actuated g/C Ratio	0.10	0.10		0.13	0.13		0.07	0.49		0.07	0.49	
v/c Ratio	1.45	3.80		2.62	3.89		1.36	0.38		1.17	0.37	
Control Delay	311.6	1283.3		801.7	1326.2		246.9	16.3		181.1	17.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	311.6	1283.3		801.7	1326.2		246.9	16.3		181.1	17.6	
LOS	F	F		F	F		F	B		F	B	
Approach Delay		1225.3			1258.1			52.0			40.6	
Approach LOS		F			F			D			D	
Queue Length 50th (ft)	~95	~1038		~210	~765		~173	132		~134	137	
Queue Length 95th (ft)	#205	#1178		#357	#906		#315	166		#270	169	
Internal Link Dist (ft)		1139			1616			553			1879	
Turn Bay Length (ft)	150			150			200			200		
Base Capacity (vph)	62	373		56	253		125	2430		125	2437	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.45	3.80		2.63	3.89		1.36	0.38		1.17	0.37	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 25 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 3.89
 Intersection Signal Delay: 705.7 Intersection LOS: F
 Intersection Capacity Utilization 107.7% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway



Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	872	10	5	729	26	10	17	5	57	42	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.995			0.967			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5			5			86	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		698			1277			499			262	
Travel Time (s)		15.9			29.0			11.3			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	711	8	4	594	21	11	18	5	62	46	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	719	0	4	615	0	11	23	0	62	132	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	16.0	27.0	0.0	16.0	27.0	0.0	16.0	16.0	0.0	16.0	16.0	0.0
Total Split (%)	21.3%	36.0%	0.0%	21.3%	36.0%	0.0%	21.3%	21.3%	0.0%	21.3%	21.3%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effct Green (s)	5.8	33.5		5.3	31.3		5.2	5.8		6.6	8.6	
Actuated g/C Ratio	0.11	0.62		0.10	0.58		0.10	0.11		0.12	0.16	
v/c Ratio	0.17	0.33		0.02	0.30		0.06	0.12		0.28	0.39	
Control Delay	28.9	9.3		29.2	11.4		29.0	25.7		28.4	14.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.9	9.3		29.2	11.4		29.0	25.7		28.4	14.1	
LOS	C	A		C	B		C	C		C	B	
Approach Delay		10.2			11.5			26.8			18.7	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	7	36		1	30		2	4		14	10	
Queue Length 95th (ft)	39	176		10	156		19	28		59	65	
Internal Link Dist (ft)		618			1197			419			182	
Turn Bay Length (ft)	150			150			100			100		
Base Capacity (vph)	366	2202		366	2055		349	359		349	447	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.33		0.01	0.30		0.03	0.06		0.18	0.30	

Intersection Summary

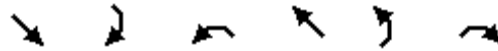
Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 53.7
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 12.1 Intersection LOS: B
 Intersection Capacity Utilization 45.0% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 20: FM 2920 & Quinn Rd

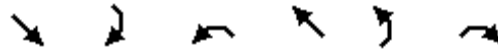


Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
2/26/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↘	↑↑	↘	↗
Volume (vph)	576	246	433	1010	238	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.955					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3380	0	1770	3539	1770	1583
Flt Permitted			0.302		0.950	
Satd. Flow (perm)	3380	0	563	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	197					232
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1406	
Travel Time (s)	35.3			19.7	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	626	267	471	1098	259	232
Shared Lane Traffic (%)						
Lane Group Flow (vph)	893	0	471	1098	259	232
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type			Perm			Perm
Protected Phases	6			2	4	
Permitted Phases			2			4
Detector Phase	6		2	2	4	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0		20.0	20.0	20.0	20.0
Total Split (s)	90.0	0.0	90.0	90.0	20.0	20.0
Total Split (%)	81.8%	0.0%	81.8%	81.8%	18.2%	18.2%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lead-Lag Optimize?						
Recall Mode	C-Min		C-Min	C-Min	None	None
Act Effect Green (s)	86.0		86.0	86.0	16.0	16.0
Actuated g/C Ratio	0.78		0.78	0.78	0.15	0.15
v/c Ratio	0.33		1.07	0.40	1.01	0.54
Control Delay	3.0		79.0	4.3	105.9	10.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	3.0		79.0	4.3	105.9	10.7
LOS	A		E	A	F	B
Approach Delay	3.0			26.7	60.9	
Approach LOS	A			C	E	
Queue Length 50th (ft)	57		~370	104	~187	0
Queue Length 95th (ft)	75		#255	130	#354	70
Internal Link Dist (ft)	1475			786	1326	
Turn Bay Length (ft)			150			
Base Capacity (vph)	2686		440	2767	257	429
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.33		1.07	0.40	1.01	0.54

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 25.2
 Intersection LOS: C
 Intersection Capacity Utilization 71.0%
 ICU Level of Service C
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 26: FM 2920 & Mahaffey Rd

02	04
90 s	20 s
06	
90 s	

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	526	17	43	772	115	66	296	12	205	365	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.980			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3468	0	1770	1852	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3522	0	1770	3468	0	1770	1852	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			14			1				165
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	121	429	14	35	629	94	72	322	13	223	397	204
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	443	0	35	723	0	72	335	0	223	397	204
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effct Green (s)	12.5	48.9		7.0	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.10	0.41		0.06	0.32		0.16	0.17		0.21	0.20	0.20
v/c Ratio	0.65	0.31		0.34	0.64		0.25	1.07		0.60	1.06	0.45
Control Delay	67.7	25.4		63.2	37.2		47.7	119.0		50.9	108.0	14.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	67.7	25.4		63.2	37.2		47.7	119.0		50.9	108.0	14.1
LOS	E	C		E	D		D	F		D	F	B
Approach Delay		34.4			38.4			106.4			69.3	
Approach LOS		C			D			F			E	
Queue Length 50th (ft)	91	126		26	243		49	~285		156	~334	25
Queue Length 95th (ft)	154	175		62	331		99	#503		254	#564	98
Internal Link Dist (ft)		1890			1910			746			1781	
Turn Bay Length (ft)	200			200			200			200		200
Base Capacity (vph)	275	1448		275	1132		283	312		372	376	451
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.44	0.31		0.13	0.64		0.25	1.07		0.60	1.06	0.45

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 119.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 58.3 Intersection LOS: E
 Intersection Capacity Utilization 76.0% ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	916	99	82	855	3	48	2	47	16	27	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985						0.934			0.972	
Flt Protected	0.950			0.950				0.976			0.986	
Satd. Flow (prot)	1770	3486	0	1770	3539	0	0	1698	0	0	1785	0
Flt Permitted	0.950			0.950				0.840			0.918	
Satd. Flow (perm)	1770	3486	0	1770	3539	0	0	1461	0	0	1662	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						25			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	747	81	67	697	2	52	2	51	17	29	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	828	0	67	699	0	0	105	0	0	58	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009

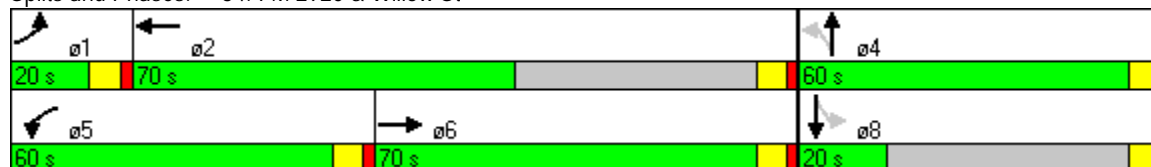


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Act Effct Green (s)	5.1	63.0		10.9	78.5			54.5			54.5	
Actuated g/C Ratio	0.03	0.43		0.07	0.53			0.37			0.37	
v/c Ratio	0.05	0.56		0.51	0.37			0.19			0.09	
Control Delay	72.0	33.8		79.6	21.5			25.5			28.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	72.0	33.8		79.6	21.5			25.5			28.2	
LOS	E	C		E	C			C			C	
Approach Delay		33.9			26.6			25.5			28.2	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	3	311		63	194			51			32	
Queue Length 95th (ft)	15	394		117	287			101			68	
Internal Link Dist (ft)		266			1425			229			974	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	156	1488		634	2464			554			617	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.02	0.56		0.11	0.28			0.19			0.09	

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 148
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 30.0
 Intersection LOS: C
 Intersection Capacity Utilization 54.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	6	820	42	20	736	14	68	94	88	58	158	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.997			0.952			0.985	
Flt Protected					0.999			0.987			0.988	
Satd. Flow (prot)	0	3514	0	0	3525	0	0	1750	0	0	1813	0
Flt Permitted		0.950			0.926			0.818			0.642	
Satd. Flow (perm)	0	3339	0	0	3267	0	0	1451	0	0	1178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			2			34			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	668	34	16	600	11	74	102	96	63	172	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	707	0	0	627	0	0	272	0	0	265	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	36.0%	36.0%	0.0%	36.0%	36.0%	0.0%	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009

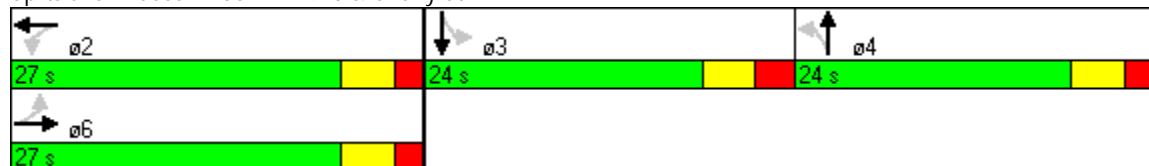


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effct Green (s)		21.5			21.5			18.0			18.0	
Actuated g/C Ratio		0.29			0.29			0.24			0.24	
v/c Ratio		0.73			0.67			0.73			0.92	
Control Delay		29.3			27.7			36.1			65.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.3			27.7			36.1			65.8	
LOS		C			C			D			E	
Approach Delay		29.3			27.7			36.1			65.8	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)		154			134			102			117	
Queue Length 95th (ft)		215			190			#212			#258	
Internal Link Dist (ft)		644			2620			220			531	
Turn Bay Length (ft)												
Base Capacity (vph)		962			938			374			289	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.73			0.67			0.73			0.92	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 34.9
 Intersection LOS: C
 Intersection Capacity Utilization 55.8%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	8	782	29	17	752	19	19	17	45	23	13	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.996			0.925			0.966	
Flt Protected		0.999			0.999			0.988			0.977	
Satd. Flow (prot)	0	3518	0	0	3522	0	0	1702	0	0	1758	0
Flt Permitted		0.949			0.940			0.902			0.826	
Satd. Flow (perm)	0	3342	0	0	3314	0	0	1554	0	0	1486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			7			49			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	638	24	14	613	15	21	18	49	25	14	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	669	0	0	642	0	0	88	0	0	52	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		41.1			41.1			7.5			7.5	
Actuated g/C Ratio		0.79			0.79			0.14			0.14	
v/c Ratio		0.25			0.24			0.33			0.23	
Control Delay		3.3			3.3			15.5			19.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.3			3.3			15.5			19.4	
LOS		A			A			B			B	
Approach Delay		3.3			3.3			15.5			19.4	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		35			34			11			11	
Queue Length 95th (ft)		63			61			44			36	
Internal Link Dist (ft)		1520			644			252			544	
Turn Bay Length (ft)												
Base Capacity (vph)		2652			2629			387			344	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.25			0.24			0.23			0.15	

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	51.9
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	4.6
Intersection LOS:	A
Intersection Capacity Utilization:	40.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	832	0	0	736	61	0	0	0	36	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.988							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3497	0	0	1863	0	1770	0	1583
Flt Permitted	0.400									0.950		
Satd. Flow (perm)	745	3539	0	0	3497	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12							75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	20	678	0	0	600	50	0	0	0	39	0	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	678	0	0	650	0	0	0	0	39	0	75
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	31.0	31.0	0.0	0.0	31.0	0.0	22.0	22.0	0.0	22.0	0.0	22.0
Total Split (%)	41.3%	41.3%	0.0%	0.0%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	0.0%	29.3%
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lead	Lead		Lag		Lag

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009

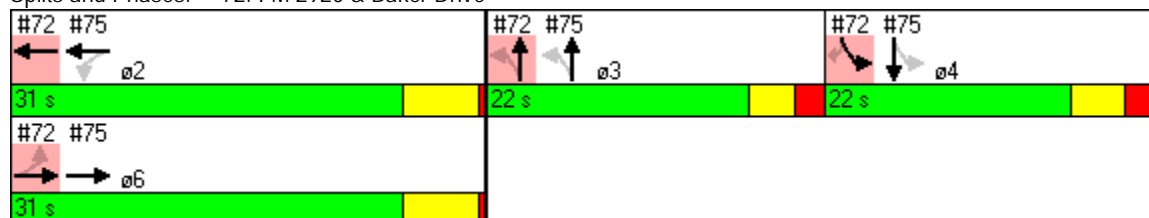


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Recall Mode	None	None			C-Max		None	None		None		None
Act Effct Green (s)	54.4	54.4			54.4					7.3		7.3
Actuated g/C Ratio	0.73	0.73			0.73					0.10		0.10
v/c Ratio	0.04	0.26			0.26					0.23		0.34
Control Delay	1.4	1.3			6.0					34.5		13.0
Queue Delay	0.7	0.2			0.0					0.0		0.1
Total Delay	2.2	1.5			6.0					34.5		13.2
LOS	A	A			A					C		B
Approach Delay		1.5			6.0							
Approach LOS		A			A							
Queue Length 50th (ft)	0	8			35					17		0
Queue Length 95th (ft)	2	12			116					44		36
Internal Link Dist (ft)		32			1520			35			250	
Turn Bay Length (ft)	100											
Base Capacity (vph)	540	2566			2539					378		397
Starvation Cap Reductn	409	1040			0					0		0
Spillback Cap Reductn	0	0			0					0		59
Storage Cap Reductn	0	0			0					0		0
Reduced v/c Ratio	0.15	0.44			0.26					0.10		0.22

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 5.0
 Intersection Capacity Utilization 33.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	853	70	52	886	0	10	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989						0.927			0.865	
Flt Protected				0.950				0.978				
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	1689	0	0	1611	0
Flt Permitted				0.353				0.833				
Satd. Flow (perm)	0	3500	0	658	3539	0	0	1438	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12						13			448	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		464			112			489			304	
Travel Time (s)		10.5			2.5			11.1			6.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	695	57	42	722	0	11	0	13	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	752	0	42	722	0	0	24	0	0	1	0
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3			4	
Permitted Phases				2			3			4		
Detector Phase		6		2	2		3	3		4	4	
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	31.0	0.0	31.0	31.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	0.0%	41.3%	0.0%	41.3%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lead	Lead		Lag	Lag	

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009

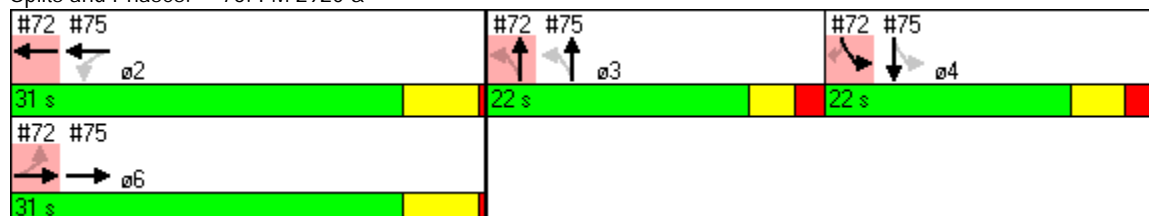


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		54.4		54.4	54.4			7.7			7.3	
Actuated g/C Ratio		0.73		0.73	0.73			0.10			0.10	
v/c Ratio		0.30		0.09	0.28			0.15			0.00	
Control Delay		6.2		2.7	2.1			22.3			0.0	
Queue Delay		0.0		1.1	0.3			0.0			0.0	
Total Delay		6.2		3.8	2.4			22.3			0.0	
LOS		A		A	A			C			A	
Approach Delay		6.2			2.5			22.3			0.0	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)		42		1	13			5			0	
Queue Length 95th (ft)		138		8	38			25			0	
Internal Link Dist (ft)		384			32			409			224	
Turn Bay Length (ft)												
Base Capacity (vph)		2541		477	2566			336			696	
Starvation Cap Reductn		0		319	1151			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.30		0.27	0.51			0.07			0.00	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 4.6
 Intersection Capacity Utilization 49.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	884	17	100	767	22	12	20	56	27	52	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.996			0.914				0.850
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1770	3529	0	1770	3525	0	0	1691	0	0	1831	1583
Flt Permitted	0.950			0.950				0.965			0.899	
Satd. Flow (perm)	1770	3529	0	1770	3525	0	0	1643	0	0	1675	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			61				48
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	15	721	14	82	625	18	13	22	61	29	57	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	735	0	82	643	0	0	96	0	0	86	48
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009

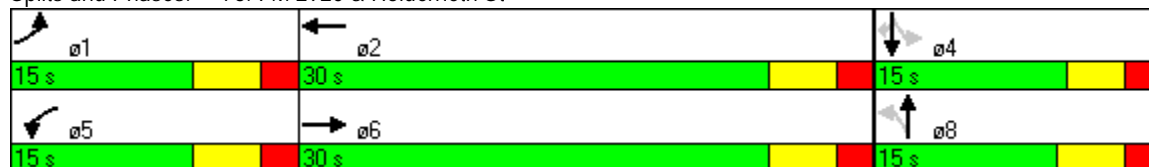


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effct Green (s)	7.1	24.8		8.1	30.4			22.3			22.8	22.8
Actuated g/C Ratio	0.11	0.38		0.12	0.46			0.34			0.34	0.34
v/c Ratio	0.08	0.55		0.38	0.40			0.16			0.15	0.08
Control Delay	30.9	19.4		34.0	13.1			9.7			18.2	6.6
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	30.9	19.4		34.0	13.1			9.7			18.2	6.6
LOS	C	B		C	B			A			B	A
Approach Delay		19.7			15.5			9.7			14.0	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	6	135		34	76			11			27	0
Queue Length 95th (ft)	23	197		74	158			43			59	21
Internal Link Dist (ft)		1197			384			552			298	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	257	1327		257	1625			594			577	577
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.06	0.55		0.32	0.40			0.16			0.15	0.08

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 66.1
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 16.9
 Intersection Capacity Utilization 50.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	927	0	2	875	22	1	4	1	33	3	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.996			0.978			0.919	
Flt Protected	0.950			0.950				0.992			0.982	
Satd. Flow (prot)	1770	3539	0	1770	3525	0	0	1807	0	0	1681	0
Flt Permitted	0.950			0.950				0.948			0.875	
Satd. Flow (perm)	1770	3539	0	1770	3525	0	0	1727	0	0	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					4			1			58	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	9	756	0	2	713	18	1	4	1	36	3	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	756	0	2	731	0	0	6	0	0	97	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	21.0	33.0	0.0	21.0	33.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	28.0%	44.0%	0.0%	28.0%	44.0%	0.0%	28.0%	28.0%	0.0%	28.0%	28.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009

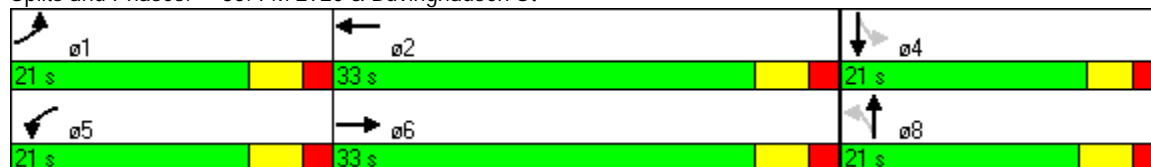


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)	7.1	35.2		7.1	35.2			7.4				7.8
Actuated g/C Ratio	0.14	0.68		0.14	0.68			0.14				0.15
v/c Ratio	0.04	0.32		0.01	0.31			0.02				0.35
Control Delay	20.9	6.3		20.5	6.2			18.8				14.3
Queue Delay	0.0	0.0		0.0	0.0			0.0				0.0
Total Delay	20.9	6.3		20.5	6.2			18.8				14.3
LOS	C	A		C	A			B				B
Approach Delay		6.4			6.2			18.8				14.3
Approach LOS		A			A			B				B
Queue Length 50th (ft)	2	42		1	40			1				9
Queue Length 95th (ft)	14	133		6	128			10				49
Internal Link Dist (ft)		196			618			13				529
Turn Bay Length (ft)												
Base Capacity (vph)	535	2392		535	2384			523				507
Starvation Cap Reductn	0	0		0	0			0				0
Spillback Cap Reductn	0	0		0	0			0				0
Storage Cap Reductn	0	0		0	0			0				0
Reduced v/c Ratio	0.02	0.32		0.00	0.31			0.01				0.19

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 52.1
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 6.9
 Intersection LOS: A
 Intersection Capacity Utilization 38.2%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 85: FM 2920 & Buvinghausen St



Lanes, Volumes, Timings
87: Alma St & FM 2920

Medical Complex Drive
2/26/2009

























Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	16	0	982	143	3	893
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt			0.981			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	3472	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	3472	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	218		890			276
Travel Time (s)	5.0		20.2			6.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	17	0	1067	155	3	971
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	1222	0	0	974
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  			  					
Volume (vph)	140	1221	0	0	503	18	180	71	26	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	0		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25		25	25		25	25		25	25		25	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00	
Ped Bike Factor													
Frt					0.995			0.987					
Flt Protected	0.950							0.971					
Satd. Flow (prot)	1770	5085	0	0	6376	0	0	4874	0	0	0	0	
Flt Permitted	0.950							0.971					
Satd. Flow (perm)	1770	5085	0	0	6376	0	0	4874	0	0	0	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					8			13					
Link Speed (mph)		30			30			30				30	
Link Distance (ft)		367			827			1957				1199	
Travel Time (s)		8.3			18.8			44.5				27.3	
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	75%	75%	75%	75%	75%	75%	75%	100%	75%	75%	75%	75%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%				0%	
Adj. Flow (vph)	114	995	0	0	410	15	147	77	21	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	114	995	0	0	425	0	0	245	0	0	0	0	
Number of Detectors	1	2			2		1	2					
Detector Template	Left	Thru			Thru		Left	Thru					
Leading Detector (ft)	20	100			100		20	100					
Trailing Detector (ft)	0	0			0		0	0					
Turn Type	Prot						Perm						
Protected Phases	1	1 2			2			4					
Permitted Phases							4						
Detector Phase	1	1 2			2		4	4					
Switch Phase													
Minimum Initial (s)	5.0				20.0		5.0	5.0					
Minimum Split (s)	11.5				26.5		27.0	27.0					
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%	
Yellow Time (s)	4.0				4.0		4.0	4.0					
All-Red Time (s)	2.5				2.5		3.0	3.0					
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead				Lag								

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes			Yes								
Recall Mode	None			C-Max			None		None			
Act Effct Green (s)	11.3		76.6		58.8		14.9					
Actuated g/C Ratio	0.11		0.73		0.56		0.14					
v/c Ratio	0.60		0.27		0.12		0.35					
Control Delay	59.0		5.9		11.6		39.3					
Queue Delay	0.0		0.1		0.0		0.0					
Total Delay	59.0		6.1		11.6		39.3					
LOS	E		A		B		D					
Approach Delay			11.5		11.6		39.3					
Approach LOS			B		B		D					
Queue Length 50th (ft)	82		106		35		52					
Queue Length 95th (ft)	m134		127		58		76					
Internal Link Dist (ft)			287		747		1877		1119			
Turn Bay Length (ft)												
Base Capacity (vph)	396		3709		3575		846					
Starvation Cap Reductn	0		1431		0		0					
Spillback Cap Reductn	0		0		0		0					
Storage Cap Reductn	0		0		0		0					
Reduced v/c Ratio	0.29		0.44		0.12		0.29					

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 15.3 Intersection LOS: B
 Intersection Capacity Utilization 48.7% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Lead-Lag Optimize?	Yes	Yes	
Recall Mode	None	C-Max	None
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↑↑↑	
Volume (vph)	0	871	326	83	600	0	0	0	0	490	51	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt		0.959										0.966
Flt Protected				0.950								0.967
Satd. Flow (prot)	0	6145	0	1770	5085	0	0	0	0	0	4750	0
Flt Permitted				0.950								0.967
Satd. Flow (perm)	0	6145	0	1770	5085	0	0	0	0	0	4750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110										61
Link Speed (mph)		30			30			30				30
Link Distance (ft)		735			367			1962				1208
Travel Time (s)		16.7			8.3			44.6				27.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	100%	75%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	710	266	68	489	0	0	0	0	399	55	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	976	0	68	489	0	0	0	0	0	587	0
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases										8		
Detector Phase		6		5	5 6					8		8
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag		Lead								

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		C-Max		None						None	None	
Act Effect Green (s)		62.3		7.8	76.6							14.9
Actuated g/C Ratio		0.59		0.07	0.73							0.14
v/c Ratio		0.26		0.52	0.13							1.31dl
Control Delay		9.7		64.9	4.9							48.1
Queue Delay		0.0		0.0	0.0							0.0
Total Delay		9.7		64.9	4.9							48.1
LOS		A		E	A							D
Approach Delay		9.7			12.2							48.1
Approach LOS		A			B							D
Queue Length 50th (ft)		74		49	39							127
Queue Length 95th (ft)		109		96	52							164
Internal Link Dist (ft)		655			287			1882				1128
Turn Bay Length (ft)												
Base Capacity (vph)		3692		396	3709							865
Starvation Cap Reductn		0		0	0							0
Spillback Cap Reductn		0		0	0							0
Storage Cap Reductn		0		0	0							0
Reduced v/c Ratio		0.26		0.17	0.13							0.68

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 21.0 Intersection LOS: C
 Intersection Capacity Utilization 48.7% ICU Level of Service A
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd

#90 ø1 30 s	#90 ø2 50 s	#90 ø4 25 s
#93 ø5 30 s	#93 ø6 50 s	#93 ø8 25 s

Lane Group	ø1	ø2	ø4
Lead-Lag Optimize?	Yes	Yes	
Recall Mode	None	C-Max	None
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑	↗		↑↑↑				
Volume (vph)	56	500	0	0	721	30	164	57	409	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850		0.903				
Flt Protected	0.950							0.987				
Satd. Flow (prot)	1770	3539	0	0	5085	1583	0	4532	0	0	0	0
Flt Permitted	0.950							0.987				
Satd. Flow (perm)	1770	3539	0	0	5085	1583	0	4532	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						33		374				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		393			1219			636			1957	
Travel Time (s)		8.9			27.7			14.5			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	61	543	0	0	784	33	178	62	445	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	543	0	0	784	33	0	685	0	0	0	0
Number of Detectors	1	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
Trailing Detector (ft)	0	0			0	0	0	0				
Turn Type	Prot					Perm	Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases						2	4					
Detector Phase	1	1 2			2	2	4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0	20.0	5.0	5.0				
Minimum Split (s)	11.5				26.5	26.5	27.0	27.0				
Total Split (s)	15.8	72.0	0.0	0.0	56.2	56.2	28.0	28.0	0.0	0.0	0.0	0.0
Total Split (%)	15.8%	72.0%	0.0%	0.0%	56.2%	56.2%	28.0%	28.0%	0.0%	0.0%	0.0%	0.0%
Yellow Time (s)	4.0				4.0	4.0	4.0	4.0				
All-Red Time (s)	2.5				2.5	2.5	3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	6.5	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag	Lag						

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	44.4	27.6	28.0
Total Split (%)	44%	28%	28%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009

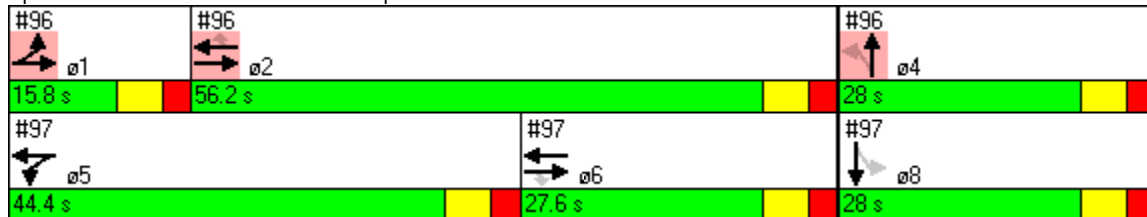


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes			Yes			Yes					
Recall Mode	None			Min			Min					
Act Effct Green (s)	8.1	75.6			61.0	61.0			10.9			
Actuated g/C Ratio	0.08	0.76			0.61	0.61			0.11			
v/c Ratio	0.43	0.20			0.25	0.03			0.87dr			
Control Delay	46.4	4.0			9.9	3.8			28.4			
Queue Delay	0.0	0.0			0.0	0.0			0.1			
Total Delay	46.4	4.0			9.9	3.8			28.6			
LOS	D	A			A	A			C			
Approach Delay		8.3			9.7				28.6			
Approach LOS		A			A				C			
Queue Length 50th (ft)	40	42			77	0			70			
Queue Length 95th (ft)	83	63			121	14			109			
Internal Link Dist (ft)		313			1139				556			1877
Turn Bay Length (ft)						200						
Base Capacity (vph)	171	2545			3101	978			1247			
Starvation Cap Reductn	0	0			0	0			0			
Spillback Cap Reductn	0	0			0	0			82			
Storage Cap Reductn	0	0			0	0			0			
Reduced v/c Ratio	0.36	0.21			0.25	0.03			0.59			

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 15.4
 Intersection LOS: B
 Intersection Capacity Utilization 63.7%
 ICU Level of Service B
 Analysis Period (min) 15
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 96: Medical Complex Drive & SH 249 East Service Rd



Lane Group	ø5	ø6	ø8
Lead-Lag Optimize?	Yes	Yes	
Recall Mode	None	C-Min	Min
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑						↑↑↑	
Volume (vph)	0	273	101	633	632	0	0	0	0	56	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt			0.850									0.966
Flt Protected				0.950								0.967
Satd. Flow (prot)	0	5085	1583	1770	3539	0	0	0	0	0	4750	0
Flt Permitted				0.950								0.967
Satd. Flow (perm)	0	5085	1583	1770	3539	0	0	0	0	0	4750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110									20
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2815			393			714				1962
Travel Time (s)		64.0			8.9			16.2				44.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	297	110	688	687	0	0	0	0	61	7	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	297	110	688	687	0	0	0	0	0	88	0
Number of Detectors		2	1	1	2					1	2	
Detector Template		Thru	Right	Left	Thru					Left	Thru	
Leading Detector (ft)		100	20	20	100					20	100	
Trailing Detector (ft)		0	0	0	0					0	0	
Turn Type			Perm	Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases			6							8		
Detector Phase		6	6	5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0						5.0	5.0	
Minimum Split (s)		27.5	27.5	11.5						28.0	28.0	
Total Split (s)	0.0	27.6	27.6	44.4	72.0	0.0	0.0	0.0	0.0	28.0	28.0	0.0
Total Split (%)	0.0%	27.6%	27.6%	44.4%	72.0%	0.0%	0.0%	0.0%	0.0%	28.0%	28.0%	0.0%
Yellow Time (s)		4.0	4.0	4.0						4.0	4.0	
All-Red Time (s)		2.5	2.5	2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag	Lag	Lead								

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	15.8	56.2	28.0
Total Split (%)	16%	56%	28%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009

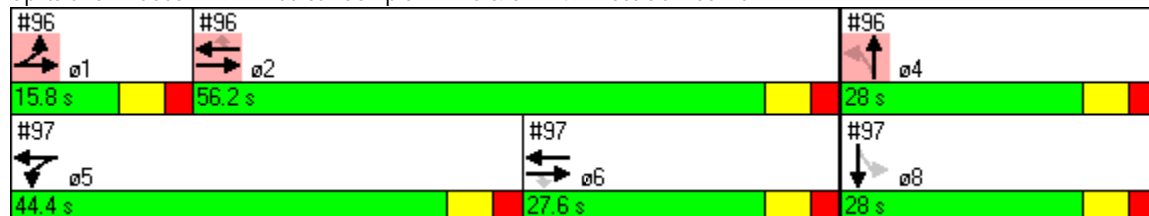


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Min	C-Min	None						Min	Min	
Act Effect Green (s)		23.3	23.3	45.8	75.6							10.9
Actuated g/C Ratio		0.23	0.23	0.46	0.76							0.11
v/c Ratio		0.25	0.24	0.85	0.26							0.16
Control Delay		32.9	8.2	31.7	3.3							30.7
Queue Delay		0.0	0.0	2.0	0.1							0.0
Total Delay		32.9	8.2	33.7	3.4							30.7
LOS		C	A	C	A							C
Approach Delay		26.2			18.6							30.7
Approach LOS		C			B							C
Queue Length 50th (ft)		58	0	247	46							14
Queue Length 95th (ft)		86	45	#619	70							29
Internal Link Dist (ft)		2735			313			634				1882
Turn Bay Length (ft)			200									
Base Capacity (vph)		1206	460	811	2690							1013
Starvation Cap Reductn		0	0	45	960							0
Spillback Cap Reductn		0	0	0	0							0
Storage Cap Reductn		0	0	0	0							0
Reduced v/c Ratio		0.25	0.24	0.90	0.40							0.09

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 20.8
 Intersection LOS: C
 Intersection Capacity Utilization 63.7%
 ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 97: Medical Complex Drive & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Lead-Lag Optimize?	Yes	Yes	
Recall Mode	None	Min	Min
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1990			618			233			163	
Travel Time (s)		45.2			14.0			5.3			3.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
114: Medical Complex Drive &



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	906			5205	1406	
Travel Time (s)	20.6			118.3	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Turn Type			Perm			
Protected Phases	4!			2	8!	
Permitted Phases			2			
Detector Phase	4		2	2	8	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						

Lanes, Volumes, Timings
 114: Medical Complex Drive &

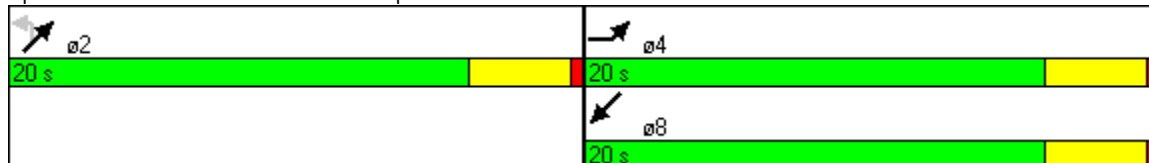


Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	Max	
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	826			5125	1326	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary





















Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.00
 Intersection Signal Delay: 0.0 Intersection LOS: A
 Intersection Capacity Utilization 0.0% ICU Level of Service A
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 114: Medical Complex Drive &



Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3855			2112			1114			1168	
Travel Time (s)		87.6			48.0			25.3			26.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												

Lanes, Volumes, Timings
 116: Medical Complex Dr &

Medical Complex Drive
 2/26/2009

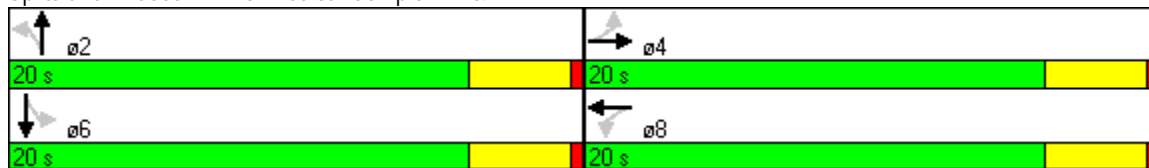


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		3775		2032			1034			1088		
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 116: Medical Complex Dr &



Lanes, Volumes, Timings
 117: Medical Complex Drive & Hufsmith Kohrville Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	467	20	35	592	87	22	97	4	86	155	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.981			0.994			0.948	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3472	0	1770	1852	0	1770	1766	0
Flt Permitted	0.325			0.446			0.570			0.687		
Satd. Flow (perm)	605	3518	0	831	3472	0	1062	1852	0	1280	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			49			4			65	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2112			5205			1065			775	
Travel Time (s)		48.0			118.3			24.2			17.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	139	508	22	38	643	95	24	105	4	93	168	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	530	0	38	738	0	24	109	0	93	256	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	55.6%	55.6%	0.0%	55.6%	55.6%	0.0%	44.4%	44.4%	0.0%	44.4%	44.4%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												

Lanes, Volumes, Timings
 117: Medical Complex Drive & Hufsmith Kohrville Rd

Medical Complex Drive
 2/26/2009

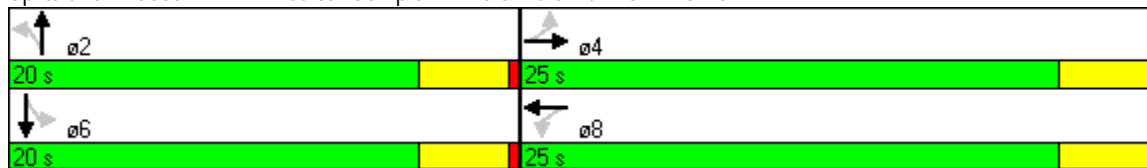


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)	21.0	21.0		21.0	21.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.36	0.36		0.36	0.36	
v/c Ratio	0.49	0.32		0.10	0.45		0.06	0.16		0.20	0.38	
Control Delay	15.9	8.0		7.6	8.6		10.2	10.5		11.6	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.9	8.0		7.6	8.6		10.2	10.5		11.6	10.0	
LOS	B	A		A	A		B	B		B	A	
Approach Delay		9.6			8.5			10.5			10.4	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	23	40		5	56		4	18		16	34	
Queue Length 95th (ft)	66	64		17	89		15	43		41	77	
Internal Link Dist (ft)		2032			5125			985			695	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	282	1649		388	1646		378	661		455	670	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.49	0.32		0.10	0.45		0.06	0.16		0.20	0.38	

Intersection Summary

Area Type:	Other
Cycle Length:	45
Actuated Cycle Length:	45
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	9.4
Intersection LOS:	A
Intersection Capacity Utilization	54.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 117: Medical Complex Drive & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	478	26	32	475	21	50	90	47	80	215	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.994			0.949			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3518	0	1770	1768	0	1770	1824	0
Flt Permitted	0.437			0.431			0.581			0.662		
Satd. Flow (perm)	814	3511	0	803	3518	0	1082	1768	0	1233	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			13			51			25	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2634			3855			1711			2332	
Travel Time (s)		59.9			87.6			38.9			53.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	29	520	28	35	516	23	54	98	51	87	234	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	548	0	35	539	0	54	149	0	87	273	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												

Lanes, Volumes, Timings
 122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
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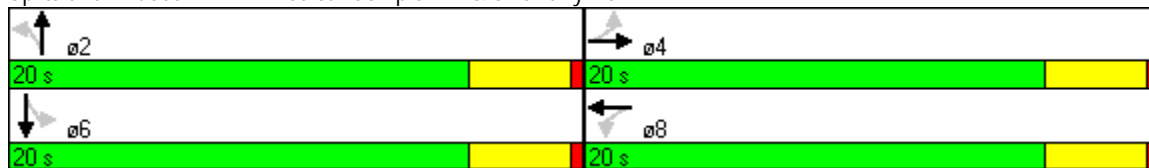


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.09	0.39		0.11	0.38		0.12	0.20		0.18	0.37	
Control Delay	8.4	9.3		8.7	9.3		8.6	6.4		8.9	9.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.4	9.3		8.7	9.3		8.6	6.4		8.9	9.4	
LOS	A	A		A	A		A	A		A	A	
Approach Delay		9.2			9.2			7.0			9.3	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	4	41		5	40		7	13		12	36	
Queue Length 95th (ft)	15	68		17	67		22	37		32	75	
Internal Link Dist (ft)		2554			3775			1631			2252	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	326	1414		321	1415		433	738		493	745	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.39		0.11	0.38		0.12	0.20		0.18	0.37	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.39
Intersection Signal Delay:	9.0
Intersection LOS:	A
Intersection Capacity Utilization:	47.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 122: Medical Complex Dr & S. Cherry Rd



Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1181			2634			643			613	
Travel Time (s)		26.8			59.9			14.6			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												

Lanes, Volumes, Timings
131: Medical Complex Dr &

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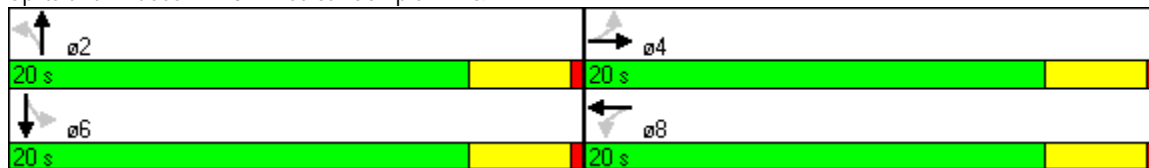


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1101		2554			563			533		
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary





















Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 131: Medical Complex Dr &



Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1181			411			528	
Travel Time (s)		22.7			26.8			9.3			12.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												

Lanes, Volumes, Timings
132: Int

Medical Complex Drive
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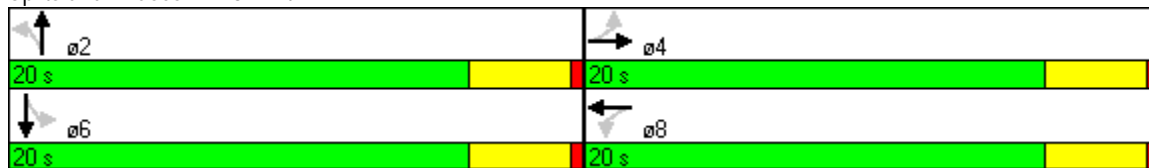


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		920			1101			331			448	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

















Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 132: Int



Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1696			1000			95			284	
Travel Time (s)		38.5			22.7			2.2			6.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												

Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009

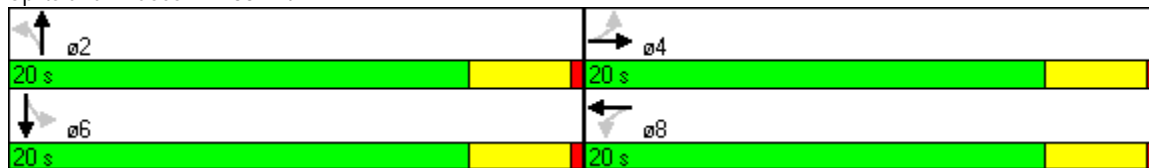


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1616		920			15			204		
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												











Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 133: Int



Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

						
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	1863	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	1863	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	313		692			2340
Travel Time (s)	7.1		15.7			53.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Turn Type					Perm	
Protected Phases	2					8
Permitted Phases			4		8	
Detector Phase	2		4		8	8
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	20.0		20.0		20.0	20.0
Total Split (s)	20.0	0.0	20.0	0.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	0.5		0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						

Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

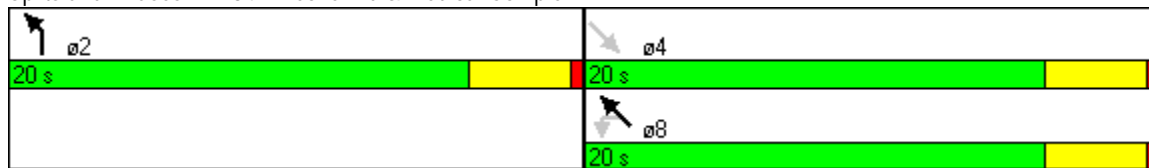


Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lead-Lag Optimize?						
Recall Mode	Max		Max		Max	Max
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	233		612		2260	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 134: Triechel Rd & Medical Complex Dr





















2011 BUILD CONDITION ANALYSIS

[PM PEAK HOUR]

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	474	25	3	663	0	36	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993						0.968				
Flt Protected				0.950				0.963				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1736	0	0	1863	0
Flt Permitted				0.950				0.776				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1399	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						12				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	386	20	2	540	0	39	0	12	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	406	0	2	540	0	0	51	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	60.1			5.0	62.3		6.7					
Actuated g/C Ratio	0.81			0.07	0.84		0.09					
v/c Ratio	0.14			0.02	0.18		0.37					
Control Delay	3.5			32.5	2.3		33.0					
Queue Delay	0.0			0.0	0.0		0.0					
Total Delay	3.5			32.5	2.3		33.0					
LOS	A			C	A		C					
Approach Delay	3.5				2.5		33.0					
Approach LOS	A				A		C					
Queue Length 50th (ft)	19			1	27		17					
Queue Length 95th (ft)	63			7	48		48					
Internal Link Dist (ft)	2210				2010		1901				120	
Turn Bay Length (ft)	200											
Base Capacity (vph)	2964			455	3390		378					
Starvation Cap Reductn	0			0	0		0					
Spillback Cap Reductn	0			0	0		0					
Storage Cap Reductn	0			0	0		0					
Reduced v/c Ratio	0.14			0.00	0.16		0.13					

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 73.9
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 4.5
 Intersection LOS: A
 Intersection Capacity Utilization 30.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	356	41	44	492	11	28	7	58	47	15	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.984			0.997			0.867			0.991	
Flt Protected	0.950			0.950			0.950			0.950	0.976	
Satd. Flow (prot)	1770	3483	0	1770	3529	0	1770	1615	0	1681	1712	0
Flt Permitted	0.432			0.501			0.733			0.711	0.903	
Satd. Flow (perm)	805	3483	0	933	3529	0	1365	1615	0	1258	1584	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			7			63			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2340			2815			624			1981	
Travel Time (s)		53.2			64.0			14.2			45.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	9	387	45	48	535	12	30	8	63	51	16	2
Shared Lane Traffic (%)										33%		
Lane Group Flow (vph)	9	432	0	48	547	0	30	71	0	34	35	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 2: Medical Complex Dr & Calvert Rd

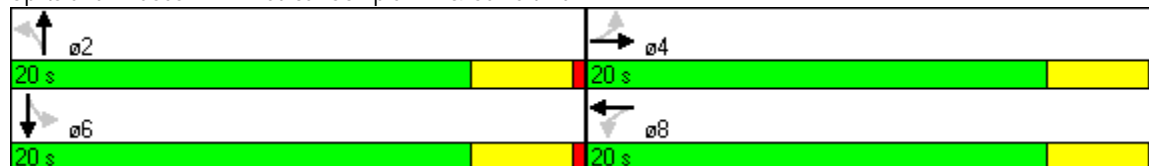


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.03	0.31		0.13	0.39		0.05	0.10		0.07	0.06	
Control Delay	7.6	8.2		8.8	9.4		7.8	3.6		7.9	7.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.6	8.2		8.8	9.4		7.8	3.6		7.9	7.4	
LOS	A	A		A	A		A	A		A	A	
Approach Delay		8.2			9.4			4.9			7.7	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	1	29		6	42		4	1		4	4	
Queue Length 95th (ft)	7	52		21	70		14	16		16	15	
Internal Link Dist (ft)		2260			2735			544			1901	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	322	1415		373	1416		546	684		503	635	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.31		0.13	0.39		0.05	0.10		0.07	0.06	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.39
Intersection Signal Delay:	8.5
Intersection LOS:	A
Intersection Capacity Utilization	35.7%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 2: Medical Complex Dr & Calvert Rd



Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	978	33	62	1164	132	39	7	67	187	9	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995				0.850		0.911				0.883
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	0	3169	0	1770	1645	0
Flt Permitted	0.950			0.950				0.840		0.674		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	0	2708	0	1255	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				108		73				35
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	29	797	27	51	949	108	42	8	73	203	10	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	824	0	51	949	108	0	123	0	203	45	0
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	6.2	54.2		7.2	57.5	57.5		14.6		14.6	14.6	
Actuated g/C Ratio	0.07	0.59		0.08	0.63	0.63		0.16		0.16	0.16	
v/c Ratio	0.24	0.39		0.36	0.42	0.10		0.25		1.01	0.15	
Control Delay	46.3	11.1		48.0	10.1	2.1		17.9		108.9	17.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	46.3	11.1		48.0	10.1	2.1		17.9		108.9	17.0	
LOS	D	B		D	B	A		B		F	B	
Approach Delay		12.3			11.0			17.9			92.2	
Approach LOS		B			B			B			F	
Queue Length 50th (ft)	17	129		29	151	0		13		-130	5	
Queue Length 95th (ft)	45	183		66	208	21		40		#277	37	
Internal Link Dist (ft)		2010			655			136			726	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	273	2099		273	2233	1039		494		200	293	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.11	0.39		0.19	0.42	0.10		0.25		1.01	0.15	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	91.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.01
Intersection Signal Delay:	20.5
Intersection LOS:	C
Intersection Capacity Utilization:	59.9%
ICU Level of Service:	B
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd/Medical Complex Dr & FM 2920

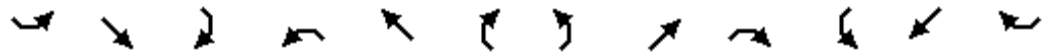
Medical Complex Drive
2/26/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	13	50	21	370	132	27	84	755	210	65	963	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.955			0.975			0.967			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3380	0	1770	3451	0	1770	3422	0	1770	3518	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3380	0	1770	3451	0	1770	3422	0	1770	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			19			37			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		706			692			1353			532	
Travel Time (s)		16.0			15.7			30.8			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	54	23	402	143	29	91	821	228	71	1047	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	77	0	402	172	0	91	1049	0	71	1093	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		4.0	4.0		5.0	15.0		4.0	15.0	
Minimum Split (s)	32.5	22.5		20.0	20.0		11.5	30.5		8.0	30.5	
Total Split (s)	32.5	24.5	0.0	28.0	20.0	0.0	12.9	43.5	0.0	9.0	39.6	0.0
Total Split (%)	31.0%	23.3%	0.0%	26.7%	19.0%	0.0%	12.3%	41.4%	0.0%	8.6%	37.7%	0.0%
Maximum Green (s)	27.0	18.0		24.0	16.0		6.4	37.0		5.0	33.1	
Yellow Time (s)	4.0	5.0		3.5	3.5		5.0	5.0		3.5	5.0	
All-Red Time (s)	1.5	1.5		0.5	0.5		1.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	4.0	4.0	6.5	4.0

Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 2/26/2009

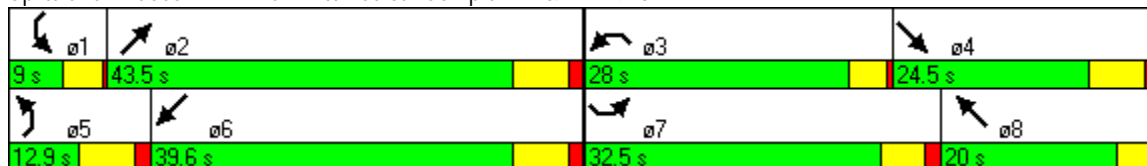


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	1.5		3.0	3.0		2.0	1.5		3.0	1.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	None		None	Max		None	Max	
Walk Time (s)	7.0			5.0	5.0		7.0				7.0	
Flash Dont Walk (s)	20.0			11.0	11.0		17.0				17.0	
Pedestrian Calls (#/hr)	0			0	0		0				0	
Act Effect Green (s)	5.6	18.0		24.0	43.7		6.4	37.0		5.0	33.1	
Actuated g/C Ratio	0.05	0.17		0.23	0.42		0.06	0.35		0.05	0.32	
v/c Ratio	0.15	0.13		0.99	0.12		0.84	0.85		0.85	0.98	
Control Delay	50.5	27.5		84.6	18.4		102.1	38.5		113.4	59.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.5	27.5		84.6	18.4		102.1	38.5		113.4	59.5	
LOS	D	C		F	B		F	D		F	E	
Approach Delay		31.1			64.8			43.5			62.7	
Approach LOS		C			E			D			E	
Queue Length 50th (ft)	9	16		271	29		62	329		48	380	
Queue Length 95th (ft)	30	37		#468	61		#156	418		#133	#528	
Internal Link Dist (ft)		626			612			1273			452	
Turn Bay Length (ft)							150					
Base Capacity (vph)	455	598		405	1448		108	1230		84	1112	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.13		0.99	0.12		0.84	0.85		0.85	0.98	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 54.8 Intersection LOS: D
 Intersection Capacity Utilization 73.9% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 11: Park Rd/Medical Complex Dr & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↔↗	↗	↘	↔↗↘		↘↗	↔↗↘	↗	↘↗	↔↗↘	
Volume (vph)	83	422	216	203	484	149	267	487	206	43	83	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor												
Frt			0.850		0.968				0.850		0.940	
Flt Protected	0.950	0.999		0.950	0.996		0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1522	4633	0	3433	5085	1583	3433	4780	0
Flt Permitted	0.157	0.713		0.533	0.861		0.950			0.950		
Satd. Flow (perm)	266	2417	1583	854	4005	0	3433	5085	1583	3433	4780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176		46				168		60	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	100%	75%	75%	100%	75%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	68	344	176	165	395	121	218	529	168	35	90	60
Shared Lane Traffic (%)	10%			27%								
Lane Group Flow (vph)	61	351	176	120	561	0	218	529	168	35	150	0
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1	6	
Permitted Phases	3		3	4					2			
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009

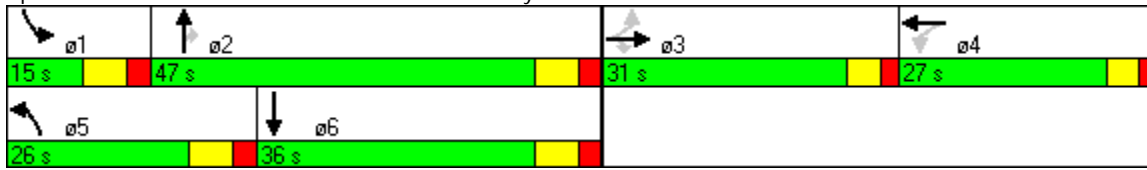


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0		22.0	22.0			26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effect Green (s)	25.5	25.5	25.5	19.1	19.1		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.16	0.16		0.16	0.36	0.36	0.07	0.27	
v/c Ratio	1.09	0.69	0.37	0.90	0.84		0.41	0.29	0.25	0.15	0.11	
Control Delay	196.0	53.1	8.4	104.4	57.7		49.4	28.5	5.0	56.4	20.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	196.0	53.1	8.4	104.4	57.7		49.4	28.5	5.0	56.4	20.6	
LOS	F	D	A	F	E		D	C	A	E	C	
Approach Delay		54.5			66.0			29.2				27.4
Approach LOS		D			E			C				C
Queue Length 50th (ft)	~61	145	0	109	154		82	110	0	13	19	
Queue Length 95th (ft)	#164	203	61	#234	202		122	142	47	31	38	
Internal Link Dist (ft)		747			810			1879			1881	
Turn Bay Length (ft)	200		200	200			200		200	200		
Base Capacity (vph)	56	507	471	151	746		536	1839	680	226	1341	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	1.09	0.69	0.37	0.79	0.75		0.41	0.29	0.25	0.15	0.11	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	121.7
Natural Cycle:	145
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.09
Intersection Signal Delay:	45.9
Intersection LOS:	D
Intersection Capacity Utilization:	53.1%
ICU Level of Service:	A
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	461	234	271	655	203	520	1007	350	265	700	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor												
Frt		0.950			0.967			0.961			0.955	
Flt Protected	0.950			0.950	0.997		0.950			0.950		
Satd. Flow (prot)	1770	3362	0	1610	3268	0	1770	4887	0	1770	4856	0
Flt Permitted	0.348			0.258	0.537		0.950			0.950		
Satd. Flow (perm)	648	3362	0	437	1760	0	1770	4887	0	1770	4856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			23			102			126	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1219			1696			633			1959	
Travel Time (s)		27.7			38.5			14.4			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	93	501	254	295	712	221	565	1095	380	288	761	326
Shared Lane Traffic (%)				20%								
Lane Group Flow (vph)	93	755	0	236	992	0	565	1475	0	288	1087	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Detector Phase	4	4		3	3		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	25.0		5.0	25.0	
Minimum Split (s)	11.5	11.5		34.5	34.5		11.5	31.5		11.5	31.5	
Total Split (s)	18.0	18.0	0.0	22.0	22.0	0.0	15.0	65.0	0.0	15.0	65.0	0.0
Total Split (%)	15.0%	15.0%	0.0%	18.3%	18.3%	0.0%	12.5%	54.2%	0.0%	12.5%	54.2%	0.0%
Maximum Green (s)	11.5	11.5		15.5	15.5		8.5	58.5		8.5	58.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead	Lead		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		1.5	1.5		2.0	1.8		2.0	1.8	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Max	C-Max		Max	C-Max	
Walk Time (s)				5.0	5.0			5.0				5.0
Flash Dont Walk (s)				23.0	23.0			20.0				7.0
Pedestrian Calls (#/hr)				0	0			0				0
Act Effect Green (s)	11.5	11.5		15.5	15.5		8.5	58.5		8.5	58.5	
Actuated g/C Ratio	0.10	0.10		0.13	0.13		0.07	0.49		0.07	0.49	
v/c Ratio	1.50	2.01		4.21	4.02		4.52	0.61		2.30	0.45	
Control Delay	329.7	489.3		1501.2	1381.1		1615.3	21.9		636.5	18.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	329.7	489.3		1501.2	1381.1		1615.3	21.9		636.5	18.2	
LOS	F	F		F	F		F	C		F	B	
Approach Delay		471.8			1404.2			463.2				147.7
Approach LOS		F			F			F				F
Queue Length 50th (ft)	~100	~463		~368	~770		~810	275		~363	172	
Queue Length 95th (ft)	#211	#591		#547	#911		#1029	324		#539	209	
Internal Link Dist (ft)		1139			1616			553				1879
Turn Bay Length (ft)	150			150			200			200		
Base Capacity (vph)	62	376		56	247		125	2435		125	2432	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.50	2.01		4.21	4.02		4.52	0.61		2.30	0.45	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 4.52
 Intersection Signal Delay: 596.0 Intersection LOS: F
 Intersection Capacity Utilization 113.2% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
19: Medical Complex Drive & Tomball Parkway

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway

 ø1	 ø2	 ø3	 ø4
15 s	65 s	22 s	18 s
 ø5	 ø6		
15 s	65 s		

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	68	649	12	10	1012	35	38	54	6	23	24	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.995			0.984			0.881	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3522	0	1770	1833	0	1770	1641	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3522	0	1770	1833	0	1770	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6			98	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		698			1277			499			262	
Travel Time (s)		15.9			29.0			11.3			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	55	529	10	8	825	29	41	59	7	25	26	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	539	0	8	854	0	41	66	0	25	124	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	0.0
Total Split (%)	20.0%	40.0%	0.0%	20.0%	40.0%	0.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.0	9.0		9.0	9.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009

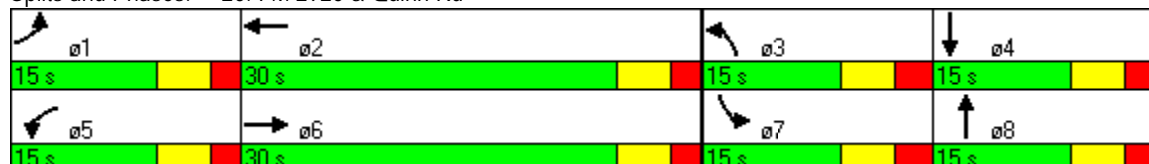


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	6.4	36.5		5.3	31.7		6.2	8.9		5.7	6.4	
Actuated g/C Ratio	0.11	0.62		0.09	0.54		0.10	0.15		0.10	0.11	
v/c Ratio	0.29	0.25		0.05	0.45		0.22	0.23		0.15	0.47	
Control Delay	32.5	9.6		31.9	15.7		31.8	26.2		32.0	17.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.5	9.6		31.9	15.7		31.8	26.2		32.0	17.1	
LOS	C	A		C	B		C	C		C	B	
Approach Delay		11.7			15.8			28.4			19.6	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	21	53		3	140		16	18		9	10	
Queue Length 95th (ft)	56	132		16	242		45	60		33	57	
Internal Link Dist (ft)		618			1197			419			182	
Turn Bay Length (ft)	150			150			100			100		
Base Capacity (vph)	300	2178		300	1890		284	352		284	346	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.25		0.03	0.45		0.14	0.19		0.09	0.36	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 59.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 15.5
 Intersection LOS: B
 Intersection Capacity Utilization 48.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd/Medical Complex Dr

Medical Complex Drive
2/26/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↖	↑↑	↖	↗
Volume (vph)	614	276	399	932	450	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.953					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3373	0	1770	3539	1770	1583
Flt Permitted			0.262		0.950	
Satd. Flow (perm)	3373	0	488	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	157					317
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1406	
Travel Time (s)	35.3			19.7	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	667	300	434	1013	489	415
Shared Lane Traffic (%)						
Lane Group Flow (vph)	967	0	434	1013	489	415
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type			Perm			Perm
Protected Phases	6			2	4	
Permitted Phases			2			4
Detector Phase	6		2	2	4	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0		20.0	20.0	20.0	20.0
Total Split (s)	81.0	0.0	81.0	81.0	29.0	29.0
Total Split (%)	73.6%	0.0%	73.6%	73.6%	26.4%	26.4%
Maximum Green (s)	77.0		77.0	77.0	25.0	25.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 26: FM 2920 & Mahaffey Rd/Medical Complex Dr

Medical Complex Drive
 2/26/2009






Lane Group	SET	SER	NWL	NWT	NEL	NER
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	C-Min		C-Min	C-Min	None	None
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	77.0		77.0	77.0	25.0	25.0
Actuated g/C Ratio	0.70		0.70	0.70	0.23	0.23
v/c Ratio	0.40		1.27	0.41	1.22	0.69
Control Delay	6.1		162.9	7.5	155.8	16.2
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	6.1		162.9	7.5	155.8	16.2
LOS	A		F	A	F	B
Approach Delay	6.1			54.1	91.7	
Approach LOS	A			D	F	
Queue Length 50th (ft)	107		~388	140	-424	57
Queue Length 95th (ft)	140		#342	175	#627	172
Internal Link Dist (ft)	1475			786	1326	
Turn Bay Length (ft)			150			
Base Capacity (vph)	2408		342	2477	402	605
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.40		1.27	0.41	1.22	0.69

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.27
 Intersection Signal Delay: 50.4
 Intersection LOS: D
 Intersection Capacity Utilization 82.8%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 26: FM 2920 & Mahaffey Rd/Medical Complex Dr

 ø2	 ø4
81 s	29 s
 ø6	
81 s	

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	471	24	30	520	159	22	327	7	112	214	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.965			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			33			1				104
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	169	384	20	24	424	130	24	355	8	122	233	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	404	0	24	554	0	24	363	0	122	233	104
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009

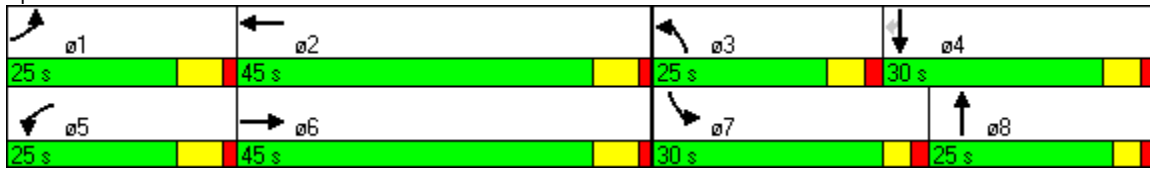


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	15.1	52.1		6.3	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.12	0.43		0.05	0.32		0.16	0.16		0.21	0.20	0.20
v/c Ratio	0.77	0.27		0.26	0.50		0.09	1.19		0.34	0.63	0.26
Control Delay	74.4	23.9		63.0	33.9		46.2	155.4		45.1	54.2	9.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	74.4	23.9		63.0	33.9		46.2	155.4		45.1	54.2	9.7
LOS	E	C		E	C		D	F		D	D	A
Approach Delay		38.8			35.1			148.7			41.7	
Approach LOS		D			D			F			D	
Queue Length 50th (ft)	130	112		19	176		17	~348		83	171	0
Queue Length 95th (ft)	209	156		48	239		43	#557		146	266	49
Internal Link Dist (ft)		1890			1910			746			1781	
Turn Bay Length (ft)	200			200			200			200		200
Base Capacity (vph)	269	1506		269	1104		277	306		364	368	396
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.63	0.27		0.09	0.50		0.09	1.19		0.34	0.63	0.26

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 121.7
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 59.7
 Intersection LOS: E
 Intersection Capacity Utilization 72.2%
 ICU Level of Service C
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	940	18	0	1061	26	14	1	7	8	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.996			0.955			0.923	
Flt Protected	0.950							0.970			0.979	
Satd. Flow (prot)	1770	3529	0	1863	3525	0	0	1726	0	0	1683	0
Flt Permitted	0.950							0.887			0.931	
Satd. Flow (perm)	1770	3529	0	1863	3525	0	0	1578	0	0	1601	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			8			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	766	15	0	865	21	15	1	8	9	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	781	0	0	886	0	0	24	0	0	21	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009

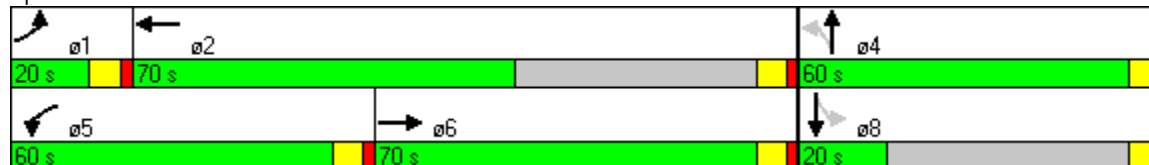


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)	5.9	68.4			63.2			54.6			54.6	
Actuated g/C Ratio	0.04	0.50			0.47			0.40			0.40	
v/c Ratio	0.21	0.44			0.54			0.04			0.03	
Control Delay	71.0	22.0			28.1			20.5			16.8	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	71.0	22.0			28.1			20.5			16.8	
LOS	E	C			C			C			B	
Approach Delay		23.0			28.1			20.5			16.8	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	13	223			263			8			4	
Queue Length 95th (ft)	41	272			393			30			25	
Internal Link Dist (ft)		266			1425			229			974	
Turn Bay Length (ft)	200											
Base Capacity (vph)	170	1781			2685			641			652	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.09	0.44			0.33			0.04			0.03	

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 135.6
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 25.5
 Intersection Capacity Utilization 39.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	13	881	41	19	890	35	86	258	57	46	123	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.994			0.981			0.979	
Flt Protected		0.999			0.999			0.989			0.989	
Satd. Flow (prot)	0	3514	0	0	3514	0	0	1807	0	0	1804	0
Flt Permitted		0.941			0.934			0.865			0.618	
Satd. Flow (perm)	0	3310	0	0	3286	0	0	1581	0	0	1127	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			10			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	718	33	15	726	29	93	280	62	50	134	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	762	0	0	770	0	0	435	0	0	218	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	22.0	22.0	0.0	19.0	19.0	0.0
Total Split (%)	45.3%	45.3%	0.0%	45.3%	45.3%	0.0%	29.3%	29.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	28.5	28.5		28.5	28.5		16.0	16.0		13.0	13.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009

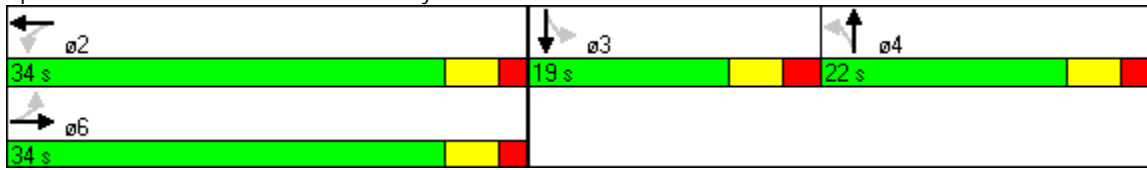


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		28.5			28.5			16.0				13.0
Actuated g/C Ratio		0.38			0.38			0.21				0.17
v/c Ratio		0.60			0.62			1.26				1.07
Control Delay		21.0			21.3			167.4				115.2
Queue Delay		0.0			0.0			0.0				0.0
Total Delay		21.0			21.3			167.4				115.2
LOS		C			C			F				F
Approach Delay		21.0			21.3			167.4				115.2
Approach LOS		C			C			F				F
Queue Length 50th (ft)		144			147			~257				~110
Queue Length 95th (ft)		201			204			#431				#241
Internal Link Dist (ft)		644			2620			220				531
Turn Bay Length (ft)												
Base Capacity (vph)		1262			1252			345				204
Starvation Cap Reductn		0			0			0				0
Spillback Cap Reductn		0			0			0				0
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		0.60			0.62			1.26				1.07

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.26
 Intersection Signal Delay: 59.6 Intersection LOS: E
 Intersection Capacity Utilization 67.6% ICU Level of Service C
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	30	853	23	20	911	16	61	30	82	10	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.997			0.936			0.943	
Flt Protected		0.998			0.999			0.983			0.984	
Satd. Flow (prot)	0	3518	0	0	3525	0	0	1714	0	0	1728	0
Flt Permitted		0.921			0.937			0.870			0.824	
Satd. Flow (perm)	0	3247	0	0	3306	0	0	1517	0	0	1447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			5			70			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	695	19	16	743	13	66	33	89	11	8	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	738	0	0	772	0	0	188	0	0	33	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		39.4			39.4			9.0			9.0	
Actuated g/C Ratio		0.71			0.71			0.16			0.16	
v/c Ratio		0.32			0.33			0.62			0.13	
Control Delay		5.0			5.0			23.2			15.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.0			5.0			23.2			15.5	
LOS		A			A			C			B	
Approach Delay		5.0			5.0			23.2			15.5	
Approach LOS		A			A			C			B	
Queue Length 50th (ft)		47			50			36			5	
Queue Length 95th (ft)		84			88			89			25	
Internal Link Dist (ft)		1520			644			252			544	
Turn Bay Length (ft)												
Base Capacity (vph)		2296			2337			369			310	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.32			0.33			0.51			0.11	

Intersection Summary

Area Type: Other
 Cycle Length: 58
 Actuated Cycle Length: 55.7
 Natural Cycle: 40
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 7.2
 Intersection Capacity Utilization 57.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	845	0	0	1129	61	0	0	0	46	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.992							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3511	0	0	1863	0	1770	0	1583
Flt Permitted	0.245									0.950		
Satd. Flow (perm)	456	3539	0	0	3511	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9							68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		112			1600			115			330	
Travel Time (s)		2.5			36.4			2.6			7.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	48	689	0	0	920	50	0	0	0	50	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	689	0	0	970	0	0	0	0	50	0	68
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	35.0	35.0	0.0	0.0	35.0	0.0	20.0	20.0	0.0	20.0	0.0	20.0
Total Split (%)	46.7%	46.7%	0.0%	0.0%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	0.0%	26.7%
Maximum Green (s)	29.5	29.5			29.5		15.0	15.0		14.0		14.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009

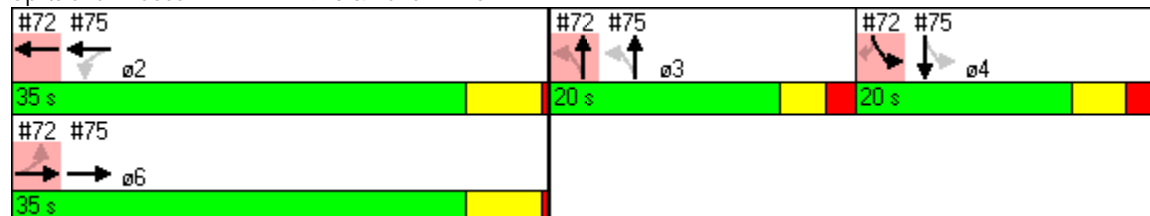


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Recall Mode	None	None			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	46.0	46.0			46.0					7.5		7.5
Actuated g/C Ratio	0.61	0.61			0.61					0.10		0.10
v/c Ratio	0.17	0.32			0.45					0.28		0.31
Control Delay	3.6	2.3			11.9					35.2		12.7
Queue Delay	0.6	0.1			0.0					0.0		0.1
Total Delay	4.2	2.4			11.9					35.2		12.9
LOS	A	A			B					D		B
Approach Delay		2.5			11.9							
Approach LOS		A			B							
Queue Length 50th (ft)	2	13			140					22		0
Queue Length 95th (ft)	m5	20			226					53		34
Internal Link Dist (ft)		32			1520			35			250	
Turn Bay Length (ft)	100											
Base Capacity (vph)	279	2169			2155					330		351
Starvation Cap Reductn	96	494			0					0		0
Spillback Cap Reductn	0	0			0					0		47
Storage Cap Reductn	0	0			0					0		0
Reduced v/c Ratio	0.26	0.41			0.45					0.15		0.22

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 8.8
 Intersection LOS: A
 Intersection Capacity Utilization 48.0%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	839	2	29	1123	0	24	0	35	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt								0.920				0.865
Flt Protected				0.950				0.980				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1679	0	0	1611	0
Flt Permitted				0.367				0.290				
Satd. Flow (perm)	0	3539	0	684	3539	0	0	497	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								38				343
Link Speed (mph)		30			30			30				30
Link Distance (ft)		464			112			489				304
Travel Time (s)		10.5			2.5			11.1				6.9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	684	2	24	915	0	26	0	38	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	686	0	24	915	0	0	64	0	0	1	0
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		
Detector Phase		6		2	2		3	3		4		4
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0		7.0
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0		27.0
Total Split (s)	0.0	35.0	0.0	35.0	35.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	0.0%	46.7%	0.0%	46.7%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%
Maximum Green (s)		29.5		29.5	29.5		15.0	15.0		14.0		14.0
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5		3.5
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009

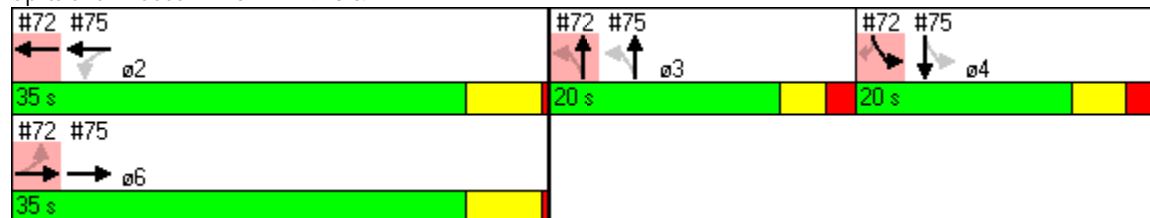


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		46.0		46.0	46.0			11.1			7.5	
Actuated g/C Ratio		0.61		0.61	0.61			0.15			0.10	
v/c Ratio		0.32		0.06	0.42			0.60			0.00	
Control Delay		10.6		2.1	2.1			39.1			0.0	
Queue Delay		0.0		0.5	0.1			0.0			0.0	
Total Delay		10.6		2.5	2.2			39.1			0.0	
LOS		B		A	A			D			A	
Approach Delay		10.6			2.2			39.1			0.0	
Approach LOS		B			A			D			A	
Queue Length 50th (ft)		90		1	15			11			0	
Queue Length 95th (ft)		149		m2	26			#59			0	
Internal Link Dist (ft)		384			32			409			224	
Turn Bay Length (ft)												
Base Capacity (vph)		2169		419	2169			130			580	
Starvation Cap Reductn		0		250	220			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.32		0.14	0.47			0.49			0.00	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 7.0 Intersection LOS: A
 Intersection Capacity Utilization 42.2% ICU Level of Service A
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	740	14	52	1021	41	45	98	106	41	43	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.994			0.943				0.850
Flt Protected	0.950			0.950				0.991			0.976	
Satd. Flow (prot)	1770	3529	0	1770	3518	0	0	1741	0	0	1818	1583
Flt Permitted	0.950			0.950				0.931			0.787	
Satd. Flow (perm)	1770	3529	0	1770	3518	0	0	1635	0	0	1466	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			8			53				73
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	603	11	42	832	33	49	107	115	45	47	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	614	0	42	865	0	0	271	0	0	92	73
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.1	24.7		7.4	27.3			22.2			22.7	22.7
Actuated g/C Ratio	0.11	0.39		0.12	0.43			0.35			0.36	0.36
v/c Ratio	0.10	0.44		0.20	0.56			0.44			0.17	0.12
Control Delay	29.4	16.3		29.8	15.5			16.6			16.9	5.6
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	29.4	16.3		29.8	15.5			16.6			16.9	5.6
LOS	C	B		C	B			B			B	A
Approach Delay		16.7			16.2			16.6			11.9	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	6	73		13	112			52			20	0
Queue Length 95th (ft)	28	157		45	224			145			63	26
Internal Link Dist (ft)		1197			384			552			298	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	270	1393		270	1533			612			531	620
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.07	0.44		0.16	0.56			0.44			0.17	0.12

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	62.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	16.1
Intersection LOS:	B
Intersection Capacity Utilization:	62.4%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	782	0	4	1161	25	11	3	3	21	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.978			0.898	
Flt Protected	0.950			0.950				0.968			0.991	
Satd. Flow (prot)	1770	3539	0	1770	3529	0	0	1763	0	0	1658	0
Flt Permitted	0.950			0.950				0.769			0.930	
Satd. Flow (perm)	1770	3539	0	1770	3529	0	0	1401	0	0	1556	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			3			92	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	638	0	3	946	20	12	3	3	23	7	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	638	0	3	966	0	0	18	0	0	122	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	19.0	37.0	0.0	19.0	37.0	0.0	19.0	19.0	0.0	19.0	19.0	0.0
Total Split (%)	25.3%	49.3%	0.0%	25.3%	49.3%	0.0%	25.3%	25.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	13.5	31.5		13.5	31.5		13.5	13.5		14.0	14.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009

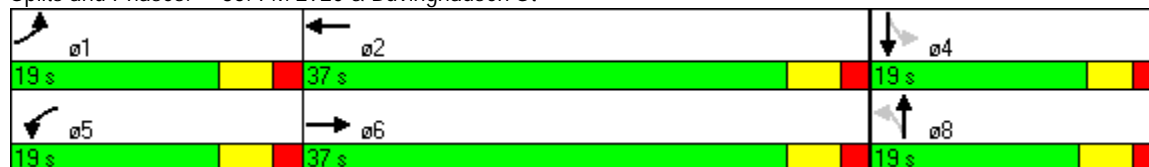


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.2	39.7		7.1	37.4			7.5			7.9	
Actuated g/C Ratio	0.13	0.70		0.13	0.66			0.13			0.14	
v/c Ratio	0.15	0.26		0.01	0.41			0.10			0.41	
Control Delay	25.9	5.5		25.0	8.1			22.9			14.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	25.9	5.5		25.0	8.1			22.9			14.1	
LOS	C	A		C	A			C			B	
Approach Delay		6.5			8.1			22.9			14.1	
Approach LOS		A			A			C			B	
Queue Length 50th (ft)	9	34		1	58			4			8	
Queue Length 95th (ft)	35	110		8	184			22			52	
Internal Link Dist (ft)		196			618			13			529	
Turn Bay Length (ft)												
Base Capacity (vph)	427	2484		427	2330			340			458	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.08	0.26		0.01	0.41			0.05			0.27	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 56.6
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 8.1
 Intersection LOS: A
 Intersection Capacity Utilization 40.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 85: FM 2920 & Buvinghausen St





Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	215		890			276
Travel Time (s)	4.9		20.2			6.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009

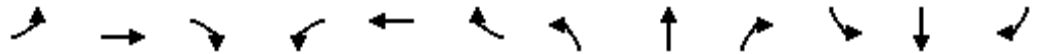


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑			↑↑↑			↙↑↑				
Volume (vph)	196	809	0	0	803	33	294	149	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Flt					0.994			0.992				
Flt Protected	0.950							0.973				
Satd. Flow (prot)	1770	5085	0	0	6369	0	0	4908	0	0	0	0
Flt Permitted	0.950							0.973				
Satd. Flow (perm)	1770	5085	0	0	6369	0	0	4908	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			8				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1957				1199
Travel Time (s)		8.3			18.8			44.5				27.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	100%	75%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	160	660	0	0	655	27	240	162	24	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	660	0	0	682	0	0	426	0	0	0	0
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 90: FM 2920 &

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lead/Lag	Lead			Lag									
Lead-Lag Optimize?	Yes			Yes									
Vehicle Extension (s)	1.0			1.0			1.0		1.0				
Minimum Gap (s)	3.0			3.0			3.0		3.0				
Time Before Reduce (s)	0.0			0.0			0.0		0.0				
Time To Reduce (s)	0.0			0.0			0.0		0.0				
Recall Mode	None			C-Max			None		None				
Walk Time (s)				7.0			7.0		7.0				
Flash Dont Walk (s)				12.0			13.0		13.0				
Pedestrian Calls (#/hr)				0			0		0				
Act Effct Green (s)	13.0		79.1		59.7			12.4					
Actuated g/C Ratio	0.12		0.75		0.57			0.12					
v/c Ratio	0.73		0.17		0.19			1.11dl					
Control Delay	71.5		4.0		11.8			51.2					
Queue Delay	0.0		0.0		0.0			0.0					
Total Delay	71.5		4.0		11.8			51.2					
LOS	E		A		B			D					
Approach Delay			17.2		11.8			51.2					
Approach LOS			B		B			D					
Queue Length 50th (ft)	116		50		59			100					
Queue Length 95th (ft)	184		65		93			132					
Internal Link Dist (ft)			287		747			1877		1119			
Turn Bay Length (ft)													
Base Capacity (vph)	396		3816		3623			848					
Starvation Cap Reductn	0		0		0			0					
Spillback Cap Reductn	0		0		0			0					
Storage Cap Reductn	0		0		0			0					
Reduced v/c Ratio	0.40		0.17		0.19			0.50					

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 22.8
 Intersection LOS: C
 Intersection Capacity Utilization 49.3%
 ICU Level of Service A
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &

 <p>#90 ø1</p>	 <p>#90 ø2</p>	 <p>#90 ø4</p>
<p>30 s</p> 	<p>50 s</p> 	<p>25 s</p> 
 <p>#93 ø5</p>	 <p>#93 ø6</p>	 <p>#93 ø8</p>
<p>30 s</p> 	<p>50 s</p> 	<p>25 s</p> 

Lane Group	ø5	ø6	ø8
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↑↑↑	
Volume (vph)	0	744	165	105	992	0	0	0	0	261	58	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt		0.973										0.967
Flt Protected				0.950								0.971
Satd. Flow (prot)	0	6235	0	1770	5085	0	0	0	0	0	4775	0
Flt Permitted				0.950								0.971
Satd. Flow (perm)	0	6235	0	1770	5085	0	0	0	0	0	4775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65										58
Link Speed (mph)		30			30			30				30
Link Distance (ft)		735			367			1962				1208
Travel Time (s)		16.7			8.3			44.6				27.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	75%	100%	75%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	607	135	86	809	0	0	0	0	213	63	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	742	0	86	809	0	0	0	0	0	353	0
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases										8		
Detector Phase		6		5	5 6					8		8
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Minimum Gap (s)		3.0		3.0						3.0	3.0	
Time Before Reduce (s)		0.0		0.0						0.0	0.0	
Time To Reduce (s)		0.0		0.0						0.0	0.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		63.5		9.1	79.1						12.4	
Actuated g/C Ratio		0.60		0.09	0.75						0.12	
v/c Ratio		0.20		0.56	0.21						0.57	
Control Delay		9.1		61.6	4.2						40.0	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		9.1		61.6	4.2						40.0	
LOS		A		E	A						D	
Approach Delay		9.1			9.7						40.0	
Approach LOS		A			A						D	
Queue Length 50th (ft)		53		62	69						69	
Queue Length 95th (ft)		83		115	84						98	
Internal Link Dist (ft)		655			287			1882			1128	
Turn Bay Length (ft)												
Base Capacity (vph)		3799		396	3832						867	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.20		0.22	0.21						0.41	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 14.8
 Intersection LOS: B
 Intersection Capacity Utilization 49.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd

#90 ø1 30 s	#90 ø2 50 s	#90 ø4 25 s
#93 ø5 30 s	#93 ø6 50 s	#93 ø8 25 s

Lane Group	ø1	ø2	ø4
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑	↗		↑↑↑				
Volume (vph)	80	322	0	0	1126	47	332	75	665	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850		0.907				
Flt Protected	0.950							0.985				
Satd. Flow (prot)	1770	3539	0	0	5085	1583	0	4543	0	0	0	0
Flt Permitted	0.950							0.985				
Satd. Flow (perm)	1770	3539	0	0	5085	1583	0	4543	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						51		429				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		393			1219			636				1957
Travel Time (s)		8.9			27.7			14.5				44.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	87	350	0	0	1224	51	361	82	723	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	350	0	0	1224	51	0	1166	0	0	0	0
Number of Detectors	1	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
Trailing Detector (ft)	0	0			0	0	0	0				
Turn Type	Prot					Perm	Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases						2	4					
Detector Phase	1	1 2			2	2	4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0	20.0	5.0	5.0				
Minimum Split (s)	11.5				26.5	26.5	27.0	27.0				
Total Split (s)	16.5	62.0	0.0	0.0	45.5	45.5	28.0	28.0	0.0	0.0	0.0	0.0
Total Split (%)	18.3%	68.9%	0.0%	0.0%	50.6%	50.6%	31.1%	31.1%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	10.0				39.0	39.0	21.0	21.0				
Yellow Time (s)	4.0				4.0	4.0	4.0	4.0				
All-Red Time (s)	2.5				2.5	2.5	3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	6.5	7.0	7.0	4.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	34.0	28.0	28.0
Total Split (%)	38%	31%	31%
Maximum Green (s)	27.5	21.5	21.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009

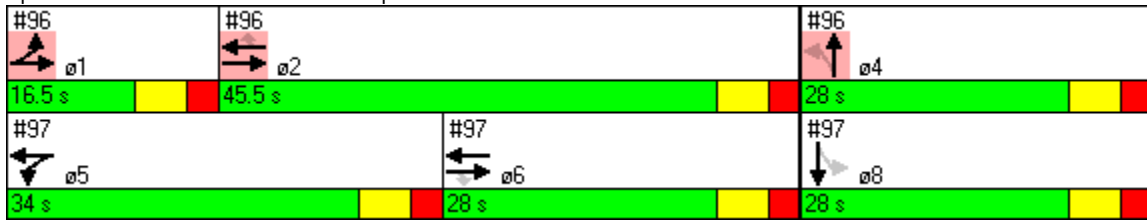


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lead/Lag	Lead			Lag			Lag						
Lead-Lag Optimize?	Yes			Yes			Yes						
Vehicle Extension (s)	1.0			1.0			1.0		1.0				
Minimum Gap (s)	3.0			3.0			3.0		3.0				
Time Before Reduce (s)	0.0			0.0			0.0		0.0				
Time To Reduce (s)	0.0			0.0			0.0		0.0				
Recall Mode	None			C-Min		C-Min		Min		Min			
Walk Time (s)				7.0		7.0		7.0		7.0			
Flash Dont Walk (s)				12.0		12.0		13.0		13.0			
Pedestrian Calls (#/hr)				0		0		0		0			
Act Effct Green (s)	7.7		57.3		43.1		43.1		19.2				
Actuated g/C Ratio	0.09		0.64		0.48		0.48		0.21				
v/c Ratio	0.57		0.16		0.50		0.07		1.06dr				
Control Delay	56.3		3.8		17.9		5.1		30.8				
Queue Delay	0.0		0.0		0.0		0.0		2.5				
Total Delay	56.3		3.8		17.9		5.1		33.3				
LOS	E		A		B		A		C				
Approach Delay	14.2			17.4			33.3						
Approach LOS	B			B			C						
Queue Length 50th (ft)	54		15		170		0		153				
Queue Length 95th (ft)	104		24		235		21		201				
Internal Link Dist (ft)	313			1139					556		1877		
Turn Bay Length (ft)							200						
Base Capacity (vph)	197		2157		2461		793		1417				
Starvation Cap Reductn	0		0		0		0		0				
Spillback Cap Reductn	0		0		50		0		145				
Storage Cap Reductn	0		0		0		0		0				
Reduced v/c Ratio	0.44		0.16		0.51		0.06		0.92				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 23.3
 Intersection LOS: C
 Intersection Capacity Utilization 66.1%
 ICU Level of Service C
 Analysis Period (min) 15
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 96: Medical Complex Drive & SH 249 East Service Rd



Lane Group	ø5	ø6	ø8
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑						↑↑↑	
Volume (vph)	0	480	106	478	477	0	0	0	0	27	6	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt			0.850									0.965
Flt Protected				0.950								0.970
Satd. Flow (prot)	0	5085	1583	1770	3539	0	0	0	0	0	4760	0
Flt Permitted				0.950								0.970
Satd. Flow (perm)	0	5085	1583	1770	3539	0	0	0	0	0	4760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115									11
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2815			393			714				1962
Travel Time (s)		64.0			8.9			16.2				44.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	522	115	520	518	0	0	0	0	29	7	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	522	115	520	518	0	0	0	0	0	47	0
Number of Detectors		2	1	1	2					1	2	
Detector Template		Thru	Right	Left	Thru					Left	Thru	
Leading Detector (ft)		100	20	20	100					20	100	
Trailing Detector (ft)		0	0	0	0					0	0	
Turn Type			Perm	Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases			6							8		
Detector Phase		6	6	5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0						5.0	5.0	
Minimum Split (s)		27.5	27.5	11.5						28.0	28.0	
Total Split (s)	0.0	28.0	28.0	34.0	62.0	0.0	0.0	0.0	0.0	28.0	28.0	0.0
Total Split (%)	0.0%	31.1%	31.1%	37.8%	68.9%	0.0%	0.0%	0.0%	0.0%	31.1%	31.1%	0.0%
Maximum Green (s)		21.5	21.5	27.5						21.0	21.0	
Yellow Time (s)		4.0	4.0	4.0						4.0	4.0	
All-Red Time (s)		2.5	2.5	2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	16.5	45.5	28.0
Total Split (%)	18%	51%	31%
Maximum Green (s)	10.0	39.0	21.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009

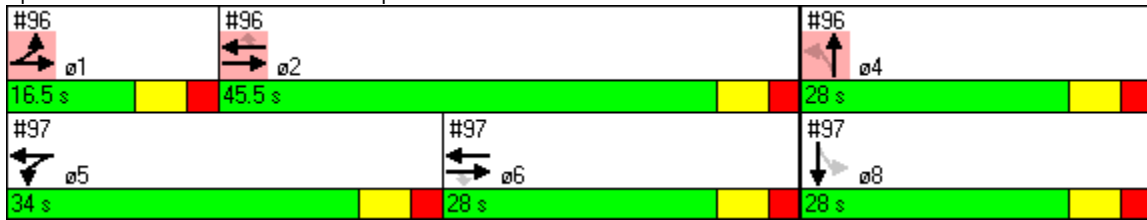


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		1.0	1.0	1.0						1.0	1.0	
Minimum Gap (s)		3.0	3.0	3.0						3.0	3.0	
Time Before Reduce (s)		0.0	0.0	0.0						0.0	0.0	
Time To Reduce (s)		0.0	0.0	0.0						0.0	0.0	
Recall Mode		C-Min	C-Min	None						None	None	
Walk Time (s)		7.0	7.0							7.0	7.0	
Flash Dont Walk (s)		14.0	14.0							14.0	14.0	
Pedestrian Calls (#/hr)		0	0							0	0	
Act Effect Green (s)		22.6	22.6	28.2	57.3							19.2
Actuated g/C Ratio		0.25	0.25	0.31	0.64							0.21
v/c Ratio		0.41	0.24	0.94	0.23							0.05
Control Delay		30.2	7.3	63.6	4.8							21.6
Queue Delay		0.0	0.0	1.6	0.0							0.0
Total Delay		30.2	7.3	65.1	4.8							21.6
LOS		C	A	E	A							C
Approach Delay		26.0			35.0							21.6
Approach LOS		C			D							C
Queue Length 50th (ft)		94	0	239	40							5
Queue Length 95th (ft)		128	42	m#473	m52							15
Internal Link Dist (ft)		2735			313			634				1882
Turn Bay Length (ft)			200									
Base Capacity (vph)		1326	498	563	2253							1151
Starvation Cap Reductn		0	0	9	0							0
Spillback Cap Reductn		0	0	0	0							0
Storage Cap Reductn		0	0	0	0							0
Reduced v/c Ratio		0.39	0.23	0.94	0.23							0.04

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 31.3
 Intersection LOS: C
 Intersection Capacity Utilization 66.1%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 97: Medical Complex Drive & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	Min
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
2/26/2009



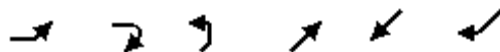
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1990			618			233			163	
Travel Time (s)		45.2			14.0			5.3			3.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
114: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	906			5205	1406	
Travel Time (s)	20.6			118.3	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Turn Type			Perm			
Protected Phases	4!			2	8!	
Permitted Phases			2			
Detector Phase	4		2	2	8	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0		16.0	16.0	16.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 114: Medical Complex Dr &

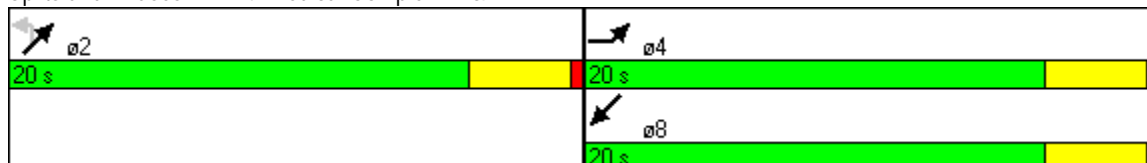


Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Max		Max	Max	Max	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	826			5125	1326	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.00
 Intersection Signal Delay: 0.0 Intersection LOS: A
 Intersection Capacity Utilization 0.0% ICU Level of Service A
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 114: Medical Complex Dr &



Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3855			2112			1114			1168	
Travel Time (s)		87.6			48.0			25.3			26.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009

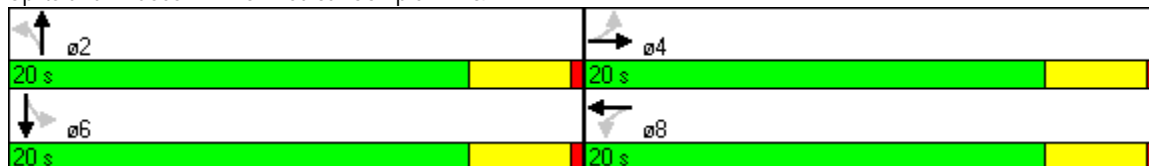


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		3775			2032			1034			1088	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 116: Medical Complex Dr &



Lanes, Volumes, Timings
 117: Medical Complex Dr & Hufsmith Khorville Rd

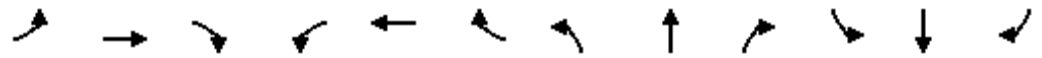
Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	412	19	27	393	118	7	107	3	47	92	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.965			0.996			0.953	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1855	0	1770	1775	0
Flt Permitted	0.430			0.483			0.665			0.681		
Satd. Flow (perm)	801	3514	0	900	3415	0	1239	1855	0	1269	1775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			117			3			45	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2112			5205			1065			775	
Travel Time (s)		48.0			118.3			24.2			17.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	200	448	21	29	427	128	8	116	3	51	100	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	469	0	29	555	0	8	119	0	51	145	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	55.6%	55.6%	0.0%	55.6%	55.6%	0.0%	44.4%	44.4%	0.0%	44.4%	44.4%	0.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 117: Medical Complex Dr & Hufsmith Khorville Rd

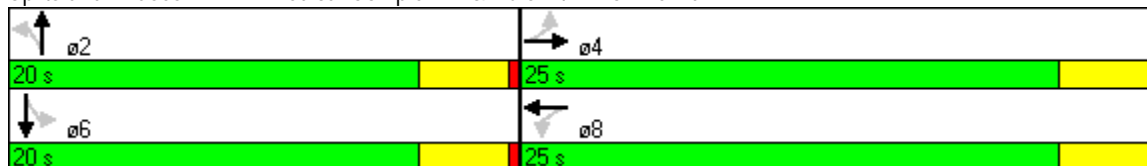
Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	21.0	21.0		21.0	21.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.36	0.36		0.36	0.36	
v/c Ratio	0.53	0.28		0.07	0.34		0.02	0.18		0.11	0.22	
Control Delay	15.1	7.7		7.2	6.5		9.6	10.7		10.6	8.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.1	7.7		7.2	6.5		9.6	10.7		10.6	8.5	
LOS	B	A		A	A		A	B		B	A	
Approach Delay		9.9			6.6			10.6			9.0	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	33	34		4	33		1	20		9	17	
Queue Length 95th (ft)	85	56		14	57		8	46		25	45	
Internal Link Dist (ft)		2032			5125			985			695	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	374	1647		420	1656		441	661		451	660	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.53	0.28		0.07	0.34		0.02	0.18		0.11	0.22	

Intersection Summary
 Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 8.6 Intersection LOS: A
 Intersection Capacity Utilization 44.1% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 117: Medical Complex Dr & Hufsmith Khorville Rd



Lanes, Volumes, Timings
 122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	517	29	25	580	39	64	188	41	62	168	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.991			0.973			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3507	0	1770	1812	0	1770	1807	0
Flt Permitted	0.350			0.400			0.616			0.605		
Satd. Flow (perm)	652	3511	0	745	3507	0	1147	1812	0	1127	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			20			33			37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2634			3855			1711			2332	
Travel Time (s)		59.9			87.6			38.9			53.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	32	562	32	27	630	42	70	204	45	67	183	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	594	0	27	672	0	70	249	0	67	228	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
 2/26/2009

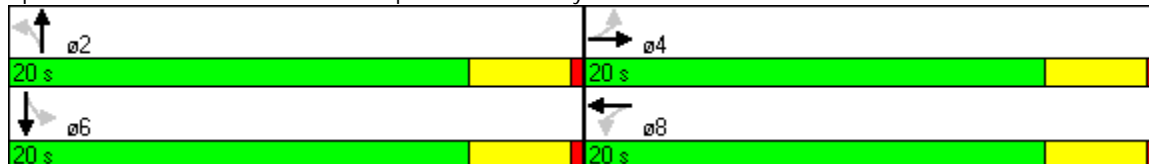


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.12	0.42		0.09	0.47		0.15	0.33		0.15	0.31	
Control Delay	9.1	9.5		8.5	10.0		8.8	8.7		8.8	8.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.1	9.5		8.5	10.0		8.8	8.7		8.8	8.2	
LOS	A	A		A	A		A	A		A	A	
Approach Delay		9.5			9.9			8.7			8.3	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	4	45		4	52		9	31		9	27	
Queue Length 95th (ft)	16	74		14	85		27	67		26	60	
Internal Link Dist (ft)		2554			3775			1631			2252	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	261	1415		298	1415		459	745		451	745	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.42		0.09	0.47		0.15	0.33		0.15	0.31	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 9.4
 Intersection LOS: A
 Intersection Capacity Utilization 49.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 122: Medical Complex Dr & S. Cherry Rd



Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1181			2634			643			613	
Travel Time (s)		26.8			59.9			14.6			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009

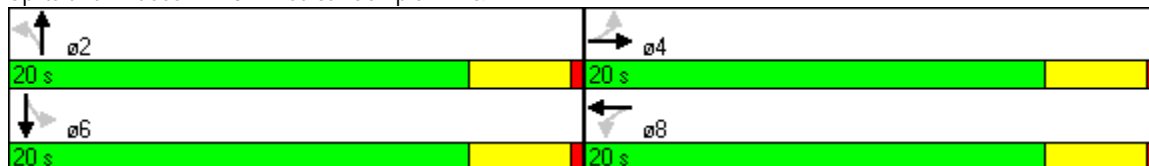


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1101			2554			563			533	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary





















Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 131: Medical Complex Dr &



Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1181			411			528	
Travel Time (s)		22.7			26.8			9.3			12.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

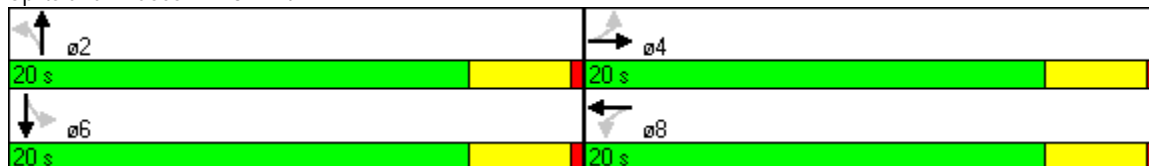


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		920		1101			331			448		
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 132: Int



Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1696			1000			95			284	
Travel Time (s)		38.5			22.7			2.2			6.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009

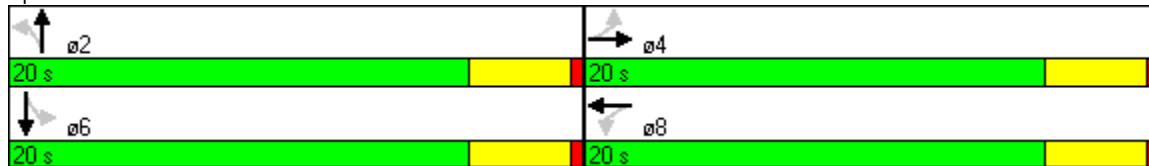


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1616			920			15			204	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary











Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection Capacity Utilization:	0.0%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 133: Int



Lanes, Volumes, Timings
134: Triechel Rd & Medical Complex Dr

Medical Complex Drive
2/26/2009

						
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	1863	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	1863	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	313		692			2340
Travel Time (s)	7.1		15.7			53.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Turn Type					Perm	
Protected Phases	2					8
Permitted Phases			4		8	
Detector Phase	2		4		8	8
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	20.0		20.0		20.0	20.0
Total Split (s)	20.0	0.0	20.0	0.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)	16.0		16.0		16.0	16.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	0.5		0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

Medical Complex Drive
 2/26/2009

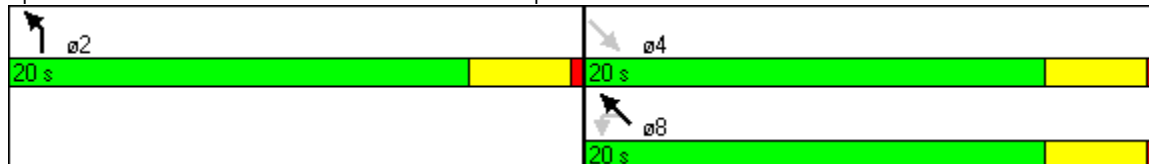


Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Minimum Gap (s)	3.0		3.0		3.0	3.0
Time Before Reduce (s)	0.0		0.0		0.0	0.0
Time To Reduce (s)	0.0		0.0		0.0	0.0
Recall Mode	Max		Max		Max	Max
Walk Time (s)	5.0		5.0		5.0	5.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	233		612		2260	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 134: Triechel Rd & Medical Complex Dr





















2035 BUILD CONDITION ANALYSIS

[AM PEAK HOUR]

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1267	51	8	765	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994						0.941				
Flt Protected				0.950				0.973				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1706	0	0	1863	0
Flt Permitted				0.950				0.825				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1446	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						27				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	2603	105	16	1572	0	35	0	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2708	0	16	1572	0	0	62	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		58.6		5.5	60.8			6.7				
Actuated g/C Ratio		0.77		0.07	0.80			0.09				
v/c Ratio		0.99		0.12	0.55			0.41				
Control Delay		29.5		37.1	4.6			29.9				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		29.5		37.1	4.6			29.9				
LOS		C		D	A			C				
Approach Delay		29.5			4.9			29.9				
Approach LOS		C			A			C				
Queue Length 50th (ft)		-560		7	120			15				
Queue Length 95th (ft)		#1151		28	206			56				
Internal Link Dist (ft)		2210			2010			1901			120	
Turn Bay Length (ft)				200								
Base Capacity (vph)		2723		447	3265			395				
Starvation Cap Reductn		0		0	0			0				
Spillback Cap Reductn		0		0	0			0				
Storage Cap Reductn		0		0	0			0				
Reduced v/c Ratio		0.99		0.04	0.48			0.16				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 75.7
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 20.5 Intersection LOS: C
 Intersection Capacity Utilization 83.0% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	365	32	55	481	11	14	5	36	88	18	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.988			0.997			0.868			0.989	
Flt Protected	0.950			0.950			0.950			0.950	0.971	
Satd. Flow (prot)	1770	3497	0	1770	3529	0	1770	1617	0	1681	1699	0
Flt Permitted	0.250			0.253			0.694			0.713	0.838	
Satd. Flow (perm)	466	3497	0	471	3529	0	1293	1617	0	1262	1467	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			7			60			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2340			2815			624			1981	
Travel Time (s)		53.2			64.0			14.2			45.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	17	778	68	117	1025	23	23	8	60	147	30	7
Shared Lane Traffic (%)										38%		
Lane Group Flow (vph)	17	846	0	117	1048	0	23	68	0	91	93	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009

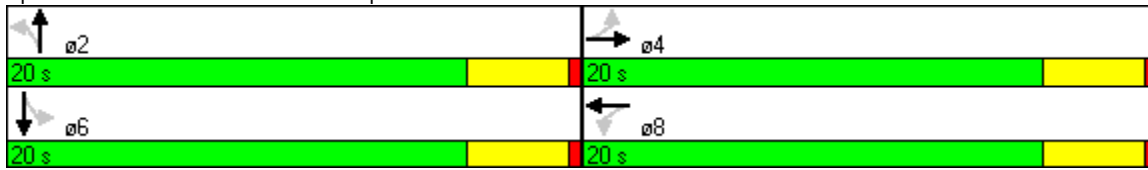


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.09	0.60		0.62	0.74		0.04	0.10		0.18	0.16	
Control Delay	9.1	11.3		30.3	14.3		7.7	3.7		9.0	8.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.1	11.3		30.3	14.3		7.7	3.7		9.0	8.1	
LOS	A	B		C	B		A	A		A	A	
Approach Delay		11.3			15.9			4.7				8.5
Approach LOS		B			B			A				A
Queue Length 50th (ft)	2	70		20	97		3	1		12	11	
Queue Length 95th (ft)	11	112		#82	151		12	16		34	32	
Internal Link Dist (ft)		2260			2735			544				1901
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	186	1415		188	1416		517	683		505	591	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.60		0.62	0.74		0.04	0.10		0.18	0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	13.1
Intersection LOS:	B
Intersection Capacity Utilization:	51.4%
ICU Level of Service:	A
Analysis Period (min):	15
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 2: Medical Complex Dr & Calvert Rd



Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1296	16	21	643	88	2	4	4	75	6	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998				0.850		0.938			0.891	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	0	3290	0	1770	1660	0
Flt Permitted	0.950			0.950				0.923		0.746		
Satd. Flow (perm)	1770	3532	0	1770	3539	1583	0	3064	0	1390	1660	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				181		7				27
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	51	2662	33	43	1321	181	3	7	7	126	10	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	2695	0	43	1321	181	0	17	0	126	37	0
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
 4: FM 2920 & Wood Forest Drive

Medical Complex Drive
 2/26/2009

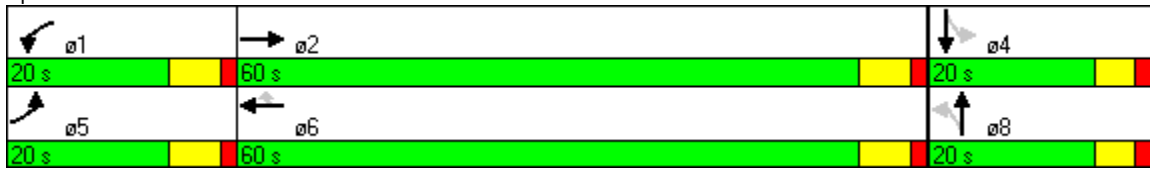


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	7.1	54.4		6.8	54.1	54.1		14.6		14.6	14.6	
Actuated g/C Ratio	0.08	0.62		0.08	0.61	0.61		0.17		0.17	0.17	
v/c Ratio	0.36	1.24		0.32	0.61	0.17		0.03		0.55	0.12	
Control Delay	47.0	132.8		46.4	13.3	2.0		26.3		45.9	18.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	47.0	132.8		46.4	13.3	2.0		26.3		45.9	18.4	
LOS	D	F		D	B	A		C		D	B	
Approach Delay		131.2			12.9			26.3			39.7	
Approach LOS		F			B			C			D	
Queue Length 50th (ft)	29	~1089		24	254	0		2		69	5	
Queue Length 95th (ft)	65	#1281		58	350	28		12		#135	33	
Internal Link Dist (ft)		2010			655			136			726	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	282	2172		282	2176	1043		512		229	296	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.18	1.24		0.15	0.61	0.17		0.03		0.55	0.13	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 88.4
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 86.6 Intersection LOS: F
 Intersection Capacity Utilization 91.3% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 2/26/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	23	94	39	211	82	32	98	1182	361	80	709	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.956			0.958			0.965			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3383	0	1770	3391	0	1770	3415	0	1770	3529	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3383	0	1770	3391	0	1770	3415	0	1770	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			32			39			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		764			692			1353			532	
Travel Time (s)		17.4			15.7			30.8			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	49	200	83	450	175	68	209	2518	769	170	1510	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	283	0	450	243	0	209	3287	0	170	1546	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		4.0	4.0		5.0	15.0		4.0	15.0	
Minimum Split (s)	32.5	22.5		20.0	20.0		11.5	30.5		8.0	30.5	
Total Split (s)	33.5	26.5	0.0	28.0	21.0	0.0	17.0	77.5	0.0	13.0	73.5	0.0
Total Split (%)	23.1%	18.3%	0.0%	19.3%	14.5%	0.0%	11.7%	53.4%	0.0%	9.0%	50.7%	0.0%
Maximum Green (s)	28.0	20.0		24.0	17.0		10.5	71.0		9.0	67.0	
Yellow Time (s)	4.0	5.0		3.5	3.5		5.0	5.0		3.5	5.0	
All-Red Time (s)	1.5	1.5		0.5	0.5		1.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	4.0	4.0	6.5	4.0

Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 2/26/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	1.5		3.0	3.0		2.0	1.5		3.0	1.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	None		None	Max		None	Max	
Walk Time (s)	7.0			5.0	5.0		7.0				7.0	
Flash Dont Walk (s)	20.0			11.0	11.0		17.0				17.0	
Pedestrian Calls (#/hr)	0			0	0		0				0	
Act Effect Green (s)	8.5	20.0		24.0	38.6		10.5	71.0		9.0	67.0	
Actuated g/C Ratio	0.06	0.14		0.17	0.27		0.07	0.49		0.06	0.46	
v/c Ratio	0.47	0.57		1.54	0.26		1.63	1.94		1.55	0.95	
Control Delay	80.0	55.8		296.9	38.5		356.7	450.9		327.3	50.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	80.0	55.8		296.9	38.5		356.7	450.9		327.3	50.3	
LOS	F	E		F	D		F	F		F	D	
Approach Delay		59.4			206.3			445.3			77.8	
Approach LOS		E			F			F			E	
Queue Length 50th (ft)	46	116		~595	84		~284	~2529		~225	723	
Queue Length 95th (ft)	89	166		#814	128		#450	#2627		#380	#892	
Internal Link Dist (ft)		684			612			1273			452	
Turn Bay Length (ft)							150					
Base Capacity (vph)	342	498		293	927		128	1692		110	1632	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.57		1.54	0.26		1.63	1.94		1.55	0.95	

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 145
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.94
 Intersection Signal Delay: 297.1 Intersection LOS: F
 Intersection Capacity Utilization 148.2% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 11: Park Rd/Medical Complex Dr & FM 2920

 ø1	 ø2	 ø3	 ø4
13 s	77.5 s	28 s	26.5 s
 ø5	 ø6	 ø7	 ø8
17 s	73.5 s	33.5 s	21 s

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↗
Volume (vph)	81	796	397	199	471	105	78	214	228	22	85	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor												
Frt			0.850		0.977				0.850		0.949	
Flt Protected	0.950	0.999		0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1522	4662	0	3433	5085	1583	3433	4826	0
Flt Permitted	0.157	0.559		0.186	0.671		0.950			0.950		
Satd. Flow (perm)	266	1895	1583	298	3151	0	3433	5085	1583	3433	4826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			306		25				307		59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	124%	124%	124%	124%	124%	124%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	166	1635	816	409	968	216	105	288	307	30	115	59
Shared Lane Traffic (%)	17%			50%								
Lane Group Flow (vph)	138	1663	816	204	1389	0	105	288	307	30	174	0
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1	6	
Permitted Phases	3		3	4					2			
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009

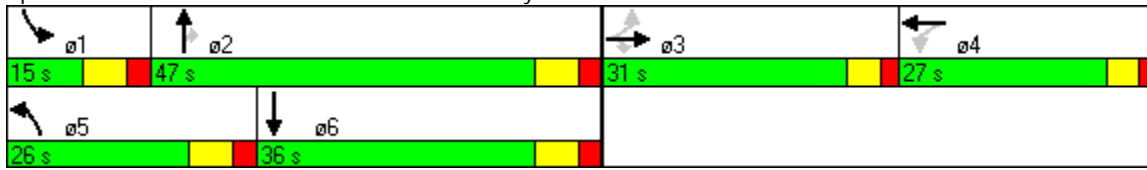


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0		22.0	22.0			26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effect Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.17	0.17		0.15	0.35	0.35	0.06	0.27	
v/c Ratio	2.51	4.26	1.43	3.92	2.63dl		0.20	0.16	0.40	0.14	0.13	
Control Delay	751.9	1488.3	229.0	1375.0	680.4		47.0	27.7	4.7	56.3	23.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	751.9	1488.3	229.0	1375.0	680.4		47.0	27.7	4.7	56.3	23.0	
LOS	F	F	F	F	F		D	C	A	E	C	
Approach Delay		1056.8			769.3			20.5				27.9
Approach LOS		F			F			C				C
Queue Length 50th (ft)	~203	~1345	~684	~345	~716		38	57	0	11	25	
Queue Length 95th (ft)	#349	#1490	#932	#493	#820		65	80	60	28	45	
Internal Link Dist (ft)		747			810			1879			1881	
Turn Bay Length (ft)	200		200	200			200		200	200		
Base Capacity (vph)	55	390	569	52	567		526	1804	760	221	1328	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	2.51	4.26	1.43	3.92	2.45		0.20	0.16	0.40	0.14	0.13	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 124
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 4.26
 Intersection Signal Delay: 784.4 Intersection LOS: F
 Intersection Capacity Utilization 97.7% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	875	431	271	635	135	156	560	295	134	630	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor												
Frt		0.951			0.978			0.948				0.965
Flt Protected	0.950			0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1770	3366	0	1610	3292	0	1770	4821	0	1770	4907	0
Flt Permitted	0.348			0.258	0.564		0.950			0.950		
Satd. Flow (perm)	648	3366	0	437	1870	0	1770	4821	0	1770	4907	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			13			154				89
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1219			1696			633				1959
Travel Time (s)		27.7			38.5			14.4				44.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	124%	124%	124%	124%	124%	124%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	177	1864	918	577	1353	288	210	755	398	181	849	256
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	177	2782	0	288	1930	0	210	1153	0	181	1105	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Detector Phase	4	4		3	3		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	25.0		5.0	25.0	
Minimum Split (s)	11.5	11.5		34.5	34.5		11.5	31.5		11.5	31.5	
Total Split (s)	18.0	18.0	0.0	22.0	22.0	0.0	15.0	65.0	0.0	15.0	65.0	0.0
Total Split (%)	15.0%	15.0%	0.0%	18.3%	18.3%	0.0%	12.5%	54.2%	0.0%	12.5%	54.2%	0.0%
Maximum Green (s)	11.5	11.5		15.5	15.5		8.5	58.5		8.5	58.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead	Lead		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		1.5	1.5		2.0	1.8		2.0	1.8	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Max	C-Max		Max	C-Max	
Walk Time (s)				5.0	5.0			5.0				5.0
Flash Dont Walk (s)				23.0	23.0			20.0				7.0
Pedestrian Calls (#/hr)				0	0			0				0
Act Effect Green (s)	11.5	11.5		15.5	15.5		8.5	58.5		8.5	58.5	
Actuated g/C Ratio	0.10	0.10		0.13	0.13		0.07	0.49		0.07	0.49	
v/c Ratio	2.85	7.46		5.14	7.63		1.68	0.47		1.45	0.45	
Control Delay	897.5	2919.7		1914.7	2998.7		372.4	18.2		280.0	19.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	897.5	2919.7		1914.7	2998.7		372.4	18.2		280.0	19.1	
LOS	F	F		F	F		F	B		F	B	
Approach Delay		2798.7			2857.9			72.8				55.8
Approach LOS		F			F			E				E
Queue Length 50th (ft)	~235	~2214		~460	~1617		~237	182		~191	183	
Queue Length 95th (ft)	#380	#2342		#652	#1764		#394	221		#337	221	
Internal Link Dist (ft)		1139			1616			553				1879
Turn Bay Length (ft)	150			150			200			200		
Base Capacity (vph)	62	373		56	253		125	2429		125	2438	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	2.85	7.46		5.14	7.63		1.68	0.47		1.45	0.45	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 43 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 7.63
 Intersection Signal Delay: 1890.0 Intersection LOS: F
 Intersection Capacity Utilization 166.5% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
19: Medical Complex Drive & Tomball Parkway

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway

 ø1	 ø2	 ø3	 ø4
15 s	65 s	22 s	18 s
 ø5	 ø6		
15 s	65 s		

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	872	10	5	729	26	10	17	5	57	42	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.995			0.967				0.902
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5			8				104
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	95	2019	23	12	1688	60	17	28	8	95	70	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	2042	0	12	1748	0	17	36	0	95	202	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	16.0	27.0	0.0	16.0	27.0	0.0	16.0	16.0	0.0	16.0	16.0	0.0
Total Split (%)	21.3%	36.0%	0.0%	21.3%	36.0%	0.0%	21.3%	21.3%	0.0%	21.3%	21.3%	0.0%
Maximum Green (s)	10.5	21.5		10.5	21.5		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009

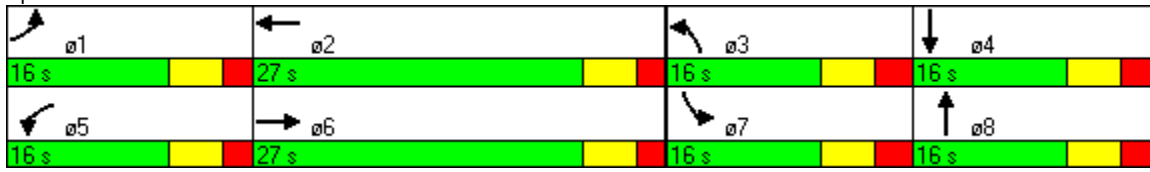


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	7.4	35.7		5.3	27.2		5.3	5.9		7.6	10.0	
Actuated g/C Ratio	0.12	0.58		0.09	0.44		0.09	0.10		0.12	0.16	
v/c Ratio	0.45	1.00		0.08	1.12		0.11	0.20		0.43	0.56	
Control Delay	35.0	36.8		32.5	85.9		32.4	27.8		34.3	19.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.0	36.8		32.5	85.9		32.4	27.8		34.3	19.9	
LOS	D	D		C	F		C	C		C	B	
Approach Delay		36.7			85.5			29.3			24.5	
Approach LOS		D			F			C			C	
Queue Length 50th (ft)	31	241		4	-381		6	9		30	31	
Queue Length 95th (ft)	86	#864		21	#762		27	39		87	109	
Internal Link Dist (ft)		618			1197			419			182	
Turn Bay Length (ft)	150			150			100			100		
Base Capacity (vph)	314	2052		314	1562		298	310		298	426	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	1.00		0.04	1.12		0.06	0.12		0.32	0.47	

Intersection Summary

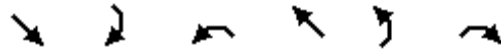
Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 61.4
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 56.0 Intersection LOS: E
 Intersection Capacity Utilization 83.2% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 20: FM 2920 & Quinn Rd



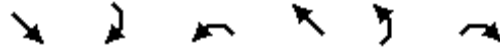
Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
2/26/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↙	↗
Volume (vph)	576	246	433	1010	238	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.955					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3380	0	1770	3539	1770	1583
Flt Permitted			0.184		0.950	
Satd. Flow (perm)	3380	0	343	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	197					31
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1406	
Travel Time (s)	35.3			19.7	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1227	524	922	2152	507	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1751	0	922	2152	507	454
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type			Perm			Perm
Protected Phases	6			2	4	
Permitted Phases			2			4
Detector Phase	6		2	2	4	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0		20.0	20.0	20.0	20.0
Total Split (s)	25.0	0.0	25.0	25.0	20.0	20.0
Total Split (%)	55.6%	0.0%	55.6%	55.6%	44.4%	44.4%
Maximum Green (s)	21.0		21.0	21.0	16.0	16.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 26: FM 2920 & Mahaffey Rd






Lane Group	SET	SER	NWL	NWT	NEL	NER
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	C-Max		C-Max	C-Max	None	None
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	21.7		21.7	21.7	15.3	15.3
Actuated g/C Ratio	0.48		0.48	0.48	0.34	0.34
v/c Ratio	1.01		5.59	1.26	0.84	0.81
Control Delay	39.0		2080.8	140.3	29.6	27.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	39.0		2080.8	140.3	29.6	27.1
LOS	D		F	F	C	C
Approach Delay	39.0			722.3	28.4	
Approach LOS	D			F	C	
Queue Length 50th (ft)	~227		~460	~397	114	93
Queue Length 95th (ft)	#375		#646	#517	#250	#225
Internal Link Dist (ft)	1475			786	1326	
Turn Bay Length (ft)			150			
Base Capacity (vph)	1732		165	1707	629	583
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.01		5.59	1.26	0.81	0.78

Intersection Summary

Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 5.59
 Intersection Signal Delay: 400.3 Intersection LOS: F
 Intersection Capacity Utilization 129.5% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 26: FM 2920 & Mahaffey Rd

 ø2 25 s	 ø4 20 s
 ø6 25 s	

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	526	17	43	772	115	66	296	12	205	365	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.981			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3472	0	1770	1852	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3522	0	1770	3472	0	1770	1852	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			14			1				165
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	306	1081	35	88	1586	236	110	495	20	343	611	315
Shared Lane Traffic (%)												
Lane Group Flow (vph)	306	1116	0	88	1822	0	110	515	0	343	611	315
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009

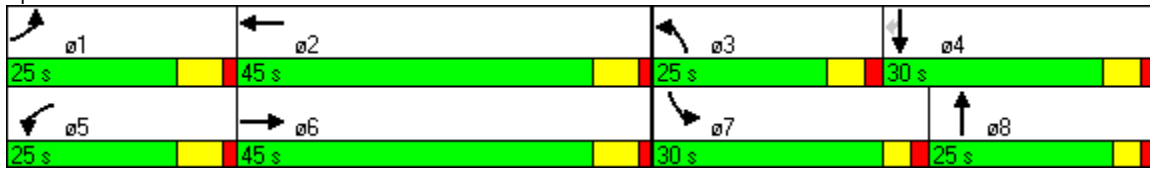


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	18.5	46.4		10.6	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.15	0.37		0.08	0.31		0.15	0.16		0.20	0.19	0.19
v/c Ratio	1.17	0.85		0.59	1.69		0.41	1.73		0.97	1.71	0.72
Control Delay	155.2	44.1		69.9	343.4		53.1	376.1		90.5	361.6	32.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	155.2	44.1		69.9	343.4		53.1	376.1		90.5	361.6	32.5
LOS	F	D		E	F		D	F		F	F	C
Approach Delay		68.0			330.8			319.2			206.6	
Approach LOS		E			F			F			F	
Queue Length 50th (ft)	~294	432		70	~1141		82	~621		278	~727	115
Queue Length 95th (ft)	#476	#601		122	#1282		142	#842		#467	#954	225
Internal Link Dist (ft)		1890			1910			746			1781	
Turn Bay Length (ft)	200			200			200			200		200
Base Capacity (vph)	262	1309		262	1079		269	297		354	358	437
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.17	0.85		0.34	1.69		0.41	1.73		0.97	1.71	0.72

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 125
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.73
 Intersection Signal Delay: 227.8 Intersection LOS: F
 Intersection Capacity Utilization 124.6% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	916	99	82	855	3	48	2	47	16	27	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.999			0.934				0.973
Flt Protected	0.950			0.950				0.976				0.985
Satd. Flow (prot)	1770	3486	0	1770	3536	0	0	1698	0	0	1785	0
Flt Permitted	0.950			0.950				0.815				0.885
Satd. Flow (perm)	1770	3486	0	1770	3536	0	0	1418	0	0	1604	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						25				7
Link Speed (mph)		30			30			30				30
Link Distance (ft)		346			1505			309				1054
Travel Time (s)		7.9			34.2			7.0				24.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	8	1882	203	168	1756	6	80	3	79	27	45	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	2085	0	168	1762	0	0	162	0	0	90	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009

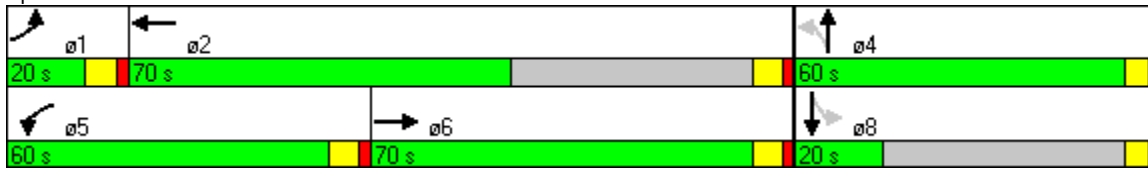


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.5	63.0		20.1	87.5			54.5			54.5	
Actuated g/C Ratio	0.03	0.40		0.13	0.56			0.35			0.35	
v/c Ratio	0.13	1.49		0.74	0.89			0.32			0.16	
Control Delay	79.9	257.5		85.8	38.1			34.5			34.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	79.9	257.5		85.8	38.1			34.5			34.7	
LOS	E	F		F	D			C			C	
Approach Delay		256.9			42.2			34.5			34.7	
Approach LOS		F			D			C			C	
Queue Length 50th (ft)	8	~1557		169	783			103			59	
Queue Length 95th (ft)	29	#1795		254	#1144			179			111	
Internal Link Dist (ft)		266			1425			229			974	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	146	1402		597	2319			508			561	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.05	1.49		0.28	0.76			0.32			0.16	

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 157.2
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.49
 Intersection Signal Delay: 146.9
 Intersection LOS: F
 Intersection Capacity Utilization 93.3%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	6	820	42	20	736	14	68	94	88	58	158	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.997			0.953			0.984	
Flt Protected					0.999			0.987			0.988	
Satd. Flow (prot)	0	3514	0	0	3525	0	0	1752	0	0	1811	0
Flt Permitted		0.674			0.540			0.770			0.631	
Satd. Flow (perm)	0	2369	0	0	1905	0	0	1367	0	0	1157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			2			34			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	1898	97	46	1704	32	114	157	147	97	264	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2009	0	0	1782	0	0	418	0	0	408	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	36.0%	36.0%	0.0%	36.0%	36.0%	0.0%	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%
Maximum Green (s)	21.5	21.5		21.5	21.5		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009

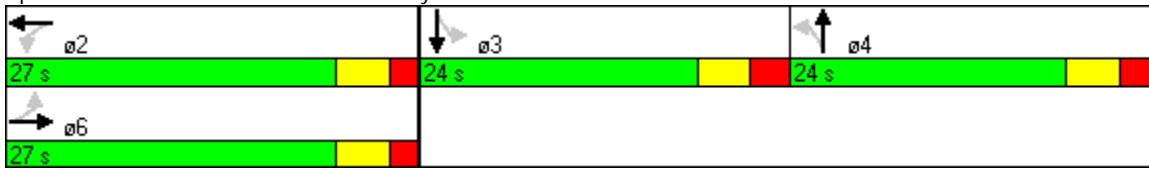


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		21.5			21.5			18.0				18.0
Actuated g/C Ratio		0.29			0.29			0.24				0.24
v/c Ratio		2.94			3.25			1.18				1.44
Control Delay		892.2			1033.3			134.3				242.1
Queue Delay		0.0			0.0			0.0				0.0
Total Delay		892.2			1033.3			134.3				242.1
LOS		F			F			F				F
Approach Delay		892.2			1033.3			134.3				242.1
Approach LOS		F			F			F				F
Queue Length 50th (ft)		-883			-801			-226				-263
Queue Length 95th (ft)		#1021			#936			#397				#431
Internal Link Dist (ft)		644			2620			220				531
Turn Bay Length (ft)												
Base Capacity (vph)		684			548			354				284
Starvation Cap Reductn		0			0			0				0
Spillback Cap Reductn		0			0			0				0
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		2.94			3.25			1.18				1.44

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 3.25
 Intersection Signal Delay: 820.6
 Intersection LOS: F
 Intersection Capacity Utilization 115.0%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	8	782	29	17	752	19	19	17	45	23	13	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.996			0.925			0.966	
Flt Protected		0.999			0.999			0.988			0.977	
Satd. Flow (prot)	0	3518	0	0	3522	0	0	1702	0	0	1758	0
Flt Permitted		0.919			0.833			0.894			0.838	
Satd. Flow (perm)	0	3236	0	0	2936	0	0	1540	0	0	1508	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			19			20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	19	1810	67	39	1741	44	32	28	75	38	22	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1896	0	0	1824	0	0	135	0	0	80	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		39.6			39.6			8.8			8.8	
Actuated g/C Ratio		0.71			0.71			0.16			0.16	
v/c Ratio		0.82			0.87			0.52			0.31	
Control Delay		13.5			16.9			25.9			19.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.5			16.9			25.9			19.7	
LOS		B			B			C			B	
Approach Delay		13.5			16.9			25.9			19.7	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)		222			235			35			18	
Queue Length 95th (ft)		#484			#493			79			49	
Internal Link Dist (ft)		1520			644			252			544	
Turn Bay Length (ft)												
Base Capacity (vph)		2299			2085			333			327	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.82			0.87			0.41			0.24	

Intersection Summary

Area Type: Other
 Cycle Length: 58
 Actuated Cycle Length: 55.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 15.6 Intersection LOS: B
 Intersection Capacity Utilization 88.5% ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	832	0	0	736	61	0	0	0	36	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.989							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3500	0	0	1863	0	1770	0	1583
Flt Permitted	0.157									0.950		
Satd. Flow (perm)	292	3539	0	0	3500	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12							116
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	213%	213%	213%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	58	1926	0	0	1704	141	0	0	0	60	0	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	1926	0	0	1845	0	0	0	0	60	0	116
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	31.0	31.0	0.0	0.0	31.0	0.0	22.0	22.0	0.0	22.0	0.0	22.0
Total Split (%)	41.3%	41.3%	0.0%	0.0%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	0.0%	29.3%
Maximum Green (s)	25.5	25.5			25.5		17.0	17.0		16.0		16.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009

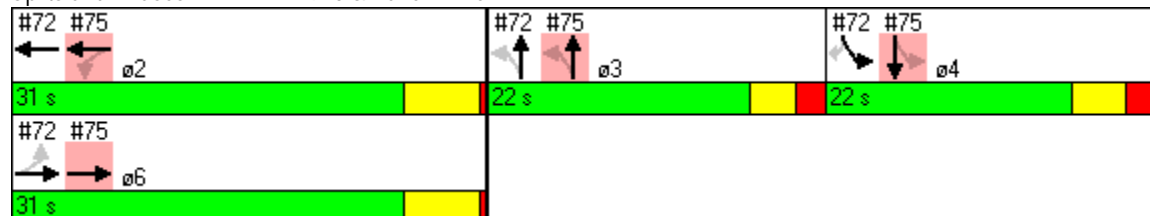


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Recall Mode	Max	Max			C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	25.5	25.5			25.5					16.0		16.0
Actuated g/C Ratio	0.34	0.34			0.34					0.21		0.21
v/c Ratio	0.59	1.60			1.54					0.16		0.27
Control Delay	12.2	286.9			271.2					25.4		7.3
Queue Delay	20.1	96.4			221.2					0.0		7.7
Total Delay	32.3	383.3			492.5					25.4		14.9
LOS	C	F			F					C		B
Approach Delay		373.0			492.5							
Approach LOS		F			F							
Queue Length 50th (ft)	4	-645			-654					23		0
Queue Length 95th (ft)	m2	m32			#791					53		39
Internal Link Dist (ft)		32			1520			35			250	
Turn Bay Length (ft)	100											
Base Capacity (vph)	99	1203			1198					378		429
Starvation Cap Reductn	29	142			0					0		0
Spillback Cap Reductn	0	0			290					0		268
Storage Cap Reductn	0	0			0					0		0
Reduced v/c Ratio	0.83	1.82			2.03					0.16		0.72

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.78
 Intersection Signal Delay: 412.5 Intersection LOS: F
 Intersection Capacity Utilization 63.6% ICU Level of Service B
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	853	70	52	886	0	10	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989						0.927				0.865
Flt Protected				0.950				0.978				
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	1689	0	0	1611	0
Flt Permitted				0.157				0.345				
Satd. Flow (perm)	0	3500	0	292	3539	0	0	596	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12						20				397
Link Speed (mph)		30			30			30				30
Link Distance (ft)		464			112			489				304
Travel Time (s)		10.5			2.5			11.1				6.9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1975	162	120	2051	0	17	0	20	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2137	0	120	2051	0	0	37	0	0	2	0
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		
Detector Phase		6		2	2		3	3		4		4
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0		7.0
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0		27.0
Total Split (s)	0.0	31.0	0.0	31.0	31.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	0.0%	41.3%	0.0%	41.3%	41.3%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)		25.5		25.5	25.5		17.0	17.0		16.0		16.0
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5		3.5
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009

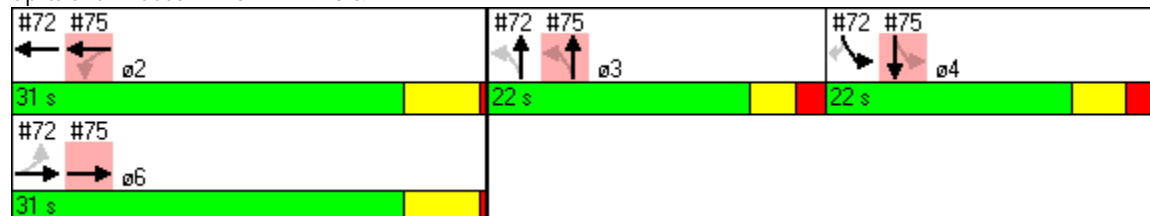


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode		Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		25.5		25.5	25.5			17.0			16.0	
Actuated g/C Ratio		0.34		0.34	0.34			0.23			0.21	
v/c Ratio		1.78		1.21	1.70			0.25			0.00	
Control Delay		378.6		125.4	335.3			19.4			0.0	
Queue Delay		321.3		57.3	31.9			0.0			0.0	
Total Delay		699.8		182.7	367.2			19.4			0.0	
LOS		F		F	F			B			A	
Approach Delay		699.8			357.0			19.4			0.0	
Approach LOS		F			F			B			A	
Queue Length 50th (ft)		-810		-64	-720			6			0	
Queue Length 95th (ft)		#949		m#55	m#460			31			0	
Internal Link Dist (ft)		384			32			409			224	
Turn Bay Length (ft)												
Base Capacity (vph)		1198		99	1203			151			656	
Starvation Cap Reductn		0		10	48			0			0	
Spillback Cap Reductn		499		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		3.06		1.35	1.78			0.25			0.00	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.78
 Intersection Signal Delay: 522.5 Intersection LOS: F
 Intersection Capacity Utilization 95.3% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	884	17	100	767	22	12	20	56	27	52	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.996			0.914				0.850
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1770	3529	0	1770	3525	0	0	1691	0	0	1831	1583
Flt Permitted	0.950			0.950				0.953			0.866	
Satd. Flow (perm)	1770	3529	0	1770	3525	0	0	1623	0	0	1613	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			94				74
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	42	2047	39	232	1776	51	20	33	94	45	87	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	2086	0	232	1827	0	0	147	0	0	132	74
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.4	24.5		9.4	31.5			22.0			22.5	22.5
Actuated g/C Ratio	0.10	0.34		0.13	0.44			0.30			0.31	0.31
v/c Ratio	0.23	1.74		1.01	1.19			0.26			0.26	0.14
Control Delay	33.1	360.5		97.4	115.2			9.5			20.6	5.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	33.1	360.5		97.4	115.2			9.5			20.6	5.8
LOS	C	F		F	F			A			C	A
Approach Delay		354.0			113.2			9.5			15.3	
Approach LOS		F			F			A			B	
Queue Length 50th (ft)	18	~757		~106	~592			17			44	0
Queue Length 95th (ft)	45	#896		#240	#749			57			86	27
Internal Link Dist (ft)		1197			384			552			298	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	232	1197		232	1539			559			502	543
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.18	1.74		1.00	1.19			0.26			0.26	0.14

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 72.4
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.74
 Intersection Signal Delay: 218.3 Intersection LOS: F
 Intersection Capacity Utilization 93.4% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	927	0	2	875	22	1	4	1	33	3	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.996			0.975			0.919	
Flt Protected	0.950			0.950				0.991			0.982	
Satd. Flow (prot)	1770	3539	0	1770	3525	0	0	1800	0	0	1681	0
Flt Permitted	0.950			0.950				0.930			0.874	
Satd. Flow (perm)	1770	3539	0	1770	3525	0	0	1689	0	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					4			2			89	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	2146	0	5	2026	51	2	7	2	55	5	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	2146	0	5	2077	0	0	11	0	0	149	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	21.0	33.0	0.0	21.0	33.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	28.0%	44.0%	0.0%	28.0%	44.0%	0.0%	28.0%	28.0%	0.0%	28.0%	28.0%	0.0%
Maximum Green (s)	15.5	27.5		15.5	27.5		15.5	15.5		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.1	32.4		7.1	32.4			8.0			8.4	
Actuated g/C Ratio	0.14	0.65		0.14	0.65			0.16			0.17	
v/c Ratio	0.10	0.93		0.02	0.91			0.04			0.46	
Control Delay	22.0	23.3		21.6	20.8			18.0			14.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	22.0	23.3		21.6	20.8			18.0			14.5	
LOS	C	C		C	C			B			B	
Approach Delay		23.3			20.8			18.0			14.5	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	6	-242		1	221			2			14	
Queue Length 95th (ft)	28	#708		10	#690			15			65	
Internal Link Dist (ft)		196			618			13			529	
Turn Bay Length (ft)												
Base Capacity (vph)	559	2303		559	2295			534			547	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.04	0.93		0.01	0.91			0.02			0.27	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 49.8
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 21.8
 Intersection LOS: C
 Intersection Capacity Utilization 78.1%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 85: FM 2920 & Buvinghausen St



Lanes, Volumes, Timings
87: Alma St & FM 2920

Medical Complex Drive
2/26/2009



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	16	0	982	143	3	893
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt			0.981			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	3472	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	3472	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	218		890			276
Travel Time (s)	5.0		20.2			6.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	17	0	1067	155	3	971
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	1222	0	0	974
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1221	0	0	503	18	180	71	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.995			0.986				
Flt Protected	0.950							0.969				
Satd. Flow (prot)	1770	5085	0	0	6376	0	0	4859	0	0	0	0
Flt Permitted	0.950							0.969				
Satd. Flow (perm)	1770	5085	0	0	6376	0	0	4859	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			8				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1957				1199
Travel Time (s)		8.3			18.8			44.5				27.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	75%	75%	75%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	288	2508	0	0	1033	37	301	119	44	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	2508	0	0	1070	0	0	464	0	0	0	0
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lead/Lag	Lead			Lag									
Lead-Lag Optimize?	Yes			Yes									
Vehicle Extension (s)	1.0			1.0			1.0		1.0				
Minimum Gap (s)	3.0			3.0			3.0		3.0				
Time Before Reduce (s)	0.0			0.0			0.0		0.0				
Time To Reduce (s)	0.0			0.0			0.0		0.0				
Recall Mode	None			C-Max			None		None				
Walk Time (s)				7.0			7.0		7.0				
Flash Dont Walk (s)				12.0			13.0		13.0				
Pedestrian Calls (#/hr)				0			0		0				
Act Effct Green (s)	23.5		73.5		43.5			18.0					
Actuated g/C Ratio	0.22		0.70		0.41			0.17					
v/c Ratio	0.73		0.70		0.40			0.97dl					
Control Delay	51.2		8.7		22.0			42.0					
Queue Delay	0.9		1.0		0.0			0.0					
Total Delay	52.1		9.7		22.0			42.0					
LOS	D		A		C			D					
Approach Delay			14.1		22.0			42.0					
Approach LOS			B		C			D					
Queue Length 50th (ft)	207		247		143			103					
Queue Length 95th (ft)	m231		m283		172			140					
Internal Link Dist (ft)			287		747			1877		1119			
Turn Bay Length (ft)													
Base Capacity (vph)	396		3560		2646			840					
Starvation Cap Reductn	19		713		0			0					
Spillback Cap Reductn	0		0		0			0					
Storage Cap Reductn	0		0		0			0					
Reduced v/c Ratio	0.76		0.88		0.40			0.55					

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.36
 Intersection Signal Delay: 19.0 Intersection LOS: B
 Intersection Capacity Utilization 82.0% ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &

#90  ø1	#90  ø2	#90  ø4
30 s	50 s	25 s
#93  ø5	#93  ø6	#93  ø8
30 s	50 s	25 s

Lane Group	ø5	ø6	ø8
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↑↑↑	
Volume (vph)	0	871	326	83	600	0	0	0	0	490	51	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt		0.959										0.965
Flt Protected				0.950								0.966
Satd. Flow (prot)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Flt Permitted				0.950								0.966
Satd. Flow (perm)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110										62
Link Speed (mph)		30			30			30				30
Link Distance (ft)		735			367			1962				1208
Travel Time (s)		16.7			8.3			44.6				27.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	189%	189%	189%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1789	670	171	1233	0	0	0	0	820	85	273
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2459	0	171	1233	0	0	0	0	0	1178	0
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009






Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Minimum Gap (s)		3.0		3.0						3.0	3.0	
Time Before Reduce (s)		0.0		0.0						0.0	0.0	
Time To Reduce (s)		0.0		0.0						0.0	0.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		51.7		15.3	73.5							18.0
Actuated g/C Ratio		0.49		0.15	0.70							0.17
v/c Ratio		0.80		0.66	0.35							2.31dl
Control Delay		24.3		61.2	5.8							204.5
Queue Delay		0.0		0.0	0.1							12.2
Total Delay		24.3		61.2	5.9							216.7
LOS		C		E	A							F
Approach Delay		24.3			12.7							216.7
Approach LOS		C			B							F
Queue Length 50th (ft)		365		125	94							~372
Queue Length 95th (ft)		473		193	108							#467
Internal Link Dist (ft)		655			287			1882				1128
Turn Bay Length (ft)												
Base Capacity (vph)		3079		396	3521							864
Starvation Cap Reductn		0		0	932							0
Spillback Cap Reductn		6		0	0							17
Storage Cap Reductn		0		0	0							0
Reduced v/c Ratio		0.80		0.43	0.48							1.39

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.36
 Intersection Signal Delay: 66.0 Intersection LOS: E
 Intersection Capacity Utilization 82.0% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd

#90  ø1 30 s	#90  ø2 50 s	#90  ø4 25 s
#93  ø5 30 s	#93  ø6 50 s	#93  ø8 25 s

Lane Group	ø1	ø2	ø4
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖	↗		↖	↗			
Volume (vph)	56	500	0	0	721	30	164	57	409	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850		0.903				
Flt Protected	0.950							0.987				
Satd. Flow (prot)	1770	3539	0	0	5085	1583	0	4532	0	0	0	0
Flt Permitted	0.950							0.987				
Satd. Flow (perm)	1770	3539	0	0	5085	1583	0	4532	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						58		169				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		393			1219			636			1957	
Travel Time (s)		8.9			27.7			14.5			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	119	1065	0	0	1536	64	275	95	685	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	1065	0	0	1536	64	0	1055	0	0	0	0
Number of Detectors	1	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
Trailing Detector (ft)	0	0			0	0	0	0				
Turn Type	Prot					Perm	Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases						2	4					
Detector Phase	1	1 2			2	2	4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0	20.0	5.0	5.0				
Minimum Split (s)	11.5				26.5	26.5	27.0	27.0				
Total Split (s)	25.6	119.0	0.0	0.0	93.4	93.4	31.0	31.0	0.0	0.0	0.0	0.0
Total Split (%)	17.1%	79.3%	0.0%	0.0%	62.3%	62.3%	20.7%	20.7%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	19.1				86.9	86.9	24.0	24.0				
Yellow Time (s)	4.0				4.0	4.0	4.0	4.0				
All-Red Time (s)	2.5				2.5	2.5	3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	6.5	7.0	7.0	4.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	90.0	29.0	31.0
Total Split (%)	60%	19%	21%
Maximum Green (s)	83.5	22.5	24.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009

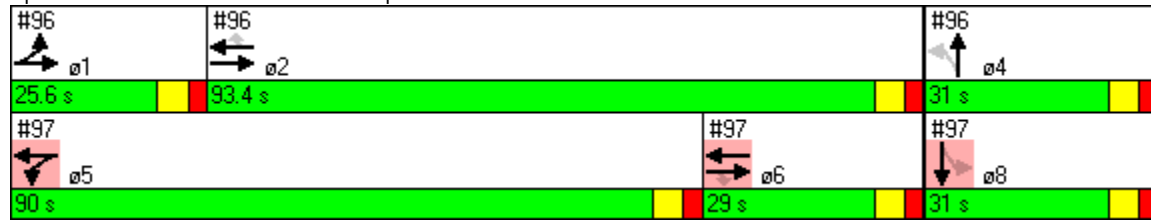


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	1.0			1.0			1.0		1.0			
Minimum Gap (s)	3.0			3.0			3.0		3.0			
Time Before Reduce (s)	0.0			0.0			0.0		0.0			
Time To Reduce (s)	0.0			0.0			0.0		0.0			
Recall Mode	None			C-Min		C-Min		Min		Min		
Walk Time (s)				7.0		7.0		7.0		7.0		
Flash Dont Walk (s)				12.0		12.0		13.0		13.0		
Pedestrian Calls (#/hr)				0		0		0		0		
Act Effct Green (s)	18.4		111.6		86.6		86.6		24.9			
Actuated g/C Ratio	0.12		0.74		0.58		0.58		0.17			
v/c Ratio	0.55		0.40		0.52		0.07		1.67dr			
Control Delay	61.7		18.6		20.0		3.9		136.3			
Queue Delay	0.0		11.8		0.1		0.0		224.5			
Total Delay	61.7		30.3		20.1		3.9		360.8			
LOS	E		C		C		A		F			
Approach Delay				33.5		19.5				360.8		
Approach LOS				C		B				F		
Queue Length 50th (ft)	118		263		320		2		~407			
Queue Length 95th (ft)	m174		325		360		23		#507			
Internal Link Dist (ft)				313		1139				556		1877
Turn Bay Length (ft)							200					
Base Capacity (vph)	225		2594		2948		942		894			
Starvation Cap Reductn	0		1513		0		0		0			
Spillback Cap Reductn	0		0		410		0		267			
Storage Cap Reductn	0		0		0		0		0			
Reduced v/c Ratio	0.53		0.99		0.61		0.07		1.68			

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.37
 Intersection Signal Delay: 117.6 Intersection LOS: F
 Intersection Capacity Utilization 81.7% ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 96: Medical Complex Drive & SH 249 East Service Rd



Lane Group	ø5	ø6	ø8
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑						↑↑↑	
Volume (vph)	0	273	101	633	632	0	0	0	0	56	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt			0.850									0.966
Flt Protected				0.950								0.966
Satd. Flow (prot)	0	5085	1583	1770	3539	0	0	0	0	0	4745	0
Flt Permitted				0.950								0.966
Satd. Flow (perm)	0	5085	1583	1770	3539	0	0	0	0	0	4745	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			215									30
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2815			393			714				1962
Travel Time (s)		64.0			8.9			16.2				44.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	196%	196%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	582	215	1349	1346	0	0	0	0	94	10	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	582	215	1349	1346	0	0	0	0	0	134	0
Number of Detectors		2	1	1	2					1	2	
Detector Template		Thru	Right	Left	Thru					Left	Thru	
Leading Detector (ft)		100	20	20	100					20	100	
Trailing Detector (ft)		0	0	0	0					0	0	
Turn Type			Perm	Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases			6							8		
Detector Phase		6	6	5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0						5.0	5.0	
Minimum Split (s)		27.5	27.5	11.5						28.0	28.0	
Total Split (s)	0.0	29.0	29.0	90.0	119.0	0.0	0.0	0.0	0.0	31.0	31.0	0.0
Total Split (%)	0.0%	19.3%	19.3%	60.0%	79.3%	0.0%	0.0%	0.0%	0.0%	20.7%	20.7%	0.0%
Maximum Green (s)		22.5	22.5	83.5						24.0	24.0	
Yellow Time (s)		4.0	4.0	4.0						4.0	4.0	
All-Red Time (s)		2.5	2.5	2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	25.6	93.4	31.0
Total Split (%)	17%	62%	21%
Maximum Green (s)	19.1	86.9	24.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009

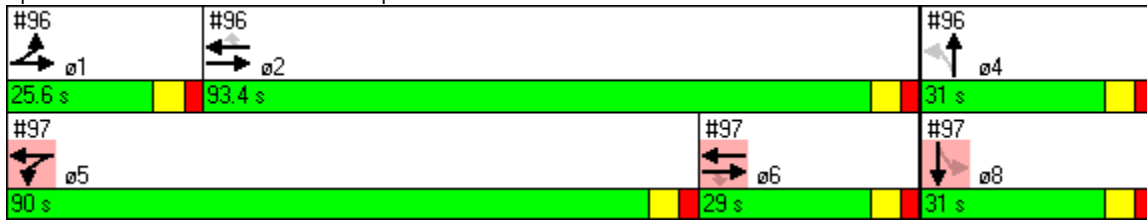


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		1.0	1.0	1.0						1.0	1.0	
Minimum Gap (s)		3.0	3.0	3.0						3.0	3.0	
Time Before Reduce (s)		0.0	0.0	0.0						0.0	0.0	
Time To Reduce (s)		0.0	0.0	0.0						0.0	0.0	
Recall Mode		C-Min	C-Min	None						None	None	
Walk Time (s)		7.0	7.0							7.0	7.0	
Flash Dont Walk (s)		14.0	14.0							14.0	14.0	
Pedestrian Calls (#/hr)		0	0							0	0	
Act Effect Green (s)		21.6	21.6	83.5	111.6							24.9
Actuated g/C Ratio		0.14	0.14	0.56	0.74							0.17
v/c Ratio		0.80	0.52	1.37	0.51							0.16
Control Delay		71.0	11.6	196.9	5.8							42.3
Queue Delay		0.0	0.0	58.7	0.2							0.0
Total Delay		71.0	11.6	255.6	6.0							42.3
LOS		E	B	F	A							D
Approach Delay		55.0			130.9							42.3
Approach LOS		D			F							D
Queue Length 50th (ft)		203	0	~1749	161							32
Queue Length 95th (ft)		250	77	m#1953	m174							55
Internal Link Dist (ft)		2735			313			634				1882
Turn Bay Length (ft)			200									
Base Capacity (vph)		763	420	985	2654							814
Starvation Cap Reductn		0	0	86	466							0
Spillback Cap Reductn		0	0	0	0							9
Storage Cap Reductn		0	0	0	0							0
Reduced v/c Ratio		0.76	0.51	1.50	0.62							0.17

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.37
 Intersection Signal Delay: 111.0 Intersection LOS: F
 Intersection Capacity Utilization 81.7% ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 97: Medical Complex Drive & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	Min
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1990			618			233			163	
Travel Time (s)		45.2			14.0			5.3			3.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
114: Medical Complex Drive &



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	906			5205	1406	
Travel Time (s)	20.6			118.3	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Turn Type			Perm			
Protected Phases	4!			2	8!	
Permitted Phases			2			
Detector Phase	4		2	2	8	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0		16.0	16.0	16.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 114: Medical Complex Drive &

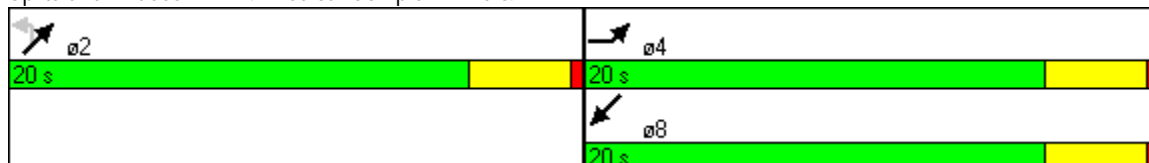


Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Max		Max	Max	Max	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	826			5125	1326	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.00
 Intersection Signal Delay: 0.0 Intersection LOS: A
 Intersection Capacity Utilization 0.0% ICU Level of Service A
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 114: Medical Complex Drive &



Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3855			2112			1114			1168	
Travel Time (s)		87.6			48.0			25.3			26.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009

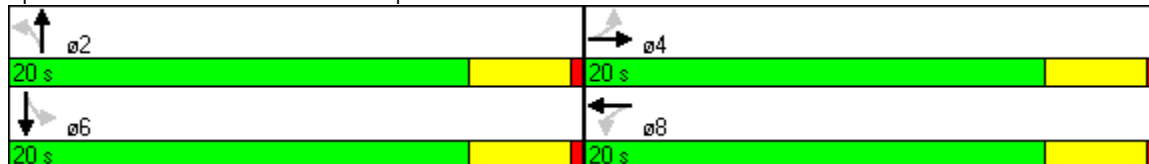


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		3775			2032			1034			1088	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 116: Medical Complex Dr &



Lanes, Volumes, Timings
 117: Medical Complex Drive & Hufsmith Kohrville Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	467	20	35	592	87	22	97	4	86	155	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.981			0.994			0.948	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3472	0	1770	1852	0	1770	1766	0
Flt Permitted	0.139			0.244			0.250			0.543		
Satd. Flow (perm)	259	3518	0	455	3472	0	466	1852	0	1011	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			48			2			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2112			5205			1065			775	
Travel Time (s)		48.0			118.3			24.2			17.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	273	995	43	75	1261	185	37	162	7	144	259	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	1038	0	75	1446	0	37	169	0	144	395	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	60.0	60.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	75.0%	75.0%	0.0%	75.0%	75.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	0.0%
Maximum Green (s)	56.0	56.0		56.0	56.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 117: Medical Complex Drive & Hufsmith Kohrville Rd

Medical Complex Drive
 2/26/2009

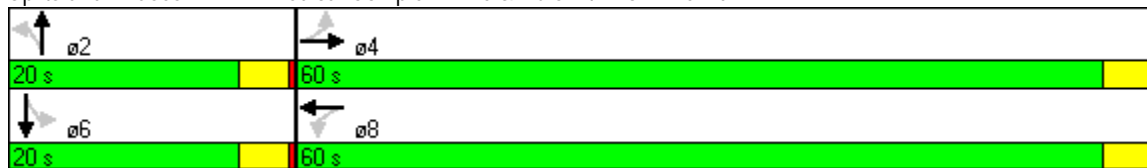


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	56.0	56.0		56.0	56.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.70	0.70		0.70	0.70		0.20	0.20		0.20	0.20	
v/c Ratio	1.51	0.42		0.24	0.59		0.40	0.45		0.71	1.05	
Control Delay	274.7	5.6		6.5	7.1		42.1	32.4		51.6	91.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	274.7	5.6		6.5	7.1		42.1	32.4		51.6	91.1	
LOS	F	A		A	A		D	C		D	F	
Approach Delay		61.7			7.1			34.1			80.6	
Approach LOS		E			A			C			F	
Queue Length 50th (ft)	~102	95		11	155		16	74		68	~205	
Queue Length 95th (ft)	#250	126		29	206		#48	132		#155	#376	
Internal Link Dist (ft)		2032			5125			985			695	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	181	2467		319	2445		93	372		202	377	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.51	0.42		0.24	0.59		0.40	0.45		0.71	1.05	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 1.51
 Intersection Signal Delay: 39.7
 Intersection LOS: D
 Intersection Capacity Utilization 88.2%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 117: Medical Complex Drive & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	478	26	32	475	21	50	90	47	80	215	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.994			0.948			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3518	0	1770	1766	0	1770	1824	0
Flt Permitted	0.200			0.200			0.379			0.611		
Satd. Flow (perm)	373	3511	0	373	3518	0	706	1766	0	1138	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			13			50			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2634			3855			1711			2332	
Travel Time (s)		59.9			87.6			38.9			53.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	58	1018	55	68	1012	45	84	151	79	134	360	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	1073	0	68	1057	0	84	230	0	134	420	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
2/26/2009

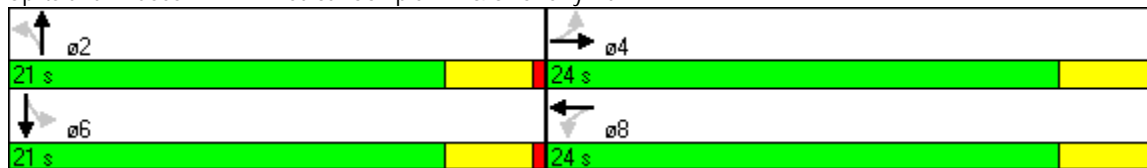


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	20.0	20.0		20.0	20.0		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.44	0.44		0.44	0.44		0.38	0.38		0.38	0.38	
v/c Ratio	0.35	0.68		0.41	0.67		0.31	0.33		0.31	0.60	
Control Delay	15.6	12.6		17.8	12.4		13.9	9.3		12.4	15.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.6	12.6		17.8	12.4		13.9	9.3		12.4	15.0	
LOS	B	B		B	B		B	A		B	B	
Approach Delay		12.8			12.8			10.5			14.4	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	9	105		11	103		15	31		23	78	
Queue Length 95th (ft)	34	159		#43	156		42	69		55	148	
Internal Link Dist (ft)		2554			3775			1631			2252	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	166	1569		166	1571		267	698		430	702	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.35	0.68		0.41	0.67		0.31	0.33		0.31	0.60	

Intersection Summary

Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 12.8 Intersection LOS: B
 Intersection Capacity Utilization 69.4% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 122: Medical Complex Dr & S. Cherry Rd



Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1181			2634			643			613	
Travel Time (s)		26.8			59.9			14.6			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009

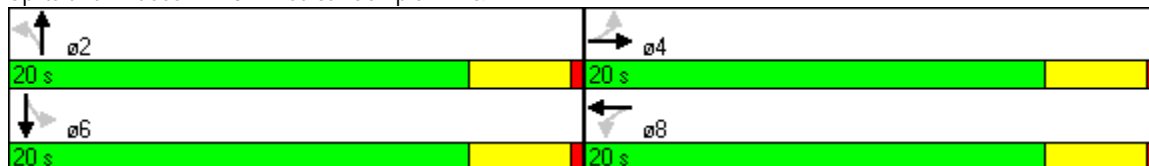


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1101			2554			563			533	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary





















Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 131: Medical Complex Dr &



Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1181			411			528	
Travel Time (s)		22.7			26.8			9.3			12.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

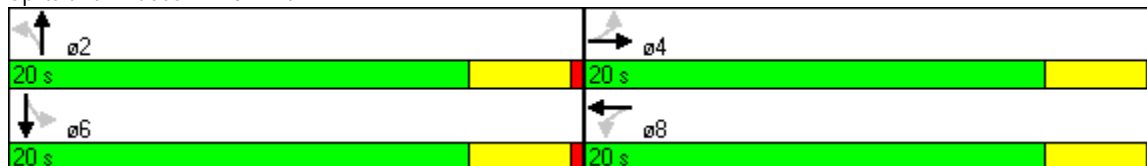


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		920		1101			331			448		
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 132: Int



Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1696			1000			95			284	
Travel Time (s)		38.5			22.7			2.2			6.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009

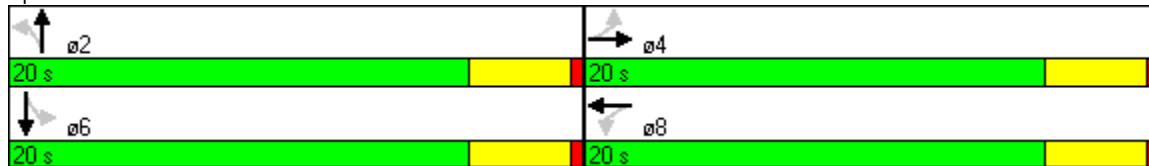


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1616			920			15			204	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												











Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection Capacity Utilization:	0.0%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 133: Int



Lanes, Volumes, Timings
134: Triechel Rd & Medical Complex Dr

						
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	1863	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	1863	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	313		692			2340
Travel Time (s)	7.1		15.7			53.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Turn Type					Perm	
Protected Phases	2					8
Permitted Phases			4		8	
Detector Phase	2		4		8	8
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	20.0		20.0		20.0	20.0
Total Split (s)	20.0	0.0	20.0	0.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)	16.0		16.0		16.0	16.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	0.5		0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

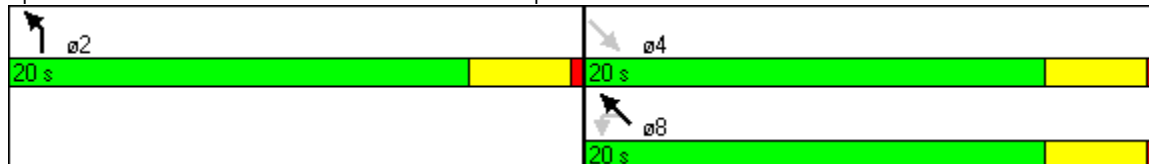


Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Minimum Gap (s)	3.0		3.0		3.0	3.0
Time Before Reduce (s)	0.0		0.0		0.0	0.0
Time To Reduce (s)	0.0		0.0		0.0	0.0
Recall Mode	Max		Max		Max	Max
Walk Time (s)	5.0		5.0		5.0	5.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	233		612		2260	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 134: Triechel Rd & Medical Complex Dr





















2035 BUILD CONDITION ANALYSIS

[PM PEAK HOUR]

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	474	25	3	663	0	36	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993						0.969				
Flt Protected				0.950				0.963				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1738	0	0	1863	0
Flt Permitted				0.950				0.775				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1399	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						12				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	974	51	6	1362	0	60	0	18	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1025	0	6	1362	0	0	78	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	60.0	0.0	25.0	60.0	0.0	25.0	25.0	0.0	10.5	10.5	0.0
Total Split (%)	10.0%	54.5%	0.0%	22.7%	54.5%	0.0%	22.7%	22.7%	0.0%	9.5%	9.5%	0.0%
Maximum Green (s)	5.0	54.0		19.0	54.0		19.5	19.5		5.0	5.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		56.0		5.1	58.2			8.0				
Actuated g/C Ratio		0.75		0.07	0.78			0.11				
v/c Ratio		0.39		0.05	0.49			0.49				
Control Delay		5.7		34.0	4.8			37.2				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		5.7		34.0	4.8			37.2				
LOS		A		C	A			D				
Approach Delay		5.7			4.9			37.2				
Approach LOS		A			A			D				
Queue Length 50th (ft)		70		3	107			29				
Queue Length 95th (ft)		200		14	181			68				
Internal Link Dist (ft)		2210			2010			1901			120	
Turn Bay Length (ft)				200								
Base Capacity (vph)		2750		452	3302			376				
Starvation Cap Reductn		0		0	0			0				
Spillback Cap Reductn		0		0	0			0				
Storage Cap Reductn		0		0	0			0				
Reduced v/c Ratio		0.37		0.01	0.41			0.21				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	74.4
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	6.3
Intersection LOS:	A
Intersection Capacity Utilization:	48.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 1: FM 2920 &



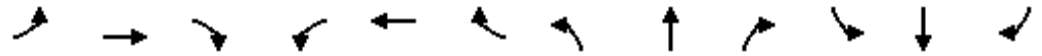
Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	356	41	44	492	11	28	7	58	47	15	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.985			0.997			0.867			0.992	
Flt Protected	0.950			0.950			0.950			0.950	0.976	
Satd. Flow (prot)	1770	3486	0	1770	3529	0	1770	1615	0	1681	1713	0
Flt Permitted	0.250			0.253			0.720			0.687	0.880	
Satd. Flow (perm)	466	3486	0	471	3529	0	1341	1615	0	1216	1545	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			6			88			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2340			2815			624			1981	
Travel Time (s)		53.2			64.0			14.2			45.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	17	758	87	94	1048	23	47	12	97	79	25	3
Shared Lane Traffic (%)										33%		
Lane Group Flow (vph)	17	845	0	94	1071	0	47	109	0	53	54	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

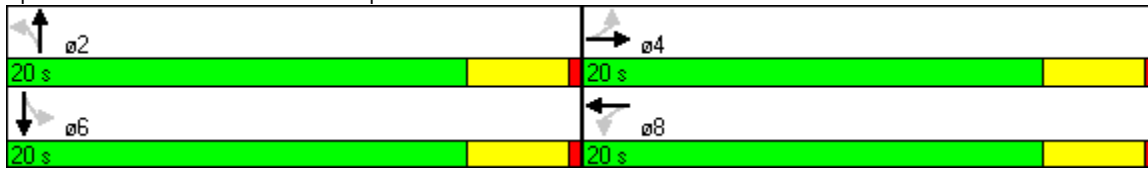


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.09	0.60		0.50	0.76		0.09	0.16		0.11	0.09	
Control Delay	9.1	11.2		22.1	14.9		8.1	3.8		8.3	7.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.1	11.2		22.1	14.9		8.1	3.8		8.3	7.7	
LOS	A	B		C	B		A	A		A	A	
Approach Delay		11.1			15.5			5.1				8.0
Approach LOS		B			B			A				A
Queue Length 50th (ft)	2	69		15	100		6	3		7	7	
Queue Length 95th (ft)	11	111		#64	#158		19	22		22	22	
Internal Link Dist (ft)		2260			2735			544				1901
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	186	1416		188	1415		536	699		486	620	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.60		0.50	0.76		0.09	0.16		0.11	0.09	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	12.8
Intersection LOS:	B
Intersection Capacity Utilization:	50.0%
ICU Level of Service:	A
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Medical Complex Dr & Calvert Rd



Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	978	33	62	1164	132	39	7	67	187	9	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995				0.850		0.911				0.883
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	0	3169	0	1770	1645	0
Flt Permitted	0.950			0.950				0.829		0.633		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	0	2673	0	1179	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				185		112				54
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	74	2009	68	127	2391	271	65	12	112	313	15	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	2077	0	127	2391	271	0	189	0	313	69	0
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	20.0	60.0	0.0	20.0	60.0	60.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	20.0%	60.0%	0.0%	20.0%	60.0%	60.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	14.0	54.0		14.0	54.0	54.0	14.5	14.5		14.5	14.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009

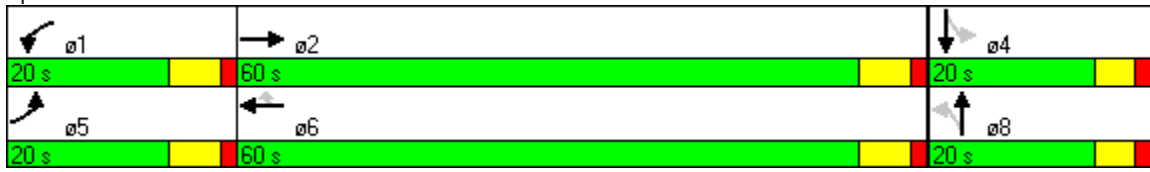


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	8.4	54.0		10.8	58.7	58.7	14.5			14.5	14.5	
Actuated g/C Ratio	0.09	0.56		0.11	0.61	0.61	0.15			0.15	0.15	
v/c Ratio	0.48	1.06		0.64	1.11	0.26	0.38			1.77	0.24	
Control Delay	52.5	59.9		56.2	80.6	4.2	18.9			397.5	16.8	
Queue Delay	0.0	0.0		0.0	9.0	0.0	0.0			0.0	0.0	
Total Delay	52.5	59.9		56.2	89.6	4.2	18.9			397.5	16.8	
LOS	D	E		E	F	A	B			F	B	
Approach Delay		59.7			79.8		18.9				328.7	
Approach LOS		E			E		B				F	
Queue Length 50th (ft)	44	~750		76	~925	22	22			~292	8	
Queue Length 95th (ft)	88	#932		135	#1123	62	56			#472	48	
Internal Link Dist (ft)		2010			655		136				726	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	256	1967		256	2145	1032	496			177	292	
Starvation Cap Reductn	0	0		0	39	0	0			0	0	
Spillback Cap Reductn	0	0		0	0	0	0			0	0	
Storage Cap Reductn	0	0		0	0	0	0			0	0	
Reduced v/c Ratio	0.29	1.06		0.50	1.14	0.26	0.38			1.77	0.24	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 96.9
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.77
 Intersection Signal Delay: 87.1
 Intersection LOS: F
 Intersection Capacity Utilization 102.2%
 ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
2/26/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	13	50	21	370	132	27	84	755	210	65	963	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.956			0.974			0.967			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3383	0	1770	3447	0	1770	3422	0	1770	3518	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3383	0	1770	3447	0	1770	3422	0	1770	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			15			29			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		706			692			1353			532	
Travel Time (s)		16.0			15.7			30.8			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	107	45	788	281	58	179	1608	447	138	2052	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	152	0	788	339	0	179	2055	0	138	2141	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		4.0	4.0		5.0	15.0		4.0	15.0	
Minimum Split (s)	32.5	22.5		20.0	20.0		11.5	30.5		8.0	30.5	
Total Split (s)	34.4	23.5	0.0	43.0	32.1	0.0	17.0	65.5	0.0	13.0	61.5	0.0
Total Split (%)	23.7%	16.2%	0.0%	29.7%	22.1%	0.0%	11.7%	45.2%	0.0%	9.0%	42.4%	0.0%
Maximum Green (s)	28.9	17.0		39.0	28.1		10.5	59.0		9.0	55.0	
Yellow Time (s)	4.0	5.0		3.5	3.5		5.0	5.0		3.5	5.0	
All-Red Time (s)	1.5	1.5		0.5	0.5		1.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	4.0	4.0	6.5	4.0

Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 2/26/2009











Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	1.5		3.0	3.0		2.0	1.5		3.0	1.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	None		None	Max		None	Max	
Walk Time (s)	7.0			5.0	5.0		7.0				7.0	
Flash Dont Walk (s)	20.0			11.0	11.0		17.0				17.0	
Pedestrian Calls (#/hr)	0			0	0		0				0	
Act Effect Green (s)	6.9	17.0		39.0	54.4		10.5	59.0		9.0	55.0	
Actuated g/C Ratio	0.05	0.12		0.27	0.38		0.07	0.41		0.06	0.38	
v/c Ratio	0.33	0.36		1.66	0.26		1.40	1.46		1.25	1.60	
Control Delay	76.5	47.3		337.9	31.8		265.9	242.6		221.5	306.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	76.5	47.3		337.9	31.8		265.9	242.6		221.5	306.2	
LOS	E	D		F	C		F	F		F	F	
Approach Delay		51.8			245.8			244.5			301.1	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	26	53		~1077	116		~225	~1392		~163	~1529	
Queue Length 95th (ft)	60	91		#1328	163		#384	#1527		#306	#1662	
Internal Link Dist (ft)		626			612			1273			452	
Turn Bay Length (ft)							150					
Base Capacity (vph)	353	428		476	1302		128	1410		110	1336	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.36		1.66	0.26		1.40	1.46		1.25	1.60	

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 145
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.66
 Intersection Signal Delay: 260.9 Intersection LOS: F
 Intersection Capacity Utilization 136.2% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 11: Park Rd/Medical Complex Dr & FM 2920

 ø1	 ø2	 ø3	 ø4
13 s	65.5 s	43 s	23.5 s
 ø5	 ø6	 ø7	 ø8
17 s	61.5 s	34.4 s	32.1 s

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↗
Volume (vph)	83	422	216	203	484	149	267	487	206	43	83	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor												
Frt			0.850		0.970				0.850		0.929	
Flt Protected	0.950	0.996		0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3377	1583	1522	4629	0	3433	5085	1583	3433	4724	0
Flt Permitted	0.157	0.515		0.293	0.714		0.950			0.950		
Satd. Flow (perm)	266	1746	1583	469	3328	0	3433	5085	1583	3433	4724	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			296		40				278		100	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	124%	124%	124%	124%	124%	124%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	171	867	444	417	994	306	360	656	278	58	112	100
Shared Lane Traffic (%)	41%			50%								
Lane Group Flow (vph)	101	937	444	208	1509	0	360	656	278	58	212	0
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1	6	
Permitted Phases	3		3	4					2			
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	31.0	31.0	31.0	27.0	27.0	0.0	26.0	47.0	47.0	15.0	36.0	0.0
Total Split (%)	25.8%	25.8%	25.8%	22.5%	22.5%	0.0%	21.7%	39.2%	39.2%	12.5%	30.0%	0.0%
Maximum Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	40.0	40.0	8.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009

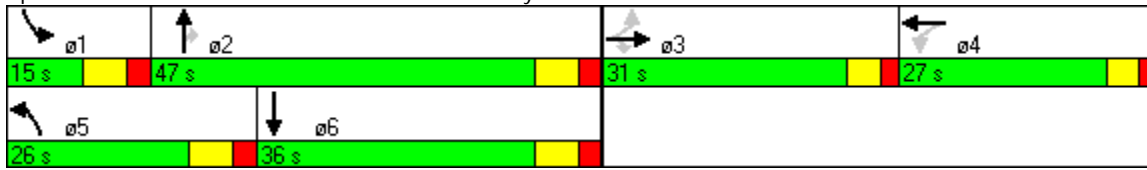


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	25.5	25.5	25.5	21.5	21.5		19.0	44.0	44.0	8.0	33.0	
Actuated g/C Ratio	0.21	0.21	0.21	0.17	0.17		0.15	0.35	0.35	0.06	0.27	
v/c Ratio	1.84	2.61	0.79	2.57	2.47		0.68	0.36	0.38	0.26	0.16	
Control Delay	467.7	754.0	26.6	762.3	690.4		57.1	30.3	4.7	58.4	18.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	467.7	754.0	26.6	762.3	690.4		57.1	30.3	4.7	58.4	18.5	
LOS	F	F	C	F	F		E	C	A	E	B	
Approach Delay		516.5			699.1			32.3			27.1	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	~135	~693	115	~324	~776		142	141	0	23	24	
Queue Length 95th (ft)	#263	#831	#264	#506	#881		195	177	58	45	46	
Internal Link Dist (ft)		747			810			1879			1881	
Turn Bay Length (ft)	200		200	200			200		200	200		
Base Capacity (vph)	55	359	561	81	610		526	1804	741	221	1331	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	1.84	2.61	0.79	2.57	2.47		0.68	0.36	0.38	0.26	0.16	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 124
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.61
 Intersection Signal Delay: 423.0
 Intersection LOS: F
 Intersection Capacity Utilization 84.5%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	461	234	271	655	203	520	1007	350	265	700	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor												
Frt		0.949			0.969			0.961			0.955	
Flt Protected	0.950			0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1770	3359	0	1610	3262	0	1770	4887	0	1770	4856	0
Flt Permitted	0.348			0.258	0.561		0.950			0.950		
Satd. Flow (perm)	648	3359	0	437	1843	0	1770	4887	0	1770	4856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			20			102			126	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1219			1696			633			1959	
Travel Time (s)		27.7			38.5			14.4			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	124%	124%	124%	124%	124%	124%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	183	982	499	577	1395	432	701	1357	472	357	943	404
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	183	1481	0	288	2116	0	701	1829	0	357	1347	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3								
Detector Phase	4	4		3	3		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	25.0		5.0	25.0	
Minimum Split (s)	11.5	11.5		34.5	34.5		11.5	31.5		11.5	31.5	
Total Split (s)	18.0	18.0	0.0	22.0	22.0	0.0	15.0	65.0	0.0	15.0	65.0	0.0
Total Split (%)	15.0%	15.0%	0.0%	18.3%	18.3%	0.0%	12.5%	54.2%	0.0%	12.5%	54.2%	0.0%
Maximum Green (s)	11.5	11.5		15.5	15.5		8.5	58.5		8.5	58.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5	4.0

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead	Lead		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		1.5	1.5		2.0	1.8		2.0	1.8	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Max	C-Max		Max	C-Max	
Walk Time (s)				5.0	5.0			5.0				5.0
Flash Dont Walk (s)				23.0	23.0			20.0				7.0
Pedestrian Calls (#/hr)				0	0			0				0
Act Effect Green (s)	11.5	11.5		15.5	15.5		8.5	58.5		8.5	58.5	
Actuated g/C Ratio	0.10	0.10		0.13	0.13		0.07	0.49		0.07	0.49	
v/c Ratio	2.95	3.95		5.14	8.30		5.61	0.75		2.86	0.55	
Control Delay	939.8	1347.9		1914.7	3299.2		2101.5	25.8		877.3	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	939.8	1347.9		1914.7	3299.2		2101.5	25.8		877.3	20.3	
LOS	F	F		F	F		F	C		F	C	
Approach Delay		1303.0			3133.3			600.9				199.9
Approach LOS		F			F			F				F
Queue Length 50th (ft)	~245	~1090		~460	~1780		~1029	387		~474	235	
Queue Length 95th (ft)	#393	#1231		#652	#1925		#1263	448		#663	280	
Internal Link Dist (ft)		1139			1616			553				1879
Turn Bay Length (ft)	150			150			200			200		
Base Capacity (vph)	62	375		56	255		125	2435		125	2432	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	2.95	3.95		5.14	8.30		5.61	0.75		2.86	0.55	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 8.30
 Intersection Signal Delay: 1392.6 Intersection LOS: F
 Intersection Capacity Utilization 164.6% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
19: Medical Complex Drive & Tomball Parkway

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway

 ø1	 ø2	 ø3	 ø4
15 s	65 s	22 s	18 s
 ø5	 ø6		
15 s	65 s		

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	649	12	10	1012	35	38	54	6	23	24	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.995			0.985				0.881
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3522	0	1770	1835	0	1770	1641	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3522	0	1770	1835	0	1770	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6				151
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	157	1503	28	23	2343	81	64	90	10	38	40	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	1531	0	23	2424	0	64	100	0	38	191	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	0.0
Total Split (%)	20.0%	40.0%	0.0%	20.0%	40.0%	0.0%	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.0	9.0		9.0	9.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009

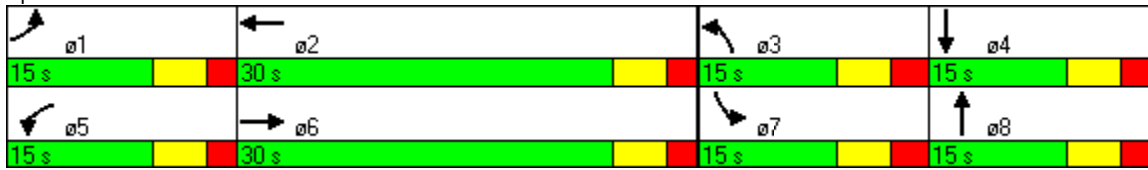


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	8.4	35.6		5.5	25.7		6.8	7.7		6.1	7.1	
Actuated g/C Ratio	0.13	0.54		0.08	0.39		0.10	0.12		0.09	0.11	
v/c Ratio	0.70	0.80		0.16	1.77		0.35	0.46		0.23	0.61	
Control Delay	48.2	22.8		34.4	369.0		35.7	35.1		34.3	18.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.2	22.8		34.4	369.0		35.7	35.1		34.3	18.8	
LOS	D	C		C	F		D	D		C	B	
Approach Delay		25.1			365.8			35.4			21.4	
Approach LOS		C			F			D			C	
Queue Length 50th (ft)	67	251		10	-906		27	40		16	17	
Queue Length 95th (ft)	#157	#595		31	#1119		64	86		44	76	
Internal Link Dist (ft)		618			1197			419			182	
Turn Bay Length (ft)	150			150			100			100		
Base Capacity (vph)	260	1902		260	1372		246	269		246	358	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.60	0.80		0.09	1.77		0.26	0.37		0.15	0.53	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 66.2
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.77
 Intersection Signal Delay: 209.4 Intersection LOS: F
 Intersection Capacity Utilization 103.4% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd/Medical Complex Dr

Medical Complex Drive
2/26/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↖	↑↑	↖	↗
Volume (vph)	614	276	399	932	450	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.953					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3373	0	1770	3539	1770	1583
Flt Permitted			0.250		0.950	
Satd. Flow (perm)	3373	0	466	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	215					12
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1406	
Travel Time (s)	35.3			19.7	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1308	588	850	1986	959	814
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1896	0	850	1986	959	814
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type			Perm			Perm
Protected Phases	6			2	4	
Permitted Phases			2			4
Detector Phase	6		2	2	4	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0		20.0	20.0	20.0	20.0
Total Split (s)	20.0	0.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0		16.0	16.0	16.0	16.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd/Medical Complex Dr

Medical Complex Drive
2/26/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	C-Min		C-Min	C-Min	None	None
Walk Time (s)	5.0		5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	16.0		16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40		0.40	0.40	0.40	0.40
v/c Ratio	1.28		4.57	1.40	1.35	1.27
Control Delay	149.5		1629.6	203.8	187.7	153.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	149.5		1629.6	203.8	187.7	153.1
LOS	F		F	F	F	F
Approach Delay	149.5			631.2	171.8	
Approach LOS	F			F	F	
Queue Length 50th (ft)	~292		~358	~336	~303	~250
Queue Length 95th (ft)	#409		#530	#449	#473	#419
Internal Link Dist (ft)	1475			786	1326	
Turn Bay Length (ft)			150			
Base Capacity (vph)	1478		186	1416	708	640
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.28		4.57	1.40	1.35	1.27

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 40

Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 4.57

Intersection Signal Delay: 365.6

Intersection LOS: F

Intersection Capacity Utilization 152.8%

ICU Level of Service H

Analysis Period (min) 15

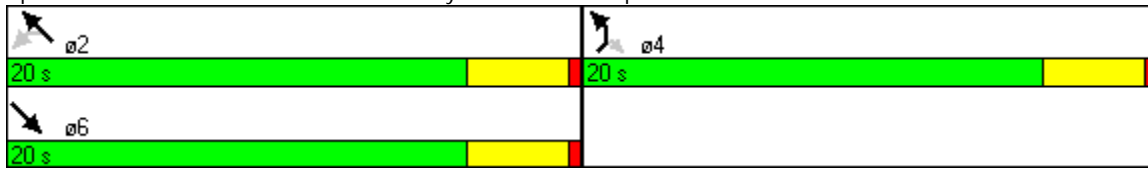
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 26: FM 2920 & Mahaffey Rd/Medical Complex Dr



Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	471	24	30	520	159	22	327	7	112	214	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.965			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			33			1				144
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	425	968	49	62	1068	327	37	547	12	187	358	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	425	1017	0	62	1395	0	37	559	0	187	358	161
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	25.0	45.0	0.0	25.0	45.0	0.0	25.0	25.0	0.0	30.0	30.0	30.0
Total Split (%)	20.0%	36.0%	0.0%	20.0%	36.0%	0.0%	20.0%	20.0%	0.0%	24.0%	24.0%	24.0%
Maximum Green (s)	18.5	38.5		18.5	38.5		19.0	20.0		25.0	24.0	24.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009

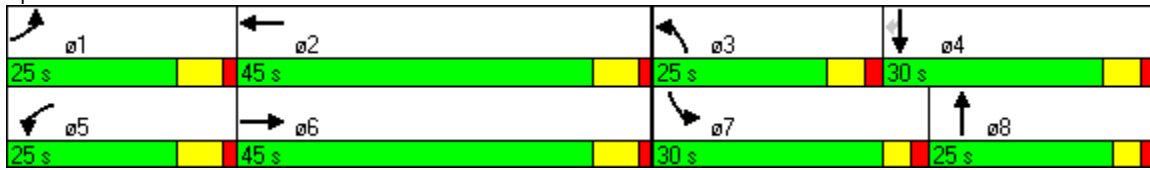


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	18.5	50.5		8.8	38.5		19.0	20.0		25.0	24.0	24.0
Actuated g/C Ratio	0.15	0.40		0.07	0.31		0.15	0.16		0.20	0.19	0.19
v/c Ratio	1.62	0.71		0.50	1.30		0.14	1.88		0.53	1.00	0.38
Control Delay	331.3	35.7		68.9	176.4		47.5	436.5		51.0	98.2	12.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	331.3	35.7		68.9	176.4		47.5	436.5		51.0	98.2	12.0
LOS	F	D		E	F		D	F		D	F	B
Approach Delay		122.8			171.8			412.3			66.0	
Approach LOS		F			F			F			E	
Queue Length 50th (ft)	~494	368		49	~753		26	~696		137	~293	11
Queue Length 95th (ft)	#698	475		94	#895		60	#921		214	#495	73
Internal Link Dist (ft)		1890			1910			746			1781	
Turn Bay Length (ft)	200			200			200			200		200
Base Capacity (vph)	262	1423		262	1075		269	298		354	358	420
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.62	0.71		0.24	1.30		0.14	1.88		0.53	1.00	0.38

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 125
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.88
 Intersection Signal Delay: 171.4 Intersection LOS: F
 Intersection Capacity Utilization 114.3% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	940	18	0	1061	26	14	1	7	8	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.996			0.956			0.922	
Flt Protected	0.950							0.970			0.979	
Satd. Flow (prot)	1770	3529	0	1863	3525	0	0	1727	0	0	1681	0
Flt Permitted	0.950							0.863			0.918	
Satd. Flow (perm)	1770	3529	0	1863	3525	0	0	1537	0	0	1577	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			12			18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	41	1931	37	0	2180	53	23	2	12	13	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	1968	0	0	2233	0	0	37	0	0	31	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	20.0	70.0	0.0	60.0	70.0	0.0	60.0	60.0	0.0	20.0	20.0	0.0
Total Split (%)	10.5%	36.8%	0.0%	31.6%	36.8%	0.0%	31.6%	31.6%	0.0%	10.5%	10.5%	0.0%
Maximum Green (s)	13.0	63.0		53.0	63.0		54.5	54.5		14.5	14.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009

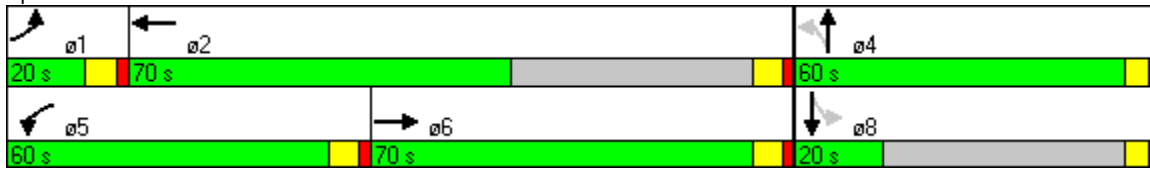


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)	7.8	75.3			63.1			54.6			54.6	
Actuated g/C Ratio	0.05	0.53			0.44			0.38			0.38	
v/c Ratio	0.43	1.05			1.43			0.06			0.05	
Control Delay	79.7	69.9			228.3			22.3			16.8	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	79.7	69.9			228.3			22.3			16.8	
LOS	E	E			F			C			B	
Approach Delay		70.1			228.3			22.3			16.8	
Approach LOS		E			F			C			B	
Queue Length 50th (ft)	38	~1050			~1518			15			8	
Queue Length 95th (ft)	80	#1190			#1697			41			31	
Internal Link Dist (ft)		266			1425			229			974	
Turn Bay Length (ft)	200											
Base Capacity (vph)	162	1866			2555			597			616	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.25	1.05			0.87			0.06			0.05	

Intersection Summary

Area Type: Other
 Cycle Length: 190
 Actuated Cycle Length: 142.4
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.43
 Intersection Signal Delay: 151.3 Intersection LOS: F
 Intersection Capacity Utilization 71.6% ICU Level of Service C
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	13	881	41	19	890	35	86	258	57	46	123	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.994			0.981			0.979	
Flt Protected		0.999			0.999			0.989			0.989	
Satd. Flow (prot)	0	3511	0	0	3514	0	0	1807	0	0	1804	0
Flt Permitted		0.625			0.577			0.831			0.618	
Satd. Flow (perm)	0	2197	0	0	2030	0	0	1519	0	0	1127	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			10			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	30	2040	95	44	2061	81	144	432	95	77	206	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2165	0	0	2186	0	0	671	0	0	335	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	22.0	22.0	0.0	19.0	19.0	0.0
Total Split (%)	45.3%	45.3%	0.0%	45.3%	45.3%	0.0%	29.3%	29.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	28.5	28.5		28.5	28.5		16.0	16.0		13.0	13.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009

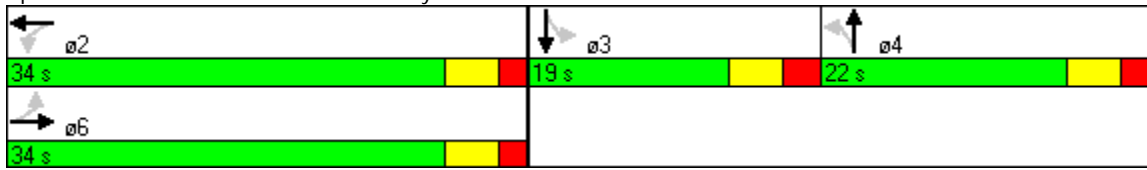


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		28.5			28.5			16.0				13.0
Actuated g/C Ratio		0.38			0.38			0.21				0.17
v/c Ratio		2.58			2.82			2.02				1.64
Control Delay		732.4			839.5			492.0				335.4
Queue Delay		0.0			0.0			0.0				0.0
Total Delay		732.4			839.5			492.0				335.4
LOS		F			F			F				F
Approach Delay		732.4			839.5			492.0				335.4
Approach LOS		F			F			F				F
Queue Length 50th (ft)		-924			-953			-504				-229
Queue Length 95th (ft)		#1063			#1092			#704				#386
Internal Link Dist (ft)		644			2620			220				531
Turn Bay Length (ft)												
Base Capacity (vph)		839			775			332				204
Starvation Cap Reductn		0			0			0				0
Spillback Cap Reductn		0			0			0				0
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		2.58			2.82			2.02				1.64

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.82
 Intersection Signal Delay: 721.2 Intersection LOS: F
 Intersection Capacity Utilization 137.3% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	30	853	23	20	911	16	61	30	82	10	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.997			0.936			0.942	
Flt Protected		0.998			0.999			0.983			0.984	
Satd. Flow (prot)	0	3518	0	0	3525	0	0	1714	0	0	1727	0
Flt Permitted		0.575			0.667			0.862			0.825	
Satd. Flow (perm)	0	2027	0	0	2354	0	0	1503	0	0	1448	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			5			13			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	69	1975	53	46	2109	37	102	50	137	17	12	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2097	0	0	2192	0	0	289	0	0	51	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	17.0	17.0	0.0	17.0	17.0	0.0
Total Split (%)	70.7%	70.7%	0.0%	70.7%	70.7%	0.0%	29.3%	29.3%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		11.5	11.5		11.5	11.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		35.5			35.5			11.5			11.5	
Actuated g/C Ratio		0.61			0.61			0.20			0.20	
v/c Ratio		1.69			1.52			0.94			0.17	
Control Delay		330.5			255.5			64.5			18.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		330.5			255.5			64.5			18.2	
LOS		F			F			E			B	
Approach Delay		330.5			255.5			64.5			18.2	
Approach LOS		F			F			E			B	
Queue Length 50th (ft)		-594			-591			95			12	
Queue Length 95th (ft)		#727			#725			#228			37	
Internal Link Dist (ft)		1520			644			252			544	
Turn Bay Length (ft)												
Base Capacity (vph)		1244			1443			308			295	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.69			1.52			0.94			0.17	

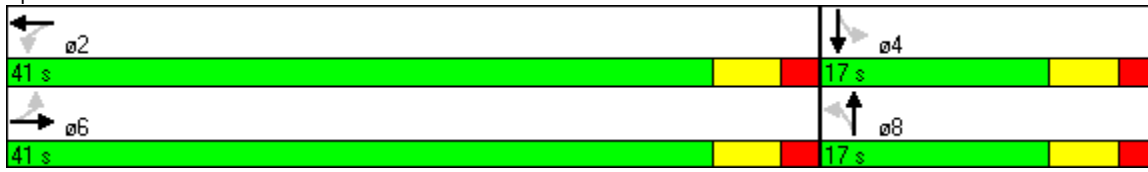
Intersection Summary

Area Type: Other
 Cycle Length: 58
 Actuated Cycle Length: 58
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.69
 Intersection Signal Delay: 274.9
 Intersection Capacity Utilization 128.1%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	845	0	0	1129	61	0	0	0	46	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.992							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3511	0	0	1863	0	1770	0	1583
Flt Permitted	0.109									0.950		
Satd. Flow (perm)	203	3539	0	0	3511	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9							105
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		112			1600			115			330	
Travel Time (s)		2.5			36.4			2.6			7.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	213%	213%	213%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	137	1956	0	0	2614	141	0	0	0	77	0	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	1956	0	0	2755	0	0	0	0	77	0	105
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	35.0	35.0	0.0	0.0	35.0	0.0	20.0	20.0	0.0	20.0	0.0	20.0
Total Split (%)	46.7%	46.7%	0.0%	0.0%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	0.0%	26.7%
Maximum Green (s)	29.5	29.5			29.5		15.0	15.0		14.0		14.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009

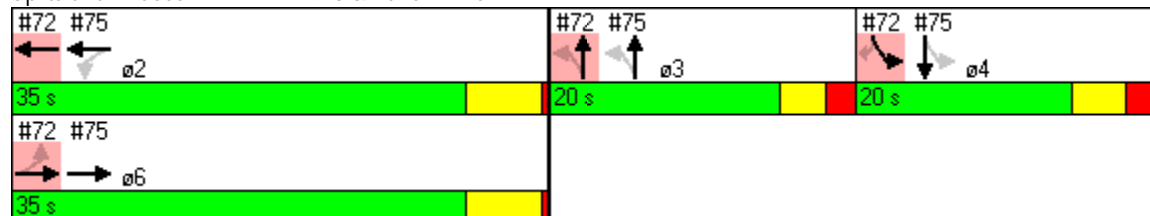


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lead	Lead		Lag		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Minimum Gap (s)	3.0	3.0			3.0		3.0	3.0		3.0		3.0
Time Before Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Time To Reduce (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Recall Mode	None	None			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	37.8	37.8			37.8					8.3		8.3
Actuated g/C Ratio	0.50	0.50			0.50					0.11		0.11
v/c Ratio	1.34	1.10			1.55					0.39		0.39
Control Delay	179.3	56.4			273.0					36.6		11.4
Queue Delay	0.0	20.6			219.4					0.0		6.3
Total Delay	179.3	77.0			492.4					36.6		17.7
LOS	F	E			F					D		B
Approach Delay		83.7			492.4							
Approach LOS		F			F							
Queue Length 50th (ft)	~84	~551			~1007					34		0
Queue Length 95th (ft)	m#83	m#518			#1190					70		41
Internal Link Dist (ft)		32			1520			35			250	
Turn Bay Length (ft)	100											
Base Capacity (vph)	102	1784			1774					330		381
Starvation Cap Reductn	0	74			0					0		0
Spillback Cap Reductn	0	0			424					0		225
Storage Cap Reductn	0	0			0					0		0
Reduced v/c Ratio	1.34	1.14			2.04					0.23		0.67

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.55
 Intersection Signal Delay: 305.5 Intersection LOS: F
 Intersection Capacity Utilization 105.4% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	839	2	29	1123	0	24	0	35	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt								0.920			0.865	
Flt Protected				0.950				0.980				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1679	0	0	1611	0
Flt Permitted				0.109				0.187				
Satd. Flow (perm)	0	3539	0	203	3539	0	0	320	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								59			285	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		464			112			489			304	
Travel Time (s)		10.5			2.5			11.1			6.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1942	5	67	2600	0	40	0	59	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1947	0	67	2600	0	0	99	0	0	2	0
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		
Detector Phase		6		2	2		3	3		4		4
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	35.0	0.0	35.0	35.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	0.0%	46.7%	0.0%	46.7%	46.7%	0.0%	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%
Maximum Green (s)		29.5		29.5	29.5		15.0	15.0		14.0	14.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009

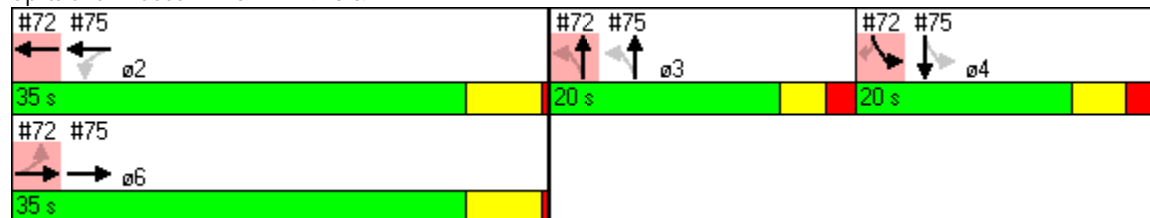


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		37.8		37.8	37.8			15.0			8.3	
Actuated g/C Ratio		0.50		0.50	0.50			0.20			0.11	
v/c Ratio		1.09		0.66	1.46			0.89			0.00	
Control Delay		73.5		15.9	221.2			80.8			0.0	
Queue Delay		92.7		16.2	57.1			648.9			0.0	
Total Delay		166.2		32.1	278.2			729.7			0.0	
LOS		F		C	F			F			A	
Approach Delay		166.2			272.1			729.7			0.0	
Approach LOS		F			F			F			A	
Queue Length 50th (ft)		-571		3	-884			18			0	
Queue Length 95th (ft)		#745		m3	m#465			#111			0	
Internal Link Dist (ft)		384			32			409			224	
Turn Bay Length (ft)												
Base Capacity (vph)		1784		102	1784			111			533	
Starvation Cap Reductn		88		22	143			0			0	
Spillback Cap Reductn		288		0	0			88			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		1.30		0.84	1.58			4.30			0.00	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.55
 Intersection Signal Delay: 237.9 Intersection LOS: F
 Intersection Capacity Utilization 86.9% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	740	14	52	1021	41	45	98	106	41	43	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.994			0.943				0.850
Flt Protected	0.950			0.950				0.991			0.976	
Satd. Flow (prot)	1770	3529	0	1770	3518	0	0	1741	0	0	1818	1583
Flt Permitted	0.950			0.950				0.911			0.639	
Satd. Flow (perm)	1770	3529	0	1770	3518	0	0	1600	0	0	1190	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			8			53				112
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	58	1713	32	120	2364	95	75	164	177	69	72	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	1745	0	120	2459	0	0	416	0	0	141	112
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	15.0	30.0	0.0	15.0	30.0	0.0	15.0	15.0	0.0	15.0	15.0	15.0
Total Split (%)	25.0%	50.0%	0.0%	25.0%	50.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	25.0%
Maximum Green (s)	9.5	24.5		9.5	24.5		9.5	9.5		10.0	10.0	10.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	7.7	24.7		8.5	27.9			22.2			22.7	22.7
Actuated g/C Ratio	0.11	0.36		0.12	0.40			0.32			0.33	0.33
v/c Ratio	0.29	1.38		0.55	1.72			0.76			0.36	0.19
Control Delay	33.5	199.4		39.9	349.0			30.4			22.6	5.2
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	33.5	199.4		39.9	349.0			30.4			22.6	5.2
LOS	C	F		D	F			C			C	A
Approach Delay		194.0			334.7			30.4				14.9
Approach LOS		F			F			C				B
Queue Length 50th (ft)	25	-578		51	-916			148			49	0
Queue Length 95th (ft)	56	#716		101	#1090			#293			97	33
Internal Link Dist (ft)		1197			384			552			298	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	246	1266		246	1428			550			391	596
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.24	1.38		0.49	1.72			0.76			0.36	0.19

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 69
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.72
 Intersection Signal Delay: 243.4
 Intersection LOS: F
 Intersection Capacity Utilization 110.9%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	782	0	4	1161	25	11	3	3	21	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.976			0.897	
Flt Protected	0.950			0.950				0.969			0.991	
Satd. Flow (prot)	1770	3539	0	1770	3529	0	0	1762	0	0	1656	0
Flt Permitted	0.950			0.950				0.539			0.928	
Satd. Flow (perm)	1770	3539	0	1770	3529	0	0	980	0	0	1551	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			5			142	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	95	1810	0	9	2688	58	18	5	5	35	10	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	1810	0	9	2746	0	0	28	0	0	187	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	19.0	37.0	0.0	19.0	37.0	0.0	19.0	19.0	0.0	19.0	19.0	0.0
Total Split (%)	25.3%	49.3%	0.0%	25.3%	49.3%	0.0%	25.3%	25.3%	0.0%	25.3%	25.3%	0.0%
Maximum Green (s)	13.5	31.5		13.5	31.5		13.5	13.5		14.0	14.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	8.4	43.3		7.0	34.3			8.2			8.7	
Actuated g/C Ratio	0.13	0.67		0.11	0.53			0.13			0.13	
v/c Ratio	0.41	0.76		0.05	1.47			0.22			0.56	
Control Delay	32.1	12.7		28.5	234.9			26.8			15.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	32.1	12.7		28.5	234.9			26.8			15.9	
LOS	C	B		C	F			C			B	
Approach Delay		13.7			234.2			26.8			15.9	
Approach LOS		B			F			C			B	
Queue Length 50th (ft)	34	163		3	-812			8			16	
Queue Length 95th (ft)	79	#586		17	#1132			31			71	
Internal Link Dist (ft)		196			618			13			529	
Turn Bay Length (ft)												
Base Capacity (vph)	369	2367		369	1868			209			447	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.26	0.76		0.02	1.47			0.13			0.42	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 64.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.47
 Intersection Signal Delay: 138.5
 Intersection LOS: F
 Intersection Capacity Utilization 91.5%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 85: FM 2920 & Buvinghausen St



Lanes, Volumes, Timings
87: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	215		890			276
Travel Time (s)	4.9		20.2			6.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	809	0	0	803	33	294	149	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Flt					0.994			0.991				
Flt Protected	0.950							0.970				
Satd. Flow (prot)	1770	5085	0	0	6369	0	0	4888	0	0	0	0
Flt Permitted	0.950							0.970				
Satd. Flow (perm)	1770	5085	0	0	6369	0	0	4888	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			9				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1957				1199
Travel Time (s)		8.3			18.8			44.5				27.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	403	1662	0	0	1650	68	492	249	50	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	403	1662	0	0	1718	0	0	791	0	0	0	0
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	30.0	80.0	0.0	0.0	50.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0
Total Split (%)	28.6%	76.2%	0.0%	0.0%	47.6%	0.0%	23.8%	23.8%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	23.5				43.5		18.0	18.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lead/Lag	Lead			Lag									
Lead-Lag Optimize?	Yes			Yes									
Vehicle Extension (s)	1.0			1.0			1.0		1.0				
Minimum Gap (s)	3.0			3.0			3.0		3.0				
Time Before Reduce (s)	0.0			0.0			0.0		0.0				
Time To Reduce (s)	0.0			0.0			0.0		0.0				
Recall Mode	None			C-Max			None		None				
Walk Time (s)				7.0			7.0		7.0				
Flash Dont Walk (s)				12.0			13.0		13.0				
Pedestrian Calls (#/hr)				0			0		0				
Act Effct Green (s)	23.7		73.7		43.5			17.8					
Actuated g/C Ratio	0.23		0.70		0.41			0.17					
v/c Ratio	1.01		0.47		0.65			1.60dl					
Control Delay	91.8		5.5		25.9			63.5					
Queue Delay	15.8		0.2		0.0			0.0					
Total Delay	107.7		5.8		25.9			63.5					
LOS	F		A		C			E					
Approach Delay			25.7		25.9			63.5					
Approach LOS			C		C			E					
Queue Length 50th (ft)	~299		128		261			192					
Queue Length 95th (ft)	m#477		143		303			#273					
Internal Link Dist (ft)			287		747			1877		1119			
Turn Bay Length (ft)													
Base Capacity (vph)	399		3569		2644			845					
Starvation Cap Reductn	19		993		0			0					
Spillback Cap Reductn	0		0		0			0					
Storage Cap Reductn	0		0		0			0					
Reduced v/c Ratio	1.06		0.65		0.65			0.94					

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 32.3 Intersection LOS: C
 Intersection Capacity Utilization 74.9% ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &

#90  ø1 30 s	#90  ø2 50 s	#90  ø4 25 s
#93  ø5 30 s	#93  ø6 50 s	#93  ø8 25 s

Lane Group	ø5	ø6	ø8
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↑↑↑	
Volume (vph)	0	744	165	105	992	0	0	0	0	261	58	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt		0.973										0.966
Flt Protected				0.950								0.969
Satd. Flow (prot)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Flt Permitted				0.950								0.969
Satd. Flow (perm)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65										21
Link Speed (mph)		30			30			30				30
Link Distance (ft)		735			367			1962				1208
Travel Time (s)		16.7			8.3			44.6				27.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	100%	100%	100%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1528	339	216	2038	0	0	0	0	437	97	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1867	0	216	2038	0	0	0	0	0	691	0
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases										8		
Detector Phase		6		5	5 6					8		8
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	50.0	0.0	30.0	80.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	47.6%	0.0%	28.6%	76.2%	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	0.0%
Maximum Green (s)		43.5		23.5						18.0	18.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	30.0	50.0	25.0
Total Split (%)	29%	48%	24%
Maximum Green (s)	23.5	43.5	18.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			







Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Minimum Gap (s)		3.0		3.0						3.0	3.0	
Time Before Reduce (s)		0.0		0.0						0.0	0.0	
Time To Reduce (s)		0.0		0.0						0.0	0.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		44.2		23.0	73.7							17.8
Actuated g/C Ratio		0.42		0.22	0.70							0.17
v/c Ratio		0.70		0.56	0.57							1.37dl
Control Delay		25.9		51.6	6.8							51.1
Queue Delay		0.0		0.0	0.3							8.6
Total Delay		25.9		51.6	7.0							59.8
LOS		C		D	A							E
Approach Delay		25.9			11.3							59.8
Approach LOS		C			B							E
Queue Length 50th (ft)		287		156	159							161
Queue Length 95th (ft)		331		m219	m173							#218
Internal Link Dist (ft)		655			287			1882				1128
Turn Bay Length (ft)												
Base Capacity (vph)		2663		396	3532							833
Starvation Cap Reductn		0		0	704							0
Spillback Cap Reductn		57		0	0							116
Storage Cap Reductn		0		0	0							0
Reduced v/c Ratio		0.72		0.55	0.72							0.96

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 23.9 Intersection LOS: C
 Intersection Capacity Utilization 74.9% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd

#90  ø1	#90  ø2	#90  ø4
30 s	50 s	25 s
#93  ø5	#93  ø6	#93  ø8
30 s	50 s	25 s

Lane Group	ø1	ø2	ø4
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑	↗		↑↑↑				
Volume (vph)	80	322	0	0	1126	47	332	75	665	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850		0.907				
Flt Protected	0.950							0.985				
Satd. Flow (prot)	1770	3539	0	0	5085	1583	0	4543	0	0	0	0
Flt Permitted	0.950							0.985				
Satd. Flow (perm)	1770	3539	0	0	5085	1583	0	4543	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						53		278				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		393			1219			636				1957
Travel Time (s)		8.9			27.7			14.5				44.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	170	686	0	0	2399	100	556	126	1113	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	686	0	0	2399	100	0	1795	0	0	0	0
Number of Detectors	1	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
Trailing Detector (ft)	0	0			0	0	0	0				
Turn Type	Prot					Perm	Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases						2	4					
Detector Phase	1	1 2			2	2	4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0	20.0	5.0	5.0				
Minimum Split (s)	11.5				26.5	26.5	27.0	27.0				
Total Split (s)	20.6	98.0	0.0	0.0	77.4	77.4	42.0	42.0	0.0	0.0	0.0	0.0
Total Split (%)	14.7%	70.0%	0.0%	0.0%	55.3%	55.3%	30.0%	30.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	14.1				70.9	70.9	35.0	35.0				
Yellow Time (s)	4.0				4.0	4.0	4.0	4.0				
All-Red Time (s)	2.5				2.5	2.5	3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	6.5	7.0	7.0	4.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	64.0	34.0	42.0
Total Split (%)	46%	24%	30%
Maximum Green (s)	57.5	27.5	35.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009

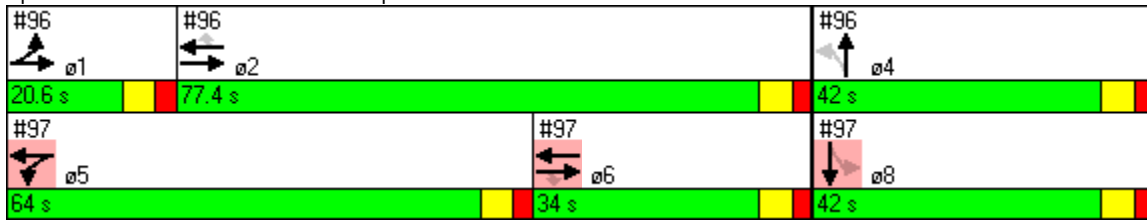


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	1.0			1.0			1.0		1.0			
Minimum Gap (s)	3.0			3.0			3.0		3.0			
Time Before Reduce (s)	0.0			0.0			0.0		0.0			
Time To Reduce (s)	0.0			0.0			0.0		0.0			
Recall Mode	None			C-Min		C-Min		Min		Min		
Walk Time (s)				7.0		7.0		7.0		7.0		
Flash Dont Walk (s)				12.0		12.0		13.0		13.0		
Pedestrian Calls (#/hr)				0		0		0		0		
Act Effct Green (s)	14.1		91.5		70.9		70.9		35.0			
Actuated g/C Ratio	0.10		0.65		0.51		0.51		0.25			
v/c Ratio	0.96		0.30		0.93		0.12		1.82dr			
Control Delay	84.3		17.0		40.2		9.4		190.8			
Queue Delay	0.0		0.8		17.8		0.0		264.4			
Total Delay	84.3		17.9		58.0		9.4		455.1			
LOS	F		B		E		A		F			
Approach Delay				31.1		56.0				455.1		
Approach LOS				C		E				F		
Queue Length 50th (ft)	165		121		729		21		~707			
Queue Length 95th (ft)	m165		m120		806		53		#804			
Internal Link Dist (ft)				313		1139				556		1877
Turn Bay Length (ft)							200					
Base Capacity (vph)	178		2313		2575		828		1344			
Starvation Cap Reductn	0		1256		0		0		0			
Spillback Cap Reductn	0		0		254		0		411			
Storage Cap Reductn	0		0		0		0		0			
Reduced v/c Ratio	0.96		0.65		1.03		0.12		1.92			

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.40
 Intersection Signal Delay: 191.0 Intersection LOS: F
 Intersection Capacity Utilization 103.7% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 96: Medical Complex Drive & SH 249 East Service Rd



Lane Group	ø5	ø6	ø8
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑						↑↑↑	
Volume (vph)	0	480	106	478	477	0	0	0	0	27	6	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt			0.850									0.965
Flt Protected				0.950								0.970
Satd. Flow (prot)	0	5085	1583	1770	3539	0	0	0	0	0	4760	0
Flt Permitted				0.950								0.970
Satd. Flow (perm)	0	5085	1583	1770	3539	0	0	0	0	0	4760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174									17
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2815			393			714				1962
Travel Time (s)		64.0			8.9			16.2				44.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	100%	100%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1023	226	1018	1016	0	0	0	0	45	10	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1023	226	1018	1016	0	0	0	0	0	72	0
Number of Detectors		2	1	1	2					1	2	
Detector Template		Thru	Right	Left	Thru					Left	Thru	
Leading Detector (ft)		100	20	20	100					20	100	
Trailing Detector (ft)		0	0	0	0					0	0	
Turn Type			Perm	Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases			6							8		
Detector Phase		6	6	5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0						5.0	5.0	
Minimum Split (s)		27.5	27.5	11.5						28.0	28.0	
Total Split (s)	0.0	34.0	34.0	64.0	98.0	0.0	0.0	0.0	0.0	42.0	42.0	0.0
Total Split (%)	0.0%	24.3%	24.3%	45.7%	70.0%	0.0%	0.0%	0.0%	0.0%	30.0%	30.0%	0.0%
Maximum Green (s)		27.5	27.5	57.5						35.0	35.0	
Yellow Time (s)		4.0	4.0	4.0						4.0	4.0	
All-Red Time (s)		2.5	2.5	2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	20.6	77.4	42.0
Total Split (%)	15%	55%	30%
Maximum Green (s)	14.1	70.9	35.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009









Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		1.0	1.0	1.0						1.0	1.0	
Minimum Gap (s)		3.0	3.0	3.0						3.0	3.0	
Time Before Reduce (s)		0.0	0.0	0.0						0.0	0.0	
Time To Reduce (s)		0.0	0.0	0.0						0.0	0.0	
Recall Mode		C-Min	C-Min	None						None	None	
Walk Time (s)		7.0	7.0							7.0	7.0	
Flash Dont Walk (s)		14.0	14.0							14.0	14.0	
Pedestrian Calls (#/hr)		0	0							0	0	
Act Effect Green (s)		27.5	27.5	57.5	91.5							35.0
Actuated g/C Ratio		0.20	0.20	0.41	0.65							0.25
v/c Ratio		1.02	0.50	1.40	0.44							0.06
Control Delay		89.4	17.2	216.3	7.1							30.7
Queue Delay		0.0	0.0	59.5	0.8							0.0
Total Delay		89.4	17.2	275.9	7.8							30.7
LOS		F	B	F	A							C
Approach Delay		76.3			142.0							30.7
Approach LOS		E			F							C
Queue Length 50th (ft)		~362	40	~1224	111							13
Queue Length 95th (ft)		#457	122	m#1249	m139							28
Internal Link Dist (ft)		2735			313			634				1882
Turn Bay Length (ft)			200									
Base Capacity (vph)		999	451	727	2313							1203
Starvation Cap Reductn		0	0	63	891							0
Spillback Cap Reductn		0	0	0	0							0
Storage Cap Reductn		0	0	0	0							0
Reduced v/c Ratio		1.02	0.50	1.53	0.71							0.06

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.40
 Intersection Signal Delay: 115.1 Intersection LOS: F
 Intersection Capacity Utilization 103.7% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 97: Medical Complex Drive & SH 249 West Service Rd

#96  ø1 20.6 s	#96  ø2 77.4 s	#96  ø4 42 s
#97  ø5 64 s	#97  ø6 34 s	#97  ø8 42 s

Lane Group	ø1	ø2	ø4
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	Min
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1990			618			233			163	
Travel Time (s)		45.2			14.0			5.3			3.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
114: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	906			5205	1406	
Travel Time (s)	20.6			118.3	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Turn Type			Perm			
Protected Phases	4!			2	8!	
Permitted Phases			2			
Detector Phase	4		2	2	8	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0		16.0	16.0	16.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 114: Medical Complex Dr &

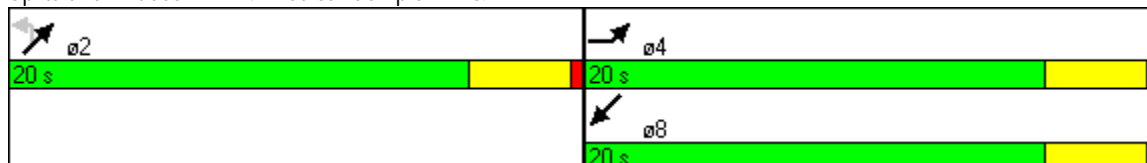


Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Max		Max	Max	Max	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	826			5125	1326	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.00
 Intersection Signal Delay: 0.0 Intersection LOS: A
 Intersection Capacity Utilization 0.0% ICU Level of Service A
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 114: Medical Complex Dr &



Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↗		↖	↗↗			↖			↖	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3855			2112			1114			1168	
Travel Time (s)		87.6			48.0			25.3			26.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009

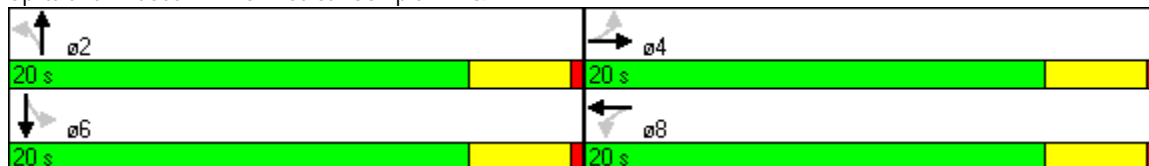


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		3775			2032			1034			1088	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 116: Medical Complex Dr &



Lanes, Volumes, Timings
 117: Medical Complex Dr & Hufsmith Khorville Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	412	19	27	393	118	7	107	3	47	92	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.965			0.996				0.954
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1855	0	1770	1777	0
Flt Permitted	0.241			0.294			0.260			0.373		
Satd. Flow (perm)	449	3514	0	548	3415	0	484	1855	0	695	1777	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			117			1				17
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2112			5205			1065				775
Travel Time (s)		48.0			118.3			24.2				17.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	392	878	40	58	837	251	12	179	5	79	154	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	392	918	0	58	1088	0	12	184	0	79	223	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	90.0	90.0	0.0	90.0	90.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	81.8%	81.8%	0.0%	81.8%	81.8%	0.0%	18.2%	18.2%	0.0%	18.2%	18.2%	0.0%
Maximum Green (s)	86.0	86.0		86.0	86.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings 117: Medical Complex Dr & Hufsmith Khorville Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	86.0	86.0		86.0	86.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.78	0.78		0.78	0.78		0.15	0.15		0.15	0.15	
v/c Ratio	1.12	0.33		0.14	0.40		0.17	0.68		0.78	0.82	
Control Delay	100.4	3.8		3.8	3.8		47.8	58.0		91.7	66.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	100.4	3.8		3.8	3.8		47.8	58.0		91.7	66.0	
LOS	F	A		A	A		D	E		F	E	
Approach Delay		32.7			3.8			57.4			72.7	
Approach LOS		C			A			E			E	
Queue Length 50th (ft)	~319	80		8	90		8	124		54	143	
Queue Length 95th (ft)	#256	101		19	115		27	#214		#142	#273	
Internal Link Dist (ft)		2032			5125			985			695	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	351	2750		428	2695		70	271		101	273	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.12	0.33		0.14	0.40		0.17	0.68		0.78	0.82	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Pretimed

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 27.2

Intersection LOS: C

Intersection Capacity Utilization 76.6%

ICU Level of Service D

Analysis Period (min) 15

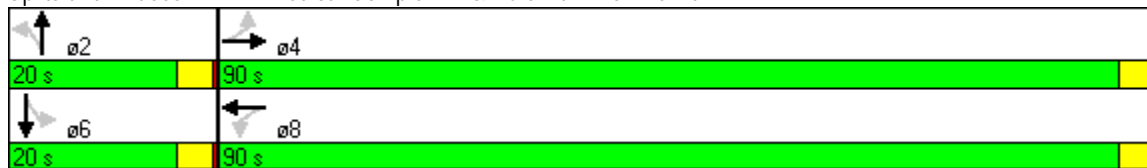
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 117: Medical Complex Dr & Hufsmith Khorville Rd



Lanes, Volumes, Timings
122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	517	29	25	580	39	64	188	41	62	168	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.991			0.973			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3507	0	1770	1812	0	1770	1807	0
Flt Permitted	0.160			0.160			0.423			0.379		
Satd. Flow (perm)	298	3511	0	298	3507	0	788	1812	0	706	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			20			24			27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2634			3855			1711			2332	
Travel Time (s)		59.9			87.6			38.9			53.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	62	1101	62	53	1236	83	107	315	69	104	281	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	1163	0	53	1319	0	107	384	0	104	350	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0	0.0	29.0	29.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	58.0%	58.0%	0.0%	58.0%	58.0%	0.0%	42.0%	42.0%	0.0%	42.0%	42.0%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
 2/26/2009

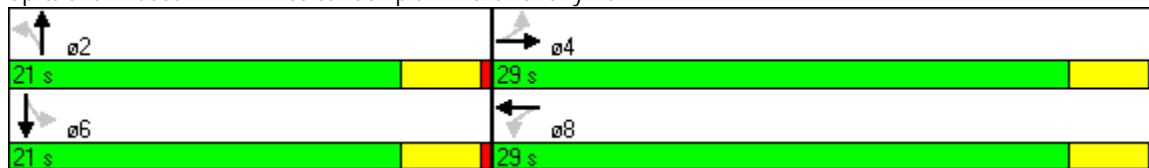


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	25.0	25.0		25.0	25.0		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.34	0.34		0.34	0.34	
v/c Ratio	0.42	0.66		0.36	0.75		0.40	0.61		0.43	0.55	
Control Delay	18.5	11.4		16.0	13.2		18.2	17.8		19.7	16.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.5	11.4		16.0	13.2		18.2	17.8		19.7	16.4	
LOS	B	B		B	B		B	B		B	B	
Approach Delay		11.8			13.3			17.8			17.1	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	10	118		9	144		23	85		23	74	
Queue Length 95th (ft)	#46	174		35	211		59	157		60	140	
Internal Link Dist (ft)		2554			3775			1631			2252	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	149	1764		149	1764		268	632		240	632	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.42	0.66		0.36	0.75		0.40	0.61		0.43	0.55	

Intersection Summary

Area Type: Other
 Cycle Length: 50
 Actuated Cycle Length: 50
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 13.9 Intersection LOS: B
 Intersection Capacity Utilization 74.9% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 122: Medical Complex Dr & S. Cherry Rd



Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1181			2634			643			613	
Travel Time (s)		26.8			59.9			14.6			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009

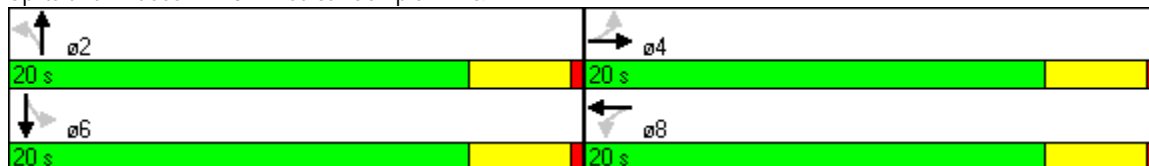


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1101			2554			563			533	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary





















Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 131: Medical Complex Dr &



Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1181			411			528	
Travel Time (s)		22.7			26.8			9.3			12.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

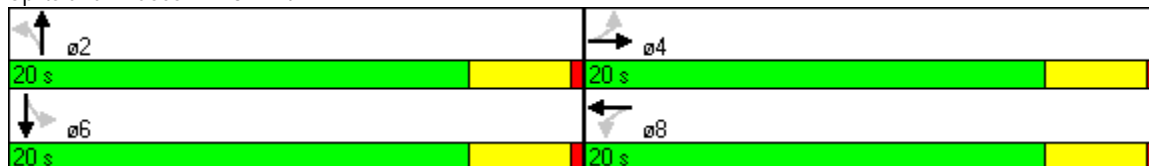


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		920			1101			331			448	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 132: Int



Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1696			1000			95			284	
Travel Time (s)		38.5			22.7			2.2			6.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009

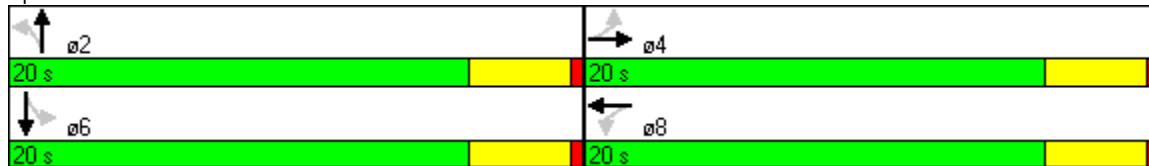


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1616			920			15			204	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												











Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection Capacity Utilization:	0.0%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 133: Int



Lanes, Volumes, Timings
134: Triechel Rd & Medical Complex Dr

						
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	1863	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	1863	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	313		692			2340
Travel Time (s)	7.1		15.7			53.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Turn Type					Perm	
Protected Phases	2					8
Permitted Phases			4		8	
Detector Phase	2		4		8	8
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	20.0		20.0		20.0	20.0
Total Split (s)	20.0	0.0	20.0	0.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)	16.0		16.0		16.0	16.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	0.5		0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

Medical Complex Drive
 2/26/2009

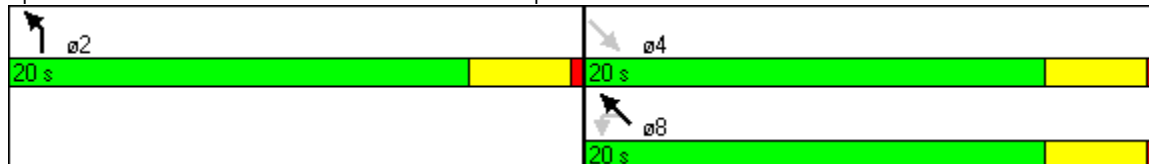


Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Minimum Gap (s)	3.0		3.0		3.0	3.0
Time Before Reduce (s)	0.0		0.0		0.0	0.0
Time To Reduce (s)	0.0		0.0		0.0	0.0
Recall Mode	Max		Max		Max	Max
Walk Time (s)	5.0		5.0		5.0	5.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	233		612		2260	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15



















Splits and Phases: 134: Triechel Rd & Medical Complex Dr



**2011 RECOMMENDED CONDITION
ANALYSIS
[AM PEAK HOUR]**

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1267	51	8	765	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.994						0.943				
Fl _t Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1707	0	0	1863	0
Fl _t Permitted				0.950				0.822				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1444	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						17				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	1033	42	7	624	0	23	0	17	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1075	0	7	624	0	0	40	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	76.0	0.0	15.0	80.0	0.0	19.0	19.0	0.0	19.0	19.0	0.0
Total Split (%)	10.0%	69.1%	0.0%	13.6%	72.7%	0.0%	17.3%	17.3%	0.0%	17.3%	17.3%	0.0%
Maximum Green (s)	5.0	70.0		9.0	74.0		13.5	13.5		13.5	13.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		80.0		5.2	82.3			6.4				
Actuated g/C Ratio		0.85		0.06	0.88			0.07				
v/c Ratio		0.36		0.07	0.20			0.35				
Control Delay		3.6		43.2	1.8			36.0				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		3.6		43.2	1.8			36.0				
LOS		A		D	A			D				
Approach Delay		3.6			2.3			36.0				
Approach LOS		A			A			D				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 93.7
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 3.9
 Intersection Capacity Utilization 41.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	365	32	55	481	11	14	5	36	88	18	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.988			0.997			0.867			0.990	
Flt Protected	0.950			0.950			0.950			0.950	0.971	
Satd. Flow (prot)	1770	3497	0	1770	3529	0	1770	1615	0	1681	1701	0
Flt Permitted	0.440			0.501			0.716			0.728	0.867	
Satd. Flow (perm)	820	3497	0	933	3529	0	1334	1615	0	1288	1519	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			7			39				4
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2340			2815			624				1981
Travel Time (s)		53.2			64.0			14.2				45.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	397	35	60	523	12	15	5	39	96	20	4
Shared Lane Traffic (%)										38%		
Lane Group Flow (vph)	9	432	0	60	535	0	15	44	0	60	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.03	0.31		0.16	0.38		0.03	0.07		0.12	0.10	
Control Delay	7.6	8.4		9.1	9.3		7.6	4.0		8.3	7.7	

Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

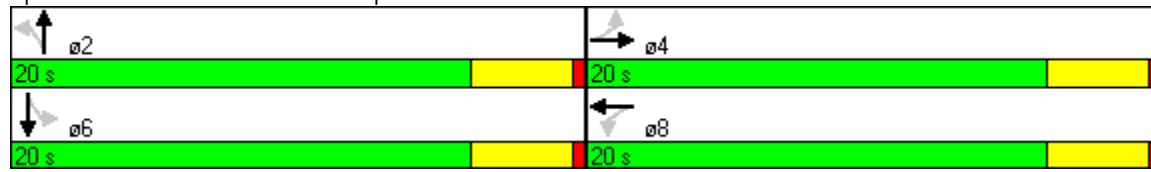


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.6	8.4		9.1	9.3		7.6	4.0		8.3	7.7	
LOS	A	A		A	A		A	A		A	A	
Approach Delay		8.4			9.3			4.9			8.0	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.38
Intersection Signal Delay:	8.6
Intersection LOS:	A
Intersection Capacity Utilization	36.7%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 2: Medical Complex Dr & Calvert Rd



Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1296	16	21	643	88	2	4	4	75	6	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.998				0.850		0.940			0.894	
Flt Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	0	3294	0	1770	1665	0
Flt Permitted	0.950			0.950				0.928		0.751		
Satd. Flow (perm)	1770	3532	0	1770	3539	1583	0	3087	0	1399	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				72		4				17
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	20	1057	13	17	524	72	2	4	4	82	7	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	1070	0	17	524	72	0	10	0	82	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	15.0	63.0	0.0	13.0	61.0	61.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	15.0%	63.0%	0.0%	13.0%	61.0%	61.0%	24.0%	24.0%	0.0%	24.0%	24.0%	0.0%
Maximum Green (s)	9.0	57.0		7.0	55.0	55.0	18.5	18.5		18.5	18.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effect Green (s)	5.8	57.2		5.7	57.1	57.1		18.6		18.6	18.6	
Actuated g/C Ratio	0.06	0.62		0.06	0.62	0.62		0.20		0.20	0.20	
v/c Ratio	0.18	0.49		0.16	0.24	0.07		0.02		0.29	0.07	
Control Delay	46.5	11.1		46.3	8.9	2.7		26.6		36.3	19.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	46.5	11.1		46.3	8.9	2.7		26.6		36.3	19.1	
LOS	D	B		D	A	A		C		D	B	
Approach Delay		11.8			9.2			26.6			32.4	
Approach LOS		B			A			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 92
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 12.2
 Intersection LOS: B
 Intersection Capacity Utilization 47.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 1/14/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	23	94	39	211	82	32	98	1182	361	80	709	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Fr't		0.956			0.958			0.965			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3383	0	1770	3391	0	1770	3415	0	1770	3529	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3383	0	1770	3391	0	1770	3415	0	1770	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			35			41				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		764			692			1353				532
Travel Time (s)		17.4			15.7			30.8				12.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	102	42	229	89	35	107	1285	392	87	771	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	144	0	229	124	0	107	1677	0	87	789	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 1/14/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Switch Phase												
Minimum Initial (s)	5.0	15.0		4.0	4.0		5.0	15.0		4.0	15.0	
Minimum Split (s)	32.5	22.5		20.0	20.0		11.5	30.5		8.0	30.5	
Total Split (s)	32.6	26.6	0.0	26.0	20.0	0.0	22.2	71.4	0.0	11.0	60.2	0.0
Total Split (%)	24.1%	19.7%	0.0%	19.3%	14.8%	0.0%	16.4%	52.9%	0.0%	8.1%	44.6%	0.0%
Maximum Green (s)	27.1	20.1		22.0	16.0		15.7	64.9		7.0	53.7	
Yellow Time (s)	4.0	5.0		3.5	3.5		5.0	5.0		3.5	5.0	
All-Red Time (s)	1.5	1.5		0.5	0.5		1.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	4.0	4.0	6.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	1.5		3.0	3.0		2.0	1.5		3.0	1.5	
Recall Mode	None	Max		None	None		None	Max		None	Max	
Walk Time (s)	7.0			5.0	5.0		7.0			7.0		
Flash Dont Walk (s)	20.0			11.0	11.0		17.0			17.0		
Pedestrian Calls (#/hr)	0			0	0		0			0		
Act Effect Green (s)	6.5	20.1		20.3	39.2		12.0	64.9		7.0	57.4	
Actuated g/C Ratio	0.05	0.15		0.15	0.29		0.09	0.49		0.05	0.43	
v/c Ratio	0.29	0.27		0.85	0.12		0.67	1.00		0.94	0.52	
Control Delay	69.6	38.1		82.6	26.6		78.9	54.4		139.5	30.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	69.6	38.1		82.6	26.6		78.9	54.4		139.5	30.1	
LOS	E	D		F	C		E	D		F	C	
Approach Delay		42.7			62.9			55.8			40.9	
Approach LOS		D			E			E			D	

Intersection Summary

Area Type:	Other
Cycle Length:	135
Actuated Cycle Length:	133.3
Natural Cycle:	135
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	51.8
Intersection LOS:	D
Intersection Capacity Utilization:	90.3%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 11: Park Rd/Medical Complex Dr & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	796	397	199	471	105	78	214	228	22	85	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.977				0.850		0.958	
Flt Protected	0.950	0.999		0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1522	4662	0	3433	5085	1583	3433	4872	0
Flt Permitted	0.129	0.739		0.391	0.755		0.950			0.950		
Satd. Flow (perm)	219	2505	1583	626	3545	0	3433	5085	1583	3433	4872	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			324		27				186		36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	100%	75%	75%	100%	75%
Adj. Flow (vph)	66	649	324	162	384	86	64	233	186	18	92	36
Shared Lane Traffic (%)	10%			50%								
Lane Group Flow (vph)	59	656	324	81	551	0	64	233	186	18	128	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		
Protected Phases		3			4		5	2		1		6
Permitted Phases	3		3	4					2			

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009

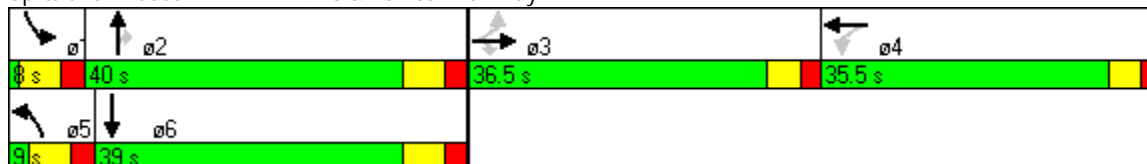


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	36.5	36.5	36.5	35.5	35.5	0.0	9.0	40.0	40.0	8.0	39.0	0.0
Total Split (%)	30.4%	30.4%	30.4%	29.6%	29.6%	0.0%	7.5%	33.3%	33.3%	6.7%	32.5%	0.0%
Maximum Green (s)	31.0	31.0	31.0	30.0	30.0		2.0	33.0	33.0	1.0	32.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	31.1	31.1	31.1	20.7	20.7		2.0	34.1	34.1	1.0	33.1	
Actuated g/C Ratio	0.28	0.28	0.28	0.18	0.18		0.02	0.30	0.30	0.01	0.30	
v/c Ratio	0.97	0.94	0.48	0.70	0.81		1.05	0.15	0.30	0.58	0.09	
Control Delay	151.9	63.4	6.4	73.3	51.6		181.9	29.6	6.0	119.4	21.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	151.9	63.4	6.4	73.3	51.6		181.9	29.6	6.0	119.4	21.7	
LOS	F	E	A	E	D		F	C	A	F	C	
Approach Delay		50.7			54.4			40.7			33.7	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	111.9
Natural Cycle:	145
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.05
Intersection Signal Delay:	48.5
Intersection LOS:	D
Intersection Capacity Utilization:	50.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	875	431	271	635	135	156	560	295	134	630	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	200		0	200		0
Storage Lanes	1		1	1		1	2		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Fr _t			0.850			0.850		0.948			0.965	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	4821	0	3433	4907	0
Fl _t Permitted	0.341			0.118			0.307			0.182		
Satd. Flow (perm)	635	3539	1583	220	3539	1583	1109	4821	0	658	4907	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			147		150			86	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1219			1696			633			1959	
Travel Time (s)		27.7			38.5			14.4			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	951	468	295	690	147	170	609	321	146	685	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	951	468	295	690	147	170	930	0	146	892	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	3	8	8	5	2		1	6	

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 1/14/2009

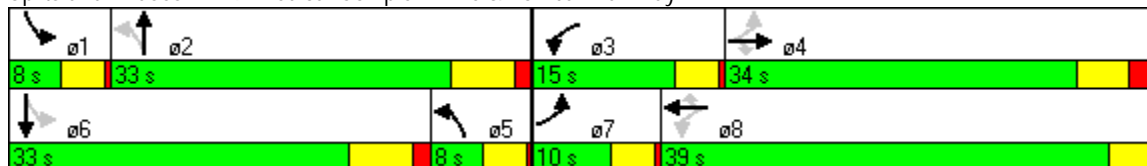


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	4.0	4.0	4.0	25.0		4.0	25.0	
Minimum Split (s)	8.0	11.5	11.5	8.0	20.0	20.0	8.0	31.5		8.0	31.5	
Total Split (s)	10.0	34.0	34.0	15.0	39.0	39.0	8.0	33.0	0.0	8.0	33.0	0.0
Total Split (%)	11.1%	37.8%	37.8%	16.7%	43.3%	43.3%	8.9%	36.7%	0.0%	8.9%	36.7%	0.0%
Maximum Green (s)	6.0	27.5	27.5	11.0	35.0	35.0	4.0	26.5		4.0	26.5	
Yellow Time (s)	3.5	4.0	4.0	3.5	3.5	3.5	3.5	5.0		3.5	5.0	
All-Red Time (s)	0.5	2.5	2.5	0.5	0.5	0.5	0.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	4.0	4.0	4.0	4.0	6.5	4.0	4.0	6.5	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	1.8		3.0	1.8	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)					5.0	5.0		5.0			5.0	
Flash Dont Walk (s)					11.0	11.0		20.0			7.0	
Pedestrian Calls (#/hr)					0	0		0			0	
Act Effct Green (s)	35.2	26.7	26.7	44.2	36.2	36.2	29.3	26.8		29.8	27.3	
Actuated g/C Ratio	0.39	0.30	0.30	0.49	0.40	0.40	0.33	0.30		0.33	0.30	
v/c Ratio	0.28	0.90	0.85	0.99	0.48	0.20	0.37	0.60		0.41	0.58	
Control Delay	12.1	38.7	34.2	74.4	21.8	4.0	27.5	24.4		25.2	25.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	12.1	38.7	34.2	74.4	21.8	4.0	27.5	24.4		25.2	25.7	
LOS	B	D	C	E	C	A	C	C		C	C	
Approach Delay		35.7			33.2			24.9			25.7	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 30.4
 Intersection LOS: C
 Intersection Capacity Utilization 82.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway



Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	872	10	5	729	26	10	17	5	57	42	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.995			0.967				0.902
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5			5				86
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	33	711	8	4	594	21	11	18	5	62	46	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	719	0	4	615	0	11	23	0	62	132	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009

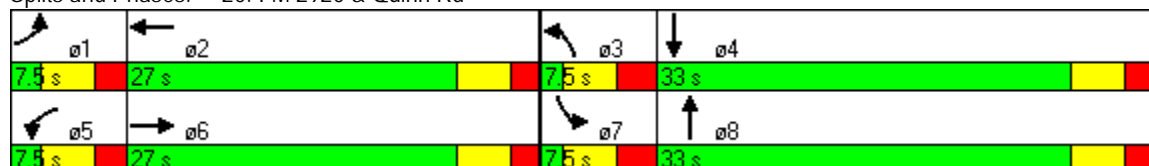


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	7.5	27.0	0.0	7.5	27.0	0.0	7.5	33.0	0.0	7.5	33.0	0.0
Total Split (%)	10.0%	36.0%	0.0%	10.0%	36.0%	0.0%	10.0%	44.0%	0.0%	10.0%	44.0%	0.0%
Maximum Green (s)	2.0	21.5		2.0	21.5		1.5	27.0		1.5	27.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	2.0	31.3		2.0	28.2		1.5	6.0		5.1	6.6	
Actuated g/C Ratio	0.04	0.60		0.04	0.54		0.03	0.12		0.10	0.13	
v/c Ratio	0.48	0.34		0.06	0.32		0.21	0.11		0.36	0.46	
Control Delay	53.4	7.3		28.5	8.8		36.8	20.3		38.7	15.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.4	7.3		28.5	8.8		36.8	20.3		38.7	15.5	
LOS	D	A		C	A		D	C		D	B	
Approach Delay		9.4			9.0			25.6			22.9	
Approach LOS		A			A			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	52.1
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.48
Intersection Signal Delay:	11.2
Intersection LOS:	B
Intersection Capacity Utilization:	45.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 20: FM 2920 & Quinn Rd

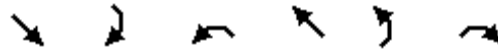


Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
1/14/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	↗
Volume (vph)	576	246	433	1010	238	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Flt	0.955					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3380	0	1770	3539	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3380	0	1770	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	101					232
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1406	
Travel Time (s)	35.3			19.7	32.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	626	267	471	1098	259	232
Shared Lane Traffic (%)						
Lane Group Flow (vph)	893	0	471	1098	259	232
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type			Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Detector Phase	6		5	2	4	4



Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0		8.0	20.0	20.0	20.0
Total Split (s)	21.0	0.0	24.0	45.0	20.0	20.0
Total Split (%)	32.3%	0.0%	36.9%	69.2%	30.8%	30.8%
Maximum Green (s)	18.0		20.0	42.0	17.0	17.0
Yellow Time (s)	2.5		3.5	2.5	2.5	2.5
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	4.0	4.0	3.0	3.0	3.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	21.6		19.3	45.0	14.0	14.0
Actuated g/C Ratio	0.33		0.30	0.69	0.22	0.22
v/c Ratio	0.75		0.90	0.45	0.68	0.44
Control Delay	23.7		44.3	5.6	32.3	6.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	23.7		44.3	5.6	32.3	6.1
LOS	C		D	A	C	A
Approach Delay	23.7			17.2	19.9	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:NWT and 6:SET, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 19.6
 Intersection LOS: B
 Intersection Capacity Utilization 71.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 26: FM 2920 & Mahaffey Rd



Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	526	17	43	772	115	66	296	12	205	365	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.980			0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3468	0	1770	1852	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3522	0	1770	3468	0	1770	1852	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			13			2				194
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	121	429	14	35	629	94	72	322	13	223	397	204
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	443	0	35	723	0	72	335	0	223	397	204
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009

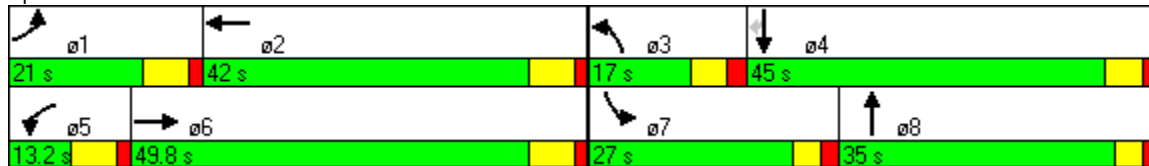


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	21.0	49.8	0.0	13.2	42.0	0.0	17.0	35.0	0.0	27.0	45.0	45.0
Total Split (%)	16.8%	39.8%	0.0%	10.6%	33.6%	0.0%	13.6%	28.0%	0.0%	21.6%	36.0%	36.0%
Maximum Green (s)	14.5	43.3		6.7	35.5		11.0	30.0		22.0	39.0	39.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effect Green (s)	11.9	46.5		6.1	35.8		11.0	30.0		22.0	39.0	39.0
Actuated g/C Ratio	0.10	0.38		0.05	0.29		0.09	0.24		0.18	0.32	0.32
v/c Ratio	0.70	0.33		0.39	0.71		0.45	0.74		0.70	0.67	0.32
Control Delay	75.5	28.8		70.3	42.9		63.6	53.9		60.8	43.4	6.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	75.5	28.8		70.3	42.9		63.6	53.9		60.8	43.4	6.5
LOS	E	C		E	D		E	D		E	D	A
Approach Delay		38.8			44.2			55.6			39.0	
Approach LOS		D			D			E			D	

Intersection Summary

Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	122.8
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	43.1
Intersection LOS:	D
Intersection Capacity Utilization	76.0%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	916	99	82	855	3	48	2	47	16	27	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985						0.934			0.972	
Flt Protected	0.950			0.950				0.976			0.986	
Satd. Flow (prot)	1770	3486	0	1770	3539	0	0	1698	0	0	1785	0
Flt Permitted	0.950			0.950				0.832			0.908	
Satd. Flow (perm)	1770	3486	0	1770	3539	0	0	1448	0	0	1644	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9						23			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	3	747	81	67	697	2	52	2	51	17	29	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	828	0	67	699	0	0	105	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009

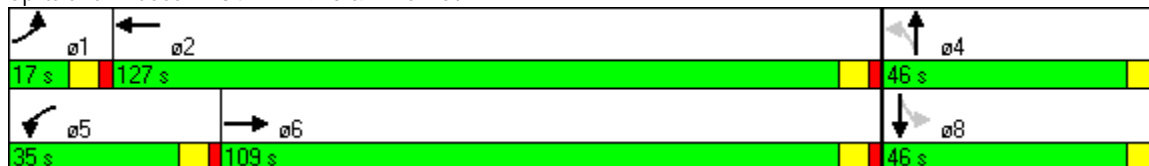


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	17.0	109.0	0.0	35.0	127.0	0.0	46.0	46.0	0.0	46.0	46.0	0.0
Total Split (%)	8.9%	57.4%	0.0%	18.4%	66.8%	0.0%	24.2%	24.2%	0.0%	24.2%	24.2%	0.0%
Maximum Green (s)	10.0	102.0		28.0	120.0		40.5	40.5		40.5	40.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.2	104.2		12.1	120.8			40.5			40.5	
Actuated g/C Ratio	0.03	0.59		0.07	0.69			0.23			0.23	
v/c Ratio	0.06	0.40		0.55	0.29			0.30			0.15	
Control Delay	87.7	20.0		96.7	11.6			47.0			50.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	87.7	20.0		96.7	11.6			47.0			50.8	
LOS	F	C		F	B			D			D	
Approach Delay		20.3			19.0			47.0			50.8	
Approach LOS		C			B			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	190
Actuated Cycle Length:	176.3
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	22.3
Intersection LOS:	C
Intersection Capacity Utilization:	54.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	6	820	42	20	736	14	68	94	88	58	158	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.997			0.952			0.985	
Flt Protected					0.999			0.987			0.988	
Satd. Flow (prot)	0	3514	0	0	3525	0	0	1750	0	0	1813	0
Flt Permitted		0.950			0.927			0.825			0.649	
Satd. Flow (perm)	0	3339	0	0	3271	0	0	1463	0	0	1191	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			2			36			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	5	668	34	16	600	11	74	102	96	63	172	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	707	0	0	627	0	0	272	0	0	265	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
1/14/2009

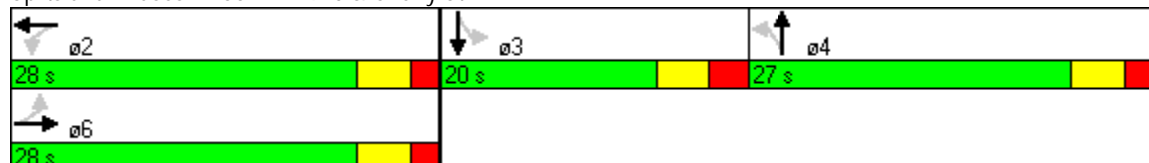


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	27.0	27.0	0.0	20.0	20.0	0.0
Total Split (%)	37.3%	37.3%	0.0%	37.3%	37.3%	0.0%	36.0%	36.0%	0.0%	26.7%	26.7%	0.0%
Maximum Green (s)	22.5	22.5		22.5	22.5		21.0	21.0		14.0	14.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effect Green (s)		22.5			22.5			21.0			14.0	
Actuated g/C Ratio		0.30			0.30			0.28			0.19	
v/c Ratio		0.70			0.64			0.62			1.16	
Control Delay		27.5			26.2			27.7			139.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		27.5			26.2			27.7			139.7	
LOS		C			C			C			F	
Approach Delay		27.5			26.2			27.7			139.7	
Approach LOS		C			C			C			F	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 43.0
 Intersection LOS: D
 Intersection Capacity Utilization 55.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	8	782	29	17	752	19	19	17	45	23	13	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.996			0.925			0.966	
Flt Protected		0.999			0.999			0.988			0.977	
Satd. Flow (prot)	0	3518	0	0	3522	0	0	1702	0	0	1758	0
Flt Permitted		0.949			0.940			0.902			0.805	
Satd. Flow (perm)	0	3342	0	0	3314	0	0	1554	0	0	1449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			7			49			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	7	638	24	14	613	15	21	18	49	25	14	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	669	0	0	642	0	0	88	0	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	18.0	18.0	0.0	18.0	18.0	0.0
Total Split (%)	69.0%	69.0%	0.0%	69.0%	69.0%	0.0%	31.0%	31.0%	0.0%	31.0%	31.0%	0.0%
Maximum Green (s)	34.5	34.5		34.5	34.5		12.5	12.5		12.5	12.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		40.2			40.2			7.5			7.5	
Actuated g/C Ratio		0.79			0.79			0.15			0.15	
v/c Ratio		0.25			0.25			0.33			0.23	
Control Delay		3.3			3.3			15.1			19.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.3			3.3			15.1			19.1	
LOS		A			A			B			B	
Approach Delay		3.3			3.3			15.1			19.1	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	50.9
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	4.6
Intersection LOS:	A
Intersection Capacity Utilization:	40.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	832	0	0	736	61	0	0	0	36	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.988							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3497	0	0	1863	0	1770	0	1583
Flt Permitted	0.401									0.950		
Satd. Flow (perm)	747	3539	0	0	3497	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11							75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	20	678	0	0	600	50	0	0	0	39	0	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	678	0	0	650	0	0	0	0	39	0	75
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1		1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100		20	100		20	100		20		20
Trailing Detector (ft)	0	0		0	0		0	0		0		0
Detector 1 Position(ft)	0	0		0	0		0	0		0		0
Detector 1 Size(ft)	20	6		20	6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm			Perm			Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6			2			3					4

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009

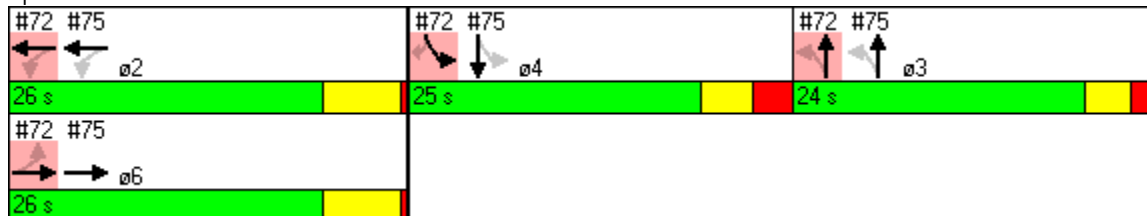


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5		27.5	27.5		26.0	26.0		27.0		27.0
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	24.0	24.0	0.0	25.0	0.0	25.0
Total Split (%)	34.7%	34.7%	0.0%	34.7%	34.7%	0.0%	32.0%	32.0%	0.0%	33.3%	0.0%	33.3%
Maximum Green (s)	20.5	20.5		20.5	20.5		19.0	19.0		19.0		19.0
Yellow Time (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0		2.0
Recall Mode	None	None		C-Max	C-Max		None	None		None		None
Walk Time (s)	7.0	7.0		7.0	7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0		10.0	10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0		0
Act Effect Green (s)	55.1	55.1			55.1					7.3		7.3
Actuated g/C Ratio	0.73	0.73			0.73					0.10		0.10
v/c Ratio	0.04	0.26			0.25					0.23		0.34
Control Delay	1.2	1.1			5.4					34.5		13.0
Queue Delay	0.7	0.2			0.0					0.0		0.1
Total Delay	1.9	1.3			5.4					34.5		13.1
LOS	A	A			A					C		B
Approach Delay		1.3			5.4							
Approach LOS		A			A							

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 4.6
 Intersection LOS: A
 Intersection Capacity Utilization 33.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	853	70	52	886	0	10	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.989						0.927			0.865	
Fl _t Protected				0.950				0.978				
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	1689	0	0	1611	0
Fl _t Permitted				0.354								
Satd. Flow (perm)	0	3500	0	659	3539	0	0	1727	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11						13			513	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		464			112			489			304	
Travel Time (s)		10.5			2.5			11.1			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	695	57	42	722	0	11	0	13	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	752	0	42	722	0	0	24	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Detector 1 Position(ft)		0		0	0		0	0		0	0	
Detector 1 Size(ft)		6		20	6		20	6		20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94		94	94		94	94		94	94	
Detector 2 Size(ft)		6		6	6		6	6		6	6	
Detector 2 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3			4	
Permitted Phases				2			3			4		

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009

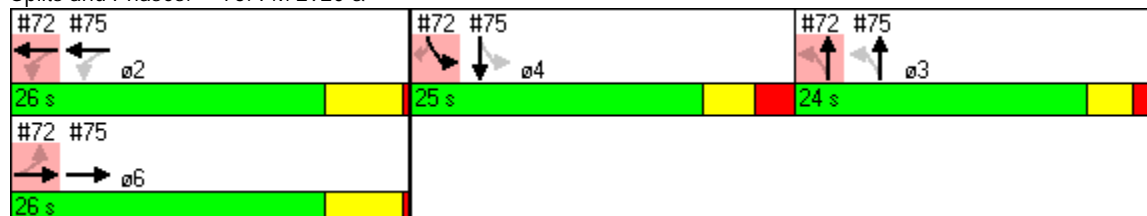


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		2	2		3	3		4	4	
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	26.0	0.0	26.0	26.0	0.0	24.0	24.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	34.7%	0.0%	34.7%	34.7%	0.0%	32.0%	32.0%	0.0%	33.3%	33.3%	0.0%
Maximum Green (s)		20.5		20.5	20.5		19.0	19.0		19.0	19.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		55.1		55.1	55.1		7.0	7.0		7.3	7.3	
Actuated g/C Ratio		0.73		0.73	0.73		0.09	0.09		0.10	0.10	
v/c Ratio		0.29		0.09	0.28		0.14	0.14		0.00	0.00	
Control Delay		5.6		2.8	2.2		23.1	23.1		0.0	0.0	
Queue Delay		0.0		1.2	0.3		0.0	0.0		0.0	0.0	
Total Delay		5.6		4.0	2.5		23.1	23.1		0.0	0.0	
LOS		A		A	A		C	C		A	A	
Approach Delay		5.6		2.6	2.6		23.1	23.1		0.0	0.0	
Approach LOS		A		A	A		C	C		A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 4.4
 Intersection Capacity Utilization 49.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	884	17	100	767	22	12	20	56	27	52	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.996			0.914				0.850
Flt Protected	0.950			0.950				0.993			0.983	
Satd. Flow (prot)	1770	3529	0	1770	3525	0	0	1691	0	0	1831	1583
Flt Permitted	0.950			0.950				0.965			0.900	
Satd. Flow (perm)	1770	3529	0	1770	3525	0	0	1643	0	0	1676	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			61				48
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	15	721	14	82	625	18	13	22	61	29	57	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	735	0	82	643	0	0	96	0	0	86	48
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8		4			4

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009

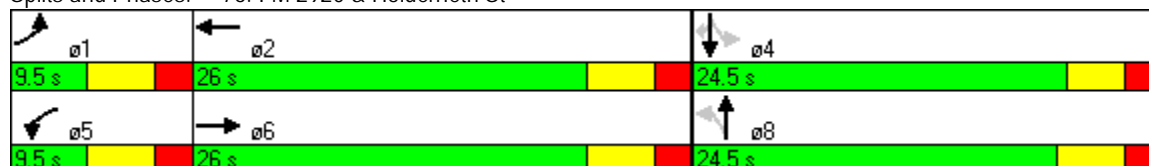


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	9.5	26.0	0.0	9.5	26.0	0.0	24.5	24.5	0.0	24.5	24.5	24.5
Total Split (%)	15.8%	43.3%	0.0%	15.8%	43.3%	0.0%	40.8%	40.8%	0.0%	40.8%	40.8%	40.8%
Maximum Green (s)	4.0	20.5		4.0	20.5		19.0	19.0		19.5	19.5	19.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	4.0	22.1		4.0	27.6			22.1			22.6	22.6
Actuated g/C Ratio	0.06	0.35		0.06	0.44			0.35			0.36	0.36
v/c Ratio	0.13	0.59		0.72	0.41			0.15			0.14	0.08
Control Delay	31.4	19.4		67.3	13.4			7.9			15.3	5.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	31.4	19.4		67.3	13.4			7.9			15.3	5.4
LOS	C	B		E	B			A			B	A
Approach Delay		19.6			19.5			7.9			11.7	
Approach LOS		B			B			A			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	62.6
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	18.3
Intersection LOS:	B
Intersection Capacity Utilization:	50.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	927	0	2	875	22	1	4	1	33	3	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996			0.978			0.919	
Flt Protected	0.950			0.950				0.992			0.982	
Satd. Flow (prot)	1770	3539	0	1770	3525	0	0	1807	0	0	1681	0
Flt Permitted	0.950			0.950				0.949			0.875	
Satd. Flow (perm)	1770	3539	0	1770	3525	0	0	1729	0	0	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					4			1			58	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	9	756	0	2	713	18	1	4	1	36	3	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	756	0	2	731	0	0	6	0	0	97	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	13.0	34.5	0.0	13.0	34.5	0.0	27.5	27.5	0.0	27.5	27.5	0.0
Total Split (%)	17.3%	46.0%	0.0%	17.3%	46.0%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	0.0%
Maximum Green (s)	7.5	29.0		7.5	29.0		22.0	22.0		22.5	22.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.1	36.7		7.1	36.7			7.5			7.9	
Actuated g/C Ratio	0.13	0.68		0.13	0.68			0.14			0.15	
v/c Ratio	0.04	0.31		0.01	0.30			0.02			0.36	
Control Delay	21.6	6.1		21.5	6.0			19.5			14.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	21.6	6.1		21.5	6.0			19.5			14.9	
LOS	C	A		C	A			B			B	
Approach Delay		6.3			6.1			19.5			14.9	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 53.6
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 6.8
 Intersection LOS: A
 Intersection Capacity Utilization 38.2%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 85: FM 2920 & Buvinghausen St



Lanes, Volumes, Timings
87: Alma St & FM 2920

Medical Complex Drive
1/14/2009



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	16	0	982	143	3	893
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt			0.981			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	3472	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	3472	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	218		890			276
Travel Time (s)	5.0		20.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	0	1067	155	3	971
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	1222	0	0	974
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1221	0	0	503	18	180	71	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Frt					0.995			0.987				
Flt Protected	0.950							0.971				
Satd. Flow (prot)	1770	5085	0	0	6376	0	0	4874	0	0	0	0
Flt Permitted	0.950							0.971				
Satd. Flow (perm)	1770	5085	0	0	6376	0	0	4874	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			15				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1957				1199
Travel Time (s)		8.3			18.8			44.5				27.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	100%	75%	75%	75%	75%
Adj. Flow (vph)	114	995	0	0	410	15	147	77	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	995	0	0	425	0	0	245	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009

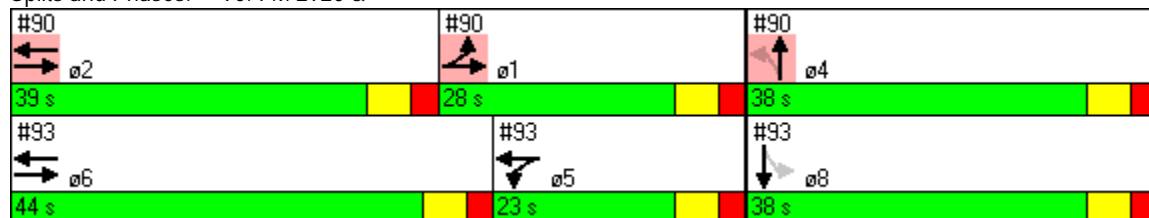


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	28.0	67.0	0.0	0.0	39.0	0.0	38.0	38.0	0.0	0.0	0.0	0.0
Total Split (%)	26.7%	63.8%	0.0%	0.0%	37.1%	0.0%	36.2%	36.2%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	21.5				32.5		31.0	31.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	1.0				1.0		1.0	1.0				
Recall Mode	None				C-Max		None	None				
Walk Time (s)					7.0		7.0	7.0				
Flash Dont Walk (s)					12.0		13.0	13.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effect Green (s)	12.7	76.3			57.1			15.2				
Actuated g/C Ratio	0.12	0.73			0.54			0.14				
v/c Ratio	0.53	0.27			0.12			0.34				
Control Delay	58.9	4.5			12.4			38.6				
Queue Delay	0.0	0.1			0.0			0.0				
Total Delay	58.9	4.6			12.4			38.6				
LOS	E	A			B			D				
Approach Delay		10.2			12.4			38.6				
Approach LOS		B			B			D				

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 14.6
 Intersection LOS: B
 Intersection Capacity Utilization 48.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	23.0	44.0	38.0
Total Split (%)	22%	42%	36%
Maximum Green (s)	16.5	37.5	31.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↖↖	
Volume (vph)	0	871	326	83	600	0	0	0	0	490	51	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.959									0.966	
Flt Protected				0.950							0.967	
Satd. Flow (prot)	0	6145	0	1770	5085	0	0	0	0	0	4750	0
Flt Permitted				0.950							0.967	
Satd. Flow (perm)	0	6145	0	1770	5085	0	0	0	0	0	4750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		100									72	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		735			367			1962			1208	
Travel Time (s)		16.7			8.3			44.6			27.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	100%	75%
Adj. Flow (vph)	0	710	266	68	489	0	0	0	0	399	55	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	976	0	68	489	0	0	0	0	0	587	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6						8	
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009

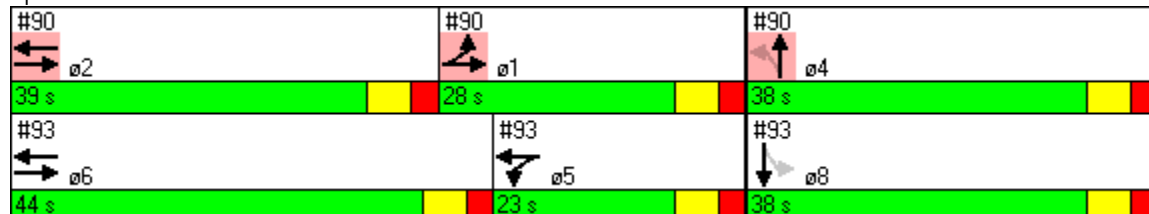


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	44.0	0.0	23.0	67.0	0.0	0.0	0.0	0.0	38.0	38.0	0.0
Total Split (%)	0.0%	41.9%	0.0%	21.9%	63.8%	0.0%	0.0%	0.0%	0.0%	36.2%	36.2%	0.0%
Maximum Green (s)		37.5		16.5						31.0	31.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		62.1		7.7	76.3						15.2	
Actuated g/C Ratio		0.59		0.07	0.73						0.14	
v/c Ratio		0.27		0.52	0.13						1.26dl	
Control Delay		10.0		68.2	3.4						45.7	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		10.0		68.2	3.4						45.7	
LOS		A		E	A						D	
Approach Delay		10.0			11.3						45.7	
Approach LOS		A			B						D	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 20.2
 Intersection LOS: C
 Intersection Capacity Utilization 48.7%
 ICU Level of Service A
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	28.0	39.0	38.0
Total Split (%)	27%	37%	36%
Maximum Green (s)	21.5	32.5	31.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑	↗		↑↑↑				
Volume (vph)	56	500	0	0	721	30	164	57	409	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Fr _t						0.850		0.903				
Fl _t Protected	0.950							0.987				
Satd. Flow (prot)	1770	3539	0	0	5085	1583	0	4532	0	0	0	0
Fl _t Permitted	0.950							0.987				
Satd. Flow (perm)	1770	3539	0	0	5085	1583	0	4532	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						33		349				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		393			1219			636				1957
Travel Time (s)		8.9			27.7			14.5				44.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	543	0	0	784	33	178	62	445	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	543	0	0	784	33	0	685	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
Trailing Detector (ft)	0	0			0	0	0	0				
Detector 1 Position(ft)	0	0			0	0	0	0				
Detector 1 Size(ft)	20	6			6	20	20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot					Perm	Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases						2	4					
Detector Phase	1	1 2			2	2	4	4				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009

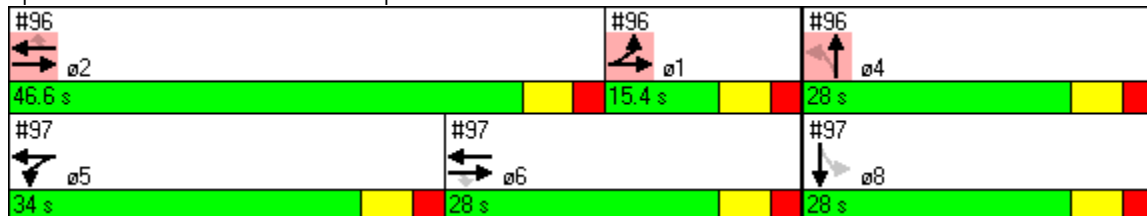


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0			20.0			5.0			5.0		
Minimum Split (s)	11.5			26.5			26.5			27.0		
Total Split (s)	15.4	62.0	0.0	0.0	46.6	46.6	28.0	28.0	0.0	0.0	0.0	0.0
Total Split (%)	17.1%	68.9%	0.0%	0.0%	51.8%	51.8%	31.1%	31.1%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	8.9			40.1			21.0			21.0		
Yellow Time (s)	4.0			4.0			4.0			4.0		
All-Red Time (s)	2.5			2.5			3.0			3.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	6.5	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead		Lead					
Lead-Lag Optimize?	Yes				Yes		Yes					
Vehicle Extension (s)	1.0				1.0		1.0		1.0			
Recall Mode	None				Min		Min		Min			
Walk Time (s)					7.0		7.0		7.0			
Flash Dont Walk (s)					12.0		12.0		13.0			
Pedestrian Calls (#/hr)					0		0		0			
Act Effct Green (s)	27.2	65.8				32.1	32.1		10.7			
Actuated g/C Ratio	0.30	0.73				0.36	0.36		0.12			
v/c Ratio	0.11	0.21				0.43	0.06		0.89dr			
Control Delay	16.9	4.2				30.2	15.8		26.5			
Queue Delay	0.0	0.0				0.0	0.0		0.0			
Total Delay	16.9	4.2				30.2	15.8		26.5			
LOS	B	A				C	B		C			
Approach Delay			5.5				29.6		26.5			
Approach LOS			A				C		C			

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 21.7 Intersection LOS: C
 Intersection Capacity Utilization 63.7% ICU Level of Service B
 Analysis Period (min) 15
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 96: Medical Complex Drive & SH 249 East Service Rd



Lane Group	ø5	ø6	ø8
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	34.0	28.0	28.0
Total Split (%)	38%	31%	31%
Maximum Green (s)	27.5	21.5	21.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Min	Min
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑						↑↑↑	
Volume (vph)	0	273	101	633	632	0	0	0	0	56	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt			0.850								0.966	
Flt Protected				0.950							0.967	
Satd. Flow (prot)	0	5085	1583	1770	3539	0	0	0	0	0	4750	0
Flt Permitted				0.950							0.967	
Satd. Flow (perm)	0	5085	1583	1770	3539	0	0	0	0	0	4750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110								20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2815			393			714			1962	
Travel Time (s)		64.0			8.9			16.2			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	297	110	688	687	0	0	0	0	61	7	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	297	110	688	687	0	0	0	0	0	88	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1	1	2					1	2	
Detector Template		Thru	Right	Left	Thru					Left	Thru	
Leading Detector (ft)		100	20	20	100					20	100	
Trailing Detector (ft)		0	0	0	0					0	0	
Detector 1 Position(ft)		0	0	0	0					0	0	
Detector 1 Size(ft)		6	20	20	6					20	6	
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type			Perm	Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases			6							8		
Detector Phase		6	6	5	5 6					8	8	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009

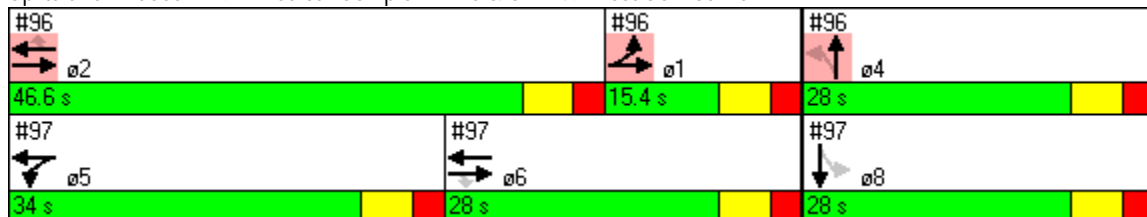


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0						5.0	5.0	
Minimum Split (s)		27.5	27.5	11.5						28.0	28.0	
Total Split (s)	0.0	28.0	28.0	34.0	62.0	0.0	0.0	0.0	0.0	28.0	28.0	0.0
Total Split (%)	0.0%	31.1%	31.1%	37.8%	68.9%	0.0%	0.0%	0.0%	0.0%	31.1%	31.1%	0.0%
Maximum Green (s)		21.5	21.5	27.5						21.0	21.0	
Yellow Time (s)		4.0	4.0	4.0						4.0	4.0	
All-Red Time (s)		2.5	2.5	2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		1.0	1.0	1.0						1.0	1.0	
Recall Mode		C-Min	C-Min	None						Min	Min	
Walk Time (s)		7.0	7.0							7.0	7.0	
Flash Dont Walk (s)		14.0	14.0							14.0	14.0	
Pedestrian Calls (#/hr)		0	0							0	0	
Act Effect Green (s)		20.0	20.0	39.3	65.8							10.7
Actuated g/C Ratio		0.22	0.22	0.44	0.73							0.12
v/c Ratio		0.26	0.25	0.89	0.27							0.15
Control Delay		29.7	7.6	29.6	2.2							27.2
Queue Delay		0.0	0.0	0.0	0.2							0.0
Total Delay		29.7	7.6	29.6	2.3							27.2
LOS		C	A	C	A							C
Approach Delay		23.7			16.0							27.2
Approach LOS		C			B							C

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.89
Intersection Signal Delay:	18.2
Intersection LOS:	B
Intersection Capacity Utilization:	63.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 97: Medical Complex Drive & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	15.4	46.6	28.0
Total Split (%)	17%	52%	31%
Maximum Green (s)	8.9	40.1	21.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	Min	Min
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1990				618				233		163	
Travel Time (s)	45.2				14.0				5.3		3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				12				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane	Yes				Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		9		15		9	
Sign Control	Free				Free				Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
 114: Medical Complex Drive &



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	906			5205	1406	
Travel Time (s)	20.6			118.3	32.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type						
Protected Phases	4!			2	8!	
Permitted Phases						
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0		16.0	16.0	16.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
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Approach Delay

Approach LOS

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 40

Offset: 0 (0%), Referenced to phase 2:NETL and 6:, Start of Green

Natural Cycle: 40

Control Type: Pretimed

Maximum v/c Ratio: 0.00

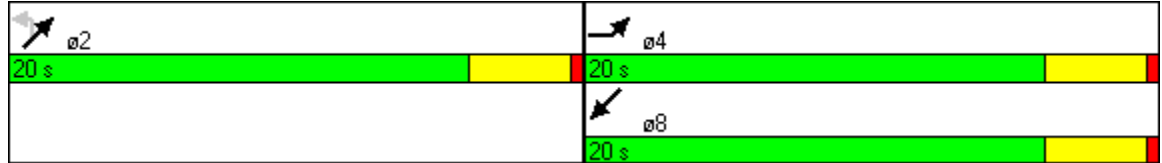
Intersection Signal Delay: 0.0 Intersection LOS: A

Intersection Capacity Utilization 0.0% ICU Level of Service A

Analysis Period (min) 15

! Phase conflict between lane groups.

Splits and Phases: 114: Medical Complex Drive &



Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3855			2112			1114			1168	
Travel Time (s)		87.6			48.0			25.3			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												

Lanes, Volumes, Timings
 116: Medical Complex Dr &

Medical Complex Drive
 1/14/2009

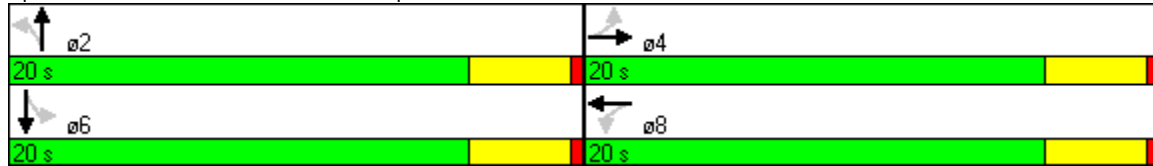


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay												
Approach LOS												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min)	15

Splits and Phases: 116: Medical Complex Dr &



Lanes, Volumes, Timings
 117: Medical Complex Drive & Hufsmith Kohrville Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	467	20	35	592	87	22	97	4	86	155	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.981			0.994			0.948	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3472	0	1770	1852	0	1770	1766	0
Flt Permitted	0.311			0.444			0.601			0.687		
Satd. Flow (perm)	579	3518	0	827	3472	0	1120	1852	0	1280	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			49			4			79	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2112			5205			1065			775	
Travel Time (s)		48.0			118.3			24.2			17.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	508	22	38	643	95	24	105	4	93	168	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	530	0	38	738	0	24	109	0	93	256	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.60	0.37		0.11	0.52		0.05	0.15		0.18	0.34	
Control Delay	25.1	9.2		8.7	10.1		7.9	8.1		9.0	7.3	

Lanes, Volumes, Timings
 117: Medical Complex Drive & Hufsmith Kohrville Rd

Medical Complex Drive
 1/14/2009

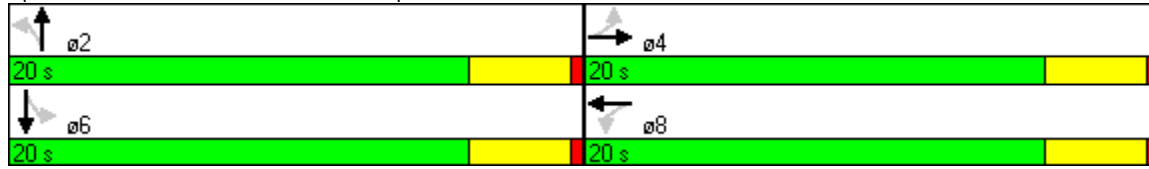


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	25.1	9.2		8.7	10.1		7.9	8.1		9.0	7.3	
LOS	C	A		A	B		A	A		A	A	
Approach Delay		12.5			10.0			8.1			7.7	
Approach LOS		B			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	10.3
Intersection LOS:	B
Intersection Capacity Utilization	54.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 117: Medical Complex Drive & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	478	26	32	475	21	50	90	47	80	215	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.994			0.949			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3518	0	1770	1768	0	1770	1824	0
Flt Permitted	0.437			0.431			0.581			0.662		
Satd. Flow (perm)	814	3511	0	803	3518	0	1082	1768	0	1233	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			13			51			25	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2634			3855			1711			2332	
Travel Time (s)		59.9			87.6			38.9			53.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	520	28	35	516	23	54	98	51	87	234	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	548	0	35	539	0	54	149	0	87	273	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.09	0.39		0.11	0.38		0.12	0.20		0.18	0.37	
Control Delay	8.4	9.3		8.7	9.3		8.6	6.4		8.9	9.4	

Lanes, Volumes, Timings
 122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
 1/14/2009

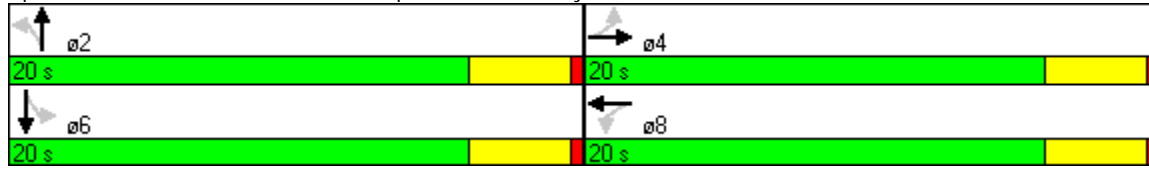


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.4	9.3		8.7	9.3		8.6	6.4		8.9	9.4	
LOS	A	A		A	A		A	A		A	A	
Approach Delay		9.2			9.2			7.0			9.3	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.39
Intersection Signal Delay:	9.0
Intersection LOS:	A
Intersection Capacity Utilization	47.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 122: Medical Complex Dr & S. Cherry Rd



Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1181			2634			643			613	
Travel Time (s)		26.8			59.9			14.6			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												

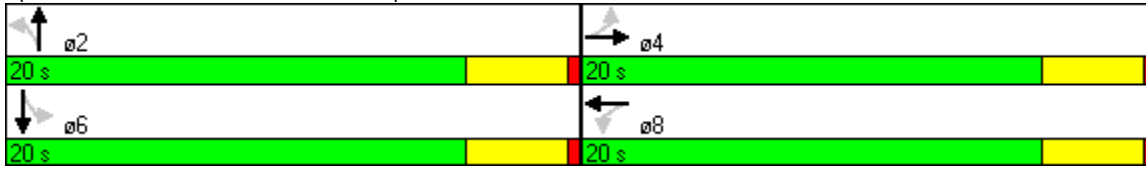
Lanes, Volumes, Timings
 131: Medical Complex Dr &

Medical Complex Drive
 1/14/2009























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Intersection Summary												
Area Type:	Other											
Cycle Length:	40											
Actuated Cycle Length:	40											
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle:	40											
Control Type:	Pretimed											
Maximum v/c Ratio:	0.00											
Intersection Signal Delay:	0.0						Intersection LOS: A					
Intersection Capacity Utilization	0.0%						ICU Level of Service A					
Analysis Period (min)	15											

Splits and Phases: 131: Medical Complex Dr &



Lanes, Volumes, Timings
132: Int

Medical Complex Drive
1/14/2009

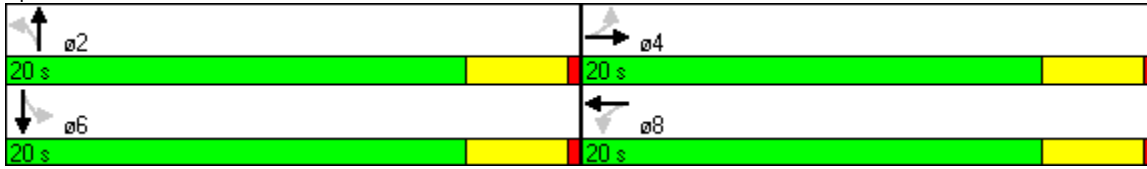
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1181			411			528	
Travel Time (s)		22.7			26.8			9.3			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												

Lanes, Volumes, Timings
132: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Intersection Summary												
Area Type:	Other											
Cycle Length:	40											
Actuated Cycle Length:	40											
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle:	40											
Control Type:	Pretimed											
Maximum v/c Ratio:	0.00											
Intersection Signal Delay:	0.0						Intersection LOS: A					
Intersection Capacity Utilization	0.0%						ICU Level of Service A					
Analysis Period (min)	15											

Splits and Phases: 132: Int



Lanes, Volumes, Timings
133: Int

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1696			1000			95			284	
Travel Time (s)		38.5			22.7			2.2			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Approach Delay

Approach LOS

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 40

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Pretimed

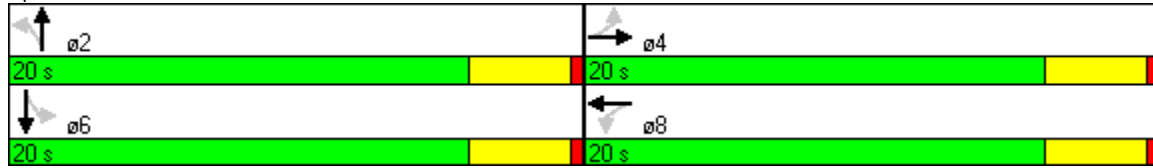
Maximum v/c Ratio: 0.00

Intersection Signal Delay: 0.0 Intersection LOS: A













Intersection Capacity Utilization 0.0% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 133: Int



Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

						
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations			 			 
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	1863	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	1863	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	313		692			2340
Travel Time (s)	7.1		15.7			53.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		24			24
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type					Perm	
Protected Phases	2					8
Permitted Phases			4		8	
Minimum Split (s)	20.0		20.0		20.0	20.0
Total Split (s)	20.0	0.0	20.0	0.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)	16.0		16.0		16.0	16.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	0.5		0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0		5.0		5.0	5.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						



Lane Group	NBL	NBR	SET	SER	NWL	NWT
------------	-----	-----	-----	-----	-----	-----

Approach Delay

Approach LOS

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 40

Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green

Natural Cycle: 40

Control Type: Pretimed

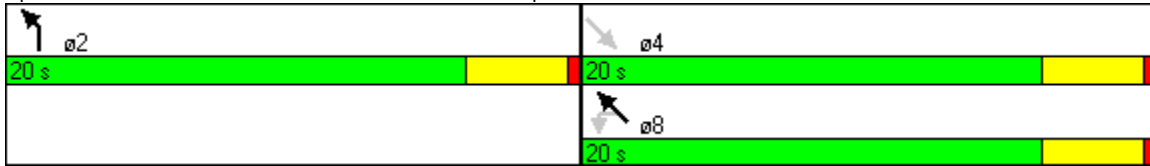
Maximum v/c Ratio: 0.00

Intersection Signal Delay: 0.0 Intersection LOS: A

Intersection Capacity Utilization 0.0% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 134: Triechel Rd & Medical Complex Dr



**2011 RECOMMENDED CONDITION
ANALYSIS**

[PM PEAK HOUR]

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Volume (vph)	0	474	25	3	663	0	36	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.993						0.968				
Fl _t Protected				0.950				0.963				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1736	0	0	1863	0
Fl _t Permitted				0.950				0.776				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1399	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						12				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	386	20	2	540	0	39	0	12	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	406	0	2	540	0	0	51	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	61.0	0.0	19.0	69.0	0.0	30.0	30.0	0.0	30.0	30.0	0.0
Total Split (%)	10.0%	55.5%	0.0%	17.3%	62.7%	0.0%	27.3%	27.3%	0.0%	27.3%	27.3%	0.0%
Maximum Green (s)	5.0	55.0		13.0	63.0		24.5	24.5		24.5	24.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Act Effect Green (s)		67.6		5.0	69.8			7.0				
Actuated g/C Ratio		0.80		0.06	0.82			0.08				
v/c Ratio		0.15		0.02	0.19			0.40				
Control Delay		3.5		37.5	2.5			38.9				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		3.5		37.5	2.5			38.9				
LOS		A		D	A			D				
Approach Delay		3.5			2.6			38.9				
Approach LOS		A			A			D				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	85
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.40
Intersection Signal Delay:	4.8
Intersection LOS:	A
Intersection Capacity Utilization:	30.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	356	41	44	492	11	28	7	58	47	15	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.984			0.997			0.867			0.991	
Flt Protected	0.950			0.950			0.950			0.950	0.976	
Satd. Flow (prot)	1770	3483	0	1770	3529	0	1770	1615	0	1681	1712	0
Flt Permitted	0.432			0.501			0.733			0.711	0.903	
Satd. Flow (perm)	805	3483	0	933	3529	0	1365	1615	0	1258	1584	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			7			63				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2340			2815			624				1981
Travel Time (s)		53.2			64.0			14.2				45.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	387	45	48	535	12	30	8	63	51	16	2
Shared Lane Traffic (%)										33%		
Lane Group Flow (vph)	9	432	0	48	547	0	30	71	0	34	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.03	0.31		0.13	0.39		0.05	0.10		0.07	0.06	
Control Delay	7.6	8.2		8.8	9.4		7.8	3.6		7.9	7.4	

Lanes, Volumes, Timings
 2: Medical Complex Dr & Calvert Rd

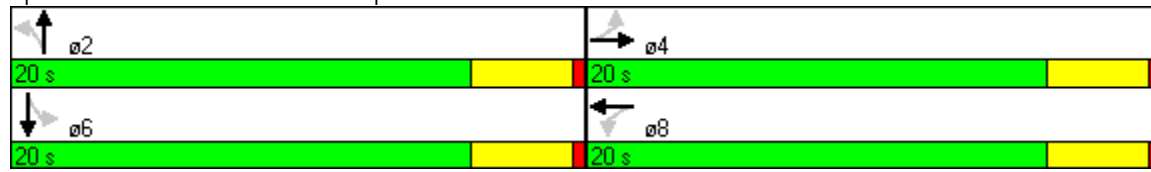


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.6	8.2		8.8	9.4		7.8	3.6		7.9	7.4	
LOS	A	A		A	A		A	A		A	A	
Approach Delay		8.2			9.4			4.9			7.7	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.39
Intersection Signal Delay:	8.5
Intersection LOS:	A
Intersection Capacity Utilization	35.7%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 2: Medical Complex Dr & Calvert Rd



Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	978	33	62	1164	132	39	7	67	187	9	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.995				0.850		0.911				0.883
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	0	3169	0	1770	1645	0
Flt Permitted	0.950			0.950				0.858		0.674		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	0	2766	0	1255	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				108		73				35
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2090			735			216				806
Travel Time (s)		47.5			16.7			4.9				18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	29	797	27	51	949	108	42	8	73	203	10	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	824	0	51	949	108	0	123	0	203	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8			4		

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive

1/14/2009

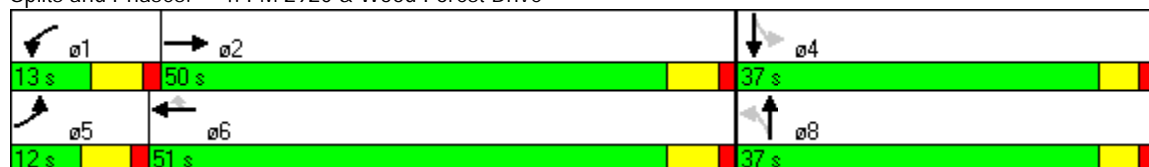


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	12.0	50.0	0.0	13.0	51.0	51.0	37.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	12.0%	50.0%	0.0%	13.0%	51.0%	51.0%	37.0%	37.0%	0.0%	37.0%	37.0%	0.0%
Maximum Green (s)	6.0	44.0		7.0	45.0	45.0	31.5	31.5		31.5	31.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Act Effect Green (s)	5.6	44.1		6.4	47.1	47.1		31.6		31.6	31.6	
Actuated g/C Ratio	0.06	0.45		0.07	0.48	0.48		0.33		0.33	0.33	
v/c Ratio	0.28	0.51		0.44	0.55	0.13		0.13		0.50	0.08	
Control Delay	52.3	20.8		56.9	20.0	3.7		11.7		32.6	11.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	52.3	20.8		56.9	20.0	3.7		11.7		32.6	11.0	
LOS	D	C		E	C	A		B		C	B	
Approach Delay		21.9			20.1			11.7			28.7	
Approach LOS		C			C			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 97.2
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 21.2
 Intersection LOS: C
 Intersection Capacity Utilization 59.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
1/14/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	13	50	21	370	132	27	84	755	210	65	963	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.955			0.975			0.967			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3380	0	1770	3451	0	1770	3422	0	1770	3518	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3380	0	1770	3451	0	1770	3422	0	1770	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			19			37				4
Link Speed (mph)		30			30			30				30
Link Distance (ft)		706			692			1353				532
Travel Time (s)		16.0			15.7			30.8				12.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	54	23	402	143	29	91	821	228	71	1047	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	77	0	402	172	0	91	1049	0	71	1093	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 1/14/2009

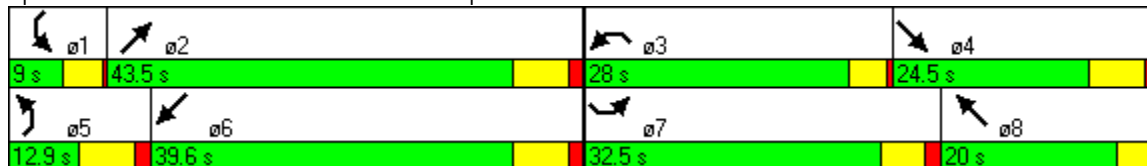


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Switch Phase												
Minimum Initial (s)	5.0	15.0		4.0	4.0		5.0	15.0		4.0	15.0	
Minimum Split (s)	32.5	22.5		20.0	20.0		11.5	30.5		8.0	30.5	
Total Split (s)	32.5	24.5	0.0	28.0	20.0	0.0	12.9	43.5	0.0	9.0	39.6	0.0
Total Split (%)	31.0%	23.3%	0.0%	26.7%	19.0%	0.0%	12.3%	41.4%	0.0%	8.6%	37.7%	0.0%
Maximum Green (s)	27.0	18.0		24.0	16.0		6.4	37.0		5.0	33.1	
Yellow Time (s)	4.0	5.0		3.5	3.5		5.0	5.0		3.5	5.0	
All-Red Time (s)	1.5	1.5		0.5	0.5		1.5	1.5		0.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	4.0	4.0	6.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	1.5		3.0	3.0		2.0	1.5		3.0	1.5	
Recall Mode	None	Max		None	None		None	Max		None	Max	
Walk Time (s)	7.0			5.0	5.0		7.0			7.0		
Flash Dont Walk (s)	20.0			11.0	11.0		17.0			17.0		
Pedestrian Calls (#/hr)	0			0	0		0			0		
Act Effect Green (s)	5.6	18.0		24.0	43.7		6.4	37.0		5.0	33.1	
Actuated g/C Ratio	0.05	0.17		0.23	0.42		0.06	0.35		0.05	0.32	
v/c Ratio	0.15	0.13		0.99	0.12		0.84	0.85		0.85	0.98	
Control Delay	50.5	27.5		84.6	18.4		102.1	38.5		113.4	59.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.5	27.5		84.6	18.4		102.1	38.5		113.4	59.5	
LOS	D	C		F	B		F	D		F	E	
Approach Delay		31.1			64.8			43.5			62.7	
Approach LOS		C			E			D			E	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 54.8
 Intersection LOS: D
 Intersection Capacity Utilization 73.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 11: Park Rd/Medical Complex Dr & FM 2920



Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	422	216	203	484	149	267	487	206	43	83	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.91	0.91	1.00	0.86	0.86	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.966				0.850		0.940	
Flt Protected	0.950	0.999		0.950	0.998		0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1522	4633	0	3433	5085	1583	3433	4780	0
Flt Permitted	0.950	0.999		0.950	0.998		0.634			0.445		
Satd. Flow (perm)	1610	3387	1583	1522	4633	0	2291	5085	1583	1608	4780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176		56				168		60	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	100%	75%	75%	100%	75%
Adj. Flow (vph)	68	344	176	165	395	121	218	529	168	35	90	60
Shared Lane Traffic (%)	10%			10%								
Lane Group Flow (vph)	61	351	176	148	533	0	218	529	168	35	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split		Perm	Split			pm+pt		Perm	pm+pt		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3				2		2	6		

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
1/14/2009

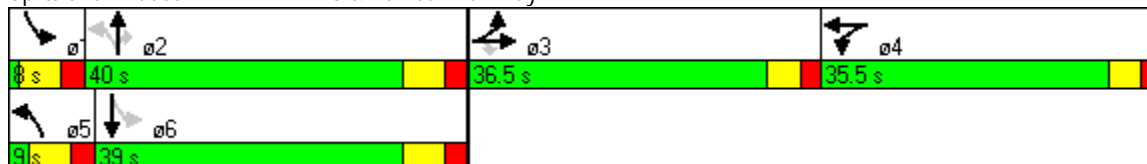


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0		6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5		13.0	36.0	36.0	12.0	40.0	
Total Split (s)	36.5	36.5	36.5	35.5	35.5	0.0	9.0	40.0	40.0	8.0	39.0	0.0
Total Split (%)	30.4%	30.4%	30.4%	29.6%	29.6%	0.0%	7.5%	33.3%	33.3%	6.7%	32.5%	0.0%
Maximum Green (s)	31.0	31.0	31.0	30.0	30.0		2.0	33.0	33.0	1.0	32.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	7.0	7.0	7.0	7.0	7.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	3.0	3.0	1.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	12.4	12.4	12.4	13.0	13.0		36.2	34.2	34.2	34.2	33.2	
Actuated g/C Ratio	0.14	0.14	0.14	0.15	0.15		0.42	0.40	0.40	0.40	0.39	
v/c Ratio	0.26	0.71	0.46	0.64	0.71		0.22	0.26	0.23	0.05	0.08	
Control Delay	36.0	43.9	9.8	48.1	36.8		15.3	18.6	4.2	14.2	11.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	36.0	43.9	9.8	48.1	36.8		15.3	18.6	4.2	14.2	11.5	
LOS	D	D	A	D	D		B	B	A	B	B	
Approach Delay		32.9			39.2			15.2			12.0	
Approach LOS		C			D			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	85.7
Natural Cycle:	135
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	26.2
Intersection LOS:	C
Intersection Capacity Utilization:	53.1%
ICU Level of Service:	A
Analysis Period (min):	15

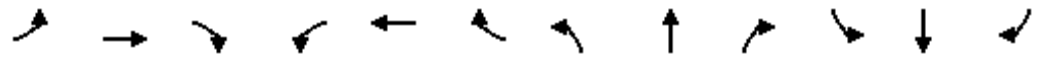
Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	461	234	271	655	203	520	1007	350	265	700	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	200		0	200		0
Storage Lanes	1		1	1		1	2		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Fr _t			0.850			0.850		0.961			0.955	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	4887	0	3433	4856	0
Fl _t Permitted	0.950			0.950			0.123			0.154		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	444	4887	0	557	4856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			249			181		81			92	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1219			1696			633			1959	
Travel Time (s)		27.7			38.5			14.4			44.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	501	254	295	712	221	565	1095	380	288	761	326
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	501	254	295	712	221	565	1475	0	288	1087	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom		Perm	custom		Perm	pm+pt			pm+pt		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases	4		4	3		3	2			6		
Detector Phase	4	4	4	3	3	3	5	2		1	6	

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 1/14/2009

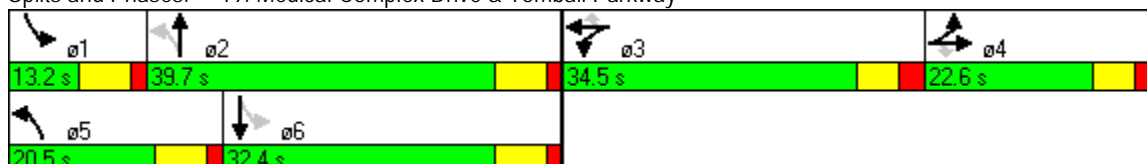


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	25.0		5.0	25.0	
Minimum Split (s)	11.5	11.5	11.5	34.5	34.5	34.5	11.5	31.5		11.5	31.5	
Total Split (s)	22.6	22.6	22.6	34.5	34.5	34.5	20.5	39.7	0.0	13.2	32.4	0.0
Total Split (%)	20.5%	20.5%	20.5%	31.4%	31.4%	31.4%	18.6%	36.1%	0.0%	12.0%	29.5%	0.0%
Maximum Green (s)	16.1	16.1	16.1	28.0	28.0	28.0	14.0	33.2		6.7	25.9	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	4.0	6.5	6.5	4.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	1.5	1.5	1.5	2.0	1.8		2.0	1.8	
Recall Mode	None	None	None	None	None	None	Max	C-Max		Max	C-Max	
Walk Time (s)				5.0	5.0	5.0		5.0			5.0	
Flash Dont Walk (s)				23.0	23.0	23.0		20.0			7.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effct Green (s)	17.4	17.4	17.4	25.4	25.4	25.4	47.7	33.2		33.9	25.9	
Actuated g/C Ratio	0.16	0.16	0.16	0.23	0.23	0.23	0.43	0.30		0.31	0.24	
v/c Ratio	0.33	0.89	0.55	0.72	0.87	0.44	0.93	0.96		0.76	0.90	
Control Delay	45.4	65.7	10.8	49.4	52.7	11.0	51.4	51.8		37.2	48.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.4	65.7	10.8	49.4	52.7	11.0	51.4	51.8		37.2	48.0	
LOS	D	E	B	D	D	B	D	D		D	D	
Approach Delay		47.0			44.4			51.7			45.7	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 47.9
 Intersection LOS: D
 Intersection Capacity Utilization 85.1%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway



Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Volume (vph)	68	649	12	10	1012	35	38	54	6	23	24	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.984				0.881
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3522	0	1770	1833	0	1770	1641	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3529	0	1770	3522	0	1770	1833	0	1770	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			5			7				98
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	55	529	10	8	825	29	41	59	7	25	26	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	539	0	8	854	0	41	66	0	25	124	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
1/14/2009

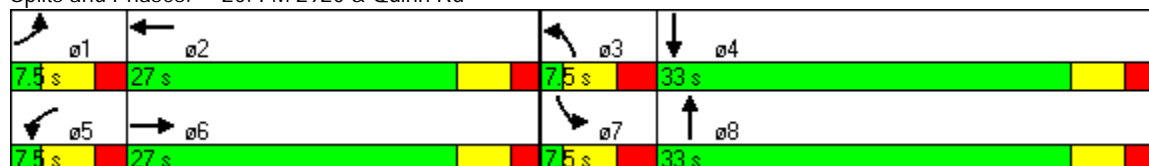


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		4.5	5.0		4.5	5.0	
Minimum Split (s)	10.5	25.5		10.5	30.5		10.5	36.0		10.5	36.0	
Total Split (s)	7.5	27.0	0.0	7.5	27.0	0.0	7.5	33.0	0.0	7.5	33.0	0.0
Total Split (%)	10.0%	36.0%	0.0%	10.0%	36.0%	0.0%	10.0%	44.0%	0.0%	10.0%	44.0%	0.0%
Maximum Green (s)	2.0	21.5		2.0	21.5		1.5	27.0		1.5	27.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	3.0		1.5	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			20.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	2.0	33.9		2.0	27.9		2.2	9.5		1.5	6.4	
Actuated g/C Ratio	0.03	0.57		0.03	0.47		0.04	0.16		0.03	0.11	
v/c Ratio	0.92	0.27		0.13	0.52		0.64	0.22		0.56	0.47	
Control Delay	134.5	8.2		32.9	13.2		79.7	21.9		77.0	14.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	134.5	8.2		32.9	13.2		79.7	21.9		77.0	14.9	
LOS	F	A		C	B		E	C		E	B	
Approach Delay		19.9			13.4			44.1			25.3	
Approach LOS		B			B			D			C	

Intersection Summary

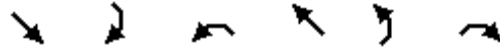
Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	59.4
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	18.6
Intersection LOS:	B
Intersection Capacity Utilization:	48.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
 26: FM 2920 & Mahaffey Rd/Medical Complex Dr

Medical Complex Drive
 1/14/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑		↙	↑↑	↘	↗
Volume (vph)	614	276	399	932	450	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Flt	0.953					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3373	0	1770	3539	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3373	0	1770	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	99					415
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1406	
Travel Time (s)	35.3			19.7	32.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	667	300	434	1013	489	415
Shared Lane Traffic (%)						
Lane Group Flow (vph)	967	0	434	1013	489	415
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type			Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Detector Phase	6		5	2	4	4

Lanes, Volumes, Timings
 26: FM 2920 & Mahaffey Rd/Medical Complex Dr

Medical Complex Drive
 1/14/2009

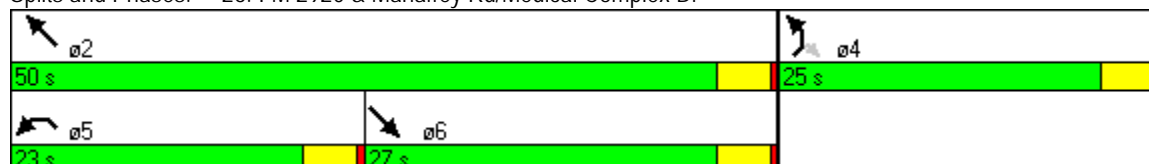


Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0		8.0	20.0	20.0	20.0
Total Split (s)	27.0	0.0	23.0	50.0	25.0	25.0
Total Split (%)	36.0%	0.0%	30.7%	66.7%	33.3%	33.3%
Maximum Green (s)	23.0		19.0	46.0	21.0	21.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Min		None	C-Min	None	None
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	22.5		19.0	45.5	21.5	21.5
Actuated g/C Ratio	0.30		0.25	0.61	0.29	0.29
v/c Ratio	0.90		0.97	0.47	0.96	0.55
Control Delay	34.9		66.0	9.0	60.9	5.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	34.9		66.0	9.0	60.9	5.7
LOS	C		E	A	E	A
Approach Delay	34.9			26.1	35.6	
Approach LOS	C			C	D	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NWT and 6:SET, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 31.2
 Intersection LOS: C
 Intersection Capacity Utilization 82.8%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 26: FM 2920 & Mahaffey Rd/Medical Complex Dr



Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	471	24	30	520	159	22	327	7	112	214	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.965			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3514	0	1770	3415	0	1770	1857	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			30			1				104
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	169	384	20	24	424	130	24	355	8	122	233	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	404	0	24	554	0	24	363	0	122	233	104
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												4

Lanes, Volumes, Timings
 29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
 1/14/2009

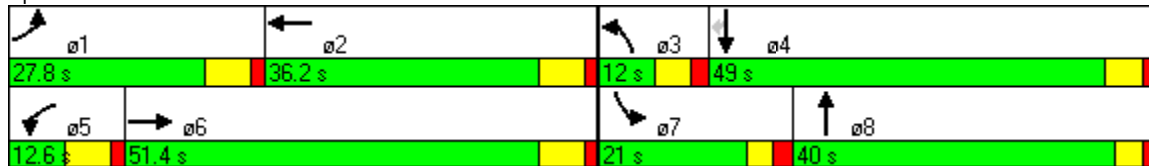


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5		11.0	10.0		10.0	11.0	11.0
Total Split (s)	27.8	51.4	0.0	12.6	36.2	0.0	12.0	40.0	0.0	21.0	49.0	49.0
Total Split (%)	22.2%	41.1%	0.0%	10.1%	29.0%	0.0%	9.6%	32.0%	0.0%	16.8%	39.2%	39.2%
Maximum Green (s)	21.3	44.9		6.1	29.7		6.0	35.0		16.0	43.0	43.0
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	4.0	6.0	5.0	4.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Act Effect Green (s)	15.6	46.1		5.7	31.2		6.0	35.1		16.0	43.1	43.1
Actuated g/C Ratio	0.13	0.38		0.05	0.26		0.05	0.29		0.13	0.36	0.36
v/c Ratio	0.74	0.30		0.29	0.61		0.27	0.67		0.52	0.35	0.16
Control Delay	69.8	27.5		66.4	41.3		65.2	45.9		58.7	31.4	5.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	69.8	27.5		66.4	41.3		65.2	45.9		58.7	31.4	5.9
LOS	E	C		E	D		E	D		E	C	A
Approach Delay		40.0			42.3			47.1			32.9	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	121
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	40.4
Intersection LOS:	D
Intersection Capacity Utilization:	72.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	940	18	0	1061	26	14	1	7	8	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.996			0.955			0.923	
Flt Protected	0.950							0.970			0.979	
Satd. Flow (prot)	1770	3529	0	1863	3525	0	0	1726	0	0	1683	0
Flt Permitted	0.950							0.855			0.909	
Satd. Flow (perm)	1770	3529	0	1863	3525	0	0	1521	0	0	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			3			8			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	16	766	15	0	865	21	15	1	8	9	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	781	0	0	886	0	0	24	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
1/14/2009

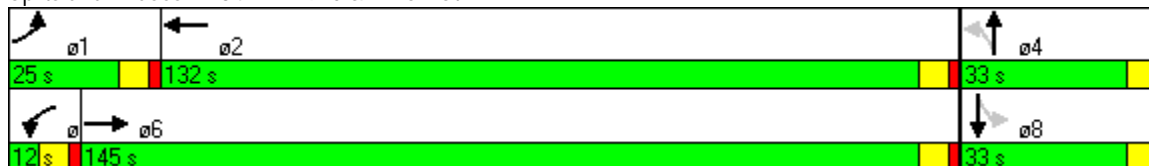


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	37.0		12.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	25.0	145.0	0.0	12.0	132.0	0.0	33.0	33.0	0.0	33.0	33.0	0.0
Total Split (%)	13.2%	76.3%	0.0%	6.3%	69.5%	0.0%	17.4%	17.4%	0.0%	17.4%	17.4%	0.0%
Maximum Green (s)	18.0	138.0		5.0	125.0		27.5	27.5		27.5	27.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		3.0	1.5		4.0	4.0		2.0	2.0	
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		8.0			8.0					13.0	13.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)	6.3	138.7			130.3			27.5			27.5	
Actuated g/C Ratio	0.04	0.78			0.73			0.15			0.15	
v/c Ratio	0.26	0.29			0.34			0.10			0.08	
Control Delay	93.6	6.0			9.7			49.6			38.7	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	93.6	6.0			9.7			49.6			38.7	
LOS	F	A			A			D			D	
Approach Delay		7.8			9.7			49.6			38.7	
Approach LOS		A			A			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	190
Actuated Cycle Length:	178.7
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.34
Intersection Signal Delay:	9.7
Intersection LOS:	A
Intersection Capacity Utilization:	39.6%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive

1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	13	881	41	19	890	35	86	258	57	46	123	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.994			0.981			0.979	
Flt Protected		0.999			0.999			0.989			0.989	
Satd. Flow (prot)	0	3514	0	0	3514	0	0	1807	0	0	1804	0
Flt Permitted		0.940			0.933			0.989			0.989	
Satd. Flow (perm)	0	3307	0	0	3282	0	0	1807	0	0	1804	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			11			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	11	718	33	15	726	29	93	280	62	50	134	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	762	0	0	770	0	0	435	0	0	218	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Split			Split		
Protected Phases		6			2		4	4		3	3	
Permitted Phases	6			2								
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
1/14/2009

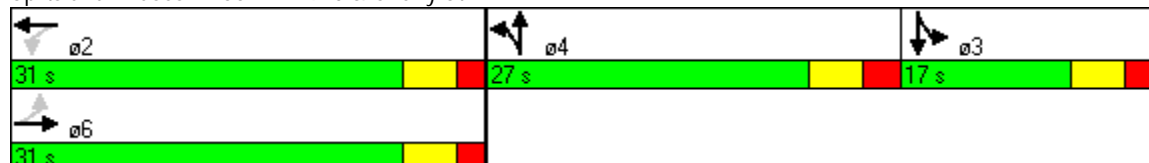


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	0.0	31.0	31.0	0.0	27.0	27.0	0.0	17.0	17.0	0.0
Total Split (%)	41.3%	41.3%	0.0%	41.3%	41.3%	0.0%	36.0%	36.0%	0.0%	22.7%	22.7%	0.0%
Maximum Green (s)	25.5	25.5		25.5	25.5		21.0	21.0		11.0	11.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effect Green (s)		25.5			25.5			21.0			11.0	
Actuated g/C Ratio		0.34			0.34			0.28			0.15	
v/c Ratio		0.67			0.69			0.85			0.80	
Control Delay		24.6			25.0			42.3			52.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		24.6			25.0			42.3			52.9	
LOS		C			C			D			D	
Approach Delay		24.6			25.0			42.3			52.9	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 31.1
 Intersection LOS: C
 Intersection Capacity Utilization 67.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	30	853	23	20	911	16	61	30	82	10	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.997			0.936			0.943	
Flt Protected		0.998			0.999			0.983			0.984	
Satd. Flow (prot)	0	3518	0	0	3525	0	0	1714	0	0	1728	0
Flt Permitted		0.921			0.937			0.870			0.851	
Satd. Flow (perm)	0	3247	0	0	3306	0	0	1517	0	0	1495	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			4			80			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	24	695	19	16	743	13	66	33	89	11	8	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	738	0	0	772	0	0	188	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
1/14/2009

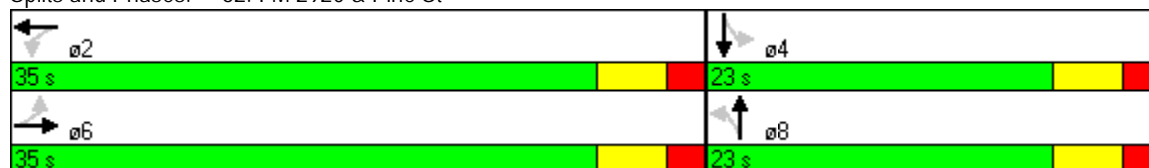


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	23.0	23.0	0.0	23.0	23.0	0.0
Total Split (%)	60.3%	60.3%	0.0%	60.3%	60.3%	0.0%	39.7%	39.7%	0.0%	39.7%	39.7%	0.0%
Maximum Green (s)	29.5	29.5		29.5	29.5		17.5	17.5		17.5	17.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		Max	Max		None	None		None	None	
Act Effect Green (s)		33.7			33.7			8.9			8.9	
Actuated g/C Ratio		0.67			0.67			0.18			0.18	
v/c Ratio		0.34			0.35			0.56			0.12	
Control Delay		5.6			5.7			17.9			13.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.6			5.7			17.9			13.1	
LOS		A			A			B			B	
Approach Delay		5.6			5.7			17.9			13.1	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	50
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	7.1
Intersection LOS:	A
Intersection Capacity Utilization:	57.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	845	2	0	1129	61	0	0	0	46	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3511	0	0	1863	0	1770	0	1583
Flt Permitted	0.262									0.950		
Satd. Flow (perm)	488	3539	0	0	3511	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7							68
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	48	689	2	0	920	50	0	0	0	50	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	691	0	0	970	0	0	0	0	50	0	68
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2		1		1
Detector Template	Left	Thru			Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100			100		20	100		20		20
Trailing Detector (ft)	0	0			0		0	0		0		0
Detector 1 Position(ft)	0	0			0		0	0		0		0
Detector 1 Size(ft)	20	6			6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm						Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6						3					4

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
1/14/2009

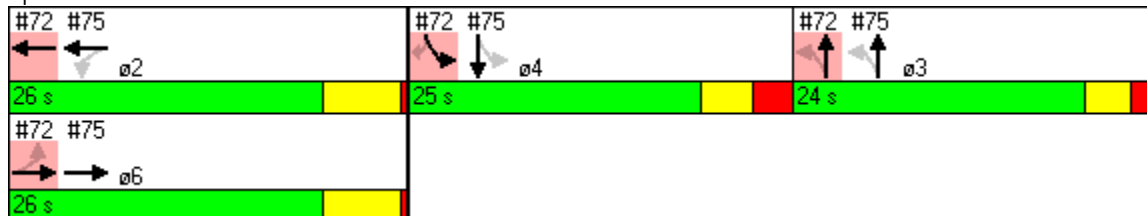


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6			2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0			22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5			27.5		26.0	26.0		27.0		27.0
Total Split (s)	26.0	26.0	0.0	0.0	26.0	0.0	24.0	24.0	0.0	25.0	0.0	25.0
Total Split (%)	34.7%	34.7%	0.0%	0.0%	34.7%	0.0%	32.0%	32.0%	0.0%	33.3%	0.0%	33.3%
Maximum Green (s)	20.5	20.5			20.5		19.0	19.0		19.0		19.0
Yellow Time (s)	5.0	5.0			5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5			0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	4.0	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0		2.0	2.0		2.0		2.0
Recall Mode	None	None			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	52.0	52.0			52.0					7.6		7.6
Actuated g/C Ratio	0.69	0.69			0.69					0.10		0.10
v/c Ratio	0.14	0.28			0.40					0.28		0.31
Control Delay	2.4	1.5			8.0					35.1		12.7
Queue Delay	0.6	0.1			0.0					0.0		0.0
Total Delay	3.0	1.6			8.0					35.1		12.7
LOS	A	A			A					D		B
Approach Delay		1.7			8.0							
Approach LOS		A			A							

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 6.4
 Intersection LOS: A
 Intersection Capacity Utilization 48.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 72: FM 2920 & Baker Drive



Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	839	2	29	1123	0	24	0	35	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t								0.920				0.865
Fl _t Protected				0.950				0.980				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1679	0	0	1611	0
Fl _t Permitted				0.380				0.867				
Satd. Flow (perm)	0	3539	0	708	3539	0	0	1486	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								38				466
Link Speed (mph)		30			30			30				30
Link Distance (ft)		464			112			489				304
Travel Time (s)		10.5			2.5			11.1				6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	684	2	24	915	0	26	0	38	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	686	0	24	915	0	0	64	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
1/14/2009

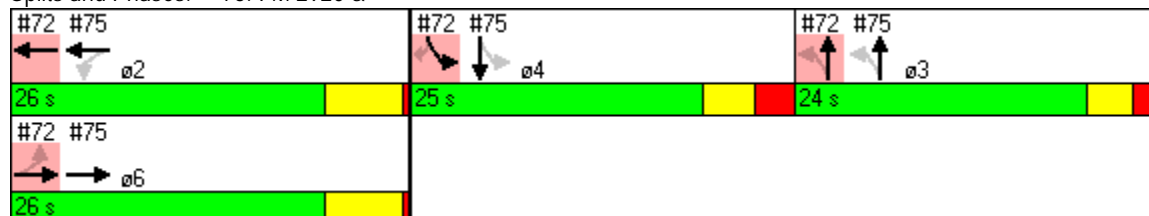


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		2	2		3	3		4	4	
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	26.0	0.0	26.0	26.0	0.0	24.0	24.0	0.0	25.0	25.0	0.0
Total Split (%)	0.0%	34.7%	0.0%	34.7%	34.7%	0.0%	32.0%	32.0%	0.0%	33.3%	33.3%	0.0%
Maximum Green (s)		20.5		20.5	20.5		19.0	19.0		19.0	19.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		52.0		52.0	52.0		7.5	7.5		7.6	7.6	
Actuated g/C Ratio		0.69		0.69	0.69		0.10	0.10		0.10	0.10	
v/c Ratio		0.28		0.05	0.37		0.35	0.35		0.00	0.00	
Control Delay		7.1		2.0	1.8		22.3	22.3		0.0	0.0	
Queue Delay		0.0		0.4	0.1		0.0	0.0		0.0	0.0	
Total Delay		7.1		2.4	1.9		22.3	22.3		0.0	0.0	
LOS		A		A	A		C	C		A	A	
Approach Delay		7.1		1.9	1.9		22.3	22.3		0.0	0.0	
Approach LOS		A		A	A		C	C		A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 4.8
 Intersection LOS: A
 Intersection Capacity Utilization 42.2%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	740	14	52	1021	41	45	98	106	41	43	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.994			0.943				0.850
Flt Protected	0.950			0.950				0.991			0.976	
Satd. Flow (prot)	1770	3529	0	1770	3518	0	0	1741	0	0	1818	1583
Flt Permitted	0.950			0.950				0.932			0.786	
Satd. Flow (perm)	1770	3529	0	1770	3518	0	0	1637	0	0	1464	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			7			65				73
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1277			464			632				378
Travel Time (s)		29.0			10.5			14.4				8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	20	603	11	42	832	33	49	107	115	45	47	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	614	0	42	865	0	0	271	0	0	92	73
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases							8			4		4

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.5	27.5		12.5	27.5		27.5	27.5		27.0	27.0	27.0
Total Split (s)	9.5	26.0	0.0	9.5	26.0	0.0	24.5	24.5	0.0	24.5	24.5	24.5
Total Split (%)	15.8%	43.3%	0.0%	15.8%	43.3%	0.0%	40.8%	40.8%	0.0%	40.8%	40.8%	40.8%
Maximum Green (s)	4.0	20.5		4.0	20.5		19.0	19.0		19.5	19.5	19.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	Max		Max	Max		Max	Max	Max
Walk Time (s)	0.0	5.0		0.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	0.0	17.0		0.0	17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effect Green (s)	4.0	22.1		4.0	23.9			22.1			22.6	22.6
Actuated g/C Ratio	0.07	0.38		0.07	0.41			0.38			0.38	0.38
v/c Ratio	0.17	0.46		0.35	0.60			0.41			0.16	0.11
Control Delay	31.2	16.0		36.1	16.3			13.4			14.3	4.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	31.2	16.0		36.1	16.3			13.4			14.3	4.8
LOS	C	B		D	B			B			B	A
Approach Delay		16.4			17.2			13.4			10.1	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	58.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	15.9
Intersection LOS:	B
Intersection Capacity Utilization:	62.4%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	782	0	4	1161	25	11	3	3	21	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.997			0.978			0.898	
Flt Protected	0.950			0.950				0.968			0.991	
Satd. Flow (prot)	1770	3539	0	1770	3529	0	0	1763	0	0	1658	0
Flt Permitted	0.950			0.950				0.788			0.930	
Satd. Flow (perm)	1770	3539	0	1770	3529	0	0	1436	0	0	1556	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			3			92	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	33	638	0	3	946	20	12	3	3	23	7	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	638	0	3	966	0	0	18	0	0	122	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			8			4	
Permitted Phases							8			4		
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0		7.0	7.0	

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

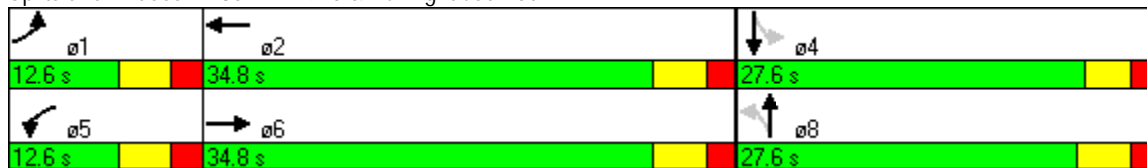


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.5	22.5		12.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	12.6	34.8	0.0	12.6	34.8	0.0	27.6	27.6	0.0	27.6	27.6	0.0
Total Split (%)	16.8%	46.4%	0.0%	16.8%	46.4%	0.0%	36.8%	36.8%	0.0%	36.8%	36.8%	0.0%
Maximum Green (s)	7.1	29.3		7.1	29.3		22.1	22.1		22.6	22.6	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	7.1	37.5		7.1	35.2			7.4			7.8	
Actuated g/C Ratio	0.13	0.69		0.13	0.65			0.14			0.14	
v/c Ratio	0.14	0.26		0.01	0.42			0.09			0.40	
Control Delay	24.7	5.7		23.7	8.3			21.8			13.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	24.7	5.7		23.7	8.3			21.8			13.5	
LOS	C	A		C	A			C			B	
Approach Delay		6.6			8.4			21.8			13.5	
Approach LOS		A			A			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 54.3
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 8.2
 Intersection LOS: A
 Intersection Capacity Utilization 40.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 85: FM 2920 & Buvinghausen St





Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	215		890			276
Travel Time (s)	4.9		20.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑			↑↑↑			↙↑↑				
Volume (vph)	196	809	0	0	803	33	294	149	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Flt					0.994			0.992				
Flt Protected	0.950							0.973				
Satd. Flow (prot)	1770	5085	0	0	6369	0	0	4908	0	0	0	0
Flt Permitted	0.950							0.973				
Satd. Flow (perm)	1770	5085	0	0	6369	0	0	4908	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			8				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1957				1199
Travel Time (s)		8.3			18.8			44.5				27.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	75%	100%	75%	100%	100%	100%
Adj. Flow (vph)	160	660	0	0	655	27	240	162	24	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	660	0	0	682	0	0	426	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
1/14/2009

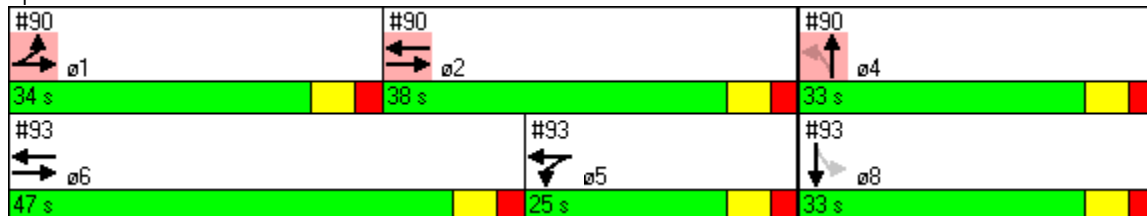


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	34.0	72.0	0.0	0.0	38.0	0.0	33.0	33.0	0.0	0.0	0.0	0.0
Total Split (%)	32.4%	68.6%	0.0%	0.0%	36.2%	0.0%	31.4%	31.4%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	27.5				31.5		26.0	26.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	1.0				1.0		1.0		1.0			
Recall Mode	None				C-Max		None		None			
Walk Time (s)					7.0		7.0		7.0			
Flash Dont Walk (s)					12.0		13.0		13.0			
Pedestrian Calls (#/hr)					0		0		0			
Act Effect Green (s)	13.0	79.1			59.6				12.4			
Actuated g/C Ratio	0.12	0.75			0.57				0.12			
v/c Ratio	0.73	0.17			0.19				1.11dl			
Control Delay	54.1	2.6			11.9				51.0			
Queue Delay	0.0	0.0			0.0				0.0			
Total Delay	54.1	2.6			11.9				51.0			
LOS	D	A			B				D			
Approach Delay		12.6			11.9				51.0			
Approach LOS		B			B				D			

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 20.9
 Intersection LOS: C
 Intersection Capacity Utilization 49.3%
 ICU Level of Service A
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	25.0	47.0	33.0
Total Split (%)	24%	45%	31%
Maximum Green (s)	18.5	40.5	26.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↑↑↑	
Volume (vph)	0	744	165	105	992	0	0	0	0	261	58	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.973									0.967	
Flt Protected				0.950							0.971	
Satd. Flow (prot)	0	6235	0	1770	5085	0	0	0	0	0	4775	0
Flt Permitted				0.950							0.971	
Satd. Flow (perm)	0	6235	0	1770	5085	0	0	0	0	0	4775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62									64	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		735			367			1962			1208	
Travel Time (s)		16.7			8.3			44.6			27.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	75%	75%	75%	75%	75%	75%	100%	100%	100%	75%	100%	75%
Adj. Flow (vph)	0	607	135	86	809	0	0	0	0	213	63	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	742	0	86	809	0	0	0	0	0	353	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6						8	
Permitted Phases										8		
Detector Phase		6		5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0

Lanes, Volumes, Timings
 93: FM 2920 & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009

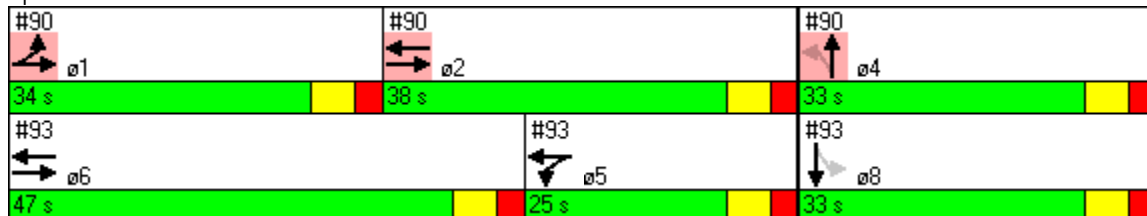


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	47.0	0.0	25.0	72.0	0.0	0.0	0.0	0.0	33.0	33.0	0.0
Total Split (%)	0.0%	44.8%	0.0%	23.8%	68.6%	0.0%	0.0%	0.0%	0.0%	31.4%	31.4%	0.0%
Maximum Green (s)		40.5		18.5						26.0	26.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0						1.0	1.0	
Recall Mode		C-Max		None						None	None	
Walk Time (s)		7.0								7.0	7.0	
Flash Dont Walk (s)		14.0								14.0	14.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effect Green (s)		54.1		18.5	79.1						12.4	
Actuated g/C Ratio		0.52		0.18	0.75						0.12	
v/c Ratio		0.23		0.28	0.21						0.57	
Control Delay		13.2		39.1	4.2						39.0	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		13.2		39.1	4.2						39.0	
LOS		B		D	A						D	
Approach Delay		13.2			7.6						39.0	
Approach LOS		B			A						D	

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	15.3
Intersection LOS:	B
Intersection Capacity Utilization	49.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	34.0	38.0	33.0
Total Split (%)	32%	36%	31%
Maximum Green (s)	27.5	31.5	26.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑	↗		↑↑↑				
Volume (vph)	80	322	0	0	1126	47	332	75	665	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Fr _t						0.850		0.907				
Fl _t Protected	0.950							0.985				
Satd. Flow (prot)	1770	3539	0	0	5085	1583	0	4543	0	0	0	0
Fl _t Permitted	0.950							0.985				
Satd. Flow (perm)	1770	3539	0	0	5085	1583	0	4543	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						51		429				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		393			1219			636				1957
Travel Time (s)		8.9			27.7			14.5				44.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	350	0	0	1224	51	361	82	723	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	350	0	0	1224	51	0	1166	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
Trailing Detector (ft)	0	0			0	0	0	0				
Detector 1 Position(ft)	0	0			0	0	0	0				
Detector 1 Size(ft)	20	6			6	20	20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot					Perm	Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases						2	4					
Detector Phase	1	1 2			2	2	4	4				

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0			20.0			5.0		5.0			
Minimum Split (s)	11.5			26.5			26.5		27.0			
Total Split (s)	16.5	62.0	0.0	0.0	45.5	45.5	28.0	28.0	0.0	0.0	0.0	0.0
Total Split (%)	18.3%	68.9%	0.0%	0.0%	50.6%	50.6%	31.1%	31.1%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	10.0			39.0			21.0		21.0			
Yellow Time (s)	4.0			4.0			4.0		4.0			
All-Red Time (s)	2.5			2.5			3.0		3.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	6.5	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead					Lag		Lag				
Lead-Lag Optimize?	Yes					Yes		Yes				
Vehicle Extension (s)	1.0					1.0		1.0		1.0		
Recall Mode	None					C-Min		C-Min		Min		
Walk Time (s)						7.0		7.0		7.0		
Flash Dont Walk (s)						12.0		12.0		13.0		
Pedestrian Calls (#/hr)						0		0		0		
Act Effct Green (s)	7.7	57.9				43.7	43.7		18.6			
Actuated g/C Ratio	0.09	0.64				0.49	0.49		0.21			
v/c Ratio	0.57	0.15				0.50	0.06		1.07dr			
Control Delay	85.4	0.8				17.3	4.8		33.2			
Queue Delay	0.0	0.0				0.0	0.0		0.1			
Total Delay	85.4	0.8				17.4	4.8		33.3			
LOS	F	A				B	A		C			
Approach Delay			17.6				16.8		33.3			
Approach LOS			B				B		C			

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 23.6 Intersection LOS: C
 Intersection Capacity Utilization 66.1% ICU Level of Service C
 Analysis Period (min) 15
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 96: Medical Complex Drive & SH 249 East Service Rd



Lane Group	ø5	ø6	ø8
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	34.0	28.0	28.0
Total Split (%)	38%	31%	31%
Maximum Green (s)	27.5	21.5	21.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↘	↑↑						↑↑↑	
Volume (vph)	0	480	106	478	477	0	0	0	0	27	6	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Frt			0.850								0.965	
Flt Protected				0.950							0.970	
Satd. Flow (prot)	0	5085	1583	1770	3539	0	0	0	0	0	4760	0
Flt Permitted				0.950							0.970	
Satd. Flow (perm)	0	5085	1583	1770	3539	0	0	0	0	0	4760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115								11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2815			393			714			1962	
Travel Time (s)		64.0			8.9			16.2			44.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	522	115	520	518	0	0	0	0	29	7	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	522	115	520	518	0	0	0	0	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1	1	2					1	2	
Detector Template		Thru	Right	Left	Thru					Left	Thru	
Leading Detector (ft)		100	20	20	100					20	100	
Trailing Detector (ft)		0	0	0	0					0	0	
Detector 1 Position(ft)		0	0	0	0					0	0	
Detector 1 Size(ft)		6	20	20	6					20	6	
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type			Perm	Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases			6							8		
Detector Phase		6	6	5	5 6					8	8	

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0						5.0	5.0	
Minimum Split (s)		27.5	27.5	11.5						28.0	28.0	
Total Split (s)	0.0	28.0	28.0	34.0	62.0	0.0	0.0	0.0	0.0	28.0	28.0	0.0
Total Split (%)	0.0%	31.1%	31.1%	37.8%	68.9%	0.0%	0.0%	0.0%	0.0%	31.1%	31.1%	0.0%
Maximum Green (s)		21.5	21.5	27.5						21.0	21.0	
Yellow Time (s)		4.0	4.0	4.0						4.0	4.0	
All-Red Time (s)		2.5	2.5	2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		1.0	1.0	1.0						1.0	1.0	
Recall Mode		C-Min	C-Min	None						None	None	
Walk Time (s)		7.0	7.0							7.0	7.0	
Flash Dont Walk (s)		14.0	14.0							14.0	14.0	
Pedestrian Calls (#/hr)		0	0							0	0	
Act Effect Green (s)		23.1	23.1	28.3	57.9							18.6
Actuated g/C Ratio		0.26	0.26	0.31	0.64							0.21
v/c Ratio		0.40	0.23	0.94	0.23							0.05
Control Delay		29.7	7.2	43.9	4.6							22.3
Queue Delay		0.0	0.0	0.2	0.0							0.0
Total Delay		29.7	7.2	44.1	4.6							22.3
LOS		C	A	D	A							C
Approach Delay		25.6			24.4							22.3
Approach LOS		C			C							C

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	24.8
Intersection LOS:	C
Intersection Capacity Utilization:	66.1%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 97: Medical Complex Drive & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	16.5	45.5	28.0
Total Split (%)	18%	51%	31%
Maximum Green (s)	10.0	39.0	21.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Recall Mode	None	C-Min	Min
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	1990				618				233		163	
Travel Time (s)	45.2				14.0				5.3		3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				12				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane	Yes				Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9		15		9		15		9	
Sign Control	Free				Free				Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
114: Medical Complex Dr &



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	906			5205	1406	
Travel Time (s)	20.6			118.3	32.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type						
Protected Phases	4!			2	8!	
Permitted Phases						
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0		16.0	16.0	16.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
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Approach Delay

Approach LOS

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 40

Offset: 0 (0%), Referenced to phase 2:NETL and 6:, Start of Green

Natural Cycle: 40

Control Type: Pretimed

Maximum v/c Ratio: 0.00

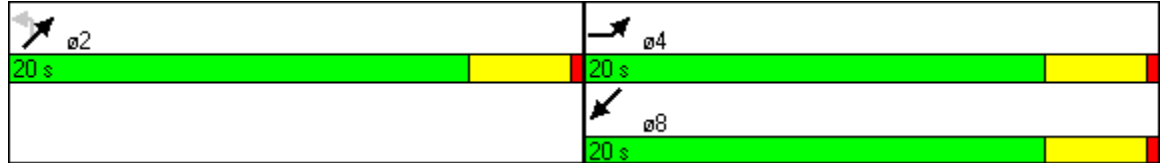
Intersection Signal Delay: 0.0 Intersection LOS: A

Intersection Capacity Utilization 0.0% ICU Level of Service A

Analysis Period (min) 15

! Phase conflict between lane groups.

Splits and Phases: 114: Medical Complex Dr &



Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3855			2112			1114			1168	
Travel Time (s)		87.6			48.0			25.3			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												

Lanes, Volumes, Timings
 116: Medical Complex Dr &

Medical Complex Drive
 1/14/2009

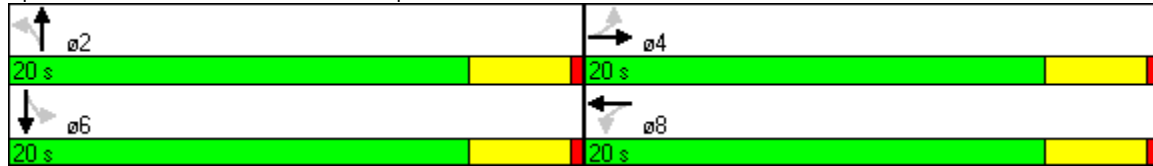


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay												
Approach LOS												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min)	15

Splits and Phases: 116: Medical Complex Dr &



Lanes, Volumes, Timings
117: Medical Complex Dr & Hufsmith Khorville Rd

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	412	19	27	393	118	7	107	3	47	92	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.993			0.965			0.996			0.953	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1855	0	1770	1775	0
Fl _t Permitted	0.426			0.483			0.665			0.681		
Satd. Flow (perm)	794	3514	0	900	3415	0	1239	1855	0	1269	1775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			117			3			45	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2112			5205			1065			775	
Travel Time (s)		48.0			118.3			24.2			17.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	448	21	29	427	128	8	116	3	51	100	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	469	0	29	555	0	8	119	0	51	145	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.63	0.33		0.08	0.39		0.02	0.16		0.10	0.20	
Control Delay	22.3	8.9		8.2	7.6		7.4	8.3		8.2	6.6	

Lanes, Volumes, Timings
 117: Medical Complex Dr & Hufsmith Khorville Rd

Medical Complex Drive
 1/14/2009

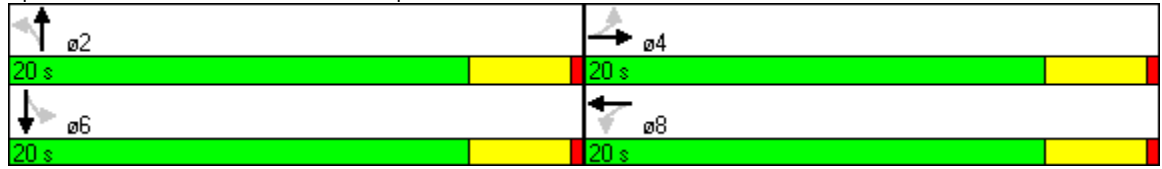


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.3	8.9		8.2	7.6		7.4	8.3		8.2	6.6	
LOS	C	A		A	A		A	A		A	A	
Approach Delay		12.9			7.6			8.2			7.0	
Approach LOS		B			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	9.8
Intersection LOS:	A
Intersection Capacity Utilization	44.1%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 117: Medical Complex Dr & Hufsmith Khorville Rd



Lanes, Volumes, Timings
 122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
 1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	517	29	25	580	39	64	188	41	62	168	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.991			0.973				0.970
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3507	0	1770	1812	0	1770	1807	0
Flt Permitted	0.350			0.400			0.616			0.605		
Satd. Flow (perm)	652	3511	0	745	3507	0	1147	1812	0	1127	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			20			33				37
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2634			3855			1711				2332
Travel Time (s)		59.9			87.6			38.9				53.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	562	32	27	630	42	70	204	45	67	183	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	594	0	27	672	0	70	249	0	67	228	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.12	0.42		0.09	0.47		0.15	0.33		0.15	0.31	
Control Delay	9.1	9.5		8.5	10.0		8.8	8.7		8.8	8.2	

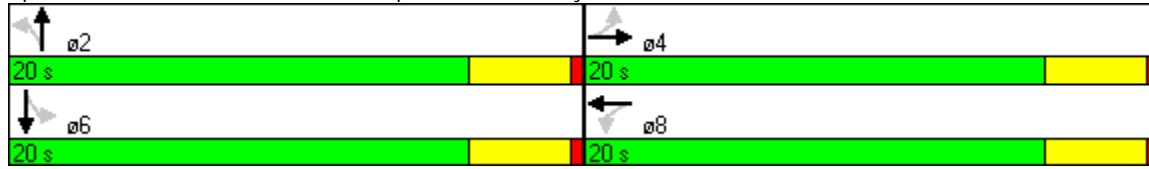


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.1	9.5		8.5	10.0		8.8	8.7		8.8	8.2	
LOS	A	A		A	A		A	A		A	A	
Approach Delay		9.5			9.9			8.7			8.3	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	9.4
Intersection LOS:	A
Intersection Capacity Utilization	49.8%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 122: Medical Complex Dr & S. Cherry Rd



Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1181			2634			643			613	
Travel Time (s)		26.8			59.9			14.6			13.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												

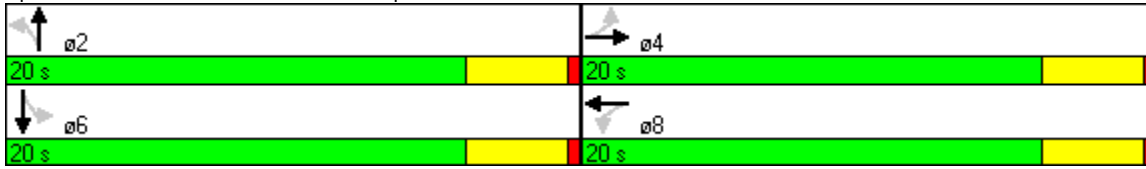
Lanes, Volumes, Timings
 131: Medical Complex Dr &

Medical Complex Drive
 1/14/2009























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Intersection Summary												
Area Type:	Other											
Cycle Length:	40											
Actuated Cycle Length:	40											
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle:	40											
Control Type:	Pretimed											
Maximum v/c Ratio:	0.00											
Intersection Signal Delay:	0.0						Intersection LOS: A					
Intersection Capacity Utilization	0.0%						ICU Level of Service A					
Analysis Period (min)	15											

Splits and Phases: 131: Medical Complex Dr &



Lanes, Volumes, Timings
132: Int

Medical Complex Drive
1/14/2009

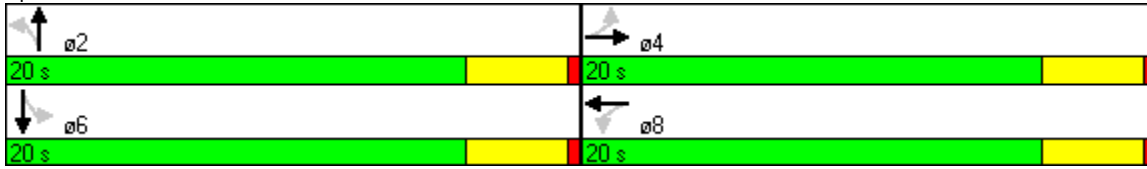
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1181			411			528	
Travel Time (s)		22.7			26.8			9.3			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												

Lanes, Volumes, Timings
132: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Intersection Summary												
Area Type:	Other											
Cycle Length:	40											
Actuated Cycle Length:	40											
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle:	40											
Control Type:	Pretimed											
Maximum v/c Ratio:	0.00											
Intersection Signal Delay:	0.0						Intersection LOS: A					
Intersection Capacity Utilization	0.0%						ICU Level of Service A					
Analysis Period (min)	15											

Splits and Phases: 132: Int



Lanes, Volumes, Timings
133: Int

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1696			1000			95			284	
Travel Time (s)		38.5			22.7			2.2			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												

Lanes, Volumes, Timings
133: Int

Medical Complex Drive
1/14/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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Approach Delay

Approach LOS

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 40

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Pretimed

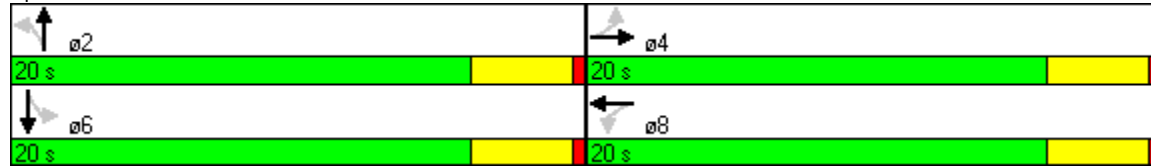
Maximum v/c Ratio: 0.00

Intersection Signal Delay: 0.0 Intersection LOS: A











Intersection Capacity Utilization 0.0% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 133: Int



Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

						
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	1863	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	1863	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	313		692			2340
Travel Time (s)	7.1		15.7			53.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		24			24
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type					Perm	
Protected Phases	2					8
Permitted Phases			4		8	
Minimum Split (s)	20.0		20.0		20.0	20.0
Total Split (s)	20.0	0.0	20.0	0.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)	16.0		16.0		16.0	16.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	0.5		0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0		5.0		5.0	5.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						



Lane Group	NBL	NBR	SET	SER	NWL	NWT
------------	-----	-----	-----	-----	-----	-----

Approach Delay

Approach LOS

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 40

Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green

Natural Cycle: 40

Control Type: Pretimed

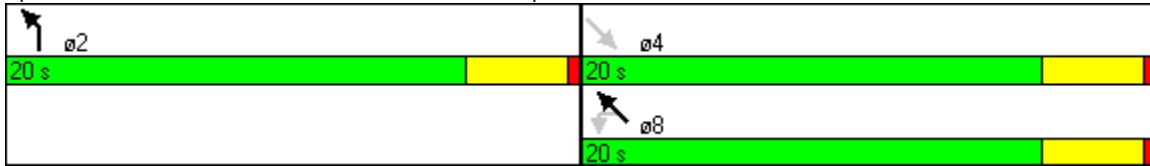
Maximum v/c Ratio: 0.00

Intersection Signal Delay: 0.0 Intersection LOS: A

Intersection Capacity Utilization 0.0% ICU Level of Service A

Analysis Period (min) 15



















Splits and Phases: 134: Triechel Rd & Medical Complex Dr



**2035 RECOMMENDED CONDITION
ANALYSIS
[AM PEAK HOUR]**

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1267	51	8	765	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994						0.941				
Flt Protected				0.950				0.973				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1706	0	0	1863	0
Flt Permitted				0.950				0.825				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1446	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10						27				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	2603	105	16	1572	0	35	0	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2708	0	16	1572	0	0	62	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	88.0	0.0	11.0	88.0	0.0	11.0	11.0	0.0	11.0	11.0	0.0
Total Split (%)	10.0%	80.0%	0.0%	10.0%	80.0%	0.0%	10.0%	10.0%	0.0%	10.0%	10.0%	0.0%
Maximum Green (s)	5.0	82.0		5.0	82.0		5.5	5.5		5.5	5.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009

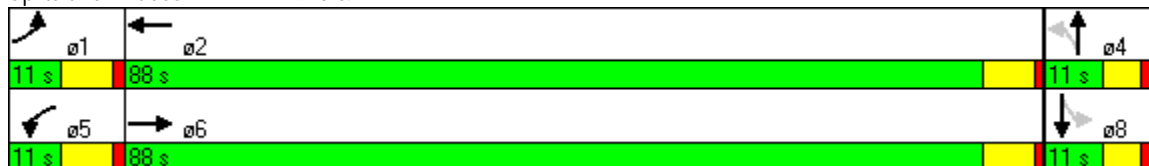


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		86.4		5.0	90.6			5.4				
Actuated g/C Ratio		0.83		0.05	0.87			0.05				
v/c Ratio		0.93		0.19	0.51			0.61				
Control Delay		17.3		54.8	2.8			57.9				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		17.3		54.8	2.8			57.9				
LOS		B		D	A			E				
Approach Delay		17.3			3.3			57.9				
Approach LOS		B			A			E				
Queue Length 50th (ft)		473		10	114			22				
Queue Length 95th (ft)		#1216		35	140			#89				
Internal Link Dist (ft)		2210			2010			1901			120	
Turn Bay Length (ft)				200								
Base Capacity (vph)		2920		85	3077			102				
Starvation Cap Reductn		0		0	0			0				
Spillback Cap Reductn		0		0	0			0				
Storage Cap Reductn		0		0	0			0				
Reduced v/c Ratio		0.93		0.19	0.51			0.61				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 104.2
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 12.8 Intersection LOS: B
 Intersection Capacity Utilization 83.0% ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	365	32	55	481	11	14	5	36	88	18	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.988			0.997			0.869				0.989
Flt Protected	0.950			0.950			0.950			0.950	0.971	
Satd. Flow (prot)	1770	3497	0	1770	3529	0	1770	1619	0	1681	1699	0
Flt Permitted	0.250			0.253			0.677			0.700	0.818	
Satd. Flow (perm)	466	3497	0	471	3529	0	1261	1619	0	1239	1432	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			7			77				9
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2340			2815			624				1981
Travel Time (s)		53.2			64.0			14.2				45.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	17	778	68	117	1025	23	30	11	77	187	38	9
Shared Lane Traffic (%)										38%		
Lane Group Flow (vph)	17	846	0	117	1048	0	30	88	0	116	118	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009

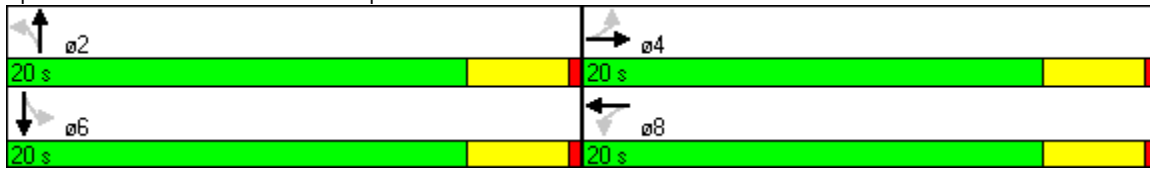


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.09	0.60		0.62	0.74		0.06	0.13		0.23	0.20	
Control Delay	9.1	11.3		30.3	14.3		7.9	3.6		9.5	8.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.1	11.3		30.3	14.3		7.9	3.6		9.5	8.5	
LOS	A	B		C	B		A	A		A	A	
Approach Delay		11.3			15.9			4.7				9.0
Approach LOS		B			B			A				A
Queue Length 50th (ft)	2	70		20	97		4	1		16	15	
Queue Length 95th (ft)	11	112		#82	151		14	18		42	40	
Internal Link Dist (ft)		2260			2735			544				1901
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	186	1415		188	1416		504	694		496	578	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.60		0.62	0.74		0.06	0.13		0.23	0.20	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 13.0 Intersection LOS: B
 Intersection Capacity Utilization 52.7% ICU Level of Service A
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Medical Complex Dr & Calvert Rd



Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	1296	16	21	643	88	2	4	4	75	6	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.998				0.850		0.938			0.949	
Flt Protected	0.950			0.950				0.991		0.950	0.974	
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	0	3290	0	1681	1636	0
Flt Permitted	0.950			0.950				0.901		0.746	0.822	
Satd. Flow (perm)	1770	3532	0	1770	3539	1583	0	2991	0	1320	1380	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				181		7			20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2090			735			216			806	
Travel Time (s)		47.5			16.7			4.9			18.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	51	2662	33	43	1321	181	3	7	7	126	10	27
Shared Lane Traffic (%)										34%		
Lane Group Flow (vph)	51	2695	0	43	1321	181	0	17	0	83	80	0
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8				4
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	31.0		11.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	13.0	75.0	0.0	11.0	73.0	73.0	14.0	14.0	0.0	14.0	14.0	0.0
Total Split (%)	13.0%	75.0%	0.0%	11.0%	73.0%	73.0%	14.0%	14.0%	0.0%	14.0%	14.0%	0.0%
Maximum Green (s)	7.0	69.0		5.0	67.0	67.0	8.5	8.5		8.5	8.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Max		None	None	None	Max	Max		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	6.4	69.2		5.0	68.1	68.1		8.5		8.5	8.5	
Actuated g/C Ratio	0.07	0.72		0.05	0.71	0.71		0.09		0.09	0.09	
v/c Ratio	0.43	1.05		0.46	0.52	0.15		0.06		0.70	0.56	
Control Delay	56.0	49.9		62.2	8.0	1.2		32.5		75.7	50.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	56.0	49.9		62.2	8.0	1.2		32.5		75.7	50.3	
LOS	E	D		E	A	A		C		E	D	
Approach Delay		50.0			8.8			32.5			63.2	
Approach LOS		D			A			C			E	
Queue Length 50th (ft)	32	~1039		27	207	0		3		55	38	
Queue Length 95th (ft)	70	#1176		#70	260	20		14		#140	#104	
Internal Link Dist (ft)		2010			655			136			726	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	130	2558		93	2520	1179		273		118	142	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.39	1.05		0.46	0.52	0.15		0.06		0.70	0.56	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 95.6
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 36.2
 Intersection LOS: D
 Intersection Capacity Utilization 89.1%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
2/26/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	23	94	39	211	82	32	98	1182	361	80	709	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	150		0	150		0	150		150	150		0
Storage Lanes	1		0	2		0	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.91	0.91	0.97	0.95	0.95
Ped Bike Factor												
Frt		0.956			0.958			0.996	0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3383	0	3433	3391	0	3433	3377	1441	3433	3529	0
Flt Permitted	0.501			0.516			0.125			0.046		
Satd. Flow (perm)	933	3383	0	1865	3391	0	452	3377	1441	166	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			9			6	237			5
Link Speed (mph)		30			30			30				30
Link Distance (ft)		764			692			1353				532
Travel Time (s)		17.4			15.7			30.8				12.1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	49	200	83	450	175	68	209	2518	769	170	1510	36
Shared Lane Traffic (%)									10%			
Lane Group Flow (vph)	49	283	0	450	243	0	209	2595	692	170	1546	0
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		4.0	4.0		15.0	15.0	15.0	15.0	15.0	
Minimum Split (s)	22.5	22.5		20.0	20.0		30.5	30.5	30.5	30.5	30.5	
Total Split (s)	27.0	27.0	0.0	27.0	27.0	0.0	93.0	93.0	93.0	93.0	93.0	0.0
Total Split (%)	22.5%	22.5%	0.0%	22.5%	22.5%	0.0%	77.5%	77.5%	77.5%	77.5%	77.5%	0.0%
Maximum Green (s)	20.5	20.5		23.0	23.0		86.5	86.5	86.5	86.5	86.5	
Yellow Time (s)	5.0	5.0		3.5	3.5		5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	1.5	1.5		0.5	0.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	6.5	6.5	6.5	4.0

Lanes, Volumes, Timings
11: Park Rd/Medical Complex Dr & FM 2920







Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		3.0	3.0		1.5	1.5	1.5	1.5	1.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)				5.0	5.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				11.0	11.0		17.0	17.0	17.0	17.0	17.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effect Green (s)	20.5	20.5		23.0	23.0		86.5	86.5	86.5	86.5	86.5	
Actuated g/C Ratio	0.17	0.17		0.19	0.19		0.72	0.72	0.72	0.72	0.72	
v/c Ratio	0.31	0.46		1.26	0.37		0.64	1.07	0.63	1.42	0.61	
Control Delay	49.7	40.0		178.3	42.5		19.9	56.9	8.0	251.1	9.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	49.7	40.0		178.3	42.5		19.9	56.9	8.0	251.1	9.5	
LOS	D	D		F	D		B	E	A	F	A	
Approach Delay		41.4			130.7			45.0				33.5
Approach LOS		D			F			D				C
Queue Length 50th (ft)	34	87		~225	83		38	~1220	162	~43	275	
Queue Length 95th (ft)	74	132		#330	124		92	#1359	273	#117	332	
Internal Link Dist (ft)		684			612			1273				452
Turn Bay Length (ft)	150			150			150		150	150		
Base Capacity (vph)	159	616		357	657		326	2436	1105	120	2545	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.31	0.46		1.26	0.37		0.64	1.07	0.63	1.42	0.61	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.42
 Intersection Signal Delay: 51.2 Intersection LOS: D
 Intersection Capacity Utilization 120.7% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 11: Park Rd/Medical Complex Dr & FM 2920

 ø2	 ø4
93 s	27 s
 ø6	 ø8
93 s	27 s

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↔
Volume (vph)	81	796	397	199	471	105	78	214	228	22	85	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	5085	1583	3433	4826	0
Flt Permitted	0.950			0.950			0.637			0.531		
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	2302	5085	1583	1919	4826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			240			198			307		59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	124%	124%	124%	124%	124%	124%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	166	1635	816	409	968	216	105	288	307	30	115	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1635	816	409	968	216	105	288	307	30	174	0
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Split		Perm	Split		Perm	Perm		Perm	Perm		
Protected Phases	3	3		4	4			2				6
Permitted Phases			3			4	2		2	6		
Detector Phase	3	3	3	4	4	4	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5	39.5	36.0	36.0	36.0	40.0	40.0	
Total Split (s)	70.0	70.0	70.0	56.0	56.0	56.0	24.0	24.0	24.0	24.0	24.0	0.0
Total Split (%)	46.7%	46.7%	46.7%	37.3%	37.3%	37.3%	16.0%	16.0%	16.0%	16.0%	16.0%	0.0%
Maximum Green (s)	64.5	64.5	64.5	50.5	50.5	50.5	17.0	17.0	17.0	17.0	17.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	7.0	7.0	7.0	7.0	7.0	4.0

Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009

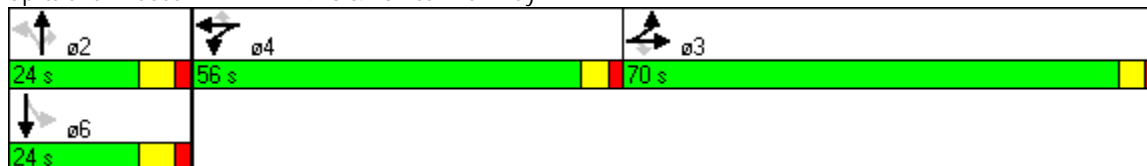


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0	27.0	22.0	22.0	22.0	26.0	26.0	26.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effect Green (s)	80.1	80.1	80.1	33.7	33.7	33.7	18.2	18.2	18.2	18.2	18.2	18.2
Actuated g/C Ratio	0.53	0.53	0.53	0.22	0.22	0.22	0.12	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.09	0.87	0.85	0.53	0.85	0.42	0.38	0.47	0.66	0.13	0.27	0.27
Control Delay	17.9	36.7	31.1	52.4	62.1	11.9	65.7	64.6	13.8	61.4	41.0	41.0
Queue Delay	0.0	8.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	45.2	33.4	52.4	62.1	11.9	65.7	64.6	13.8	61.4	41.0	41.0
LOS	B	D	C	D	E	B	E	E	B	E	D	D
Approach Delay		39.8			52.8			42.5				44.0
Approach LOS		D			D			D				D
Queue Length 50th (ft)	39	703	502	191	348	23	50	98	0	13	37	37
Queue Length 95th (ft)	64	890	#861	m222	392	m64	82	133	97	31	64	64
Internal Link Dist (ft)		747			810			1879				1881
Turn Bay Length (ft)	200		200	200		200	200		200	200		
Base Capacity (vph)	1834	1890	957	1156	1712	664	279	615	462	232	636	636
Starvation Cap Reductn	0	241	61	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.99	0.91	0.35	0.57	0.33	0.38	0.47	0.66	0.13	0.27	0.27

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 44.4 Intersection LOS: D
 Intersection Capacity Utilization 89.8% ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: FM 2920 & Tomball Parkway



Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	875	431	271	635	135	156	560	295	134	630	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		150	150		150	200		200	200		200
Storage Lanes	1		1	2		1	2		1	2		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.127			0.118			0.269			0.316		
Satd. Flow (perm)	237	3539	1583	426	3539	1583	972	5085	1583	1142	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134			172			191			227
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1219			1696			633			1959	
Travel Time (s)		27.7			38.5			14.4			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	140%	140%	140%	140%	140%	140%	110%	110%	110%	110%	110%	110%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	126	1332	656	412	966	205	187	670	353	160	753	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1332	656	412	966	205	187	670	353	160	753	227
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	5.0	5.0	4.0	4.0	4.0	4.0	25.0	25.0	4.0	25.0	25.0
Minimum Split (s)	8.0	11.5	11.5	8.0	20.0	20.0	8.0	31.5	31.5	8.0	31.5	31.5
Total Split (s)	13.0	47.0	47.0	11.0	45.0	45.0	8.0	34.0	34.0	8.0	34.0	34.0
Total Split (%)	13.0%	47.0%	47.0%	11.0%	45.0%	45.0%	8.0%	34.0%	34.0%	8.0%	34.0%	34.0%
Maximum Green (s)	9.0	40.5	40.5	7.0	41.0	41.0	4.0	27.5	27.5	4.0	27.5	27.5
Yellow Time (s)	3.5	4.0	4.0	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	0.5	2.5	2.5	0.5	0.5	0.5	0.5	1.5	1.5	0.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	4.0	6.5	6.5

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009

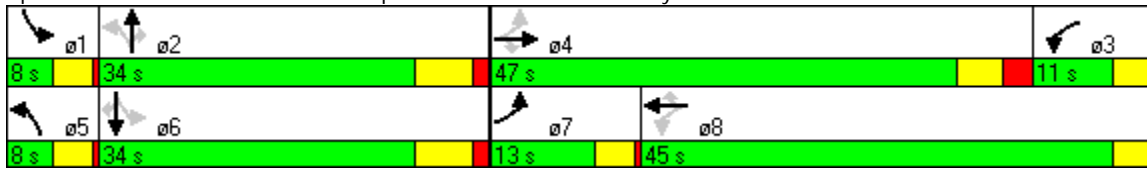


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	2.0	2.0	3.0	3.0	3.0	3.0	1.8	1.8	3.0	1.8	1.8
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)					5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)					11.0	11.0		20.0	20.0		7.0	7.0
Pedestrian Calls (#/hr)					0	0		0	0		0	0
Act Effect Green (s)	42.5	40.0	40.0	41.5	41.5	41.5	34.0	27.5	27.5	34.0	27.5	27.5
Actuated g/C Ratio	0.42	0.40	0.40	0.42	0.42	0.42	0.34	0.28	0.28	0.34	0.28	0.28
v/c Ratio	0.55	0.94	0.92	1.02	0.66	0.27	0.44	0.48	0.61	0.33	0.54	0.38
Control Delay	26.9	42.9	42.4	91.3	26.3	5.6	24.4	31.7	19.3	22.6	32.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	42.9	42.4	91.3	26.3	5.6	24.4	31.7	19.3	22.6	32.6	5.9
LOS	C	D	D	F	C	A	C	C	B	C	C	A
Approach Delay		41.8			40.5			26.9			25.8	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	48	417	322	-98	257	12	39	130	86	33	149	0
Queue Length 95th (ft)	86	#566	#558	#196	328	56	63	168	184	55	190	55
Internal Link Dist (ft)		1139			1616			553			1879	
Turn Bay Length (ft)	150		150	150		150	200		200	200		200
Base Capacity (vph)	239	1433	721	402	1470	759	429	1398	574	480	1398	600
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.93	0.91	1.02	0.66	0.27	0.44	0.48	0.61	0.33	0.54	0.38

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 35.5
 Intersection LOS: D
 Intersection Capacity Utilization 87.9%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway



Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	872	10	5	729	26	10	17	5	57	42	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.995			0.967			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3522	0	1770	1801	0	1770	1680	0
Flt Permitted	0.080			0.080			0.547			0.734		
Satd. Flow (perm)	149	3532	0	149	3522	0	1019	1801	0	1367	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			6			2			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		698			1277			499			262	
Travel Time (s)		15.9			29.0			11.3			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	95	2019	23	12	1688	60	17	28	8	95	70	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	2042	0	12	1748	0	17	36	0	95	202	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.5	25.5		30.5	30.5		36.0	36.0		36.0	36.0	
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	37.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	50.7%	50.7%	0.0%	50.7%	50.7%	0.0%	49.3%	49.3%	0.0%	49.3%	49.3%	0.0%
Maximum Green (s)	32.5	32.5		32.5	32.5		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009

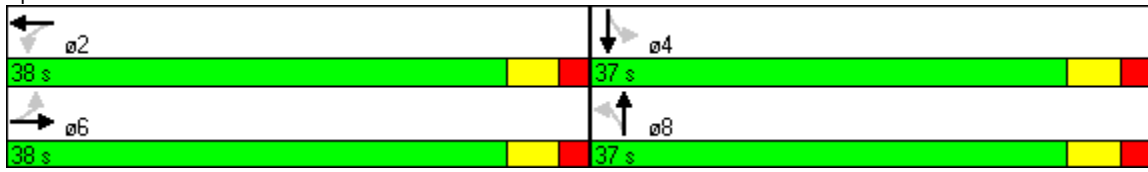


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0		20.0	20.0		25.0	25.0		25.0	25.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	50.1	50.1		50.1	50.1		13.4	13.4		13.4	13.4	
Actuated g/C Ratio	0.67	0.67		0.67	0.67		0.18	0.18		0.18	0.18	
v/c Ratio	0.95	0.87		0.12	0.74		0.09	0.11		0.39	0.66	
Control Delay	75.7	15.3		9.7	11.8		24.3	23.3		30.4	38.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	75.7	15.3		9.7	11.8		24.3	23.3		30.4	38.0	
LOS	E	B		A	B		C	C		C	D	
Approach Delay		18.0			11.7			23.6			35.5	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)	51	366		2	239		7	13		40	86	
Queue Length 95th (ft)	m#135	#438		11	418		21	34		74	139	
Internal Link Dist (ft)		618			1197			419			182	
Turn Bay Length (ft)	150			150			100			100		
Base Capacity (vph)	100	2360		100	2355		421	746		565	697	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.95	0.87		0.12	0.74		0.04	0.05		0.17	0.29	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 53 (71%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 16.7 Intersection LOS: B
 Intersection Capacity Utilization 91.5% ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

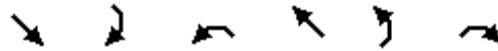
Medical Complex Drive
2/26/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑	↑	↔	↑↑	↔	↑
Volume (vph)	576	246	433	1010	238	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		150	150		0	0
Storage Lanes		1	2		2	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted			0.115		0.950	
Satd. Flow (perm)	3539	1583	416	3539	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		454				405
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1406	
Travel Time (s)	35.3			19.7	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1227	524	922	2152	507	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1227	524	922	2152	507	454
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Turn Type		Perm	pm+pt			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6	2			4
Detector Phase	6	6	5	2	4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	34.0	34.0	21.0	55.0	20.0	20.0
Total Split (%)	45.3%	45.3%	28.0%	73.3%	26.7%	26.7%
Maximum Green (s)	30.0	30.0	17.0	51.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd

Medical Complex Drive
2/26/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)	30.7	30.7	52.0	52.0	15.0	15.0
Actuated g/C Ratio	0.41	0.41	0.69	0.69	0.20	0.20
v/c Ratio	0.85	0.57	0.94	0.88	0.74	0.71
Control Delay	27.4	5.7	37.3	15.1	35.1	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	5.7	37.3	15.1	35.1	11.5
LOS	C	A	D	B	D	B
Approach Delay	20.9			21.8	24.0	
Approach LOS	C			C	C	
Queue Length 50th (ft)	267	20	165	361	112	19
Queue Length 95th (ft)	#392	90	#286	#505	163	108
Internal Link Dist (ft)	1475			786	1326	
Turn Bay Length (ft)		150	150			
Base Capacity (vph)	1450	917	982	2452	732	656
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.57	0.94	0.88	0.69	0.69

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 21.9 Intersection LOS: C
 Intersection Capacity Utilization 78.7% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 26: FM 2920 & Mahaffey Rd



Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	526	17	43	772	115	66	296	12	205	365	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		200	200		0	200		200
Storage Lanes	2		0	1		1	1		0	2		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.995				0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3522	0	1770	3539	1583	1770	1852	0	3433	1863	1583
Flt Permitted	0.078			0.083			0.164			0.154		
Satd. Flow (perm)	282	3522	0	155	3539	1583	305	1852	0	557	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				129		1				156
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	124%	124%	124%	124%	124%	124%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	306	1081	35	88	1586	236	89	399	16	276	492	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	306	1116	0	88	1586	236	89	415	0	276	492	253
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		4
Detector Phase	1	6		5	2	2	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5	26.5	11.0	10.0		10.0	11.0	11.0
Total Split (s)	14.4	63.6	0.0	16.4	65.6	65.6	11.0	38.0	0.0	12.0	39.0	39.0
Total Split (%)	11.1%	48.9%	0.0%	12.6%	50.5%	50.5%	8.5%	29.2%	0.0%	9.2%	30.0%	30.0%
Maximum Green (s)	7.9	57.1		9.9	59.1	59.1	5.0	33.0		7.0	33.0	33.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	6.5	6.0	5.0	4.0	5.0	6.0	6.0

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009

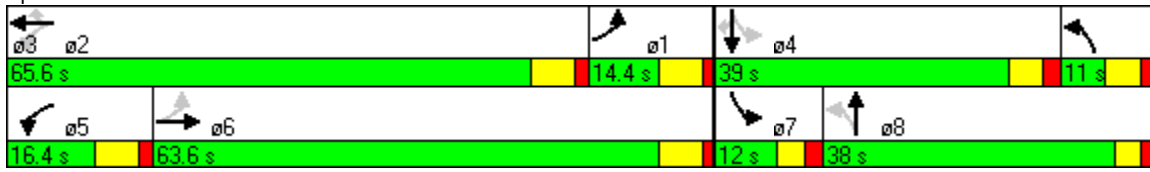


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Max		None	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	59.0	59.0		59.1	59.1	59.1	32.0	33.0		34.0	33.0	33.0
Actuated g/C Ratio	0.45	0.45		0.45	0.45	0.45	0.25	0.25		0.26	0.25	0.25
v/c Ratio	0.96	0.70		0.52	0.99	0.30	0.68	0.88		0.92	1.04	0.49
Control Delay	90.6	31.4		31.5	54.5	10.8	76.7	67.5		75.6	99.2	19.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	90.6	31.4		31.5	54.5	10.8	76.7	67.5		75.6	99.2	19.1
LOS	F	C		C	D	B	E	E		E	F	B
Approach Delay		44.2			48.0			69.1			73.0	
Approach LOS		D			D			E			E	
Queue Length 50th (ft)	82	388		42	681	52	60	337		96	~447	65
Queue Length 95th (ft)	#180	481		75	#860	109	#129	#520		#152	#665	151
Internal Link Dist (ft)		1890			1910			746			1781	
Turn Bay Length (ft)	200			200		200	200			200		200
Base Capacity (vph)	320	1601		193	1609	790	131	471		301	473	518
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.96	0.70		0.46	0.99	0.30	0.68	0.88		0.92	1.04	0.49

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 54.3 Intersection LOS: D
 Intersection Capacity Utilization 97.6% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	916	99	82	855	3	48	2	47	16	27	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.999			0.934			0.973	
Flt Protected	0.950			0.950				0.976			0.985	
Satd. Flow (prot)	1770	3486	0	1770	3536	0	0	1698	0	0	1785	0
Flt Permitted	0.094			0.094				0.804			0.884	
Satd. Flow (perm)	175	3486	0	175	3536	0	0	1399	0	0	1602	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			1			11			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	8	1882	203	168	1756	6	80	3	79	27	45	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	2085	0	168	1762	0	0	162	0	0	90	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	37.0	37.0		37.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	49.5	49.5	0.0	49.5	49.5	0.0	25.5	25.5	0.0	25.5	25.5	0.0
Total Split (%)	66.0%	66.0%	0.0%	66.0%	66.0%	0.0%	34.0%	34.0%	0.0%	34.0%	34.0%	0.0%
Maximum Green (s)	42.5	42.5		42.5	42.5		20.0	20.0		20.0	20.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009

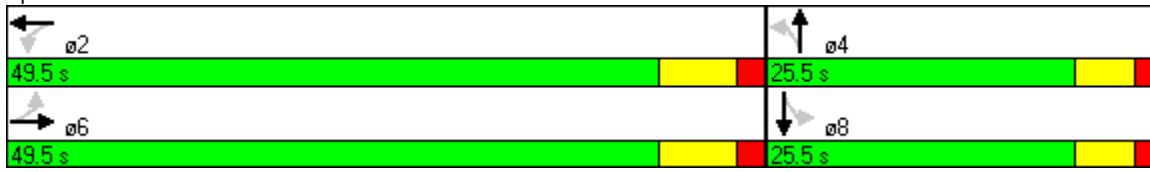


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		4.0	4.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0					7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0					13.0	13.0	
Pedestrian Calls (#/hr)	0	0		0	0					0	0	
Act Effect Green (s)	42.5	42.5		42.5	42.5			20.0			20.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.27			0.27	
v/c Ratio	0.08	1.05		1.70	0.88			0.43			0.21	
Control Delay	9.9	53.0		374.3	20.8			25.3			19.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.9	53.0		374.3	20.8			25.3			19.4	
LOS	A	D		F	C			C			B	
Approach Delay		52.8			51.6			25.3			19.4	
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	2	~565		~117	340			58			26	
Queue Length 95th (ft)	8	#704		#190	#462			112			61	
Internal Link Dist (ft)		266			1425			229			974	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	99	1986		99	2004			381			439	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.08	1.05		1.70	0.88			0.43			0.21	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 29 (39%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.70
 Intersection Signal Delay: 50.5 Intersection LOS: D
 Intersection Capacity Utilization 109.7% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	820	42	20	736	14	68	94	88	58	158	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		150	150		150
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.993			0.997			0.927			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3529	0	1770	3281	0	1770	3458	0
Flt Permitted	0.071			0.071			0.950			0.950		
Satd. Flow (perm)	132	3514	0	132	3529	0	1770	3281	0	1770	3458	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			4			48			18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	1898	97	46	1704	32	114	157	147	97	264	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	1995	0	46	1736	0	114	304	0	97	311	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			custom			custom		
Protected Phases		6			2		4	4		3	3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	62.0	62.0	0.0	62.0	62.0	0.0	14.0	14.0	0.0	14.0	14.0	0.0
Total Split (%)	68.9%	68.9%	0.0%	68.9%	68.9%	0.0%	15.6%	15.6%	0.0%	15.6%	15.6%	0.0%
Maximum Green (s)	56.5	56.5		56.5	56.5		8.0	8.0		8.0	8.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	56.5	56.5		56.5	56.5		8.0	8.0		8.0	8.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.09	0.09		0.09	0.09	
v/c Ratio	0.17	0.90		0.55	0.78		0.73	0.91		0.62	0.96	
Control Delay	12.8	21.7		40.8	15.5		67.0	66.2		57.7	81.2	
Queue Delay	0.0	1.2		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.8	22.9		40.8	15.5		67.0	66.2		57.7	81.2	
LOS	B	C		D	B		E	E		E	F	
Approach Delay		22.9			16.1			66.5			75.6	
Approach LOS		C			B			E			E	
Queue Length 50th (ft)	3	460		14	343		64	77		54	88	
Queue Length 95th (ft)	14	#602		#76	437		#149	#156		#120	#174	
Internal Link Dist (ft)		644			2620			220			531	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	83	2210		83	2217		157	335		157	324	
Starvation Cap Reductn	0	82		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.94		0.55	0.78		0.73	0.91		0.62	0.96	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 28.9 Intersection LOS: C
 Intersection Capacity Utilization 79.6% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 56: FM 2920 & Cherry St

 ø2	 ø3	 ø4
62 s	14 s	14 s
 ø6		
62 s		

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕			↕↕	
Volume (vph)	8	782	29	17	752	19	19	17	45	23	13	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.996			0.891			0.966	
Flt Protected		0.999			0.999		0.950				0.977	
Satd. Flow (prot)	0	3518	0	0	3522	0	1770	1660	0	0	1758	0
Flt Permitted		0.917			0.845		0.864				0.797	
Satd. Flow (perm)	0	3229	0	0	2979	0	1609	1660	0	0	1434	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			9			43			18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	19	1810	67	39	1741	44	32	28	75	38	22	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1896	0	0	1824	0	32	103	0	0	80	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	62.0	62.0	0.0	62.0	62.0	0.0	13.0	13.0	0.0	13.0	13.0	0.0
Total Split (%)	82.7%	82.7%	0.0%	82.7%	82.7%	0.0%	17.3%	17.3%	0.0%	17.3%	17.3%	0.0%
Maximum Green (s)	56.5	56.5		56.5	56.5		7.5	7.5		7.5	7.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		60.3			60.3		7.3	7.3				7.3
Actuated g/C Ratio		0.80			0.80		0.10	0.10				0.10
v/c Ratio		0.73			0.76		0.20	0.51				0.51
Control Delay		7.0			8.0		34.5	30.0				38.3
Queue Delay		0.0			0.0		0.0	0.0				0.0
Total Delay		7.0			8.0		34.5	30.0				38.3
LOS		A			A		C	C				D
Approach Delay		7.0			8.0			31.1				38.3
Approach LOS		A			A			C				D
Queue Length 50th (ft)		208			214		14	27				28
Queue Length 95th (ft)		293			313		39	73				#72
Internal Link Dist (ft)		1520			644			252				544
Turn Bay Length (ft)							150					
Base Capacity (vph)		2599			2397		161	205				160
Starvation Cap Reductn		0			0		0	0				0
Spillback Cap Reductn		0			0		0	0				0
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		0.73			0.76		0.20	0.50				0.50

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 45 (60%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 8.9
 Intersection LOS: A
 Intersection Capacity Utilization 91.5%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	832	0	0	736	61	0	0	0	36	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.989							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3500	0	0	1863	0	1770	0	1583
Flt Permitted	0.046									0.190		
Satd. Flow (perm)	86	3539	0	0	3500	0	0	1863	0	354	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					10							116
Link Speed (mph)		30			30			30				30
Link Distance (ft)		112			1600			115				330
Travel Time (s)		2.5			36.4			2.6				7.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	213%	213%	213%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	58	1926	0	0	1704	141	0	0	0	60	0	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	1926	0	0	1845	0	0	0	0	60	0	116
Number of Detectors	1	2		1	2		1	2		1		1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100		20	100		20	100		20		20
Trailing Detector (ft)	0	0		0	0		0	0		0		0
Turn Type	Perm			Perm			Perm			custom		custom
Protected Phases		6			2			3				
Permitted Phases	6			2			3			4		4
Detector Phase	6	6		2	2		3	3		4		4
Switch Phase												
Minimum Initial (s)	7.0	7.0		22.0	22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5		27.5	27.5		26.0	26.0		27.0		27.0
Total Split (s)	92.0	92.0	0.0	92.0	92.0	0.0	26.0	26.0	0.0	27.0	0.0	27.0
Total Split (%)	63.4%	63.4%	0.0%	63.4%	63.4%	0.0%	17.9%	17.9%	0.0%	18.6%	0.0%	18.6%
Maximum Green (s)	86.5	86.5		86.5	86.5		21.0	21.0		21.0		21.0
Yellow Time (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0		2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0		7.0	7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0		10.0	10.0		10.0	10.0		10.0		10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0		0
Act Effect Green (s)	86.5	86.5			86.5					21.0		21.0
Actuated g/C Ratio	0.60	0.60			0.60					0.14		0.14
v/c Ratio	1.14	0.91			0.88					1.18		0.35
Control Delay	163.0	19.8			31.1					233.7		12.2
Queue Delay	0.0	16.9			30.4					0.0		1.5
Total Delay	163.0	36.6			61.6					233.7		13.7
LOS	F	D			E					F		B
Approach Delay		40.3			61.6							
Approach LOS		D			E							
Queue Length 50th (ft)	~64	775			744					~67		0
Queue Length 95th (ft)	m#92	636			867					#167		58
Internal Link Dist (ft)		32			1520			35			250	
Turn Bay Length (ft)	100											
Base Capacity (vph)	51	2111			2092					51		328
Starvation Cap Reductn	0	237			0					0		0
Spillback Cap Reductn	0	0			354					0		98
Storage Cap Reductn	0	0			0					0		0
Reduced v/c Ratio	1.14	1.03			1.06					1.18		0.50

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 145
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.18
 Intersection Signal Delay: 52.2 Intersection LOS: D
 Intersection Capacity Utilization 63.6% ICU Level of Service B
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 72: FM 2920 & Baker Drive

 ø2	 ø4	 ø3
92 s	27 s	26 s
 ø6		
92 s		

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	853	70	52	886	0	10	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989						0.927				0.865
Flt Protected				0.950				0.978				
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	1689	0	0	1611	0
Flt Permitted				0.046				0.852				
Satd. Flow (perm)	0	3500	0	86	3539	0	0	1471	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17						20				68
Link Speed (mph)		30			30			30				30
Link Distance (ft)		464			112			489				304
Travel Time (s)		10.5			2.5			11.1				6.9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1975	162	120	2051	0	17	0	20	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2137	0	120	2051	0	0	37	0	0	2	0
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		
Detector Phase		6		2	2		3	3		4		4
Switch Phase												
Minimum Initial (s)		7.0		22.0	22.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0	27.0	
Total Split (s)	0.0	115.0	0.0	115.0	115.0	0.0	12.0	12.0	0.0	18.0	18.0	0.0
Total Split (%)	0.0%	79.3%	0.0%	79.3%	79.3%	0.0%	8.3%	8.3%	0.0%	12.4%	12.4%	0.0%
Maximum Green (s)		109.5		109.5	109.5		7.0	7.0		12.0	12.0	
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode		Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		109.5		109.5	109.5			7.0			12.0	
Actuated g/C Ratio		0.76		0.76	0.76			0.05			0.08	
v/c Ratio		0.81		1.85	0.77			0.41			0.01	
Control Delay		14.2		437.6	4.0			52.0			0.0	
Queue Delay		42.4		26.3	1.5			0.0			0.0	
Total Delay		56.6		463.9	5.5			52.0			0.0	
LOS		E		F	A			D			A	
Approach Delay		56.6			30.8			52.0			0.0	
Approach LOS		E			C			D			A	
Queue Length 50th (ft)		587		~174	55			16			0	
Queue Length 95th (ft)		685		m#232	54			55			0	
Internal Link Dist (ft)		384			32			409			224	
Turn Bay Length (ft)				100								
Base Capacity (vph)		2647		65	2673			90			196	
Starvation Cap Reductn		685		2	403			0			0	
Spillback Cap Reductn		533		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		1.09		1.90	0.90			0.41			0.01	

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 145
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.85
 Intersection Signal Delay: 43.7 Intersection LOS: D
 Intersection Capacity Utilization 95.3% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 75: FM 2920 &

 ø3 ø2	 ø4	
115 s	18 s	12 s
 ø6		
115 s		

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	884	17	100	767	22	12	20	56	27	52	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	0		150	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.996				0.850			0.850
Flt Protected	0.950			0.950				0.981			0.983	
Satd. Flow (prot)	1770	3529	0	1770	3525	0	0	1827	1583	0	1831	1583
Flt Permitted	0.064			0.060				0.871			0.883	
Satd. Flow (perm)	119	3529	0	112	3525	0	0	1622	1583	0	1645	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5				94			74
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1277			464			632			378	
Travel Time (s)		29.0			10.5			14.4			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	42	2047	39	232	1776	51	20	33	94	45	87	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	2086	0	232	1827	0	0	53	94	0	132	74
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	pm+pt			pm+pt			Perm		Perm	Perm		Perm
Protected Phases	1	6		5	2			8				4
Permitted Phases	6			2			8		8	4		4
Detector Phase	1	6		5	2		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	20.0		4.0	20.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	27.5		8.0	27.5		27.5	27.5	27.5	27.0	27.0	27.0
Total Split (s)	8.0	68.2	0.0	14.0	74.2	0.0	27.8	27.8	27.8	27.8	27.8	27.8
Total Split (%)	7.3%	62.0%	0.0%	12.7%	67.5%	0.0%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%
Maximum Green (s)	4.0	62.7		10.0	68.7		22.3	22.3	22.3	22.8	22.8	22.8
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	0.5	2.0		0.5	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	5.5	5.5	5.5	5.0	5.0	5.0

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max		None	C-Max		Max	Max	Max	Max	Max	Max
Walk Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		17.0			17.0		17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effect Green (s)	68.2	62.7		78.2	71.9			22.3	22.3		22.8	22.8
Actuated g/C Ratio	0.62	0.57		0.71	0.65			0.20	0.20		0.21	0.21
v/c Ratio	0.31	1.04		1.01	0.79			0.16	0.24		0.39	0.19
Control Delay	12.0	54.5		91.2	17.7			37.8	9.2		41.5	9.7
Queue Delay	0.0	0.0		0.0	23.9			0.0	0.0		0.0	0.0
Total Delay	12.0	54.5		91.2	41.6			37.8	9.2		41.5	9.7
LOS	B	D		F	D			D	A		D	A
Approach Delay		53.7			47.2			19.5			30.1	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	8	-837		-115	488			31	0		81	0
Queue Length 95th (ft)	18	#977		#278	600			67	43		140	39
Internal Link Dist (ft)		1197			384			552			298	
Turn Bay Length (ft)	150			150					150			
Base Capacity (vph)	134	2013		230	2305			329	396		341	387
Starvation Cap Reductn	0	0		0	552			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.31	1.04		1.01	1.04			0.16	0.24		0.39	0.19

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 48.6 Intersection LOS: D
 Intersection Capacity Utilization 90.3% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 76: FM 2920 & Holderrieth St



Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	927	0	2	875	22	1	4	1	33	3	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.996			0.975				0.919
Flt Protected	0.950			0.950				0.991				0.982
Satd. Flow (prot)	1770	3539	0	1770	3525	0	0	1800	0	0	1681	0
Flt Permitted	0.076			0.076				0.948				0.874
Satd. Flow (perm)	142	3539	0	142	3525	0	0	1722	0	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5			2				7
Link Speed (mph)		30			30			30				30
Link Distance (ft)		276			698			93				609
Travel Time (s)		6.3			15.9			2.1				13.8
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	25	2146	0	5	2026	51	2	7	2	55	5	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	2146	0	5	2077	0	0	11	0	0	149	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	22.5	22.5		27.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	47.5	47.5	0.0	47.5	47.5	0.0	27.5	27.5	0.0	27.5	27.5	0.0
Total Split (%)	63.3%	63.3%	0.0%	63.3%	63.3%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	0.0%
Maximum Green (s)	42.0	42.0		42.0	42.0		22.0	22.0		22.5	22.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

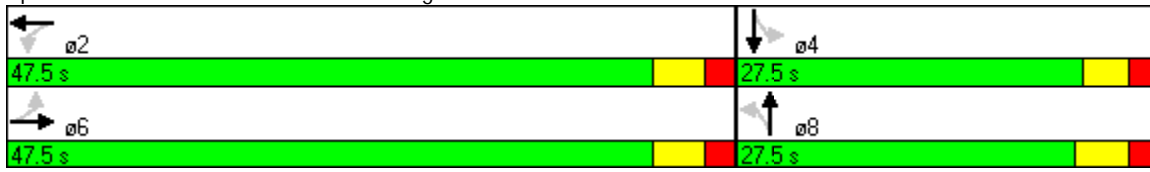


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	12.0	12.0		17.0	17.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	52.8	52.8		52.8	52.8			11.2			11.7	
Actuated g/C Ratio	0.70	0.70		0.70	0.70			0.15			0.16	
v/c Ratio	0.25	0.86		0.05	0.84			0.04			0.62	
Control Delay	12.5	21.3		3.0	6.8			23.1			39.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	12.5	21.3		3.0	6.8			23.1			39.2	
LOS	B	C		A	A			C			D	
Approach Delay		21.2			6.8			23.1			39.2	
Approach LOS		C			A			C			D	
Queue Length 50th (ft)	6	762		0	70			4			63	
Queue Length 95th (ft)	m17	#977		m1	#125			16			110	
Internal Link Dist (ft)		196			618			13			529	
Turn Bay Length (ft)												
Base Capacity (vph)	100	2494		100	2485			507			454	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.25	0.86		0.05	0.84			0.02			0.33	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 57 (76%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 15.1 Intersection LOS: B
 Intersection Capacity Utilization 78.1% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 85: FM 2920 & Buvinghausen St



Lanes, Volumes, Timings
87: Alma St & FM 2920

Medical Complex Drive
2/26/2009



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	16	0	982	143	3	893
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt			0.981			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	3472	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	3472	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	218		890			276
Travel Time (s)	5.0		20.2			6.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	17	0	1067	155	3	971
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	1222	0	0	974
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1221	0	0	503	18	180	71	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.995			0.986				
Flt Protected	0.950							0.969				
Satd. Flow (prot)	1770	5085	0	0	6376	0	0	4859	0	0	0	0
Flt Permitted	0.950							0.969				
Satd. Flow (perm)	1770	5085	0	0	6376	0	0	4859	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6			2				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1957				1199
Travel Time (s)		8.3			18.8			44.5				27.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	75%	75%	75%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	288	2508	0	0	1033	37	301	119	44	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	2508	0	0	1070	0	0	464	0	0	0	0
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	37.5	67.0	0.0	0.0	29.5	0.0	38.0	38.0	0.0	0.0	0.0	0.0
Total Split (%)	35.7%	63.8%	0.0%	0.0%	28.1%	0.0%	36.2%	36.2%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	31.0				23.0		31.0	31.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	18.2	48.8	38.0
Total Split (%)	17%	46%	36%
Maximum Green (s)	11.7	42.3	31.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009

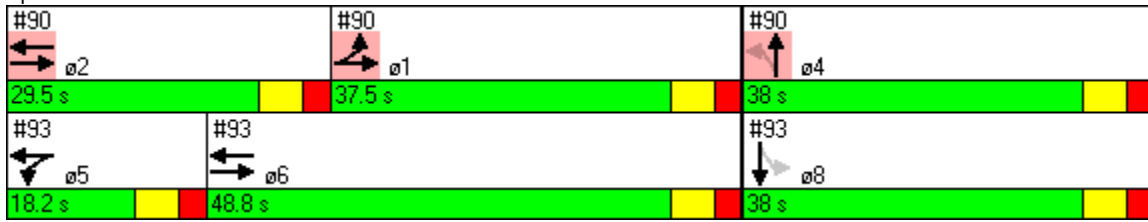


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag			Lead								
Lead-Lag Optimize?	Yes			Yes								
Vehicle Extension (s)	1.0			1.0			1.0		1.0			
Minimum Gap (s)	3.0			3.0			3.0		3.0			
Time Before Reduce (s)	0.0			0.0			0.0		0.0			
Time To Reduce (s)	0.0			0.0			0.0		0.0			
Recall Mode	None			C-Max			None		None			
Walk Time (s)				7.0			7.0		7.0			
Flash Dont Walk (s)				12.0			13.0		13.0			
Pedestrian Calls (#/hr)				0			0		0			
Act Effct Green (s)	31.0		63.5		26.0			28.0				
Actuated g/C Ratio	0.30		0.60		0.25			0.27				
v/c Ratio	0.55		0.82		0.67			0.36				
Control Delay	28.5		14.7		38.5			31.5				
Queue Delay	1.4		4.4		0.0			0.0				
Total Delay	30.0		19.1		38.5			31.5				
LOS	C		B		D			C				
Approach Delay			20.2		38.5			31.5				
Approach LOS			C		D			C				
Queue Length 50th (ft)	117		296		189			91				
Queue Length 95th (ft)	m145		m334		236			119				
Internal Link Dist (ft)			287		747			1877				
Turn Bay Length (ft)	1119											
Base Capacity (vph)	523		3077		1586			1436				
Starvation Cap Reductn	101		497		0			0				
Spillback Cap Reductn	0		0		0			0				
Storage Cap Reductn	0		0		0			0				
Reduced v/c Ratio	0.68		0.97		0.67			0.32				

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 25.9
 Intersection LOS: C
 Intersection Capacity Utilization 82.0%
 ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

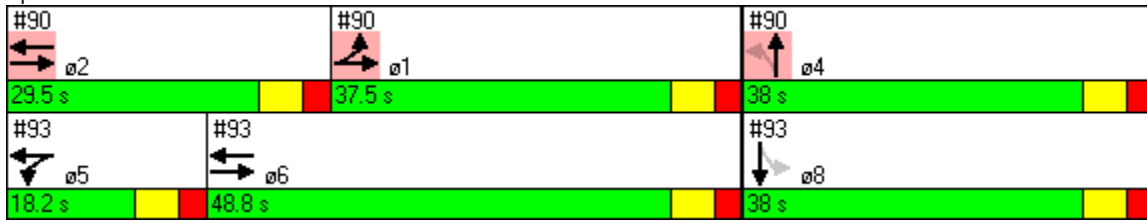
Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↑↑↑	
Volume (vph)	0	871	326	83	600	0	0	0	0	490	51	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt		0.959										0.965
Flt Protected				0.950								0.966
Satd. Flow (prot)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Flt Permitted				0.950								0.966
Satd. Flow (perm)	0	6145	0	1770	5085	0	0	0	0	0	4740	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		108										62
Link Speed (mph)		30			30			30				30
Link Distance (ft)		735			367			1962				1208
Travel Time (s)		16.7			8.3			44.6				27.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	189%	189%	189%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1789	670	171	1233	0	0	0	0	820	85	273
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2459	0	171	1233	0	0	0	0	0	1178	0
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases										8		
Detector Phase		6		5	5 6					8		8
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	48.8	0.0	18.2	67.0	0.0	0.0	0.0	0.0	38.0	38.0	0.0
Total Split (%)	0.0%	46.5%	0.0%	17.3%	63.8%	0.0%	0.0%	0.0%	0.0%	36.2%	36.2%	0.0%
Maximum Green (s)		42.3		11.7						31.0	31.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	37.5	29.5	38.0
Total Split (%)	36%	28%	36%
Maximum Green (s)	31.0	23.0	31.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑↑	↗	↘	↔	↗			
Volume (vph)	56	500	0	0	721	30	164	57	409	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		200	200		200	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.91	0.86	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850		0.890	0.850			
Flt Protected	0.950						0.950	0.997				
Satd. Flow (prot)	1770	3539	0	0	5085	1583	1610	2843	1441	0	0	0
Flt Permitted	0.106						0.950	0.997				
Satd. Flow (perm)	197	3539	0	0	5085	1583	1610	2843	1441	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						45		111	111			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		393			1219			636			1957	
Travel Time (s)		8.9			27.7			14.5			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	119	1065	0	0	1536	64	275	95	685	0	0	0
Shared Lane Traffic (%)							10%		50%			
Lane Group Flow (vph)	119	1065	0	0	1536	64	247	466	342	0	0	0
Number of Detectors	1	2			2	1	1	2	1			
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	1	1 2			2			4				
Permitted Phases	1 2					2	4		4			
Detector Phase	1	1 2			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	5.0				20.0	20.0	5.0	5.0	5.0			
Minimum Split (s)	11.5				26.5	26.5	27.0	27.0	27.0			
Total Split (s)	25.0	99.0	0.0	0.0	74.0	74.0	51.0	51.0	51.0	0.0	0.0	0.0
Total Split (%)	16.7%	66.0%	0.0%	0.0%	49.3%	49.3%	34.0%	34.0%	34.0%	0.0%	0.0%	0.0%
Maximum Green (s)	18.5				67.5	67.5	44.0	44.0	44.0			
Yellow Time (s)	4.0				4.0	4.0	4.0	4.0	4.0			
All-Red Time (s)	2.5				2.5	2.5	3.0	3.0	3.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	6.5	7.0	7.0	7.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	62.0	37.0	51.0
Total Split (%)	41%	25%	34%
Maximum Green (s)	55.5	30.5	44.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	1.0			1.0			1.0	1.0	1.0			
Minimum Gap (s)	3.0			3.0			3.0	3.0	3.0			
Time Before Reduce (s)	0.0			0.0			0.0	0.0	0.0			
Time To Reduce (s)	0.0			0.0			0.0	0.0	0.0			
Recall Mode	None			C-Min		C-Min	Min	Min	Min			
Walk Time (s)				7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)				12.0		12.0	13.0	13.0	13.0			
Pedestrian Calls (#/hr)				0		0	0	0	0			
Act Effct Green (s)	99.8	106.3		79.7		79.7	30.2	30.2	30.2			
Actuated g/C Ratio	0.67	0.71		0.53		0.53	0.20	0.20	0.20			
v/c Ratio	0.35	0.42		0.57		0.07	0.76	0.91dr	0.90			
Control Delay	11.7	9.0		26.5		9.3	70.4	46.9	65.2			
Queue Delay	0.0	1.1		0.0		0.0	0.0	0.0	0.0			
Total Delay	11.7	10.0		26.6		9.3	70.4	46.9	65.2			
LOS	B	B		C		A	E	D	E			
Approach Delay	10.2			25.9			58.3					
Approach LOS	B			C			E					
Queue Length 50th (ft)	22	384		376		9	253	192	257			
Queue Length 95th (ft)	44	533		482		39	327	234	360			
Internal Link Dist (ft)	313			1139			556			1877		
Turn Bay Length (ft)							200	200	200			
Base Capacity (vph)	355	2472		2702		862	472	912	501			
Starvation Cap Reductn	0	1080		0		0	0	0	0			
Spillback Cap Reductn	0	0		128		0	0	2	0			
Storage Cap Reductn	0	0		0		0	0	0	0			
Reduced v/c Ratio	0.34	0.77		0.60		0.07	0.52	0.51	0.68			

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 12 (8%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 30.0 Intersection LOS: C
 Intersection Capacity Utilization 72.9% ICU Level of Service C
 Analysis Period (min) 15
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 96: Medical Complex Drive & SH 249 East Service Rd



Lane Group	ø5	ø6	ø8
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↑↑	↑↑					↑	↑↑	
Volume (vph)	0	273	101	633	632	0	0	0	0	56	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		200	0		0	0		0	200		0
Storage Lanes	0		1	2		0	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.91	0.91	0.95
Ped Bike Factor												
Frt			0.850									0.948
Flt Protected				0.950						0.950	0.974	
Satd. Flow (prot)	0	5085	1583	3433	3539	0	0	0	0	1610	3130	0
Flt Permitted				0.354						0.950	0.974	
Satd. Flow (perm)	0	5085	1583	1279	3539	0	0	0	0	1610	3130	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			215									30
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2815			393			714				1962
Travel Time (s)		64.0			8.9			16.2				44.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	196%	196%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	582	215	1349	1346	0	0	0	0	94	10	30
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	582	215	1349	1346	0	0	0	0	47	87	0
Number of Detectors		2	1	1	2					1	2	
Detector Template		Thru	Right	Left	Thru					Left	Thru	
Leading Detector (ft)		100	20	20	100					20	100	
Trailing Detector (ft)		0	0	0	0					0	0	
Turn Type			Perm	pm+pt						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases			6	5 6						8		
Detector Phase		6	6	5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0						5.0	5.0	
Minimum Split (s)		27.5	27.5	11.5						28.0	28.0	
Total Split (s)	0.0	37.0	37.0	62.0	99.0	0.0	0.0	0.0	0.0	51.0	51.0	0.0
Total Split (%)	0.0%	24.7%	24.7%	41.3%	66.0%	0.0%	0.0%	0.0%	0.0%	34.0%	34.0%	0.0%
Maximum Green (s)		30.5	30.5	55.5						44.0	44.0	
Yellow Time (s)		4.0	4.0	4.0						4.0	4.0	
All-Red Time (s)		2.5	2.5	2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	25.0	74.0	51.0
Total Split (%)	17%	49%	34%
Maximum Green (s)	18.5	67.5	44.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		1.0	1.0	1.0						1.0	1.0	
Minimum Gap (s)		3.0	3.0	3.0						3.0	3.0	
Time Before Reduce (s)		0.0	0.0	0.0						0.0	0.0	
Time To Reduce (s)		0.0	0.0	0.0						0.0	0.0	
Recall Mode		C-Min	C-Min	None						None	None	
Walk Time (s)		7.0	7.0							7.0	7.0	
Flash Dont Walk (s)		14.0	14.0							14.0	14.0	
Pedestrian Calls (#/hr)		0	0							0	0	
Act Effect Green (s)		46.3	46.3	99.8	106.3					30.2	30.2	
Actuated g/C Ratio		0.31	0.31	0.67	0.71					0.20	0.20	
v/c Ratio		0.37	0.34	0.83	0.54					0.14	0.13	
Control Delay		43.6	7.2	23.8	8.0					46.3	29.6	
Queue Delay		0.1	0.0	0.5	0.3					0.0	0.0	
Total Delay		43.7	7.2	24.3	8.3					46.3	29.6	
LOS		D	A	C	A					D	C	
Approach Delay		33.8			16.3						35.5	
Approach LOS		C			B						D	
Queue Length 50th (ft)		166	0	391	182					41	25	
Queue Length 95th (ft)		231	71	586	230					74	46	
Internal Link Dist (ft)		2735			313			634			1882	
Turn Bay Length (ft)			200							200		
Base Capacity (vph)		1569	637	1665	2555					472	939	
Starvation Cap Reductn		0	0	78	491					0	0	
Spillback Cap Reductn		141	0	0	0					0	1	
Storage Cap Reductn		0	0	0	0					0	0	
Reduced v/c Ratio		0.41	0.34	0.85	0.65					0.10	0.09	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 12 (8%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 20.8
 Intersection LOS: C
 Intersection Capacity Utilization 72.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 97: Medical Complex Drive & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	Min
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1990			618			233			163	
Travel Time (s)		45.2			14.0			5.3			3.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

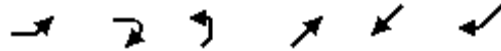
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
114: Medical Complex Drive &



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	906			5205	1406	
Travel Time (s)	20.6			118.3	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Turn Type			Perm			
Protected Phases	4!			2	8!	
Permitted Phases			2			
Detector Phase	4		2	2	8	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0		16.0	16.0	16.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 114: Medical Complex Drive &

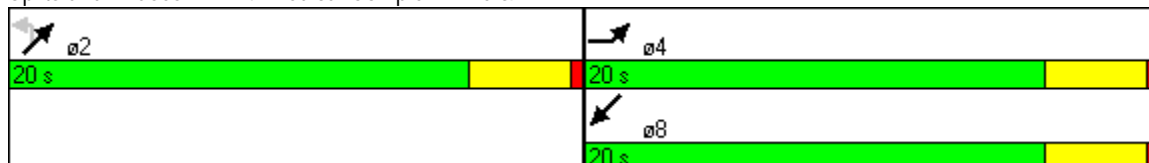


Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Max		Max	Max	Max	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	826			5125	1326	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.00
 Intersection Signal Delay: 0.0 Intersection LOS: A
 Intersection Capacity Utilization 0.0% ICU Level of Service A
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 114: Medical Complex Drive &



Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3855			2112			1114			1168	
Travel Time (s)		87.6			48.0			25.3			26.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009

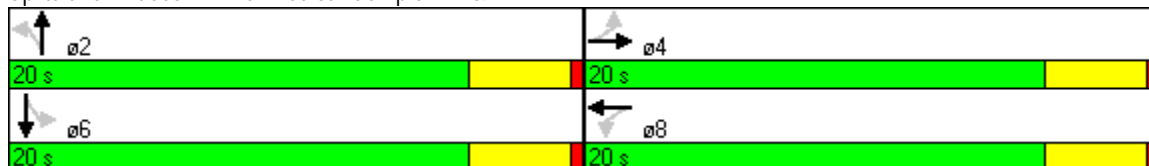


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		3775			2032			1034			1088	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 116: Medical Complex Dr &



Lanes, Volumes, Timings
 117: Medical Complex Drive & Hufsmith Kohrville Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	467	20	35	592	87	22	97	4	86	155	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.981			0.994			0.948	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3472	0	1770	1852	0	1770	1766	0
Flt Permitted	0.106			0.232			0.209			0.591		
Satd. Flow (perm)	197	3518	0	432	3472	0	389	1852	0	1101	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			28			3			34	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2112			5205			1065			775	
Travel Time (s)		48.0			118.3			24.2			17.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	273	995	43	75	1261	185	37	162	7	144	259	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	1038	0	75	1446	0	37	169	0	144	395	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	20.0		8.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	14.0	42.0	0.0	9.0	37.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	18.7%	56.0%	0.0%	12.0%	49.3%	0.0%	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%
Maximum Green (s)	10.0	38.0		5.0	33.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 117: Medical Complex Drive & Hufsmith Kohrville Rd

Medical Complex Drive
 2/26/2009

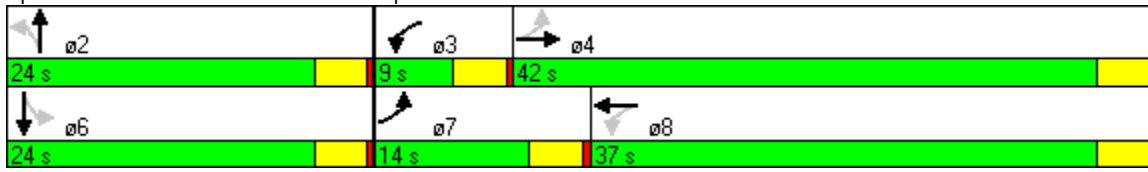


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	46.9	39.7		37.9	32.9		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.63	0.53		0.51	0.44		0.27	0.27		0.27	0.27	
v/c Ratio	0.82	0.56		0.24	0.94		0.35	0.34		0.49	0.79	
Control Delay	36.7	13.6		8.2	33.7		33.6	24.1		29.8	37.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.7	13.6		8.2	33.7		33.6	24.1		29.8	37.0	
LOS	D	B		A	C		C	C		C	D	
Approach Delay		18.4			32.4			25.8			35.1	
Approach LOS		B			C			C			D	
Queue Length 50th (ft)	72	165		12	318		14	62		56	156	
Queue Length 95th (ft)	#197	222		26	#475		43	113		112	#297	
Internal Link Dist (ft)		2032			5125			985			695	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	333	1864		307	1543		105	499		296	499	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.82	0.56		0.24	0.94		0.35	0.34		0.49	0.79	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 27.3 Intersection LOS: C
 Intersection Capacity Utilization 88.2% ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 117: Medical Complex Drive & Hufsmith Kohrville Rd



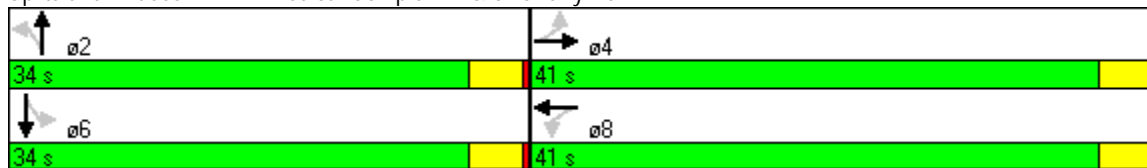
Lanes, Volumes, Timings
122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	478	26	32	475	21	50	90	47	80	215	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.994			0.948			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3518	0	1770	1766	0	1770	1824	0
Flt Permitted	0.131			0.131			0.408			0.587		
Satd. Flow (perm)	244	3511	0	244	3518	0	760	1766	0	1093	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			8			42			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2634			3855			1711			2332	
Travel Time (s)		59.9			87.6			38.9			53.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	58	1018	55	68	1012	45	84	151	79	134	360	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	1073	0	68	1057	0	84	230	0	134	420	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	54.7%	54.7%	0.0%	54.7%	54.7%	0.0%	45.3%	45.3%	0.0%	45.3%	45.3%	0.0%
Maximum Green (s)	37.0	37.0		37.0	37.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Splits and Phases: 122: Medical Complex Dr & S. Cherry Rd



Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1181			2634			643			613	
Travel Time (s)		26.8			59.9			14.6			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009

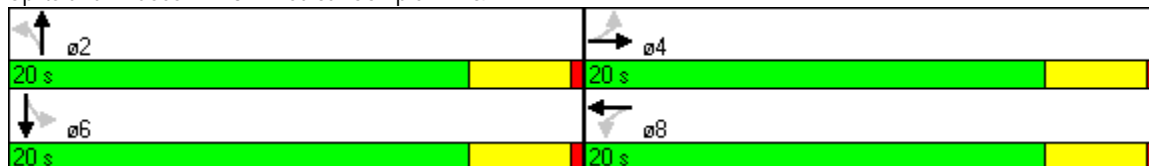


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1101			2554			563			533	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary





















Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 131: Medical Complex Dr &



Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1181			411			528	
Travel Time (s)		22.7			26.8			9.3			12.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

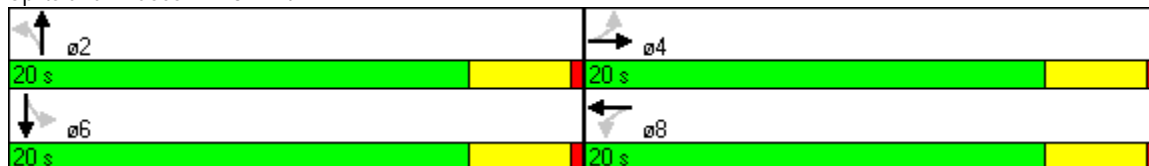


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		920		1101			331			448		
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 132: Int



Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1696			1000			95			284	
Travel Time (s)		38.5			22.7			2.2			6.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009

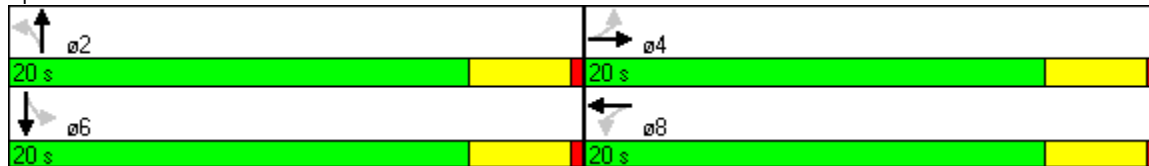


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1616			920			15			204	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												











Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection Capacity Utilization:	0.0%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 133: Int



Lanes, Volumes, Timings
134: Triechel Rd & Medical Complex Dr

						
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	1863	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	1863	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	313		692			2340
Travel Time (s)	7.1		15.7			53.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Turn Type					Perm	
Protected Phases	2					8
Permitted Phases			4		8	
Detector Phase	2		4		8	8
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	20.0		20.0		20.0	20.0
Total Split (s)	20.0	0.0	20.0	0.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)	16.0		16.0		16.0	16.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	0.5		0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

Medical Complex Drive
 2/26/2009

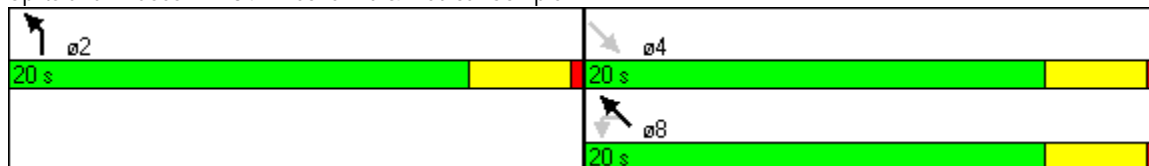


Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Minimum Gap (s)	3.0		3.0		3.0	3.0
Time Before Reduce (s)	0.0		0.0		0.0	0.0
Time To Reduce (s)	0.0		0.0		0.0	0.0
Recall Mode	Max		Max		Max	Max
Walk Time (s)	5.0		5.0		5.0	5.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	233		612		2260	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15



















Splits and Phases: 134: Triechel Rd & Medical Complex Dr



**2035 RECOMMENDED CONDITION
ANALYSIS
[PM PEAK HOUR]**

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	474	25	3	663	0	36	0	11	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993						0.969				
Flt Protected				0.950				0.963				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1738	0	0	1863	0
Flt Permitted				0.950				0.775				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1399	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9						12				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2290			2090			1981				200
Travel Time (s)		52.0			47.5			45.0				4.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	974	51	6	1362	0	60	0	18	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1025	0	6	1362	0	0	78	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		10.5	10.5		10.5	10.5	
Total Split (s)	11.0	75.0	0.0	11.0	75.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	10.0%	68.2%	0.0%	10.0%	68.2%	0.0%	21.8%	21.8%	0.0%	21.8%	21.8%	0.0%
Maximum Green (s)	5.0	69.0		5.0	69.0		18.5	18.5		18.5	18.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
1: FM 2920 &

Medical Complex Drive
2/26/2009

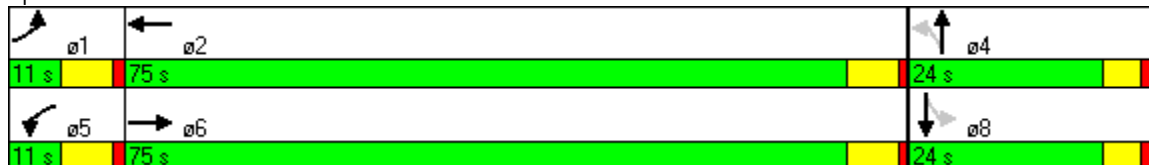


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	71.1			5.0	73.2		8.8					
Actuated g/C Ratio	0.79			0.06	0.81		0.10					
v/c Ratio	0.37			0.06	0.47		0.53					
Control Delay	5.0			42.8	4.3		46.0					
Queue Delay	0.0			0.0	0.0		0.0					
Total Delay	5.0			42.8	4.3		46.0					
LOS	A			D	A		D					
Approach Delay	5.0				4.5		46.0					
Approach LOS	A				A		D					
Queue Length 50th (ft)	74			3	114		36					
Queue Length 95th (ft)	200			16	191		80					
Internal Link Dist (ft)	2210				2010		1901				120	
Turn Bay Length (ft)				200								
Base Capacity (vph)	2855			98	2874		297					
Starvation Cap Reductn	0			0	0		0					
Spillback Cap Reductn	0			0	0		0					
Storage Cap Reductn	0			0	0		0					
Reduced v/c Ratio	0.36			0.06	0.47		0.26					

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 90.2
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 6.0
 Intersection Capacity Utilization 48.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 1: FM 2920 &



Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	356	41	44	492	11	28	7	58	47	15	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.985			0.997			0.867			0.992	
Flt Protected	0.950			0.950			0.950			0.950	0.976	
Satd. Flow (prot)	1770	3486	0	1770	3529	0	1770	1615	0	1681	1713	0
Flt Permitted	0.250			0.253			0.720			0.687	0.880	
Satd. Flow (perm)	466	3486	0	471	3529	0	1341	1615	0	1216	1545	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			6			88			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2340			2815			624			1981	
Travel Time (s)		53.2			64.0			14.2			45.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	17	758	87	94	1048	23	47	12	97	79	25	3
Shared Lane Traffic (%)										33%		
Lane Group Flow (vph)	17	845	0	94	1071	0	47	109	0	53	54	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
2: Medical Complex Dr & Calvert Rd

Medical Complex Drive
2/26/2009

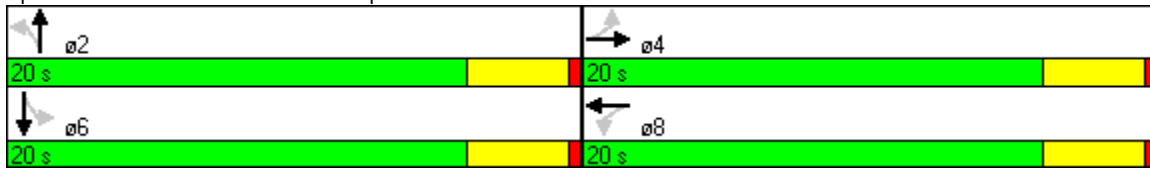


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.09	0.60		0.50	0.76		0.09	0.16		0.11	0.09	
Control Delay	9.1	11.2		22.1	14.9		8.1	3.8		8.3	7.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.1	11.2		22.1	14.9		8.1	3.8		8.3	7.7	
LOS	A	B		C	B		A	A		A	A	
Approach Delay		11.1			15.5			5.1				8.0
Approach LOS		B			B			A				A
Queue Length 50th (ft)	2	69		15	100		6	3		7	7	
Queue Length 95th (ft)	11	111		#64	#158		19	22		22	22	
Internal Link Dist (ft)		2260			2735			544				1901
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	186	1416		188	1415		536	699		486	620	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.60		0.50	0.76		0.09	0.16		0.11	0.09	

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 12.8 Intersection LOS: B
 Intersection Capacity Utilization 50.0% ICU Level of Service A
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Medical Complex Dr & Calvert Rd



Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↗		↖	↗	
Volume (vph)	36	978	33	62	1164	132	39	7	67	187	9	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor												
Frt		0.995				0.850		0.911			0.957	
Flt Protected	0.950			0.950				0.983		0.950	0.969	
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	0	3169	0	1681	1641	0
Flt Permitted	0.062			0.062				0.681		0.633	0.694	
Satd. Flow (perm)	115	3522	0	115	3539	1583	0	2196	0	1120	1175	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				271		25			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2090			735			216			806	
Travel Time (s)		47.5			16.7			4.9			18.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	74	2009	68	127	2391	271	65	12	112	313	15	54
Shared Lane Traffic (%)										38%		
Lane Group Flow (vph)	74	2077	0	127	2391	271	0	189	0	194	188	0
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		2			6			8				4
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0	25.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	10.5	10.5		10.5	10.5	
Total Split (s)	71.0	71.0	0.0	71.0	71.0	71.0	19.0	19.0	0.0	19.0	19.0	0.0
Total Split (%)	78.9%	78.9%	0.0%	78.9%	78.9%	78.9%	21.1%	21.1%	0.0%	21.1%	21.1%	0.0%
Maximum Green (s)	65.0	65.0		65.0	65.0	65.0	13.5	13.5		13.5	13.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	6.0	6.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
4: FM 2920 & Wood Forest Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		None	None	None	Max	Max		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	65.0	65.0		65.0	65.0	65.0		13.5		13.5	13.5	
Actuated g/C Ratio	0.72	0.72		0.72	0.72	0.72		0.15		0.15	0.15	
v/c Ratio	0.89	0.82		1.53	0.94	0.22		0.54		1.15	1.01	
Control Delay	93.4	11.9		311.0	19.7	0.9		36.9		154.6	107.5	
Queue Delay	0.0	0.0		0.0	4.9	0.0		0.0		0.0	0.0	
Total Delay	93.4	11.9		311.0	24.6	0.9		36.9		154.6	107.5	
LOS	F	B		F	C	A		D		F	F	
Approach Delay		14.7			35.4			36.9			131.4	
Approach LOS		B			D			D			F	
Queue Length 50th (ft)	27	349		-55	512	0		45		-138	-108	
Queue Length 95th (ft)	#79	456		#168	#750	18		81		#277	#253	
Internal Link Dist (ft)		2010			655			136			726	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	83	2546		83	2556	1219		351		168	186	
Starvation Cap Reductn	0	0		0	137	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.89	0.82		1.53	0.99	0.22		0.54		1.15	1.01	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.53
 Intersection Signal Delay: 34.0 Intersection LOS: C
 Intersection Capacity Utilization 112.7% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: FM 2920 & Wood Forest Drive



Lanes, Volumes, Timings
 11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
 2/26/2009



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	13	50	21	370	132	27	84	755	210	65	963	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	1		0	2		0	2		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor												
Frt		0.956			0.974			0.967			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3383	0	3433	3447	0	3433	3422	0	3433	3518	0
Flt Permitted	0.464			0.656			0.065			0.065		
Satd. Flow (perm)	864	3383	0	2371	3447	0	235	3422	0	235	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			24			66			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		706			692			1353			532	
Travel Time (s)		16.0			15.7			30.8			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	107	45	788	281	58	179	1608	447	138	2052	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	152	0	788	339	0	179	2055	0	138	2141	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0		4.0	4.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	22.5	22.5		20.0	20.0		30.5	30.5		30.5	30.5	
Total Split (s)	32.0	32.0	0.0	32.0	32.0	0.0	68.0	68.0	0.0	68.0	68.0	0.0
Total Split (%)	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%	68.0%	68.0%	0.0%	68.0%	68.0%	0.0%
Maximum Green (s)	25.5	25.5		28.0	28.0		61.5	61.5		61.5	61.5	
Yellow Time (s)	5.0	5.0		3.5	3.5		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.5	1.5		0.5	0.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	4.0	4.0	6.5	6.5	4.0	6.5	6.5	4.0

Lanes, Volumes, Timings
11: Park Rd/Medical Complex Dr & FM 2920

Medical Complex Drive
2/26/2009

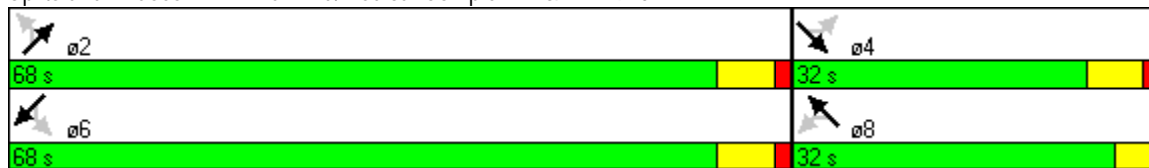


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		3.0	3.0		1.5	1.5		1.5	1.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				5.0	5.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				11.0	11.0		17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effect Green (s)	25.5	25.5		28.0	28.0		61.5	61.5		61.5	61.5	
Actuated g/C Ratio	0.26	0.26		0.28	0.28		0.62	0.62		0.62	0.62	
v/c Ratio	0.13	0.17		1.19	0.35		1.23	0.96		0.95	0.99	
Control Delay	30.7	27.6		132.5	27.8		175.1	31.3		87.0	36.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.7	27.6		132.5	27.8		175.1	31.3		87.0	36.4	
LOS	C	C		F	C		F	C		F	D	
Approach Delay		28.0			101.0			42.8			39.5	
Approach LOS		C			F			D			D	
Queue Length 50th (ft)	14	36		~313	83		~73	588		38	647	
Queue Length 95th (ft)	37	63		#431	123		#96	#825		#107	#882	
Internal Link Dist (ft)		626			612			1273			452	
Turn Bay Length (ft)							150					
Base Capacity (vph)	220	871		664	982		145	2130		145	2167	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.17		1.19	0.35		1.23	0.96		0.95	0.99	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 52.3
 Intersection LOS: D
 Intersection Capacity Utilization 117.8%
 ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 11: Park Rd/Medical Complex Dr & FM 2920









Lanes, Volumes, Timings
17: FM 2920 & Tomball Parkway

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Volume (vph)	83	422	216	203	484	149	267	487	206	43	83	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	5085	1583	3433	4724	0
Flt Permitted	0.950			0.950			0.486			0.119		
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	1756	5085	1583	430	4724	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			288			254			330		138	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		827			890			1959			1961	
Travel Time (s)		18.8			20.2			44.5			44.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	189%	189%	189%	189%	189%	189%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	171	867	444	417	994	306	549	1000	423	88	171	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	867	444	417	994	306	549	1000	423	88	323	0
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Split		Perm	Split		Perm	pm+pt		Perm	pm+pt		
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2		2	6		
Detector Phase	3	3	3	4	4	4	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	10.0	6.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	40.5	40.5	40.5	39.5	39.5	39.5	13.0	36.0	36.0	12.0	40.0	
Total Split (s)	46.0	46.0	46.0	48.4	48.4	48.4	15.0	43.6	43.6	12.0	40.6	0.0
Total Split (%)	30.7%	30.7%	30.7%	32.3%	32.3%	32.3%	10.0%	29.1%	29.1%	8.0%	27.1%	0.0%
Maximum Green (s)	40.5	40.5	40.5	42.9	42.9	42.9	8.0	36.6	36.6	5.0	33.6	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	7.0	7.0	7.0	7.0	7.0	4.0

Splits and Phases: 17: FM 2920 & Tomball Parkway

 ø1	 ø2	 ø4	 ø3
12 s	43.6 s	48.4 s	46 s
 ø5	 ø6		
15 s	40.6 s		

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	461	234	271	655	203	520	1007	350	265	700	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		150	150		150	200		200	200		200
Storage Lanes	1		1	2		1	2		1	2		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.204			0.186		
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	737	5085	1583	672	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			252			171			355			359
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1219			1696			633			1959	
Travel Time (s)		27.7			38.5			14.4			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	140%	140%	140%	140%	140%	140%	101%	110%	110%	101%	110%	110%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	131	702	356	412	997	309	571	1204	418	291	837	359
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	702	356	412	997	309	571	1204	418	291	837	359
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	custom		Perm	custom		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases	4		4	3		3	2		2	6		6
Detector Phase	4	4	4	3	3	3	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	25.0	25.0	4.0	25.0	25.0
Minimum Split (s)	11.5	11.5	11.5	34.5	34.5	34.5	8.0	31.5	31.5	8.0	31.5	31.5
Total Split (s)	30.2	30.2	30.2	39.7	39.7	39.7	18.0	40.1	40.1	10.0	32.1	32.1
Total Split (%)	25.2%	25.2%	25.2%	33.1%	33.1%	33.1%	15.0%	33.4%	33.4%	8.3%	26.8%	26.8%
Maximum Green (s)	23.7	23.7	23.7	33.2	33.2	33.2	14.0	33.6	33.6	6.0	25.6	25.6
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	0.5	1.5	1.5	0.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	4.0	6.5	6.5	4.0	6.5	6.5

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	1.5	1.5	1.5	3.0	1.8	1.8	3.0	1.8	1.8
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)				5.0	5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)				23.0	23.0	23.0		20.0	20.0		7.0	7.0
Pedestrian Calls (#/hr)				0	0	0		0	0		0	0
Act Effect Green (s)	23.7	23.7	23.7	33.2	33.2	33.2	36.1	33.6	33.6	28.1	25.6	25.6
Actuated g/C Ratio	0.20	0.20	0.20	0.28	0.28	0.28	0.30	0.28	0.28	0.23	0.21	0.21
v/c Ratio	0.37	1.00	0.69	0.43	1.02	0.55	1.07	0.85	0.60	0.99	0.77	0.58
Control Delay	45.4	83.3	21.1	37.4	76.5	20.1	93.0	47.4	10.5	100.3	50.0	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	83.3	21.1	37.4	76.5	20.1	93.0	47.4	10.5	100.3	50.0	8.2
LOS	D	F	C	D	E	C	F	D	B	F	D	A
Approach Delay		60.5			57.0			52.2			49.8	
Approach LOS		E			E			D			D	
Queue Length 50th (ft)	89	-291	71	135	-430	87	-193	323	37	97	225	0
Queue Length 95th (ft)	150	#422	183	183	#562	181	#305	381	137	#187	275	82
Internal Link Dist (ft)		1139			1616			553			1879	
Turn Bay Length (ft)	150		150	150		150	200		200	200		200
Base Capacity (vph)	350	699	515	950	979	562	536	1424	699	295	1085	620
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.00	0.69	0.43	1.02	0.55	1.07	0.85	0.60	0.99	0.77	0.58

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 54.4
 Intersection LOS: D
 Intersection Capacity Utilization 87.4%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
 19: Medical Complex Drive & Tomball Parkway

Medical Complex Drive
 2/26/2009

Splits and Phases: 19: Medical Complex Drive & Tomball Parkway

↑ ø2	↘ ø1	↗ ø4	↙ ø3
40.1 s	10 s	30.2 s	39.7 s
↖ ø5	↓ ø6		
18 s	32.1 s		

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	649	12	10	1012	35	38	54	6	23	24	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	150		0	150		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.995			0.985				0.881
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3522	0	1770	1835	0	1770	1641	0
Flt Permitted	0.080			0.120			0.573			0.692		
Satd. Flow (perm)	149	3529	0	224	3522	0	1067	1835	0	1289	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			9				1
Link Speed (mph)		30			30			30				30
Link Distance (ft)		698			1277			499				262
Travel Time (s)		15.9			29.0			11.3				6.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	157	1503	28	23	2343	81	64	90	10	38	40	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	1531	0	23	2424	0	64	100	0	38	191	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8				4
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	25.5	25.5		30.5	30.5		36.0	36.0		36.0	36.0	
Total Split (s)	39.0	39.0	0.0	39.0	39.0	0.0	36.0	36.0	0.0	36.0	36.0	0.0
Total Split (%)	52.0%	52.0%	0.0%	52.0%	52.0%	0.0%	48.0%	48.0%	0.0%	48.0%	48.0%	0.0%
Maximum Green (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
20: FM 2920 & Quinn Rd

Medical Complex Drive
2/26/2009

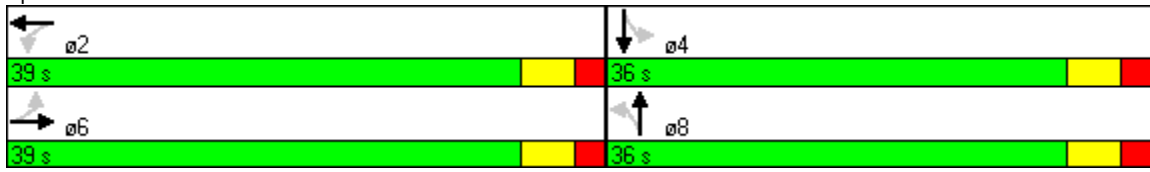


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0		20.0	20.0		25.0	25.0		25.0	25.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	50.3	50.3		50.3	50.3		13.2	13.2		13.2	13.2	
Actuated g/C Ratio	0.67	0.67		0.67	0.67		0.18	0.18		0.18	0.18	
v/c Ratio	1.57	0.65		0.15	1.03		0.34	0.30		0.17	0.66	
Control Delay	323.1	9.6		9.1	41.1		30.4	25.2		25.8	38.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	323.1	9.6		9.1	41.1		30.4	25.2		25.8	38.8	
LOS	F	A		A	D		C	C		C	D	
Approach Delay		38.8			40.8			27.2			36.7	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	~59	184		3	~584		26	37		15	83	
Queue Length 95th (ft)	#186	320		17	#860		56	71		36	135	
Internal Link Dist (ft)		618			1197			419			182	
Turn Bay Length (ft)	150			150			100			100		
Base Capacity (vph)	100	2366		150	2362		427	739		516	657	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.57	0.65		0.15	1.03		0.15	0.14		0.07	0.29	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 46 (61%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.57
 Intersection Signal Delay: 39.4 Intersection LOS: D
 Intersection Capacity Utilization 108.3% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 20: FM 2920 & Quinn Rd



Lanes, Volumes, Timings
26: FM 2920 & Mahaffey Rd/Medical Complex Dr

Medical Complex Drive
2/26/2009



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑↑	↑	↖↗	↑↑	↖↗	↑
Volume (vph)	614	276	399	932	450	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		150	150		0	0
Storage Lanes		1	2		2	1
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted			0.129		0.950	
Satd. Flow (perm)	3539	1583	466	3539	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		449				341
Link Speed (mph)	30			30	30	
Link Distance (ft)	1555			866	1406	
Travel Time (s)	35.3			19.7	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1308	588	850	1986	959	814
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1308	588	850	1986	959	814
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Turn Type		Perm	pm+pt			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6	2			4
Detector Phase	6	6	5	2	4	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	31.0	31.0	16.0	47.0	28.0	28.0
Total Split (%)	41.3%	41.3%	21.3%	62.7%	37.3%	37.3%
Maximum Green (s)	27.0	27.0	12.0	43.0	24.0	24.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Splits and Phases: 26: FM 2920 & Mahaffey Rd/Medical Complex Dr



Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	207	471	24	30	520	159	22	327	7	112	214	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	200		0	200		200
Storage Lanes	2		0	1		1	1		0	2		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor												
Frt		0.993				0.850		0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3514	0	1770	3539	1583	1770	1857	0	3433	1863	1583
Flt Permitted	0.167			0.167			0.293			0.174		
Satd. Flow (perm)	603	3514	0	311	3539	1583	546	1857	0	629	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				207		1				161
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1970			1990			826				1861
Travel Time (s)		44.8			45.2			18.8				42.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	425	968	49	62	1068	327	37	547	12	187	358	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	425	1017	0	62	1068	327	37	559	0	187	358	161
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6			2		2	8			4		4
Detector Phase	1	6		5	2	2	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	20.0	20.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.5	36.5		11.5	26.5	26.5	11.0	10.0		10.0	11.0	11.0
Total Split (s)	14.1	38.4	0.0	11.6	35.9	35.9	11.0	30.0	0.0	10.0	29.0	29.0
Total Split (%)	15.7%	42.7%	0.0%	12.9%	39.9%	39.9%	12.2%	33.3%	0.0%	11.1%	32.2%	32.2%
Maximum Green (s)	7.6	31.9		5.1	29.4	29.4	5.0	25.0		5.0	23.0	23.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	4.0	3.0		3.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	6.5	6.5	6.5	6.0	5.0	4.0	5.0	6.0	6.0

Lanes, Volumes, Timings
29: FM 2920 & Hufsmith Kohrville Rd

Medical Complex Drive
2/26/2009

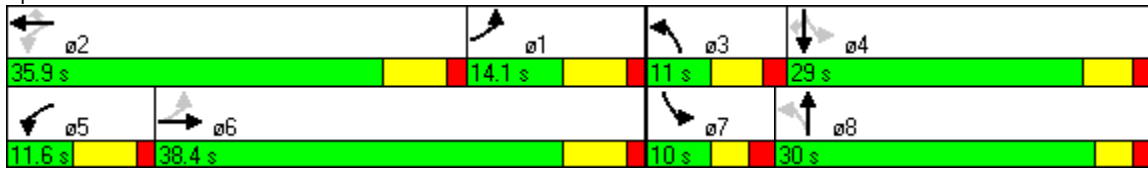


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Max		None	C-Max	C-Max	Max	Max		Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	34.2	34.2		29.4	29.4	29.4	29.0	25.0		29.0	23.0	23.0
Actuated g/C Ratio	0.38	0.38		0.33	0.33	0.33	0.32	0.28		0.32	0.26	0.26
v/c Ratio	0.91	0.76		0.34	0.92	0.50	0.15	1.08		0.52	0.75	0.31
Control Delay	59.2	29.5		26.4	43.7	11.8	19.5	96.4		23.7	42.4	6.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	59.2	29.5		26.4	43.7	11.8	19.5	96.4		23.7	42.4	6.3
LOS	E	C		C	D	B	B	F		C	D	A
Approach Delay		38.3			35.8			91.6			29.2	
Approach LOS		D			D			F			C	
Queue Length 50th (ft)	90	271		24	305	49	13	~360		34	188	0
Queue Length 95th (ft)	#171	351		53	#433	126	33	#563		56	#313	47
Internal Link Dist (ft)		1890			1910			746			1781	
Turn Bay Length (ft)	200			200			200			200		200
Base Capacity (vph)	468	1340		184	1156	656	244	517		358	476	524
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.91	0.76		0.34	0.92	0.50	0.15	1.08		0.52	0.75	0.31

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 43.5 Intersection LOS: D
 Intersection Capacity Utilization 89.6% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 29: FM 2920 & Hufsmith Kohrville Rd



Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	940	18	0	1061	26	14	1	7	8	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.996			0.958			0.920	
Flt Protected	0.950							0.969			0.980	
Satd. Flow (prot)	1770	3529	0	1863	3525	0	0	1729	0	0	1679	0
Flt Permitted	0.094							0.838			0.904	
Satd. Flow (perm)	175	3529	0	1863	3525	0	0	1495	0	0	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			5			10			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		346			1505			309			1054	
Travel Time (s)		7.9			34.2			7.0			24.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	189%	189%	189%	189%	189%	189%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	41	1931	37	0	2180	53	29	2	14	16	0	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	1968	0	0	2233	0	0	45	0	0	39	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	37.0	37.0		37.0	37.0		10.5	10.5		25.5	25.5	
Total Split (s)	49.5	49.5	0.0	49.5	49.5	0.0	25.5	25.5	0.0	25.5	25.5	0.0
Total Split (%)	66.0%	66.0%	0.0%	66.0%	66.0%	0.0%	34.0%	34.0%	0.0%	34.0%	34.0%	0.0%
Maximum Green (s)	42.5	42.5		42.5	42.5		20.0	20.0		20.0	20.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
34: FM 2920 & Willow St

Medical Complex Drive
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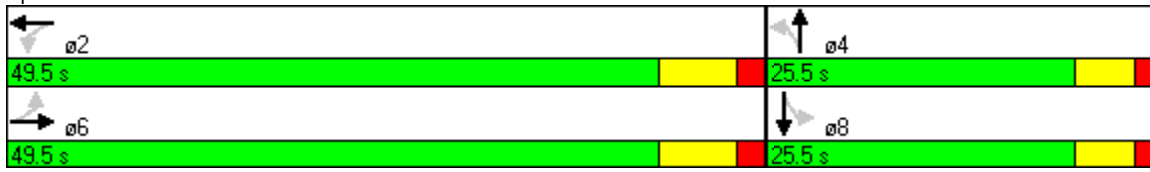


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		4.0	4.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0					7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0					13.0	13.0	
Pedestrian Calls (#/hr)	0	0		0	0					0	0	
Act Effct Green (s)	42.5	42.5			42.5			20.0			20.0	
Actuated g/C Ratio	0.57	0.57			0.57			0.27			0.27	
v/c Ratio	0.41	0.98			1.12			0.11			0.09	
Control Delay	7.5	15.2			79.0			18.2			19.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	7.5	15.2			79.0			18.2			19.5	
LOS	A	B			E			B			B	
Approach Delay		15.1			79.0			18.2			19.5	
Approach LOS		B			E			B			B	
Queue Length 50th (ft)	4	520			-643			12			12	
Queue Length 95th (ft)	m4	m450			#783			36			34	
Internal Link Dist (ft)		266			1425			229			974	
Turn Bay Length (ft)	200											
Base Capacity (vph)	99	2002			2000			406			417	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.41	0.98			1.12			0.11			0.09	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 4 (5%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 48.1 Intersection LOS: D
 Intersection Capacity Utilization 71.6% ICU Level of Service C
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: FM 2920 & Willow St



Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	881	41	19	890	35	86	258	57	46	123	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	200		0	200		0	150		150	150		150
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.993			0.994			0.973			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3518	0	1770	3444	0	1770	3433	0
Flt Permitted	0.092			0.092			0.950			0.950		
Satd. Flow (perm)	171	3514	0	171	3518	0	1770	3444	0	1770	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			9			28			32	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		724			2700			300			611	
Travel Time (s)		16.5			61.4			6.8			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	30	2040	95	44	2061	81	144	432	95	77	206	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	2135	0	44	2142	0	144	527	0	77	258	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			custom			custom		
Protected Phases		6			2		4	4		3	3	
Permitted Phases	6			2			4			3		
Detector Phase	6	6		2	2		4	4		3	3	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		11.0	11.0		11.0	11.0	
Total Split (s)	49.0	49.0	0.0	49.0	49.0	0.0	15.0	15.0	0.0	11.0	11.0	0.0
Total Split (%)	65.3%	65.3%	0.0%	65.3%	65.3%	0.0%	20.0%	20.0%	0.0%	14.7%	14.7%	0.0%
Maximum Green (s)	43.5	43.5		43.5	43.5		9.0	9.0		5.0	5.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	6.0	6.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
56: FM 2920 & Cherry St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	43.5	43.5		43.5	43.5		9.0	9.0		5.0	5.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.12	0.12		0.07	0.07	
v/c Ratio	0.30	1.05		0.44	1.05		0.68	1.20		0.65	1.00	
Control Delay	18.1	50.7		3.8	30.1		49.7	142.0		61.7	89.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.1	50.7		3.8	30.1		49.7	142.0		61.7	89.3	
LOS	B	D		A	C		D	F		E	F	
Approach Delay		50.2			29.5			122.2			82.9	
Approach LOS		D			C			F			F	
Queue Length 50th (ft)	6	~578		0	~595		65	~154		36	56	
Queue Length 95th (ft)	29	#717		m0	m10		#145	#252		#99	#132	
Internal Link Dist (ft)		644			2620			220			531	
Turn Bay Length (ft)	200			200			150			150		
Base Capacity (vph)	99	2043		99	2044		212	438		118	259	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	1.05		0.44	1.05		0.68	1.20		0.65	1.00	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 52.9 Intersection LOS: D
 Intersection Capacity Utilization 87.3% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 56: FM 2920 & Cherry St



Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕			↕↕	
Volume (vph)	30	853	23	20	911	16	61	30	82	10	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.997			0.890			0.942	
Flt Protected		0.998			0.999		0.950				0.984	
Satd. Flow (prot)	0	3518	0	0	3525	0	1770	1658	0	0	1727	0
Flt Permitted		0.659			0.788		0.881				0.376	
Satd. Flow (perm)	0	2323	0	0	2781	0	1641	1658	0	0	660	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			7			46			22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1600			724			332			624	
Travel Time (s)		36.4			16.5			7.5			14.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	69	1975	53	46	2109	37	102	50	137	17	12	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2097	0	0	2192	0	102	187	0	0	51	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		12.5	12.5		12.5	12.5	
Total Split (s)	97.4	97.4	0.0	97.4	97.4	0.0	12.6	12.6	0.0	12.6	12.6	0.0
Total Split (%)	88.5%	88.5%	0.0%	88.5%	88.5%	0.0%	11.5%	11.5%	0.0%	11.5%	11.5%	0.0%
Maximum Green (s)	91.9	91.9		91.9	91.9		7.1	7.1		7.1	7.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0

Lanes, Volumes, Timings
62: FM 2920 & Pine St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		91.9			91.9		7.1	7.1				7.1
Actuated g/C Ratio		0.84			0.84		0.06	0.06				0.06
v/c Ratio		1.08			0.94		0.96	1.25				0.81
Control Delay		57.9			17.6		130.4	187.4				103.0
Queue Delay		0.0			5.6		0.0	0.0				0.0
Total Delay		57.9			23.1		130.4	187.4				103.0
LOS		E			C		F	F				F
Approach Delay		57.9			23.1			167.3				103.0
Approach LOS		E			C			F				F
Queue Length 50th (ft)		-874			457		73	-133				20
Queue Length 95th (ft)		#1014			#936		#183	#279				#95
Internal Link Dist (ft)		1520			644			252				544
Turn Bay Length (ft)							150					
Base Capacity (vph)		1942			2325		106	150				63
Starvation Cap Reductn		0			117		0	0				0
Spillback Cap Reductn		0			0		0	0				0
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		1.08			0.99		0.96	1.25				0.81

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.25
 Intersection Signal Delay: 48.8 Intersection LOS: D
 Intersection Capacity Utilization 123.8% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 62: FM 2920 & Pine St



Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	845	0	0	1129	61	0	0	0	46	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.992							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	0	0	3511	0	0	1863	0	1770	0	1583
Flt Permitted	0.026									0.950		
Satd. Flow (perm)	48	3539	0	0	3511	0	0	1863	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7							105
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		112			1600			115			330	
Travel Time (s)		2.5			36.4			2.6			7.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	137	1956	0	0	2614	141	0	0	0	77	0	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	1956	0	0	2755	0	0	0	0	77	0	105
Number of Detectors	1	2		1	2		1	2		1		1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100		20	100		20	100		20		20
Trailing Detector (ft)	0	0		0	0		0	0		0		0
Turn Type	Perm			Perm			Perm			Prot		custom
Protected Phases		6			2			3		4		
Permitted Phases	6			2			3					4
Detector Phase	6	6		2	2		3	3		4		4
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		7.0	7.0		7.0		7.0
Minimum Split (s)	27.5	27.5		27.5	27.5		26.0	26.0		27.0		27.0
Total Split (s)	127.0	127.0	0.0	127.0	127.0	0.0	26.0	26.0	0.0	27.0	0.0	27.0
Total Split (%)	70.6%	70.6%	0.0%	70.6%	70.6%	0.0%	14.4%	14.4%	0.0%	15.0%	0.0%	15.0%
Maximum Green (s)	121.5	121.5		121.5	121.5		21.0	21.0		21.0		21.0
Yellow Time (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.5		3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	4.0	6.0

Lanes, Volumes, Timings
72: FM 2920 & Baker Drive

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0		2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Recall Mode	None	None		C-Max	C-Max		None	None		None		None
Walk Time (s)	7.0	7.0		7.0	7.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)	12.0	12.0		10.0	10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0		0
Act Effect Green (s)	156.3	156.3		156.3	156.3					12.2		12.2
Actuated g/C Ratio	0.87	0.87		0.87	0.87					0.07		0.07
v/c Ratio	3.26	0.64		0.90	0.90					0.64		0.51
Control Delay	1093.2	1.6		13.6	13.6					104.3		21.0
Queue Delay	0.0	0.1		1.0	1.0					0.0		23.5
Total Delay	1093.2	1.6		14.6	14.6					104.3		44.5
LOS	F	A		B	B					F		D
Approach Delay		73.1		14.6	14.6							
Approach LOS		E		B	B							
Queue Length 50th (ft)	~287	47		827	827					90		0
Queue Length 95th (ft)	#445	33		1210	1210					150		64
Internal Link Dist (ft)		32		1520	1520			35			250	
Turn Bay Length (ft)	100											
Base Capacity (vph)	42	3073		3049	3049					207		277
Starvation Cap Reductn	0	193		116	116					0		0
Spillback Cap Reductn	0	0		92	92					0		159
Storage Cap Reductn	0	0		0	0					0		0
Reduced v/c Ratio	3.26	0.68		0.94	0.94					0.37		0.89

Intersection Summary

Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 180
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 3.26
 Intersection Signal Delay: 41.0 Intersection LOS: D
 Intersection Capacity Utilization 116.3% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 72: FM 2920 & Baker Drive

 ø2	 ø4	 ø3
127 s	27 s	26 s
 ø6		
127 s		

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	839	2	29	1123	0	24	0	35	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt								0.920				0.865
Flt Protected				0.950				0.980				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1679	0	0	1611	0
Flt Permitted				0.084				0.868				
Satd. Flow (perm)	0	3539	0	156	3539	0	0	1488	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								33				108
Link Speed (mph)		30			30			30				30
Link Distance (ft)		464			112			489				304
Travel Time (s)		10.5			2.5			11.1				6.9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1942	5	67	2600	0	40	0	59	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1947	0	67	2600	0	0	99	0	0	2	0
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Turn Type				Perm			Perm			Perm		
Protected Phases		6			2			3				4
Permitted Phases				2			3			4		
Detector Phase		6		2	2		3	3		4		4
Switch Phase												
Minimum Initial (s)		22.0		22.0	22.0		7.0	7.0		7.0		7.0
Minimum Split (s)		27.5		27.5	27.5		26.0	26.0		27.0		27.0
Total Split (s)	0.0	127.0	0.0	127.0	127.0	0.0	26.0	26.0	0.0	27.0	27.0	0.0
Total Split (%)	0.0%	70.6%	0.0%	70.6%	70.6%	0.0%	14.4%	14.4%	0.0%	15.0%	15.0%	0.0%
Maximum Green (s)		121.5		121.5	121.5		21.0	21.0		21.0		21.0
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0		3.5		3.5
All-Red Time (s)		0.5		0.5	0.5		2.0	2.0		2.5		2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0	6.0	6.0	4.0

Lanes, Volumes, Timings
75: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode		None		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0	10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effect Green (s)		154.1		154.1	154.1			12.8			7.0	
Actuated g/C Ratio		0.86		0.86	0.86			0.07			0.04	
v/c Ratio		0.64		0.50	0.86			0.72			0.01	
Control Delay		4.1		8.5	4.7			81.7			0.0	
Queue Delay		7.1		9.5	2.3			66.7			0.0	
Total Delay		11.1		18.1	7.0			148.4			0.0	
LOS		B		B	A			F			A	
Approach Delay		11.1			7.3			148.4			0.0	
Approach LOS		B			A			F			A	
Queue Length 50th (ft)		171		2	30			78			0	
Queue Length 95th (ft)		m318		m15	1096			145			0	
Internal Link Dist (ft)		384			32			409			224	
Turn Bay Length (ft)				100								
Base Capacity (vph)		3030		134	3030			203			283	
Starvation Cap Reductn		163		41	230			0			0	
Spillback Cap Reductn		1044		0	299			110			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.98		0.72	0.95			1.06			0.01	

Intersection Summary

Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 180
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 11.8 Intersection LOS: B
 Intersection Capacity Utilization 86.9% ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 75: FM 2920 &



Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	740	14	52	1021	41	45	98	106	41	43	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		150	0		150	0		0
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950				0.985			0.976	
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	0	1835	1583	0	1818	1583
Flt Permitted	0.029			0.097				0.640			0.335	
Satd. Flow (perm)	54	3529	0	181	3539	1583	0	1192	1583	0	624	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				45			54			16
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1277			464			632			378	
Travel Time (s)		29.0			10.5			14.4			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	58	1713	32	120	2364	95	75	164	177	69	72	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	1745	0	120	2364	95	0	239	177	0	141	112
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		6			2			8				4
Permitted Phases	6			2		2	8		8	4		4
Detector Phase	6	6		2	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	27.5	27.5		27.5	27.5	27.5	27.5	27.5	27.5	27.0	27.0	27.0
Total Split (s)	143.0	143.0	0.0	143.0	143.0	143.0	37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	79.4%	79.4%	0.0%	79.4%	79.4%	79.4%	20.6%	20.6%	20.6%	20.6%	20.6%	20.6%
Maximum Green (s)	137.5	137.5		137.5	137.5	137.5	31.5	31.5	31.5	32.0	32.0	32.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0

Lanes, Volumes, Timings
76: FM 2920 & Holderrieth St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	Max	Max		C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effect Green (s)	137.5	137.5		137.5	137.5	137.5		31.5	31.5		32.0	32.0
Actuated g/C Ratio	0.76	0.76		0.76	0.76	0.76		0.18	0.18		0.18	0.18
v/c Ratio	1.41	0.65		0.87	0.87	0.08		1.14	0.55		1.27	0.38
Control Delay	309.6	11.3		44.1	13.1	0.9		168.5	53.7		229.6	59.9
Queue Delay	0.0	0.4		0.0	6.1	0.0		0.0	0.0		0.0	0.0
Total Delay	309.6	11.6		44.1	19.2	0.9		168.5	53.7		229.6	59.9
LOS	F	B		D	B	A		F	D		F	E
Approach Delay		21.2			19.7			119.6			154.5	
Approach LOS		C			B			F			F	
Queue Length 50th (ft)	~42	459		105	1106	9		~329	135		~209	101
Queue Length 95th (ft)	#153	516		m#12	95	m0		#523	225		#366	171
Internal Link Dist (ft)		1197			384			552			298	
Turn Bay Length (ft)	150			150		150			150			
Base Capacity (vph)	41	2696		138	2703	1220		209	322		111	295
Starvation Cap Reductn	0	393		0	307	0		0	0		0	0
Spillback Cap Reductn	0	7		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	1.41	0.76		0.87	0.99	0.08		1.14	0.55		1.27	0.38

Intersection Summary

Area Type: Other
 Cycle Length: 180
 Actuated Cycle Length: 180
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.41
 Intersection Signal Delay: 35.2 Intersection LOS: D
 Intersection Capacity Utilization 113.5% ICU Level of Service H
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 76: FM 2920 & Holderrieth St

 ø2	 ø4
143 s	37 s
 ø6	 ø8
143 s	37 s

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	782	0	4	1161	25	11	3	3	21	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.976			0.897	
Flt Protected	0.950			0.950				0.969			0.991	
Satd. Flow (prot)	1770	3539	0	1770	3529	0	0	1762	0	0	1656	0
Flt Permitted	0.062			0.082				0.709			0.936	
Satd. Flow (perm)	115	3539	0	153	3529	0	0	1289	0	0	1564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5			5			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		276			698			93			609	
Travel Time (s)		6.3			15.9			2.1			13.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	213%	213%	213%	213%	213%	213%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	95	1810	0	9	2688	58	18	5	5	35	10	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	1810	0	9	2746	0	0	28	0	0	187	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Detector Phase	6	6		2	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	22.5	22.5		27.5	27.5		27.5	27.5		27.0	27.0	
Total Split (s)	62.5	62.5	0.0	62.5	62.5	0.0	27.5	27.5	0.0	27.5	27.5	0.0
Total Split (%)	69.4%	69.4%	0.0%	69.4%	69.4%	0.0%	30.6%	30.6%	0.0%	30.6%	30.6%	0.0%
Maximum Green (s)	57.0	57.0		57.0	57.0		22.0	22.0		22.5	22.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0	5.0	4.0

Lanes, Volumes, Timings
85: FM 2920 & Buvinghausen St

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		C-Max	C-Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	64.7	64.7		64.7	64.7			14.3			14.8	
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.16			0.16	
v/c Ratio	1.14	0.71		0.08	1.08			0.13			0.72	
Control Delay	168.6	10.2		7.4	60.8			27.3			49.9	
Queue Delay	0.0	0.0		0.0	19.9			0.0			0.0	
Total Delay	168.6	10.2		7.4	80.7			27.3			49.9	
LOS	F	B		A	F			C			D	
Approach Delay		18.1			80.4			27.3			49.9	
Approach LOS		B			F			C			D	
Queue Length 50th (ft)	~64	263		1	-932			11			100	
Queue Length 95th (ft)	#125	442		8	#1150			33			158	
Internal Link Dist (ft)		196			618			13			529	
Turn Bay Length (ft)				200								
Base Capacity (vph)	83	2542		110	2537			319			393	
Starvation Cap Reductn	0	0		0	103			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	1.14	0.71		0.08	1.13			0.09			0.48	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.14
 Intersection Signal Delay: 54.6 Intersection LOS: D
 Intersection Capacity Utilization 91.5% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 85: FM 2920 & Buvinghausen St



Lanes, Volumes, Timings
87: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	30		30			30
Link Distance (ft)	215		890			276
Travel Time (s)	4.9		20.2			6.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
90: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	809	0	0	803	33	294	149	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86	0.86	0.91	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.994			0.991				
Flt Protected	0.950							0.970				
Satd. Flow (prot)	1770	5085	0	0	6369	0	0	4888	0	0	0	0
Flt Permitted	0.950							0.970				
Satd. Flow (perm)	1770	5085	0	0	6369	0	0	4888	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			9				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		367			827			1957				1199
Travel Time (s)		8.3			18.8			44.5				27.3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	154%	154%	154%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	403	1662	0	0	1650	68	492	249	50	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	403	1662	0	0	1718	0	0	791	0	0	0	0
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Turn Type	Prot						Perm					
Protected Phases	1	1 2			2			4				
Permitted Phases							4					
Detector Phase	1	1 2			2		4	4				
Switch Phase												
Minimum Initial (s)	5.0				20.0		5.0	5.0				
Minimum Split (s)	11.5				26.5		27.0	27.0				
Total Split (s)	36.4	75.0	0.0	0.0	38.6	0.0	30.0	30.0	0.0	0.0	0.0	0.0
Total Split (%)	34.7%	71.4%	0.0%	0.0%	36.8%	0.0%	28.6%	28.6%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	29.9				32.1		23.0	23.0				
Yellow Time (s)	4.0				4.0		4.0	4.0				
All-Red Time (s)	2.5				2.5		3.0	3.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	4.0	7.0	7.0	4.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	28.4	46.6	30.0
Total Split (%)	27%	44%	29%
Maximum Green (s)	21.9	40.1	23.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 90: FM 2920 &

Medical Complex Drive
 2/26/2009

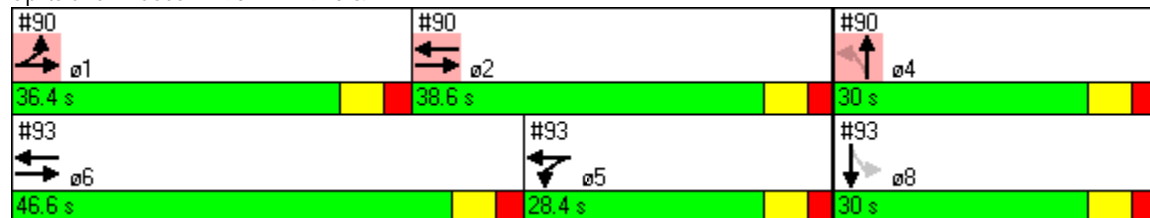


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lead/Lag	Lead			Lag									
Lead-Lag Optimize?	Yes			Yes									
Vehicle Extension (s)	1.0			1.0			1.0		1.0				
Minimum Gap (s)	3.0			3.0			3.0		3.0				
Time Before Reduce (s)	0.0			0.0			0.0		0.0				
Time To Reduce (s)	0.0			0.0			0.0		0.0				
Recall Mode	None			C-Max			None		None				
Walk Time (s)				7.0			7.0		7.0				
Flash Dont Walk (s)				12.0			13.0		13.0				
Pedestrian Calls (#/hr)				0			0		0				
Act Effct Green (s)	27.3		71.6		37.8			19.9					
Actuated g/C Ratio	0.26		0.68		0.36			0.19					
v/c Ratio	0.88		0.48		0.75			1.43dl					
Control Delay	43.7		4.1		32.9			49.9					
Queue Delay	3.4		0.6		0.0			0.1					
Total Delay	47.1		4.6		32.9			50.0					
LOS	D		A		C			D					
Approach Delay			12.9		32.9			50.0					
Approach LOS			B		C			D					
Queue Length 50th (ft)	144		103		301			186					
Queue Length 95th (ft)	#382		116		365			227					
Internal Link Dist (ft)			287		747			1877		1119			
Turn Bay Length (ft)													
Base Capacity (vph)	507		3383		2300			1078					
Starvation Cap Reductn	47		1172		0			0					
Spillback Cap Reductn	0		0		0			16					
Storage Cap Reductn	0		0		0			0					
Reduced v/c Ratio	0.88		0.75		0.75			0.74					

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 26.8 Intersection LOS: C
 Intersection Capacity Utilization 74.9% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 90: FM 2920 &



Lane Group	ø5	ø6	ø8
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
93: FM 2920 & SH 249 West Service Rd

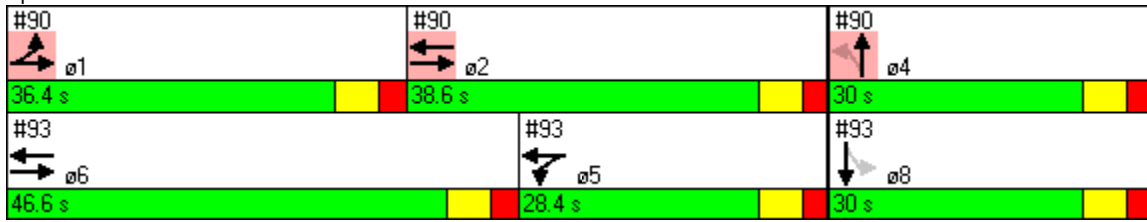
Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑↑↑						↖↑↑↑	
Volume (vph)	0	744	165	105	992	0	0	0	0	261	58	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.86	0.86	1.00	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Ped Bike Factor												
Frt		0.973										0.966
Flt Protected				0.950								0.969
Satd. Flow (prot)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Flt Permitted				0.950								0.969
Satd. Flow (perm)	0	6235	0	1770	5085	0	0	0	0	0	4760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62										15
Link Speed (mph)		30			30			30				30
Link Distance (ft)		735			367			1962				1208
Travel Time (s)		16.7			8.3			44.6				27.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	189%	189%	189%	189%	189%	189%	100%	100%	100%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1528	339	216	2038	0	0	0	0	437	97	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1867	0	216	2038	0	0	0	0	0	691	0
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Turn Type				Prot						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases										8		
Detector Phase		6		5	5 6					8		8
Switch Phase												
Minimum Initial (s)		20.0		5.0						5.0	5.0	
Minimum Split (s)		27.5		11.5						28.0	28.0	
Total Split (s)	0.0	46.6	0.0	28.4	75.0	0.0	0.0	0.0	0.0	30.0	30.0	0.0
Total Split (%)	0.0%	44.4%	0.0%	27.0%	71.4%	0.0%	0.0%	0.0%	0.0%	28.6%	28.6%	0.0%
Maximum Green (s)		40.1		21.9						23.0	23.0	
Yellow Time (s)		4.0		4.0						4.0	4.0	
All-Red Time (s)		2.5		2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	4.0	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	36.4	38.6	30.0
Total Split (%)	35%	37%	29%
Maximum Green (s)	29.9	32.1	23.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Splits and Phases: 93: FM 2920 & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Max	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	322	0	0	1126	47	332	75	665	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		200	200		200	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.91	0.86	0.91	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850		0.896	0.850			
Flt Protected	0.950						0.950	0.992				
Satd. Flow (prot)	1770	3539	0	0	5085	1583	1610	2848	1441	0	0	0
Flt Permitted	0.049						0.950	0.992				
Satd. Flow (perm)	91	3539	0	0	5085	1583	1610	2848	1441	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						45		227	227			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		393			1219			636			1957	
Travel Time (s)		8.9			27.7			14.5			44.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	124%	124%	124%	196%	196%	196%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	170	686	0	0	2399	100	447	101	896	0	0	0
Shared Lane Traffic (%)							22%		50%			
Lane Group Flow (vph)	170	686	0	0	2399	100	349	647	448	0	0	0
Number of Detectors	1	2			2	1	1	2	1			
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	1	1 2			2			4				
Permitted Phases	1 2					2	4		4			
Detector Phase	1	1 2			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	5.0				20.0	20.0	5.0	5.0	5.0			
Minimum Split (s)	11.5				26.5	26.5	27.0	27.0	27.0			
Total Split (s)	17.2	92.0	0.0	0.0	74.8	74.8	58.0	58.0	58.0	0.0	0.0	0.0
Total Split (%)	11.5%	61.3%	0.0%	0.0%	49.9%	49.9%	38.7%	38.7%	38.7%	0.0%	0.0%	0.0%
Maximum Green (s)	10.7				68.3	68.3	51.0	51.0	51.0			
Yellow Time (s)	4.0				4.0	4.0	4.0	4.0	4.0			
All-Red Time (s)	2.5				2.5	2.5	3.0	3.0	3.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.0	4.0	6.5	6.5	7.0	7.0	7.0	4.0	4.0	4.0

Lane Group	ø5	ø6	ø8
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	5	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	27.5	28.0
Total Split (s)	44.8	47.2	58.0
Total Split (%)	30%	31%	39%
Maximum Green (s)	38.3	40.7	51.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Lanes, Volumes, Timings
 96: Medical Complex Drive & SH 249 East Service Rd

Medical Complex Drive
 2/26/2009

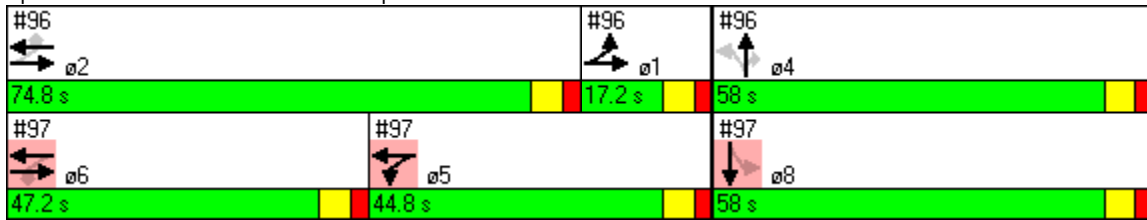


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag			Lead			Lead					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	1.0			1.0			1.0	1.0	1.0			
Minimum Gap (s)	3.0			3.0			3.0	3.0	3.0			
Time Before Reduce (s)	0.0			0.0			0.0	0.0	0.0			
Time To Reduce (s)	0.0			0.0			0.0	0.0	0.0			
Recall Mode	None			C-Min		C-Min	Min	Min	Min			
Walk Time (s)				7.0		7.0	7.0	7.0	7.0			
Flash Dont Walk (s)				12.0		12.0	13.0	13.0	13.0			
Pedestrian Calls (#/hr)				0		0	0	0	0			
Act Effct Green (s)	92.5	99.0		81.8		81.8	37.5	37.5	37.5			
Actuated g/C Ratio	0.62	0.66		0.55		0.55	0.25	0.25	0.25			
v/c Ratio	0.97	0.29		0.86		0.11	0.87	0.73	0.85			
Control Delay	103.3	1.1		34.5		11.2	74.5	37.3	40.2			
Queue Delay	0.0	0.3		2.0		0.0	0.0	0.0	0.0			
Total Delay	103.3	1.5		36.4		11.2	74.5	37.3	40.2			
LOS	F	A		D		B	E	D	D			
Approach Delay	21.7			35.4				47.2				
Approach LOS	C			D				D				
Queue Length 50th (ft)	143	10		720		25	361	226	245			
Queue Length 95th (ft)	#308	13		#980		65	453	276	373			
Internal Link Dist (ft)	313			1139				556		1877		
Turn Bay Length (ft)						200	200			200		
Base Capacity (vph)	176	2337		2774		884	547	1118	640			
Starvation Cap Reductn	0	1018		0		0	0	0	0			
Spillback Cap Reductn	0	0		234		0	0	10	0			
Storage Cap Reductn	0	0		0		0	0	0	0			
Reduced v/c Ratio	0.97	0.52		0.94		0.11	0.64	0.58	0.70			

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 78 (52%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 36.5
 Intersection LOS: D
 Intersection Capacity Utilization 83.6%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 96: Medical Complex Drive & SH 249 East Service Rd



Lane Group	ø5	ø6	ø8
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		14.0	14.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 97: Medical Complex Drive & SH 249 West Service Rd

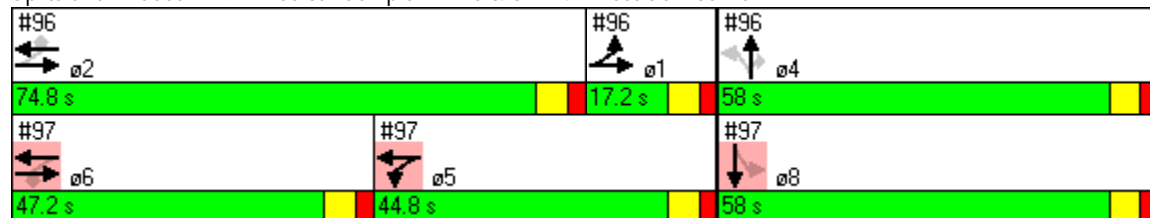
Medical Complex Drive
 2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↑↑	↑↑					↑	↑↑	
Volume (vph)	0	480	106	478	477	0	0	0	0	27	6	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	2		0	0		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.91	0.91	0.95
Ped Bike Factor												
Frt			0.850									0.949
Flt Protected				0.950						0.950	0.978	
Satd. Flow (prot)	0	5085	1583	3433	3539	0	0	0	0	1610	3147	0
Flt Permitted				0.146						0.950	0.978	
Satd. Flow (perm)	0	5085	1583	528	3539	0	0	0	0	1610	3147	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			179									13
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2815			393			714				1962
Travel Time (s)		64.0			8.9			16.2				44.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	196%	100%	100%	124%	124%	124%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	1023	226	1018	1016	0	0	0	0	36	8	13
Shared Lane Traffic (%)										46%		
Lane Group Flow (vph)	0	1023	226	1018	1016	0	0	0	0	19	38	0
Number of Detectors		2	1	1	2					1	2	
Detector Template		Thru	Right	Left	Thru					Left	Thru	
Leading Detector (ft)		100	20	20	100					20	100	
Trailing Detector (ft)		0	0	0	0					0	0	
Turn Type			Perm	pm+pt						Perm		
Protected Phases		6		5	5 6							8
Permitted Phases			6	5 6						8		
Detector Phase		6	6	5	5 6					8	8	
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0						5.0	5.0	
Minimum Split (s)		27.5	27.5	11.5						28.0	28.0	
Total Split (s)	0.0	47.2	47.2	44.8	92.0	0.0	0.0	0.0	0.0	58.0	58.0	0.0
Total Split (%)	0.0%	31.5%	31.5%	29.9%	61.3%	0.0%	0.0%	0.0%	0.0%	38.7%	38.7%	0.0%
Maximum Green (s)		40.7	40.7	38.3						51.0	51.0	
Yellow Time (s)		4.0	4.0	4.0						4.0	4.0	
All-Red Time (s)		2.5	2.5	2.5						3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5	6.5	6.5	6.5	4.0	4.0	4.0	4.0	7.0	7.0	4.0

Lane Group	ø1	ø2	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Turn Type			
Protected Phases	1	2	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	20.0	5.0
Minimum Split (s)	11.5	26.5	27.0
Total Split (s)	17.2	74.8	58.0
Total Split (%)	11%	50%	39%
Maximum Green (s)	10.7	68.3	51.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	3.0
Lost Time Adjust (s)			
Total Lost Time (s)			

Splits and Phases: 97: Medical Complex Drive & SH 249 West Service Rd



Lane Group	ø1	ø2	ø4
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0
Recall Mode	None	C-Min	Min
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		12.0	13.0
Pedestrian Calls (#/hr)		0	0
Act Effect Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
104: FM 2920 &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↕			↕	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1990			618			233			163	
Travel Time (s)		45.2			14.0			5.3			3.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
114: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	3539	3539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	906			5205	1406	
Travel Time (s)	20.6			118.3	32.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Turn Type			Perm			
Protected Phases	4!			2	8!	
Permitted Phases			2			
Detector Phase	4		2	2	8	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0		16.0	16.0	16.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 114: Medical Complex Dr &

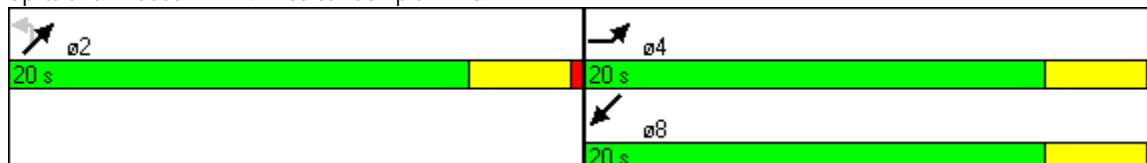


Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Max		Max	Max	Max	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	826			5125	1326	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type: Other
 Cycle Length: 40
 Actuated Cycle Length: 40
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:, Start of Green
 Natural Cycle: 40
 Control Type: Pretimed
 Maximum v/c Ratio: 0.00
 Intersection Signal Delay: 0.0 Intersection LOS: A
 Intersection Capacity Utilization 0.0% ICU Level of Service A
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 114: Medical Complex Dr &



Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑		↘	↑↑			↙			↙	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3855			2112			1114			1168	
Travel Time (s)		87.6			48.0			25.3			26.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
116: Medical Complex Dr &

Medical Complex Drive
2/26/2009

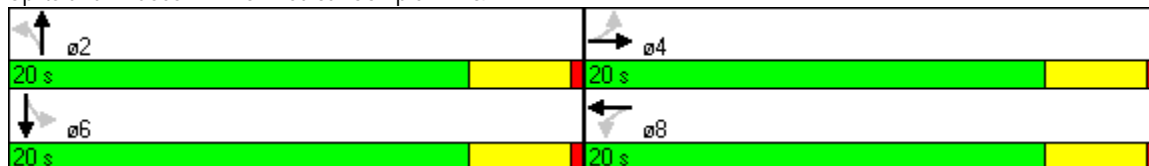


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		3775			2032			1034			1088	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 116: Medical Complex Dr &



Lanes, Volumes, Timings
117: Medical Complex Dr & Hufsmith Khorville Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	412	19	27	393	118	7	107	3	47	92	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.965			0.996				0.954
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3415	0	1770	1855	0	1770	1777	0
Flt Permitted	0.225			0.282			0.451			0.533		
Satd. Flow (perm)	419	3514	0	525	3415	0	840	1855	0	993	1777	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			117			2				27
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2112			5205			1065				775
Travel Time (s)		48.0			118.3			24.2				17.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	392	878	40	58	837	251	12	179	5	79	154	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	392	918	0	58	1088	0	12	184	0	79	223	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	55.0	55.0	0.0	55.0	55.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	73.3%	73.3%	0.0%	73.3%	73.3%	0.0%	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%
Maximum Green (s)	51.0	51.0		51.0	51.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 117: Medical Complex Dr & Hufsmith Khorville Rd

Medical Complex Drive
 2/26/2009

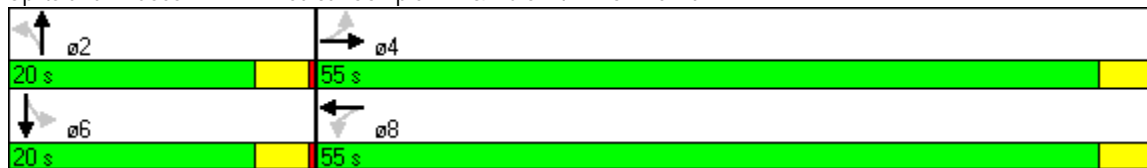


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	51.0	51.0		51.0	51.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.21	0.21		0.21	0.21	
v/c Ratio	1.38	0.38		0.16	0.46		0.07	0.46		0.37	0.56	
Control Delay	208.7	5.7		5.6	5.6		24.8	29.9		31.3	29.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	208.7	5.7		5.6	5.6		24.8	29.9		31.3	29.2	
LOS	F	A		A	A		C	C		C	C	
Approach Delay		66.4			5.6			29.6			29.7	
Approach LOS		E			A			C			C	
Queue Length 50th (ft)	~246	80		8	90		4	74		32	81	
Queue Length 95th (ft)	#279	108		22	124		18	133		71	149	
Internal Link Dist (ft)		2032			5125			985			695	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	285	2394		357	2360		179	397		212	400	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.38	0.38		0.16	0.46		0.07	0.46		0.37	0.56	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 Maximum v/c Ratio: 1.38
 Intersection Signal Delay: 36.6 Intersection LOS: D
 Intersection Capacity Utilization 76.6% ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 117: Medical Complex Dr & Hufsmith Khorville Rd



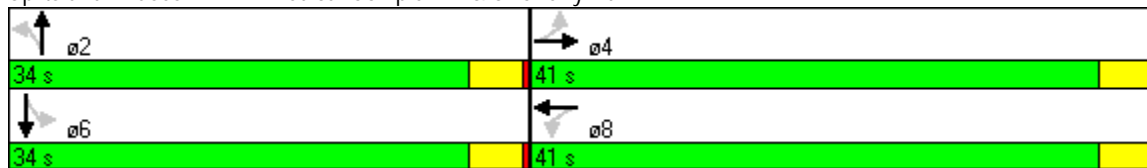
Lanes, Volumes, Timings
122: Medical Complex Dr & S. Cherry Rd

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	517	29	25	580	39	64	188	41	62	168	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.991			0.973				0.970
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3507	0	1770	1812	0	1770	1807	0
Flt Permitted	0.108			0.141			0.425			0.388		
Satd. Flow (perm)	201	3511	0	263	3507	0	792	1812	0	723	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			13			18				20
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2634			3855			1711				2332
Travel Time (s)		59.9			87.6			38.9				53.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	196%	196%	196%	196%	196%	196%	154%	154%	154%	154%	154%	154%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	62	1101	62	53	1236	83	107	315	69	104	281	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	1163	0	53	1319	0	107	384	0	104	350	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	54.7%	54.7%	0.0%	54.7%	54.7%	0.0%	45.3%	45.3%	0.0%	45.3%	45.3%	0.0%
Maximum Green (s)	37.0	37.0		37.0	37.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Splits and Phases: 122: Medical Complex Dr & S. Cherry Rd



Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1181			2634			643			613	
Travel Time (s)		26.8			59.9			14.6			13.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
131: Medical Complex Dr &

Medical Complex Drive
2/26/2009

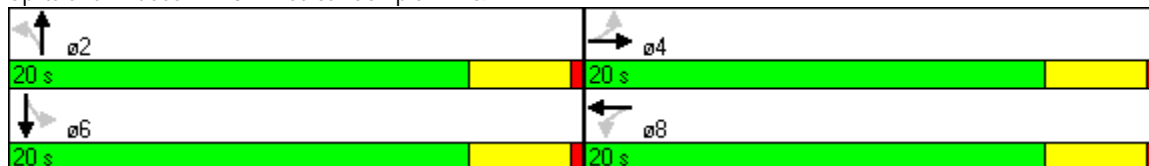


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1101			2554			563			533	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

























Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 131: Medical Complex Dr &



Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	3539	0	1863	3539	0	1863	1863	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1181			411			528	
Travel Time (s)		22.7			26.8			9.3			12.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
132: Int

Medical Complex Drive
2/26/2009

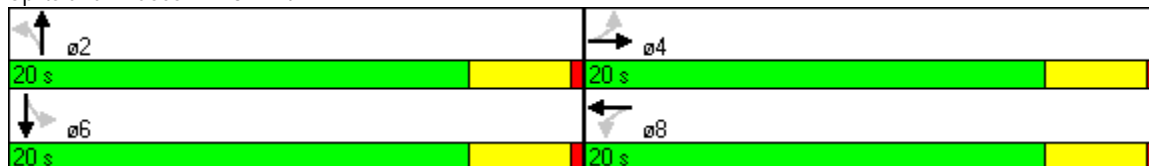


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		920			1101			331			448	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 132: Int



Lanes, Volumes, Timings
133: Int

Medical Complex Drive
2/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1696			1000			95			284	
Travel Time (s)		38.5			22.7			2.2			6.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
133: Int

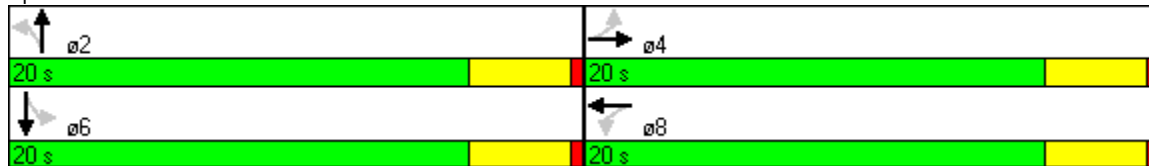


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Queue Length 50th (ft)												
Queue Length 95th (ft)												
Internal Link Dist (ft)		1616			920			15			204	
Turn Bay Length (ft)												
Base Capacity (vph)												
Starvation Cap Reductn												
Spillback Cap Reductn												
Storage Cap Reductn												
Reduced v/c Ratio												











Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection Capacity Utilization:	0.0%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 133: Int



Lanes, Volumes, Timings
134: Triechel Rd & Medical Complex Dr

						
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	1863	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	1863	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	313		692			2340
Travel Time (s)	7.1		15.7			53.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (ft)	20		100		20	100
Trailing Detector (ft)	0		0		0	0
Turn Type					Perm	
Protected Phases	2					8
Permitted Phases			4		8	
Detector Phase	2		4		8	8
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	20.0		20.0		20.0	20.0
Total Split (s)	20.0	0.0	20.0	0.0	20.0	20.0
Total Split (%)	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%
Maximum Green (s)	16.0		16.0		16.0	16.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	0.5		0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0

Lanes, Volumes, Timings
 134: Triechel Rd & Medical Complex Dr

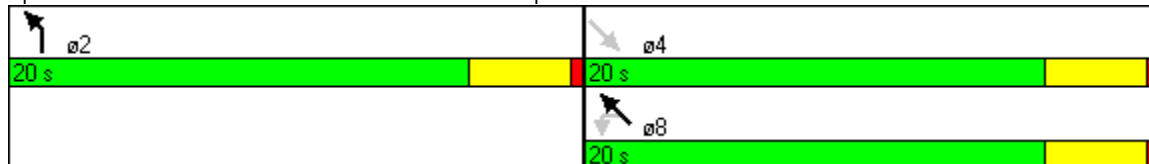


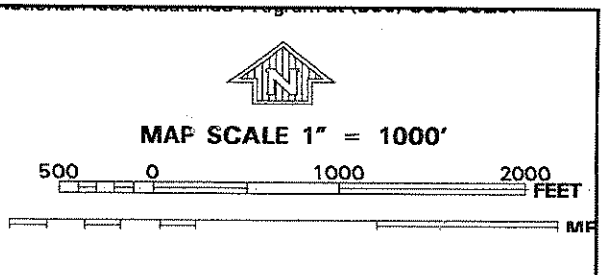
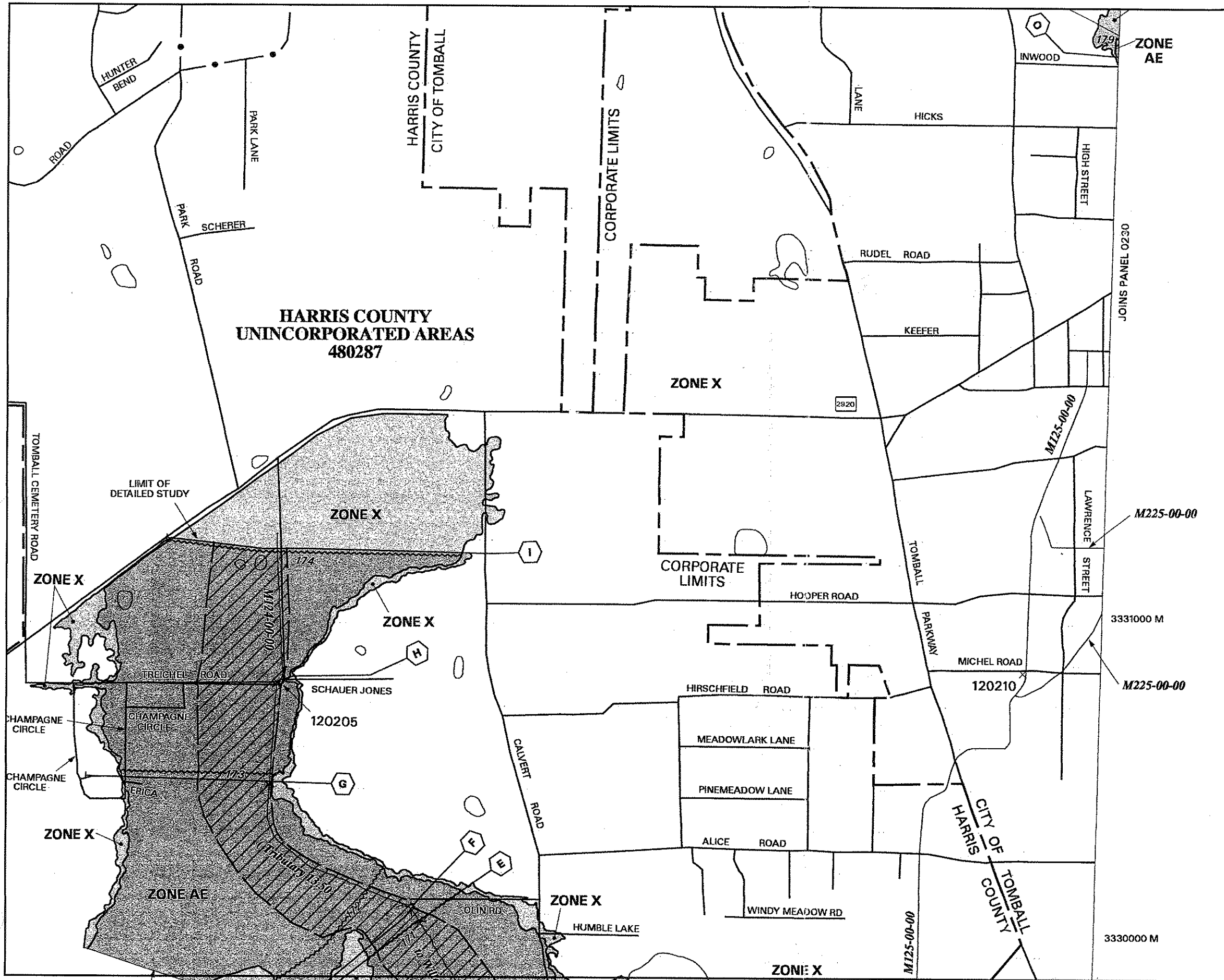
Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Minimum Gap (s)	3.0		3.0		3.0	3.0
Time Before Reduce (s)	0.0		0.0		0.0	0.0
Time To Reduce (s)	0.0		0.0		0.0	0.0
Recall Mode	Max		Max		Max	Max
Walk Time (s)	5.0		5.0		5.0	5.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Queue Length 50th (ft)						
Queue Length 95th (ft)						
Internal Link Dist (ft)	233		612		2260	
Turn Bay Length (ft)						
Base Capacity (vph)						
Starvation Cap Reductn						
Spillback Cap Reductn						
Storage Cap Reductn						
Reduced v/c Ratio						

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.00
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization:	0.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 134: Triechel Rd & Medical Complex Dr





NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0210L

FIRM
FLOOD INSURANCE RATE MAP
 HARRIS COUNTY,
 TEXAS
 AND INCORPORATED AREAS

PANEL 210 OF 1150
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)


CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
TOMBALL, CITY OF	48216	0210	L
HARRIS COUNTY, UNINCORPORATED AREAS	48287	0210	L

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

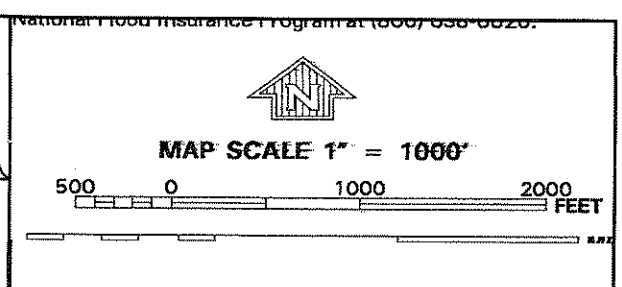
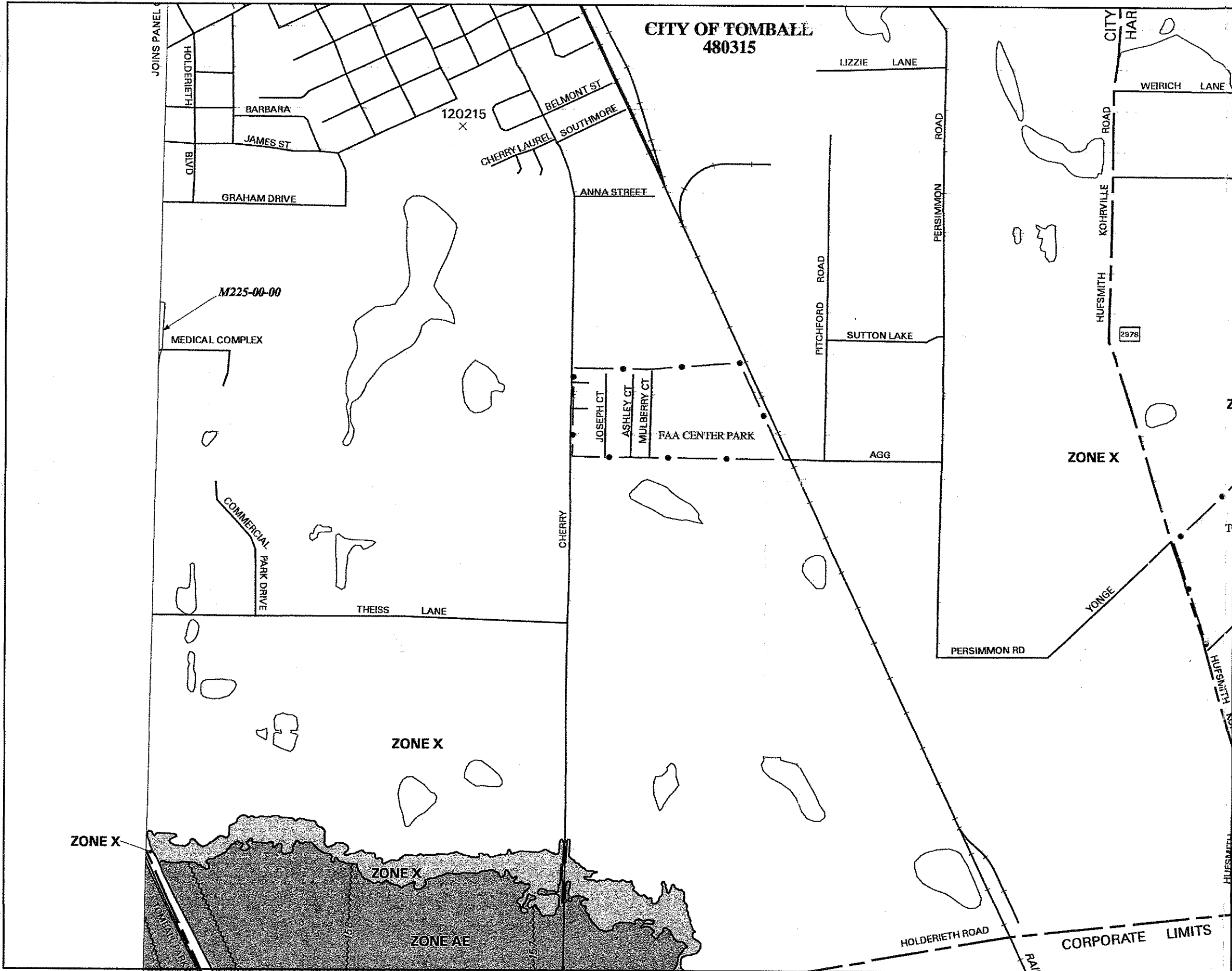
MAP NUMBER
48201G0210L

MAP REVISED:
JUNE 18, 2007



Federal Emergency Management Agency

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FIRM
FLOOD INSURANCE RATE MAP
HARRIS COUNTY,
TEXAS
AND INCORPORATED AREAS

PANEL 230 OF 1150
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

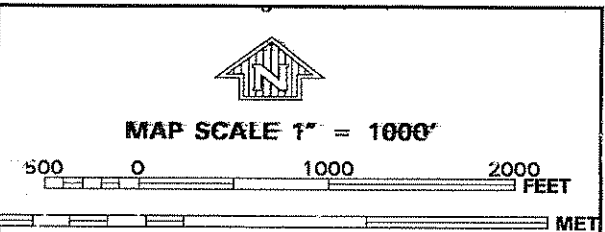
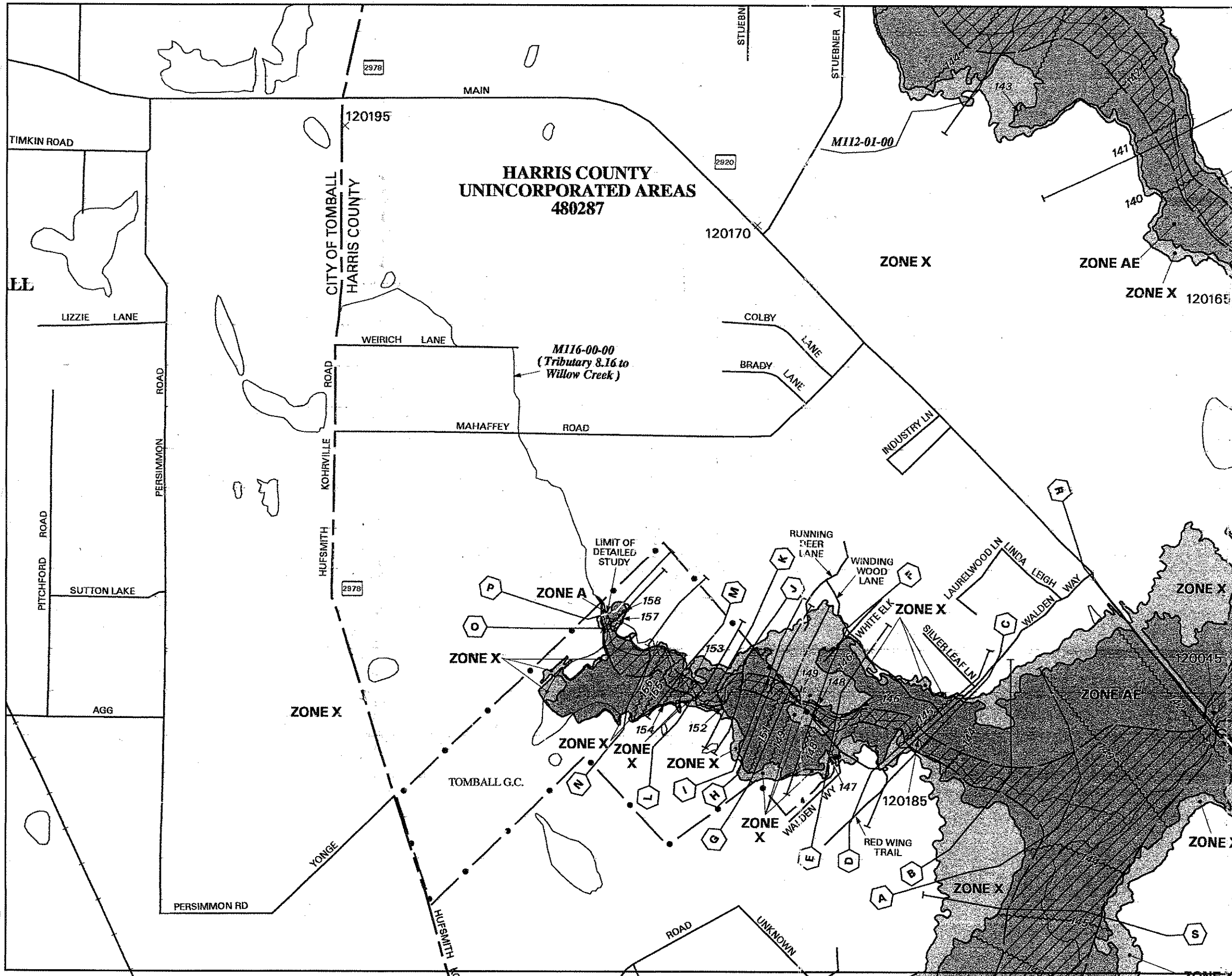
COMMUNITY	NUMBER	PANEL	SUFFIX
TOMBALL, CITY OF	480315	0230	L
HARRIS COUNTY, UNINCORPORATED AREAS	480287	0230	L
HOUSTON, CITY OF	480298	0230	L

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
48201C0230L
MAP REVISED:
JUNE 18, 2007

Federal Emergency Management Agency

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NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0230L

FIRM
FLOOD INSURANCE RATE MAP
 HARRIS COUNTY,
 TEXAS
 AND INCORPORATED AREAS

PANEL 230 OF 1150
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
TOMBALL, CITY OF	48015	0230	L
HARRIS COUNTY, UNINCORPORATED AREAS	48027	0230	L
HOUSTON, CITY OF	48099	0230	L

Notice to User: The Map Number shown below should be used when placing map orders; the Community Numbers shown above should be used on insurance applications for the subject community.

MAP NUMBER
 48201C0230L

MAP REVISED:
 JUNE 19, 2007

Federal Emergency Management Agency

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MEDICAL COMPLEX DRIVE EXPANSION - DRAINAGE IMPACT ANALYSIS
 RUNOFF COMPUTATIONS SUMMARY FOR EXISTING CONDITIONS

DRAIN AREA I.D.	TOTAL AREA (AC)	PAVED AREA (AC)	SUBDV. AREA (AC)	GRASSED AREA (AC)	IMPERV. COVER (%)	RUNOFF COEFF. C	CONCRETE LENGTH (FT)	CHANNEL LENGTH (FT)	OVERLAND LENGTH (FT)	TIME OF CONC. (MIN)	2-YR INTENSITY (IN/HR)	100-YR INTENSITY (IN/HR)	2-YR RUNOFF (CFS)	100-YR RUNOFF (CFS)
SYSTEM A														
A1	22.00	4.94	0.00	17.07	22.43	0.33	0.00	1899.00	235.00	26.70	3.29	6.82	24.25	50.23
A2	16.39	5.77	0.00	10.61	35.23	0.41	0.00	787.00	822.00	28.32	3.19	6.66	21.54	44.89
SYSTEM B														
B1	3.30	0.26	0.00	3.04	7.85	0.25	0.00	886.00	191.00	14.39	4.36	8.50	3.56	6.94
B2	5.72	1.05	0.00	4.67	18.33	0.31	0.00	1704.00	232.00	24.46	3.44	7.07	6.11	12.54
B3	5.36	3.72	0.00	1.64	69.45	0.62	607.00	128.00	45.00	5.87	5.73	10.40	18.92	34.35
B4	11.71	4.79	0.00	6.91	40.94	0.45	0.00	1708.00	160.00	22.79	3.57	7.27	18.61	37.91
B5	20.70	0.76	0.00	19.94	3.67	0.22	0.00	1026.00	845.00	31.52	3.01	6.36	13.86	29.22
B6	5.56	0.18	0.00	5.39	3.17	0.22	0.00	0.00	854.00	20.33	3.76	7.58	4.59	9.24
B7	3.90	0.29	0.00	3.61	7.42	0.24	0.00	0.00	877.00	20.88	3.72	7.51	3.54	7.16
B8	2.78	0.17	0.00	2.61	5.96	0.24	0.00	0.00	908.00	21.62	3.66	7.41	2.39	4.85
SYSTEM C														
C1	216.78	56.05	0.00	160.73	25.86	0.36	0.00	9003.00	785.00	118.72	1.27	3.07	97.81	236.55
C2	0.98	0.01	0.00	0.96	1.24	0.21	0.00	0.00	598.00	14.24	4.38	8.53	0.89	1.73
C3	3.76	0.00	0.00	3.76	0.00	0.20	0.00	0.00	889.00	21.17	3.69	7.47	2.78	5.62
C4	76.02	0.00	0.00	76.02	0.00	0.20	1185.00	1233.00	267.00	26.64	3.30	6.83	50.14	103.83
C5	7.74	0.00	0.00	7.74	0.00	0.20	0.00	0.00	1587.00	37.79	2.72	5.85	4.21	9.05
C6	9.08	0.06	0.00	9.03	0.65	0.20	0.00	0.00	1524.00	36.29	2.79	5.96	5.16	11.04
C7	9.42	1.87	0.00	7.55	19.88	0.32	0.00	2781.00	241.00	36.64	2.77	5.93	8.33	17.84
C8	311.95	36.95	0.00	275.00	11.84	0.27	0.00	7227.00	743.00	97.99	1.46	3.46	123.42	292.85
SYSTEM D														
D1	0.99	0.06	0.00	0.93	5.91	0.24	0.00	204.00	239.00	7.96	5.31	9.84	1.24	2.29
D2	3.75	0.29	0.00	3.46	7.62	0.25	0.00	530.00	293.00	12.87	4.55	8.78	4.20	8.09
D3	5.43	0.08	0.00	5.35	1.43	0.21	0.00	0.00	1136.00	27.05	3.27	6.79	3.70	7.68
D4	14.14	1.67	0.00	12.47	11.80	0.27	0.00	297.00	863.00	23.85	3.49	7.14	13.35	27.33
SYSTEM E														
E1	4.67	0.05	0.00	4.62	1.12	0.21	0.00	0.00	988.00	23.52	3.51	7.18	3.39	6.93
E2	23.49	0.44	0.00	23.05	1.88	0.21	0.00	462.00	1301.00	36.11	2.79	5.97	13.86	29.65
E3	5.27	0.46	0.00	4.81	8.76	0.25	0.00	1146.00	258.00	18.88	3.89	7.79	5.18	10.36
E4	61.92	7.88	0.00	54.04	12.73	0.28	0.00	816.00	3060.00	81.92	1.66	3.86	28.33	66.02
SYSTEM F														
F1	3.51	0.29	0.00	3.22	8.35	0.25	0.00	784.00	263.00	14.97	4.30	8.40	3.77	7.37
F2	164.20	34.47	0.00	129.73	20.99	0.33	0.00	6834.00	89.00	78.05	1.71	3.97	91.63	212.48
SYSTEM G														
G1	14.51	1.05	0.00	13.46	7.25	0.24	0.00	48.00	1253.00	30.37	3.08	6.46	10.87	22.83
G2	6.34	0.24	0.00	6.10	3.84	0.22	0.00	1115.00	237.00	18.03	3.97	7.91	5.62	11.19
SYSTEM H														
H1	14.30	2.65	0.00	11.65	18.55	0.31	0.00	806.00	568.00	22.48	3.59	7.31	15.99	32.53
H2	4.75	0.59	0.00	4.16	12.44	0.27	0.00	1531.00	235.00	22.61	3.58	7.29	4.67	9.50
H3	10.53	0.00	10.18	0.35	53.16	0.52	774.00	0.00	137.00	7.56	5.38	9.94	29.42	54.33

MEDICAL COMPLEX DRIVE EXPANSION - DRAINAGE IMPACT ANALYSIS
 RUNOFF COMPUTATIONS SUMMARY FOR EXISTING CONDITIONS

DRAIN AREA I.D.	TOTAL AREA (AC)	PAVED AREA (AC)	SUBDV. AREA (AC)	GRASSED AREA (AC)	IMPERV. COVER (%)	RUNOFF COEFF. C	CONCRETE LENGTH (FT)	CHANNEL LENGTH (FT)	OVERLAND LENGTH (FT)	TIME OF CONC. (MIN)	2-YR INTENSITY (IN/HR)	100-YR INTENSITY (IN/HR)	2-YR RUNOFF (CFS)	100-YR RUNOFF (CFS)
H4	1.76	0.00	0.00	1.76	0.00	0.20	0.00	269.00	45.00	4.06	6.15	10.94	2.16	3.84
H5	125.99	24.56	29.85	71.58	32.52	0.40	116.00	6698.00	695.00	91.61	1.53	3.61	76.21	179.63
SYSTEM I														
I1	195.52	31.86	89.63	74.03	41.51	0.45	0.00	6729.00	774.00	93.20	1.51	3.57	132.80	313.53
I2	3.46	0.06	0.00	3.40	1.72	0.21	0.00	0.00	808.00	19.24	3.86	7.73	2.81	5.63
SYSTEM J														
J1	4.98	0.00	0.00	4.98	0.00	0.20	0.00	0.00	938.00	22.33	3.60	7.32	3.58	7.29
J2	91.70	17.06	17.26	57.38	28.96	0.37	1654.00	1324.00	1128.00	50.76	2.27	5.04	77.97	172.88
J3	4.12	0.07	0.00	4.05	1.70	0.21	70.00	0.00	819.00	19.89	3.80	7.64	3.29	6.62
J4	3.48	0.06	0.00	3.42	1.80	0.21	0.00	123.00	734.00	18.84	3.90	7.79	2.86	5.72
J5	23.57	2.39	0.00	21.18	10.14	0.26	0.00	0.00	905.00	21.55	3.66	7.42	22.53	45.64
SYSTEM K														
K1	46.70	30.31	0.00	16.39	64.91	0.59	2381.00	0.00	0.00	13.23	4.51	8.71	124.05	239.74
K2	9.64	1.90	3.83	3.91	41.54	0.45	1426.00	0.00	388.00	17.16	4.06	8.04	17.59	34.84
K3	172.41	93.82	26.13	52.47	62.75	0.58	1344.00	3463.00	817.00	65.40	1.93	4.39	191.83	436.80
K4	7.31	1.65	0.00	5.66	22.61	0.34	0.00	497.00	303.00	12.74	4.57	8.80	11.21	21.59
K5	1.55	0.89	0.00	0.66	57.28	0.54	1121.00	0.00	21.00	6.73	5.55	10.16	4.66	8.54
SYSTEM L														
L1	30.05	21.35	0.00	8.71	71.03	0.63	2492.00	0.00	0.00	13.84	4.43	8.60	83.36	161.77
SYSTEM M														
M1	41.02	31.45	0.00	9.56	76.68	0.66	2724.00	0.00	0.00	15.13	4.28	8.37	115.81	226.61
M2	3.62	0.41	0.00	3.20	11.46	0.27	0.00	756.00	301.00	15.57	4.23	8.30	4.11	8.07
SYSTEM N														
N1	8.26	0.22	0.00	8.04	2.67	0.22	0.00	845.00	416.00	19.29	3.86	7.73	6.88	13.78
N2	5.96	0.41	0.00	5.55	6.90	0.24	0.00	1181.00	191.00	17.67	4.01	7.96	5.77	11.46
SYSTEM P														
P1	98.29	46.11	0.00	52.19	46.91	0.48	2378.00	1992.00	0.00	35.34	2.83	6.03	133.82	285.53
P2	8.48	1.14	0.00	7.35	13.40	0.28	0.00	1815.00	190.00	24.69	3.43	7.04	8.16	16.76
P3	41.83	4.35	0.00	37.48	10.40	0.26	0.00	353.00	1309.00	35.09	2.84	6.05	31.16	66.44
P4	21.94	2.31	0.00	19.63	10.54	0.26	0.00	1163.00	588.00	26.92	3.28	6.80	18.94	39.28
P5	19.48	0.36	0.00	19.11	1.87	0.21	0.00	0.00	1697.00	40.40	2.62	5.66	10.76	23.29
P6	10.77	0.28	0.00	10.49	2.61	0.22	0.00	0.00	971.00	23.12	3.54	7.23	8.22	16.78
P7	78.69	9.88	0.00	68.81	12.56	0.28	0.00	2108.00	1896.00	68.57	1.87	4.28	40.51	92.70
P8	402.49	42.24	97.13	263.12	23.77	0.34	0.00	2796.00	3335.00	110.47	1.34	3.22	184.62	443.34
P9	586.39	130.02	81.46	374.91	29.81	0.38	0.00	707.00	6921.00	172.64	0.96	2.41	213.42	535.05
P10	124.34	10.72	0.00	113.63	8.62	0.25	0.00	449.00	4248.00	106.13	1.38	3.30	43.14	103.18
P11	17.01	3.51	0.00	13.51	20.62	0.32	0.00	3481.00	95.00	40.94	2.60	5.63	14.29	30.98
P12	5.79	0.83	0.00	4.96	14.38	0.29	60.00	1400.00	0.00	15.89	4.19	8.24	6.95	13.67
P13	14.52	5.20	0.00	9.33	35.78	0.41	0.00	2560.00	182.00	32.78	2.95	6.25	17.77	37.61
P14	17.40	0.74	0.00	16.65	4.28	0.23	0.00	366.00	1248.00	33.78	2.90	6.16	11.39	24.19
P15	305.28	19.54	30.52	255.22	11.90	0.27	0.00	2167.00	3818.00	114.98	1.30	3.14	107.74	259.76

MEDICAL COMPLEX DRIVE EXPANSION - DRAINAGE IMPACT ANALYSIS
 RUNOFF COMPUTATIONS SUMMARY FOR PROPOSED CONDITIONS

DRAIN AREA I.D.	TOTAL AREA (AC)	PAVED AREA (AC)	SUBDV. AREA (AC)	GRASSED AREA (AC)	IMPERV. COVER (%)	RUNOFF COEFF. C	CONCRETE LENGTH (FT)	CHANNEL LENGTH (FT)	OVERLAND LENGTH (FT)	TIME OF CONC. (MIN)	2-YR INTENSITY (IN/HR)	100-YR INTENSITY (IN/HR)	2-YR RUNOFF (CFS)	100-YR RUNOFF (CFS)
SYSTEM A2														
A1a	0.25	0.16	0.00	0.09	62.82	0.58	88.00	112.00	0.00	10.00	4.96	9.36	0.72	1.36
A1b	1.76	0.49	0.00	1.28	27.72	0.37	375.00	0.00	135.00	10.00	4.96	9.36	3.21	6.05
A1c	6.94	1.35	0.00	5.60	19.42	0.32	0.00	1269.00	241.00	19.84	3.81	7.65	8.37	16.82
A1d	6.16	1.64	0.00	4.52	26.67	0.36	0.00	1235.00	260.00	19.91	3.80	7.64	8.43	16.94
A1e	1.00	0.36	0.00	0.64	36.10	0.42	212.00	0.00	135.00	10.00	4.96	9.36	2.08	3.92
A2a	9.85	2.62	0.00	7.23	26.62	0.36	0.00	138.00	786.00	20.25	3.77	7.59	13.37	26.92
A2b	3.28	2.28	0.00	1.00	69.55	0.62	954.00	0.00	0.00	10.00	4.96	9.36	10.04	18.93
A2c	3.40	1.11	0.00	2.28	32.80	0.40	261.00	0.00	489.00	13.09	4.52	8.73	6.10	11.77
B1a	1.54	0.31	0.00	1.23	20.06	0.32	309.00	0.00	167.00	10.00	4.96	9.36	2.44	4.60
B1b	1.98	0.35	0.00	1.63	17.73	0.31	299.00	0.00	168.00	10.00	4.96	9.36	3.01	5.67
B2a	1.07	0.41	0.00	0.66	38.13	0.43	239.00	0.00	169.00	10.00	4.96	9.36	2.29	4.31
B2b	4.31	0.63	0.00	3.68	14.70	0.29	0.00	955.00	232.00	16.13	4.17	8.20	5.18	10.19
B2c	0.54	0.29	0.00	0.25	54.47	0.53	428.00	0.00	0.00	10.00	4.96	9.36	1.41	2.66
B2d	5.85	1.20	0.00	4.64	20.61	0.32	0.00	987.00	225.00	16.32	4.15	8.17	7.85	15.46
B3	5.22	3.72	0.00	1.50	71.29	0.63	607.00	128.00	45.00	10.00	4.96	9.36	16.26	30.68
B4	12.00	5.16	0.00	6.85	42.98	0.46	0.00	1843.00	169.00	24.50	3.44	7.06	18.92	38.83
B5a	3.39	0.49	0.00	2.90	14.38	0.29	448.00	0.00	161.00	10.00	4.96	9.36	4.81	9.08
B5b	17.05	0.65	0.00	16.40	3.80	0.22	0.00	913.00	845.00	30.26	3.08	6.47	11.71	24.57
B6a	1.38	0.17	0.00	1.21	12.00	0.27	290.00	0.00	160.00	10.00	4.96	9.36	1.86	3.51
B7	3.49	0.80	0.00	2.69	22.78	0.34	449.00	0.00	160.00	10.00	4.96	9.36	5.83	11.00
B8a	1.30	0.32	0.00	0.98	24.43	0.35	292.00	0.00	118.00	10.00	4.96	9.36	2.24	4.22
SYSTEM C														
B6b	2.98	0.29	0.00	2.69	9.88	0.26	162.00	0.00	376.00	10.00	4.96	9.36	3.84	7.24
B8b	1.28	0.23	0.00	1.06	17.70	0.31	397.00	0.00	116.00	10.00	4.96	9.36	1.95	3.68
C1a	2.08	0.52	0.00	1.56	24.95	0.35	390.00	0.00	359.00	10.71	4.85	9.21	3.54	6.71
C2a	0.48	0.22	0.00	0.26	45.31	0.47	403.00	0.00	0.00	10.00	4.96	9.36	1.12	2.11
C1d-1	16.80	0.98	0.00	15.82	5.82	0.23	0.00	497.00	1065.00	30.88	3.05	6.41	12.03	25.31
C1c	1.35	0.22	0.00	1.13	16.59	0.30	398.00	0.00	129.00	10.00	4.96	9.36	2.01	3.78
C1d-2	195.14	54.82	0.00	140.32	28.09	0.37	0.00	7065.00	505.00	90.52	1.54	3.63	111.03	261.38
C3b	2.07	0.23	0.00	1.84	11.14	0.27	413.00	0.00	166.00	10.00	4.96	9.36	2.74	5.18
C4	76.40	0.15	76.02	0.24	54.91	0.53	1185.00	1379.00	267.00	28.26	3.20	6.66	129.35	269.54
C5a	3.77	0.44	0.00	3.34	11.58	0.27	397.00	0.00	166.00	10.00	4.96	9.36	5.05	9.52
C5b	1.32	0.16	0.00	1.17	11.88	0.27	275.00	0.00	170.00	10.00	4.96	9.36	1.78	3.36
C5c	1.89	0.22	0.00	1.68	11.57	0.27	393.00	0.00	166.00	10.00	4.96	9.36	2.53	4.78
C6a	3.18	0.48	0.00	2.70	15.08	0.29	400.00	0.00	185.00	10.00	4.96	9.36	4.58	8.64
C6b	3.99	0.18	0.00	3.80	4.61	0.23	117.00	0.00	747.00	18.44	3.94	7.85	3.57	7.13
C6c	2.56	0.27	0.00	2.29	10.45	0.26	22.00	0.00	539.00	12.96	4.54	8.76	3.05	5.89
C7_C8	321.37	38.82	0.00	282.55	12.08	0.27	0.00	9290.64	743.00	120.92	1.25	3.04	109.77	265.94
D1	1.49	0.19	0.00	1.31	12.42	0.27	299.00	0.00	166.00	10.00	4.96	9.36	2.03	3.83
D2a	0.81	0.28	0.00	0.53	34.31	0.41	178.00	0.00	130.00	10.00	4.96	9.36	1.62	3.06
SYSTEM D1														
D2b	2.44	0.34	0.00	2.10	13.87	0.28	0.00	472.00	293.00	12.22	4.64	8.90	3.20	6.14
SYSTEM D2 REV														
D4a	2.55	0.33	0.00	2.22	12.97	0.28	263.00	0.00	349.00	10.00	4.96	9.36	3.52	6.64
D4b	8.59	1.68	0.00	6.91	19.58	0.32	0.00	241.00	863.00	23.23	3.53	7.21	9.63	19.67
D4c	1.32	0.14	0.00	1.18	10.50	0.26	247.00	0.00	285.00	10.00	4.96	9.36	1.73	3.26
D3a	2.77	0.46	0.00	2.31	16.75	0.30	290.00	0.00	176.00	10.00	4.96	9.36	4.13	7.79
D3b	1.26	0.14	0.00	1.12	11.06	0.27	246.00	0.00	168.00	10.00	4.96	9.36	1.66	3.14

MEDICAL COMPLEX DRIVE EXPANSION - DRAINAGE IMPACT ANALYSIS
 RUNOFF COMPUTATIONS SUMMARY FOR PROPOSED CONDITIONS

DRAIN AREA I.D.	TOTAL AREA (AC)	PAVED AREA (AC)	SUBDV. AREA (AC)	GRASSED AREA (AC)	IMPERV. COVER (%)	RUNOFF COEFF. C	CONCRETE LENGTH (FT)	CHANNEL LENGTH (FT)	OVERLAND LENGTH (FT)	TIME OF CONC. (MIN)	2-YR INTENSITY (IN/HR)	100-YR INTENSITY (IN/HR)	2-YR RUNOFF (CFS)	100-YR RUNOFF (CFS)
SYSTEM E REV														
E1a	4.50	0.49	0.00	4.01	10.94	0.27	495.00	0.00	168.00	10.00	4.96	9.36	5.93	11.19
E1b	1.22	0.16	0.00	1.06	12.91	0.28	223.00	0.00	168.00	10.00	4.96	9.36	1.68	3.16
E2a	5.36	0.56	0.00	4.80	10.42	0.26	495.00	0.00	291.00	10.00	4.96	9.36	6.99	13.18
E2b	0.56	0.21	0.00	0.35	37.07	0.42	149.00	0.00	64.00	10.00	4.96	9.36	1.17	2.21
E2c	19.24	0.48	0.00	18.76	2.47	0.21	0.00	400.00	1301.00	35.42	2.82	6.03	11.67	24.91
E3a	2.53	0.72	0.00	1.81	28.39	0.37	477.00	0.00	163.00	10.00	4.96	9.36	4.64	8.76
E3b	1.79	0.16	0.00	1.63	8.71	0.25	395.00	0.00	162.00	10.00	4.96	9.36	2.24	4.23
E3c	0.48	0.33	0.00	0.14	70.29	0.62	427.00	0.00	18.00	10.00	4.96	9.36	1.47	2.77
E4a	2.38	0.38	0.00	1.99	16.05	0.30	476.00	0.00	163.00	10.00	4.96	9.36	3.49	6.59
E4b	56.80	7.64	0.00	49.16	13.45	0.28	0.00	760.00	3060.00	81.30	1.66	3.88	26.54	61.80
E4c	1.84	0.11	0.00	1.73	6.04	0.24	401.00	0.00	161.00	10.00	4.96	9.36	2.16	4.08
E4d	0.48	0.33	0.00	0.15	69.49	0.62	432.00	0.00	17.00	10.00	4.96	9.36	1.47	2.76
F1b	0.48	0.34	0.00	0.14	70.61	0.62	429.00	0.00	16.00	10.00	4.96	9.36	1.48	2.79
F2b	0.48	0.34	0.00	0.14	70.51	0.62	426.00	0.00	18.00	10.00	4.96	9.36	1.48	2.79
SYSTEM F														
F1a	2.22	0.11	0.00	2.11	4.99	0.23	398.00	0.00	166.00	10.00	4.96	9.36	2.54	4.79
F1c	0.89	0.29	0.00	0.60	32.98	0.40	254.00	0.00	346.00	10.00	4.96	9.36	1.75	3.31
F2a	1.45	0.14	0.00	1.31	9.97	0.26	130.00	0.00	173.00	10.00	4.96	9.36	1.87	3.53
F2c	11.29	0.98	0.00	10.31	8.70	0.25	0.00	634.00	766.00	25.28	3.39	6.98	9.65	19.87
F2d	55.23	6.80	0.00	48.43	12.31	0.27	553.00	2079.00	955.00	48.91	2.33	5.14	35.22	77.79
F2e	2.01	0.31	0.00	1.69	15.57	0.29	276.00	0.00	341.00	10.00	4.96	9.36	2.92	5.51
F2f	94.15	26.29	0.00	67.86	27.92	0.37	0.00	6768.00	89.00	77.32	1.72	3.99	59.62	138.13
SYSTEM G														
G1d	6.75	0.75	0.00	5.99	11.16	0.27	0.00	535.00	767.00	24.21	3.46	7.10	6.24	12.79
SYSTEM H1 REV														
G1a	1.21	0.32	0.00	0.89	26.24	0.36	347.00	0.00	95.00	10.00	4.96	9.36	2.15	4.05
G1b	0.55	0.39	0.00	0.17	69.65	0.62	496.00	0.00	16.00	10.00	4.96	9.36	1.70	3.21
G1c	5.57	0.09	0.00	5.48	1.61	0.21	153.00	0.00	896.00	22.18	3.61	7.34	4.22	8.57
G2a	2.61	0.31	0.00	2.30	11.71	0.27	367.00	0.00	301.00	10.00	4.96	9.36	3.50	6.60
G2b	0.59	0.41	0.00	0.18	69.71	0.62	525.00	0.00	16.00	10.00	4.96	9.36	1.81	3.41
G2c	1.56	0.08	0.00	1.48	5.25	0.23	291.00	0.00	168.00	10.00	4.96	9.36	1.79	3.39
G2d	1.26	0.08	0.00	1.19	6.16	0.24	277.00	0.00	163.00	10.00	4.96	9.36	1.49	2.80
G2e	0.34	0.23	0.00	0.10	69.21	0.62	312.00	0.00	17.00	10.00	4.96	9.36	1.03	1.94
H1a	1.91	0.11	0.00	1.80	5.60	0.23	212.00	0.00	381.00	10.25	4.92	9.31	2.20	4.15
H1b	0.34	0.24	0.00	0.09	72.22	0.63	313.00	0.00	16.00	10.00	4.96	9.36	1.06	2.00
H1c	3.41	2.54	0.00	0.87	74.56	0.65	652.00	0.00	0.00	10.00	4.96	9.36	10.96	20.68
H1d	9.38	0.29	0.00	9.09	3.08	0.22	0.00	745.00	568.00	21.80	3.64	7.39	7.47	15.14
H2a	2.80	0.69	0.00	2.11	24.62	0.35	373.00	0.00	163.00	10.00	4.96	9.36	4.83	9.11
H2b	0.31	0.21	0.00	0.10	67.26	0.60	259.00	0.00	11.00	10.00	4.96	9.36	0.93	1.75
H2c	1.02	0.94	0.00	0.08	92.13	0.75	324.00	0.00	61.00	10.00	4.96	9.36	3.82	7.21
H5a	0.33	0.19	0.00	0.14	57.13	0.54	260.00	0.00	12.00	10.00	4.96	9.36	0.90	1.70
H5b	0.33	0.24	0.00	0.09	71.62	0.63	263.00	0.00	10.00	10.00	4.96	9.36	1.03	1.95
H5d	64.76	10.44	3.88	50.43	19.43	0.32	0.00	5626.00	695.00	79.06	1.70	3.94	34.79	80.78
SYSTEM H2 REV														
H5c	60.25	13.65	25.99	20.60	46.39	0.48	64.00	5886.00	0.00	65.76	1.92	4.38	55.42	126.26

MEDICAL COMPLEX DRIVE EXPANSION - DRAINAGE IMPACT ANALYSIS
 RUNOFF COMPUTATIONS SUMMARY FOR PROPOSED CONDITIONS

DRAIN AREA I.D.	TOTAL AREA (AC)	PAVED AREA (AC)	SUBDV. AREA (AC)	GRASSED AREA (AC)	IMPERV. COVER (%)	RUNOFF COEFF. C	CONCRETE LENGTH (FT)	CHANNEL LENGTH (FT)	OVERLAND LENGTH (FT)	TIME OF CONC. (MIN)	2-YR INTENSITY (IN/HR)	100-YR INTENSITY (IN/HR)	2-YR RUNOFF (CFS)	100-YR RUNOFF (CFS)
SYSTEM I														
I1a	2.41	0.32	0.00	2.09	13.29	0.28	269.00	0.00	166.00	10.00	4.96	9.36	3.35	6.32
I1b	187.20	31.72	88.89	66.60	43.06	0.46	0.00	6672.00	800.00	93.18	1.51	3.57	129.79	306.44
I1c	1.88	0.22	0.60	1.05	29.37	0.38	388.00	0.00	167.00	10.00	4.96	9.36	3.50	6.61
I1d	1.93	0.22	0.00	1.71	11.43	0.27	393.00	0.00	168.00	10.00	4.96	9.36	2.57	4.85
I1e	2.11	0.35	0.00	1.75	16.67	0.30	378.00	0.00	192.00	10.00	4.96	9.36	3.14	5.91
I2	2.86	0.48	0.00	2.38	16.65	0.30	292.00	0.00	166.00	10.00	4.96	9.36	4.26	8.03
J1a	1.97	0.22	0.00	1.75	11.25	0.27	395.00	0.00	169.00	10.00	4.96	9.36	2.62	4.95
J1b	1.93	0.22	0.00	1.71	11.43	0.27	394.00	0.00	168.00	10.00	4.96	9.36	2.57	4.85
J1c	1.52	0.21	0.00	1.31	13.92	0.28	305.00	0.00	176.00	10.00	4.96	9.36	2.13	4.03
SYSTEM J1														
J2b	88.17	34.22	0.00	53.95	38.81	0.43	1596.00	1273.00	1128.00	49.87	2.30	5.09	87.80	194.30
SYSTEM J2														
J2a	3.53	0.70	0.00	2.84	19.75	0.32	457.00	0.00	183.00	10.00	4.96	9.36	5.59	10.54
J3	3.58	0.55	0.00	3.03	15.27	0.29	484.00	0.00	185.00	10.00	4.96	9.36	5.18	9.77
J4	3.69	0.64	0.00	3.04	17.46	0.30	468.00	0.00	170.00	10.00	4.96	9.36	5.58	10.53
J5a	5.71	0.44	0.00	5.27	7.76	0.25	476.00	0.00	444.00	13.22	4.51	8.71	6.35	12.27
J5b	18.96	2.42	0.00	16.54	12.75	0.28	0.00	0.00	1977.00	47.07	2.38	5.25	12.50	27.50
K1a	4.44	0.40	0.00	4.05	8.90	0.25	383.00	0.00	444.00	12.70	4.58	8.81	5.15	9.92
K2a	1.79	0.21	0.00	1.58	11.81	0.27	368.00	0.00	162.00	10.00	4.96	9.36	2.41	4.54
SYSTEM M														
M1a	0.54	0.41	0.00	0.13	75.42	0.65	288.00	0.00	22.00	10.00	4.96	9.36	1.76	3.32
M1b	0.42	0.37	0.00	0.05	87.69	0.73	333.00	0.00	0.00	10.00	4.96	9.36	1.53	2.89
M1c	0.45	0.43	0.00	0.02	96.10	0.78	304.00	0.00	0.00	10.00	4.96	9.36	1.73	3.27
M1d	39.68	30.72	0.00	8.96	77.42	0.66	2636.00	0.00	0.00	14.64	4.33	8.45	114.26	222.89
M1e	0.40	0.40	0.00	0.00	100.00	0.80	394.00	0.00	0.00	10.00	4.96	9.36	1.59	3.01
M2a	0.44	0.39	0.00	0.05	88.54	0.73	318.00	0.00	10.00	10.00	4.96	9.36	1.61	3.04
M2b	0.84	0.18	0.00	0.66	21.46	0.33	354.00	0.00	94.00	10.00	4.96	9.36	1.38	2.60
M2c	0.43	0.43	0.00	0.00	100.00	0.80	287.00	0.00	0.00	10.00	4.96	9.36	1.69	3.19
M2d	0.30	0.30	0.00	0.00	100.00	0.80	305.00	0.00	0.00	10.00	4.96	9.36	1.19	2.24
M2e	1.33	0.06	0.00	1.27	4.70	0.23	0.00	523.00	49.00	10.00	4.96	9.36	1.51	2.84
M2f	0.19	0.19	0.00	0.00	100.00	0.80	442.00	0.00	0.00	10.00	4.96	9.36	0.75	1.42
M2g	0.73	0.24	0.00	0.48	33.36	0.40	208.00	0.00	130.00	10.00	4.96	9.36	1.44	2.72
M2h	0.40	0.40	0.00	0.00	100.00	0.80	394.00	0.00	0.00	10.00	4.96	9.36	1.59	3.01
SYSTEM P1A														
N1a	0.38	0.24	0.00	0.00	63.54	0.58	242.00	0.00	0.00	10.00	4.96	9.36	1.10	2.07
N1b	0.38	0.38	0.00	0.00	100.87	0.81	406.00	0.00	0.00	10.00	4.96	9.36	1.51	2.85
N1c	1.86	0.38	0.00	0.00	20.31	0.32	407.00	0.00	0.00	10.00	4.96	9.36	2.97	5.61
N1d	0.28	0.08	0.00	1.78	29.68	0.38	0.00	406.00	319.00	12.11	4.65	8.92	0.49	0.94
N1e	2.88	0.28	0.00	0.00	9.68	0.26	311.00	0.00	0.00	10.00	4.96	9.36	3.69	6.97
N1f	2.88	0.32	0.00	2.56	11.20	0.27	288.00	0.00	254.00	10.00	4.96	9.36	3.82	7.21
N1g	0.14	0.14	0.00	0.00	100.00	0.80	325.00	0.00	0.00	10.00	4.96	9.36	0.54	1.02
N1h	2.20	0.15	0.00	2.05	6.61	0.24	269.00	0.00	248.00	10.00	4.96	9.36	2.61	4.93
N1i	0.11	0.11	0.00	0.00	100.00	0.80	182.00	0.00	0.00	10.00	4.96	9.36	0.45	0.85
N1j	0.29	0.12	0.00	0.16	43.35	0.46	133.00	0.00	36.00	10.00	4.96	9.36	0.65	1.23
N2a	0.24	0.24	0.00	0.00	100.00	0.80	243.00	0.00	0.00	10.00	4.96	9.36	0.96	1.81
N2b	0.40	0.40	0.00	0.00	100.00	0.80	407.00	0.00	0.00	10.00	4.96	9.36	1.57	2.97
N2c	0.39	0.39	0.00	0.00	100.00	0.80	404.00	0.00	0.00	10.00	4.96	9.36	1.57	2.96

MEDICAL COMPLEX DRIVE EXPANSION - DRAINAGE IMPACT ANALYSIS
 RUNOFF COMPUTATIONS SUMMARY FOR PROPOSED CONDITIONS

DRAIN AREA I.D.	TOTAL AREA (AC)	PAVED AREA (AC)	SUBDV. AREA (AC)	GRASSED AREA (AC)	IMPERV. COVER (%)	RUNOFF COEFF. C	CONCRETE LENGTH (FT)	CHANNEL LENGTH (FT)	OVERLAND LENGTH (FT)	TIME OF CONC. (MIN)	2-YR INTENSITY (IN/HR)	100-YR INTENSITY (IN/HR)	2-YR RUNOFF (CFS)	100-YR RUNOFF (CFS)
N2d	3.21	0.11	0.00	3.10	3.36	0.22	0.00	618.00	271.00	13.32	4.49	8.69	3.17	6.13
N2e	1.88	0.42	0.00	1.46	22.52	0.34	0.00	393.00	169.00	10.00	4.96	9.36	3.13	5.90
P2a	1.50	0.17	0.00	1.33	11.60	0.27	293.00	0.00	172.00	10.00	4.96	9.36	2.01	3.79
P2b	1.87	0.22	0.00	1.65	11.67	0.27	387.00	0.00	167.00	10.00	4.96	9.36	2.51	4.73
P2c	1.93	0.39	0.00	1.53	20.41	0.32	395.00	0.00	165.00	10.00	4.96	9.36	3.09	5.82
P2d	3.20	1.09	0.00	2.11	33.99	0.40	284.00	0.00	165.00	10.00	4.96	9.36	6.42	12.11
P3a	9.58	0.38	0.00	9.20	4.01	0.22	133.00	0.00	1214.00	29.64	3.12	6.53	6.69	14.01
P3b	8.44	0.46	0.00	7.98	5.44	0.23	394.00	0.00	1126.00	29.00	3.15	6.59	6.19	12.93
P3c	6.97	0.56	0.00	6.41	8.00	0.25	282.00	0.00	630.00	16.57	4.12	8.13	7.12	14.06
P3d	17.06	3.43	0.00	13.63	20.12	0.32	0.00	1569.00	381.00	26.50	3.31	6.84	18.10	37.46
P4	21.92	2.32	0.00	19.60	10.60	0.26	0.00	1148.00	588.00	26.76	3.29	6.82	19.01	39.39
P5a	4.10	0.49	0.00	3.61	11.85	0.27	8.00	0.00	454.00	10.85	4.83	9.18	5.37	10.19
P5b	5.74	0.39	0.00	5.36	6.74	0.24	9.00	0.00	791.00	18.88	3.89	7.78	5.38	10.75
P6a	2.77	0.35	0.00	2.42	12.62	0.28	522.00	0.00	168.00	10.00	4.96	9.36	3.79	7.15
P6b	1.99	0.22	0.00	1.76	11.20	0.27	401.00	0.00	165.00	10.00	4.96	9.36	2.63	4.97
SYSTEM P1B														
P5c	6.08	0.30	0.00	5.78	5.00	0.23	404.00	0.00	798.00	21.24	3.69	7.46	5.16	10.44
P5d	3.34	0.49	0.00	2.85	14.58	0.29	480.00	0.00	169.00	10.00	4.96	9.36	4.76	8.99
P6c	1.78	0.22	0.00	1.57	12.07	0.27	380.00	0.00	167.00	10.00	4.96	9.36	2.41	4.55
P6d	3.47	0.58	0.00	2.89	16.78	0.30	437.00	0.00	166.00	10.00	4.96	9.36	5.18	9.78
P7_alt	37.08	6.32	0.00	30.76	17.05	0.30	0.00	1353.00	1072.00	40.56	2.61	5.65	29.26	63.35
SYSTEM P2														
P12a	3.52	0.62	0.00	2.90	17.52	0.31	416.00	0.00	385.00	11.48	4.74	9.05	5.09	9.72
P14	12.49	1.48	0.00	11.01	11.85	0.27	48.00	0.00	821.00	19.81	3.81	7.65	12.90	25.91
SYSTEM PARK														
P11a	1.30	0.22	0.00	1.08	16.93	0.30	306.00	0.00	167.00	10.00	4.96	9.36	1.94	3.66
P11b	1.93	0.22	0.00	1.71	11.43	0.27	395.00	0.00	172.00	10.00	4.96	9.36	2.57	4.85
P11c	0.30	0.23	0.00	0.07	76.58	0.66	396.00	0.00	0.00	10.00	4.96	9.36	0.99	1.87
P11d	13.28	2.17	0.00	11.11	16.37	0.30	0.00	3165.00	0.00	35.17	2.84	6.05	11.23	23.95
P15a	0.87	0.32	0.00	0.54	37.42	0.42	359.00	0.00	162.00	10.00	4.96	9.36	1.83	3.45
P15b	1.83	0.37	0.00	1.46	20.36	0.32	341.00	0.00	174.00	10.00	4.96	9.36	2.93	5.52
P15c	0.30	0.21	0.00	0.09	68.78	0.61	400.00	0.00	0.00	10.00	4.96	9.36	0.92	1.74
P15d	59.40	5.56	0.00	53.84	9.36	0.26	0.00	943.00	1949.00	56.88	2.12	4.75	32.18	72.22
P15e	242.64	13.80	30.52	198.32	12.61	0.28	0.00	2087.00	3818.00	114.09	1.31	3.15	87.47	210.72

PROJECT NAME : Medical Complex Drive Expansion
 JOB NUMBER : 0812-008
 PROJECT DESCRIPTION : Tomball TX 2-year design - System A

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemA_rev2.s

ANALYSYS FREQUENCY : 2 Years
 MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
B5a	0.29	3.39	10.00	10.00	4.96	0.000	4.880
B5b	0.22	17.05	30.26	30.26	3.08	0.000	11.564
B6a	0.27	1.38	10.00	10.00	4.96	0.000	1.849
B7	0.34	3.49	10.00	10.00	4.96	0.000	5.890
B8a	0.35	1.30	10.00	10.00	4.96	0.000	2.258
B1a	0.32	1.54	10.00	10.00	4.96	0.000	2.446
B1b	0.32	1.98	10.00	10.00	4.96	0.000	3.145
B2a	0.43	1.07	10.00	10.00	4.96	0.000	2.284
B2b	0.29	4.31	16.13	16.13	4.17	0.000	5.209
B2c	0.53	0.54	10.00	10.00	4.96	0.000	1.421
B3	0.63	5.22	10.00	10.00	4.96	0.000	16.323
B4	0.46	12.00	24.50	24.50	3.44	0.000	18.997
B2d	0.32	5.85	16.32	16.32	4.15	0.000	7.764
A2A	0.36	9.85	20.25	20.25	3.77	0.000	13.375
A2B	0.62	3.28	10.00	10.00	4.96	0.000	10.094
A2C	0.4	3.40	13.09	13.09	4.52	0.000	6.153
A1E	0.42	1.00	10.00	10.00	4.96	0.000	2.085
A1D	0.36	6.16	19.91	19.91	3.80	0.000	8.430
A1C	0.32	6.94	19.84	19.84	3.81	0.000	8.456
A1B	0.37	1.76	10.00	10.00	4.96	0.000	3.232

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
B3	Junct	0.630	5.22	10.00	4.96		0.00	16.323
B4	Junct	0.319	29.05	30.63	3.06		0.00	28.395
B2d	Junct	0.307	10.16	16.45	4.13		0.00	12.905
MHB1	Junct	0.000	0.00	0.00	0.00		0.00	0.000
MHB2	Junct	0.356	48.96	32.46	2.97		0.00	51.700
MHB3	Junct	0.355	46.35	32.09	2.99		0.00	49.192
MHB4	Junct	0.318	38.61	31.21	3.03		0.00	37.192
MHB5	Junct	0.309	2.68	10.57	4.88		0.00	4.036
MHB6	Junct	0.314	9.56	13.15	4.52		0.00	13.537
MHB7	Junct	0.314	9.56	13.15	4.52		0.00	13.537

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B5a	Junct	0.290	3.39	10.00	4.96	0.00	4.880
B5b	Junct	0.220	17.05	30.26	3.08	0.00	11.564
B6a	Junct	0.270	1.38	10.00	4.96	0.00	1.849
B7	Junct	0.315	6.88	10.50	4.89	0.00	10.602
B8a	Junct	0.309	2.68	10.57	4.88	0.00	4.036
B1a	Junct	0.365	2.61	10.61	4.87	0.00	4.640
B1b	Junct	0.544	7.74	10.99	4.81	0.00	20.254
B2a	Junct	0.430	1.07	10.00	4.96	0.00	2.284
B2b	Junct	0.290	4.31	16.13	4.17	0.00	5.209
B2c	Junct	0.621	5.76	10.55	4.88	0.00	17.438
A2A	Junct	0.360	9.85	20.25	3.77	0.00	13.375
MHA2	Junct	0.351	86.47	36.39	2.78	0.00	84.311
A2B	Junct	0.360	89.75	36.42	2.78	0.00	89.925
A1B	Junct	0.361	91.51	36.75	2.76	0.00	91.247
A1C	Junct	0.320	6.94	19.84	3.81	0.00	8.456
A1D	Junct	0.339	13.10	20.13	3.78	0.00	16.788
MHA1	Junct	0.349	76.62	34.65	2.86	0.00	76.558
A1E	Junct	0.345	14.10	20.24	3.77	0.00	18.330
A2C	Junct	0.355	17.50	20.68	3.74	0.00	23.231
MHB2a	Junct	0.348	59.12	33.52	2.91	0.00	59.884
MHA3	Junct	0.361	91.51	36.75	2.76	0.00	91.247
MHA4	Junct	0.000	0.00	0.00	0.00	0.00	0.000
A-OUT	Outlt	0.361	91.51	36.75	2.76	0.00	91.247

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	B6a	B8a	156.27	156.12	Cir 1	0.00	2.00	81.0	0.185	0.013
2	B8a	MHB5	156.12	156.11	Cir 1	0.00	2.00	6.0	0.167	0.013
3	MHB5	MHB6	156.11	155.30	Cir 1	0.00	2.00	452.3	0.179	0.013
4	B5a	B7	155.47	155.31	Cir 1	0.00	2.00	91.1	0.176	0.013
5	B7	MHB6	154.81	154.80	Cir 1	0.00	2.50	6.2	0.160	0.013
6	MHB6	MHB7	154.80	154.65	Cir 1	0.00	2.50	113.8	0.132	0.013
7	MHB7	MHB4	154.65	154.34	Cir 1	0.00	2.50	242.5	0.128	0.013
8	B5b	B4	154.54	154.44	Cir 1	0.00	2.50	74.4	0.134	0.013
9	B4	MHB4	153.44	153.34	Cir 1	0.00	3.50	120.0	0.083	0.013
10	MHB4	MHB3	153.34	153.00	Cir 1	0.00	3.50	237.8	0.143	0.013
11	B3	B2c	154.31	154.11	Cir 1	0.00	2.50	126.1	0.159	0.013
12	B2c	B1b	153.61	153.51	Cir 1	0.00	3.00	91.0	0.110	0.013
13	B1b	MHB3	153.51	153.50	Cir 1	0.00	3.00	6.0	0.167	0.013
14	MHB3	MHB2	152.50	152.37	Cir 1	0.00	4.00	104.3	0.125	0.013
15	B2a	B1a	154.54	154.38	Cir 1	0.00	2.00	91.1	0.176	0.013
16	B1a	MHB2	154.38	154.37	Cir 1	0.00	2.00	6.0	0.167	0.013
17	MHB2	MHB2a	152.37	151.94	Cir 1	0.00	4.00	307.2	0.140	0.013
18	B2b	B2d	154.19	154.08	Cir 1	0.00	2.00	60.0	0.183	0.013
19	B2d	MHB2a	153.58	153.44	Cir 1	0.00	2.50	108.1	0.130	0.013
20	MHB2a	MHA1	151.44	151.13	Cir 1	0.00	4.50	305.1	0.102	0.013
21	A1C	A1D	153.87	153.76	Cir 1	0.00	2.00	60.0	0.183	0.013
22	A1D	A1E	152.76	152.74	Cir 1	0.00	3.00	21.8	0.092	0.013
23	A1E	A2C	152.74	152.64	Cir 1	0.00	3.00	91.0	0.110	0.013
24	A2C	MHA1	152.64	152.63	Cir 1	0.00	3.00	6.0	0.167	0.013
25	MHA1	MHA2	150.63	150.20	Cir 1	0.00	5.00	475.5	0.090	0.013
26	A2A	MHA2	152.76	152.70	Cir 1	0.00	2.50	42.8	0.140	0.013
27	MHA2	A2B	149.70	149.69	Cir 1	0.00	5.50	9.0	0.111	0.013
28	A2B	A1B	149.69	149.62	Cir 1	0.00	5.50	91.0	0.077	0.013
29	A1B	MHA3	149.62	149.61	Cir 1	0.00	5.50	9.6	0.104	0.013
30	MHA3	A-OUT	149.61	149.46	Cir 1	0.00	5.50	188.8	0.079	0.013

SystemA_rev2.txt

Conveyance Hydraulic Computations. Tailwater = 154.960 (ft)

Run #	Gr.line		Crit.Elev US (ft)	Fr.Slope (%)	Depth		Velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)
	US (ft)	DS (ft)			Unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
1	157.24	157.11	161.82	0.007	0.59	0.99	2.38	2.38	1.8	9.8	0.000
2	157.11	157.11	161.82	0.032	0.93	1.00	2.84	2.84	4.0	9.3	0.000
3	157.11	156.68	161.82	0.032	0.91	1.38	2.92	2.92	4.0	9.6	0.000
4	156.76	156.68	160.28	0.046	1.02	1.37	3.05	3.05	4.9	9.5	0.000
5	156.68	156.68	160.28	0.066	1.46	1.88	3.55	3.55	10.6	16.5	0.000
6	156.68	156.54	160.28	0.108	1.88	1.89	3.43	3.43	13.5	15.0	0.000
7	156.54	156.14	160.64	0.108	1.89	1.89	3.39	3.39	13.5	14.7	0.000
8	156.22	156.23	161.10	0.079	1.64	1.79	3.39	3.39	11.6	15.1	0.000
9	156.23	156.14	161.07	0.079	2.79	2.80	3.45	3.45	28.4	29.2	0.000
10	156.14	155.69	160.99	0.135	2.80	2.80	4.50	4.50	37.2	38.2	0.000
11	156.30	155.69	160.67	0.157	2.05	2.05	3.79	3.79	16.3	16.4	0.000
12	155.69	155.69	160.28	0.068	2.00	2.18	3.48	3.48	17.4	22.2	0.000
13	155.69	155.69	160.28	0.091	1.93	2.19	4.22	4.22	20.3	27.3	0.000
14	155.69	155.53	160.28	0.116	3.19	3.19	4.58	4.58	49.2	50.9	0.000
15	155.66	155.53	160.64	0.010	0.67	1.15	2.48	2.48	2.3	9.5	0.000
16	155.53	155.53	160.64	0.042	1.00	1.16	2.94	2.94	4.6	9.3	0.000
17	155.53	155.04	160.64	0.128	3.16	3.16	4.86	4.86	51.7	54.0	0.000
18	155.43	155.39	161.50	0.053	1.04	1.31	3.14	3.14	5.2	9.7	0.000
19	155.39	155.04	161.57	0.098	1.81	1.81	3.40	3.40	12.9	14.8	0.000
20	155.04	155.04	161.57	0.092	3.52	3.91	4.49	4.49	59.9	63.0	0.000
21	155.32	155.06	159.49	0.139	1.45	1.45	3.48	3.48	8.5	9.7	0.000
22	155.06	155.06	160.03	0.063	2.09	2.32	3.20	3.20	16.8	20.3	0.000
23	155.06	155.04	160.31	0.075	2.09	2.40	3.49	3.49	18.3	22.2	0.000
24	155.04	155.04	160.31	0.120	2.13	2.41	4.32	4.32	23.2	27.3	0.000
25	155.04	155.00	160.31	0.086	3.98	4.80	4.56	4.56	76.6	78.7	0.000
26	155.02	155.00	157.26	0.105	1.81	2.30	3.52	3.52	13.4	15.4	0.000
27	155.00	154.99	157.38	0.063	3.57	5.30	5.17	5.17	84.3	112.4	0.000
28	154.99	154.98	157.38	0.071	4.34	5.36	4.47	4.47	89.9	93.5	0.000
29	154.98	154.98	157.38	0.073	3.87	5.37	5.11	5.11	91.2	108.7	0.000
30	154.98	154.96	157.32	0.073	4.34	5.50	4.54	4.54	91.2	95.1	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	8	847.38
Circular	Concrete	2.5	0.0	7	713.83
Circular	Concrete	3.5	0.0	2	357.82
Circular	Concrete	3.0	0.0	5	215.74
Circular	Concrete	4.0	0.0	2	411.46
Circular	Concrete	4.5	0.0	1	305.06
Circular	Concrete	5.0	0.0	1	475.54
Circular	Concrete	5.5	0.0	4	298.4

SystemA_rev2.txt

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	32
outlet		0.0	0.0	0.0	0.0	0.0	1
=====END=====							

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
 Discharge decreased downstream node Id= MHB5 Previous intensity used.
 Discharge decreased downstream node Id= MHB7 Previous intensity used.
 Discharge decreased downstream node Id= MHA3 Previous intensity used.

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System C

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemC1.stm

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
C1a	0.35	2.08	10.71	10.71	4.85	0.000	3.534
C2a	0.47	0.48	10.00	10.00	4.96	0.000	1.120
B6b	0.26	2.98	10.00	10.00	4.96	0.000	3.846
B8b	0.31	1.28	10.00	10.00	4.96	0.000	1.970

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
MHC1	Junct	0.275	4.26	10.46	4.89		0.00	5.731
MHC2	Junct	0.275	4.26	10.46	4.89		0.00	5.731
MHC3	Junct	0.312	6.82	11.52	4.74		0.00	10.065
MHC4	Junct	0.312	6.82	11.52	4.74		0.00	10.065
MHC5	Junct	0.312	6.82	11.52	4.74		0.00	10.065
B6b	Junct	0.260	2.98	10.00	4.96		0.00	3.846
B8b	Junct	0.275	4.26	10.46	4.89		0.00	5.731
C1a	Junct	0.350	2.08	10.71	4.85		0.00	3.534
C2a	Junct	0.373	2.56	11.20	4.78		0.00	4.560
C1-OUT	Outlt	0.312	6.82	11.52	4.74		0.00	10.065

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	B6b	B8b	156.98	156.83	Cir 1	0.00	2.00	81.0	0.185	0.013
2	B8b	MHC1	156.83	156.82	Cir 1	0.00	2.00	6.0	0.167	0.013
3	MHC1	MHC2	156.82	156.46	Cir 1	0.00	2.00	204.0	0.176	0.013
4	MHC2	MHC3	156.46	156.09	Cir 1	0.00	2.00	203.9	0.181	0.013
5	C1a	C2a	156.25	156.10	Cir 1	0.00	2.00	82.9	0.181	0.013
6	C2a	MHC3	156.10	156.09	Cir 1	0.00	2.00	6.0	0.167	0.013
7	MHC3	MHC4	156.09	155.69	Cir 1	0.00	2.00	198.0	0.202	0.013

SystemC1.txt										
8	MHC4	MHC5	155.69	155.42	Cir 1	0.00	2.00	136.3	0.198	0.013
9	MHC5	C1-OUT	155.42	155.35	Cir 1	0.00	2.00	35.3	0.198	0.013

Conveyance Hydraulic Computations. Tailwater = 157.350 (ft)

Run #	Hyd. Gr. line		Crit. Elev		Fr. Slope (%)	Depth		Velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)
	US (ft)	DS (ft)	US (ft)			unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
1	158.11	158.02	161.60		0.029	0.87	1.19	2.92	2.92	3.8	9.8	0.000
2	158.02	158.03	161.60		0.064	1.14	1.21	3.10	3.10	5.7	9.3	0.000
3	158.03	157.92	161.60		0.064	1.12	1.46	3.16	3.16	5.7	9.5	0.000
4	157.92	157.72	161.00		0.064	1.11	1.63	3.20	3.20	5.7	9.7	0.000
5	157.85	157.72	160.40		0.024	0.84	1.62	2.82	2.82	3.5	9.7	0.000
6	157.72	157.72	160.40		0.040	0.99	1.63	2.93	2.93	4.6	9.3	0.000
7	157.72	157.34	160.40		0.196	1.63	1.65	3.68	3.68	10.1	10.2	0.000
8	157.34	157.35	159.83		0.196	1.64	1.93	3.65	3.65	10.1	10.1	0.000
9	157.35	157.35	159.42		0.196	1.64	2.00	3.65	3.65	10.1	10.1	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	9	953.42

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	9
outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

Discharge decreased downstream node Id= MHC1 Previous intensity used.
 Discharge decreased downstream node Id= MHC2 Previous intensity used.
 Discharge decreased downstream node Id= MHC4 Previous intensity used.
 Discharge decreased downstream node Id= MHC5 Previous intensity used.

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System C

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemC1.stm

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
C1d-1	0.23	16.80	30.88	30.88	3.05	0.000	11.781

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
C1d-1	Junct	0.230	16.80	30.88	3.05		0.00	11.781
C1d-OUT	Outlt	0.230	16.80	30.88	3.05		0.00	11.781

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	C1d-1	C1d-OU	150.50	150.27	cir 1	0.00	2.50	128.7	0.179	0.013

Conveyance Hydraulic Computations. Tailwater = 152.770 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	152.90	152.77	158.00	0.082	1.51	2.50	3.79	3.79	11.8	17.4	0.000

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SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

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NOTE:

The convey length should be from upstream to downstream inside box.
This length may also be used as Pay Item.

SystemCld.txt

Using hydraulic length, from node center to node center, may result in profile error,
and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.5	0.0	1	128.66

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	1
Outlet		0.0	0.0	0.0	0.0	0.0	1

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END
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NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System C2

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemC2.stm

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
C1a	0.35	2.08	10.71	10.71	4.85	0.000	3.534
C1b	0.32	2.09	10.00	10.00	4.96	0.000	3.320
C1c	0.3	1.35	10.00	10.00	4.96	0.000	2.010
C1d	0.36	211.94	90.52	90.52	1.54	0.000	117.801
C2a	0.47	0.48	10.00	10.00	4.96	0.000	1.120
C2b	0.31	2.38	10.00	10.00	4.96	0.000	3.662
C3b	0.27	2.07	10.00	10.00	4.96	0.000	2.774
C4	0.0	0.00	0.00	28.26	0.00	44.490	44.490
C5a	0.27	3.77	10.00	10.00	4.96	0.000	5.053
C5b	0.27	1.32	10.00	10.00	4.96	0.000	1.769
C5c	0.27	1.89	10.00	10.00	4.96	0.000	2.533
C6a	0.29	3.18	10.00	10.00	4.96	0.000	4.577
C6b	0.23	3.99	18.44	18.44	3.94	0.000	3.611
C6c	0.26	2.56	12.96	12.96	4.54	0.000	3.022
B6b	0.26	2.98	10.00	10.00	4.96	0.000	3.846
B8b	0.31	1.28	10.00	10.00	4.96	0.000	1.970
D2a	0.41	0.81	10.00	10.00	4.96	0.000	1.648
D1	0.27	1.49	10.00	10.00	4.96	0.000	1.997
C7_C8	0.27	321.37	120.92	120.92	1.25	0.000	108.765
C1d-2	0.37	195.14	90.52	90.52	1.54	0.000	111.476

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
C5b	Junct	0.240	5.31	18.98	3.88		0.00	4.950
C5c	Junct	0.264	4.45	13.51	4.47		0.00	5.257
C6a	Junct	0.290	3.18	10.00	4.96		0.00	4.577
C6b	Junct	0.230	3.99	18.44	3.94		0.00	3.611
C6c	Junct	0.260	2.56	12.96	4.54		0.00	3.022
MHC1	Junct	0.000	0.00	0.00	0.00		0.00	0.000
MHC2	Junct	0.000	0.00	0.00	0.00		0.00	0.000
MHC3	Junct	0.000	0.00	0.00	0.00		0.00	0.000
C7_C8	Junct	0.270	321.37	120.92	1.25		0.00	108.765
MHC1a	Junct	0.270	321.37	121.20	1.25		0.00	153.255

systemC2.txt

MHC4	Junct	0.000	0.00	0.00	0.00	0.00	0.000
MHC5	Junct	0.000	0.00	0.00	0.00	0.00	0.000
B6b	Junct	0.000	0.00	0.00	0.00	0.00	0.000
B8b	Junct	0.000	0.00	0.00	0.00	0.00	0.000
MHC6	Junct	0.319	2.30	10.67	4.86	0.00	3.570
MHC7	Junct	0.283	6.75	13.55	4.47	0.00	8.532
MHC8	Junct	0.264	12.06	19.01	3.88	0.00	12.362
MHC9	Junct	0.264	12.06	19.01	3.88	0.00	12.362
MHC10	Junct	0.270	19.01	19.69	3.82	0.00	19.578
MHC11	Junct	0.306	538.94	121.93	1.25	0.00	250.136
MHC12	Junct	0.282	3.42	10.60	4.87	0.00	4.695
MHC13	Junct	0.282	3.42	10.60	4.87	0.00	4.695
MHC14	Junct	0.000	0.00	0.00	0.00	0.00	0.000
D2a	Junct	0.410	0.81	10.00	4.96	0.00	1.648
D1	Junct	0.319	2.30	10.67	4.86	0.00	3.570
C1a	Junct	0.000	0.00	0.00	0.00	0.00	0.000
C1b	Junct	0.000	0.00	0.00	0.00	0.00	0.000
C1c	Junct	0.300	1.35	10.00	4.96	0.00	2.010
C1d	Junct	0.000	0.00	0.00	0.00	0.00	0.000
C2a	Junct	0.000	0.00	0.00	0.00	0.00	0.000
C2b	Junct	0.000	0.00	0.00	0.00	0.00	0.000
C3a	Junct	0.000	0.00	0.00	0.00	0.00	0.000
C3b	Junct	0.282	3.42	10.60	4.87	0.00	4.695
C4	Junct	0.000	0.00	0.00	0.00	0.00	44.490
C5a	Junct	0.279	6.95	10.51	4.89	0.00	9.478
MHC11b	Junct	0.308	516.51	121.46	1.25	0.00	243.111
C1d-2	Junct	0.370	195.14	90.52	1.54	0.00	111.476
C2-OUT	outlt	0.306	538.94	121.93	1.25	0.00	250.136

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	D2a	D1	158.14	157.98	Cir 1	0.00	2.00	91.0	0.176	0.013
2	D1	MHC6	157.98	157.97	Cir 1	0.00	2.00	6.0	0.167	0.013
3	MHC6	MHC7	157.97	157.25	Cir 1	0.00	2.00	396.3	0.182	0.013
4	C6c	C5c	157.43	157.26	Cir 1	0.00	2.00	91.0	0.187	0.013
5	C5c	MHC7	157.26	157.25	Cir 1	0.00	2.00	6.0	0.167	0.013
6	MHC7	MHC8	157.25	156.75	Cir 1	0.00	2.00	282.1	0.177	0.013
7	C6b	C5b	156.92	156.76	Cir 1	0.00	2.00	91.0	0.176	0.013
8	C5b	MHC8	156.76	156.75	Cir 1	0.00	2.00	6.0	0.167	0.013
9	MHC8	MHC9	156.25	155.92	Cir 1	0.00	2.50	253.9	0.130	0.013
10	MHC9	MHC10	155.92	155.74	Cir 1	0.00	2.50	138.0	0.130	0.013
11	C6a	C5a	156.41	156.25	Cir 1	0.00	2.00	91.0	0.176	0.013
12	C5a	MHC10	155.75	155.74	Cir 1	0.00	2.50	6.0	0.167	0.013
13	MHC10	MHC11	155.24	154.82	Cir 1	0.00	3.00	376.8	0.111	0.013
14	C4	MHC11a	154.24	154.04	Cir 1	0.00	4.00	206.3	0.097	0.013
15	C7_C8	MHC11a	152.10	152.04	Cir 1	0.00	6.00	79.6	0.075	0.013
16	MHC11a	MHC11b	152.04	151.99	Box 1	7.00	6.00	72.8	0.069	0.013
17	C1d-2	MHC11b	152.14	151.99	Cir 1	0.00	6.00	207.9	0.072	0.013
18	MHC11b	MHC11	151.99	151.82	Box 1	8.00	6.00	172.1	0.099	0.013
19	C1c	C3b	156.79	156.63	Cir 1	0.00	2.00	87.8	0.182	0.013
20	C3b	MHC13	156.63	156.62	Cir 1	0.00	2.00	6.0	0.167	0.013
21	MHC13	MHC12	156.62	156.30	Cir 1	0.00	2.00	180.0	0.178	0.013
22	MHC12	MHC11	156.30	155.82	Cir 1	0.00	2.00	264.0	0.182	0.013
23	MHC11	C2-OUT	151.82	151.62	Box 1	8.00	6.00	183.5	0.109	0.013

Conveyance Hydraulic Computations. Tailwater = 157.620 (ft)

Run #	Hyd. Gr.line		Crit.Elev US (ft)	Fr.Slope (%)	Depth		velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)
	US (ft)	DS (ft)			Unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
1	159.46	159.31	165.72	0.005	0.56	1.33	2.26	2.26	1.6	9.5	0.000
2	159.31	159.30	165.72	0.025	0.86	1.33	2.75	2.75	3.6	9.3	0.000
3	159.30	158.73	165.72	0.025	0.84	1.48	2.83	2.83	3.6	9.7	0.000
4	158.88	158.73	164.07	0.018	0.76	1.47	2.74	2.74	3.0	9.8	0.000
5	158.73	158.73	164.07	0.054	1.08	1.48	3.03	3.03	5.3	9.3	0.000
6	158.73	158.01	164.07	0.141	1.48	1.48	3.43	3.43	8.5	9.6	0.000
7	158.12	158.01	162.88	0.025	0.86	1.25	2.82	2.82	3.6	9.5	0.000
8	158.01	158.01	162.88	0.047	1.04	1.26	2.99	2.99	4.9	9.3	0.000
9	158.01	157.99	162.88	0.090	1.75	2.07	3.37	3.37	12.4	14.9	0.000
10	157.99	157.94	161.81	0.090	1.75	2.20	3.37	3.37	12.4	14.9	0.000
11	158.07	157.95	161.23	0.041	0.98	1.70	2.99	2.99	4.6	9.5	0.000
12	157.95	157.94	161.23	0.053	1.35	2.20	3.51	3.51	9.5	16.8	0.000
13	157.94	157.82	161.23	0.085	2.18	3.00	3.56	3.56	19.6	22.4	0.000
14	157.90	157.89	162.00	0.095	3.25	3.85	4.07	4.07	44.5	44.9	0.000
15	157.90	157.89	162.00	0.065	4.59	5.85	4.68	4.68	108.8	116.8	0.000
16	157.89	157.87	162.00	0.054	4.59	5.87	4.77	4.77	153.3	173.2	0.000
17	157.88	157.87	162.00	0.069	4.78	5.87	4.61	4.61	111.5	114.2	0.000
18	157.87	157.82	162.00	0.096	4.97	6.00	6.12	6.12	243.1	247.0	0.000
19	158.61	158.46	160.79	0.008	0.62	1.83	2.43	2.43	2.0	9.7	0.000
20	158.46	158.45	160.79	0.043	1.01	1.83	2.95	2.95	4.7	9.3	0.000
21	158.45	158.20	160.79	0.043	0.99	1.90	3.02	3.02	4.7	9.6	0.000
22	158.20	157.82	161.50	0.043	0.98	2.00	3.05	3.05	4.7	9.7	0.000
23	157.82	157.62	162.37	0.101	4.90	6.00	6.38	6.38	250.1	259.5	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.

This length may also be used as Pay Item.

Using hydraulic length, from node center to node center, may result in profile error,

and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	13	1598.2
Circular	Concrete	2.5	0.0	3	397.88
Circular	Concrete	3.0	0.0	1	376.8
Circular	Concrete	4.0	0.0	1	206.34
Circular	Concrete	6.0	0.0	2	287.48
Box	Concrete	6.0	7.0	1	72.84
Box	Concrete	6.0	8.0	2	355.6

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft ²)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	37
Outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

Discharge decreased downstream node Id= MHC6 Previous intensity used.
Discharge decreased downstream node Id= MHC9 Previous intensity used.
Discharge decreased downstream node Id= MHC11a Previous intensity used.
Discharge decreased downstream node Id= MHC13 Previous intensity used.
Discharge decreased downstream node Id= MHC12 Previous intensity used.

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System D1

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrsystemD1.stm

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
D2b	0.28	2.44	12.22	12.22	4.64	0.000	3.169

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
D2b	Junct	0.280	2.44	12.22	4.64		0.00	3.169
D1-OUT	Outlt	0.280	2.44	12.22	4.64		0.00	3.169

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	D2b	D1-OUT	162.96	162.73	Cir 1	0.00	2.00	126.0	0.183	0.013

Conveyance Hydraulic Computations. Tailwater = 164.730 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	164.94	164.73	166.96	0.019	0.79	2.00	2.75	2.75	3.2	9.7	0.000

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SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

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NOTE:

The convey length should be from upstream to downstream inside box.
This length may also be used as Pay Item.

SystemD1.txt

Using hydraulic length, from node center to node center, may result in profile error, and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	1	126.0

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	1
Outlet		0.0	0.0	0.0	0.0	0.0	1

=====**END**=====

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System D2

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM_rev030209\2yrSyst

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
D4c	0.26	1.32	10.00	10.00	4.96	0.000	1.704
D3b	0.27	1.26	10.00	10.00	4.96	0.000	1.689
D4a	0.28	2.55	10.00	10.00	4.96	0.000	3.544
D3a	0.3	2.77	10.00	10.00	4.96	0.000	4.125
D4b	0.32	8.59	23.23	23.23	3.53	0.000	9.713

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
D4c	Junct	0.260	1.32	10.00	4.96		0.00	1.704
D3b	Junct	0.265	2.58	10.66	4.86		0.00	3.322
D4a	Junct	0.280	2.55	10.00	4.96		0.00	3.544
D3a	Junct	0.290	5.32	10.54	4.88		0.00	7.539
D4b	Junct	0.320	8.59	23.23	3.53		0.00	9.713
MHD1	Junct	0.302	16.49	26.50	3.31		0.00	16.460
MHD2	Junct	0.309	13.91	25.03	3.40		0.00	14.617
MHD3	Junct	0.320	8.59	23.78	3.49		0.00	9.713
MHD1a	Junct	0.302	16.49	26.50	3.31		0.00	16.460
D2-OUT	Outlt	0.302	16.49	26.50	3.31		0.00	16.460

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	D4b	MHD3	162.79	162.57	Cir 1	0.00	2.00	117.0	0.188	0.013
2	MHD3	MHD2	162.57	162.06	Cir 1	0.00	2.00	268.9	0.190	0.013
3	D4a	D3a	162.23	162.07	Cir 1	0.00	2.00	91.0	0.176	0.013
4	D3a	MHD2	162.07	162.06	Cir 1	0.00	2.00	6.0	0.167	0.013
5	MHD2	MHD1	161.56	161.17	Cir 1	0.00	2.50	300.1	0.130	0.013
6	D4c	D3b	161.84	161.68	Cir 1	0.00	2.00	91.0	0.176	0.013

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7	D3b	MHD1	161.68	161.67	Cir 1	0.00	2.00	6.0	0.167	0.013
8	MHD1	MHD1a	161.17	160.85	Cir 1	0.00	2.50	184.8	0.173	0.013
9	MHD1a	D2-OUT	160.85	160.73	Cir 1	0.00	2.50	72.0	0.167	0.013

Conveyance Hydraulic Computations. Tailwater = 163.230 (ft)

Run #	Hyd. Gr.line		Crit.Elev US (ft)	Fr.Slope (%)	Depth		Velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)
	US (ft)	DS (ft)			Unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
1	164.42	164.19	167.06	0.183	1.63	1.63	3.55	3.55	9.7	9.9	0.000
2	164.19	163.59	167.04	0.183	1.62	1.62	3.57	3.57	9.7	9.9	0.000
3	163.73	163.59	166.23	0.024	0.85	1.52	2.80	2.80	3.5	9.5	0.000
4	163.59	163.59	166.23	0.110	1.38	1.53	3.27	3.27	7.5	9.3	0.000
5	163.59	163.26	166.23	0.126	2.03	2.09	3.42	3.42	14.6	14.8	0.000
6	163.42	163.27	167.49	0.006	0.57	1.59	2.28	2.28	1.7	9.5	0.000
7	163.27	163.26	167.49	0.021	0.83	1.59	2.70	2.70	3.3	9.3	0.000
8	163.26	163.24	167.49	0.160	1.97	2.39	3.96	3.96	16.5	17.1	0.000
9	163.24	163.23	168.27	0.160	2.01	2.50	3.89	3.89	16.5	16.8	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	6	579.9
Circular	Concrete	2.5	0.0	3	556.91

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	9
Outlet		0.0	0.0	0.0	0.0	0.0	1

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
 Discharge decreased downstream node Id= MHD3 Previous intensity used.
 Discharge decreased downstream node Id= MHD1a Previous intensity used.

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System E

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemE_rev.st

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
E3A	0.37	2.53	10.00	10.00	4.96	0.000	4.646
E4B	0.28	56.80	81.30	81.30	1.66	0.000	26.471
E1A	0.27	4.50	10.00	10.00	4.96	0.000	6.031
E1B	0.28	1.22	10.00	10.00	4.96	0.000	1.696
E2A	0.26	5.36	10.00	10.00	4.96	0.000	6.917
E2B	0.42	0.56	10.00	10.00	4.96	0.000	1.167
E2C	0.21	19.24	35.42	35.42	2.82	0.000	11.411
F2B	0.62	0.48	10.00	10.00	4.96	0.000	1.477
F1B	0.62	0.48	10.00	10.00	4.96	0.000	1.477
E4C	0.28	1.84	10.00	10.00	4.96	0.000	2.557
E4D	0.62	0.48	10.00	10.00	4.96	0.000	1.477
E3C	0.62	0.48	10.00	10.00	4.96	0.000	1.477
E3B	0.25	1.79	10.00	10.00	4.96	0.000	2.221
E4A	0.3	2.38	10.00	10.00	4.96	0.000	3.544

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
E3B	Junct	0.388	5.55	13.32	4.50		0.00	9.678
E4A	Junct	0.281	59.18	81.39	1.66		0.00	27.638
E3A	Junct	0.284	61.71	81.83	1.66		0.00	29.087
E4B	Junct	0.280	56.80	81.30	1.66		0.00	26.471
MHE6	Junct	0.620	0.96	10.79	4.84		0.00	2.882
MHE7	Junct	0.454	3.76	13.28	4.50		0.00	7.676
MHE8	Junct	0.388	5.55	13.32	4.50		0.00	9.678
MHE9	Junct	0.388	5.55	13.32	4.50		0.00	9.678
MHE10	Junct	0.293	67.26	81.85	1.66		0.00	32.649
F2B	Junct	0.620	0.48	10.00	4.96		0.00	1.477
F1B	Junct	0.620	0.96	10.79	4.84		0.00	2.882
E4C	Junct	0.280	1.84	10.00	4.96		0.00	2.557
E4D	Junct	0.350	2.32	10.09	4.95		0.00	4.023
E3C	Junct	0.397	2.80	10.69	4.86		0.00	5.394
E2C	Junct	0.210	19.24	35.42	2.82		0.00	11.411
E2B	Junct	0.420	0.56	10.00	4.96		0.00	1.167

SystemE_rev.txt

E1B	Junct	0.324	1.78	10.74	4.85	0.00	2.798
MHE4	Junct	0.276	88.28	83.09	1.64	0.00	39.880
MHE3	Junct	0.276	88.28	83.09	1.64	0.00	39.880
E2A	Junct	0.260	5.36	10.00	4.96	0.00	6.917
E1A	Junct	0.265	9.86	10.46	4.89	0.00	12.762
MHE1	Junct	0.274	98.14	84.08	1.63	0.00	43.792
MHE1a	Junct	0.274	98.14	84.08	1.63	0.00	43.792
MHE5	Junct	0.275	86.50	82.24	1.65	0.00	39.212
E-OUT	Outlt	0.274	98.14	84.08	1.63	0.00	43.792

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
23	MHE1	MHE1a	160.87	160.44	cir 1	0.00	4.00	428.7	0.100	0.013
24	MHE1a	E-OUT	160.44	160.38	cir 1	0.00	4.00	60.0	0.100	0.013
1	F2B	F1B	184.52	184.33	cir 1	0.00	2.00	105.0	0.181	0.013
2	F1B	MHE6	184.33	184.32	cir 1	0.00	2.00	6.0	0.167	0.013
3	MHE6	MHE7	165.33	164.62	cir 1	0.00	2.00	397.2	0.179	0.013
4	E4C	E4D	167.21	167.18	cir 1	0.00	2.00	14.4	0.208	0.013
5	E4D	E3C	167.18	166.99	cir 1	0.00	2.00	105.1	0.181	0.013
6	E3C	MHE7	166.99	166.98	cir 1	0.00	2.00	6.0	0.167	0.013
7	MHE7	E3B	164.12	164.10	cir 1	0.00	2.50	9.1	0.221	0.013
8	E3B	MHE8	164.10	164.09	cir 1	0.00	2.50	6.0	0.167	0.013
9	MHE8	MHE9	164.09	163.69	cir 1	0.00	2.50	212.4	0.188	0.013
10	MHE9	MHE10	163.69	163.17	cir 1	0.00	2.50	270.0	0.193	0.013
11	E4B	E4A	162.30	162.26	cir 1	0.00	3.50	24.0	0.167	0.013
12	E4A	E3A	162.26	162.18	cir 1	0.00	3.50	91.9	0.087	0.013
13	E3A	MHE10	162.18	162.17	cir 1	0.00	3.50	6.0	0.167	0.013
14	MHE10	MHE5	162.17	162.07	cir 1	0.00	3.50	92.3	0.108	0.013
15	E2C	MHE5	163.23	163.07	cir 1	0.00	2.50	120.0	0.133	0.013
16	MHE5	MHE4	162.07	161.68	cir 1	0.00	3.50	242.3	0.161	0.013
17	E2B	E1B	163.36	163.20	cir 1	0.00	2.00	91.0	0.176	0.013
18	E1B	MHE4	163.20	163.19	cir 1	0.00	2.00	6.0	0.167	0.013
19	MHE4	MHE3	161.19	161.05	cir 1	0.00	4.00	176.9	0.079	0.013
20	MHE3	MHE1	161.05	160.87	cir 1	0.00	4.00	221.8	0.081	0.013
21	E2A	E1A	163.04	162.88	cir 1	0.00	2.00	91.0	0.176	0.013
22	E1A	MHE1	162.38	162.37	cir 1	0.00	2.50	6.0	0.167	0.013

Conveyance Hydraulic Computations. Tailwater = 164.380 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
23	164.45	164.39	167.04	0.092	3.16	3.95	4.12	4.12	43.8	45.7	0.000
24	164.39	164.38	168.33	0.092	3.16	4.00	4.12	4.12	43.8	45.6	0.000
1	186.52	186.33	188.52	0.004	0.53	2.00	2.22	2.22	1.5	9.7	0.000
2	186.33	186.32	188.52	0.016	0.77	2.00	2.60	2.60	2.9	9.3	0.000
3	166.08	165.44	188.52	0.016	0.75	0.82	2.66	2.66	2.9	9.6	0.000
4	169.18	169.15	171.21	0.013	0.68	1.97	2.72	2.72	2.6	10.4	0.000
5	169.15	168.99	173.74	0.031	0.90	2.00	2.92	2.92	4.0	9.7	0.000
6	168.99	168.98	173.85	0.056	1.10	2.00	3.05	3.05	5.4	9.3	0.000
7	165.44	165.43	173.86	0.035	1.10	1.33	3.71	3.71	7.7	19.4	0.000
8	165.43	165.40	171.07	0.055	1.36	1.36	3.54	3.54	9.7	16.8	0.000
9	165.40	165.22	171.07	0.055	1.31	1.53	3.70	3.70	9.7	17.9	0.000
10	165.22	164.99	170.23	0.055	1.30	1.82	3.74	3.74	9.7	18.1	0.000

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11	165.01	164.99	169.07	0.069	2.04	2.73	4.54	4.54	26.5	41.2	0.000
12	164.99	164.99	169.14	0.075	2.68	2.81	3.50	3.50	27.6	29.8	0.000
13	164.99	164.99	169.18	0.083	2.17	2.82	4.63	4.63	29.1	41.2	0.000
14	164.99	164.86	169.18	0.104	2.82	2.82	3.93	3.93	32.6	33.3	0.000
15	164.86	164.86	168.85	0.077	1.63	1.79	3.36	3.36	11.4	15.0	0.000
16	164.86	164.45	168.91	0.151	2.79	2.79	4.77	4.77	39.2	40.5	0.000
17	164.62	164.46	168.21	0.003	0.47	1.26	2.05	2.05	1.2	9.5	0.000
18	164.46	164.45	168.21	0.015	0.75	1.26	2.58	2.58	2.8	9.3	0.000
19	164.45	164.46	168.21	0.076	3.25	3.41	3.65	3.65	39.9	40.6	0.000
20	164.46	164.45	167.69	0.076	3.19	3.58	3.71	3.71	39.9	41.1	0.000
21	164.49	164.45	167.04	0.093	1.27	1.57	3.30	3.30	6.9	9.5	0.000
22	164.45	164.45	167.04	0.096	1.63	2.08	3.76	3.76	12.8	16.8	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	4.0	0.0	4	887.4
Circular	Concrete	2.0	0.0	9	821.77
Circular	Concrete	2.5	0.0	6	623.42
Circular	Concrete	3.5	0.0	5	456.49

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	24
Outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
 Discharge decreased downstream node Id= MHE6 Previous intensity used.
 Discharge decreased downstream node Id= MHE8 Previous intensity used.
 Discharge decreased downstream node Id= MHE9 Previous intensity used.
 Discharge decreased downstream node Id= MHE3 Previous intensity used.
 Discharge decreased downstream node Id= MHE1a Previous intensity used.
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 6
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 2

PROJECT NAME : Medical Complex Drive Expansion
 JOB NUMBER : 0812-008
 PROJECT DESCRIPTION : Tomball TX 2-year design - System F

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemF.stm

ANALYSYS FREQUENCY : 2 Years
 MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
F2A	0.26	1.45	10.00	10.00	4.96	0.000	1.871
F1A	0.23	2.22	10.00	10.00	4.96	0.000	2.534
F2C	0.25	11.29	25.28	25.28	3.39	0.000	9.561
F2D	0.27	55.23	48.91	48.91	2.33	0.000	34.722
F2E	0.29	2.01	10.00	10.00	4.96	0.000	2.893
F1C	0.4	0.89	10.00	10.00	4.96	0.000	1.767
F2F	0.37	94.15	77.32	77.32	1.72	0.000	60.025

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
F2A	Junct	0.260	1.45	10.00	4.96		0.00	1.871
F1A	Junct	0.230	2.22	10.00	4.96		0.00	2.534
F2C	Junct	0.251	12.74	25.28	3.39		0.00	10.838
F2D	Junct	0.266	67.97	48.91	2.33		0.00	42.172
F2E	Junct	0.290	2.01	10.00	4.96		0.00	2.893
F1C	Junct	0.400	0.89	10.00	4.96		0.00	1.767
F2F	Junct	0.326	164.13	77.32	1.72		0.00	92.238
MHF1	Junct	0.260	1.45	10.04	4.96		0.00	1.871
MHF2	Junct	0.267	69.98	49.33	2.32		0.00	43.300
MHF3	Junct	0.230	2.22	10.04	4.96		0.00	2.534
MHF4	Junct	0.279	3.11	12.64	4.58		0.00	3.971
MHF5	Junct	0.325	167.24	78.61	1.70		0.00	92.670
F-OUT	Outlet	0.325	167.24	78.61	1.70		0.00	92.670

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	F2A	MHF1	167.74	167.73	Cir 1	0.00	2.00	6.0	0.167	0.013

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2	MHF1	F2C	167.73	167.29	Cir 1	0.00	2.00	242.2	0.182	0.013
3	F2C	F2D	166.79	166.71	Cir 1	0.00	2.50	61.9	0.129	0.013
4	F2D	MHF2	165.21	165.12	Cir 1	0.00	4.00	98.0	0.092	0.013
5	F2E	MHF2	167.13	167.12	Cir 1	0.00	2.00	6.0	0.167	0.013
6	MHF2	F2F	163.62	163.48	Cir 1	0.00	5.50	281.4	0.050	0.013
7	F2F	MHF5	163.48	163.20	Cir 1	0.00	5.50	351.4	0.080	0.013
8	F1A	MHF3	167.67	167.66	Cir 1	0.00	2.00	6.0	0.167	0.013
9	MHF3	MHF4	167.66	166.93	Cir 1	0.00	2.00	402.7	0.181	0.013
10	F1C	MHF4	166.94	166.93	Cir 1	0.00	2.00	6.0	0.167	0.013
11	MHF4	MHF5	166.93	166.70	Cir 1	0.00	2.00	129.4	0.178	0.013
12	MHF5	F-OUT	163.20	163.19	Cir 1	0.00	5.50	12.0	0.083	0.013

Conveyance Hydraulic Computations. Tailwater = 168.690 (ft)

Run #	Hyd. Gr. line		Crit. Elev US (ft)	Fr. Slope (%)	Depth		Velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)
	US (ft)	DS (ft)			Unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
1	169.31	169.30	172.36	0.007	0.61	1.57	2.30	2.30	1.9	9.3	0.000
2	169.30	168.88	172.36	0.007	0.60	1.58	2.37	2.37	1.9	9.7	0.000
3	168.88	168.84	171.72	0.069	1.59	2.13	3.29	3.29	10.8	14.8	0.000
4	168.84	168.83	171.26	0.085	3.19	3.71	3.93	3.93	42.2	43.7	0.000
5	168.84	168.83	171.13	0.016	0.77	1.71	2.60	2.60	2.9	9.3	0.000
6	168.83	168.73	171.13	0.016	3.01	5.25	3.26	3.26	43.3	75.2	0.000
7	168.73	168.69	171.77	0.075	4.38	5.49	4.54	4.54	92.2	95.2	0.000
8	169.58	169.57	172.20	0.012	0.72	1.91	2.50	2.50	2.5	9.3	0.000
9	169.57	168.89	172.20	0.012	0.70	1.96	2.58	2.58	2.5	9.7	0.000
10	168.90	168.89	172.33	0.006	0.59	1.96	2.26	2.26	1.8	9.3	0.000
11	168.89	168.69	172.33	0.031	0.90	1.99	2.90	2.90	4.0	9.6	0.000
12	168.69	168.69	172.38	0.076	4.30	5.50	4.65	4.65	92.7	97.4	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
This length may also be used as Pay Item.
Using hydraulic length, from node center to node center, may result in profile error,
and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	7	798.3
Circular	Concrete	2.5	0.0	1	61.92
Circular	Concrete	4.0	0.0	1	97.99
Circular	Concrete	5.5	0.0	3	644.8

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate width (ft)	Grate Length (ft)	Grate Area (ft ²)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	12
Outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

Discharge decreased downstream node Id= MHF1 Previous intensity used.

Discharge decreased downstream node Id= MHF3 Previous intensity used.

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System G

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemG.stm

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
G1d	0.27	6.75	24.21	24.21	3.46	0.000	6.309

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
G1d	Junct	0.270	6.75	24.21	3.46		0.00	6.309
G-OUT	Outlt	0.270	6.75	24.21	3.46		0.00	6.309

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	G1d	G-OUT	167.30	167.06	cir 1	0.00	2.00	136.0	0.176	0.013

Conveyance Hydraulic Computations. Tailwater = 169.060 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	169.20	169.06	171.30	0.077	1.19	2.00	3.23	3.23	6.3	9.5	0.000

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SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

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NOTE:

The convey length should be from upstream to downstream inside box.
This length may also be used as Pay Item.

SystemG.txt

Using hydraulic length, from node center to node center, may result in profile error,
and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	1	135.98

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	1
Outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System H1

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrsSystemH1_rev.s

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
G1A	0.36	1.21	10.00	10.00	4.96	0.000	2.162
G2A	0.27	2.61	10.00	10.00	4.96	0.000	3.498
G1C	0.21	5.57	22.18	22.18	3.61	0.000	4.227
G1B	0.62	0.55	10.00	10.00	4.96	0.000	1.693
G2B	0.62	0.59	10.00	10.00	4.96	0.000	1.816
G2C	0.23	1.56	10.00	10.00	4.96	0.000	1.781
H1A	0.23	1.91	10.25	10.25	4.92	0.000	2.163
H1B	0.63	0.34	10.00	10.00	4.96	0.000	1.063
G2E	0.62	0.34	10.00	10.00	4.96	0.000	1.046
G2D	0.24	1.26	10.00	10.00	4.96	0.000	1.501
H1C	0.65	3.41	10.00	10.00	4.96	0.000	11.002
H2A	0.35	2.80	10.00	10.00	4.96	0.000	4.864
H5D	0.32	64.76	79.06	79.06	1.70	0.000	35.165
H1D	0.22	9.38	21.80	21.80	3.64	0.000	7.519
H3	0.52	10.53	10.00	10.00	4.96	0.000	27.179
H5A	0.54	0.33	10.00	10.00	4.96	0.000	0.885
H2B	0.6	0.31	10.00	10.00	4.96	0.000	0.923
H4	0.2	1.76	10.00	10.00	4.96	0.000	1.747
H5C	0.48	60.25	65.76	65.76	1.92	0.000	55.611
H5B	0.63	0.33	10.00	10.00	4.96	0.000	1.032
H2C	0.75	1.02	10.00	10.00	4.96	0.000	3.797
H3_H4	0.0	0.00	10.00	0.00	0.00	15.040	15.040

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
G1A	Junct	0.360	1.21	10.00	4.96		0.00	2.162
G2A	Junct	0.270	2.61	10.00	4.96		0.00	3.498
G1C	Junct	0.210	5.57	22.18	3.61		0.00	4.227
G1B	Junct	0.620	0.55	10.00	4.96		0.00	1.693
G2B	Junct	0.620	1.14	10.76	4.85		0.00	3.426
G2C	Junct	0.395	2.70	11.08	4.80		0.00	5.115
H1A	Junct	0.235	8.69	22.25	3.61		0.00	7.378
H1B	Junct	0.250	9.03	22.33	3.60		0.00	8.137

SystemH1_rev.txt

G2E	Junct	0.264	9.37	22.84	3.56	0.00	8.799
G2D	Junct	0.261	10.63	22.92	3.56	0.00	9.859
H1C	Junct	0.322	77.55	79.73	1.69	0.00	42.183
H2A	Junct	0.323	80.35	80.06	1.68	0.00	43.711
H5D	Junct	0.320	64.76	79.06	1.70	0.00	35.165
H1D	Junct	0.307	74.14	79.30	1.69	0.00	38.586
H3	Junct	0.000	0.00	0.00	0.00	0.00	0.000
H5A	Junct	0.540	0.33	10.00	4.96	0.00	0.885
H2B	Junct	0.569	0.64	10.70	4.86	0.00	1.769
H4	Junct	0.000	0.00	0.00	0.00	0.00	0.000
H5C	Junct	0.000	0.00	0.00	0.00	0.00	0.000
H5B	Junct	0.630	0.33	10.00	4.96	0.00	1.032
H2C	Junct	0.721	1.35	10.67	4.86	0.00	4.729
MHG1	Junct	0.270	2.61	10.04	4.96	0.00	3.498
H3_H4	Junct	0.721	1.35	10.70	4.86	0.00	19.764
MHG14	Junct	0.000	0.00	0.00	0.00	0.00	0.000
MHG2	Junct	0.324	98.28	81.95	1.66	0.00	67.778
MHG3	Junct	0.000	0.00	0.00	0.00	0.00	0.000
MHG4	Junct	0.360	1.21	10.04	4.96	0.00	2.162
MHG5	Junct	0.237	6.78	22.21	3.61	0.00	5.796
MHG6	Junct	0.237	6.78	22.21	3.61	0.00	5.796
MHG7	Junct	0.324	92.97	80.97	1.67	0.00	65.266
MHG8	Junct	0.264	9.37	22.84	3.56	0.00	8.799
MHG9	Junct	0.332	82.34	80.08	1.68	0.00	60.993
MHG10	Junct	0.332	82.34	80.08	1.68	0.00	60.993
MHG11	Junct	0.000	0.00	0.00	0.00	0.00	0.000
MHG12	Junct	0.672	1.99	11.98	4.67	0.00	21.287
H1-OUT	Outlt	0.324	98.28	81.95	1.66	0.00	67.778

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
3	H5B	H2C	166.61	166.46	Cir 1	0.00	2.00	81.0	0.185	0.013
4	H2C	H3_H4	166.46	166.45	Cir 1	0.00	2.00	6.0	0.167	0.013
5	H3_H4	MHG12	165.45	165.16	Cir 1	0.00	3.00	268.8	0.108	0.013
6	H5A	H2B	166.32	166.17	Cir 1	0.00	2.00	81.0	0.185	0.013
7	H2B	MHG12	166.17	166.16	Cir 1	0.00	2.00	6.0	0.167	0.013
8	MHG12	MHG10	165.16	164.76	Cir 1	0.00	3.00	359.5	0.111	0.013
9	H5D	H1D	164.01	163.96	Cir 1	0.00	4.00	55.0	0.091	0.013
10	H1D	H1C	163.96	163.85	Cir 1	0.00	4.00	105.9	0.104	0.013
11	H1C	H2A	163.85	163.77	Cir 1	0.00	4.00	81.0	0.099	0.013
12	H2A	MHG10	163.77	163.76	Cir 1	0.00	4.00	6.0	0.167	0.013
13	MHG10	MHG9	163.26	163.12	Cir 1	0.00	4.50	138.5	0.101	0.013
14	MHG9	MHG7	163.12	162.88	Cir 1	0.00	4.50	240.0	0.100	0.013
15	G1A	MHG4	166.74	166.73	Cir 1	0.00	2.00	6.0	0.167	0.013
16	MHG4	MHG5	166.73	166.18	Cir 1	0.00	2.00	306.7	0.179	0.013
17	G1C	MHG5	166.19	166.18	Cir 1	0.00	2.00	6.0	0.167	0.013
18	MHG5	MHG6	166.18	165.67	Cir 1	0.00	2.00	283.5	0.180	0.013
19	MHG6	H1A	165.67	165.66	Cir 1	0.00	2.00	6.0	0.167	0.013
20	H1A	H1B	165.66	165.63	Cir 1	0.00	2.00	16.2	0.185	0.013
21	H1B	G2E	165.63	165.44	Cir 1	0.00	2.00	105.0	0.181	0.013
22	G2E	MHG8	165.44	165.43	Cir 1	0.00	2.00	6.0	0.167	0.013
23	MHG8	G2D	165.43	165.40	Cir 1	0.00	2.00	17.0	0.177	0.013
24	G2D	MHG7	165.40	165.38	Cir 1	0.00	2.00	6.0	0.333	0.013
25	MHG7	MHG2	162.88	162.55	Cir 1	0.00	4.50	282.5	0.117	0.013
26	G1B	G2B	183.00	182.81	Cir 1	0.00	2.00	105.0	0.181	0.013
27	G2B	G2C	165.15	165.06	Cir 1	0.00	2.00	52.6	0.171	0.013
28	G2C	MHG2	165.06	165.05	Cir 1	0.00	2.00	6.0	0.167	0.013

SystemH1_rev.txt

29	G2A	MHG1	165.59	165.58	Cir 1	0.00	2.00	6.0	0.167	0.013
30	MHG1	MHG2	165.58	165.05	Cir 1	0.00	2.00	296.9	0.179	0.013
31	MHG2	H1-OUT	162.55	162.45	Cir 1	0.00	4.50	72.0	0.139	0.013

Conveyance Hydraulic Computations. Tailwater = 166.950 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
3	167.83	167.68	171.68	0.002	0.44	1.22	2.02	2.02	1.0	9.8	0.000
4	167.68	167.68	171.68	0.043	1.02	1.23	2.95	2.95	4.7	9.3	0.000
5	167.68	167.50	171.68	0.087	2.23	2.34	3.51	3.51	19.8	22.0	0.000
6	167.66	167.51	170.88	0.002	0.41	1.34	1.93	1.93	0.9	9.8	0.000
7	167.51	167.50	170.88	0.006	0.59	1.34	2.26	2.26	1.8	9.3	0.000
8	167.50	167.02	170.88	0.101	2.34	2.34	3.59	3.59	21.3	22.3	0.000
9	167.04	167.03	170.28	0.059	2.73	3.07	3.84	3.84	35.2	43.5	0.000
10	167.03	167.02	170.11	0.072	2.78	3.17	4.14	4.14	38.6	46.5	0.000
11	167.02	167.02	169.85	0.086	3.06	3.25	4.09	4.09	42.2	45.3	0.000
12	167.02	167.02	169.85	0.092	2.58	3.26	5.10	5.10	43.7	58.9	0.000
13	167.02	167.02	169.85	0.095	3.59	3.90	4.49	4.49	61.0	62.8	0.000
14	167.02	167.01	170.67	0.095	3.62	4.13	4.45	4.45	61.0	62.5	0.000
15	167.77	167.76	173.86	0.009	0.66	1.03	2.40	2.40	2.2	9.3	0.000
16	167.76	167.30	173.86	0.009	0.65	1.12	2.46	2.46	2.2	9.6	0.000
17	167.30	167.30	174.03	0.035	0.95	1.12	2.88	2.88	4.2	9.3	0.000
18	167.30	167.04	174.03	0.065	1.12	1.37	3.20	3.20	5.8	9.6	0.000
19	167.04	167.04	173.62	0.065	1.15	1.38	3.11	3.11	5.8	9.3	0.000
20	167.04	167.04	173.62	0.105	1.30	1.41	3.41	3.41	7.4	9.8	0.000
21	167.04	167.01	175.93	0.128	1.41	1.57	3.44	3.44	8.1	9.7	0.000
22	167.01	167.01	175.93	0.150	1.56	1.58	3.34	3.34	8.8	9.3	0.000
23	167.01	167.01	176.10	0.150	1.52	1.61	3.43	3.43	8.8	9.5	0.000
24	167.01	167.01	172.80	0.188	1.30	1.63	4.57	4.57	9.9	13.1	0.000
25	167.01	166.97	172.80	0.109	3.59	4.42	4.80	4.80	65.3	67.5	0.000
26	185.00	184.81	187.00	0.006	0.57	2.00	2.30	2.30	1.7	9.7	0.000
27	167.06	166.98	187.00	0.023	0.84	1.92	2.75	2.75	3.4	9.4	0.000
28	166.98	166.97	173.47	0.051	1.06	1.92	3.02	3.02	5.1	9.3	0.000
29	167.45	167.44	173.66	0.024	0.85	1.86	2.74	2.74	3.5	9.3	0.000
30	167.44	166.97	173.66	0.024	0.84	1.92	2.81	2.81	3.5	9.6	0.000
31	166.97	166.95	173.47	0.118	3.41	4.50	5.24	5.24	67.8	73.6	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	19	1398.79
Circular	Concrete	3.0	0.0	2	628.32
Circular	Concrete	4.0	0.0	4	247.85
Circular	Concrete	4.5	0.0	4	733.03

NODES:

SystemH1_rev.txt

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	35
Outlet		0.0	0.0	0.0	0.0	0.0	1
END							

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

Discharge decreased downstream node Id= MHG9 Previous intensity used.
 Discharge decreased downstream node Id= MHG4 Previous intensity used.
 Discharge decreased downstream node Id= MHG6 Previous intensity used.
 Discharge decreased downstream node Id= MHG8 Previous intensity used.
 Discharge decreased downstream node Id= MHG1 Previous intensity used.
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 26

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System H2

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemH2_rev.s

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
H5C	0.48	60.25	65.76	65.76	1.92	0.000	55.611

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
H5C	Junct	0.480	60.25	65.76	1.92		0.00	55.611
H2-OUT	Outlt	0.480	60.25	65.76	1.92		0.00	55.611

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	H5C	H2-OUT	168.01	167.82	Cir 3	0.00	2.50	90.0	0.211	0.013

Conveyance Hydraulic Computations. Tailwater = 170.320 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	170.33	170.32	172.51	0.203	2.01	2.50	4.38	4.38	55.6	56.8	0.000

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SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

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NOTE:

The convey length should be from upstream to downstream inside box.
This length may also be used as Pay Item.

SystemH2_rev.txt

Using hydraulic length, from node center to node center, may result in profile error,
and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	concrete	2.5	0.0	1	270.0

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	1
Outlet		0.0	0.0	0.0	0.0	0.0	1

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END
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NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

PROJECT NAME : Medical Complex Drive Expansion
 JOB NUMBER : 0812-008
 PROJECT DESCRIPTION : Tomball TX 2-year design - System I

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemI.stm

ANALYSYS FREQUENCY : 2 Years
 MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
I1E	0.3	2.11	10.00	10.00	4.96	0.000	3.142
J1C	0.28	1.52	10.00	10.00	4.96	0.000	2.113
I1D	0.27	1.93	10.00	10.00	4.96	0.000	2.587
J1B	0.27	1.93	10.00	10.00	4.96	0.000	2.587
I1C	0.38	1.88	10.00	10.00	4.96	0.000	3.546
J1A	0.27	1.97	10.00	10.00	4.96	0.000	2.640
I1A	0.28	2.41	10.00	10.00	4.96	0.000	3.349
I1B	0.46	187.20	93.18	93.18	1.51	0.000	130.258
I2	0.3	2.86	10.00	10.00	4.96	0.000	4.259

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
MHI2	Junct	0.280	7.49	12.70	4.58		0.00	9.612
MHI3	Junct	0.280	7.49	12.70	4.58		0.00	9.612
MHI4	Junct	0.295	11.34	13.56	4.46		0.00	14.943
MHI5	Junct	0.295	11.34	13.56	4.46		0.00	14.943
MHI6	Junct	0.294	16.61	14.22	4.38		0.00	21.395
MHI7	Junct	0.294	16.61	14.22	4.38		0.00	21.395
MHI8	Junct	0.446	203.81	93.57	1.51		0.00	137.232
I1E	Junct	0.300	2.11	10.00	4.96		0.00	3.142
J1C	Junct	0.292	3.63	10.56	4.88		0.00	5.163
I1D	Junct	0.270	1.93	10.00	4.96		0.00	2.587
J1B	Junct	0.270	3.86	10.59	4.87		0.00	5.078
I1C	Junct	0.380	1.88	10.00	4.96		0.00	3.546
J1A	Junct	0.324	3.85	10.52	4.88		0.00	6.085
I1A	Junct	0.280	2.41	10.00	4.96		0.00	3.349
I1B	Junct	0.460	187.20	93.18	1.51		0.00	130.258
I2	Junct	0.291	5.27	10.51	4.88		0.00	7.486
MHI1	Junct	0.292	3.63	10.56	4.88		0.00	5.163
I-OUT	Outlet	0.446	203.81	93.57	1.51		0.00	137.232

SystemI.txt

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	IIE	J1C	169.55	169.39	Cir 1	0.00	2.00	91.0	0.176	0.013
2	J1C	MHI1	169.39	169.38	Cir 1	0.00	2.00	6.0	0.167	0.013
3	MHI1	MHI2	169.38	168.66	Cir 1	0.00	2.00	399.6	0.180	0.013
4	I1D	J1B	168.83	168.67	Cir 1	0.00	2.00	91.0	0.176	0.013
5	J1B	MHI2	168.67	168.66	Cir 1	0.00	2.00	6.0	0.167	0.013
6	MHI2	MHI3	168.66	168.24	Cir 1	0.00	2.00	219.5	0.191	0.013
7	MHI3	MHI4	168.24	167.89	Cir 1	0.00	2.00	184.8	0.189	0.013
8	I1C	J1A	168.06	167.90	Cir 1	0.00	2.00	88.8	0.180	0.013
9	J1A	MHI4	167.90	167.89	Cir 1	0.00	2.00	6.0	0.167	0.013
10	MHI4	MHI5	167.39	167.20	Cir 1	0.00	2.50	135.9	0.140	0.013
11	MHI5	MHI6	167.20	167.01	Cir 1	0.00	2.50	139.0	0.137	0.013
12	I1A	I2	167.67	167.52	Cir 1	0.00	2.00	85.2	0.176	0.013
13	I2	MHI6	167.52	167.51	Cir 1	0.00	2.00	6.0	0.167	0.013
14	MHI6	MHI7	166.51	166.38	Cir 1	0.00	3.00	110.9	0.117	0.013
15	MHI7	MHI8	166.38	166.16	Cir 1	0.00	3.00	207.4	0.106	0.013
16	I1B	MHI8	162.73	162.66	Cir 1	0.00	6.50	107.8	0.065	0.013
17	MHI8	I-OUT	162.66	162.60	Cir 1	0.00	6.50	83.5	0.072	0.013

Conveyance Hydraulic Computations. Tailwater = 169.100 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	170.79	170.67	177.98	0.019	0.79	1.28	2.71	2.71	3.1	9.5	0.000
2	170.67	170.66	177.98	0.052	1.07	1.28	3.02	3.02	5.2	9.3	0.000
3	170.66	170.25	177.98	0.052	1.04	1.59	3.12	3.12	5.2	9.6	0.000
4	170.41	170.26	175.27	0.013	0.71	1.59	2.57	2.57	2.6	9.5	0.000
5	170.26	170.25	175.27	0.050	1.06	1.59	3.01	3.01	5.1	9.3	0.000
6	170.25	169.84	175.27	0.179	1.59	1.60	3.58	3.58	9.6	9.9	0.000
7	169.84	169.38	173.79	0.179	1.60	1.60	3.56	3.56	9.6	9.9	0.000
8	169.52	169.39	172.57	0.024	0.84	1.49	2.82	2.82	3.5	9.6	0.000
9	169.39	169.38	172.57	0.072	1.18	1.49	3.14	3.14	6.1	9.3	0.000
10	169.38	169.21	172.58	0.132	1.99	2.01	3.56	3.56	14.9	15.4	0.000
11	169.21	169.21	171.90	0.132	2.01	2.20	3.53	3.53	14.9	15.2	0.000
12	169.34	169.21	171.67	0.022	0.82	1.69	2.76	2.76	3.3	9.5	0.000
13	169.21	169.21	171.67	0.109	1.37	1.70	3.27	3.27	7.5	9.3	0.000
14	169.21	169.18	171.67	0.102	2.30	2.80	3.68	3.68	21.4	22.9	0.000
15	169.18	169.16	171.81	0.102	2.41	3.00	3.51	3.51	21.4	21.8	0.000
16	169.17	169.16	172.48	0.061	5.18	6.50	4.59	4.59	130.3	134.1	0.000
17	169.16	169.10	172.50	0.068	5.18	6.50	4.84	4.84	137.2	141.2	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey	Material	Rise	Span	Number of Links	Quantity
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Structure		(ft)	SystemI.txt (ft)	of this type	(ft)
Circular	Concrete	2.0	0.0	11	1183.98
Circular	Concrete	2.5	0.0	2	274.93
Circular	Concrete	3.0	0.0	2	318.27
Circular	Concrete	6.5	0.0	2	191.3

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	17
Outlet		0.0	0.0	0.0	0.0	0.0	1

=====END=====

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
 Discharge decreased downstream node Id= MHI1 Previous intensity used.
 Discharge decreased downstream node Id= MHI3 Previous intensity used.
 Discharge decreased downstream node Id= MHI5 Previous intensity used.
 Discharge decreased downstream node Id= MHI7 Previous intensity used.

PROJECT NAME : Medical Complex Drive Expansion
 JOB NUMBER : 0812-008
 PROJECT DESCRIPTION : Tomball TX 2-year design - System J1

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemJ1.stm

ANALYSYS FREQUENCY : 2 Years
 MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
J2B	0.43	88.17	49.87	49.87	2.30	0.000	87.212

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
J2B	Junct	0.430	88.17	49.87	2.30		0.00	87.212
J1-OUT	Outlt	0.430	88.17	49.87	2.30		0.00	87.212

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	J2B	J1-OUT	160.91	160.84	Cir 1	0.00	6.00	150.0	0.047	0.013

Conveyance Hydraulic Computations. Tailwater = 0.000 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	165.60	165.53	168.91	0.042	4.69	4.69	3.68	3.68	87.2	91.9	0.000

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SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

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NOTE:
 The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.

SystemJ1.txt

Using hydraulic length, from node center to node center, may result in profile error,
and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	6.0	0.0	1	150.0

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	1
Outlet		0.0	0.0	0.0	0.0	0.0	1

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END
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NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
Tailwater set to uniform depth elevation = 165.53(ft)

PROJECT NAME : Medical Complex Drive Expansion
 JOB NUMBER : 0812-008
 PROJECT DESCRIPTION : Tomball TX 2-year design - System J2

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemJ2.stm

ANALYSYS FREQUENCY : 2 Years
 MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
K1A	0.25	4.44	12.70	12.70	4.57	0.000	5.078
K2A	0.27	1.79	10.00	10.00	4.96	0.000	2.399
J5A	0.25	5.71	13.22	13.22	4.51	0.000	6.435
J4	0.3	3.69	10.00	10.00	4.96	0.000	5.495
J5B	0.28	18.96	47.07	47.07	2.38	0.000	12.660
J2A	0.32	3.53	10.00	10.00	4.96	0.000	5.607
J3	0.29	3.58	10.00	10.00	4.96	0.000	5.153

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
K1A	Junct	0.250	4.44	12.70	4.57		0.00	5.078
K2A	Junct	0.256	6.23	13.16	4.52		0.00	7.195
J5A	Junct	0.250	5.71	13.22	4.51		0.00	6.435
J4	Junct	0.270	9.40	13.69	4.45		0.00	11.276
J5B	Junct	0.280	18.96	47.07	2.38		0.00	12.660
J2A	Junct	0.320	3.53	10.00	4.96		0.00	5.607
J3	Junct	0.305	7.11	10.48	4.89		0.00	10.598
MHJ1	Junct	0.256	6.23	13.16	4.52		0.00	7.195
MHJ2	Junct	0.264	15.63	15.51	4.24		0.00	17.484
MHJ3	Junct	0.264	15.63	15.51	4.24		0.00	17.484
MHJ4	Junct	0.273	34.59	47.87	2.36		0.00	22.270
MHJ5	Junct	0.280	18.96	47.38	2.37		0.00	12.660
MHJ6	Junct	0.278	41.70	48.63	2.34		0.00	27.116
MHJ7	Junct	0.278	41.70	48.63	2.34		0.00	27.116
MHJ8	Junct	0.278	41.70	48.63	2.34		0.00	27.116
J2-OUT	Outlt	0.278	41.70	48.63	2.34		0.00	27.116

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine Elev. US DS		Shape #	Span	Rise	Length	Slope	n_value

			(ft)	(ft)	SystemJ2.txt (ft)	(ft)	(ft)	(ft)	(%)	
1	K1A	K2A	172.65	172.49	Cir 1 0.00	2.00	86.1	0.186	0.013	
2	K2A	MHJ1	172.49	172.48	Cir 1 0.00	2.00	6.0	0.167	0.013	
3	MHJ1	MHJ2	172.48	171.63	Cir 1 0.00	2.00	472.2	0.180	0.013	
4	J5A	J4	171.80	171.64	Cir 1 0.00	2.00	91.0	0.176	0.013	
5	J4	MHJ2	170.64	170.63	Cir 1 0.00	3.00	6.0	0.167	0.013	
6	MHJ2	MHJ3	170.63	170.52	Cir 1 0.00	3.00	102.7	0.107	0.013	
7	MHJ3	MHJ4	170.52	170.25	Cir 1 0.00	3.00	240.2	0.112	0.013	
8	J5B	MHJ5	170.97	170.88	Cir 1 0.00	2.50	64.9	0.139	0.013	
9	MHJ5	MHJ4	170.88	170.75	Cir 1 0.00	2.50	99.0	0.131	0.013	
10	MHJ4	MHJ6	170.25	170.02	Cir 1 0.00	3.00	177.3	0.130	0.013	
11	J2A	J3	171.19	171.03	Cir 1 0.00	2.00	91.0	0.176	0.013	
12	J3	MHJ6	170.53	170.52	Cir 1 0.00	2.50	6.0	0.167	0.013	
13	MHJ6	MHJ7	169.52	169.28	Cir 1 0.00	3.50	263.9	0.091	0.013	
14	MHJ7	MHJ8	169.28	169.08	Cir 1 0.00	3.50	230.1	0.087	0.013	
15	MHJ8	J2-OUT	169.08	169.02	Cir 1 0.00	3.50	68.4	0.088	0.013	

Conveyance Hydraulic Computations. Tailwater = 172.520 (ft)

Run #	Hyd. Gr.line		Crit.Elev US (ft)	Fr.slope (%)	Depth		Velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)
	US (ft)	DS (ft)			Unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
1	173.86	173.80	178.32	0.050	1.02	1.31	3.14	3.14	5.1	9.8	0.000
2	173.80	173.77	178.32	0.100	1.33	1.33	3.25	3.25	7.2	9.3	0.000
3	173.77	172.70	178.32	0.100	1.29	1.29	3.35	3.35	7.2	9.6	0.000
4	173.01	172.71	175.80	0.080	1.21	1.21	3.25	3.25	6.4	9.5	0.000
5	172.71	172.70	175.80	0.028	1.35	2.07	3.66	3.66	11.3	27.3	0.000
6	172.70	172.71	175.80	0.068	2.03	2.19	3.44	3.44	17.5	21.9	0.000
7	172.71	172.66	175.95	0.068	1.99	2.41	3.51	3.51	17.5	22.5	0.000
8	172.71	172.66	178.36	0.094	1.74	1.78	3.47	3.47	12.7	15.3	0.000
9	172.66	172.66	176.82	0.094	1.78	1.91	3.39	3.39	12.7	14.9	0.000
10	172.66	172.65	176.32	0.111	2.29	2.63	3.85	3.85	22.3	24.1	0.000
11	172.75	172.65	175.84	0.061	1.11	1.62	3.15	3.15	5.6	9.5	0.000
12	172.65	172.65	175.84	0.066	1.45	2.13	3.60	3.60	10.6	16.8	0.000
13	172.65	172.58	175.84	0.072	2.57	3.30	3.58	3.58	27.1	30.5	0.000
14	172.58	172.53	177.99	0.072	2.63	3.45	3.50	3.50	27.1	29.8	0.000
15	172.53	172.52	179.78	0.072	2.63	3.50	3.50	3.50	27.1	29.9	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
This length may also be used as Pay Item.
Using hydraulic length, from node center to node center, may result in profile error,
and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	5	746.28
Circular	Concrete	3.0	0.0	4	526.22
Circular	Concrete	2.5	0.0	3	169.89
Circular	Concrete	3.5	0.0	3	562.36

NODES:

SystemJ2.txt

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	15
Outlet		0.0	0.0	0.0	0.0	0.0	1
=====END=====							

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

Discharge decreased downstream node Id= MHJ1 Previous intensity used.
 Discharge decreased downstream node Id= MHJ3 Previous intensity used.
 Discharge decreased downstream node Id= MHJ5 Previous intensity used.
 Discharge decreased downstream node Id= MHJ7 Previous intensity used.
 Discharge decreased downstream node Id= MHJ8 Previous intensity used.

PROJECT NAME : Medical Complex Drive Expansion
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System M

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemM.stm

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
M1E	0.8	0.40	10.00	10.00	4.96	0.000	1.588
M2H	0.8	0.40	10.00	10.00	4.96	0.000	1.588
M1C	0.78	0.45	10.00	10.00	4.96	0.000	1.742
M2D	0.8	0.30	10.00	10.00	4.96	0.000	1.191
M1B	0.65	0.42	10.00	10.00	4.96	0.000	1.355
M2C	0.8	0.43	10.00	10.00	4.96	0.000	1.707
M1A	0.65	0.54	10.00	10.00	4.96	0.000	1.742
M2A	0.73	0.44	10.00	10.00	4.96	0.000	1.594
M2E	0.23	1.33	10.00	10.00	4.96	0.000	1.518
M2F	0.8	0.19	10.00	10.00	4.96	0.000	0.754
M2G	0.4	0.73	10.00	10.00	4.96	0.000	1.449
M2B	0.33	0.84	10.00	10.00	4.96	0.000	1.376
M1D	0.66	39.68	14.64	14.64	4.33	0.000	113.511

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
M1E	Junct	0.800	0.40	10.00	4.96		0.00	1.588
M2H	Junct	0.800	0.80	10.65	4.86		0.00	3.113
M1C	Junct	0.780	0.45	10.00	4.96		0.00	1.742
M2D	Junct	0.794	1.55	12.48	4.60		0.00	5.668
M1A	Junct	0.650	0.54	10.00	4.96		0.00	1.742
M2A	Junct	0.686	0.98	10.50	4.89		0.00	3.284
M2E	Junct	0.548	6.47	13.30	4.50		0.00	15.953
M2F	Junct	0.483	0.92	10.28	4.92		0.00	2.185
M2G	Junct	0.400	0.73	10.00	4.96		0.00	1.449
M2B	Junct	0.437	1.26	10.51	4.88		0.00	2.687
M1B	Junct	0.650	0.42	10.00	4.96		0.00	1.355
M2C	Junct	0.800	0.43	10.00	4.96		0.00	1.707
M1D	Junct	0.660	39.68	14.64	4.33		0.00	113.511
MHM1	Junct	0.794	1.55	12.48	4.60		0.00	5.668
MHM2	Junct	0.663	4.22	13.07	4.53		0.00	12.662
MHM3	Junct	0.686	0.98	10.50	4.89		0.00	3.284
MHM4	Junct	0.546	2.24	12.44	4.61		0.00	5.634

SystemM.txt

MHM5	Junct	0.548	6.47	13.30	4.50	0.00	15.953
MHM6	Junct	0.644	46.15	15.46	4.24	0.00	126.114
M-OUT	Outlt	0.644	46.15	15.46	4.24	0.00	126.114

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	M1E	M2H	203.82	203.66	Cir 1	0.00	2.00	87.9	0.182	0.013
2	M2H	M2D	190.20	189.66	Cir 1	0.00	2.00	300.0	0.180	0.013
3	M1C	M2D	189.81	189.66	Cir 1	0.00	2.00	83.0	0.181	0.013
4	M2D	MHM1	184.29	183.95	Cir 1	0.00	2.00	190.3	0.179	0.013
5	MHM1	MHM2	179.64	179.61	Cir 1	0.00	2.00	18.3	0.164	0.013
6	M2C	MHM2	179.62	179.61	Cir 1	0.00	2.00	6.0	0.167	0.013
7	M1A	M2A	180.54	180.42	Cir 1	0.00	2.00	68.9	0.174	0.013
8	M2A	MHM3	180.42	180.40	Cir 1	0.00	2.00	9.6	0.208	0.013
9	MHM3	MHM4	180.40	179.82	Cir 1	0.00	2.00	322.3	0.180	0.013
10	M1B	M2B	179.95	179.83	Cir 1	0.00	2.00	66.4	0.181	0.013
11	M2B	MHM4	179.83	179.82	Cir 1	0.00	2.00	6.0	0.167	0.013
12	MHM4	MHM2	179.82	179.61	Cir 1	0.00	2.00	119.5	0.176	0.013
13	MHM2	M2E	179.11	179.05	Cir 1	0.00	2.50	46.3	0.130	0.013
14	M2G	M2F	179.67	179.60	Cir 1	0.00	2.00	37.0	0.189	0.013
15	M2F	M2E	179.60	179.55	Cir 1	0.00	2.00	30.8	0.162	0.013
16	M2E	MHM5	179.05	178.91	Cir 1	0.00	2.50	85.0	0.165	0.013
17	MHM5	MHM6	178.91	178.25	Cir 1	0.00	2.50	413.1	0.160	0.013
18	M1D	MHM6	177.16	176.75	Cir 2	0.00	4.00	255.6	0.160	0.013
19	MHM6	M-OUT	176.25	176.19	Cir 2	0.00	4.50	55.2	0.109	0.013

Conveyance Hydraulic Computations. Tailwater = 180.690 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	205.82	205.66	207.82	0.005	0.55	2.00	2.27	2.27	1.6	9.7	0.000
2	192.15	191.66	207.82	0.019	0.78	2.00	2.73	2.73	3.1	9.6	0.000
3	191.81	191.66	193.81	0.006	0.58	2.00	2.33	2.33	1.7	9.7	0.000
4	186.18	185.95	193.81	0.062	1.11	2.00	3.17	3.17	5.7	9.6	0.000
5	181.03	181.01	187.95	0.062	1.14	1.40	3.07	3.07	5.7	9.2	0.000
6	181.02	181.01	187.57	0.006	0.58	1.40	2.25	2.25	1.7	9.3	0.000
7	181.60	181.49	184.73	0.006	0.58	1.07	2.29	2.29	1.7	9.5	0.000
8	181.49	181.48	184.62	0.021	0.78	1.08	2.92	2.92	3.3	10.4	0.000
9	181.48	181.08	184.62	0.021	0.81	1.26	2.77	2.77	3.3	9.6	0.000
10	181.20	181.09	185.89	0.004	0.51	1.26	2.16	2.16	1.4	9.7	0.000
11	181.09	181.08	185.89	0.014	0.74	1.26	2.55	2.55	2.7	9.3	0.000
12	181.08	181.01	185.86	0.062	1.11	1.40	3.15	3.15	5.6	9.5	0.000
13	181.01	181.01	187.63	0.094	1.78	1.96	3.39	3.39	12.7	14.8	0.000
14	181.13	181.06	184.22	0.004	0.52	1.46	2.24	2.24	1.4	9.9	0.000
15	181.06	181.01	184.20	0.009	0.67	1.46	2.39	2.39	2.2	9.2	0.000
16	181.01	180.90	184.15	0.150	1.96	1.99	3.86	3.86	16.0	16.7	0.000
17	180.90	180.70	183.64	0.150	1.99	2.45	3.80	3.80	16.0	16.5	0.000
18	180.72	180.70	183.16	0.155	3.23	3.95	5.21	5.21	113.5	115.6	0.000
19	180.70	180.69	184.15	0.102	3.59	4.50	4.64	4.64	126.1	130.2	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

SystemM.txt

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	14	1346.01
Circular	Concrete	2.5	0.0	3	544.37
Circular	Concrete	4.0	0.0	1	511.16
Circular	Concrete	4.5	0.0	1	110.46

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	19
Outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

Discharge decreased downstream node Id= MHM1 Previous intensity used.
 Discharge decreased downstream node Id= MHM3 Previous intensity used.
 Discharge decreased downstream node Id= MHM5 Previous intensity used.
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 4
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 2
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 3
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 1

PROJECT NAME : Medical Complex Drive Extension
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System Pla

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemPla_rev.

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
N1A	0.58	0.38	10.00	10.00	4.96	0.000	1.094
N2A	0.8	0.24	10.00	10.00	4.96	0.000	0.953
N1B	0.81	0.38	10.00	10.00	4.96	0.000	1.528
N2B	0.8	0.40	10.00	10.00	4.96	0.000	1.588
N1C	0.32	1.86	10.00	10.00	4.96	0.000	2.954
N2C	0.8	0.39	10.00	10.00	4.96	0.000	1.549
N1F	0.27	2.88	10.00	10.00	4.96	0.000	3.860
N1E	0.26	2.88	10.00	10.00	4.96	0.000	3.717
N1H	0.24	2.20	10.00	10.00	4.96	0.000	2.621
N1G	0.8	0.14	10.00	10.00	4.96	0.000	0.556
N1D	0.38	0.28	12.11	12.11	4.65	0.000	0.495
N1I	0.8	0.11	10.00	10.00	4.96	0.000	0.437
N1J	0.46	0.29	10.00	10.00	4.96	0.000	0.662
P4	0.26	21.92	26.76	26.76	3.29	0.000	18.752
P5A	0.27	4.10	10.85	10.85	4.83	0.000	5.351
P6A	0.28	2.77	10.00	10.00	4.96	0.000	3.850
P6B	0.27	1.99	10.00	10.00	4.96	0.000	2.667
P5B	0.24	5.74	18.88	18.88	3.89	0.000	5.364
P1	0.22	98.29	13.32	13.32	4.49	0.000	97.196
P7	0.27	78.69	68.57	68.57	1.87	0.000	39.725
P2A	0.27	1.50	10.00	10.00	4.96	0.000	2.010
N2E	0.26	2.88	10.00	10.00	4.96	0.000	3.717
P2B	0.27	1.87	10.00	10.00	4.96	0.000	2.506
P3A	0.22	9.58	29.64	29.64	3.12	0.000	6.570
P2C	0.32	1.93	10.00	10.00	4.96	0.000	3.066
P3B	0.23	8.44	29.00	29.00	3.15	0.000	6.123
P2D	0.4	3.20	10.00	10.00	4.96	0.000	6.353
P3C	0.25	6.97	16.57	16.57	4.12	0.000	7.181
P3D	0.32	17.06	26.50	26.50	3.31	0.000	18.053
N2D	0.22	3.21	13.32	13.32	4.49	0.000	3.174

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
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N1D	Junct	0.271	8.38	12.11	4.65	0.00	10.578
N1I	Junct	0.554	0.40	10.37	4.91	0.00	1.086
N1J	Junct	0.460	0.29	10.00	4.96	0.00	0.662
P4	Junct	0.282	90.99	34.99	2.84	0.00	72.956
P5A	Junct	0.274	6.87	10.85	4.83	0.00	9.100
P6A	Junct	0.280	2.77	10.00	4.96	0.00	3.850
P6B	Junct	0.270	1.99	10.00	4.96	0.00	2.667
P5B	Junct	0.248	7.73	18.88	3.89	0.00	7.457
MHP3	Junct	0.265	5.76	10.22	4.93	0.00	7.523
MHP4	Junct	0.267	8.10	11.14	4.79	0.00	10.380
MHP5	Junct	0.554	0.40	10.37	4.91	0.00	1.086
MHP6	Junct	0.284	8.78	12.26	4.63	0.00	11.557
MHP7	Junct	0.315	20.02	17.51	4.03	0.00	25.366
MHP8	Junct	0.315	20.02	17.51	4.03	0.00	25.366
MHP9	Junct	0.283	31.47	29.67	3.12	0.00	27.774
MHP10	Junct	0.274	41.84	31.55	3.01	0.00	34.574
MHP11	Junct	0.279	52.01	32.95	2.94	0.00	42.641
MHP12	Junct	0.281	97.86	37.13	2.75	0.00	75.696
MHP13	Junct	0.281	97.86	37.13	2.75	0.00	75.696
P2A	Junct	0.270	1.50	10.00	4.96	0.00	2.010
N2E	Junct	0.263	4.38	10.62	4.87	0.00	5.617
P2B	Junct	0.270	1.87	10.00	4.96	0.00	2.506
P3A	Junct	0.228	11.45	29.64	3.12	0.00	8.144
P2C	Junct	0.320	1.93	10.00	4.96	0.00	3.066
P3B	Junct	0.247	10.37	29.00	3.15	0.00	8.071
P2D	Junct	0.400	3.20	10.00	4.96	0.00	6.353
P3C	Junct	0.297	10.17	16.57	4.12	0.00	12.456
P3D	Junct	0.289	69.07	34.72	2.86	0.00	56.997
MHP2	Junct	0.265	5.76	10.22	4.93	0.00	7.523
MHP14	Junct	0.279	105.59	37.72	2.72	0.00	80.223
MHP15	Junct	0.279	105.59	37.72	2.72	0.00	80.223
N1A	Junct	0.580	0.38	10.00	4.96	0.00	1.094
N2A	Junct	0.665	0.62	10.71	4.85	0.00	2.002
N1B	Junct	0.810	0.38	10.00	4.96	0.00	1.528
N2B	Junct	0.743	1.40	13.46	4.48	0.00	4.657
N1C	Junct	0.290	10.64	12.61	4.59	0.00	14.169
N2C	Junct	0.357	12.43	15.65	4.22	0.00	18.741
N1F	Junct	0.270	2.88	10.00	4.96	0.00	3.860
N1E	Junct	0.265	5.76	10.22	4.93	0.00	7.523
N1H	Junct	0.240	2.20	10.00	4.96	0.00	2.621
N1G	Junct	0.274	2.34	10.23	4.93	0.00	3.153
N2D	Junct	0.329	15.64	15.68	4.22	0.00	21.707
Pla-OUT	Outlt	0.279	105.59	37.72	2.72	0.00	80.223

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
24	P2B	P3A	175.89	175.73	Cir 1	0.00	2.00	91.0	0.176	0.013
25	P3A	MHP9	175.73	175.72	Cir 1	0.00	2.00	6.0	0.167	0.013
26	MHP9	MHP10	174.22	173.86	Cir 1	0.00	3.50	399.9	0.090	0.013
27	P2C	P3B	175.36	175.20	Cir 1	0.00	2.00	91.0	0.176	0.013
28	P3B	MHP10	175.20	175.19	Cir 1	0.00	2.00	6.0	0.167	0.013
29	MHP10	MHP11	170.41	170.20	Cir 1	0.00	4.00	291.4	0.072	0.013
30	P2D	P3C	172.37	172.21	Cir 1	0.00	2.00	91.0	0.176	0.013
31	P3C	MHP11	171.71	171.70	Cir 1	0.00	2.50	6.0	0.167	0.013
32	MHP11	P3D	170.20	169.77	Cir 1	0.00	4.00	434.7	0.099	0.013
33	P3D	P4	169.27	169.21	Cir 1	0.00	4.50	67.6	0.089	0.013
34	P4	MHP12	168.71	168.10	Cir 1	0.00	5.00	607.7	0.100	0.013

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35	P6A	P5A	171.27	171.11	Cir 1	0.00	2.00	91.0	0.176	0.013
36	P5A	MHP12	171.11	171.10	Cir 1	0.00	2.00	6.0	0.167	0.013
37	MHP12	MHP13	168.10	167.87	Cir 1	0.00	5.00	228.0	0.101	0.013
38	MHP13	MHP14	167.87	167.71	Cir 1	0.00	5.00	166.0	0.096	0.013
39	P6B	P5B	170.88	170.72	Cir 1	0.00	2.00	91.0	0.176	0.013
40	P5B	MHP14	170.72	170.71	Cir 1	0.00	2.00	6.0	0.167	0.013
41	MHP14	MHP15	167.71	167.52	Cir 1	0.00	5.00	186.0	0.102	0.013
42	MHP15	P1a-OU	167.52	167.34	Cir 1	0.00	5.00	178.5	0.101	0.013
1	N1A	N2A	208.78	208.62	Cir 1	0.00	2.00	86.9	0.184	0.013
2	N2A	N2B	196.18	195.46	Cir 1	0.00	2.00	400.0	0.180	0.013
3	N1B	N2B	195.61	195.46	Cir 1	0.00	2.00	83.0	0.181	0.013
4	N2B	N2C	184.65	183.93	Cir 1	0.00	2.00	399.2	0.180	0.013
5	N1F	N1E	180.54	180.48	Cir 1	0.00	2.00	37.2	0.161	0.013
6	N1E	MHP2	180.48	180.47	Cir 1	0.00	2.00	6.0	0.167	0.013
7	MHP2	MHP3	180.47	180.24	Cir 1	0.00	2.00	123.0	0.187	0.013
8	MHP3	MHP4	180.24	179.91	Cir 1	0.00	2.00	185.1	0.178	0.013
9	N1H	N1G	179.99	179.92	Cir 1	0.00	2.00	37.0	0.189	0.013
10	N1G	MHP4	179.92	179.91	Cir 1	0.00	2.00	6.0	0.167	0.013
11	MHP4	N1D	179.46	179.37	Cir 1	0.00	2.50	30.5	0.298	0.013
12	N1J	N1I	179.99	179.93	Cir 1	0.00	2.00	37.0	0.162	0.013
13	N1I	MHP5	179.93	179.91	Cir 1	0.00	2.00	6.0	0.333	0.013
14	MHP5	MHP6	179.91	179.83	Cir 1	0.00	2.00	45.8	0.175	0.013
15	N1D	MHP6	179.37	179.33	Cir 1	0.00	2.50	30.0	0.133	0.013
16	MHP6	N1C	179.33	179.24	Cir 1	0.00	2.50	70.0	0.129	0.013
17	N1C	N2C	179.24	179.13	Cir 1	0.00	2.50	88.7	0.124	0.013
18	N2C	N2D	178.63	178.62	Cir 1	0.00	3.00	6.0	0.167	0.013
19	N2D	MHP7	178.62	178.18	Cir 1	0.00	3.00	395.2	0.111	0.013
20	P2A	N2E	179.36	179.19	Cir 1	0.00	2.00	91.0	0.187	0.013
21	N2E	MHP7	179.19	179.18	Cir 1	0.00	2.00	6.0	0.167	0.013
22	MHP7	MHP8	177.68	177.53	Cir 1	0.00	3.50	168.0	0.089	0.013
23	MHP8	MHP9	174.43	174.22	Cir 1	0.00	3.50	237.8	0.088	0.013

Conveyance Hydraulic Computations. Tailwater = 172.340 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
24	177.59	177.44	181.67	0.012	0.70	1.71	2.55	2.55	2.5	9.5	0.000
25	177.44	177.44	181.67	0.129	1.46	1.72	3.31	3.31	8.1	9.3	0.000
26	177.44	177.36	181.67	0.076	2.65	3.50	3.55	3.55	27.8	30.3	0.000
27	177.34	177.19	179.36	0.018	0.78	1.99	2.70	2.70	3.1	9.5	0.000
28	177.19	177.19	179.36	0.126	1.45	2.00	3.32	3.32	8.1	9.3	0.000
29	173.38	173.29	179.36	0.057	2.97	3.09	3.46	3.46	34.6	38.7	0.000
30	173.57	173.32	177.68	0.078	1.20	1.20	3.23	3.23	6.4	9.5	0.000
31	173.32	173.29	177.68	0.091	1.61	1.61	3.74	3.74	12.5	16.8	0.000
32	173.29	172.67	177.68	0.087	3.09	3.09	4.09	4.09	42.6	45.4	0.000
33	172.67	172.52	178.98	0.083	3.59	3.59	4.19	4.19	57.0	58.8	0.000
34	172.52	172.46	179.00	0.078	3.65	4.36	4.75	4.75	73.0	82.9	0.000
35	172.61	172.50	176.71	0.029	0.89	1.38	2.86	2.86	3.8	9.5	0.000
36	172.50	172.46	176.71	0.160	1.61	1.61	3.36	3.36	9.1	9.3	0.000
37	172.46	172.42	176.71	0.084	3.75	4.55	4.79	4.79	75.7	83.1	0.000
38	172.42	172.39	175.84	0.084	3.83	4.68	4.69	4.69	75.7	81.2	0.000
39	172.54	172.39	175.20	0.014	0.72	1.67	2.60	2.60	2.7	9.5	0.000
40	172.39	172.39	175.20	0.108	1.36	1.68	3.28	3.28	7.5	9.3	0.000
41	172.39	172.36	175.20	0.094	3.95	4.84	4.83	4.83	80.2	83.6	0.000
42	172.36	172.34	174.52	0.094	3.98	5.00	4.78	4.78	80.2	83.1	0.000
1	210.78	210.62	212.78	0.002	0.45	2.00	2.05	2.05	1.1	9.8	0.000
2	198.15	197.46	212.78	0.008	0.62	2.00	2.42	2.42	2.0	9.6	0.000
3	197.61	197.46	199.61	0.005	0.54	2.00	2.24	2.24	1.5	9.7	0.000
4	186.50	185.93	199.61	0.042	0.98	2.00	3.04	3.04	4.7	9.6	0.000

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5	181.85	181.81	184.81	0.029	0.91	1.33	2.77	2.77	3.9	9.1	0.000
6	181.81	181.79	184.82	0.110	1.37	1.37	3.28	3.28	7.5	9.3	0.000
7	181.79	181.58	184.80	0.110	1.32	1.34	3.43	3.43	7.5	9.8	0.000
8	181.58	181.36	184.50	0.110	1.34	1.45	3.37	3.37	7.5	9.6	0.000
9	181.43	181.36	184.08	0.013	0.71	1.44	2.65	2.65	2.6	9.9	0.000
10	181.36	181.36	184.06	0.019	0.80	1.45	2.67	2.67	3.2	9.3	0.000
11	181.36	181.29	184.05	0.063	1.20	1.92	4.47	4.47	10.4	22.5	0.000
12	181.43	181.37	185.05	0.001	0.37	1.44	1.69	1.69	0.7	9.1	0.000
13	181.37	181.35	184.84	0.002	0.39	1.44	2.52	2.52	1.1	13.1	0.000
14	181.35	181.27	184.81	0.002	0.46	1.44	2.00	2.00	1.1	9.5	0.000
15	181.29	181.27	184.59	0.066	1.55	1.94	3.30	3.30	10.6	15.0	0.000
16	181.27	181.25	184.81	0.079	1.67	2.01	3.32	3.32	11.6	14.8	0.000
17	181.25	181.12	187.93	0.118	2.01	2.01	3.35	3.35	14.2	14.5	0.000
18	181.12	181.11	187.93	0.078	1.83	2.49	4.15	4.15	18.7	27.3	0.000
19	181.11	181.08	187.93	0.105	2.39	2.90	3.59	3.59	21.7	22.3	0.000
20	181.25	181.09	183.98	0.008	0.62	1.90	2.45	2.45	2.0	9.8	0.000
21	181.09	181.08	183.98	0.061	1.13	1.90	3.09	3.09	5.6	9.3	0.000
22	181.08	181.03	183.98	0.063	2.46	3.50	3.51	3.51	25.4	30.2	0.000
23	177.51	177.44	183.03	0.063	2.47	3.22	3.49	3.49	25.4	30.0	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	24	2028.25
Circular	Concrete	3.5	0.0	3	805.76
Circular	Concrete	4.0	0.0	2	726.07
Circular	Concrete	2.5	0.0	5	225.21
Circular	Concrete	4.5	0.0	1	67.64
Circular	Concrete	5.0	0.0	5	1366.16
Circular	Concrete	3.0	0.0	2	401.24

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	42
Outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years

Discharge decreased downstream node Id= MHP2 Previous intensity used.
 Discharge decreased downstream node Id= MHP3 Previous intensity used.
 Discharge decreased downstream node Id= MHP5 Previous intensity used.
 Discharge decreased downstream node Id= MHP8 Previous intensity used.
 Discharge decreased downstream node Id= MHP13 Previous intensity used.

SystemP1a_rev.txt

Discharge decreased downstream node Id= MHP15 Previous intensity used.
HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 26
HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 28
HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 22
HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 4
HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 2
HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 3
HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 1

PROJECT NAME : Medical Complex Drive Extension
JOB NUMBER : 0812-008
PROJECT DESCRIPTION : Tomball TX 2-year design - System P1b

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemP1b_rev.

ANALYSYS FREQUENCY : 2 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
p7_alt	0.3	37.08	40.56	40.56	2.61	0.000	29.033
P6C	0.27	1.78	10.00	10.00	4.96	0.000	2.386
P5C	0.23	6.08	21.24	21.24	3.69	0.000	5.158
P6D	0.3	3.41	10.00	10.00	4.96	0.000	5.078
P5D	0.29	3.34	10.00	10.00	4.96	0.000	4.808

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
p7_alt	Junct	0.300	37.08	40.56	2.61		0.00	29.033
MHP21	Junct	0.300	37.08	41.22	2.59		0.00	29.033
MHP20	Junct	0.300	37.08	41.22	2.59		0.00	29.033
P6D	Junct	0.300	3.41	10.00	4.96		0.00	5.078
P5D	Junct	0.295	6.75	10.50	4.89		0.00	9.733
MHP19	Junct	0.299	43.83	41.56	2.57		0.00	33.736
MHP18	Junct	0.299	43.83	41.56	2.57		0.00	33.736
MHP17	Junct	0.299	43.83	41.56	2.57		0.00	33.736
P6C	Junct	0.270	1.78	10.00	4.96		0.00	2.386
P5C	Junct	0.239	7.86	21.24	3.69		0.00	6.931
MHP16	Junct	0.290	51.69	42.42	2.54		0.00	38.102
P1b-OUT	outlet	0.290	51.69	42.42	2.54		0.00	38.102

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	p7_alt	MHP21	166.44	166.31	Cir 1	0.00	3.50	141.9	0.092	0.013
2	MHP21	MHP20	166.31	166.16	Cir 1	0.00	3.50	161.5	0.093	0.013
3	MHP20	MHP19	166.16	166.09	Cir 1	0.00	3.50	75.7	0.092	0.013
4	P6D	P5D	167.77	167.61	Cir 1	0.00	2.00	91.1	0.176	0.013

SystemP1b_rev.txt

5	P5D	MHP19	167.61	167.59	Cir 1	0.00	2.00	6.0	0.333	0.013
6	MHP19	MHP18	166.09	165.94	Cir 1	0.00	3.50	128.7	0.117	0.013
7	MHP18	MHP17	165.94	165.76	Cir 1	0.00	3.50	150.6	0.120	0.013
8	MHP17	MHP16	165.76	165.51	Cir 1	0.00	3.50	210.0	0.119	0.013
9	P6C	P5C	167.18	167.02	Cir 1	0.00	2.00	91.0	0.176	0.013
10	P5C	MHP16	167.02	167.01	Cir 1	0.00	2.00	6.0	0.167	0.013
11	MHP16	P1b-OU	165.51	165.47	Cir 1	0.00	3.50	24.0	0.167	0.013

Conveyance Hydraulic Computations. Tailwater = 168.970 (ft)

Run #	Hyd. Gr.line		Crit.Elev US (ft)	Fr.Slope (%)	Depth		Velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)
	US (ft)	DS (ft)			Unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
1	169.17	169.02	171.94	0.083	2.73	2.73	3.60	3.60	29.0	30.6	0.000
2	169.02	169.02	172.62	0.083	2.71	2.86	3.64	3.64	29.0	30.8	0.000
3	169.02	169.02	172.16	0.083	2.71	2.93	3.64	3.64	29.0	30.7	0.000
4	169.10	169.02	171.94	0.050	1.04	1.41	3.07	3.07	5.1	9.5	0.000
5	169.02	169.02	171.94	0.184	1.29	1.43	4.55	4.55	9.7	13.1	0.000
6	169.02	169.02	171.94	0.111	2.82	3.08	4.07	4.07	33.7	34.5	0.000
7	169.02	169.01	172.40	0.111	2.79	3.25	4.10	4.10	33.7	34.9	0.000
8	169.01	168.98	172.94	0.111	2.79	3.47	4.10	4.10	33.7	34.9	0.000
9	169.13	168.98	173.69	0.011	0.68	1.96	2.51	2.51	2.4	9.5	0.000
10	168.98	168.98	173.69	0.093	1.29	1.97	3.23	3.23	6.9	9.3	0.000
11	168.98	168.97	173.69	0.142	2.67	3.50	4.85	4.85	38.1	41.2	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	3.5	0.0	7	892.28
Circular	Concrete	2.0	0.0	4	194.1

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	11
Outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
 Discharge decreased downstream node Id= MHP21 Previous intensity used.
 Discharge decreased downstream node Id= MHP20 Previous intensity used.

SystemP1b_rev.txt

Discharge decreased downstream node Id= MHP18 Previous intensity used.
Discharge decreased downstream node Id= MHP17 Previous intensity used.

PROJECT NAME : Medical Complex Drive Extension
 JOB NUMBER : 0812-008
 PROJECT DESCRIPTION : Tomball TX 2-year design - System P2

PROJECT File: D:\CFA\2008\12008.med_complex\ENG\H&H\HOUSTORM\2yrSystemP2.stm

ANALYSYS FREQUENCY : 2 Years
 MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
P14	0.27	12.49	19.81	19.81	3.81	0.000	12.849
P12A	0.31	3.52	11.48	11.48	4.74	0.000	5.174
NW_P	0.0	0.00	10.00	10.00	0.00	1.000	1.000

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
P14	Junct	0.279	16.01	19.81	3.81		0.00	17.007
P12A	Junct	0.310	3.52	11.48	4.74		0.00	5.174
NW_P	Junct	0.000	0.00	0.00	0.00		0.00	1.000
MHP22	Junct	0.279	16.01	19.81	3.81		0.00	17.007
MHP23	Junct	0.279	16.01	21.30	3.68		0.00	17.442
P2-OUT	Outlt	0.279	16.01	21.30	3.68		0.00	17.442

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	P12A	P14	167.78	167.62	Cir 1	0.00	2.00	91.0	0.176	0.013
2	P14	MHP22	166.62	166.61	Cir 1	0.00	3.00	6.0	0.167	0.013
3	MHP22	MHP23	166.61	166.27	Cir 1	0.00	3.00	309.9	0.110	0.013
4	NW_P	MHP23	167.51	167.27	Cir 1	0.00	2.00	132.2	0.182	0.013
5	MHP23	P2-OUT	166.27	166.21	Cir 1	0.00	3.00	50.0	0.120	0.013

Conveyance Hydraulic Computations. Tailwater = 169.210 (ft)

Run #	Hyd. US	Gr.line DS	Crit.Elev US	Fr.Slope	Depth Unif.	Velocity Actual	Q	Cap	Junc Loss

	(ft)	(ft)	(ft)	(%)	SystemP2.txt		(f/s)	(f/s)	(cfs)	(cfs)	(ft)
					(ft)	(ft)					
1	169.52	169.40	171.78	0.052	1.05	1.78	3.08	3.08	5.2	9.5	0.000
2	169.40	169.40	171.78	0.064	1.72	2.79	4.07	4.07	17.0	27.3	0.000
3	169.40	169.24	171.78	0.064	1.97	2.97	3.46	3.46	17.0	22.2	0.000
4	169.48	169.24	172.83	0.002	0.44	1.97	1.98	1.98	1.0	9.7	0.000
5	169.24	169.21	172.79	0.068	1.95	3.00	3.60	3.60	17.4	23.2	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
This length may also be used as Pay Item.
Using hydraulic length, from node center to node center, may result in profile error,
and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	2.0	0.0	2	223.16
Circular	Concrete	3.0	0.0	3	365.89

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	5
Outlet		0.0	0.0	0.0	0.0	0.0	1

END

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
Discharge decreased downstream node Id= MHP22 Previous intensity used.

PROJECT NAME : Medical Complex Drive Extension

JOB NUMBER : 0812-008

PROJECT DESCRIPTION : Tomball TX 2-year design - System Park P

PROJECT File: C:\My Documents\Med_Complex\HOUSTORM\2yrParkP.stm

ANALYSYS FREQUENCY : 2 Years

MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSYS FREQUENCY of: 2 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
P15D	0.26	59.40	56.88	56.88	2.12	0.000	32.669
P15C	0.61	0.30	10.00	10.00	4.96	0.000	0.908
P11C	0.66	0.30	10.00	10.00	4.96	0.000	0.983
P11D	0.3	13.28	35.17	35.17	2.84	0.000	11.298
P15B	0.32	1.83	10.00	10.00	4.96	0.000	2.907
P11B	0.27	1.93	10.00	10.00	4.96	0.000	2.587
P15A	0.42	0.87	10.00	10.00	4.96	0.000	1.814
P11A	0.3	1.30	10.00	10.00	4.96	0.000	1.936
P15E	0.28	242.64	114.09	114.09	1.31	0.000	88.857

Cumulative Junction Discharge Computations

Node I.D.	Node Type	weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
P15D	Junct	0.260	59.40	56.88	2.12		0.00	32.669
P15C	Junct	0.262	59.70	56.90	2.11		0.00	33.048
P11C	Junct	0.264	60.00	57.23	2.11		0.00	33.343
P11D	Junct	0.270	73.28	57.25	2.11		0.00	41.727
P15B	Junct	0.320	1.83	10.00	4.96		0.00	2.907
P11B	Junct	0.294	3.76	10.57	4.88		0.00	5.396
P15A	Junct	0.281	243.51	114.18	1.31		0.00	89.286
P15E	Junct	0.280	242.64	114.09	1.31		0.00	88.857
MHP24	Junct	0.271	77.04	58.88	2.07		0.00	43.260
MHP25	Junct	0.271	77.04	58.88	2.07		0.00	43.260
MHP26	Junct	0.278	321.85	114.66	1.30		0.00	116.778
P11A	Junct	0.278	321.85	114.66	1.30		0.00	116.778
OUT	outlet	0.278	321.85	114.66	1.30		0.00	116.778

Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US	Elev. DS	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
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SystemParkP.txt

1	P15D	P15C	168.55	168.54	Cir 1	0.00	3.50	6.0	0.167	0.013
2	P15C	P11C	168.54	168.45	Cir 1	0.00	3.50	78.6	0.115	0.013
3	P11C	P11D	168.45	168.44	Cir 1	0.00	3.50	6.0	0.167	0.013
4	P11D	MHP24	167.94	167.54	Cir 1	0.00	4.00	400.1	0.100	0.013
5	P15B	P11B	169.71	169.55	Cir 1	0.00	2.00	91.0	0.176	0.013
6	P11B	MHP24	169.55	169.54	Cir 1	0.00	2.00	6.0	0.167	0.013
7	MHP24	MHP25	167.54	167.27	Cir 1	0.00	4.00	270.3	0.100	0.013
8	P15A	P11A	165.83	165.73	Cir 1	0.00	5.50	129.5	0.077	0.013
9	P15E	P15A	165.85	165.83	Cir 1	0.00	5.50	24.0	0.083	0.013
10	MHP25	P11A	167.27	167.23	Cir 1	0.00	4.00	36.0	0.111	0.013
11	P11A	MHP26	165.23	165.22	Cir 1	0.00	6.00	12.0	0.083	0.013
12	MHP26	OUT	165.22	165.19	Cir 1	0.00	6.00	30.0	0.100	0.013

Conveyance Hydraulic Computations. Tailwater = 171.190 (ft)

Run #	Hyd. Gr. line		Crit. Elev US (ft)	Fr. Slope (%)	Depth		Velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)
	US (ft)	DS (ft)			Unif. (ft)	Actual (ft)	Unif. (f/s)	Actual (f/s)			
1	171.33	171.33	178.42	0.105	2.36	2.79	4.74	4.74	32.7	41.2	0.000
2	171.33	171.33	178.42	0.107	2.79	2.88	4.02	4.02	33.0	34.2	0.000
3	171.33	171.33	178.42	0.109	2.39	2.89	4.76	4.76	33.3	41.2	0.000
4	171.33	171.26	178.42	0.084	3.03	3.72	4.08	4.08	41.7	45.6	0.000
5	171.41	171.26	175.03	0.016	0.76	1.71	2.65	2.65	2.9	9.5	0.000
6	171.26	171.26	175.03	0.056	1.10	1.72	3.06	3.06	5.4	9.3	0.000
7	171.26	171.21	175.03	0.090	3.13	3.94	4.11	4.11	43.3	45.6	0.000
8	171.22	171.20	173.51	0.070	4.30	5.47	4.48	4.48	89.3	93.7	0.000
9	171.22	171.22	173.35	0.069	4.13	5.38	4.65	4.65	88.9	97.4	0.000
10	171.21	171.20	173.89	0.090	2.97	3.97	4.33	4.33	43.3	48.1	0.000
11	171.20	171.20	173.74	0.075	4.69	5.98	4.93	4.93	116.8	122.8	0.000
12	171.20	171.19	173.74	0.075	4.34	6.00	5.34	5.34	116.8	134.5	0.000

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box.
 This length may also be used as Pay Item.
 Using hydraulic length, from node center to node center, may result in profile error,
 and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	3.5	0.0	3	90.57
Circular	Concrete	4.0	0.0	3	706.3
Circular	Concrete	2.0	0.0	2	97.0
Circular	Concrete	5.5	0.0	2	153.47
Circular	Concrete	6.0	0.0	2	42.0

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft ²)	Grate Perimeter (ft)	Quantity (each)
Conduit Junction		0.0	0.0	0.0	0.0	0.0	12

SystemParkP.txt
outlet 0.0 0.0 0.0 0.0 0.0 1
=====END=====

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years
Discharge decreased downstream node Id= MHP25 Previous intensity used.
Discharge decreased downstream node Id= MHP26 Previous intensity used.



Future Medical Complex Drive (existing Park St.) @ 2920
Looking south



Future Medical Complex Drive (existing Park St.) @ 2920
Looking north



Future Triechel Road Cul-de-Sac (existing Triechel Rd.) @ 2920
Looking north



Future Medical Complex Drive @ Triechel Rd. (existing Triechel Rd.)
Looking south



Future Medical Complex Drive @ Triechel Rd. (existing Triechel Rd.)
Looking north



Future Medical Complex Dr. (existing Medical Complex Dr.) @ Calvert Rd.
Looking west



Future Medical Complex Drive (existing Medical Complex Dr.) @ Calvert Rd.
Looking east



Future Medical Complex Drive access to proposed bridge west of SH 249
(existing Medical Complex Dr.)
Looking east



Future Medical Complex Dr. proposed bridge west of SH 249
(existing Medical Complex Dr.)
Looking east



Future Medical Complex Drive access @ southbound SH 249 Frontage Rd.
Looking south



Future Medical Complex Drive access @ southbound SH 249 Frontage Rd.
Looking southwest



Future Medical Complex Drive @ northbound SH 249 Frontage Rd.
Looking east



Future Medical Complex Drive proposed bridge east of SH 249 Frontage Rd.
(existing Medical Complex Dr.)
Looking west



Future Medical Complex Drive access @ northbound SH 249 Frontage Rd.
Looking west



Future Medical Complex Drive access to proposed bridge east of SH 249
(existing Medical Complex Dr.)
Looking east



Future Medical Complex Dr. (existing Medical Complex Dr.) @ Tomball Parkway
Looking east



Future Medical Complex Dr. (existing Medical Complex Dr.) @ Holderrieth S. Blvd.
Looking east



Future Medical Complex Dr. tie-in to existing Medical Complex Dr.
west of Holderrieth S. Blvd.
Looking west



Future Medical Complex Drive @ School St. (existing School St.)
Looking east



Future Medical Complex Drive @ School St. (existing School St.)
Looking west



Future Medical Complex Drive @ School St. (existing School St.)
Looking south



Future Medical Complex Drive (existing Agg Rd.) @ S. Cherry
Looking east



Future Medical Complex Drive (existing Agg Rd.) @ S. Cherry
Looking west



Future Medical Complex Drive (existing Agg Rd.) east of BNSF tracks
Looking east



Future Medical Complex Drive (existing Agg Rd.) west of BNSF tracks
Looking west



Future Medical Complex Drive (existing Agg Rd.) @ BNSF RR
Looking northwest



Future Medical Complex Drive (existing Agg Rd.) @ Pitchford Rd.
Looking west



Future Medical Complex Drive (existing Agg Rd.) @ Pitchford Rd.
Looking north



Future Medical Complex Drive (existing Agg Rd.) @ Hufsmith Kohrville Rd.
Looking east



Future Medical Complex Drive (existing Agg Rd.) @ Hufsmith Kohrville Rd.
Looking west



Future Medical Complex Drive (existing Mahaffey Rd.) @ Mahaffey Rd.
Looking west



Future Medical Complex Drive (existing Mahaffey Rd.) @ FM 2920
Looking east

MEETING MINUTES

To : Mark McClure, P.E.

From : Mahmoud Salehi, P.E.

Date : December 11, 2008

Subject : Medical Complex Drive
Tomball, Texas

Attendees : Alan Clark
Ramesh Gunda, P.E.
Carol Nixon, P.E.
Mark McClure, P.E.
Lori Lakatos, P.E.
Dale Conger, P.E.
Mahmoud Salehi, P.E.

The following items were discussed during a meeting held at H-GAC office on December 11, 2008:

1. H-GAC suggested in obtaining the FM 2920 access and ROW study.
2. H-GAC suggested adding the City of Tomball ETJ to the project overall schematic.
3. H-GAC stated that next TIP cycle is the 1st of September, 2009 for funding potential projects in 2013.
4. H-GAC stated that an Environment Assessment study (EA) will be required if the project were to receive Federal/State funding sources.
5. H-GAC stated that the project is sound however lack of funding and sheer number of projects that have been nominated for years will cause extensive delays in securing funds and suggested this is a STP project by local government.
6. H-GAC suggested acquiring the ROW, refining the scope of the project perhaps by constructing half section and evaluates the economic rate of return on the investment.
7. H-GAC suggested if the project were to receive any state funding there must be ROW commitment by the City in addition to conducting the environmental impact statement (EIS)

and obtain the clearance letter stating finding of no significant impact (FONSI) in addition to perform the engineering design using AASHTO/TxDOT design guidelines.

8. H-GAC suggested in pursuing alternative funding mechanism such as TRZ, TIRRZ, incremental development utilizing private sector participation based on the traffic and growth projections which would substantially add value to the properties along the proposed corridor.
9. H-GAC stated that the City is lacking viable east-west corridors and suggested promoting the regional mobility of the project by incorporation of bike lanes, bike path, and Transit possibility.

Meeting Adjourned.

These notes reflect CobbFendley's understanding of the items discussed during the meeting. Please notify CobbFendley in writing within 7 working days of any changes or modifications.

MEETING MINUTES

To : Mark McClure, P.E.

From : Mahmoud Salehi, P.E.

Date : January 21, 2009

Subject : Medical Complex Drive
Tomball, Texas

Attendees : Gabe Johnson, P.E.
Pat Henry, P.E.
Mark McClure, P.E.
Dale Conger, P.E.
Mahmoud Salehi, P.E.

The following items were discussed during a meeting held in TxDOT Houston District on January 21, 2009:

1. TxDOT stated due to lack of funding in recent years the project will encounter lengthy delays in securing Federal/State construction funds.
2. TxDOT indicated that if project receives Federal/State funds, the City would have to perform Environmental Assessment (EA) report and obtain findings of no significant impact (FONSI) clearance in addition to conducting the design using TxDOT/AASHTO guidelines.
3. TxDOT may help fund generating the Environmental Categorical Exclusion (CE) Report and Traffic Impact Analysis Study at the intersection of proposed Medical Complex and existing TxDOT facilities, FM 2920 and SH 249.
4. TxDOT may participate and potentially share the cost of the proposed bridge over SH 249.
5. Upon completion and approval of the CE report the City may opt to build the tie-in to the SH 249 frontage road while securing the ROW for the ultimate build-out.
6. For additional funding, the City should go through MPO for constructing the bridges including the bridge over BNSF railroad.
7. The City may opt to pursue constructing the individual segments by themselves and wait for other funding sources to construct the bridges.

8. Work with BNSF Railroad Company for potential funding of an interim (at-grade) RR safe crossing.
9. TxDOT suggested maintaining all public meeting documentation as if it were a TxDOT project in case TxDOT is challenged.
10. TxDOT suggested constructing the proposed roadway up to SH 249 in order to make it easier and more palatable for TxDOT to provide connectivity in the future.
11. TxDOT suggested the City should be proactive to purchase/acquire the ROW near TxDOT facilities utilizing TxDOT ROW acquisition criteria (1970 Act).
12. The City should avoid going through property condemnation process, the ROW map and independent appraiser should meet with property owner in most cases where he is agreeable to sell/donate. In an event property owner does not agree to settle, a further investigation will ensue which may lead to a 3 member panel and/or a judge to make the case and settlement. The extreme cases will proceed with the condemnation process.
13. The City of Tomball is favorable to follow TxDOT process in ROW acquisition.
14. TxDOT suggested in construction the project in multiple Phases, 2 at minimum, where you would secure the ROW, build half section, provide connectivity to SH 249, and the bridges can be constructed when/if funding becomes available.
15. TxDOT suggested that CobbFendley to contact Alan Wang for files on FM 2978 (713-803-5381) and meet with Rob Fanning and Elie Alkhoury for drainage study along SH 249.

Meeting Adjourned.

These notes reflect CobbFendley's understanding of the items discussed during the meeting. Please notify CobbFendley in writing within 7 working days of any changes or modifications.

MEETING MINUTES

To : Mark McClure, P.E.

From : Mahmoud Salehi, P.E.

Date : February 11, 2009

Subject : Medical Complex Drive
Tomball, Texas

Attendees : Elie Alkhoury, P.E.
Peter Ashu
Lori Lakatos, P.E.
Mahmoud Salehi, P.E.
Carl Arhrendt, P.E, C.F.M.

The following items were discussed during a meeting held at Texas Department of Transportation - Houston District Office on February 11, 2009:

1. Coordination would be necessary with the TxDOT Bridge section for maintenance agreements and right of entry for bridges/intersections associated with SH 249.
2. An impact analysis will be required for all areas where impacts can possibly affect TxDOT roadside ditches/ROW. The allowable release rate in TxDOT roadside ditches must be maintained at or below the existing levels.
3. In areas where detention is required, TxDOT may be willing to share the costs associated with constructing/maintaining facilities which would benefit both the City of Tomball as well as TxDOT.
4. TxDOT will require a complete drainage area map showing the overall areas draining to their ditches for the areas of concern.
5. TxDOT is aware of existing ponding issues associated with the roadside ditches and intersections of FM 2920 and Triechel/Park roads. TxDOT is willing to coordinate with the City of Tomball to improve FM 2920 at these locations.
6. A limited ROW envelope will need to be created for the future intersection of FM 2920 and proposed Medical Complex Drive.
7. TxDOT may be willing to be involved in a collective public and private partnership for funding of projects within the area.

COMPANY CONTACT
DATE
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8. TxDOT requires water surface pool elevations to determine feasibility of proposed improvements for drainage related items.

These notes reflect CobbFendley's understanding of the items discussed during the meeting. Please notify CobbFendley in writing within 7 working days of any changes or modifications.