



FACSIMILE TRANSMITTAL SHEET

TO: CONTRACTORS

FROM: AMY STONAKER

COMPANY:

DATE: APRIL 14, 2009

FAX NUMBER:

TOTAL NO. OF PAGES INCLUDING
COVER: 30

RE: CONTRACT DOCUMENTS AND
TECHNICAL SPECIFICATIONS FOR
THE CONSTRUCTION OF WATER
SUPPLY AND STORAGE FACILITY
NO. 5, CITY OF TOMBALL

COBBFENDLEY PROJECT NUMBER:
0512-015-00

NOTES/COMMENTS:

ADDENDUM NO. 1

Attached is Addendum No. 1 for the above referenced project. **PLEASE NOTE THAT THE BID DATE HAS BEEN EXTENDED TO APRIL 28, 2009.**

PLEASE ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY RETURN FAX.

Thank you.

Please call if you have any questions or comments.

ADDENDUM NO. 1
DATED APRIL 13, 2009

CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS
FOR THE CONSTRUCTION OF WATER SUPPLY AND STORAGE FACILITY
NO. 5

CITY OF TOMBALL PROJECT NO. 2009-06

The attention of all prospective Bidders is directed to the following modifications to Drawings, Specifications, and Contract Documents for the above-referenced project. The information contained in this Addendum supersedes information contained in the Drawings, Specifications, and Contract Documents to the extent indicated. All information contained in the Drawings, Specifications, and Contract Documents remains in full force and effect unless specifically modified herein.

CONTRACT DOCUMENTS:

Notice to Bidders – The second paragraph should read:

“Sealed proposals shall be addressed to the City Purchasing Agent, City of Tomball, 501 James Street, Tomball, Texas 77375, and shall be labeled “Project Number 2009-06, DO NOT OPEN”. Proposals shall be submitted no later than 2:00 pm, Local Time on Tuesday, April 28, 2009.”

Section 0300 – Bid Form

- 1) A new bid form is attached to reflect additional information in item No. 14.

Well Contractor Quality Control

- 1) Information regarding the qualifications of water well contractors is attached and should be used as a guideline.

SPECIFICATIONS:

Section 04200 – Concrete Block Masonry

- 1) The specification has been added and is attached.

Section WP – 215 - Welded Steel Hydropneumatic Tank

- 1) The design pressure of the steel tank is changed from 65 psig to 80 psig.

Section WP – 225 – Painting

- 1) A revised specification is attached.

DRAWINGS:

Plan and Profile Sheets

- 1) A revised sheet E – 6 is attached.
- 2) Additional electrical sheets with telemetry is attached.

PERMITS:

- 1) Permits from the City of Tomball are required. However, the fee for filing the permits with the City is waived.

CLARIFICATIONS:

This section is intended to clarify or provide additional information and does not supersede the Contract Documents, Technical Specifications, and Construction Plans. This section does not try to report the complete notes of the Pre-Bid Conference.

A pre-bid conference was held Monday, April 6, 2009 at 10:00 a.m. at the City of Tomball Public Works Building. A list of attendees is attached. A brief summary of the project was presented, followed by a question-and-answer session.

- 1) The required horsepower for the well pump is 350 hp.
- 2) A nearby fire hydrant will be available to the contractor for use. All use should be monitored and reported to the City. The contractor will not be charged for metered water use.
- 3) Water used on site may be pumped to the detention pond on site.
- 4) The contractor is allowed 24-hour operations, but the City must be notified for inspection purposes.
- 5) Operations and maintenance manuals are required to be provided by the contractor at the end of the project.
- 6) Regarding questions associated with the construction of welded steel tanks:
 - a) Shop priming is not allowed.
 - b) Containment is not required for blasting.
 - c) Full seal welds are required for the roofing.
- 7) The entrance gate should be a 24-foot electric slide gate with keypad. A gate and fence specification will not be provided. The contractor is to use the detail on page 26.
- 8) The detail on sheet 26 shows that the gravel access road is supposed to have a stabilized subgrade. This has been added to the description on the bid form and a new bid form is attached reflecting the change.
- 9) The amounts required for stabilization are 3% lime and 7% fly ash.
- 10) The detail for the concrete pavement on Sheet 26 is incorrect. The concrete driveway should be 6" reinforced concrete pavement with 8" fly ash/lime slurry subgrade (3% lime, 7% fly ash).

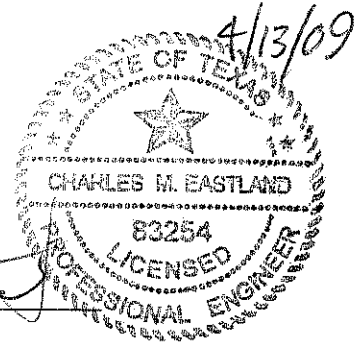
Direct any questions concerning this Addendum to Cobb, Fendley, and Associates to
Ms. Amy Stonaker at (713) 462-3242.

END OF ADDENDUM NO. 1

APPROVED FOR ISSUE: _____

CM Eastland

By Cobb, Fendley, and Associates, Inc.



END OF DOCUMENT

Section 00300

BID FORM

TO: City of Tomball Public Works
501 James Street
Tomball, Texas 77375

PROJECT: Water Supply and Storage Facility No. 5

PROJECT NO.: 2006-10000

BIDDER: _____
(Print or type full name of proprietorship, partnership, corporation, or joint venture.)

1. The undersigned bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the deposition of Bid Security. This Bid will remain subject to acceptance for 45 calendar days after the day of Bid opening. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within 15 calendar days after the date of OWNER'S Notice of Award.
3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:
 - A. BIDDER has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date	Number
_____	_____
_____	_____
_____	_____

- B. BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance, or furnishing of the Work.
- C. BIDDER has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions as provided in Paragraph 4.02 of the General Conditions,

- and accepts the determination of the technical data contained in such reports and drawings upon which BIDDER is entitled to rely.
- D. BIDDER has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, and studies (in addition to or to supplement those referred to in C above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance, or furnishing of the Work as BIDDER considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time, and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.02 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, or similar information or data are or will be required by BIDDER for such purposes.
- E. BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing underground facilities at or contiguous to the site and assumes responsibility for the accurate location of said underground facilities. No additional examinations, investigations, explorations, tests, reports, or similar information or data in respect to said underground facilities are or will be required by BIDDER in order to perform and furnish the Work at the Contract Price, within the Contract Time, and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.03 of the General Conditions.
- F. BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents.
- G. BIDDER has given ENGINEER written notice of all conflicts, errors, or discrepancies that it has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to BIDDER.
- H. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation, and is not submitted in conformity with any Agreement or rules of any group, association, organization, or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm, or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other BIDDER or over OWNER.
4. BIDDER will complete the Work for the following prices: (Note: All bid items are for work complete in place). These prices are to cover all expenses incurred in performing the work required under the Contract Documents, including related work which may not be specifically mentioned.

BASE UNIT PRICE ITEMS

ITEM NO.	SECTION NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL
1	n/a	Mobilization and Demobilization of Contractor(s) to the site	LS	1		
2	02921	Site Preparation, Final Grading and Turf Establishment Inclusive of Watering, Fertilizing, Mowing, and Maintenance Until a Stand of Bermuda Grass has been Established and Inspected and Accepted by the Engineer	LS	1		
3	02260	Trench Safety System (Complete in Place as per the Approved Construction Drawings and Contract Documents).	LF	4,600		
4	01410	Storm Water Pollution Prevention Plan Compliance Including but not limited to, Filter Fabric Fence, Placing & Removing Stabilized Construction Exit, SWPPP Implementation, Performing Project Site Inspections, Inspection Reports, Filing Notices, Posting Permits, Certificates & Notices, Installation of Control Measures & Maintenance of Existing Control Measure, etc.	LS	1		
5	02319	Clean Fill Borrow for Site Grading from Offsite Location (Complete in Place as per the Approved Construction Drawings and Contract Documents).	CY	500		
6	n/a	6 Foot High Chain Link Fence with 3-Strand Barbed Wire and 24 Foot Wide Electric Sliding Gate with all Appurtenances (Complete in Place as per the Approved Construction Drawings and Contract Documents).	LF	1,156		
7	03315	Drainage System Including swales, splash boxes, flume, and pipe (Complete in Place as shown on the plans and Approved Construction Drawings and Contract Documents).	LS	1		
8	02511	16-inch Offsite PVC Waterline, Open Cut, including Fittings, Fire Hydrants, with all Appurtenances (Complete in Place as shown on the plans and Approved Construction Drawings and Contract Documents).	LF	1,303		
9	02532	2-inch Offsite PVC Sewer Force Main, Open Cut, including Fittings with all Appurtenances (Complete in Place as shown on the plans and Approved Construction Drawings and Contract Documents).	LF	1,335		
10	02506	2-inch Offsite Natural Gas Main, Open Cut, including Fittings with all Appurtenances (Complete in Place as shown on the plans and Approved Construction Drawings and Contract Documents).	LF	1,405		

11	02532	Sewage Grinder Pump Station in 3-Foot Manhole (Complete in Place and Fully Operational and Functional, Including all Miscellaneous and Required Components and Appurtenances, as per the Construction Drawings and Contract Documents)	LS	1		
12	02330	Earthen Berm (Complete in Place as shown on the plans and Approved Construction Drawings and Contract Documents).	LS	1		
13	02754	6" Reinforced Concrete Access Drive w/ 8"Lime/Fly Ash Stabilized Subgrade (Complete in Place as shown on the Approved Construction Drawings and Contract Documents).	SY	1,150		
14	n/a	8" Gravel Access Road w/ Geotextile Fabric and 6" Fly Ash/Lime Slurry Subgrade (Complete in Place as shown on the Approved Construction Drawings and Contract Documents)	SY	1,743		
15	WP-520	Water Plant Yard Piping Including, but Not Limited to, Well Discharge Inlet and Outlet Piping between Tanks and Booster Pump Pad, all Water Distribution Piping, Valves, and Fittings within the Water Plant Fence. (Complete in Place and Fully Operational Including all Components and Appurtenances per the Approved Construction Drawings and Contract Documents).	LS	1		
16	WP-201	Pilot Hole with a Depth of 950 Feet with Pilot Hole Drilling, Drill Cutting Sampling and Geophysical Logging with Well Completion Recommendations (Complete in Place and Fully Operational and Functional, Including all Miscellaneous and Required Components and Appurtenances, as per the Construction Drawings and Contract Documents)	LS	1		
17	WP-201	Pilot Hole Water Sampling (3 Samples) and Chemical and Radionuclide Analyses Using a Small-Diameter Temporary Well and Gravel Pack Method with 36 hours of Development Using Airlift Pumping and Submersible Pump (Complete in Place and Fully Operational and Functional, Including all Miscellaneous and Required Components and Appurtenances, as per the Construction Drawings and Contract Documents)	EA	1		
18	WP-201	24-Inch x 18-Inch x 850-Foot Deep Gravel Wall Water Well (Evangeline Aquifer) 550 Feet of 24-Inch Casing, 100 Feet of 18-Inch Screen and 200 Feet of 18-Inch Blank Liner with Reinforced Concrete Well Base Foundation, (Complete in Place and Fully Operational and Functional, Including Well Development, Testing and Certifications; Including all Miscellaneous and Required Components and Appurtenances, as per the Approved Construction Drawings and Contract Documents).	LS	1		

19	WP-201	1,500 GPM Deep Well Vertical Turbine Water Well Pump and 300 hp Motor (Complete in Place and Fully Operational and Functional, Well Development, Testing and Certifications; Including all Miscellaneous and Required Components and Appurtenances, as per the Construction Drawings and Contract Documents)	LS	1		
20	WP-230	1,000 GPM Horizontal Split-Case Booster Pump and 50hp Motor (Complete in Place and Fully Operational and Functional Including all Appurtenances as per the Approved Construction Drawings and Contract Documents)	EA	3		
21	03315	Booster Pump Pad (Complete in Place as shown on the Approved Construction Drawings and Contract Documents)	LS	1		
22	WP-210	500,000 gallon (minimum capacity) Welded Steel Ground Storage Tank (Painted), Complete with Reinforced Concrete Foundation (Complete in Place with all Appurtenances as per the Approved Construction Drawings and Construction Documents).	EA	1		
23	WP-215	5,000 Gallon Welded and Painted Hydropneumatic Tank Including , but not Limited to Reinforced Concrete Foundation, Air Compressor, Air Piping and Pressure Sensory Equipment (Complete in Place and Fully Operational, Including all Appurtenances, as per the Approved Construction Drawings and Contract Documents).	EA	1		
24	16012	Complete Electrical System Including, but not limited to, Control Panel, Electrical Controls, Electric Service, Auto Dialer, Fans, Air Conditioner, Interior and Exterior Lighting. (Complete in Place and Fully Operational Including all Components and Appurtenances per the Approved Construction Drawings and Contract Documents).	LS	1		
25	n/a	Concrete Block Building and Foundation to House the Motor Control Center, Disinfection and Bathroom Facilities (Complete in Place Including all Miscellaneous Components and Appurtenances per the Approved Construction Drawings and Contract Documents).	LS	1		
26	WP-240	Chlorine Disinfection System Including, but not Limited to Chlorination, Scales, Miscellaneous Equipment and Piping and Four (4) Full 150 lb Gas Cylinders. (Complete in Place and Fully Operational Including all Components and Appurtenances per the Approved Construction Drawings and Contract Documents).	LS	1		

27	16231	An 800 kw Natural Gas Generator with 1600Amp Automatic Transfer Switch, Reinforced Concrete Foundation (Complete in Place as shown on the Approved Construction Drawings and Contract Documents).	LS	1		
		TOTAL BASE BID				
ALTERNATE UNIT PRICE ITEMS						
1	WP-212	500,000 Gallon Glass Lined Ground Storage Tank, Concrete Foundation, Connection to Yard Piping and Drainage System, Sterilization and Testing, replacing base bid Steel Ground Storage Tank	LS	1		
2	16231	A 750 kw Diesel Generator with 1600Amp Automatic Transfer Switch, 8 Hour Fuel Storage Tank, Reinforced Concrete Foundation, replacing base bid Natural Gas Generator (Complete in Place as shown on the Approved Construction Drawings and Contract Documents).	LS	1		
3	WP-241	Fluoridation System, Including, but not Limited to Bulk Storage Tank, Fluorosilicic Day Tank, Transfer Pump, Scale, and Metering Pump. (Complete in Place and Fully Operational Including all Components and Appurtenances per the Approved Construction Drawings and Contract Documents).	LS	1		
4	WP-242	Liquid Phosphate System Including, but not Limited to Phosphate, 55 Gallon Drum, Metering Pump and Piping, Valves, and all necessary appurtenances. (Complete in Place and Fully Operational Including all Components and Appurtenances per the Approved Construction Drawings and Contract Documents).	LS	1		
5	WP-201	Plug and Abandon Pilot Hole to meet specifications and TDLR, TCEQ, and HGSD rules	LS	Add		
6	WP-201	24-inch Surface Casing as required, more or less than 550 feet base bid length	VF	Add/ Deduct		
7	WP-201	18-inch Production Screen, as required, more or less than 100 feet base bid length	VF	Add/ Deduct		
8	WP-201	18-inch Blank Production Liner as required, more or less than 200 feet base bid length	VF	Add/ Deduct		
9	WP-201	550 feet of 20-inch Surface Casing as a substitute for 24-inch surface casing	LS	Deduct		
10	WP-201	32-inch Diameter Underream of Pilot Hole	LS	Add		
11	WP-201	Additional Water Sample	Ea	Add		
12	WP-201	Perform Spectralog of Pilot hole upon the request of the Engineer	LS	Add		
13	16150	Increase the Horsepower of the Electric Water Well	LS	Add		

		Pump Motor by 50 hp				
14	16150	Decrease the Horsepower of the Electric Water Well Pump Motor by 50 Hp	LS	Deduct		
TOTAL ALTERNATE BID						

5. OWNER reserves the right to modify the scope of Work after opening of Bid. If the scope is modified, the unit prices bid may not be revised unless the quantity for that bid item is reduced by greater than twenty-five percent (25%).
6. OWNER reserves the right to abandon the project if the pilot hole analysis is not conducive to providing public water supply. If this occurs, the BIDDER will be paid for work performed on the pilot hole by Base Bid Items 16 and 17, and Alternate Bid Item 5. Abandonment of the project will not be considered a work change directive or change order.
7. BIDDER agrees that the Work will be substantially complete and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
8. The following documents are attached to and made a condition of this Bid:
 - A. Required Bid Security in the form of a Bid Bond, Cashier's Check, or Certified Check.
9. Communications concerning this Bid shall be addressed to the business address of BIDDER indicated herein.
10. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

SUBMITTED on _____, 20____.

Bidder:

(Print or type full name of your proprietorship, partnership, corporation, or joint venture.*)

**By:

Signature

Date

Name:

(Print or type name)

Title

Address:

(Mailing)

(Street, if different)

Telephone and Fax Number:

(Print or type numbers)

- * If Bid is a joint venture, add additional Bid Form signature sheets for each member of the joint venture.
- ** Bidder certifies that the only person or parties interested in this offer as principals are those named above. Bidder has not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding.

Note: This document constitutes a government record, as defined by § 37.01 of the Texas Penal Code. Submission of a false government record is punishable as provided in § 37.10 of the Texas Penal Code.

END OF SECTION

WELL CONTRACTOR QUALITY CONTROL

Well Contractor Experience and Licenses:

Well Contractor, drilling superintendent and driller must have successfully completed similar water well drilling and construction work for a minimum of ten public supply wells in the last five years for water wells with comparable depth settings and well material diameters in the Evangeline Aquifer and/or Jasper Aquifer in Harris County, Montgomery County, Fort Bend County, Brazoria County, and/or Liberty County, Texas.

The project and work must be supervised by a field superintendent that is currently licensed in the State of Texas by the Texas Department of Licensing and Regulation as a water well driller and pump installer and must have more than ten years of related experience for the work specified drilling and constructing 2-piece under-reamed gravel pack water wells. The driller shall be currently licensed in the State of Texas by the Texas Department of Licensing and Regulation as a water well driller and must have more than five years of related experience for the work specified drilling and constructing 2-piece under-reamed gravel pack water wells. The well pump and pumping equipment shall be installed by an experienced service rig operator that is currently licensed in the State of Texas by the Department of Licensing and Regulation as a pump installer.

The following Well Contractors are pre-qualified for this project: Alsay Incorporated, Layne-Texas and Weisinger Water Well Inc.

SECTION 04200

CONCRETE BLOCK MASONRY

PART 1 GENERAL

1.01 DESCRIPTION

A. Extent of Work

1. This section governs the materials used, for storing and handling of materials, for proportioning and mixing of materials, and for construction of structures involving concrete masonry.
2. Contractor assumes responsibility for design of proper mortar mixture.
3. Furnish laboratory reports showing proportions and materials selected will produce laboratory-mixed mortar of the specified quality and strength.

1.02 QUALITY ASSURANCE

A. Submittals

- 1 Samples: Submit samples of masonry for approval of color and texture.
- 2 Mix Designs:
 - a. Submit mortar mix designs for each different kind of mix.
 - b. Secure confirmation of laboratory tests on proposed mix designs.
- 3 Reports: Provide certified mill reports on cement and sieve analysis on fine aggregate.

PART 2 PRODUCTS

2.01 MATERIALS

A. Suppliers: Materials by Lone Star Cement, Trinity Portland, USG or Universal Atlas.

B. Concrete Masonry Units

1. Hollow load-bearing concrete masonry units as per ASTM C90.
2. Solid load-bearing concrete masonry units as per ASTM 0145.
3. Hollow or solid units to be high pressure steam cured. Grade N-I.
4. Minimum compressive strength on net area to be 2000 psi.

- C Cement
 - 1. Portland cement as per ASTM C150.
 - 2. Nonstaining cement meeting ASTM requirements for "Nonstaining Cement".
- D. Lime
 - 1. Lime in accordance with ASTM C-150 - Type S "Double-hydrated lime", 92% hydration.
 - 2. Certification of double hydration is required.
- E. Sand: Clean, natural, light colored sand as per ASTM C144
- F Water: Clean, potable, and free of any deleterious materials as per ASTM C94.
- G Waterproofing Admixtures: "Omnicon" {Master Builders} or "Hydratite" {W.R. Grace and Company}.
- H Mortar
 - 1. Portland Cement Mortar: 1 part Portland cement, 1/2 part lime putty, 4 1/2 parts sand, water as required, and waterproofed as specified.
 - 2. Mortar color to be approved brand, pure, substantially nonfading.

Waterproofing: Add one pound of admixture to each cubic foot of cementitious materials (cement, hydrated lime, or lime putty) in mix in strict accordance with manufacturer's specifications.
- I Reinforcement: Truss type, 3/16-inch extra heavy as manufactured by AA Wire Products, Co., or Dur-O-Wal National, Inc.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Pre-construction Submittals: Prior to start work, submit information regarding method of construction, type of equipment, and handling and storage.

3.02 CONSTRUCTION

- A. Storing and Handling Materials
 - 1. Prevent foreign matter or materials in work.
 - 2. Prevent damage from weather or ground

3. Deliver and store manufactured materials, such as lime and cement, in original packages, plainly marked with brand and manufacturer's name.
4. Materials in broken containers, or in packages showing watermarks or other evidence of damage, will be rejected.

B Mortar Mixture

Measure materials accurately by volume and mix thoroughly as per ASTM C270.

2. Do not add water to mortar that has stiffened due to delay in placing.
3. Discard mortar too stiff place.

C Masonry Construction

1. In accordance with Chapter 24 "Masonry" of UBC.
2. Construct walls plumb and true, with courses level, running bond, and having uniform thickness of joints.
3. Bond and anchor intersecting walls.
4. Clean exposed surfaces of set masonry with wire brush and wet lightly before placing fresh masonry thereto.
5. Remove loose units of mortar.
6. Use recommended procedures of National Concrete Masonry Association.
7. Do not lay units when air temperature is below 40° F.
8. Do not lay units with water or ice on surfaces, or on frozen materials.
9. Construct walls in dry weather, and provide waterproof covering if work is suspended.
10. Dampen masonry just prior to laying.
11. Provide and install anchors, nailing strips, hangers, and similar devices.
12. Place dry blocks only, in wall
13. Use full mortar bedding except for weep hole drainage.
14. Shove vertical joints tight.
15. Provide smooth concave exterior joints made with suitable tool after mortar has stiffened.

16. Strike joints flush on interior face of walls.
 17. Fill cells containing reinforcing bars with concrete.
 18. Remove projecting mortar and other surface irregularities and clean wall with diluted muriatic acid.
 19. Install masonry wall reinforcement in first and second bed joints, eight inches apart, immediately above lintels and below sills at openings, and in bed joints at 16-inch vertical intervals elsewhere. Extend reinforcement continuous except at control joints. Lap side rods a minimum of six inches at splices. Provide minimum 5/8-inch mortar cover on exterior faces and 1/2-inch mortar cover on interior faces. In walls constructed with more than one width, use reinforcing with three side rods. In cavity walls use reinforcing with drip. Reinforce corners of building with 3/16 inch extra heavy "prefabcorner" and "prefabtee".
 20. Prepare walls for thru-the-wall clashing as indicated.
 21. Construct walls watertight against blowing rains.
- D. Incidental Work
1. Follow details on drawings as to actual dimensions required for clearances, alignment, etc.
 2. All anchors, bolts, hangers, nailing strips, etc. shown or detailed on DRAWINGS or called for in SPECIFICATIONS.
 3. Build in all certical expansion joint materials where indicated.
- E Clean-Up: Clean-up and remove masonry work debris during construction, and cleanup area completely and thoroughly after completion of work.

3.02 MEASUREMENT AND PAYMENT

- A No separate measurement and payment for Work performed under this Section. Include cost of same in contract unit prices bid for Items of which this Work is a component part.

END OF SECTION

SPECIFICATION WP-225

PAINTING

1.01 SCOPE:

This section covers painting, surface preparation, protection of surfaces, testing and inspection. The Contractor shall furnish all materials, tools, equipment, and labor to paint the facility, including piping, machinery, miscellaneous metals, structures, and buildings, as shown on the drawings and specified herein. All coatings and solvents will be delivered to the job site in original, sealed, and labeled factory containers. All coatings shall be made by a single manufacturer and applied in strict accordance with the manufacturer's requirements and instructions.

2.01 PREVAILING REGULATORY REQUIREMENTS:

- A. It is the contractor's sole responsibility to protect the plant, equipment and environment while performing work under these technical specifications. In addition, it is the contractor's sole responsibility to provide a safe working environment for all individuals working in accordance with these technical specifications. Therefore, the contractor shall comply with all applicable requirements of the following regulatory agencies;

TNRCC	Texas Natural Resource Conservation Committee
TACB	Texas Air Control Board
HCHD	Harris County Health Department
EPA	Environmental Protection Agency
OSHA	Occupational Safety & Hazard Association
NSF	National Sanitation Foundation

- B. The contractor shall obtain all required permits in compliance with the above listed regulatory agencies in order to complete the surface preparations, application and the handling, removal and disposal of used abrasive, paint containers and any other trash generated during this subject project. In addition, if a permit is not required, then the contractor shall issue a letter to the District's engineer stating that the contractor has researched all regulatory agencies and that no permit(s) is required.

3.01 COLOR SELECTION:

The colors shall be selected from the manufacturer's standard color chart by the Owner.

- 4.01 MATERIAL HANDLING AND STORAGE: All paint shall be delivered to the job in original unopened containers with labels in tact. Paint shall be stored inside and shall be protected against freezing. No adulterant, unauthorized thinner or other material not included in the paint formulation shall be added to the paint for any purpose.

5.01 SHOP PAINTING: Valves and piping shall have shop paint removed by sandblasting (SSPC SP-10).

6.01 MIXING AND THINNING: Paint shall be thoroughly mixed when withdrawn from the container. Paint containers shall be kept tightly closed except while paint is being withdrawn.

Unless otherwise authorized, all paint shall be factory mixed to proper consistency and viscosity for hot weather application without thinning. Thinning will be permitted only as necessary to obtain recommended coverage at lower application temperatures. In no case shall the wet film thickness of applied paint be reduced by addition of paint thinner, or otherwise, below that represented by the recommended coverage rate.

Do not split kits of multi-component products.

7.01 SURFACE PREPARATION: All surfaces to be painted shall be dry and clean and shall meet or exceed the recommendations of the paint manufacturer for surface preparation. Cleaning and painting operations shall be performed in a manner which will prevent dust or other contaminants from getting on freshly painted surfaces.

Oil and grease shall be completely removed by use of solvents or detergents.

Surfaces shall be free of cracks, pits, projections, or other imperfections which would prevent the formation of a smooth, unbroken paint film. Surface anchor pattern shall be 1.5 to 2.0 mils.

When applying touch-up paint, or repairing previously painted surfaces, the surfaces to be painted shall be cleaned and sanded or wire brushed in such a manner that the edges of adjacent paint are feathered or otherwise smoothed so that they will not be noticeable when painted. Areas damaged to the steel substrate shall be cleaned as per SSPC-SP11 Power Tool Cleaning to Bare Metal. All paint made brittle or otherwise damaged by heat of welding shall be completely removed.

The surface preparation shall be in accordance with Society for Protective Coatings and ASTM as follows:

SURFACE

SURFACE PREPARATION

Tank Components, Piping
Valves, Fittings & Misc. Steel

SSPC-SP10 with an angular anchor profile

Galvanized & Non-Ferrous Metals

ASTM D 6386

Concrete & Masonry

SSPC-SP13

Prepared surfaces shall be approved by the Engineer before applying the paint.

8.01 ENVIRONMENTAL CONDITIONS:

- A. Blasting or coating applications shall NOT take place in rain, snow, mist or fog. Blasting or coating operations shall not take place on a damp or wet surface. This includes the inside of the equipment as well.
- B. The surface temperature shall be above 50 degree F. prior to coating application. If it is expected to fall below 40 degrees F. within six hours after the anticipated application time, the coating shall not be applied.
- C. The relative humidity shall be below 85% as verified by the use of a sling psychrometer in conjunction with the US Department of Commerce Weather Bureau Psychrometric Tables. The surface temperature shall be 5 degrees F. above the dew point listed in these tables.
- D. The maximum steel temperature that coating can be applied to shall be 125 degrees F.
- F. It is the responsibility of the contractor to confirm the above prior to commencing operations. If conditions are found unacceptable by the Site Representative, any work performed shall be rejected. If the conditions are border line, then the contractor shall discuss the conditions with the Site Representative prior to commencing operations.

9.01 APPLICATION:

Paint shall be applied in a neat manner, with finished surfaces free of runs, sags, ridges, laps, and brush marks. All weld seams and corners shall be stripe coated. Each paint coat shall be dry to the extent recommended by the manufacturer before the next coat is applied. Each coat shall be applied in a manner that will produce an even film of uniform and proper thickness. In no case shall paint be applied at a rate of coverage per gallon which is greater than the maximum rate recommended by the manufacturer.

Paint used in successive field coats shall be produced by the same manufacturer. Paint used in the second field coat over previously painted surfaces shall cause no wrinkling, lifting, or other damage to underlying paint.

10.01 REPAIRING DAMAGED PAINT:

Painted surfaces which have become damaged prior to acceptance by the Owner shall be repainted with the same or equivalent paint and methods used in the original application.

11.01 PROTECTION OF SURFACES:

Throughout the work the Contractor shall use drop cloths, masking tapes, and other suitable measures to protect all surfaces from accidental spraying, spattering, or spilling of paint. The Contractor shall be responsible for and shall correct and repair damage resulting from his operations or the operations of those responsible to him.

12.01 REMOVAL OF IMPROPER PAINT OR PAINT IMPROPERLY APPLIED:

All applied paint that does not conform to the requirements herein specified, or paint that has been applied on surfaces that have not been cleaned sufficiently or properly shall be thoroughly removed and the surfaces cleaned and repainted to the satisfaction of the Engineer, at the expense of the Contractor.

When the final field coat does not have a uniform color and appearance throughout the structure, it shall be corrected by the use of additional coats as may be necessary.

13.01 COATING SYSTEMS SCHEDULE:

A. TANKS

1. Interior:

1st Coat
2.5-3.5 Mils (DFT)
Tnemec Series 91-H2O

Stripe Coat

Applied by brush to all weld seams, edges, corners, nut, bolts and other difficult to coat items

Tnemec Series N140-15BL

2nd Coat

4.0-6.0 Mils (DFT)
Tnemec Series N140-1255

3rd Coat

4.0-6.0 Mils (DFT)
Tnemec Series N140-15BL

2. Exterior:

1st Coat
2.5-3.5 Mils (DFT)
Tnemec Series 90-97

2nd Coat

4.0-6.0 Mils (DFT)
Tnemec Series 27WB Typoxy

3rd Coat

2.0-3.0 Mils (DFT)
Tnemec Series 740 Endura-Shield

B. PIPING, VALVES, MACHINERY & MISCELLANEOUS STEEL

1st Coat
2.5-3.5 Mils (DFT)
Tnemec Series 90-97

2nd Coat
4.0-6.0 Mils (DFT)
Tnemec Series 27WB Typoxy

3rd Coat
2.0-3.0 Mils (DFT)
Tnemec Series 740 Endura-Shield

C. CONCRETE AND MASONRY (Interior & Exterior)

1st Coat
60-80 Sq.Ft./Gal.
Tnemec Series 130 Envirofill

2nd Coat
6.0-8.0 mils (DFT)
Tnemec Series 156 Enviro-Crete

3rd Coat
6.0-8.0 mils (DFT)
Tnemec Series 156 Enviro-Crete

Maximum dry mill thickness shall not exceed 9 mils for first coat and second coat each.

14.01 INSPECTION & TESTING:

A. The contractor shall perform all required inspections prior to the site inspector performing inspection activities, to ensure that the area to be inspected is acceptable to project requirements. It is not the responsibility of the inspector to perform inspection activities for the contractor. Any area found unacceptable to the inspector shall be repaired at the expense of the contractor including the cost of the inspector.

1. Anchor profile shall be checked as per ASTM D 4417-91, Method A and/or Method C or NACE Standard RP0287-87.
2. Thickness of coatings and paint shall be measured checked according to the procedures outlined in SSPC-PA 2 "Measurement of Dry Film Thickness with Magnetic Gages" with particular attention to section(s) 4.0, 7.8, 7.9, 7.11, 7.13, 7.14, with a non-destructive, magnetic-type thickness gauge that has been calibrated according to the procedures outlined in SSPC-PA 2 "Measurement of Dry Film Thickness with Magnetic Gages" with particular attention to section(s) 3.0, 7.4, 7.5, 7.15. Pass/fail criteria shall require that ninety (90) percent of the spot measurements (average of 3 gauge readings within a 1.5 inch diameter area)

be at or above the minimum specified dry film thickness. Of the remaining ten (10) percent of the spot measurements (average of 3 gauge readings within a 1.5 inch diameter area) that are below the minimum specified dry film thickness, they shall be no less than ninety (90) percent of the minimum specified dry film thickness. Areas that fail to meet these criteria shall be corrected at no expense to the Owner. Use of an instrument such as a Tooke Gauge, precision groove grinder, etc. is permitted if a destructive test is deemed necessary by the Engineer and the total DFT is less than 50 mils.

3. The integrity of interior coated surfaces shall be tested for holidays in accordance with NACE Standard SP0188. For dry films less than 20 mils, a non-destructive holiday detector shall not exceed 67.5 volts, nor shall destructive holiday detector exceed the voltage recommended by the manufacturer of the coating system. A solution of 1 ounce non-sudsing type wetting agent, such as Kodak Photo-Flo, and 1 gallon of tap water shall be used to perform the holiday testing. For coating thickness at 20 mils and greater, a high voltage Tinker & Rasor AP/W holiday tester shall be used. Contact coating manufacturer for voltage recommendations and curing parameters.

All pinholes and/or holidays shall be marked and repaired in accordance with the manufacturer's printed recommendations and retested. No pinholes or other irregularities will be permitted in the final coating.

- B. The contractor is required to have on site at all times the required inspection and testing equipment. This shall include but is not limited to; wet film thickness gauge, dry film thickness gauge, micrometer and Testex tape, sling psychrometer, temperature gauge, US Department of Commerce Weather Bureau Psychrometer Tables, low voltage holiday detection equipment and any other equipment deemed necessary. The inspection equipment shall be calibrated prior to any inspection.
- C. The contractor and the inspector shall coordinate in advance of any work to be performed the timing of completion of the work in order for the project to continue in a timely manner. The following inspections, but not limited to, shall be performed by the contractor and the inspector;
 1. The inspector shall take and record the environmental conditions with the contractor when he is on site,
 2. Inspection and approval of surface preparations prior to any coating,
 3. Inspection and approval of each coat prior to application of the next coat. Areas found unacceptable shall be repaired,
 4. Wet and dry film thickness measurements shall be performed at applicable times,
 5. Visual inspection of the entire surface to be coated,

6. Holiday inspection after the coating has cured a minimum of seven (7) days at 75 degrees F. The coating manufacturer shall be consulted on the numbers of days required to wait prior to holiday inspection. Holiday inspection will be performed on all immersed and non-immersed surfaces inside the tank as per NACE SP0188, special consideration around lap joint will be discussed at the pre-job meeting.
 7. Coatings applied without the inspector's approval may be required to be removed and reapplied at no additional cost to the Owner.
- D. To facilitate adequate examination of all surfaces, including the roof and shell surfaces, above the overflow pipe, center support column and above the rafters, the contractor shall supply scaffolding or rigging and adequate illumination required to perform all inspection activities. Personnel shall be made available to move the scaffolding or rigging.
- E. All inspection activities shall be performed in accordance with the requirements of SSPC and NACE.

15.01 FIRST ANNIVERSARY INSPECTION:

The Contractor shall perform first anniversary inspection in the presence of Owner's representative as per Section 5.2 of the latest edition of AWWA Standard Specification D102-03.

16.01 SUBMITTALS

The contractor shall submit for approval by the engineer the following information;

1. Type of grit and how it will be stored,
2. Name of paint manufacturer, type of paint, trade name and number identifying each paint material, technical data sheets, Material Safety Data Sheets, color chart to allow final color to be selected by owner,
3. Proof of compliance with requirements for potable water contact,
4. Proof of compliance with the performance data listed in these specifications,
5. Proof of a lead free system

17.01 TOUCH-UP PAINT:

The Contractor shall provide 5 gallons of each paints used in unopened containers.

18.01 GUARANTEE

All work performed under these specifications shall be free of defects in either material or workmanship for a period of one (1) year after final acceptance.

19.01 CLEANING AND DISINFECTION:

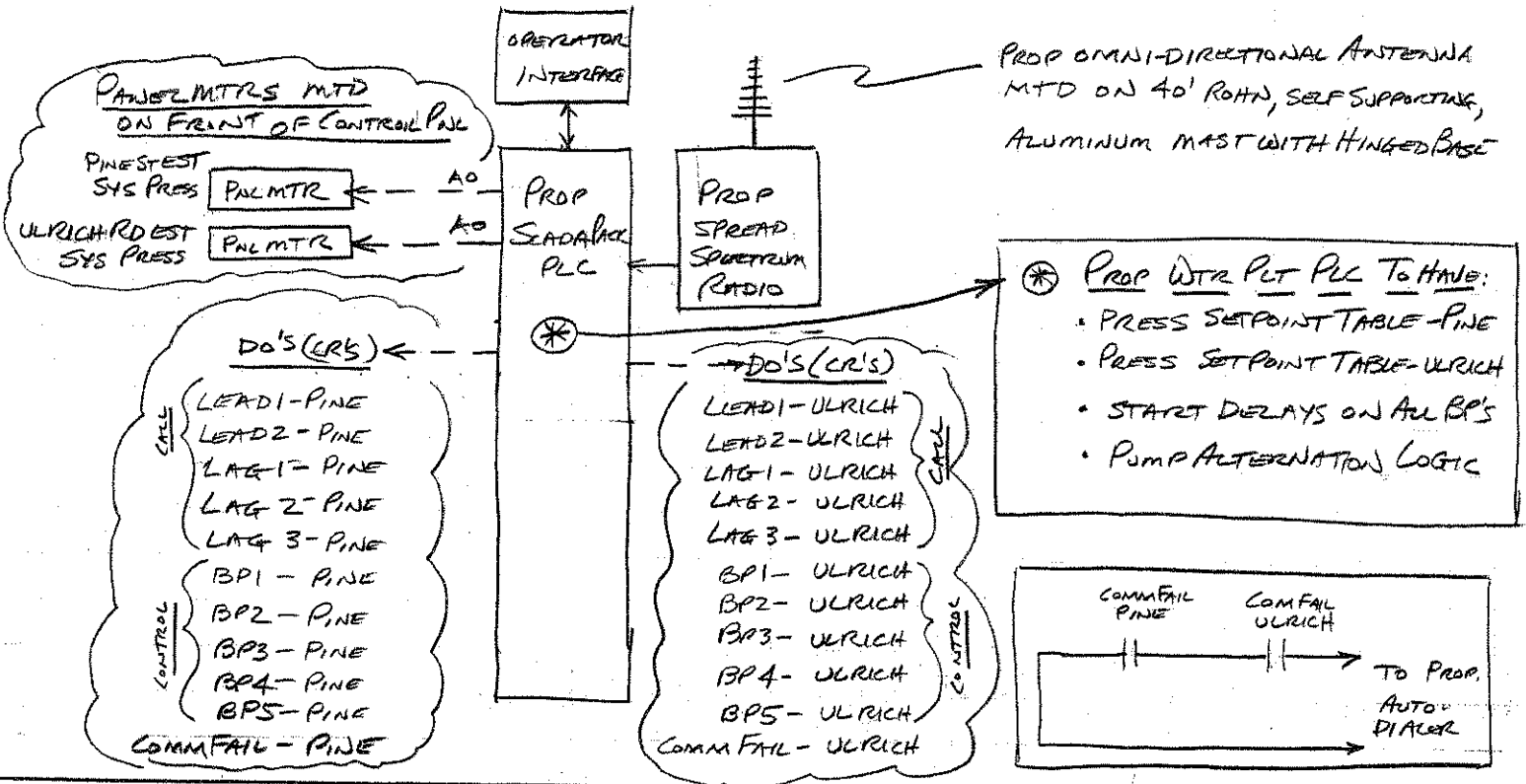
After construction and painting has been completed, the tank shall be cleaned and disinfected before being placed in service. The cleaning and disinfection of the tank shall be in accordance with Specification 275 of these specifications.

20.01 MEASUREMENT AND PAYMENT:

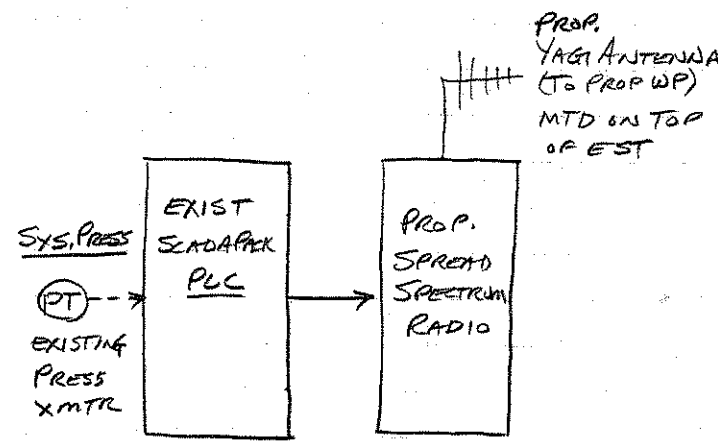
Measurement will be lump sum basis for painting both the interior and exterior of the hydropneumatic tanks and shall be considered full compensation for providing all labor, equipment, materials, etc. necessary for a complete coating system.

END OF SECTION

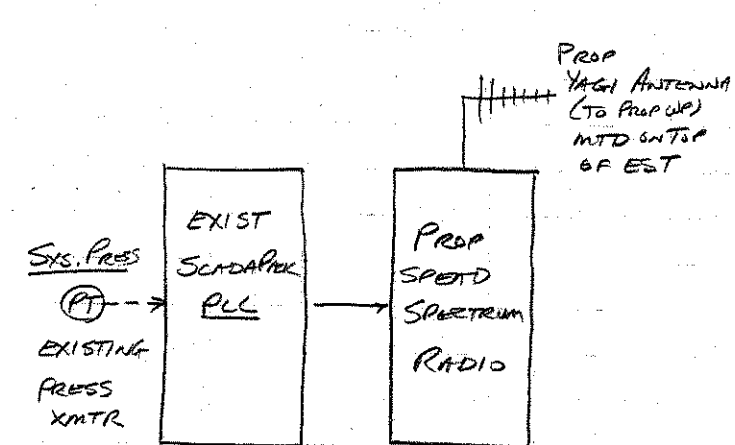
CITY of Tomball - PROPOSED WATER PLANT



EXISTING PINE ST EST

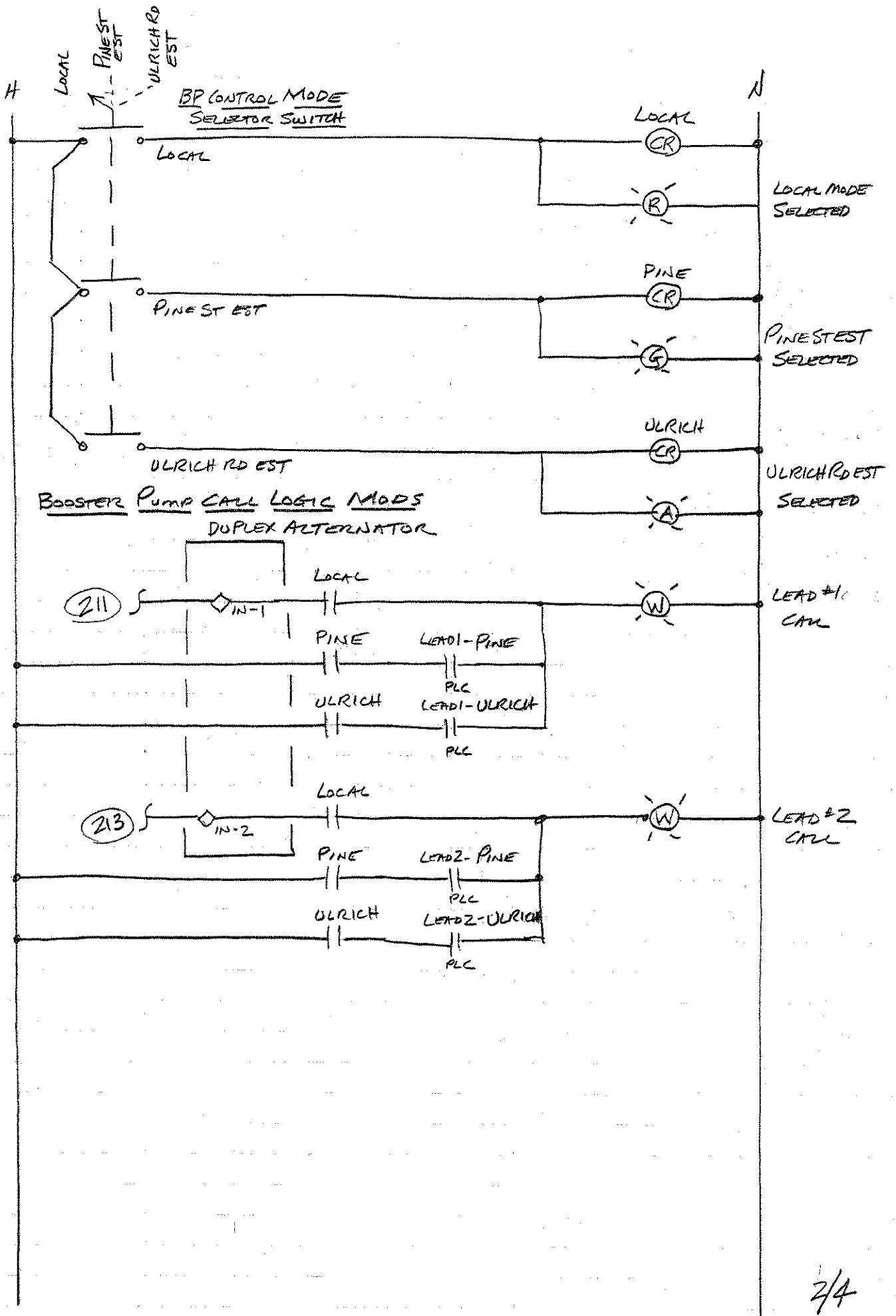


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New Logic

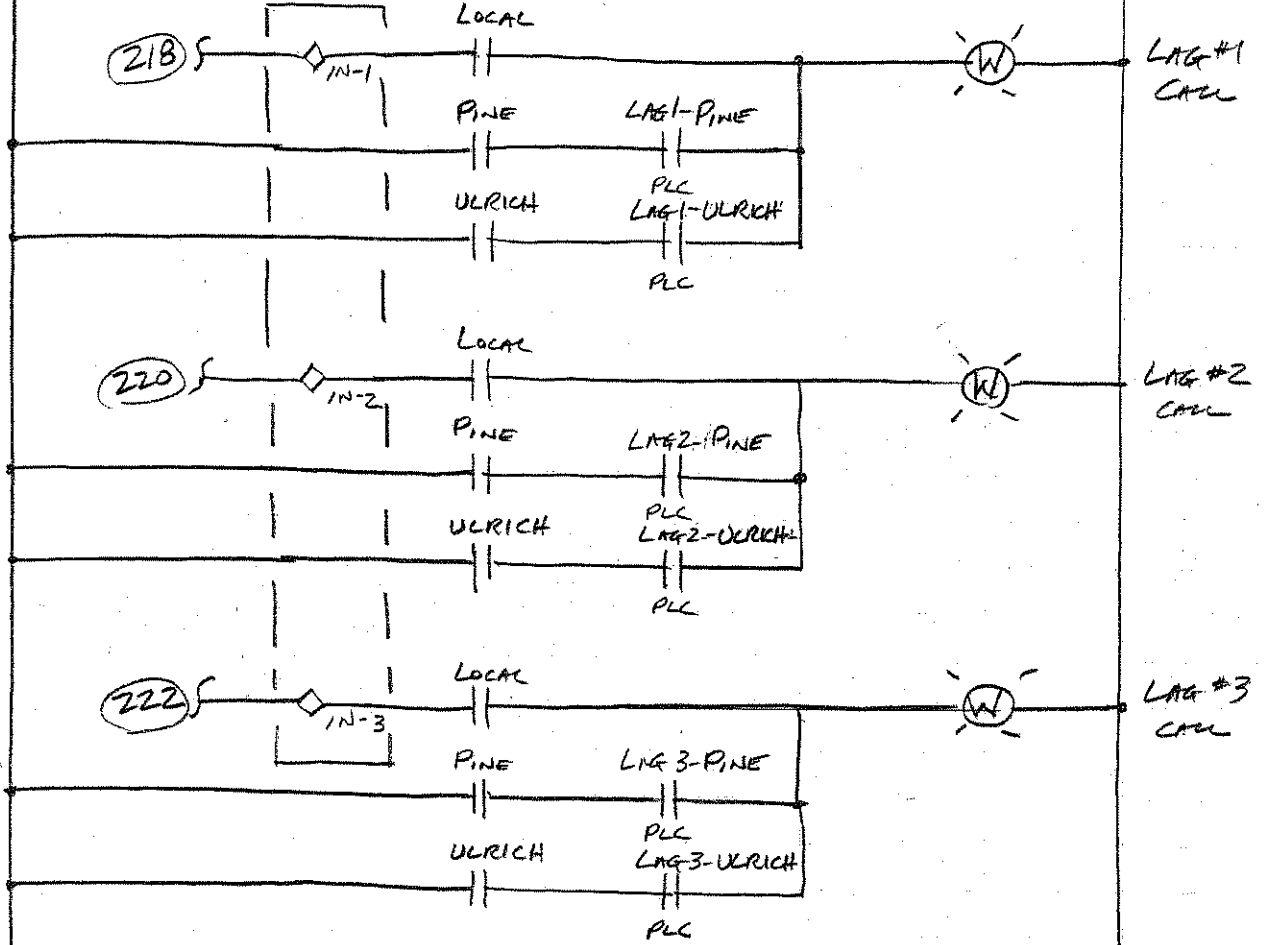
MODIFIED LOGIC



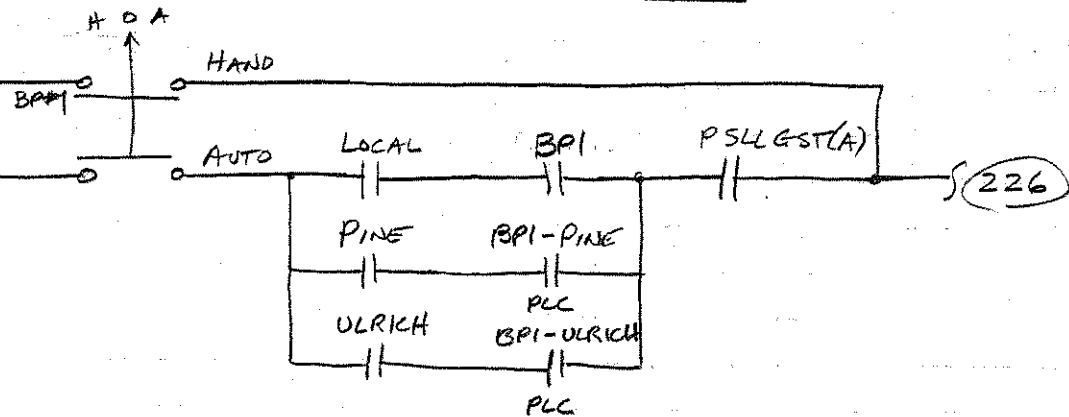
MODIFIED LOGIC

BOOSTER PUMP CALL LOGIC MODS (CONT'D)

TRI-PLEX ALTERNATOR



BOOSTER PUMP CONTROL LOGIC MODS



BOOSTER PUMP CONTROL LOGIC MODS (CONT)

MODIFIED LOGIC

NEW LOGIC

