

UNIVERSITY OF NORTH TEXAS™

REQUEST FOR COMPETITIVE SEALED PROPOSALS HUB SUBCONTRACTING PLAN REQUIRED

IF NOT BIDDING, DO NOT RETURN THIS FORM.

Request for Proposal #:

Request for Proposal Name:

RFCSPPRE-PROPOSAL MEETING DATE & TIME:

RFCSPP DUE DATE AND TIME:

RFCSPP PUBLIC OPENING DATE & TIME:

RFCSPP752-13-143050-CC

Fouts Field Demolition

April 22, 2013 at 10:00 AM

May 8, 2013 at 2:00 PM

May 10, 2013 at 2:00 PM

RETURN SEALED PROPOSALS TO:

Physical Address (i.e. hand delivery and overnight):

University of North Texas System

Business Service Center

Woodhill Square

1112 Dallas Drive, Suite 4000

Denton, Texas 76205

If there are any questions regarding this RFCSPP, please contact Carolyn Cross at 940-369-5500 or submit solicitation questions to: [Solicitation Inquiry](mailto:bsc.untssystem.edu) located at bsc.untssystem.edu. Bids Listing Page. All questions must be received no later than 04/30/2013 at 2:00 PM CST. All questions and answers will be posted to the website by 5:00 PM CST, 05/1/2013.

A copy of this proposal form is posted at and may be downloaded from: bsc.untssystem.edu

Check below if preference claimed under TAC, Title 34, as amended

- Supplies, materials, or equipment produced in Texas/offered by Texas respondents
- Agricultural products produced or grown in Texas
- Agricultural products and services offered by TX respondents
- USA produced supplies, materials, or equipment
- Products of persons with mental or physical disabilities
- Recycled, remanufactured, or environmentally sensitive products, including recycled steel products
- Energy efficient products
- Rubberized asphalt paving material
- Recycled motor oil and lubricants
- Products produced at facilities located on formally contaminated property
- Products and services from economically depressed or blighted areas
- Vendors that meet or exceed air quality standards

By signing this proposal, respondent certifies that if a Texas address is shown as the address of the respondent, respondent qualifies as a Texas Resident Respondent as defined in Texas Administrative Code (TAC), Title 34, as amended.

In accordance with the Texas Government Code, Sections 2161.181-182 and the Texas Administrative Code (TAC), Title 34, as amended, state agencies shall make a good faith effort to utilize Historically Underutilized Businesses (HUBS) in contracts for construction, services, including professional and consulting services and commodities contracts. The Texas Comptroller of Public Accounts HUB Rules, TAC, Title 34, as amended, encourages the use of HUBs by implementing these policies through race-ethnic-and gender-neutral means.

Are you a certified HUB? (circle one) YES or NO

If yes, please circle the organization or entity certified with below and include a copy of your certificate:

Texas Comptroller of Public Accounts; NCTRCA; MBDC; Other _____

If yes, please also specify: Ethnicity _____ & Gender _____

IF SUBMITTING A PROPOSAL, RFCSPP MUST BE SIGNED and ALL attached files must be printed and returned with proposal package. The HUB Subcontracting Plan must be submitted in a separate clearly marked envelope. You shall submit a clearly marked original, one (1) duplicate copy, and two (2) CD/DVD in a single PDF format (CD's with more than the requested information will be considered non-responsive). Sealed proposals should be received NO LATER THAN the specified due date and time. UNT System reserves the right to accept late proposals, however proposals received after opening time will not be accepted. Show RFCSPP opening date, RFCSPP number, and return address of firm on sealed proposal envelope. Incomplete proposals will be disqualified.

RESPONDENT MUST FILL IN AND SIGN BELOW:

(FAILURE TO SIGN WILL DISQUALIFY PROPOSAL)

COMPANY NAME: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PAYEE ID#: _____

AUTHORIZE AGENT: _____

(Print or Type Name)

AUTHORIZED SIGNATURE: _____

DATE: _____

PHONE NUMBER: _____

FAX NUMBER: _____

EMAIL ADDRESS: _____

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RFCSP Checklist-Please use this checklist to make sure you are providing all the proper documents

- () All UNT System provided RFCSP forms completed
- () Proposal signed
- () Proposed contract supplied (if applicable)
- () Appropriate number of copies requested
- () If requested, supporting product or service documentation provided
- () All required HUB Subcontracting forms completed and placed in an individual, clearly marked envelope, packaged separately from any other documents. Your HSP must be returned with your RFCSP response.
- () Addendums included in response

NOTICE--IN ADDITION TO THE ITEMS LISTED BELOW, THE TERMS AND CONDITIONS OF THIS PROPOSAL ARE ATTACHED AS ATTACHMENT "A".

RCSFPs for contracts with an expected value of \$100,000 or more will also require sub-contracting form or plan. This RFCSP DOES include a HUB sub-contracting package, which is attached at Attachment "B". The HUB Sub-contracting package must be completed and returned with response in a separate marked envelope.

IMPORTANT NOTICE: ANY PROPOSED CHANGES TO THE TERMS AND CONDITIONS OUTLINED IN THIS RFCSP OR THE PROPOSED ATTACHED AGREEMENT MUST BE SUBMITTED ALONG WITH YOUR RESPONSE TO THIS RFCSP. FAILURE TO PROVIDE SUCH PROPOSED CHANGES WILL PREVENT UNT SYSTEM FROM AGREEING TO ANY CHANGES IN OUR STANDARD TERMS AND CONDITIONS AND COULD AFFECT THE AWARD OF THIS RFCSP.

The laws of the State of Texas must prevail on all proposals.

1.0 SCOPE OF WORK/DESCRIPTION OF GOODS (COMMODITY CODE: 912-40)

In accordance with Education Code 51.783, the University of North Texas System, subsequently referred to as UNT System, is accepting proposals and intends to enter into an agreement with a vendor that specializes in **demolition** in accordance with the terms and conditions and requirements set forth in this Request for Competitive Sealed Proposal (RFCSP).

1.1 Specifications/Scope of Work:

The scope of work of this RFCSP is for the partial demolition of Fouts Field Stadium. A set of the 100% Construction Documents and Specification has been included (Attachment "C") for use in preparation of the proposal.

Contractor must be on-site to begin demolition NO LATER THAN June 17, 2013.

IMPORTANT NOTICE: UNT SYSTEM INTENDS ON USING A GENERAL CONSTRUCTION AGREEMENT.

A sample of copy of the agreement has been included (Attachment "D") for review. Any requested modifications to the contract language must be included with the proposal. Any proposal modifications can be included as an attachment to the proposal and included in the same envelope as the proposal. Modifications to the contract will be taken into consideration during the selection process.

1.2 Pricing:

Your proposal must include all labor, material, equipment and services necessary to complete the work required by the construction documents. The Contractor shall base their base proposal price on the set of the Construction Documents and Specifications titled Fouts Field 100% Submittal and Fouts Field Demolition and Restoration Technical Specifications both dated March 15, 2015, prepared by Huitt-Zollars, Inc.

1.2.1 Base Proposal Cost (Do not include bond costs) \$ _____

1.2.2 Alternate No. 1 Reinstall Track and Field Lighting \$ _____

**1.2.3 Alternate No. 2 Salvage to Owner,
9 cast stone panels from East Concourse Structure \$** _____

1.2.4 Consecutive Calendar Days needed to complete project _____ days

1.2.3 LIQUIDATED DAMAGES.

Liquidated damages will be in accordance with the UNTS UGC/SGC, 2010 Amended. If the work is not completed within the time specified in the final agreement plus any extension(s) of time allowed, liquidated damages will be assessed. For each consecutive calendar day after the agreed upon completion period, including the correction of deficiencies found during the final testing and inspection, is not completed, the amount of Two hundred fifty and 00/100 Dollars (\$250.00) per calendar day will be paid by the Contractor to the Owner, not as a penalty but as liquidated damages representing the parties' estimate at the time of agreement execution of the damages which the Owner will sustain for late completion. Owner shall also be entitled to deduct the amount of liquidated damages owed by Contractor from money due or becomes due the Contractor.

1.2.4 An incomplete proposal or one having additional information or other modifications inscribed thereon, may be cause for rejections of the entire proposal. This proposal is valid and will be honored for a period of 180 days following the proposal opening.

1.2.5 Addenda Checklist

Receipt is hereby acknowledged of the following addenda to this RFCSP. (initial, if applicable)

No. 1 _____ No. 2 _____ No. 3 _____ No. 4 _____

Dated:_____ Dated:_____ Dated:_____ Dated:_____

1.3 PAYMENT AND PERFORMANCE BOND: In accordance with Texas Government Code 2253, a Payment Bond is required for all public works agreements over \$25,000.00 and a Payment and Performance Bond for all public works agreements over \$100,000.00. It is estimated that this agreement will be over \$100,000.00 so a Payment and Performance Bond is required. The cost of the Payment and Performance Bond should be listed separate from your pricing of the project. Please provide the amount as a total bond cost. If awarded the agreement, vendor will secure bonding and provide UNT System with proper documentation. UNT System will pay bonding costs to the awarded vendor as a pass through amount with proper documentation provided along with an invoice.

Payment and Performance bond cost \$ _____

1.4 PAYMENTS: Successful respondent shall be responsible for referencing the purchase order number(s) resulting from this RFCSP on any packing list(s), invoice(s), correspondence, etc. The successful respondent will also be required to send an itemized invoice that will list all services provided, work performed and materials supplied by building location. Each invoice may only reference one purchase order. Multiple purchase orders will require separate invoices. A payment schedule may be negotiated with the vendor of choice, subject to no prepayment. If progress payments are approved, UNT System will have to verify the progress before payment will be made.

2.0 HUB SUBCONTRACTING OPPORTUNITIES AND FORMS:

UNT System has determined Sub-contracting opportunities are possible and have identified the following areas:

- Demolition
- Disposal of demolished materials
- Utilities
- Landscape
- Labor

All subcontracted work whether identified by UNT System or not, are required to be identified in the HUB Subcontracting Plan. Please complete the attached HUB Subcontracting Plan for all subcontracting opportunities to be utilized in this project. **Failure to complete the HUB Subcontracting Plan correctly will disqualify your RFCSP response. Please return the HUB Subcontracting Plan in a clearly marked envelope, separate from your RFCSP response.** Only one (1) hard copy of the HUB plan is required with your response.

IMPORTANT NOTICE:

Only RFCSP responses with approved HUB Subcontracting Plans will be opened. Failure to return your HUB Subcontracting Plan in a separate envelope will prevent UNT System from opening your RFCSP response.

Questions regarding the completion of the HUB Subcontracting Plan should be directed to Amy Woods or Claire Anderson at 940-369-5500. You may also view an on-line video/audio file that explains, in a step by step manner, exactly how to fill out a HUB Sub-Contracting Plan. The video/audio file is located at <http://www.window.state.tx.us/procurement/prog/hub/hub-subcontracting-plan/>.

3.0 PRE-PROPOSAL MEETING/SITE VISIT:

Pre-Proposal Meeting: A scheduled Pre-proposal Meeting shall be held on **April 22, 2013 promptly at 10:00 A.M. Location shall be University Services Building, USB Conference Room, 2310 N. I-35E, Denton, TX, 76205. There will also be a site visit of the Fouts Field Stadium site following the pre-proposal meeting.**

Respondents who cannot attend this meeting will miss valuable information. A presentation regarding the requirement of the HUB plans will be held during this meeting. A site visit is also planned immediately following the pre-proposal meeting. For this reason it will be highly advantageous to attend the scheduled meeting to obtain all information.

For parking, please use the visitor parking in front of the USB or park in the “G” parking spaces located next to the football stadium. Any further questions or concerns can be directed to Carolyn Cross at 940-369-5500.

4.0 EVALUATION:

Proposals will be opened publicly to identify the names of the proposers and their respective proposed agreement amounts. Other contents of the Proposals will be afforded security sufficient to preclude disclosure of the contents prior to award. Proposals will be evaluated by the Owner. The criteria for evaluation, Best Value determination using Education Code 51.783 and selection of the successful proposer for this award, will be based upon the factors listed below:

1. Proposed agreement amount listed on Proposal form.
2. Proposed time listed on Proposal form.
3. The proposer’s experience with similar projects.
4. Proposed modifications to the contract agreement language.
5. The qualifications and experience of the proposer’s key personnel and subcontractors committed to the project.
6. The proposer’s project schedule and the demonstrated ability to have met schedules on similar projects.
7. The proposer’s safety record.
8. The quality of references from owners and architects for similar projects completed by the proposer within the last five (5) years.
9. The responsibility and reputation of the proposer, including claims and litigation experiences.
10. The sufficiency of the proposer’s financial resources.
11. Proposer’s current workload and availability of personnel and equipment.
12. The proposer’s response to requested qualification information.

5.0 SELECTION PROCESS:

Selection of the Successful Offer submitted in response to this RFCSP by the Submittal Deadline will be made using the competitive process described below.

After the opening of the offers and upon completion of the initial review and evaluation of the offers submitted, selected respondents may be invited to participate in oral presentations. The selection of the Successful Offer may be made by UNT System on the basis of the offers initially submitted, without discussion, clarification or modification. In the alternative, selection of the Successful Offer may be made by UNT System on the basis of negotiation with any of the respondents. At UNT System's sole option and discretion, it may discuss and negotiate all elements of the offers submitted by selected respondents within a specified competitive range. For purposes of negotiation, a competitive range of acceptable or potentially acceptable offers may be established comprising the highest rated offers. UNT System will provide each respondent within the competitive range with an equal opportunity for discussion and revision of its offer. UNT System will not disclose any information derived from the offers submitted by competing respondents in conducting such discussions. Further action on offers not included within the competitive range will be deferred pending the selection of the Successful Offer, however, UNT System reserves the right to include additional offers in the competitive range if deemed to be in its best interest.

After the submission of offers but before final selection of the Successful Offer is made, UNT System may permit a respondent to revise its offer in order to obtain the respondent's best final offer. UNT System is not bound to accept the lowest priced offer if that offer is not in its best interest, as determined by UNT System.

UNT System reserves the right to: (a) enter into agreements or other contractual arrangements for all or any portion of the Scope of Work set forth in this Proposal with one or more respondents; (b) reject any and all offers and re-solicit offers; or (c) reject any and all offers and temporarily or permanently abandon this procurement, if deemed to be in the best interest of UNT System.

5.1 Evaluation of Criteria: The successful offer will be the offer that is submitted in response to this Proposal by the Submittal Deadline and is the most advantageous to UNT System in UNT System's sole discretion. Offers will be evaluated by an evaluation committee that will include employees of UNT System and other persons invited by UNT System to participate. The evaluation of offers and the selection of the Successful Offer will be based on the information provided to UNT System by the respondent in response to the Specifications section of this Proposal. Consideration may also be given to any additional information and comments if such information or comments increase the benefits to UNT System. The successful respondent will be required to enter into a contract acceptable to UNT System.

The evaluation committee will determine if Best and Final Offers are necessary. Award of a contract may be made without Best and Final Offers. UNT System may, at its discretion, elect to have Respondents provide oral presentations and respond to inquiries from the evaluation committee related to their Proposals. A request for a Best and Final Offer is at the sole discretion of UNT System and will be extended in writing.

In evaluating Proposals to determine the best value for the State, UNT System may consider information related to past contract performance of a Respondent including, but not limited to, Texas Comptroller of Public Account's Vendor Performance Tracking System.

5.2 Respondent's Acceptance of Process: Submission of an offer by a respondent indicates: (1) the respondent's acceptance of the Selection Process, the Evaluation of Criteria for selection, and all other requirements and specifications set forth in this Proposal; and (2) the respondent's recognition that some subjective judgments must be made by UNT System during this Proposal process.

6.0 INSURANCE REQUIREMENTS:

The Contractor shall carry insurance in the types and amounts indicated in this Article for the duration of the Contract, which shall include items owned by Owner in the care, custody and control of Contractor prior to and during construction as well as during the warranty period. Contractor must also complete and file the declaration pages from the insurance policies with Owner whenever a previously identified policy period expires during the term of the contract, as proof of continuing coverage. Acceptance of the insurance policy declaration pages by the Owner shall not relieve or decrease the liability of the Contractor.

Unless otherwise provided for in UNT System UGC/SGC 2010 Amended the Contractor shall provide and maintain, until the work covered in this Contract is completed and accepted by the Owner, the minimum insurance coverage's in the minimum amounts as described below. Coverage shall be written on an occurrence basis by companies authorized and admitted to do business in the State of Texas and rated A – or better by A.M. Best Company, or otherwise acceptable to Owner.

Type of Coverage	Limits of Liability
Worker's Compensation	Statutory and required for all employees.
Waiver of subrogation in favor of UNT System, UNTS Board or Regents, and UNT is required.	
Employer's Liability	
Bodily Injury by Accident	\$500,000 ea. Accident
Bodily Injury by Disease	\$500,000 ea. Employee
Bodily Injury by Disease	\$500,000 Policy Limit

Commercial General Liability (CGL) A wavier of subrogation in favor of UNT System, UNTS Board of Regents, and UNT is required and UNT System, UNTS Board of Regents, and UNT must be named as an Additional Insured.

Combined single limit for bodily injury and property damage of \$1,000,000 per occurrence /\$2,000,000 aggregate, with coverage that includes the following:

- 1) Premises operations
- 2) Independent contractors
- 3) Products/Completed Operations
- 4) Personal Injury
- 5) Contractual Liability

- 6) Explosion, Collapse, Underground
- 7) Broad form property damage liability endorsement
- 8) Fire damage legal liability

Business Automobile Liability for owned/hired/non owned with a waiver of subrogation in favor of UNT System, UNTS Board of Regents, and UNT is required and UNT System, UNTS Board of Regents, and UNT must be named as an Additional Insured.

Combined single limit of \$1,000,000 per occurrence

Owner's Protective Liability Insurance Policy (if not in CGL) as endorsed to UNT System, UNTS Board of Regents, and UNT must be named as an Additional Insured. Waiver of subrogation in favor of UNT System, UNTS Board of Regents, and UNT is required. The following limits: \$1,000,000 each Occurrence/ \$2,000,000 Aggregate

Builder's Risk Insurance:

An all risk policy, including workmanship acceptable to the Owner, in the amount equal at all times to 100% of the Contract Sum. The policy shall be issued in the name of the Contractor and shall name his Subcontractors as additional insured's. The Owner shall be named as a loss payee on the policy. The builders risk policy shall have endorsements as follows:

This insurance shall be specific and primary as to coverage and not considered as contributing insurance with any permanent insurance maintained on the present premises. If off-site storage is permitted, coverage shall include transit and storage in an amount sufficient to protect property being transported or stored.

Builder's Risk Policy shall be endorsed to include coverage for existing building structure(s) where the renovation or remodel is being done, and shall include buildings that are contiguous to the renovation or remodel work being done.

Flood insurance when specified in UNT System UGC/SGC 2010 Amended.

Umbrella coverage when specified in UNT System UGC/SGC 2010 Amended.

Policies must include the following clauses, as applicable.

- "This insurance shall not be canceled, limited in scope or coverage, or non-renewed until after thirty (30) days prior written notice, or ten (10) days for non-payment of premium, has been given to the Owner."
- "It is agreed that the Contractor's insurance shall be deemed primary with respect to any insurance or self insurance carried by the state agency for liability arising out of operations under the Contract with the Owner."
- "The Owner, its officials, directors, employees, representatives, and volunteers are added as additional insured as respects operations and activities of, or on behalf of the named insured, performed under contract with the Owner." This is not applicable to the workers' compensation policy.

- “The workers’ compensation and employers’ liability policy will provide a waiver of subrogation in favor of the Owner.”

The workers’ compensation insurance coverage must include the responsibility of the General Contractor to provide coverage for every worker either under the general Contractor’s policy or under the policy provided by a Subcontractor. The general Contractor’s policy shall provide that, in the event a Subcontractor’s policy fails to provide workers’ compensation coverage for a worker, such insurance coverage is provided by the General Contractor’s policy. Contractor shall obtain certificates of coverage from Subcontractors carrying their own policies, prior to any Subcontractor providing services to the Project.

By signing the Contract or providing or causing to be provided a certificate of insurance coverage, Contractor is representing to Owner that all employees of the Contractor who will provide services on the Project will be covered by workers’ compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier, or in the case of self-insured, with the Texas Workers’ Compensation Commission. Providing false or misleading information may subject Contractor to administrative penalties, criminal penalties, civil penalties or other civil actions.

If insurance policies are not written for the amounts specified, Contractor shall carry Umbrella or Excess Liability Insurance for any differences in amounts specified. If Excess Liability Insurance is provided, it shall follow the form of primary coverage.

The furnishing of the above listed insurance coverage, as may be modified by UNT System UGC/SGC 2010 Amended, must be tendered prior to execution of the Contract, and in no event later than ten (10) days from Notice of Award.

Owner shall be entitled, upon request and without expense, to receive copies of the policies and all endorsements as they apply to the limits.

7.0 SUBMITTAL DEADLINE:

To respond to this Proposal via mail, respondents must submit the information requested in the Specifications section of this Proposal and any other relevant information in a clear and concise written format to:

Via hand delivery or overnight only

(i.e. FedEx, UPS, etc.)

Carolyn Cross
University of North Texas System
Business Service Center
Woodhill Square
1112 Dallas Drive, Suite 4000
Denton, Texas 76205

Offers must be submitted in an envelope or other appropriate container and the name and return address of the respondent must be clearly visible. All offers shall be received at the above address no later than the due date and time listed on Page 1 of this RFCSP. UNT reserves the right to accept late proposals, however proposals received after opening time will not be accepted.

8.0 SCHEDULE OF EVENTS: The solicitation process for this RFCSP will proceed according to the following schedule:

<u>EVENT</u>	<u>DATE</u>
Issue RFCSP	04/17/2013
Pre-Proposal Conference	04/22/2013 at 10:00 AM
Deadline for Submission of Questions	04/30/2013 at 2:00 PM
Deadline for Submission of Proposals	05/08/2013 at 2:00 PM
Public Opening	05/10/2013 at 2:00 PM

8.1 REVISIONS TO SCHEDULE. UNT System reserves the right to change the dates in the schedule of events above upon written notification to prospective Respondents through a posting on the BSC website and the Electronic State Business Daily as an Addendum.

9.0 QUESTIONS:

Questions concerning this Proposal should be directed to:

Carolyn Cross

Please submit solicitation questions to:

[Solicitation Inquiry](http://bsc.untsystem.edu/content/bid-inquiry) located at <http://bsc.untsystem.edu/content/bid-inquiry> Bids Opportunities Page.

All questions must be received no later than April 30, 2013, at 2:00 P.M. CST. All questions and answers will be posted to the website by 5:00 P.M. CST, May 1, 2013.

UNT System may in its sole discretion respond in writing to questions concerning this Proposal. Only UNT System's responses made by formal written Addendum to this Proposal shall be binding and shall be posted on the BSC's website located at <http://bsc.untsystem.edu/bid-listing>. Oral or other written interpretations or clarifications shall be without legal effect.

10.0 PUBLIC OPENING:

A public opening shall be held on **May 10, 2013 promptly at 2:00 P.M. Location shall be University of North Texas System Business Service Center, Woodhill Square, Conference Room 4202, 1112 Dallas Drive, Suite 4200, Denton, TX 76205.**

11.0 REFERENCES (REQUIRED):

See Proposer's Qualifications (Attachment "E").

ATTACHMENT "A"
TERMS AND CONDITIONS

ITEMS BELOW APPLY TO AND BECOME A PART OF TERMS AND CONDITIONS OF THE SOLICITATION:

1.0 Response Requirements:

- a. Respondents must comply with all the rules, regulations and statutes relating to purchasing in the State of Texas, to the rules and regulations of the University of North Texas System and the requirements of this form. The University of North Texas System (UNTS) consists of the University of North Texas, University of North Texas at Dallas, and the University of North Texas Health Science Center at Fort Worth.
- b. Respondents must price per unit shown. Unit prices shall govern in the event of extension errors.
- c. Responses should be submitted on this form. Responses will be time stamped on or before the hour and date specified for the response opening.
- d. Unsigned responses will not be considered under any circumstances. Person signing response must have the authority to bind the firm in a contract.
- e. Quote F.O.B destination, freight prepaid and allowed. Otherwise, specify exact delivery cost and terms.
- f. Response prices are to be firm for UNTS acceptance for 180 days from response opening date. "Discount from list" Responses should be specified. Cash discount will not be considered in determining the low response. All cash discounts offered will be taken if earned.
- g. Respondents must give unit prices for each item to be purchased. Respondents may response less than the total number of items. An "All or None" response by Respondent may be rejected at the option of UNT System.
- h. Respondents should give Payee ID Number, full firm name, and address of respondent on the face of this form. Enter in the space provided. The Payee ID Number is the taxpayer number assigned and used by the Texas Comptroller of Public Accounts. If this number is not known, complete the following:
Enter Federal Employer's Identification Number _____
- i. Responses cannot be altered or amended after opening time. Alterations made before opening time should be initialed by respondent or his authorized agent. No response can be withdrawn after opening time without approval by UNTS based on an acceptable written reason.
- j. Purchases made for UNTS use are exempt from the State Sales tax and Federal Excise tax. Do not include tax in response. Excise Tax Exemption Certificates are available upon request.
- k. UNTS reserves the right to accept or reject all or any part of any response, waive minor technicalities and award the response to best serve the interests of UNTS.
- l. Consistent and continued tie Responses could cause rejection of offers by UNTS and/or investigation for antitrust violations.
- m. FACSIMILE FOR RESPONSE— UNTS will not accept responses via facsimile.
- n. QUOTATIONS AND RESPONSES: Any quotation number referenced is for pricing purposes only. In addition, UNTS solicitation terms and mutually acceptable written revisions, if any, shall apply. Any terms and conditions not accepted through UNTS Business Service Center Purchasing in writing are not binding on either party.
- o. Catalogs, brand names or manufacturer's references are descriptive only, and indicate type and quality desired. Responses on brands of like nature and quality will be considered if response specifies such. If responding on other than referenced, response should show manufacturer, brand or trade name, and other description of product offered. If other than brand(s) specified is offered, illustrations and a complete description of product offered are requested to be made part of the response. Failure to take exception to specifications or reference data will require respondent to furnish specified brand names, numbers, etc.
- p. Unless otherwise specified, items offered shall be new and unused.
- q. In addition, all electrical items must meet all applicable state and federal standards and regulations, and bear the appropriate listing such as ANSI, FCC, NEMA, NTRL, and OSHA standards.
- r. Samples, when requested, must be furnished free of expense to UNTS. If not destroyed in examination, they will be returned to the respondent, on request, at respondent's expense. Each sample should be marked with respondent's name and address, and requisition number. Do not enclose in or attach offer to sample.
- s. UNTS will not be bound by any oral statement, or representation contrary to the written specifications of this Response.
- t. Manufacturer's standard warranty shall apply unless otherwise stated in the Response.

1.2 Tie Responses: In case of tie bids, any award will be made in accordance with TAC, Title 34, as amended.

1.3 Delivery:

- a. Show number of days required to place material at UNTS designated location under normal conditions. Failure to state delivery time obligates respondent to deliver in 14 calendar days. Unrealistic delivery promises may cause offer to be disregarded.
- b. If delay is foreseen, respondent shall give written notice to UNTS. Vendor must keep UNTS advised at all times of status of order. Default in promised delivery (without accepted reasons) or failure to meet specifications authorizes UNTS to purchase supplies elsewhere and charge full increase, if any, in cost and handling to defaulting vendor.
- c. No substitutions permitted without written approval of UNTS Business Service Center Purchasing
- d. Delivery shall be made during normal UNTS working hours only, unless prior approval has been obtained from UNTS Business Service Center Purchasing

1.4 Inspection and Tests: All goods will be subject to inspection and test by UNTS. Authorized UNTS personnel shall have access to supplier's place of business for the purpose of inspecting merchandise. Tests shall be performed on samples submitted with the response or on samples taken from regular shipment. All costs shall be borne by the respondent in the event products tested fail to meet or exceed all conditions and requirements in this Solicitation. Goods delivered and rejected in whole or in part may, at UNTS option, be returned to the respondent or held for disposition at respondent's expense. Latent defects may result in revocation of acceptance.

1.5 Award of Contract: A response to this Solicitation is an offer to contract based upon the terms, conditions and specifications contained herein. Responses do not become contracts until they are accepted through a UNTS purchase order. The contract shall be governed, construed, and interpreted under the laws of the State of Texas as the same may be amended from time to time. The Education Code 51.9335 shall be considered in making an award when specified. Venue for any suit filed against the UNTS shall be subject to the mandatory venue statute set forth in § 105.151 of the Texas Education Code.

- a. An award is made to the vendor submitting the lowest and/or best value response conforming to this specification. To determine the lowest and/or best value response, in addition to price, BEST VALUE may be considered by some of the criteria listed below:
 - i. The quality, availability, and adaptability of the supplies, materials, equipment, or contractual services to the particular use required;

ATTACHMENT "A"
TERMS AND CONDITIONS

- ii. The purchase price;
- iii. The reputation of the vendor and of the vendor's goods or services;
- iv. The quality of the vendor's goods or services;
- v. The extent to which the goods or services meet UNTS needs;
- vi. The vendor's past relationship with UNTS and its component institutions;
- vii. The impact on the ability of UNTS to comply with laws and rules relating to historically under utilized business;
- viii. The total long-term cost to UNTS of acquiring the vendor's goods or services;
- ix. And any other relevant factor that a private business entity would consider in selecting a vendor.

- b. **DEBTS TO THE STATE:** Any party indebted to the State of Texas or any party who is more than 30 days delinquent for Child Support is not entitled to payment on this purchase order or any accompanying contract
- c. If a "best offer" vendor shows not to be in "good standing" this agency may reject the response and award to the next best response.
- d. The UNTS reserves the right to award the entire contract to a single Vendor or to award different components to different Vendors, whichever UNTS, at its sole discretion, determines to be in its overall best interest, as solely determined by the responsible parties of UNTS.
- e. Delivery may be a factor in this award.

1.6 Payment Terms: UNTS shall be billed in accordance with Chapter 2251 of the Texas Government Code and payment shall be made no later than thirty days following the latter of (i) delivery of the goods or completion of the services and (ii) delivery of an invoice to Customer; and (c) interest, if any, on past due payments shall accrue and be paid in accordance with Chapter 2251 of the Texas Government Code. Payee must be in good standing, not indebted to the State of Texas, and current on all taxes owed to the State of Texas for payment to occur. Invoices and any required supporting documents must be presented to: UNTS Business Service Center-Payment Services; 1112 Dallas Dr. Ste. 400, Denton, TX 76205 or electronically submitted to invoices@untsystem.edu

- a. Payment on any contract will be withheld from Respondent if Respondent is determined to be more than 30 days delinquent for Child Support.
- b. Successful respondent shall be responsible for referencing the purchase order number(s) resulting from this response on any invoice(s) packing list(s), correspondence etc. Invoicing must coincide to prices quoted either on a unit, hourly, etc. basis.
- c. **DISQUALIFICATION:** Response is subject to disqualification if respondent provides revisions and/or exclusions to the terms and conditions listed in this solicitation that the UNTS is limited by law from accepting (i.e. offers with the laws of a State other than Texas), requirements for prepayment not defined in or allowed for in this Solicitation, limitations on remedies, any revision to stated terms and conditions of the Solicitation, etc.

1.7 Patents and Copyrights: The vendor agrees to protect UNTS from claims involving infringement of patents or copyrights.

1.8 Vendor Assignments: Vendor hereby assigns to UNTS any and all claims for overcharges associated with this contract arising under the antitrust laws of the United States 15 U.S.C.A. Section 1, et seq. (1973), and the antitrust laws of the State of Texas, Tex. Bus. & Comm. Code Ann Sec. 15.01, et seq. (1967). Inquiries pertaining to Solicitations must give solicitation number, codes, and opening date.

1.9 Respondent Affirmation: Signing this response with a false statement is a material breach of contract and shall void the submitted response or any resulting contracts, and the respondent shall be removed from all bidder lists. By signature provided below, the respondent hereby affirms and certifies that:

- a. The respondent has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted response.
- b. The respondent is not currently delinquent in the payment of any franchise tax owed the State of Texas.
- c. Neither the respondent nor the firm, corporation, partnership, or institution represented by the respondent, or anyone acting for such firm, corporation or institution has violated the antitrust laws of this State or the Federal Antitrust Laws, nor communicated directly or indirectly the offer made to any competitor or any other person engaged in such line of business.
- d. Under Section 2155.004 Government Code, the vendor certifies that the individual or business entity named in this bid or contract is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if the certification is inaccurate.
- e. Under Section 231.006(d), Family Code (relating to child support), the respondent certifies that the individual or business entity named in this offer is not ineligible to receive the specified payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.
- f. Respondent agrees that any payments due under this contract may be applied towards any debt, including but not limited to delinquent taxes and child support that is owed to the State of Texas.
- g. Respondent agrees to comply with Government Code 2155.4441, pertaining to service contract use of products produced in the State of Texas.
- h. Respondent understands that acceptance of funds under this contract acts as acceptance of the authority of the State Auditor's Office, or any successor agency, to conduct an audit or investigation in connection with those funds. Respondent further agrees to cooperate fully with the State Auditor's Office or its successor in the conduct of the audit or investigation, including providing all records requested. Respondent will ensure that this clause concerning the authority to audit funds received indirectly by subcontractors through bidder and the requirement to cooperate is included in any subcontract it awards
- i. Respondent certifies that they are in compliance with Section 669.003 of the Government Code, relating to contracting with the executive head of a State agency. If Section 669.003 applies, respondent will complete the following information in order for the response to be evaluated:

Name of former Executive: _____

Name of State Agency: _____

Date of separation from State agency: _____

Position with respondent: _____ Date of employment with respondent: _____

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- 1.10 Pursuant to Section 231.006 of the Family Code**, response must include names and Social Security Numbers of each person with at least 25% ownership of the business entity submitting the response. Vendors that have pre-registered this information on the Texas Comptroller of Public Accounts Centralized Master Bidders List (CMBL) have satisfied this requirement. If not pre-registered, list the name and social security numbers for each person. Otherwise, this information must be provided prior to contract award.
- 1.11 Note to Vendors: Any terms and conditions attached to any response will not be considered unless specifically referred to on the Solicitation and may result in disqualification of the response.**
- a. **Dispute Resolution:** Chapter 2260 of the Texas Government Code establishes a dispute resolution process for contracts involving goods, services, and certain types of projects. If Chapter 2260 applies to this Purchase Order, then the statutory dispute resolution process must be used by the vendor to attempt to resolve all of its disputes arising under this Purchase Order.
- i. Any contractual claim of respondent that the parties cannot resolve in the ordinary course of business shall be submitted to the negotiation process provided in Chapter 2260, subchapter B, of the Texas Government Code. To initiate the process, respondent shall submit written notice, as required by subchapter B, to Carolyn Cross, UNTS Business Service Center Director of Purchasing.. Said notice shall specifically state that the provisions of Chapter 2260, of subchapter B, are being invoked. Compliance by respondent with subchapter B is a condition precedent to the filing of a contested case proceeding under Chapter 2260, subchapter C, of the Texas Government Code.
- ii. The contested case process provided in Chapter 2260, subchapter C, of the Texas Government Code is respondent's sole and exclusive process for seeking a remedy for any and all alleged contractual claims if the parties are unable to resolve their disputes under subparagraph (A) of this paragraph.
- iii. Compliance with the contested case process provided in subchapter C is a condition precedent to seeking consent to sue from the Legislature under Ch. 107 of the Civil Practices and Remedies Code. Neither the execution of this contract by the UNTS and its component institutions nor any conduct of any representative of the UNTS and its component institutions hereafter shall be considered a waiver of sovereign immunity to suit. The submission, processing, and resolution of respondent's claim is governed by the published Rules adopted by the Texas Office of the Attorney General pursuant to Chapter 2260, as currently effective, hereinafter enacted or subsequently amended. Neither the occurrence of an event nor the pendency of a claim constitutes grounds for the suspension of performance by respondent, in whole or in part. The designated individual responsible on behalf of the UNTS for examining any claim or counterclaim and conducting any negotiations related thereto, as required under 2260.052 of H.B. 826 of the 76th Texas Legislature shall be Carolyn Cross, UNTS Business Service Center Director of Purchasing.iv. Venue and service of process for suits involving UNTS is governed by Section 105.151 of the Texas Education Code.
- b. **Excess Obligations Prohibited:** The Texas Constitution (Article XVI, Section 10) prohibits obligators beyond the current appropriations, which UNTS applies annually. Any Purchase Order may be canceled at any time without penalty if legislative and/or UNTS funds are not appropriated for goods or services obligated on any Purchase Order beyond the current fiscal year (September 1 through August 31 of any given year.)
- d. **Cancellation:** Items or orders may be canceled without the consent of the vendor due to failure to fulfill their contractual obligations. If cancellation is requested by UNT System for some other reason through no fault of the vendor, the vendor will be contacted. UNTS reserves the right to cancel this contract upon 30 days written notice to the contractor. The contractor must request and secure in writing the approval of the Purchasing Department to be released from this contract or any portion thereof should conditions unforeseeable occur.
- e. **Miscellaneous:** The laws of the State of Texas shall prevail including the Public Information Act. Any order is not confidential. All transactions associated with this Order may be subject to audit. Vendor by accepting this Order agrees to allow access to all records regarding this transaction upon written request by the UNTS Internal Auditors and/or UNTSBusiness Service Center Purchasing.
- f. **RESPONSE RESULTS:** It is not the policy of UNTS to furnish results over the telephone. Bid tabulations may be requested at <http://bsc.untsystem.edu/content/bid-inquiry>.
- g. **Centralized Master Bidders List ("CBML"):** The UNTS utilizes the Texas Comptroller of Public Accounts Centralized Master Bidders List (CMBL) for Historically Underutilized Businesses (HUB). The CMBL is located at: <http://www.window.state.tx.us/procurement/>. Non-HUB respondents are identified from various sources including the CBML.
- 1.12 Indemnification: Vendor further agrees to indemnify, defend, and hold harmless the UNTS, its Board of Regents, officers and employees, from and against any and all claims, actions, suits, demands, proceedings costs, liability, injuries, damages or allegations of such brought by an act or omission of vendor or vendor's employees and/or subcontractors or due to vendor's product or services. This indemnification shall include but not be limited to acts or omissions related to environmental hazards.**
- 1.14** The parties understand and agree that any purchase order/contract may be subject to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), the administrative regulations and/or guidance which have issued or may in the future be issued pursuant to HIPAA, including, but not limited to, the Department of Health and Human Services regulations on privacy and security, and Texas state laws pertaining to medical privacy (collectively, "Privacy Laws"). Vendor agrees to comply with all Privacy Laws that are applicable to this purchase order/contract and to negotiate in good faith to execute any amendment to this purchase order/contract that s required for the terms of this purchase order/contract to comply with applicable Privacy Laws. In the event the parties are unable to agree on the terms of an amendment pursuant to this paragraph within thirty (30) days of the date the other party
- 1.15** Vendor hereby certifies that the network hardware or software, as applicable, procured or leased under this contract, has undergone independent certification testing for known and relevant vulnerabilities in accordance with §2059.060, Texas Government Code.
- 1.16 Exemption Declaration:** Pursuant to the provisions of the Texas Government Code, Chapter 2157.005(d) this requirement is for the purchase of a wireless communication device to be used by peace officers, firefighters, and other emergency response personnel to respond to a public safety emergency. .
- 1.17 Important Notice:** Any purchase order may be funded wholly or partially with federal funds subject to the American Recovery and Reinvestment Act of 2009 (ARRA). The vendor shall comply with all applicable provisions of ARRA, which may include, but are not limited to the provision of Division A, Titles XV and XVI (e.g., audit provisions, whistleblower protection, and preferences for American products).
- 1.18 Federal Funds:** All procurements of supplies equipment, and services utilizing Federal Funds (e.g. Federal Grant or Contract) shall be made in accordance with all applicable federal rules and regulations: Federal Acquisition Regulations (FAR), Federal Office of Management and Budget (OMB)Educational Institutions (even if part of a State or local government) follow: OMB A-21 for cost principles, A-110 for

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administrative requirements, and A-133 for audit requirements. All procurement requirements contained in the above referenced circulars are incorporated herein by reference. By signing this solicitation document vendor certifies that vendor is in compliance with OMB A110 and that vendor is not on the Debarred Bidders List.

- 1.19 Suspension, Debarment, and Terrorism:** Vendor further certifies that the vendor and its principals are eligible to participate in this transaction and have not been subjected to suspension, debarment, or similar ineligibility determined by any federal, state or local governmental entity and that vendor is in compliance with the State of Texas statutes and rules relating to procurement and that vendor is not listed on the federal government's terrorism watch list as described in executive order 13224. Entities ineligible for federal procurement are listed at <http://www.epls.gov>

ATTACHMENT “B”

HUB SUBCONTRACTING PLAN



HUB SUBCONTRACTING PLAN (HSP)

In accordance with Texas Gov't Code §2161.252, the contracting agency has determined that subcontracting opportunities are probable under this contract. Therefore, all respondents, including State of Texas certified Historically Underutilized Businesses (HUBs) must complete and submit this State of Texas HUB Subcontracting Plan (HSP) with their response to the bid requisition (solicitation).

NOTE: Responses that do not include a completed HSP shall be rejected pursuant to Texas Gov't Code §2161.252(b).

The HUB Program promotes equal business opportunities for economically disadvantaged persons to contract with the State of Texas in accordance with the goals specified in the 2009 State of Texas Disparity Study. The statewide HUB goals defined in 34 Texas Administrative Code (TAC) §20.13 are:

- 11.2 percent for heavy construction other than building contracts,
- 21.1 percent for all building construction, including general contractors and operative builders contracts,
- 32.7 percent for all special trade construction contracts,
- 23.6 percent for professional services contracts,
- 24.6 percent for all other services contracts, and
- 21 percent for commodities contracts.

- - Agency Special Instructions/Additional Requirements - -

In accordance with 34 TAC §20.14(d)(1)(D)(iii), a respondent (prime contractor) may demonstrate good faith effort to utilize Texas certified HUBs for its subcontracting opportunities if the total value of the respondent's subcontracts with Texas certified HUBs meets or exceeds the statewide HUB goal or the agency specific HUB goal, whichever is higher. When a respondent uses this method to demonstrate good faith effort, the respondent must identify the HUBs with which it will subcontract. If using existing contracts with Texas certified HUBs to satisfy this requirement, only contracts that have been in place for five years or less shall qualify for meeting the HUB goal. This limitation is designed to encourage vendor rotation as recommended by the 2009 Texas Disparity Study.

SECTION 1 RESPONDENT AND REQUISITION INFORMATION

- a. Respondent (Company) Name: _____ State of Texas VID #: _____
 Point of Contact: _____ Phone #: _____
 E-mail Address: _____ Fax #: _____
- b. Is your company a State of Texas certified HUB? - Yes - No
- c. Requisition #: _____ Bid Open Date: _____

(mm/dd/yyyy)

Enter your company's name here: _____

Requisition #: _____

SECTION 2 SUBCONTRACTING INTENTIONS

After dividing the contract work into reasonable lots or portions to the extent consistent with prudent industry practices, and taking into consideration the scope of work to be performed under the proposed contract, including all potential subcontracting opportunities, the respondent must determine what portions of work, including goods and services, will be subcontracted. Note: In accordance with 34 TAC §20.11., an "Subcontractor" means a person who contracts with a prime contractor to work, to supply commodities, or to contribute toward completing work for a governmental entity.

a. Check the appropriate box (Yes or No) that identifies your subcontracting intentions:

- **Yes**, I will be subcontracting portions of the contract. (If **Yes**, complete Item b, of this SECTION and continue to Item c of this SECTION.)
- **No**, I will not be subcontracting any portion of the contract, and I will be fulfilling the entire contract with my own resources. (If **No**, continue to SECTION 3 and SECTION 4.)

b. List all the portions of work (subcontracting opportunities) you will subcontract. Also, based on the total value of the contract, identify the percentages of the contract you expect to award to Texas certified HUBs, and the percentage of the contract you expect to award to vendors that are not a Texas certified HUB (i.e., Non-HUB).

Item #	Subcontracting Opportunity Description	HUBs		Non-HUBs
		Percentage of the contract expected to be subcontracted to HUBs with which you have a <u>continuous contract*</u> in place for five (5) years or less.	Percentage of the contract expected to be subcontracted to HUBs with which you have a <u>continuous contract*</u> in place for more than five (5) years.	Percentage of the contract expected to be subcontracted to non-HUBs .
1		%	%	%
2		%	%	%
3		%	%	%
4		%	%	%
5		%	%	%
6		%	%	%
7		%	%	%
8		%	%	%
9		%	%	%
10		%	%	%
11		%	%	%
12		%	%	%
13		%	%	%
14		%	%	%
15		%	%	%
Aggregate percentages of the contract expected to be subcontracted:		%	%	%

(Note: If you have more than fifteen subcontracting opportunities, a continuation sheet is available online at <http://window.state.tx.us/procurement/prog/hub/hub-subcontracting-plan/>)

c. Check the appropriate box (Yes or No) that indicates whether you will be using only Texas certified HUBs to perform all of the subcontracting opportunities you listed in SECTION 2, Item b.

- **Yes** (If **Yes**, continue to SECTION 4 **and** complete an "HSP Good Faith Effort - Method A (Attachment A)" for each of the subcontracting opportunities you listed.)
- **No** (If **No**, continue to Item d, of this SECTION.)

d. Check the appropriate box (Yes or No) that indicates whether the **aggregate expected percentage** of the contract you will subcontract with Texas certified HUBs with which you have a continuous contract* in place with for five (5) years or less **meets or exceeds** the HUB goal the contracting agency identified on page 1 in the "Agency Special Instructions/Additional Requirements".

- **Yes** (If **Yes**, continue to SECTION 4 **and** complete an "HSP Good Faith Effort - Method A (Attachment A)" for each of the subcontracting opportunities you listed.)
- **No** (If **No**, continue to SECTION 4 **and** complete an "HSP Good Faith Effort - Method B (Attachment B)" for each of the subcontracting opportunities you listed.)

**Continuous Contract: Any existing written agreement (including any renewals that are exercised) between a prime contractor and a HUB vendor, where the HUB vendor provides the prime contractor with goods or service under the same contract for a specified period of time. The frequency the HUB vendor is utilized or paid during the term of the contract is not relevant to whether the contract is considered continuous. Two or more contracts that run concurrently or overlap one another for different periods of time are considered by CPA to be individual contracts rather than renewals or extensions to the original contract. In such situations the prime contractor and HUB vendor are entering (have entered) into "new" contracts.*

Enter your company's name here: _____

Requisition #: _____

SECTION 2 SUBCONTRACTING INTENTIONS (CONTINUATION SHEET)

a. This page can be used as a continuation sheet to the HSP Form’s page 2, SECTION 2, Item b. Continue listing the portions of work (subcontracting opportunities) you will subcontract. Also, based on the total value of the contract, identify the percentages of the contract you expect to award to Texas certified HUBs, and the percentage of the contract you expect to award to vendors that are not a Texas certified HUB (i.e., Non-HUB).

Item #	Subcontracting Opportunity Description	HUBs		Non-HUBs
		Percentage of the contract expected to be subcontracted to HUBs with which you have a <u>continuous contract*</u> in place for <u>five (5) years or less.</u>	Percentage of the contract expected to be subcontracted to HUBs with which you have a <u>continuous contract*</u> in place for <u>more than five (5) years.</u>	Percentage of the contract expected to be subcontracted to non-HUBs .
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
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		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
		%	%	%
Aggregate percentages of the contract expected to be subcontracted:		%	%	%

*Continuous Contract: Any existing written agreement (including any renewals that are exercised) between a prime contractor and a HUB vendor, where the HUB vendor provides the prime contractor with goods or service under the same contract for a specified period of time. The frequency the HUB vendor is utilized or paid during the term of the contract is not relevant to whether the contract is considered continuous. Two or more contracts that run concurrently or overlap one another for different periods of time are considered by CPA to be individual contracts rather than renewals or extensions to the original contract. In such situations the prime contractor and HUB vendor are entering (have entered) into "new" contracts.

SECTION 3 SELF PERFORMING JUSTIFICATION (If you responded "No" to SECTION 2, Item a, you must complete this SECTION and continue to SECTION 4.)

Check the appropriate box (Yes or No) that indicates whether your response/proposal contains an explanation demonstrating how your company will fulfill the entire contract with its own resources.

- Yes (If *Yes*, in the space provided below **list the specific page(s)/section(s)** of your proposal which explains how your company will perform the entire contract with its own equipment, supplies, materials and/or employees.)
- No (If *No*, in the space provided below **explain how** your company will perform the entire contract with its own equipment, supplies, materials and/or employees.)

SECTION 4 AFFIRMATION

As evidenced by my signature below, I affirm that I am an authorized representative of the respondent listed in SECTION 1, and that the information and supporting documentation submitted with the HSP is true and correct. Respondent understands and agrees that, if awarded any portion of the requisition:

- The respondent will provide notice as soon as practical to **all** the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor for the awarded contract. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.
- The respondent must submit monthly compliance reports (Prime Contractor Progress Assessment Report – PAR) to the contracting agency, verifying its compliance with the HSP, including the use of and expenditures made to its subcontractors (HUBs and Non-HUBs). (The PAR is available at <http://www.window.state.tx.us/procurement/prog/hub/hub-forms/progressassessmentrpt.xls>).
- The respondent must seek approval from the contracting agency prior to making any modifications to its HSP, including the hiring of additional or different subcontractors and the termination of a subcontractor the respondent identified in its HSP. If the HSP is modified without the contracting agency's prior approval, respondent may be subject to any and all enforcement remedies available under the contract or otherwise available by law, up to and including debarment from all state contracting.
- The respondent must, upon request, allow the contracting agency to perform on-site reviews of the company's headquarters and/or work-site where services are being performed and must provide documentation regarding staffing and other resources.

 Signature Printed Name Title Date
(mm/dd/yyyy)

- REMINDER:**
- If you responded "Yes" to SECTION 2, Items c or d, you must complete an "HSP Good Faith Effort - Method A (Attachment A)" for each of the subcontracting opportunities you listed in SECTION 2, Item b.
 - If you responded "No" SECTION 2, Items c and d, you must complete an "HSP Good Faith Effort - Method B (Attachment B)" for each of the subcontracting opportunities you listed in SECTION 2, Item b.

HSP Good Faith Effort - Method A (Attachment A)

Enter your company's name here: _____ Requisition #: _____

IMPORTANT: If you responded "Yes" to SECTION 2, Items c or d of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method A (Attachment A)" for each of the subcontracting opportunities you listed in SECTION 2, Item b of the completed HSP form. You may photo-copy this page or download the form at <http://www.window.state.tx.us/procurement/prog/hub/hub-forms/HUBSubcontractingPlanAttachment-A.doc>

SECTION A-1 SUBCONTRACTING OPPORTUNITY

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing this attachment.

Item #: _____ Description: _____

SECTION A-2 SUBCONTRACTOR SELECTION

List the subcontractor(s) you selected to perform the subcontracting opportunity you listed above in SECTION A-1. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB.

Company Name	Texas certified HUB <input type="checkbox"/> - Yes <input type="checkbox"/> - No	VID # <small>(Required if Texas certified HUB)</small>	Approximate Dollar Amount	Expected Percentage of Contract
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
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	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
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	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to all the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.

HSP Good Faith Effort - Method B (Attachment B)

Enter your company's name here: _____	Requisition #: _____
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IMPORTANT: If you responded "No" to SECTION 2, Items c and d of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method B (Attachment B)" for each of the subcontracting opportunities you listed in SECTION 2, Item b of the completed HSP form. You may photo-copy this page or download the form at <http://www.window.state.tx.us/procurement/prog/hub/hub-forms/HUBSubcontractingPlanAttachment-B.doc>

SECTION B-1 SUBCONTRACTING OPPORTUNITY

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing this attachment.

Item #: _____ Description: _____

SECTION B-2 MENTOR PROTÉGÉ PROGRAM

If respondent is participating as a Mentor in a State of Texas Mentor Protégé Program, submitting its Protégé (Protégé must be a State of Texas certified HUB) as a subcontractor to perform the subcontracting opportunity listed in SECTION B-1, constitutes a good faith effort to subcontract with a Texas certified HUB towards that specific portion of work.

Check the appropriate box (Yes or No) that indicates whether you will be subcontracting the portion of work you listed in SECTION B-1 to your Protégé.

- Yes (If Yes, to continue to SECTION B-4.)
- No / Not Applicable (If No or Not Applicable, continue to SECTION B-3 and SECTION B-4.)

SECTION B-3 NOTIFICATION OF SUBCONTRACTING OPPORTUNITY

When completing this section you MUST comply with items a, b, c and d, thereby demonstrating your Good Faith Effort of having notified Texas certified HUBs and minority or women trade organizations or development centers about the subcontracting opportunity you listed in SECTION B-1. Your notice should include the scope of work, information regarding the location to review plans and specifications, bonding and insurance requirements, required qualifications, and identify a contact person. When sending notice of your subcontracting opportunity, you are encouraged to use the attached HUB Subcontracting Opportunity Notice form, which is also available online at <http://www.window.state.tx.us/procurement/prog/hub/hub-subcontracting-plan/>

Retain supporting documentation (i.e., certified letter, fax, e-mail) demonstrating evidence of your good faith effort to notify the Texas certified HUBs and minority or women trade organizations or development centers. Also, be mindful that a working day is considered a normal business day of a state agency, not including weekends, federal or state holidays, or days the agency is declared closed by its executive officer. The initial day the subcontracting opportunity notice is sent/provided to the HUBs and to the minority or women trade organizations or development centers is considered to be "day zero" and does not count as one of the seven (7) working days.

- a. Provide written notification of the subcontracting opportunity you listed in SECTION B-1, to three (3) or more Texas certified HUBs. Unless the contracting agency specified a different time period, you must allow the HUBs at least seven (7) working days to respond to the notice prior to your submitting your bid response to the contracting agency. When searching for Texas certified HUBs, ensure that you use the State of Texas' Centralized Master Bidders List (CMBL) and Historically Underutilized Business (HUB) Search directory located at <http://www.window.state.tx.us/procurement/cmb/cmbhub.html>. HUB Status code "A" signifies that the company is a Texas certified HUB.
- b. List the three (3) Texas certified HUBs you notified regarding the subcontracting opportunity you listed in SECTION B-1. Include the company's Vendor ID (VID) number, the date you sent notice to that company, and indicate whether it was responsive or non-responsive to your subcontracting opportunity notice.

Company Name	VID #	Date Notice Sent (mm/dd/yyyy)	Did the HUB Respond?
			<input type="checkbox"/> - Yes <input type="checkbox"/> - No
			<input type="checkbox"/> - Yes <input type="checkbox"/> - No
			<input type="checkbox"/> - Yes <input type="checkbox"/> - No

- c. Provide written notification of the subcontracting opportunity you listed in SECTION B-1 to two (2) or more minority or women trade organizations or development centers in Texas to assist in identifying potential HUBs by disseminating the subcontracting opportunity to their members/participants. Unless the contracting agency specified a different time period, you must provide your subcontracting opportunity notice to minority or women trade organizations or development centers at least seven (7) working days prior to submitting your bid response to the contracting agency. A list of trade organizations and development centers that have expressed an interest in receiving notices of subcontracting opportunities is available on the Statewide HUB Program's webpage at <http://www.window.state.tx.us/procurement/prog/hub/mwb-links-1/>
- d. List two (2) minority or women trade organizations or development centers you notified regarding the subcontracting opportunity you listed in SECTION B-1. Include the date when you sent notice to it and indicate if it accepted or rejected your notice.

Minority/Women Trade Organizations or Development Centers	Date Notice Sent (mm/dd/yyyy)	Was the Notice Accepted?
		<input type="checkbox"/> - Yes <input type="checkbox"/> - No
		<input type="checkbox"/> - Yes <input type="checkbox"/> - No

HSP Good Faith Effort - Method B (Attachment B) *Cont.*

Enter your company's name here: _____	Requisition #: _____
---------------------------------------	----------------------

SECTION B-4 SUBCONTRACTOR SELECTION

a. Enter the item number and description of the subcontracting opportunity for which you are completing this Attachment B continuation page.

Item #: _____ Description: _____

b. List the subcontractor(s) you selected to perform the subcontracting opportunity you listed in SECTION B-1. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB.

Company Name	Texas certified HUB	VID # <small>(Required if Texas certified HUB)</small>	Approximate Dollar Amount	Expected Percentage of Contract
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%
	<input type="checkbox"/> - Yes <input type="checkbox"/> - No		\$	%

c. If any of the subcontractors you have selected to perform the subcontracting opportunity you listed in SECTION B-1 is **not** a Texas certified HUB, provide written justification for your selection process (attach additional page if necessary):

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to **all** the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity it (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.



HUB Subcontracting Opportunity Notification Form

In accordance with Texas Gov't Code, Chapter 2161, each state agency that considers entering into a contract with an expected value of \$100,000 or more shall, before the agency solicits bids, proposals, offers, or other applicable expressions of interest, determine whether subcontracting opportunities are probable under the contract. The state agency I have identified below in Section B has determined that subcontracting opportunities are probable under the requisition to which my company will be responding.

34 Texas Administrative Code, §20.14 requires all respondents (prime contractors) bidding on the contract to provide notice of each of their subcontracting opportunities to at least three (3) Texas certified HUBs (who work within the respective industry applicable to the subcontracting opportunity), and allow the HUBs at least seven (7) working days to respond to the notice prior to the respondent submitting its bid response to the contracting agency. In addition, the respondent must provide notice of each of its subcontracting opportunities to two (2) or more minority or women trade organizations or development centers at least seven (7) working days prior to submitting its bid response to the contracting agency.

We respectfully request that vendors interested in bidding on the subcontracting opportunity scope of work identified in Section C, Item 2, reply no later than the date and time identified in Section C, Item 1. Submit your response to the point-of-contact referenced in Section A.

Section A	PRIME CONTRACTOR'S INFORMATION	
Company Name:	_____	State of Texas VID #: _____
Point-of-Contact:	_____	Phone #: _____
E-mail Address:	_____	Fax #: _____

Section B	CONTRACTING STATE AGENCY AND REQUISITION INFORMATION	
Agency Name:	_____	
Point-of-Contact:	_____	Phone #: _____
Requisition #:	_____	Bid Open Date: _____ <small>(mm/dd/yyyy)</small>

Section C	SUBCONTRACTING OPPORTUNITY RESPONSE DUE DATE, DESCRIPTION, REQUIREMENTS AND RELATED INFORMATION	
1. Potential Subcontractor's Bid Response Due Date:	<p>If you would like for our company to consider your company's bid for the subcontracting opportunity identified below in Item 2, we must receive your bid response no later than <input type="text" value="Select"/> Central Time on: _____ Date (mm/dd/yyyy)</p> <div style="border: 1px solid black; padding: 5px; font-size: small;"> <p><i>In accordance with 34 TAC §20.14, each notice of subcontracting opportunity shall be provided to at least three (3) Texas certified HUBs, and allow the HUBs at least seven (7) working days to respond to the notice prior to submitting our bid response to the contracting agency. In addition, we must provide the same notice to two (2) or more minority or women trade organizations or development centers at least seven (7) working days prior to submitting our bid response to the contracting agency.</i></p> <p><i>(A working day is considered a normal business day of a state agency, not including weekends, federal or state holidays, or days the agency is declared closed by its executive officer. The initial day the subcontracting opportunity notice is sent/provided to the HUBs and to the minority or women trade organizations or development centers is considered to be "day zero" and does not count as one of the seven (7) working days.)</i></p> </div>	
2. Subcontracting Opportunity Scope of Work:		
3. Required Qualifications: <input type="checkbox"/> - Not Applicable		
4. Bonding/Insurance Requirements: <input type="checkbox"/> - Not Applicable		
5. Location to review plans/specifications: <input type="checkbox"/> - Not Applicable		



HUB SUBCONTRACTING PLAN (HSP) QUICK CHECKLIST

While this HSP Quick Checklist is being provided to merely assist you in readily identifying the sections of the HSP form that you will need to complete, it is very important that you adhere to the instructions in the HSP form and instructions provided by the contracting agency.

- ❖ If you will be awarding all of the subcontracting work you have to offer under the contract to only Texas certified HUB vendors, complete:
 - Section 1 – Respondent and Requisition Information
 - Section 2 a. – Yes, I will be subcontracting portions of the contract
 - Section 2 b. – List all the portions of work you will subcontract, and indicate the percentage of the contract you expect to award to Texas certified HUB vendors
 - Section 2 c. – Yes
 - Section 4 – Affirmation
 - GFE Method A (Attachment A) – Complete an Attachment A for each of the subcontracting opportunities you listed in Section 2 b.

- ❖ If you will be subcontracting any portion of the contract to Texas certified HUB vendors and Non-HUB vendors, and the aggregate percentage of all the subcontracting work you will be awarding to the Texas certified HUB vendors with which you have a continuous contract* in place for five (5) years or less meets or exceeds the HUB Goal the contracting agency identified in the “Agency Special Instructions/Additional Requirements”, complete:
 - Section 1 – Respondent and Requisition Information
 - Section 2 a. – Yes, I will be subcontracting portions of the contract
 - Section 2 b. – List all the portions of work you will subcontract, and indicate the percentage of the contract you expect to award to Texas certified HUB vendors and Non-HUB vendors
 - Section 2 c. – No
 - Section 2 d. – Yes
 - Section 4 – Affirmation
 - GFE Method A (Attachment A) – Complete an Attachment A for each of the subcontracting opportunities you listed in Section 2 b.

- ❖ If you will be subcontracting any portion of the contract to Texas certified HUB vendors and Non-HUB vendors or only to Non-HUB vendors, and the aggregate percentage of all the subcontracting work you will be awarding to the Texas certified HUB vendors with which you have a continuous contract* in place for five (5) years or less does not meet or exceed the HUB Goal the contracting agency identified in the “Agency Special Instructions/Additional Requirements”, complete:
 - Section 1 – Respondent and Requisition Information
 - Section 2 a. – Yes, I will be subcontracting portions of the contract
 - Section 2 b. – List all the portions of work you will subcontract, and indicated the percentage of the contract you expect to award to Texas certified HUB vendors and Non-HUB vendors
 - Section 2 c. – No
 - Section 2 d. – No
 - Section 4 – Affirmation
 - GFE Method B (Attachment B) – Complete an Attachment B for each of the subcontracting opportunities you listed in Section 2 b.

- ❖ If you will not be subcontracting any portion of the contract and will be fulfilling the entire contract with your own resources, complete:
 - Section 1 – Respondent and Requisition Information
 - Section 2 a. – No, I will not be subcontracting any portion of the contract, and I will be fulfilling the entire contract with my own resources
 - Section 3 – Self Performing Justification
 - Section 4 – Affirmation

***Continuous Contract:** Any existing written agreement (including any renewals that are exercised) between a prime contractor and a HUB vendor, where the HUB vendor provides the prime contractor with goods or service under the same contract for a specified period of time. The frequency the HUB vendor is utilized or paid during the term of the contract is not relevant to whether the contract is considered continuous. Two or more contracts that run concurrently or overlap one another for different periods of time are considered by CPA to be individual contracts rather than renewals or extensions to the original contract. In such situations the prime contractor and HUB vendor are entering (have entered) into “new” contracts.

ATTACHMENT C

CONSTRUCTION DOCUMENTS

UNIVERSITY OF NORTH TEXAS

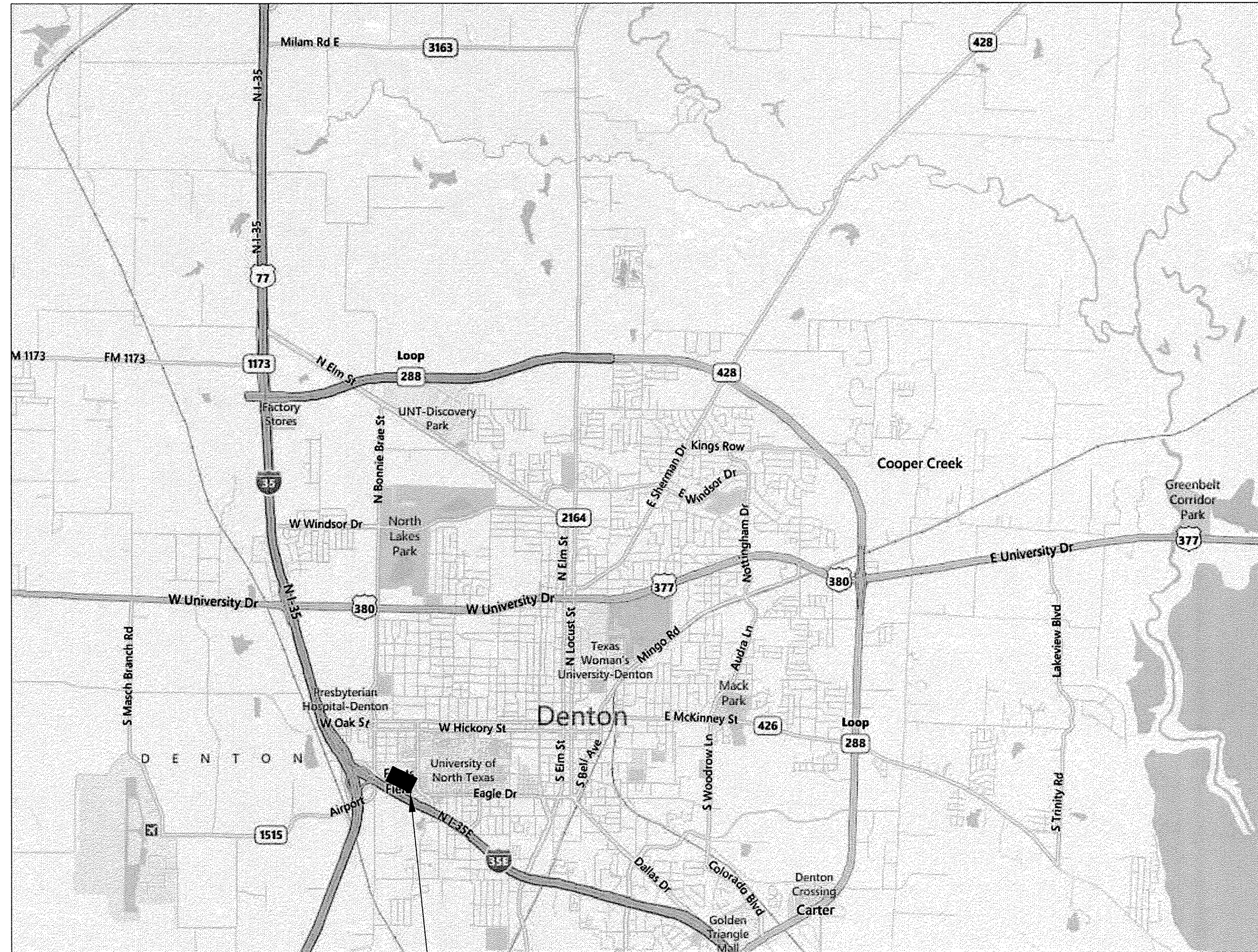
DENTON, TX

FOUTS FIELD

100% SUBMITTAL
MARCH 15, 2013

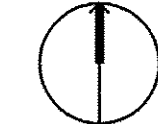
HUITT-ZOLIARS
Huitt-Zoliars, Inc. Engineering / Architecture
500 W. 7th St. Ste. 300 Fort Worth, Texas 76102
Phone (817)335-3000 Fax (817)335-1025

SHEET INDEX	
SHEET NO.	DESCRIPTION
G001	COVER SHEET
CIVIL	
C101	DEMOLITION PLAN
C201	SITE AND GRADING PLAN
C301	EROSION CONTROL PLAN
C501	CONSTRUCTION DETAILS
STRUCTURAL	
S101	OVERALL STADIUM DEMO PLAN
S401	ENLARGED DEMO PLAN & DETAILS
S701	EXISTING DRAWINGS CLARIFICATION ONLY
S702	EXISTING DRAWINGS CLARIFICATION ONLY
S703	EXISTING DRAWINGS CLARIFICATION ONLY
S704	EXISTING DRAWINGS CLARIFICATION ONLY
S705	EXISTING DRAWINGS CLARIFICATION ONLY
S706	EXISTING DRAWINGS CLARIFICATION ONLY
S707	EXISTING DRAWINGS CLARIFICATION ONLY
S708	EXISTING DRAWINGS CLARIFICATION ONLY
S709	EXISTING DRAWINGS CLARIFICATION ONLY
S710	EXISTING DRAWINGS CLARIFICATION ONLY
S711	EXISTING DRAWINGS CLARIFICATION ONLY
S712	EXISTING DRAWINGS CLARIFICATION ONLY
S713	EXISTING DRAWINGS CLARIFICATION ONLY
S714	EXISTING DRAWINGS CLARIFICATION ONLY
S715	EXISTING DRAWINGS CLARIFICATION ONLY
ELECTRICAL	
E101	DEMOLITION PLAN
E102	DEMOLITION PLAN - ALTERNATE 1
E201	SITE PLAN
E202	SITE PLAN - ALTERNATE 1
E501	DETAILS AND PANELBOARD SCHEDULE
E601	DEMOLITION DIAGRAMS
E602	ONE-LINE DIAGRAM



PROJECT LOCATION

TRUE/PLAN
NORTH



PROJECT LOCATION MAP

NOT TO SCALE

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

HUITT-ZOLIARS
Huitt-Zoliars, Inc.
500 West 7th Street, Suite 300
Fort Worth, Texas 76102-4728
Phone (817) 335-3000 Fax (817) 335-1025

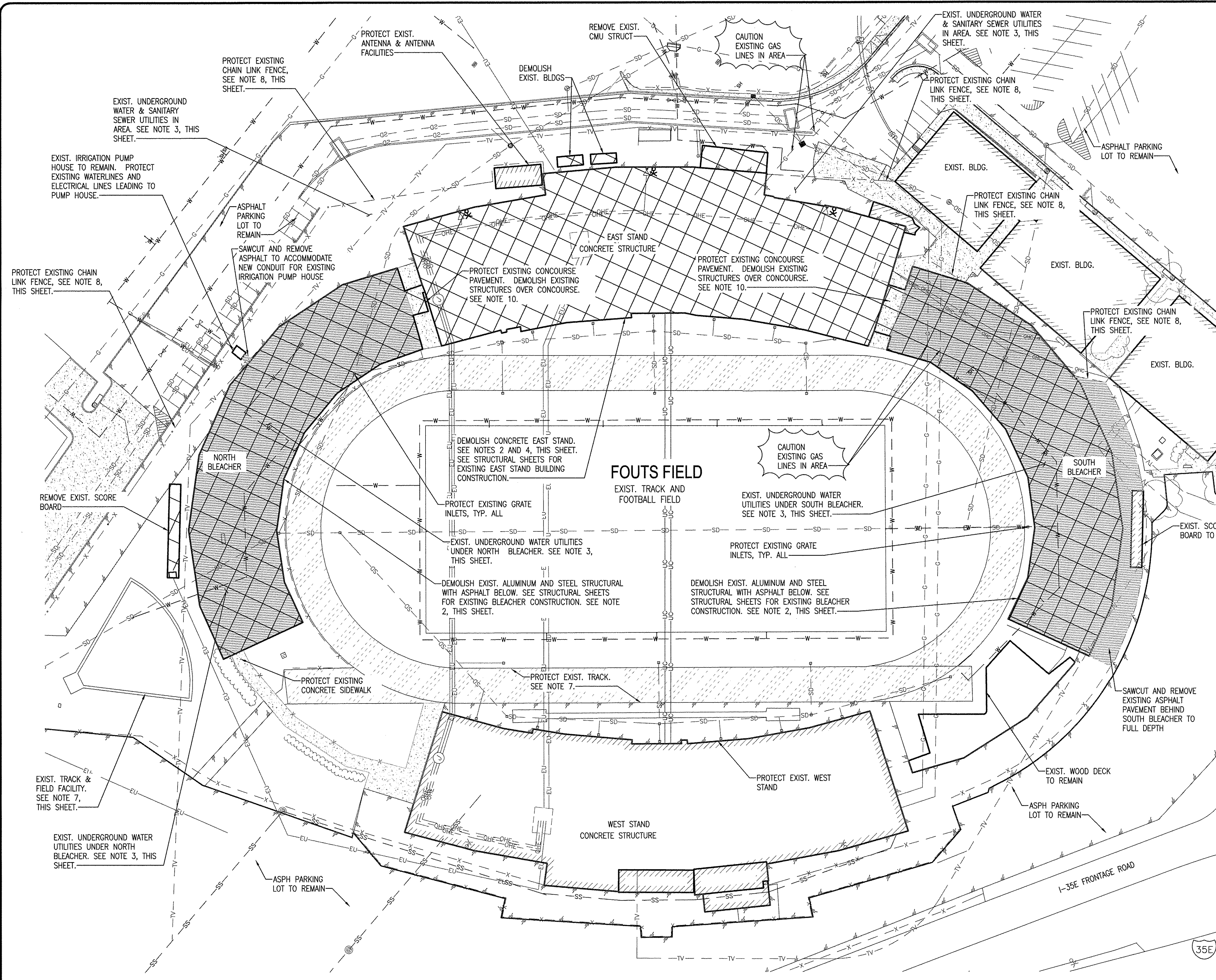
COVER

UNT FOUTS FIELD

UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203



DATE: 02/11/2013
DRAWN BY: LLM
DESIGNED BY: MTM
CHECKED BY: RLP
PROJ. NO. 03-1240-04
SHEET: G001



GENERAL NOTES

NOTE	DESCRIPTION
1.	ALL EXISTING DIMENSIONS, GRADES, TREE LINES, & UTILITIES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO DEMOLITION/CONSTRUCTION. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO THE TO DIMENSIONS, GRADES, & UTILITIES SHOWN INCORRECTLY IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
2.	ALL STRUCTURES LOCATED UNDER EAST STAND, NORTH AND SOUTH BLEACHERS SHALL BE REMOVED TO A MINIMUM OF 24" BELOW GRADE. ALL PAVEMENT SHALL BE REMOVED TO FULL DEPTH OR 24 INCHES, WHICHEVER IS GREATER.
3.	ALL UTILITY MAINS AND SERVICES SHALL BE PROTECTED FROM DAMAGE EXCEPT WHERE NOTED OTHERWISE.
4.	WATER AND SEWER SERVICES LINES SERVING RESTROOMS, CONCESSION STANDS AND MECHANICAL FIXTURES LOCATED UNDER THE EAST STAND SHALL BE EXPOSED BACK TO THE MAIN LINE. THE SERVICE LINE SHALL BE REMOVED TO 1 FT FROM THE MAIN, AND THE REMAINING LINE CAPPED. ANY DAMAGE TO THE MAIN LINE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. SEE DETAIL 1/C501.
5.	EXISTING TOPOGRAPHIC INFORMATION IS BASED ON AERIAL SURVEY FLOWN BY METROPOLITAN AERIAL SURVEYS ON DECEMBER 30, 1998 AND EXISTING RECORD DRAWINGS. THE CONTRACTOR SHALL ESTABLISH LOCAL DIMENSIONAL CONTROL FOR THE DURATION OF THE PROJECT.
6.	ALL PROJECT PHASING AND ONSITE STORAGE LOCATIONS SHALL BE COORDINATED WITH UNT SYSTEM PROJECT MANAGER.
7.	THE EXISTING TRACK AND FIELD FACILITIES SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION. DAMAGE DONE TO THE EXISTING TRACK SHALL BE REPAIRED TO LIKE NEW OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE.
8.	THE CONTRACTOR SHALL PROTECT THE EXISTING FENCE FROM DAMAGE DURING CONSTRUCTION, AND COORDINATE GATE ACCESS WITH THE UNT SYSTEM PROJECT MANAGER. ANY DAMAGE DONE TO THE FENCES AND GATES SHALL BE REPAIRED TO EXISTING OR BETTER CONDITION AT THE END OF CONSTRUCTION.
9.	THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SITE SECURITY DURING THE PROJECT.
10.	ANY DAMAGE DONE TO THE EXISTING CONCRETE PAVEMENT UNDER THE EXISTING CONCOURSES SHALL BE REPAIRED TO LIKE NEW CONDITION AT THE CONTRACTOR'S EXPENSE.

LEGEND

EXISTING	DESCRIPTION	DEMOLITION
SS	SANITARY SEWER	
SS	SS MANHOLE	
SS	SS CLEANOUT	
W	WATER MAIN & SERVICES	
SD	STORM DRAIN SYSTEM	
G	GAS LINE	
F	FIRE HYDRANT	
S	SPRINKLER HEAD	
WV	WATER VALVE	
WM	WATER METER	
SDM	STORM DRAIN MANHOLE	
GI	GRATE INLET	
GM	GAS METER	
EU	UNDERGROUND ELECTRIC	
GP	GOAL POST	
LP	LIGHT POLE	
TR	TRANSFORMER	
CTV	CABLE T.V.	
C	CURB	
EA	EDGE OF ASPHALT	
CP	CONCRETE PAVEMENT & SIDEWALK	
RT	RUNNING TRACK TO REMAIN	
STR	STRUCTURE	
AR	ASPHALT TO BE REMOVED	
S	SIGN	
T	TREE	
F	FENCE	
OE	OVERHEAD ELECTRIC	
OC	OVERHEAD COMMUNICATION	

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

HUIT-ZOLLARS
 HUIT-ZOLLARS, INC.
 Fort Worth, Texas 76102-4728
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-025

OVERALL DEMOLITION PLAN

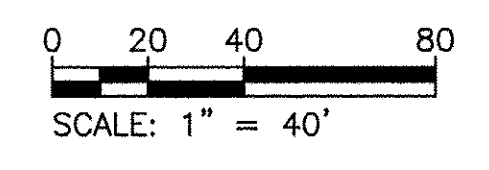
UNT FOUTS FIELD

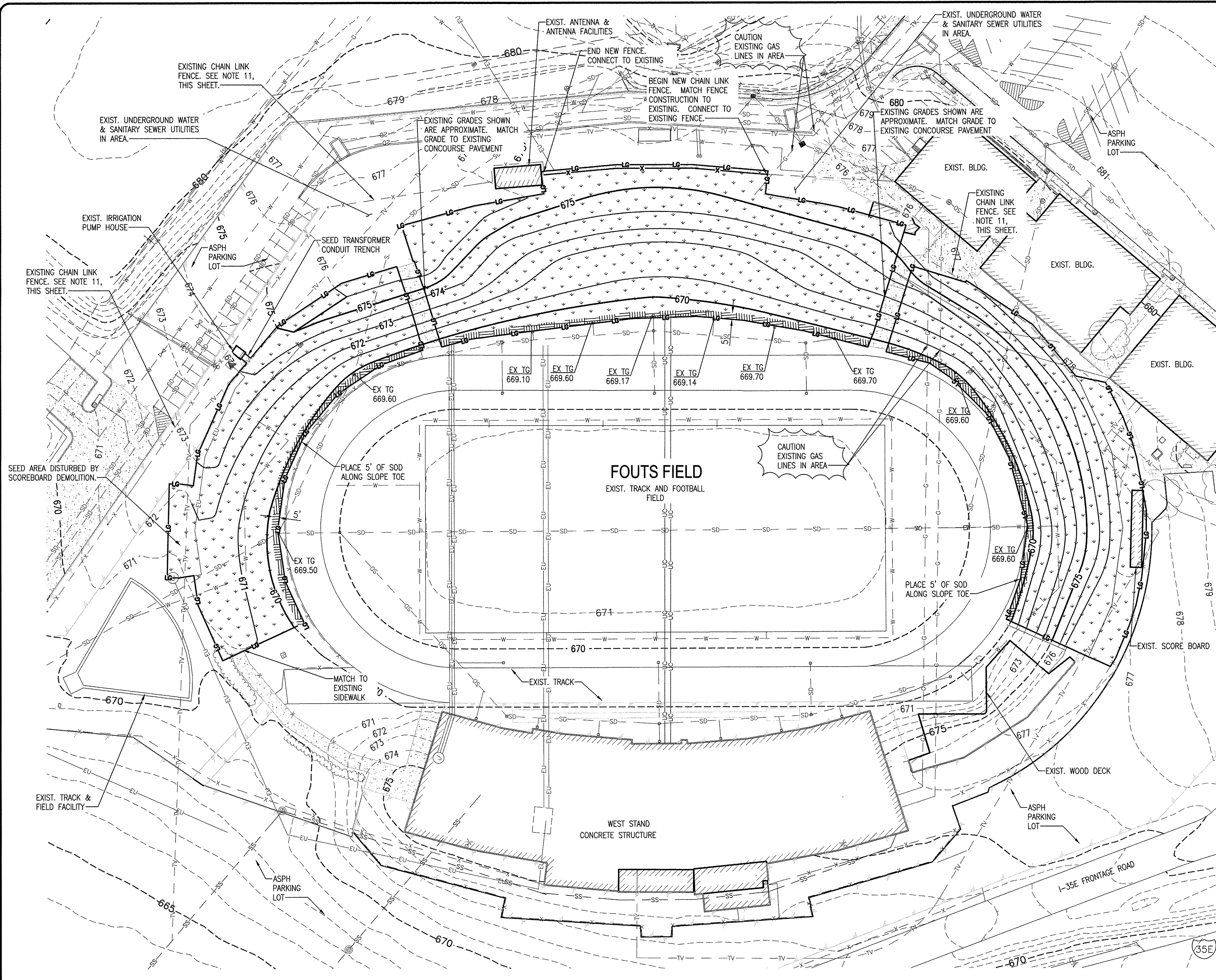
UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

Michael T. Mosier
 STATE OF TEXAS
 MICHAEL T. MOSIER
 110138
 LICENSED PROFESSIONAL ENGINEER
 03/14/2013
 Huit-Zollars, Inc.
 Firm Registration No. F-761

DATE:	02/04/2013
DRAWN BY:	LLM
DESIGNED BY:	MTM
CHECKED BY:	KRC
PROJ. NO.	03-1240-04
SHEET:	C101

1 OVERALL DEMOLITION PLAN
 SCALE: 1" = 40'





- ### GENERAL NOTES
- | NOTE | DESCRIPTION |
|------|---|
| 1. | ALL EXISTING DIMENSIONS, GRADES, TREE LINES, AND UTILITIES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO THE TO DIMENSIONS, GRADES, AND UTILITIES SHOWN INCORRECTLY IF SUCH NOTIFICATION HAS NOT BEEN GIVEN. |
| 2. | ALL DIMENSIONS ARE TO EDGE OF CONCRETE, EDGE OF ASPHALT, OR TOE OF GRADE UNLESS NOTED OTHERWISE. |
| 3. | EXISTING TOPOGRAPHIC INFORMATION IS BASED ON A AERIAL SURVEY PERFORMED BY METROPOLITAN AERIAL SURVEYS FLOW ON DECEMBER 30, 1998 AND RECORD DRAWINGS. CONTRACTOR SHALL COORDINATE WITH UNT SYSTEM PROJECT MANAGER FOR EXISTING BENCHMARKS. |
| 4. | PROVIDE 95% STANDARD PROCTOR DENSITY IN ALL EMBANKMENTS. |
| 5. | ALL DISTURBED AREAS SHALL BE SEEDDED OR SODDED TO STABILIZE THE AREA PRIOR TO REMOVAL OF EROSION CONTROL MEASURES. |
| 6. | THE CONTRACTOR SHALL NOTIFY DIGTSS 48 HOURS (2 WORKING DAYS) PRIOR TO THE START OF DEMOLITION, GRADING, TRENCHING OR PAVING OPERATIONS. |
| 7. | THE CONTRACTOR IS RESPONSIBLE FOR KEEPING ROADS ADJACENT TO PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION, AND SHALL MAINTAIN & CLEAN SURROUNDING SITE DAILY. |
| 8. | CONTRACTOR IS TO RECORD CONDITIONS OF SURROUNDING SITE PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES. DAMAGES CAUSED BY CONSTRUCTION WILL BE REPAIRED AT CONTRACTOR EXPENSE. THE CONTRACTOR SHALL PROVIDE VIDEO DOCUMENTATION OF THE EXISTING SITE CONDITIONS TO THE UNT SYSTEM PROJECT MANAGER ON CD PRIOR TO THE START OF CONSTRUCTION. |
| 9. | LANDSCAPED AREA SLOPES SHALL BE 1% MIN. TO 4:1 MAX. |
| 10. | NO TREES OR LANDSCAPING SHALL BE REMOVED OR DAMAGED. ANY TREE THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S COST. |
| 11. | ALL EXISTING CHAIN LINK FENCES AND GATES SHALL BE PROTECTED DURING CONSTRUCTION. ANY DAMAGE DONE TO THE FENCES DURING CONSTRUCTION SHALL BE RESTORE TO LIKE NEW OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL COORDINATE GATE ACCESS WITH UNT PROJECT MANAGER. |
| 12. | ADD SOD TO 5 FT FROM LIMIT OF GRADING ON TOE OF SLOPE. HYDROSEED REMAINDER OF EXPOSED SOILS. |
| 13. | IF TRENCH DEPTH EXCEED 5 FT IN DEPTH, THE CONTRACTOR SHALL PROVIDE THE OWNER AN ACCEPTABLE TRENCH SAFETY PLAN SIGNED & SEALED BY A PROFESSIONAL ENGINEER QUALIFIED TO DO SUCH WORK & REGISTERED IN THE STATE OF TEXAS. DEVICES USED TO PROVIDED TRENCH SAFETY SUCH AS TRENCH SHIELDS & SHORING SYSTEMS WILL BE LIKEWISE CERTIFIED BY A PROFESSIONAL REGISTERED IN THE STATE OF TEXAS OR BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE MANUFACTURE OF THE SHIELD |

LEGEND

EXISTING	DESCRIPTION	NEW
--- 680 ---	MAJOR CONTOUR	--- 680 ---
--- 679 ---	MINOR CONTOUR	--- 679 ---
- - - - -	TOE OF DITCH	
- - - - -	TOP OF DITCH	
[Symbol]	SODDED TURF	
[Symbol]	HYDROSEEDDED TURF	
[Symbol]	LIMIT OF GRADING	

DATE	03/15/13
REVISION	
NO.	0
100% SUBMITTAL	

HUIT-ZOLLARS
Huit-Zollars, Inc.
Fort Worth
500 West 7th Street, Suite 300
Fort Worth, Texas 76102-4728
Phone (817) 385-3000 Fax (817) 385-1025

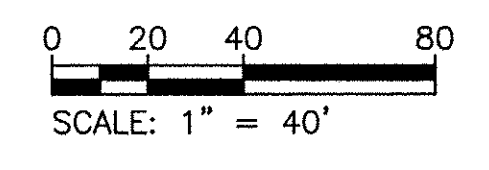
UNT FOUTS FIELD
UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

Michael T. Mosier
STATE OF TEXAS
MICHAEL T. MOSIER
110138
LICENSED PROFESSIONAL ENGINEER
3-14-2003
Huit-Zollars, Inc.
Firm Registration No. F-761

DATE:	02/06/2013
DRAWN BY:	LLM
DESIGNED BY:	MTM
CHECKED BY:	KRC
PROJ. NO.	03-1240-04
SHEET:	C201

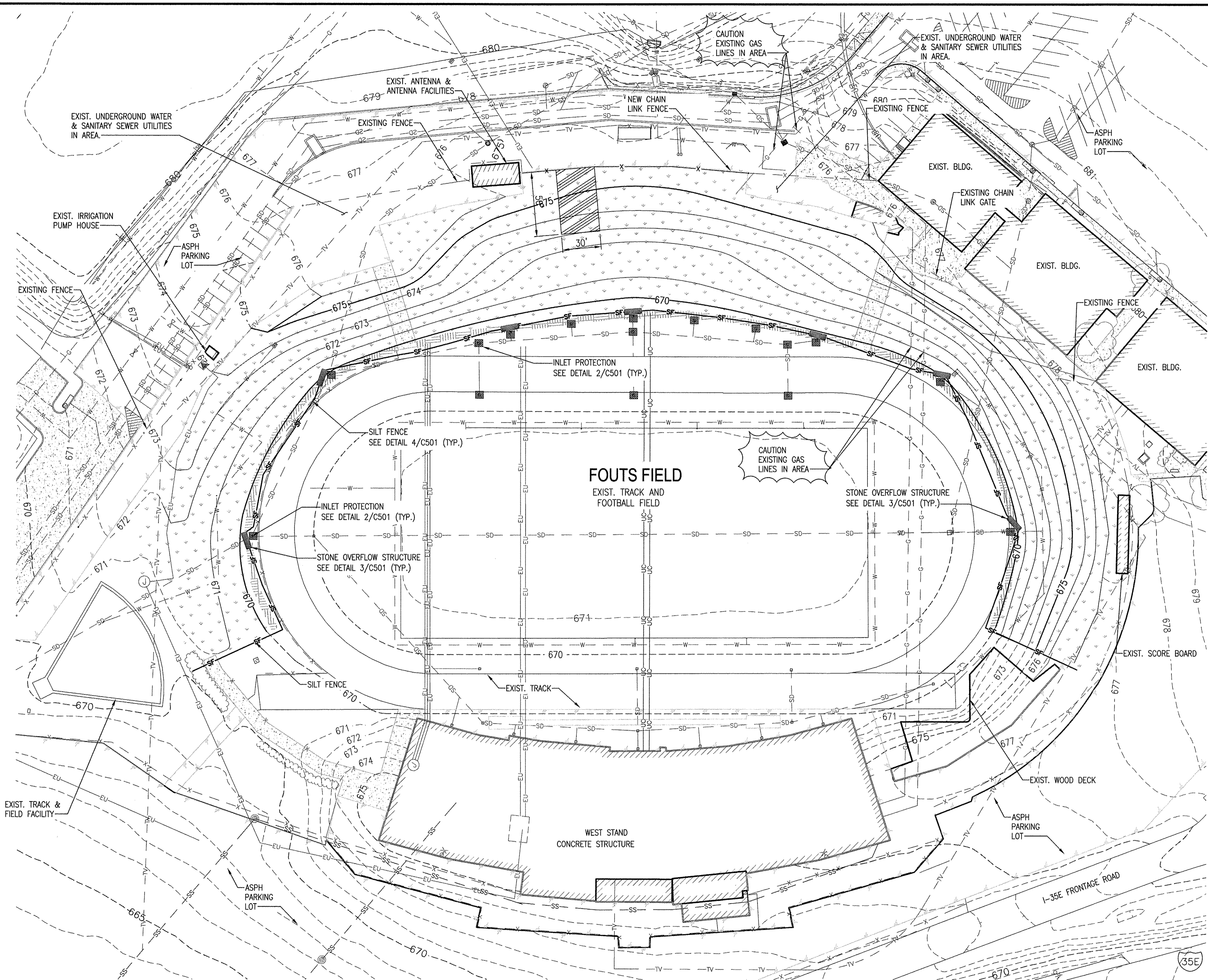
ABBREVIATIONS

NOTE	DESCRIPTION
1.	EX = EXISTING
2.	TG = TOP OF GRADE
3.	LG = LIMIT OF GRADING



1 OVERALL SITE & GRADING PLAN
C201 SCALE: 1" = 40'

IF THIS SHEET IS NOT 34" x 22", IT IS A REDUCED PRINT. SCALE ACCORDINGLY. FILE NAME: 124004_C201.dwg



LEGEND		
EXISTING	DESCRIPTION	NEW
	STABILIZED CONSTRUCTION ENTRANCE	
	SILT FENCE	
	INLET PROTECTION	
	STONE OVERFLOW STRUCTURE	

1 EROSION CONTROL PLAN
SCALE: 1" = 40'

EROSION CONTROL GENERAL NOTES

- | NOTE | DESCRIPTION |
|------|---|
| 1. | ALL EROSION CONTROL MEASURE SHALL MEET THE REQUIREMENTS OF THE INTEGRATED STORM WATER MANAGEMENT (ISWM) CONSTRUCTION CONTROLS MANUAL, LATEST EDITION. |
| 2. | MAINTAINING AND IMPLEMENTING THE SWPPP GUIDELINES IS THE RESPONSIBILITY OF THE CONTRACTOR. |
| 3. | EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGEWAYS OR BORROW DITCHES AT RISK OF THE CONTRACTOR. THE CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGE CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGEWAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES. |
| 4. | CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES, AS INDICATED ON THE PLANS AND AS FIELD CONDITIONS WARRANT, PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY. REPAIRS OR MODIFICATIONS TO THE MEASURES WILL BE MADE BY THE CONTRACTOR IF THE CONTROL MEASURES PROVE INEFFECTIVE OR IF ADDITIONAL CONTROL MEASURES ARE NECESSARY. |
| 5. | AT A MINIMUM, PERIMETER CONTROLS SUCH AS SILT FENCE SHALL BE INSTALLED AT ALL DOWN SLOPE BOUNDARIES AND AS WARRANTED WHERE PAVEMENT REMOVAL, UTILITY CONSTRUCTION, GRADING, OR OTHER CONSTRUCTION ACTIVITIES ARE TO BE PERFORMED. THE CONTRACTOR SHALL AT ALL TIMES TAKE SUCH MEASURES AS NECESSARY TO MINIMIZE OFF SITE TRACKING OR TRANSPORT OF SEDIMENT AND DEBRIS. |
| 6. | THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO ADJACENT PROPERTY OR TO RECEIVING WATERS CAUSED BY IMPROPERLY INSTALLED OR POORLY MAINTAINED EROSION CONTROL MEASURES. |
| 7. | THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ANY SILT DEPOSITS OR TRACKING BEYOND THE LIMITS OF CONSTRUCTION CAUSED BY HIS OPERATIONS AND/OR FAILURE OF THE EROSION CONTROL MEASURES. |
| 8. | CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ACCUMULATED SILT AND SEDIMENT FROM EROSION CONTROL MEASURES WHEN IT REACHES A DEPTH OF SIX (6) INCHES OR IMPAIRS THE EFFECTIVENESS OF THE MEASURES. |
| 9. | THE OWNER'S REPRESENTATIVE WILL INSPECT THE PROJECT AT A MINIMUM OF ONCE EVERY DAY AND AFTER EVERY RAINFALL OF 0.5 INCHES OR GREATER TO DETERMINE THE INTEGRITY AND EFFECTIVENESS OF THE EROSION CONTROL MEASURES. A WRITTEN INSPECTION REPORT WILL BE FILED WITH THE POLLUTION PREVENTION PLAN. THIS INSPECTION DOES NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR INSPECTION AND MAINTENANCE OF THE EROSION CONTROL MEASURES OR HIS DUTY TO COMPLY WITH THE INTENT AND CONDITIONS OF THE N.P.D.E.S. GENERAL PERMIT. |
| 10. | ALL OFF-SITE STOCKPILED SOILS WILL BE SURROUNDED BY A STRAW BALE DIKE, SILT FENCE, SEDIMENT CONTROL SWALE, OR EQUIVALENT MEASURE, AS APPROVED BY ENGINEER, TO PROPERLY CONTROL SEDIMENT RUNOFF. |
| 11. | THE CONTRACTOR SHALL STABILIZE ANY AREA WHERE CONSTRUCTION ACTIVITY IS TEMPORARILY OR PERMANENTLY CEASED FOR MORE THAN 14 DAYS. |
| 12. | THE CONTRACTOR SHALL FULLY REMOVE ALL CONSTRUCTION ENTRANCES, SILT FENCES, INLET PROTECTION AND ANY EROSION/SEDIMENT CONTROLS AFTER THE PROJECT IS FULLY STABILIZED. |

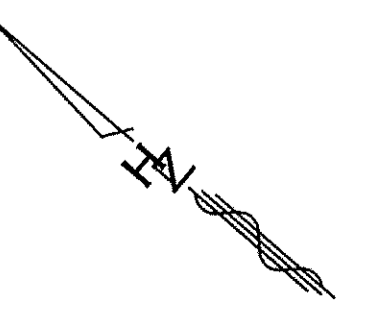
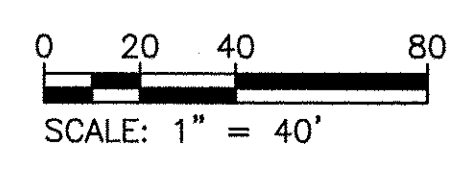
NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

HULL-ZOLLARS
Hull-Zollars, Inc.
500 West 7th Street, Suite 300
Fort Worth, Texas 76102-4728
Phone (817) 338-3000 Fax (817) 338-0225

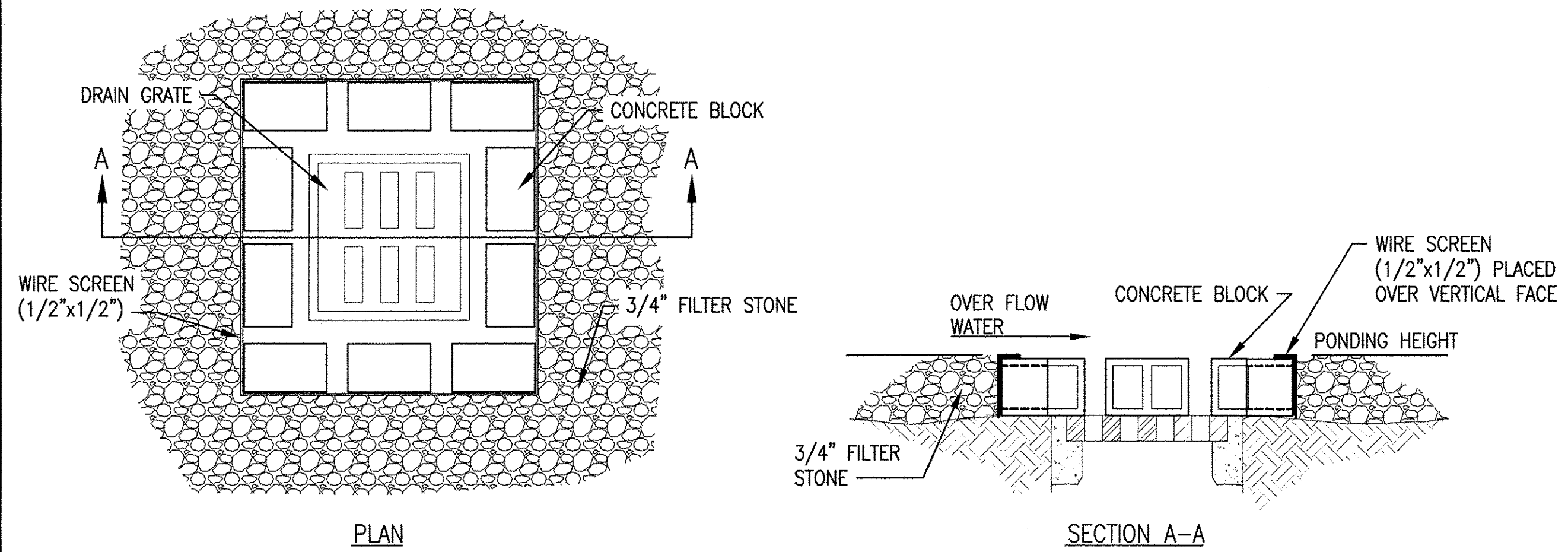
UNIVERSITY OF NORTH TEXAS
UNT FOUTS FIELD
1155 UNION CIRCLE
DENTON, TX 76203

Michael T. Mosier
STATE OF TEXAS
MICHAEL T. MOSSIER
110138
LICENSED PROFESSIONAL ENGINEER
EXPIRES 03/14/2017
Hull-Zollars, Inc.
Firm Registration No. F-761

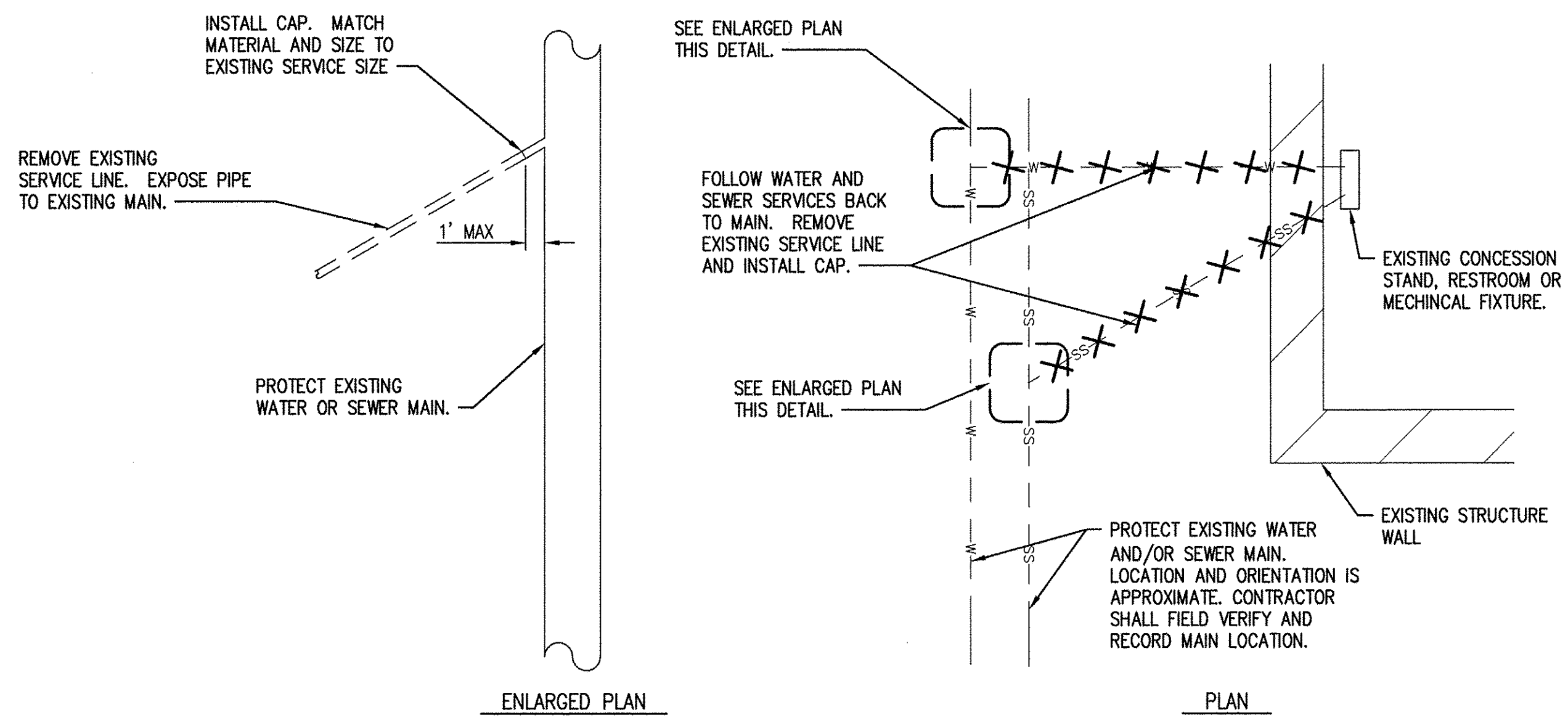
DATE: 02/06/2013
DRAWN BY: LLM
DESIGNED BY: MTM
CHECKED BY: KRC
PROJ. NO. 03-1240-04
SHEET: C301



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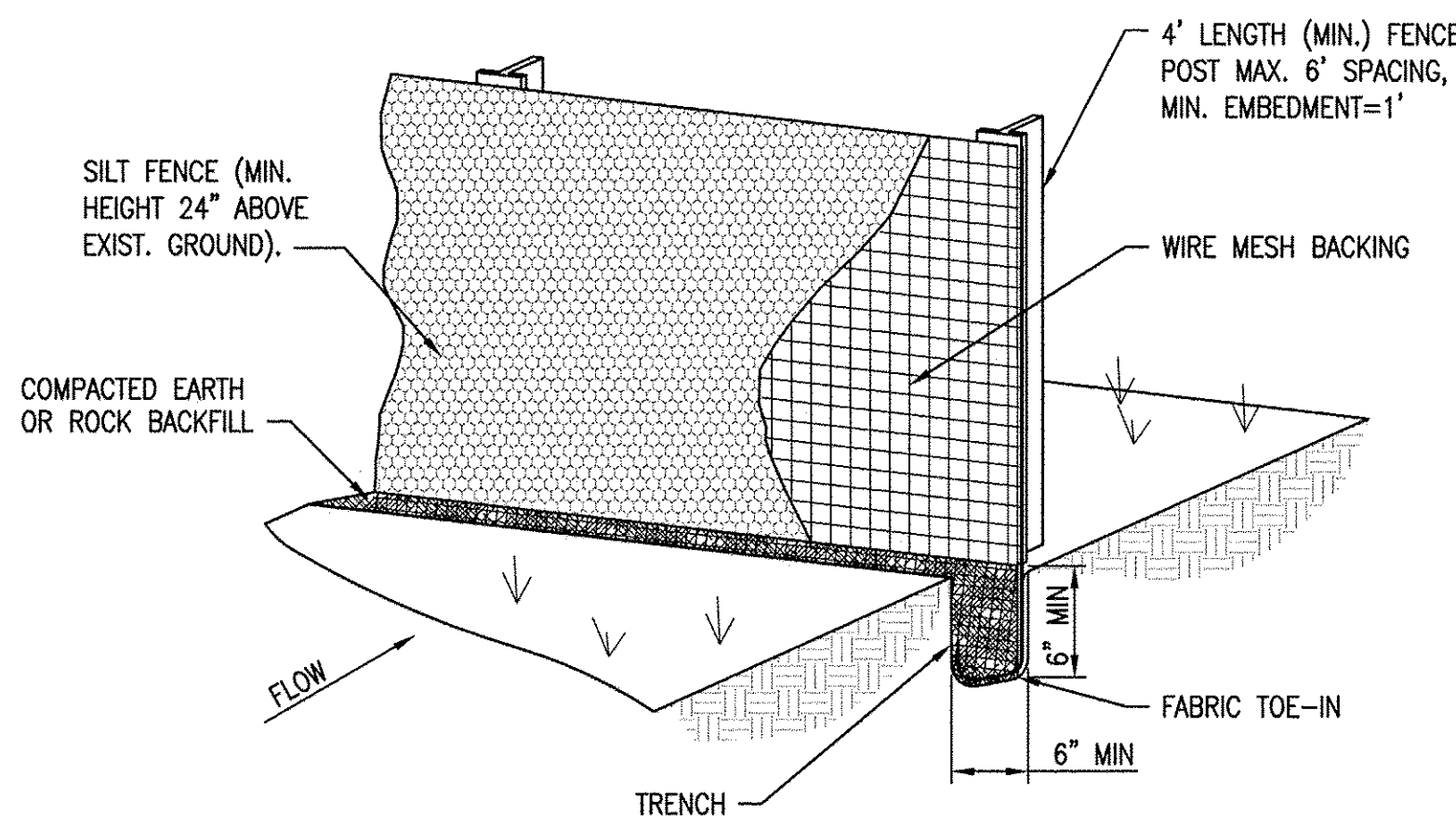


2 INLET PROTECTION
C502 | NOT TO SCALE

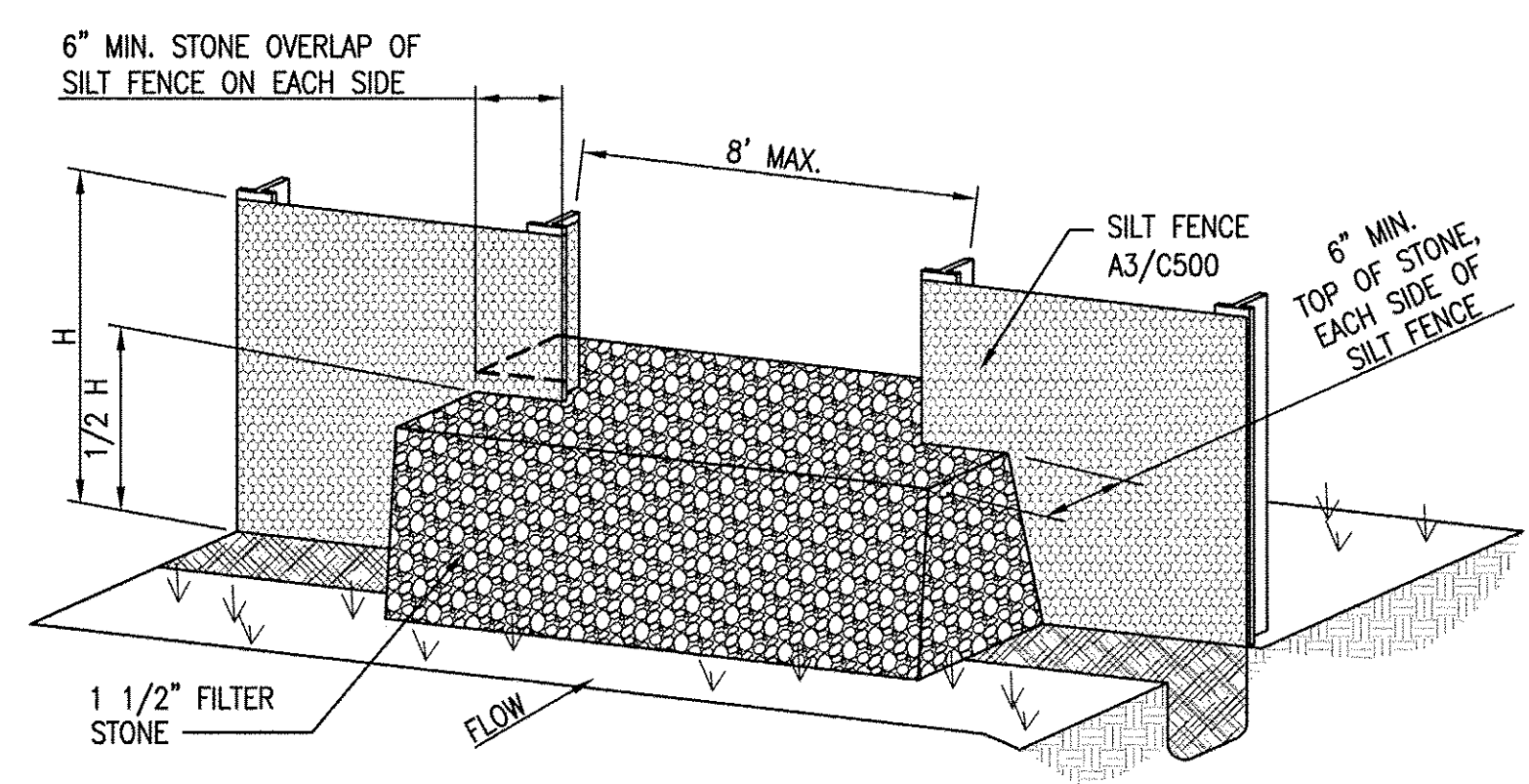


1 WATER/SEWER SERVICE REMOVAL
C501 | NOT TO SCALE

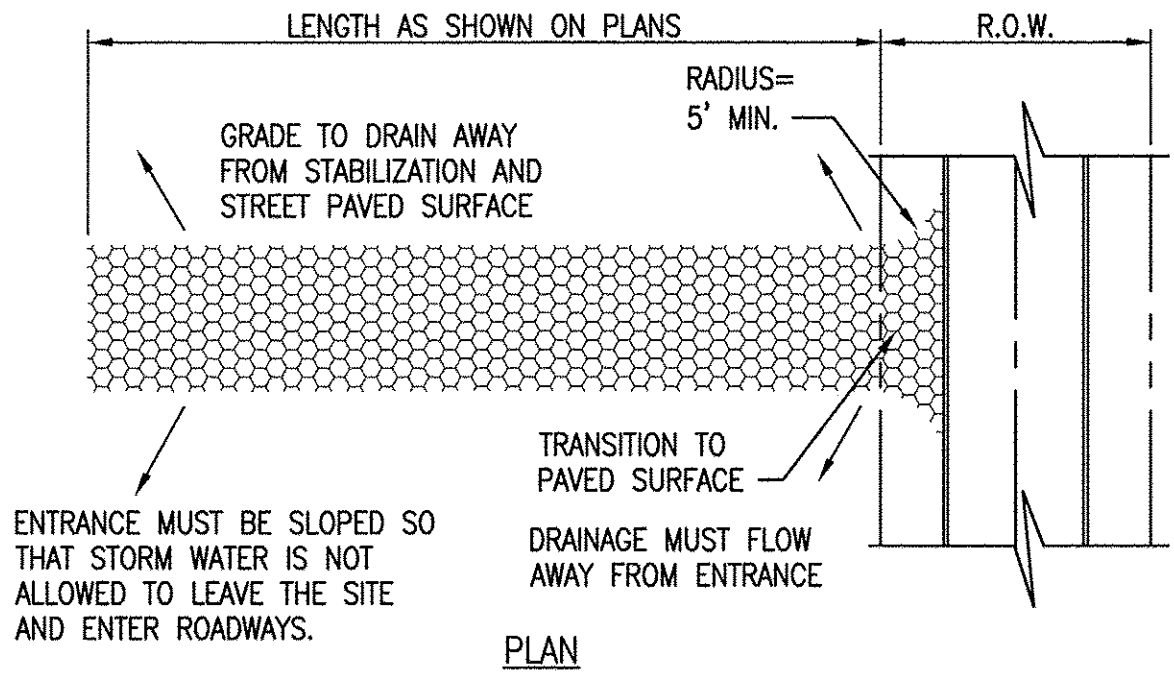
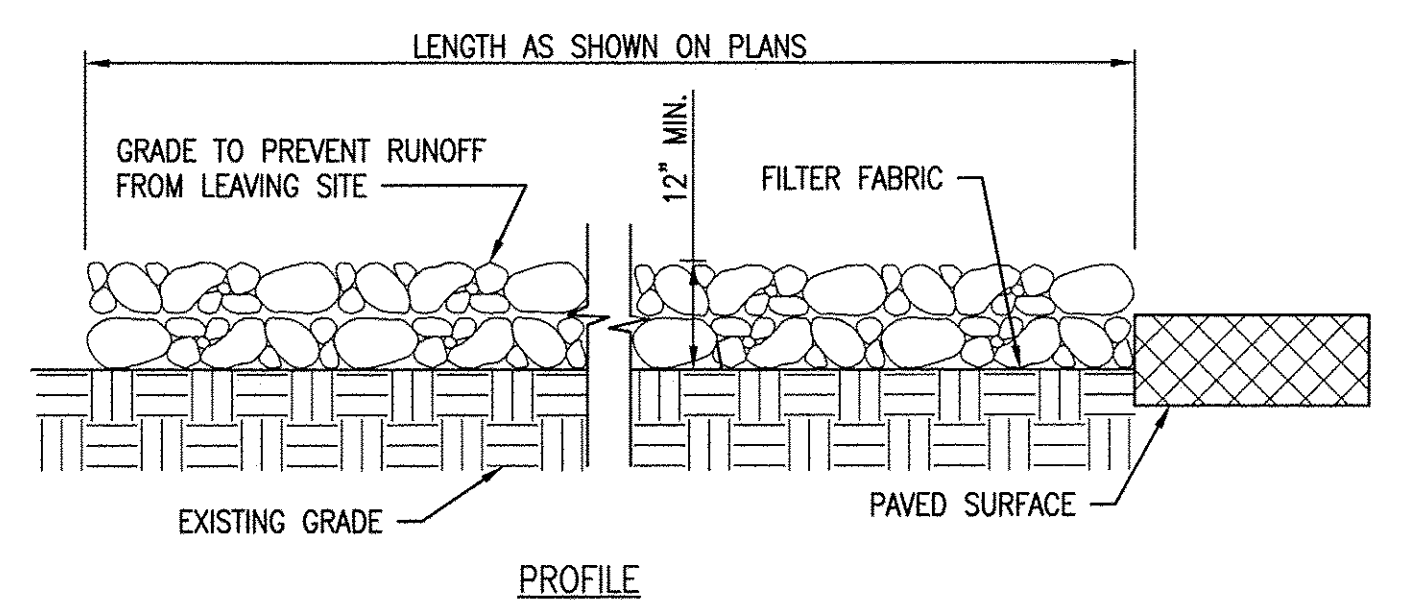
WATER/SEWER SERVICE REMOVAL NOTES:
 1. MATCH NEW CAP AND FITTINGS TO THE EXISTING MAIN MATERIAL.
 2. RECORD ALL LOCATIONS OF EXISTING WATER, SEWER, STORM DRAINAGE, ELECTRICAL AND COMMUNICATION LINES UNCOVERED DURING EXCAVATION ON RECORD DRAWINGS TO BE DELIVERED TO UNT PROJECT MANAGER UPON PROJECT COMPLETION



- 4** SILT FENCE DETAIL
C501 | NOT TO SCALE
- SILT FENCE GENERAL NOTES:
 1. POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
 2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
 3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
 4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WIRE BACKING, WHICH IN TURN IS ATTACHED TO THE FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
 5. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
 6. SILT FENCE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.
 7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.



- 3** STONE OVERFLOW STRUCTURE
C501 | NOT TO SCALE
- NOTES:
 1. OVERFLOW STRUCTURES SHALL BE PLACED AT ALL LOW POINTS AND AT A SPACING OF APPROXIMATELY 300 FT WHERE NO LOW POINT IS APPARENT.



- 5** STABILIZED CONSTRUCTION ENTRANCE
C501 | NOT TO SCALE
- STABILIZED CONSTRUCTION ENTRANCE:
 1. STONE SHALL BE 3 TO 5 INCH DIAMETER COARSE AGGREGATE
 2. LENGTH SHALL BE AS SPECIFIED IN THE SWPPP.
 3. THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.
 4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
 5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
 6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES, MUST BE REMOVED IMMEDIATELY.
 7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
 8. PREVENT SHORTCUTTING OF THE FULL LENGTH OF THE CONSTRUCTION ENTRANCE BY INSTALLING BARRIERS AS NECESSARY.
 9. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.

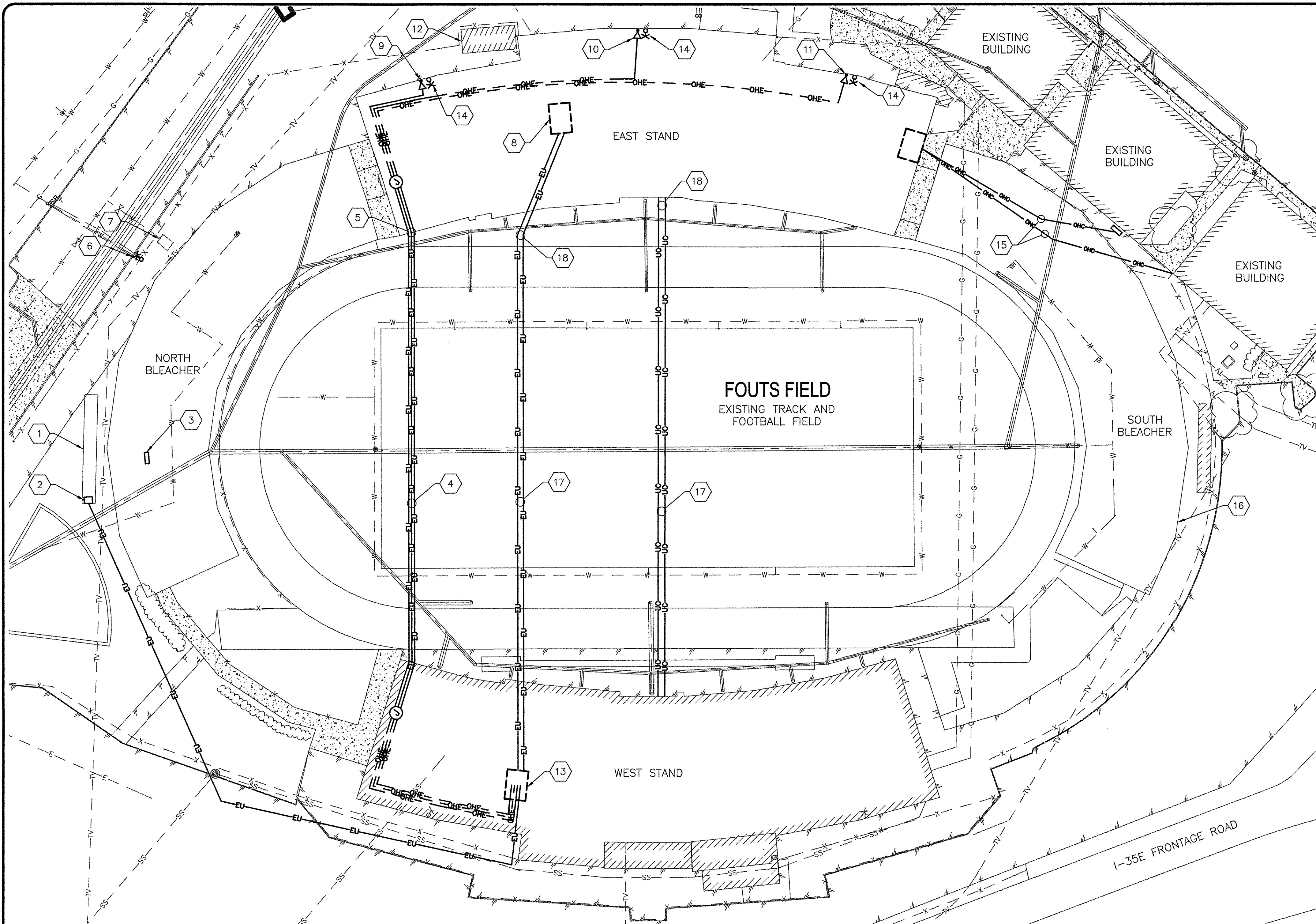
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HULT-ZOLLARS
 Hult-Zollars, Inc.
 Fort Worth
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 335-9000 Fax (817) 335-4025

CONSTRUCTION DETAILS
UNT FOOTS FIELD
 UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

Michael T. Mosier
 STATE OF TEXAS
 MICHAEL T. MOSIER
 110138
 LICENSED PROFESSIONAL ENGINEER
 05-114-2002
 Hult-Zollars, Inc.
 Firm Registration No. F-761

DATE:	02/11/2013
DRAWN BY:	LLM
DESIGNED BY:	MTM
CHECKED BY:	KLC
PROJ. NO.	03-1240-04
SHEET:	C501



1 ELECTRICAL DEMOLITION PLAN
 E101 SCALE: 1" = 40'

0 20 40 80
 SCALE: 1" = 40'

GENERAL NOTES		GENERAL NOTES CONTINUED	
NOTE	DESCRIPTION	NOTE	DESCRIPTION
A.	ALL EXISTING UTILITIES AND ELECTRICAL EQUIPMENT SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION.	C.	ELECTRICAL CONDUITS RUNNING BELOW GRADE THAT ARE NOT GOING TO BE REMOVED DURING CIVIL AND STRUCTURAL DEMOLITION SHALL BE ABANDONED IN PLACE. CONDUITS SHALL BE CUT AND CAPPED AT 6" BELOW FINISHED GRADE.
B.	ALL CONDUCTORS, CONDUITS, RECEPTACLES, DISCONNECTS, SECURITY CAMERAS, AND OTHER ELECTRICAL ITEMS IN THE EASTERN PORTION OF THE STADIUM SHALL BE REMOVED. SCOPE ALSO INCLUDES ELECTRICAL ITEMS WITHIN THE STADIUM'S EASTERN CONCESSION STANDS.	D.	REFERENCE SHEETS C101 AND S101 FOR DEMOLITION SCOPE IN CIVIL AND STRUCTURAL DESIGNS.
		E.	CONDUCTORS NOTED TO BE REMOVED SHALL BE COMPLETELY REMOVED BACK TO THEIR SOURCE.
		F.	CONTRACTOR SHALL DOCUMENT THE LOCATIONS OF EXISTING UNDERGROUND CONDUITS AND CAPPED LOCATIONS AT THE END OF DEMOLITION.

NOTES BY SYMBOL	
NOTE	DESCRIPTION
1.	EXISTING SCOREBOARD TO BE REMOVED. POLE MOUNTED FUSED DISCONNECT, CONDUCTORS FROM TRANSFORMER "T-11", AND OTHER SCOREBOARD ELECTRICAL COMPONENTS SHALL BE REMOVED.
2.	EXISTING TRANSFORMER "T-11" SHALL BE REMOVED AND SALVAGED. CONDUCTORS FEEDING TRANSFORMER SHALL BE REMOVED. REFERENCE 1/E601 FOR SWITCHGEAR "SG-1" ELEVATION TO DISCONNECT TRANSFORMER "T-11" POWER.
3.	EXISTING PANELBOARD MOUNTED TO NORTH BLEACHER STRUCTURE SHALL BE REMOVED. ALL ASSOCIATED BLEACHER MOUNTED RECEPTACLES, CONDUITS, AND CONDUCTORS SHALL BE REMOVED.
4.	THREE EXISTING CONDUITS SHALL BE ABANDONED IN PLACE.
5.	THREE EXISTING CONDUITS SHALL BE CUT AND CAPPED AT 6" BELOW FINISHED GRADE ONCE CONCRETE BLEACHER STRUCTURE IS REMOVED.
6.	EXISTING MAST LIGHT FIXTURE SHALL REMAIN. POWER TO LIGHT FIXTURE IS PROVIDED FROM TRANSFORMER LOCATED NORTH OF THE STADIUM. NO SPECIAL PROVISIONS SHALL BE REQUIRED TO MAINTAIN POWER.
7.	EXISTING IRRIGATION PUMP HOUSE TO REMAIN. EXISTING 240/120V PANELBOARD LOCATED INSIDE THE PUMP HOUSE SHALL BE REPLACED. REFERENCE SHEET E201 FOR NEW PROVISIONS TO PROVIDE POWER TO THE IRRIGATION SYSTEM AND REPLACEMENT 240/120V PANELBOARD.
8.	EAST ELECTRICAL ROOM TO HAVE ALL ELECTRICAL ITEMS REMOVED. REFERENCE E601 FOR SWITCHGEAR "SG-1" ELEVATION AND DEMOLITION ONE-LINE DIAGRAM. TRANSFORMER "T-4", PANELBOARDS, AND LIGHTING CONTACTOR SHALL BE SALVAGED.
9.	75KVA WALL MOUNTED TRANSFORMER "T-5" SHALL BE REMOVED. CONDUCTORS FEEDING TRANSFORMER SHALL BE REMOVED. REFERENCE 1/E601 FOR SWITCHGEAR "SG-1" ELEVATION TO DISCONNECT TRANSFORMER "T-5" POWER.
10.	75KVA WALL MOUNTED TRANSFORMER "T-6" SHALL BE REMOVED. CONDUCTORS FEEDING TRANSFORMER SHALL BE REMOVED. REFERENCE 1/E601 FOR SWITCHGEAR "SG-1" ELEVATION TO DISCONNECT TRANSFORMER "T-6" POWER.
11.	75KVA WALL MOUNTED TRANSFORMER "T-7" SHALL BE REMOVED. CONDUCTORS FEEDING TRANSFORMER SHALL BE REMOVED. REFERENCE 1/E601 FOR SWITCHGEAR "SG-1" ELEVATION TO DISCONNECT TRANSFORMER "T-7" POWER.
12.	EXISTING ANTENNA AND ANTENNA FACILITY ARE TO REMAIN. POWER TO ANTENNA FACILITY IS PROVIDED FROM TRANSFORMER LOCATED NORTH OF THE STADIUM. NO SPECIAL PROVISIONS SHALL BE REQUIRED TO MAINTAIN POWER.
13.	WEST ELECTRICAL ROOM CONTAINS SWITCHGEAR "SG-1". REFERENCE E601 FOR SWITCHGEAR ELEVATION AND DEMOLITION ONE-LINE DIAGRAM.
14.	LIGHT POLE, FIXTURE, CONDUCTORS, AND POLE MOUNTED LIGHTING CONTROLS SHALL BE REMOVED.
15.	OVERHEAD COMMUNICATION CABLES SHALL BE REMOVED.
16.	RECEPTACLES, CONDUITS, AND CONDUCTORS MOUNTED TO SOUTH BLEACHERS SHALL BE REMOVED.
17.	TWO EXISTING CONDUITS SHALL BE ABANDONED IN PLACE AND ASSOCIATED CONDUCTORS REMOVED.
18.	TWO EXISTING CONDUITS SHALL BE CUT AND CAPPED AT 6" BELOW FINISHED GRADE ONCE CONCRETE BLEACHER STRUCTURE IS REMOVED.

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

HULT-ZOLLARS
 Hult-Zollars, Inc.
 Fort Worth
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4778
 Phone (817) 335-3000 Fax (817) 335-025

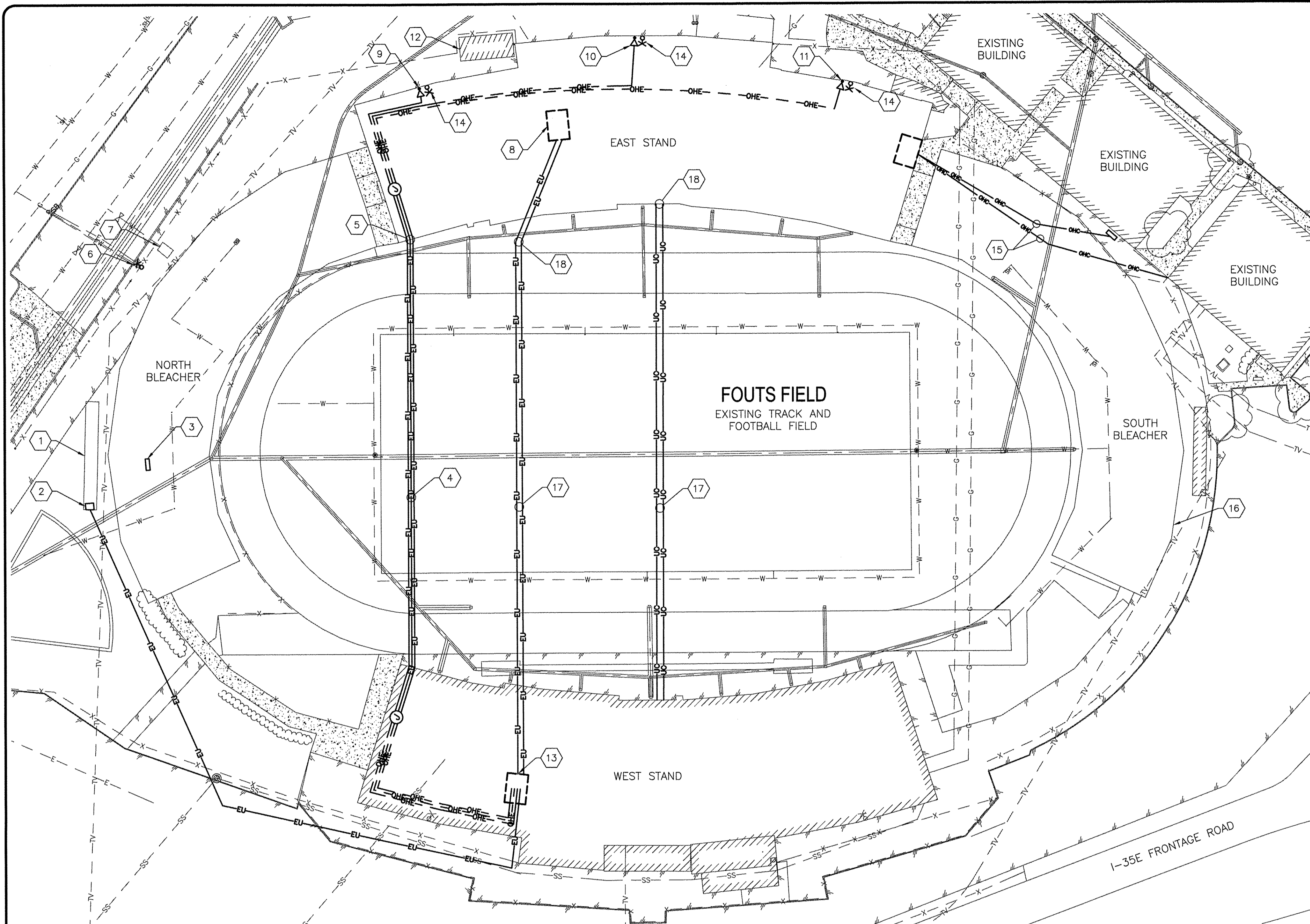
DEMOLITION PLAN

UNT FOUTS FIELD

UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

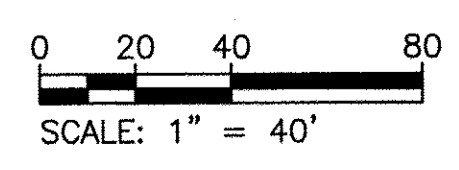
Scott P. Parma
 STATE OF TEXAS
 SCOTT P. PARMA
 75690
 LICENSED PROFESSIONAL ENGINEER
 Hult-Zollars, Inc.
 Firm Registration No. F-761
 3/14/13

DATE: 02/07/2013
 DRAWN BY: JG
 DESIGNED BY: RLD
 CHECKED BY: SPP
 PROJ. NO. 03-1240-04
 SHEET: E101



- NOTES BY SYMBOL**
- | NOTE | DESCRIPTION |
|------|---|
| 1. | EXISTING SCOREBOARD TO BE REMOVED. POLE MOUNTED FUSED DISCONNECT, CONDUCTORS FROM TRANSFORMER "T-11", AND OTHER SCOREBOARD ELECTRICAL COMPONENTS SHALL BE REMOVED. |
| 2. | EXISTING TRANSFORMER "T-11" SHALL BE REMOVED AND SALVAGED. CONDUCTORS FEEDING TRANSFORMER SHALL BE REMOVED. REFERENCE 1/E601 FOR SWITCHGEAR "SG-1" ELEVATION TO DISCONNECT TRANSFORMER "T-11" POWER. |
| 3. | EXISTING PANELBOARD MOUNTED TO NORTH BLEACHER STRUCTURE SHALL BE REMOVED. ALL ASSOCIATED BLEACHER MOUNTED RECEPTACLES, CONDUITS, AND CONDUCTORS SHALL BE REMOVED. |
| 4. | THREE EXISTING CONDUITS SHALL REMAIN. |
| 5. | THREE EXISTING CONDUITS SHALL BE CUT AT FINISHED GRADE AND PROTECTED FOR REUSE. REFERENCE SHEET E202 FOR NEW PROVISIONS TO PROVIDE POWER TO TRACK AND FIELD LIGHTING. |
| 6. | EXISTING MAST LIGHT FIXTURE SHALL REMAIN. POWER TO LIGHT FIXTURE IS PROVIDED FROM TRANSFORMER LOCATED NORTH OF THE STADIUM. NO SPECIAL PROVISIONS SHALL BE REQUIRED TO MAINTAIN POWER. |
| 7. | EXISTING IRRIGATION PUMP HOUSE TO REMAIN. EXISTING 240/120V PANELBOARD LOCATED INSIDE THE PUMP HOUSE SHALL BE REPLACED. REFERENCE SHEET E201 FOR NEW PROVISIONS TO PROVIDE POWER TO THE IRRIGATION SYSTEM AND REPLACEMENT 240/120V PANELBOARD. |
| 8. | EAST ELECTRICAL ROOM TO HAVE ALL ELECTRICAL ITEMS REMOVED. REFERENCE E601 FOR SWITCHGEAR "SG-1" ELEVATION AND DEMOLITION ONE-LINE DIAGRAM. TRANSFORMER "T-4", PANELBOARDS AND LIGHTING CONTACTOR SHALL BE SALVAGED. |
| 9. | 75KVA WALL MOUNTED TRANSFORMER "T-5" SHALL BE REMOVED. CONDUCTORS FEEDING TRANSFORMER SHALL BE COILED AND PROTECTED DURING DEMOLITION FOR FUTURE EXTENSION TO TRACK AND FIELD LIGHTING. REFERENCE 1/E601 FOR SWITCHGEAR "SG-1" ELEVATION TO DISCONNECT TRANSFORMER "T-5" POWER. |
| 10. | 75KVA WALL MOUNTED TRANSFORMER "T-6" SHALL BE REMOVED. CONDUCTORS FEEDING TRANSFORMER SHALL BE COILED AND PROTECTED DURING DEMOLITION FOR FUTURE EXTENSION TO TRACK AND FIELD LIGHTING. REFERENCE 1/E601 FOR SWITCHGEAR "SG-1" ELEVATION TO DISCONNECT TRANSFORMER "T-6" POWER. |
| 11. | 75KVA WALL MOUNTED TRANSFORMER "T-7" SHALL BE REMOVED. CONDUCTORS FEEDING TRANSFORMER SHALL BE COILED AND PROTECTED DURING DEMOLITION FOR FUTURE EXTENSION TO TRACK AND FIELD LIGHTING. REFERENCE 1/E601 FOR SWITCHGEAR "SG-1" ELEVATION TO DISCONNECT TRANSFORMER "T-7" POWER. |
| 12. | EXISTING ANTENNA AND ANTENNA FACILITY ARE TO REMAIN. POWER TO ANTENNA IS PROVIDED FROM TRANSFORMER LOCATED NORTH OF THE STADIUM. NO SPECIAL PROVISIONS SHALL BE REQUIRED TO MAINTAIN POWER. |
| 13. | WEST ELECTRICAL ROOM CONTAINS SWITCHGEAR "SG-1". REFERENCE E601 FOR SWITCHGEAR ELEVATION AND DEMOLITION ONE-LINE DIAGRAM. |
| 14. | LIGHT POLE, FIXTURE, AND POLE MOUNTED LIGHTING CONTROLS SHALL BE REMOVED AND SALVAGED FOR REUSE. |
| 15. | OVERHEAD COMMUNICATION CABLES SERVING EAST COMMUNICATIONS ROOM SHALL BE REMOVED. |
| 16. | RECEPTACLES, CONDUITS, AND CONDUCTORS MOUNTED TO SOUTH BLEACHERS SHALL BE REMOVED. |

1 ELECTRICAL DEMOLITION PLAN - ALTERNATE 1
 E101 SCALE: 1" = 40'



GENERAL NOTES		GENERAL NOTES CONTINUED	
NOTE	DESCRIPTION	NOTE	DESCRIPTION
A.	ALL EXISTING UTILITIES AND ELECTRICAL EQUIPMENT SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION.	D.	ELECTRICAL CONDUITS RUNNING BELOW GRADE THAT ARE NOT GOING TO BE REMOVED DURING CIVIL AND STRUCTURAL DEMOLITION SHALL BE ABANDONED IN PLACE. CONDUITS SHALL BE CUT AND CAPPED AT 6" BELOW FINISHED GRADE.
B.	ALL CONDUCTORS, CONDUITS, RECEPTACLES, DISCONNECTS, SECURITY CAMERAS, AND OTHER ELECTRICAL ITEMS IN THE EASTERN PORTION OF THE STADIUM SHALL BE REMOVED. SCOPE INCLUDES ELECTRICAL ITEMS WITHIN THE STADIUM'S EASTERN CONCESSION STANDS.	E.	REFERENCE SHEETS C101 AND S101 FOR DEMOLITION SCOPE IN CIVIL AND STRUCTURAL DESIGNS.
C.	CONDUCTORS NOTED TO BE REMOVED SHALL BE COMPLETELY REMOVED BACK TO THEIR SOURCE.	F.	CONTRACTOR SHALL DOCUMENT THE LOCATIONS OF EXISTING UNDERGROUND CONDUITS AND CAPPED LOCATIONS AT THE END OF DEMOLITION.
		G.	BOLD TEXT SHOWS ALTERNATIVE DEMOLITION IF ALTERNATE 1 IS SELECTED. ALTERNATE 1 INCLUDES THE SALVAGE OF FIELD LIGHT FIXTURES, POLES, AND LIGHTING CONTROLS FROM EAST STANDS FOR REUSE. GRAY TEXT IS STILL INCLUDED IN SCOPE.

NOTES BY SYMBOL CONTINUED

NOTE	DESCRIPTION
17.	TWO EXISTING CONDUITS SHALL BE ABANDONED IN PLACE AND ASSOCIATED CONDUCTORS SHALL BE REMOVED.
18.	TWO EXISTING CONDUITS SHALL BE CUT AND CAPPED AT 6" BELOW EXISTING GRADE ONCE CONCRETE BLEACHER STRUCTURE IS REMOVED.

NO.	REVISION	DATE
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HUIT-ZOLIARS
 Huit-Zoliars, Inc.
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-1025

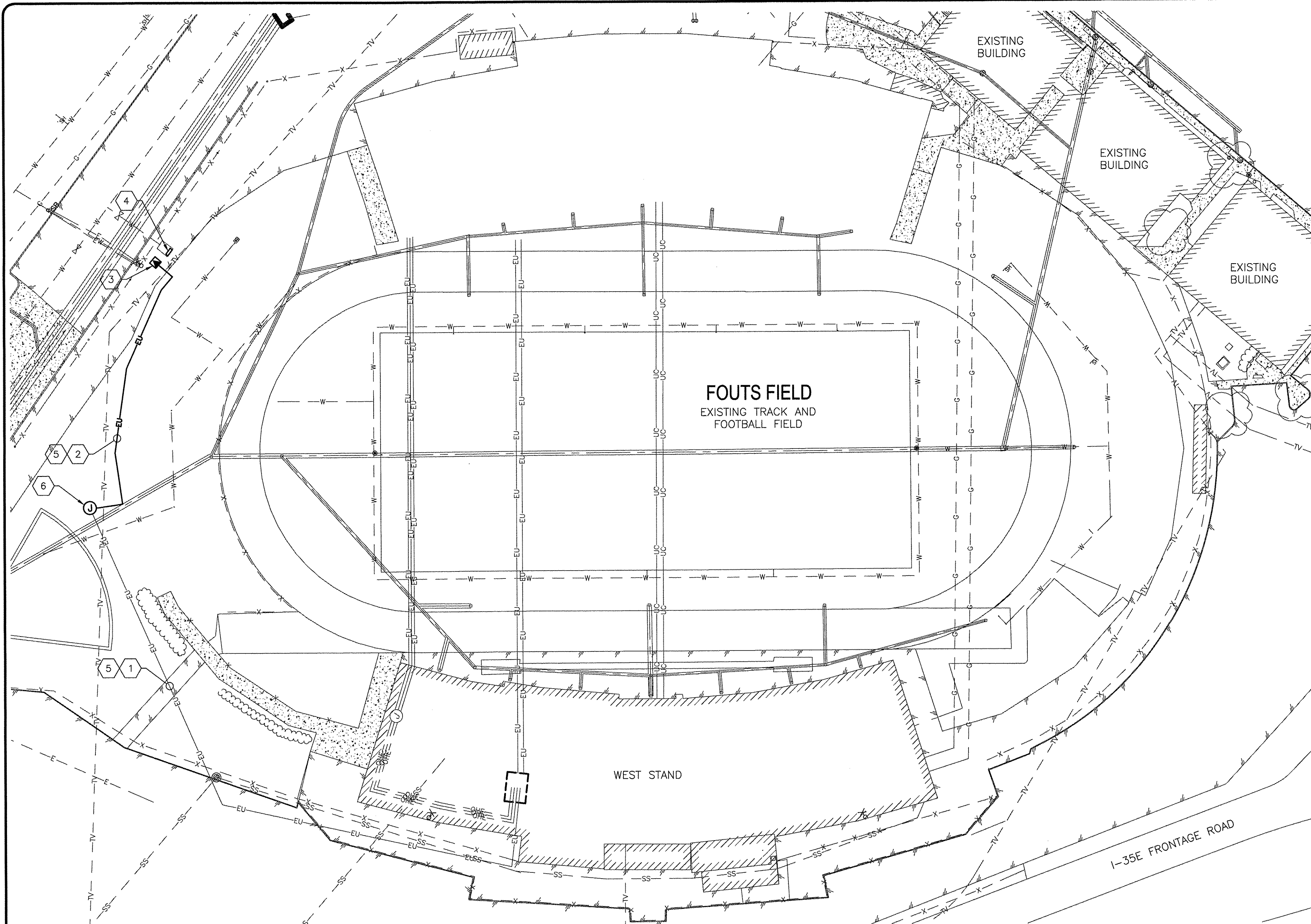
DEMOLITION PLAN - ALTERNATE 1

UNT FOUTS FIELD

UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

Scott P. Parma
 STATE OF TEXAS
 SCOTT P. PARMA
 75690
 LICENSED PROFESSIONAL ENGINEER
 Huit-Zoliars, Inc.
 Firm Registration No. F-761
 3/14/13

DATE:	02/07/2013
DRAWN BY:	JG
DESIGNED BY:	RLD
CHECKED BY:	SPP
PROJ. NO.	03-1240-04
SHEET:	E102



1 ELECTRICAL SITE PLAN
 E101 SCALE: 1" = 40'

GENERAL NOTES	
NOTE	DESCRIPTION
A.	ALL EXISTING UTILITIES AND ELECTRICAL EQUIPMENT SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION.
B.	CONDUITS SHALL BE PVC SCHEDULE 40 DIRECT BURIED A MINIMUM OF 18" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.
C.	CONTRACTOR SHALL DOCUMENT THE LOCATIONS OF NEW UNDERGROUND CONDUITS AND JUNCTION BOXES.

NOTES BY SYMBOL	
NOTE	DESCRIPTION
1.	VERIFY EXISTING CONDUIT FROM SWITCHGEAR "SG-1" TO PREVIOUS TRANSFORMER "T-11" LOCATION IS SUITABLE FOR REUSE. REPAIR IF NECESSARY.
2.	EXISTING TRANSFORMER "T-11" PRIMARY CONDUIT SHALL BE EXTENDED TO NEW TRANSFORMER. 4" CONDUIT SHALL BE ENCASED WITH A MINIMUM OF 3" OF CONCRETE ON ALL SIDES AND BURIED A MINIMUM OF 36" BELOW FINISHED GRADE.
3.	PROVIDE 25KVA, 2400V, 3Ø PRIMARY TO 240/120V, 1Ø SECONDARY GROUND MOUNTED TRANSFORMER (NEW TRANSFORMER "T-11"). REFERENCE SHEET E602 FOR ONE LINE DIAGRAM.
4.	REPLACE EXISTING IRRIGATION PUMP HOUSE PANELBOARD WITH NEW 100 AMP, 240/120V PANELBOARD "P1". RECONNECT ALL EXISTING CIRCUITS TO NEW PANELBOARD. REFERENCE 1/E501 FOR "P1" PANELBOARD SCHEDULE.
5.	REFERENCE SHEET E602 ONE-LINE DIAGRAM FOR CONDUCTOR SIZE AND OVERCURRENT PROTECTION. CONNECT TO SWITCHGEAR "SG-1" AT EXISTING TRANSFORMER "T-11" LOCATION.
6.	PROVIDE 24"x36"x3" PULL BOX AT CONNECTION BETWEEN NEW AND EXISTING CONDUIT.

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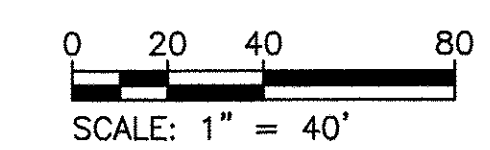
HULT-ZOLLARS
 Hult-Zollars, Inc.
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-1025

SITE PLAN

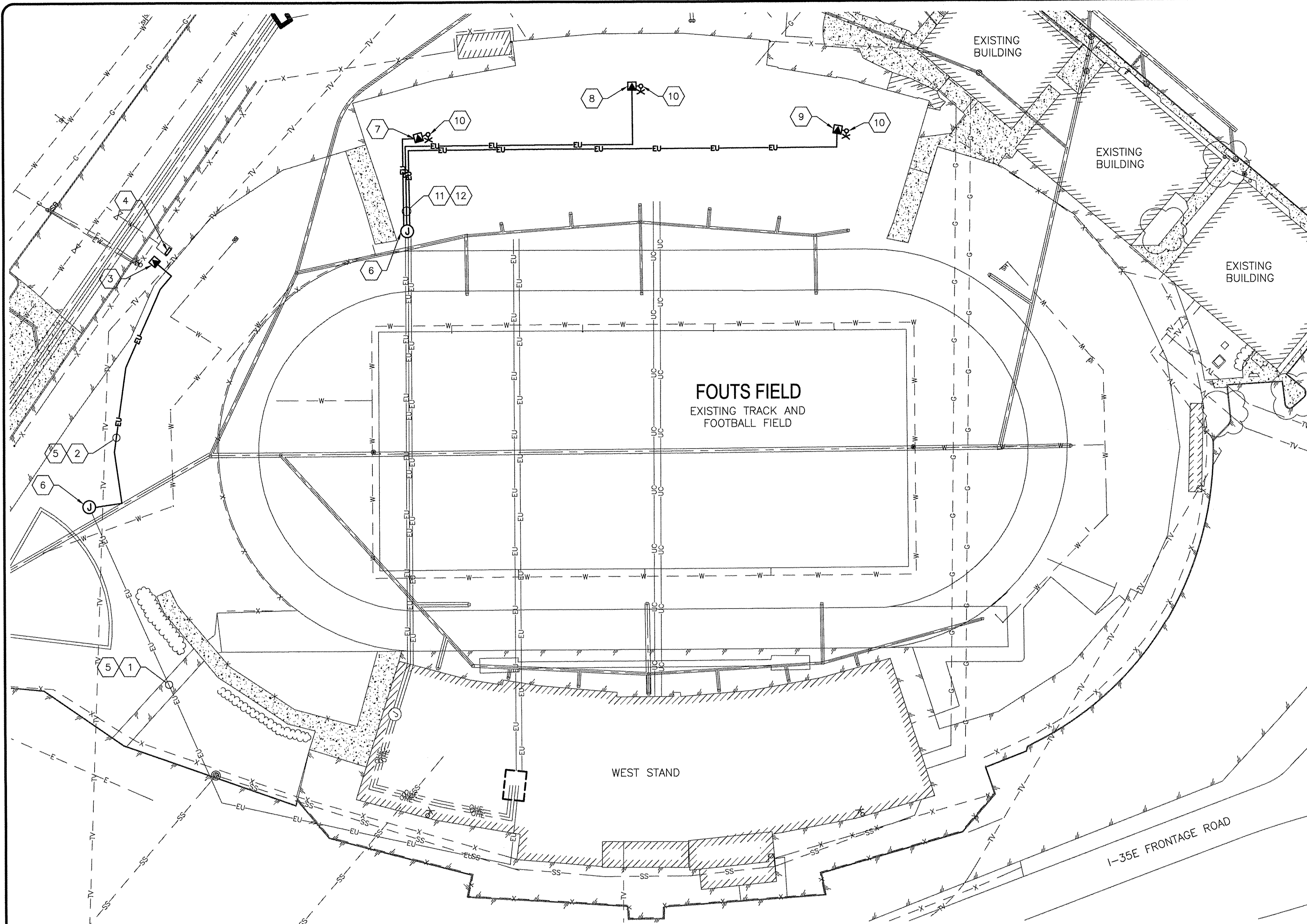
UNT FOUTS FIELD
 UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

SCOTT P. PARMA
 75690
 LICENSED PROFESSIONAL ENGINEER
 Hult-Zollars, Inc.
 Firm Registration No. F-761
 3/14/13

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DRAWN BY:	JG
DESIGNED BY:	RLD
CHECKED BY:	SPP
PROJ. NO.	03-1240-04
SHEET:	E201



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1 ELECTRICAL SITE PLAN - ALTERNATE 1
 E101 SCALE: 1" = 40'

0 20 40 80
 SCALE: 1" = 40'

GENERAL NOTES

NOTE	DESCRIPTION
A.	ALL EXISTING UTILITIES AND ELECTRICAL EQUIPMENT SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION.
B.	CONDUITS SHALL BE PVC SCHEDULE 40 DIRECT BURIED 18" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.
C.	CONTRACTOR SHALL DOCUMENT THE LOCATIONS OF NEW UNDERGROUND CONDUITS AND JUNCTION BOXES.
D.	BOLD TEXT SHOWS ADDITIONAL CONSTRUCTION IF ALTERNATE 1 IS SELECTED. ALTERNATE 1 INCLUDES THE REUSE OF SALVAGED OF LIGHT FIXTURES, POLES, AND LIGHTING CONTROLS FROM EAST STAND FOR REUSE. GRAY TEXT IS STILL INCLUDED IN SCOPE.

NOTES BY SYMBOL

NOTE	DESCRIPTION
1.	VERIFY EXISTING CONDUIT FROM SWITCHGEAR "SG-1" TO PREVIOUS TRANSFORMER "T-11" LOCATION IS SUITABLE FOR REUSE. REPAIR IF NECESSARY.
2.	EXISTING TRANSFORMER "T-11" PRIMARY CONDUIT SHALL BE EXTENDED TO NEW TRANSFORMER. 4" CONDUIT SHALL BE ENCASED WITH A MINIMUM OF 3" OF CONCRETE ON ALL SIDES AND BURIED A MINIMUM OF 36" BELOW FINISHED GRADE.
3.	PROVIDE 25KVA, 2400V, 3Ø PRIMARY TO 240/120V, 1Ø SECONDARY GROUND MOUNTED TRANSFORMER (NEW TRANSFORMER "T-11"). REFERENCE SHEET E602 FOR ONE LINE DIAGRAM.
4.	REPLACE EXISTING IRRIGATION PUMP HOUSE PANELBOARD WITH NEW 100 AMP, 240/120V PANELBOARD "P1". RECONNECT ALL EXISTING CIRCUITS TO NEW PANELBOARD. REFERENCE 1/E501 FOR "P1" PANELBOARD SCHEDULE.
5.	REFERENCE SHEET E602 ONE-LINE DIAGRAM FOR CONDUCTOR SIZE AND OVERCURRENT PROTECTION. CONNECT TO SWITCHGEAR "SG-1" AT EXISTING TRANSFORMER "T-11" LOCATION.
6.	PROVIDE 24"x36"x3' PULL BOX AT CONNECTION BETWEEN NEW AND EXISTING CONDUIT.
7.	PROVIDE 75KVA, 2400V, 1Ø PRIMARY TO 240/120V, 1Ø SECONDARY GROUND MOUNTED TRANSFORMER (NEW TRANSFORMER "T-5"). REFERENCE SHEET E602 FOR ONE-LINE DIAGRAM.
8.	PROVIDE 75KVA, 2400V, 1Ø PRIMARY TO 240/120V, 1Ø SECONDARY GROUND MOUNTED TRANSFORMER (NEW TRANSFORMER "T-6"). REFERENCE SHEET E602 FOR ONE-LINE DIAGRAM.
9.	PROVIDE 75KVA, 2400V, 1Ø PRIMARY TO 240/120V, 1Ø SECONDARY GROUND MOUNTED TRANSFORMER (NEW TRANSFORMER "T-7"). REFERENCE SHEET E602 FOR ONE-LINE DIAGRAM.
10.	REINSTALL SALVAGED TRACK AND FIELD LIGHTING FIXTURES AND LIGHTING CONTROLS. REFERENCE 3/E501 FOR TRACK/FIELD LIGHT POLE BASE DETAIL. REFERENCE 2/E501 FOR LIGHTING CONTROLS MOUNTING DETAIL. LIGHTING CONTROLS SHALL BE LOCATED ADJACENT TO LIGHT POLE. CONTRACTOR SHALL VERIFY OPERATION OF LIGHT FIXTURES AND REPAIR AS NECESSARY.
11.	EXTEND EXISTING CONDUCTORS TO GROUND MOUNTED TRANSFORMERS.
12.	PRIMARY CONDUIT SHALL BE EXTENDED TO TRANSFORMERS "T-5", "T-6", AND "T-7". CONDUIT SHALL BE ENCASED WITH A MINIMUM OF 3" OF CONCRETE ON ALL SIDES AND BURIED A MINIMUM OF 36" BELOW FINISHED GRADE.

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

HUIT-ZOLLARS
 Huit-Zollars, Inc.
 Fort Worth
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 333-3000 Fax (817) 335-1025

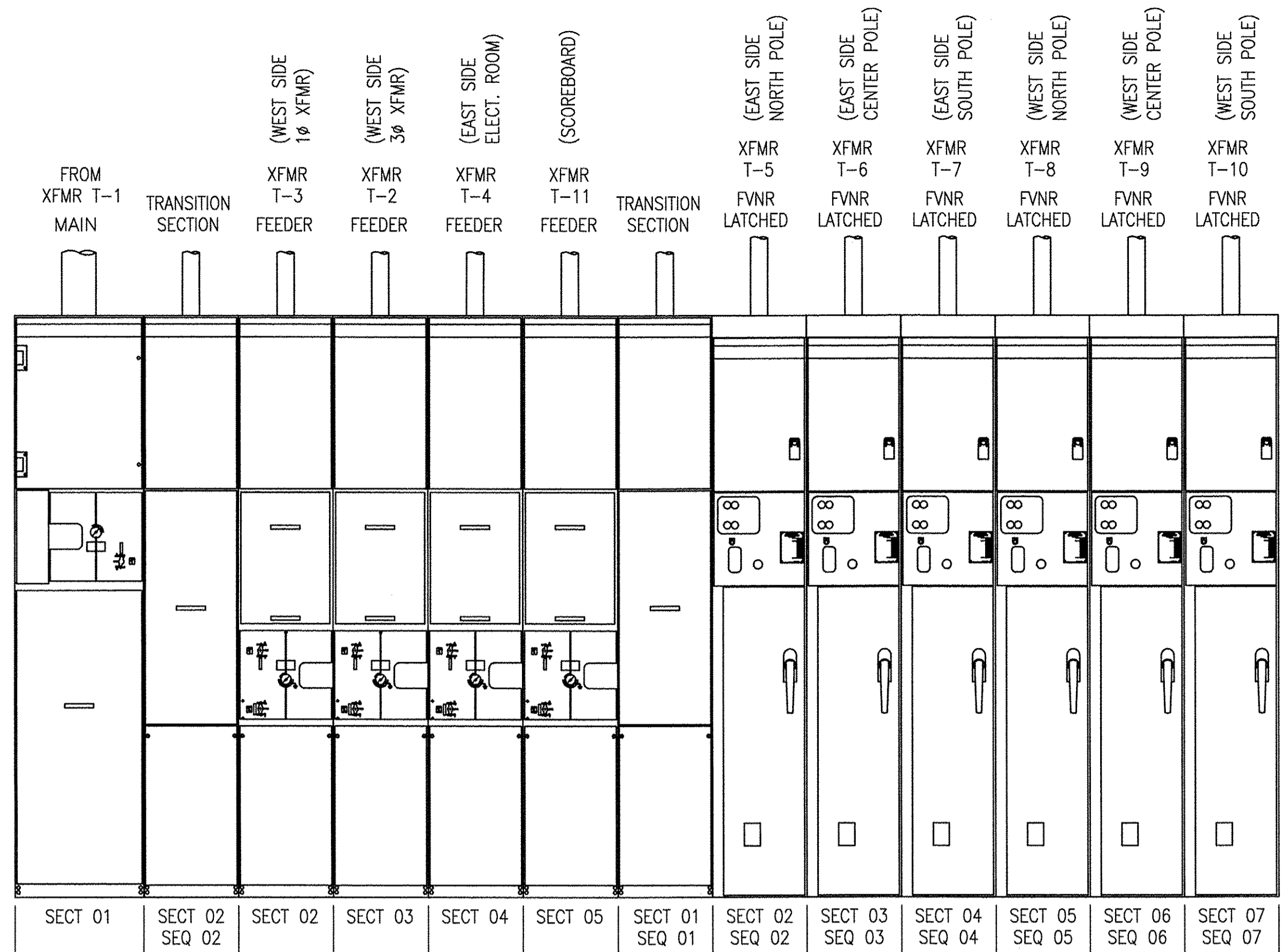
SITE PLAN - ALTERNATE 1

UNT FOUTS FIELD
 UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

Scott P. Parma
 STATE OF TEXAS
 SCOTT P. PARMA
 75690
 LICENSED PROFESSIONAL ENGINEER
 Huit-Zollars, Inc.
 Firm Registration No. F-761
 3/14/13

DATE:	02/07/2013
DRAWN BY:	JG
DESIGNED BY:	RLD
CHECKED BY:	SPP
PROJ. NO.	03-1240-04
SHEET:	E202

C:\MSDCAD\PLANS\1314\2013\131403\131403A04.dwg (ELECTRICAL) - LAYOUT: LAYOUT

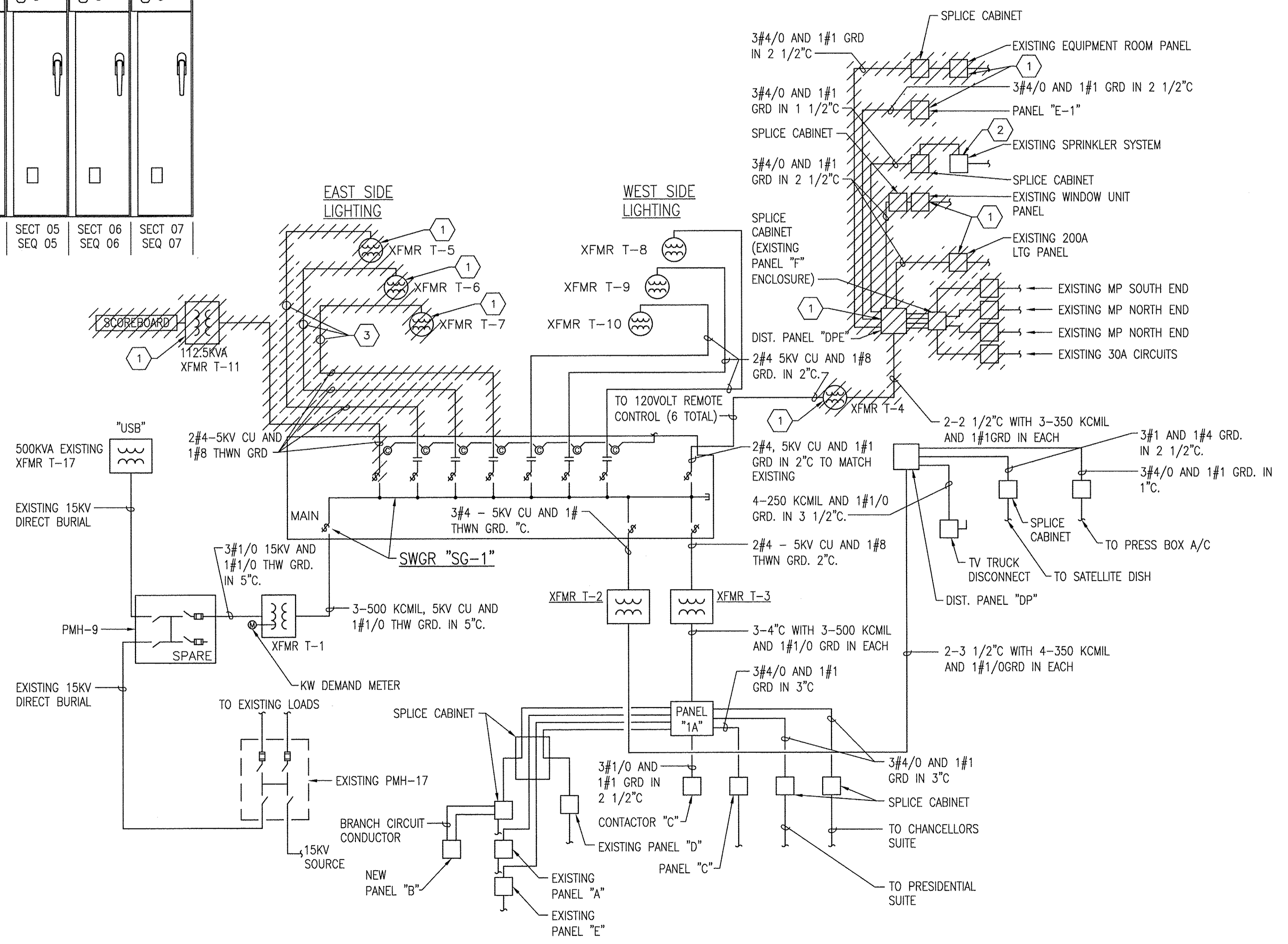


1 SWITCHGEAR "SG-1" ELEVATION
E601 NTS

GENERAL NOTES	
NOTE	DESCRIPTION
A.	ALL POWER TO TRANSFORMERS BEING REMOVED SHALL BE DISCONNECTED AT SWITCHGEAR "SG-1" PRIOR TO REMOVAL.
B.	ALL HATCHED ITEMS SHALL BE DISCONNECTED AND REMOVED.

NOTES BY SYMBOL	
NOTE	DESCRIPTION
1.	ITEM SHALL BE SALVAGED AND GIVEN TO UNT SYSTEMS FACILITIES MAINTENANCE UPON REMOVAL.
2.	IRRIGATION SYSTEM 240/120V PANELBOARD LOCATED IN IRRIGATION PUMP HOUSE SHALL BE REPLACED. REFERENCE ONE-LINE DIAGRAM ON E602 FOR NEW PANELBOARD "P1".
3.	CONDUCTORS TO EAST SIDE LIGHTING TRANSFORMERS SHALL REMAIN IF ALTERNATE 1 IS SELECTED. REFERENCE SHEET E102 FOR ELECTRICAL DEMOLITION PLAN - ALTERNATE 1.

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2 ONE-LINE DIAGRAM - DEMOLITION
E601 NTS

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Huitzoliars, Inc. Fort Worth, TX
500 West 7th Street, Suite 300
Fort Worth, Texas 76102-4728
Phone (817) 335-3000 Fax (817) 335-0025

DEMOLITION DIAGRAMS

UNT FOOTS FIELD
UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

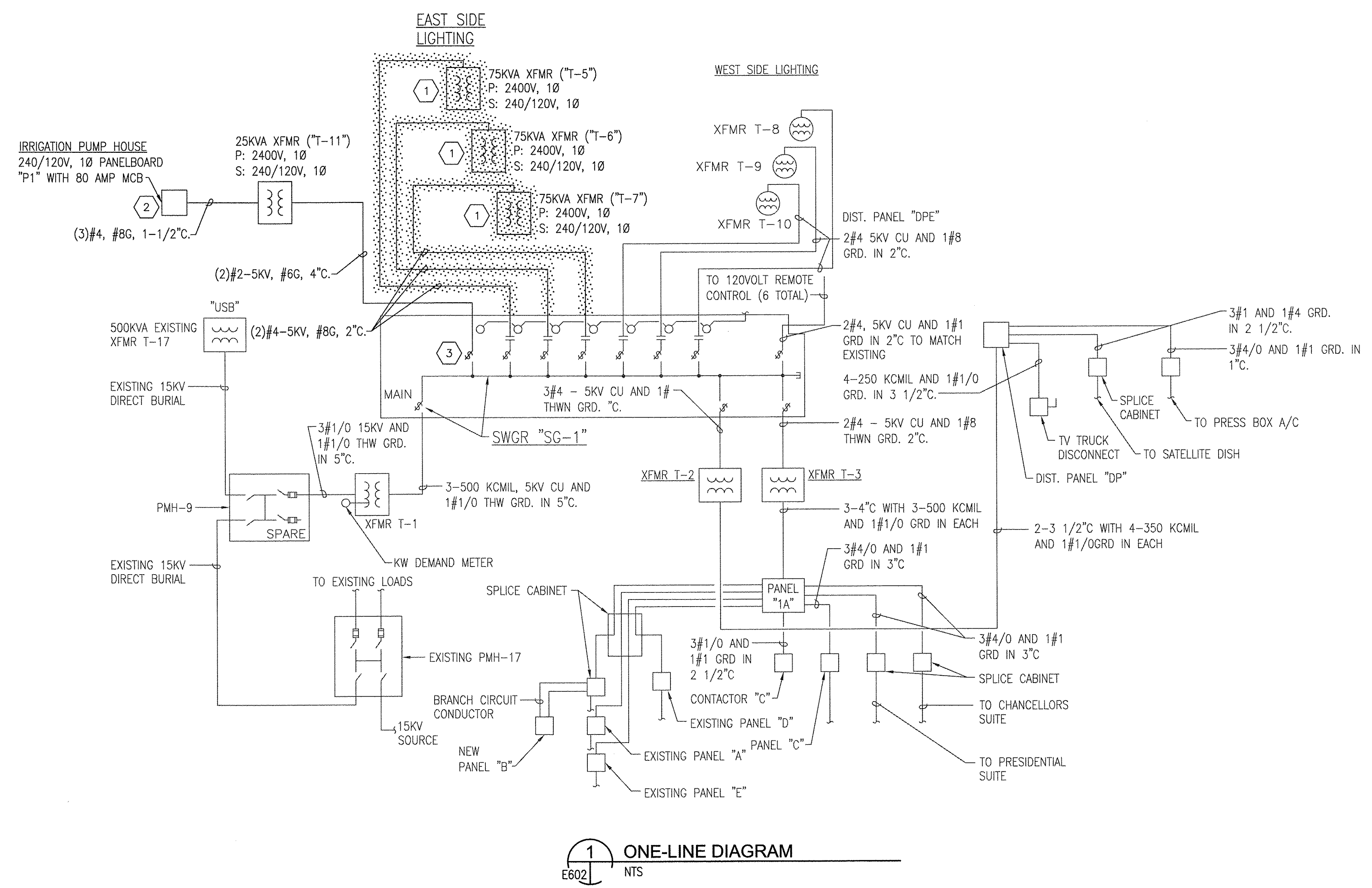
SCOTT P. PARMA
75690
LICENSED PROFESSIONAL ENGINEER
Huitzoliars, Inc.
Firm Registration No. F-761
3/14/13

DATE: 02/07/2013
DRAWN BY: JG
DESIGNED BY: RLD
CHECKED BY: SPP
PROJ. NO. 03-1240-04
SHEET: E601

CLIENT: THURSDAY, 3/14/2013
C:\PROJ\031240\DWG\ELEC\E601.DWG - LAYOUT: LAYOUT1

NOTES BY SYMBOL	
NOTE	DESCRIPTION
1.	EAST LIGHTING TRANSFORMERS AND CONDUCTORS SHALL ONLY BE NEEDED IF ALTERNATE 1 IS SELECTED. ITEMS ARE SHOWN WITH DOT HATCH. REFERENCE SHEET E102 FOR ALTERNATE 1 DEMOLITION AND SHEET E202 ALTERNATE 1 ELECTRICAL SITE PLAN.
2.	REFERENCE SHEET E501 FOR PANELBOARD "P1" SCHEDULE.
3.	REPLACE EXISTING FEEDER FUSES WITH NEW 15 AMP FUSES.

NO.	REVISION	DATE
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1 ONE-LINE DIAGRAM
E602 NTS

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Fort Worth, Texas 76102-4728
Phone (817) 335-3000 Fax (817) 335-0225

ONE-LINE DIAGRAM

UNT FOOTS FIELD

UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

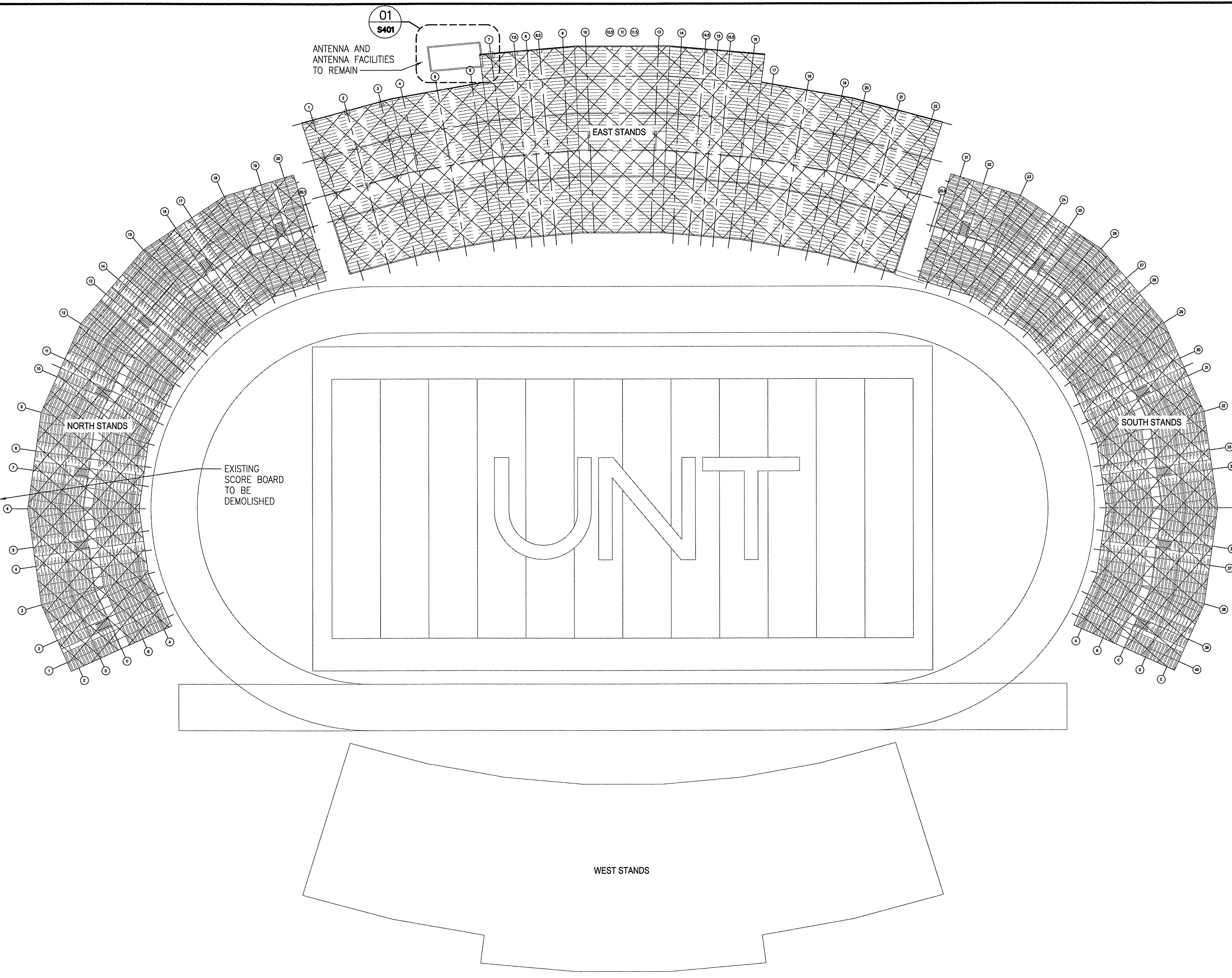
STATE OF TEXAS
SCOTT P. PARMA
75690
LICENSED PROFESSIONAL ENGINEER

Huit-Zollars, Inc.
Firm Registration No. F-761
3/14/13

DATE: 02/07/2013
DRAWN BY: JG
DESIGNED BY: RLD
CHECKED BY: SPP
PROJ. NO. 03-1240-04
SHEET: E602

CLIENT: THURSKEY 3/14/2013
PROJECT: UNT FOOTBALL FIELD ELECTRICAL REVISIONS - LAYOUT: LAYOUT1

01
S401
ANTENNA AND
ANTENNA FACILITIES
TO REMAIN



DEMOLITION GENERAL NOTES	
NOTE	DESCRIPTION
1.	REMOVE AND DISPOSE OF ALL KITCHEN EQUIPMENT. CAP ALL UNUSED UTILITY LINES ABOVE CEILING, IN WALL AND IN FLOOR.
2.	UNT WILL REMOVE ITEMS TO BE KEPT PRIOR TO THE START OF DEMOLITION BY JUNE 15, 2013. CONTRACTOR TO REMOVE ALL FURNITURE AND EQUIPMENT THAT HAS NOT BEEN PREVIOUSLY REMOVED OR INDICATED TO BE SALVAGED BY THE USERS. CONTRACTOR SHALL DISPOSE OF ALL ITEMS LEGALLY.
3.	REFER TO ELECTRICAL AND CIVIL DRAWINGS FOR SUPPLEMENTAL DEMOLITION ITEMS.
4.	DRAWINGS SHOW THE GENERAL EXTENT OF DEMOLITION; HOWEVER IT IS IMPRACTICAL TO INDICATE EVERY ITEM. REMOVE ALL ITEMS NECESSARY TO ACHIEVE THE FINAL PRODUCT INDICATED ON THESE DRAWINGS.
5.	PATCH, REPAIR, PREP, AND FINISH ANY EXISTING SURFACES TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION TO MATCH ADJACENT EXISTING SURFACES.
6.	CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO AVOID DUST GENERATION DURING DEMOLITION.
7.	CONTRACTOR SHALL COORDINATE WITH THE UNT SYSTEM PROJECT MANAGER PRIOR TO START OF PROJECT TO IDENTIFY SALVAGE ITEMS. SALVAGED ITEMS WILL BE REMOVED AND KEPT FOR UNT.
8.	HAZARDOUS SUBSTANCES MAY BE PRESENT. DEMOLITION, RENOVATION, AND/OR MODIFICATIONS SHOULD PROCEED WITH CAUTION. REF SPECIFICATION 01 00 50.00 44 GENERAL REQUIREMENTS, SECTIONS 1.23 AND 1.25 FOR REQUIREMENTS FOR DEALINGS WITH HAZARDOUS SUBSTANCES.
9.	ALL EXISTING FOUNDATION BEAMS AND PIERS, WITHIN THE AREAS TO BE DEMOLISHED, SHALL BE REMOVED OR CUT DOWN TO A MINIMUM OF 2'-0" BELOW FINISHED GRADE.
10.	EXISTING DRAWINGS ON SHEETS S701-S712 ARE PROVIDED FOR INFORMATION ONLY.
11.	SEE SHEET E501 FOR NOTES CONCERNING TRACK AND FIELD LIGHT POLE & FOUNDATION DETAIL-ALTERNATE 1.
12.	ALL NINE CAST PANELS ON THE BACK FACE OF THE EAST STANDS ARE TO BE SALVAGED AND KEPT FOR UNT -ALTERNATE 2.

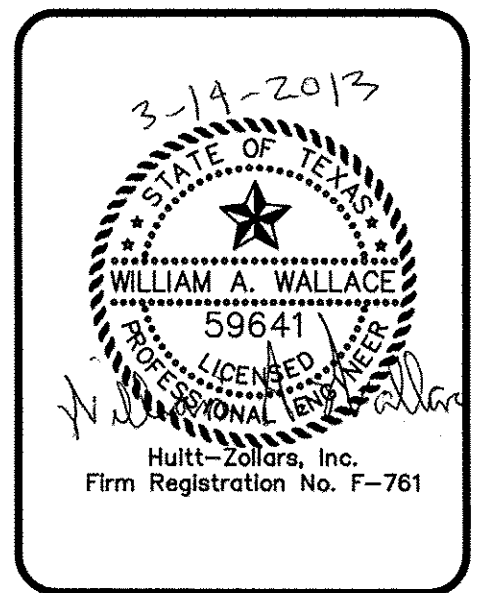
DATE	03/15/13
REVISION	Δ
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Hult-Zollars, Inc.
Fort Worth
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Fort Worth, Texas 76102-4728
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OVERALL STADIUM DEMO PLAN

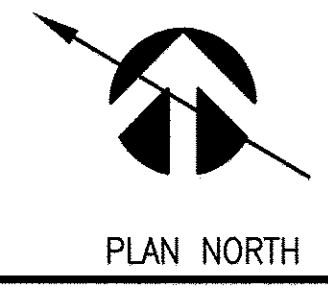
UNT FOOTS FIELD

UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203



DATE:	01/29/2013
DRAWN BY:	TWM
DESIGNED BY:	RTR
CHECKED BY:	WAW
PROJ. NO.	03-1240-04
SHEET:	S101

01 OVERALL DEMO PLAN
1/32"=1'-0"

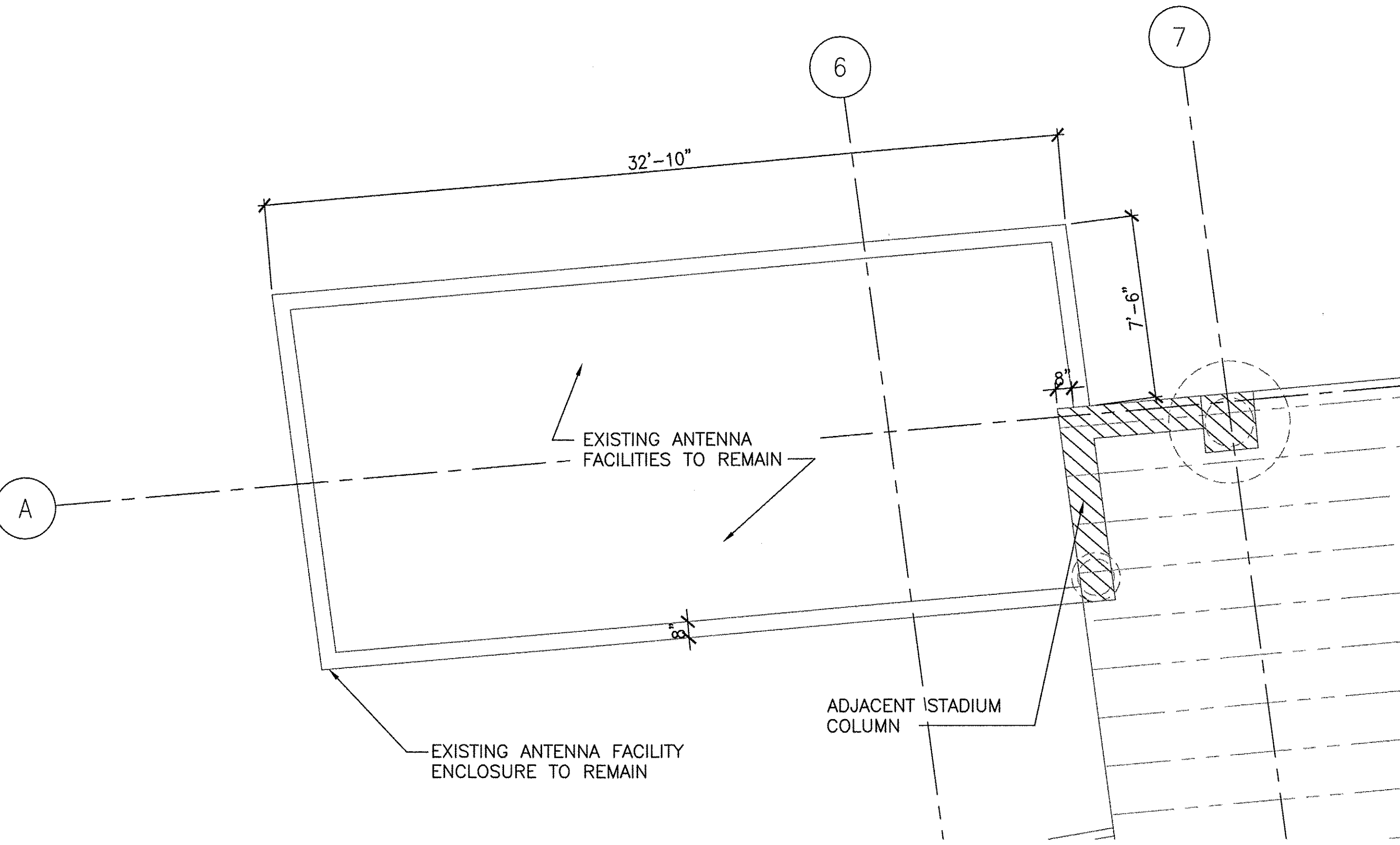


TO BE DEMOLISHED

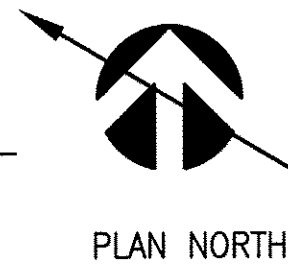
SCALE 1/32" = 1'-0"
0 16' 32' 64'

IF THIS SHEET IS NOT 34" x 22", IT IS A REDUCED PRINT. SCALE ACCORDINGLY. FILE NAME: STANDARDS.DWG

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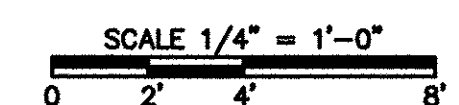


01 ENLARGED ANTENNA FACILITY
1/4" = 1'-0"



ANTENNA FACILITY PROTECTION NOTES

NOTE	DESCRIPTION
1.	EXISTING ANTENNA, ANTENNA FACILITY ENCLOSURE, AND ALL RELATED EQUIPMENT AND UTILITIES ARE TO BE PROTECTED FROM ALL OPERATIONS RELATED TO THIS PROJECT.
2.	IN ADDITION TO PROTECTING THE EXISTING ANTENNA FACILITIES, A PROTECTIVE COVERING SHALL BE PROVIDED SO THAT DEBRIS DOES NOT FALL INTO THE ANTENNA FACILITY ENCLOSURE DURING DEMOLITION OPERATIONS.
3.	THE STADIUM COLUMN, WHICH IS TO BE DEMOLISHED FORMS PART OF THE ANTENNA FACILITY ENCLOSURE. AT THE CONTRACTOR'S OPTION, THE ADJACENT STADIUM COLUMN SHALL BE:
3.1.	DEMOLISHED TO THE SAME HEIGHT OF THE EXISTING ANTENNA FACILITY ENCLOSURE AND THE REMAINING COLUMN SHALL BE FINISHED TO MATCH THE EXISTING ENCLOSURE WALL. IF THIS OPTION IS CHOSEN, THE CONTRACTOR SHALL ENSURE THAT ADEQUATE EXISTING FOUNDATION REMAINS TO SUPPORT THE STADIUM COLUMN PORTION.
3.2.	REMOVED AND ANOTHER WALL WILL BE ADDED IN ITS PLACE THAT MATCHES THE EXISTING ENCLOSURE WALL.
4.	ACCESS TO THE ANTENNA FACILITIES SHALL BE MAINTAINED 24 HOURS A DAY 7 DAYS A WEEK.



NO.	REVISION	DATE
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HUITZOLLARS
Huitzollars, Inc.
Fort Worth
500 West 7th Street, Suite 900
Fort Worth, Texas 76102-4728
Phone (877) 335-3000 Fax (877) 335-0025

ENLARGED DEMO PLAN

UNT FOOTS FIELD

UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

3-14-2013

STATE OF TEXAS

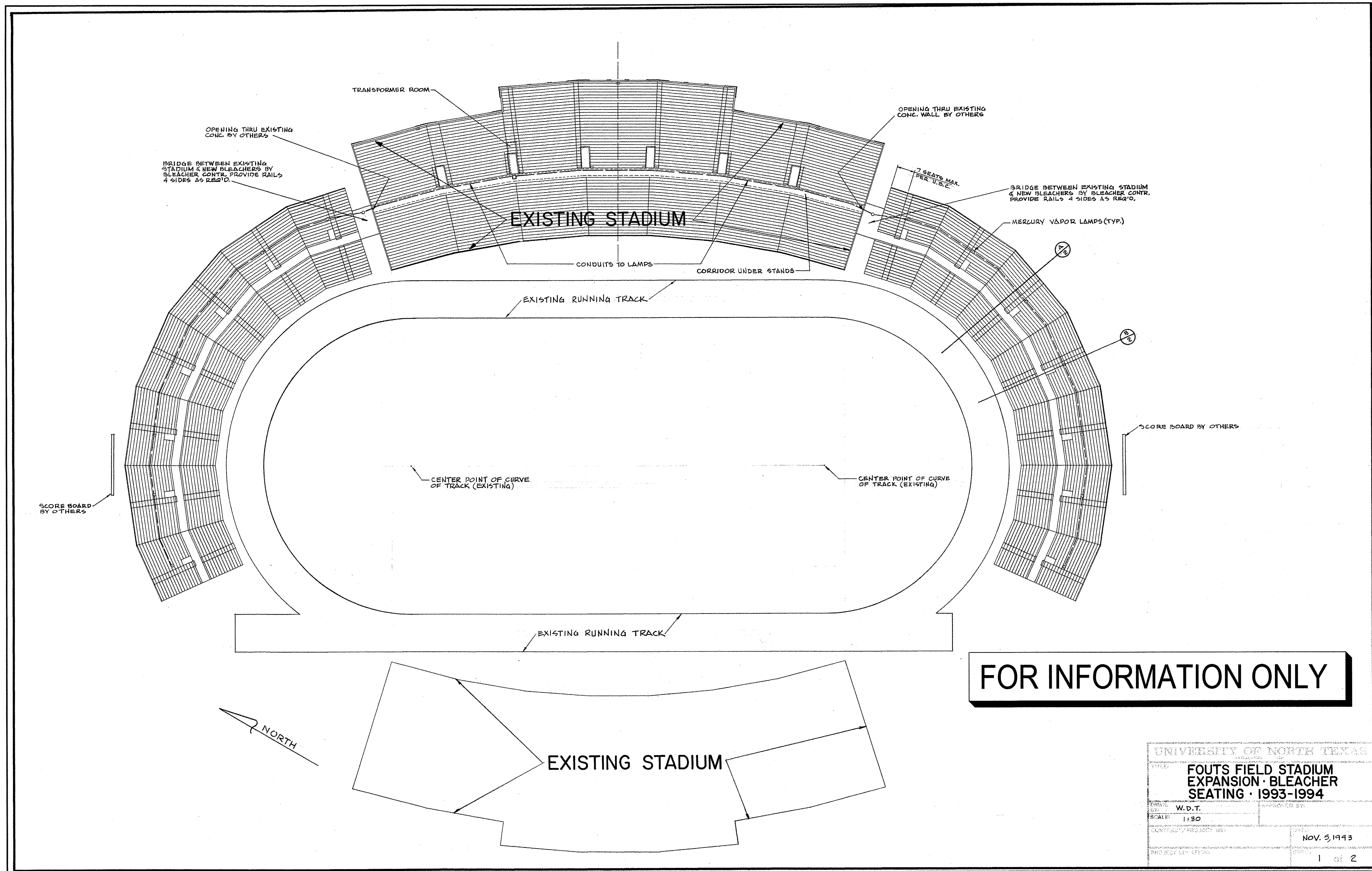
WILLIAM A. WALLACE
59641

LICENSED PROFESSIONAL ARCHITECT

Huitzollars, Inc.
Firm Registration No. F-761

DATE:	01/29/2013
DRAWN BY:	TWM
DESIGNED BY:	RTR
CHECKED BY:	WAW
PROJ. NO.	03-1240-04
SHEET:	S401

JWC: THURSDAY | 3/14/2013
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FOR INFORMATION ONLY

UNIVERSITY OF NORTH TEXAS	
TITLE: FOUTS FIELD STADIUM EXPANSION - BLEACHER SEATING - 1993-1994	
DATE: 01/29/2013	APPROVED BY:
DRAWN BY: TWB	DATE: NOV. 5, 1993
DESIGNED BY: RTR	PROJECT NO. 03-1240-04
CHECKED BY: WAW	SHEET: 1 of 2
PROJ. NO. 03-1240-04	

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

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 Huitzollars, Inc.
 Fort Worth
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-1025

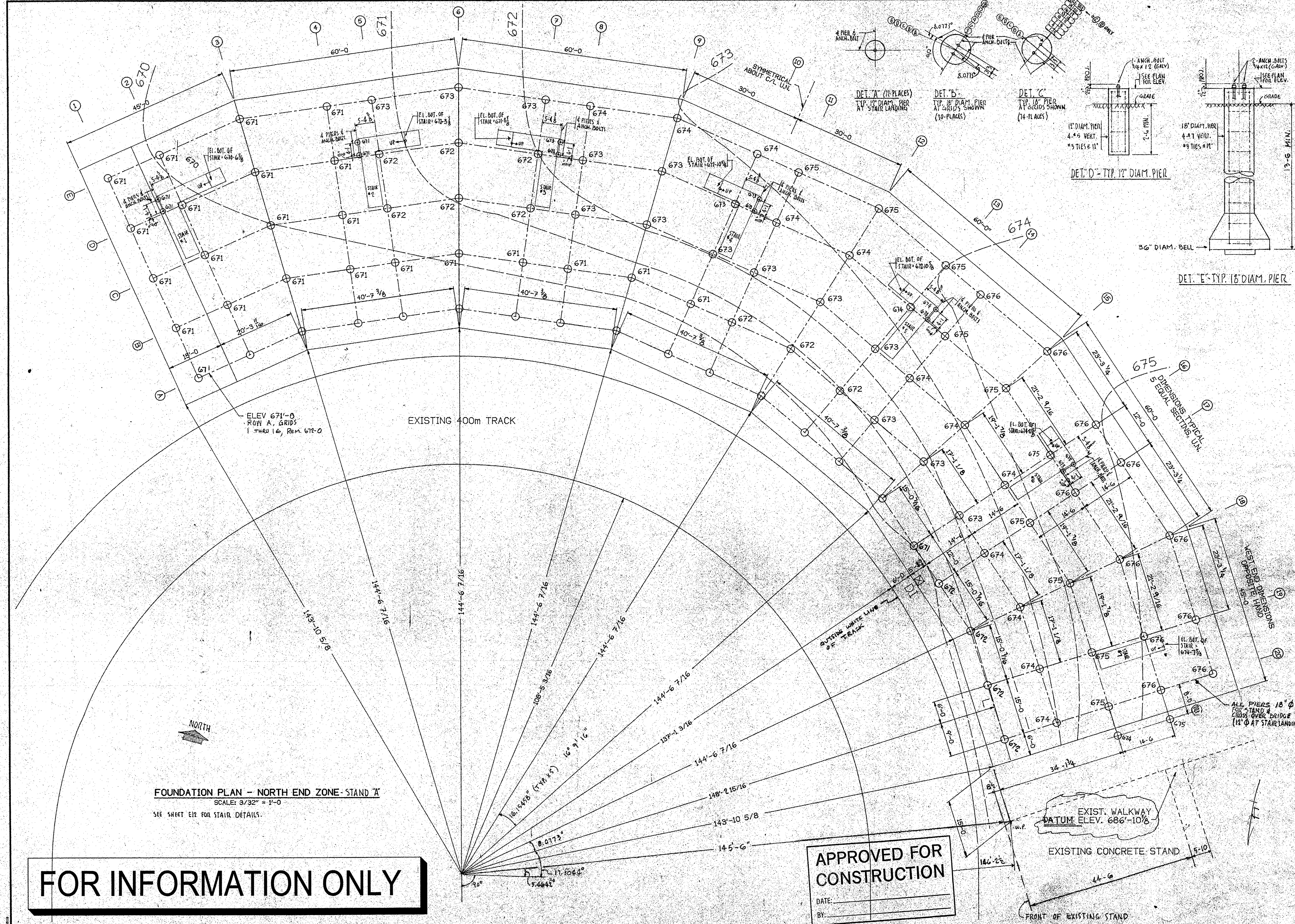
EXISTING DRAWING CLARIFICATION ONLY

UNT FOUTS FIELD

UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76205

DATE: 01/29/2013
DRAWN BY: TWB
DESIGNED BY: RTR
CHECKED BY: WAW
PROJ. NO.: 03-1240-04
SHEET: S701

JWC, THURSDAY, 3/14/2013
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FOUNDATION PLAN - NORTH END ZONE STAND A
 SCALE: 3/32" = 1'-0"
 SEE SHEET E12 FOR STAIR DETAILS.

FOR INFORMATION ONLY

APPROVED FOR CONSTRUCTION

DATE: _____
 BY: _____



NO.	DATE	DESCRIPTION
1	11/26/04	TOP OF NOTES
2	4/18/04	STAIR BRIDGE DETAILS
3		
4		

PROJECT: 2 - 28 ROW x 378'-0" CURVED
 LOCATION: UNIV. OF NORTH TEXAS
 DENTON, TX
 CUSTOMER:

Standafoot
 A DIVISION OF SCHULTZ INDUSTRIES, INC.
 PO BOX 2655 WACO, TEXAS 76702 800 433-3116

DATE: 13 DEC 93
 DRAWN BY: JBS, PBL
 CHECKED BY: JPH
 JOB NUMBER: 601-7960
 SHEET NO.: E5

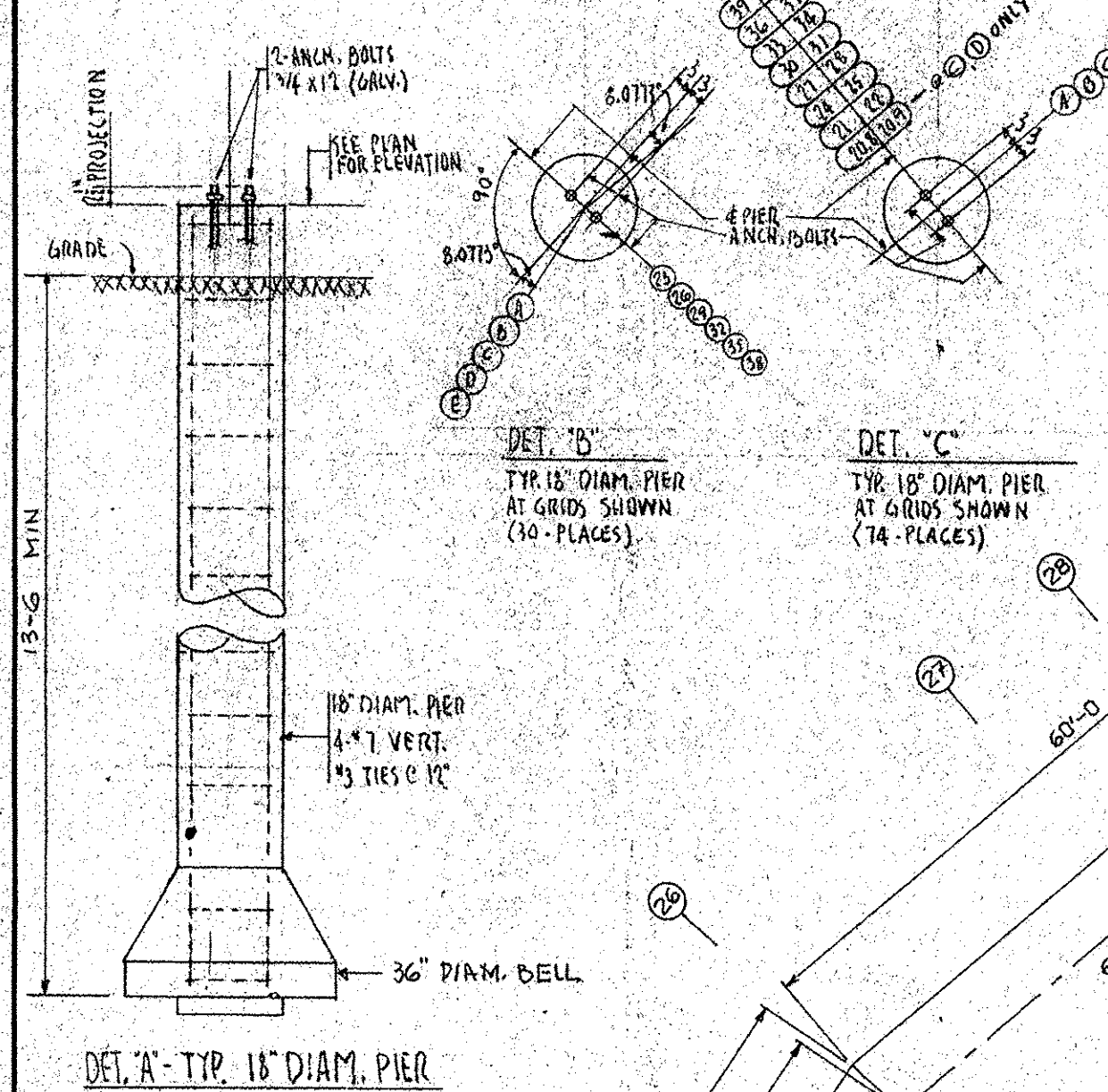
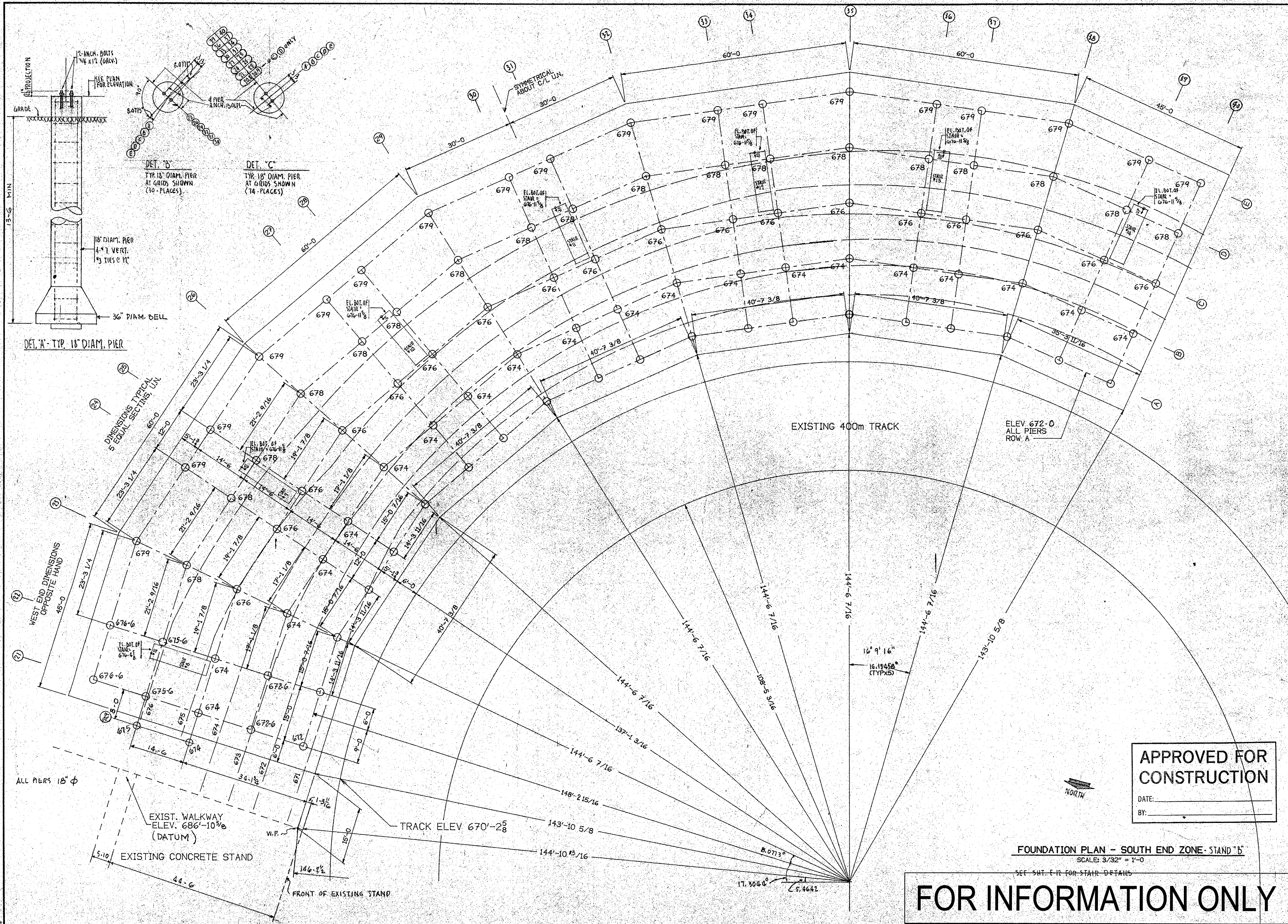
NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

HUITZOLIARS
 Huitzoliars, Inc.
 Fort Worth
 500 West 7th Street, Suite 300
 Fort Worth, Texas 7602-4728
 Phone (817) 335-3000 Fax (817) 335-0025

EXISTING DRAWINGS CLARIFICATION ONLY

UNT FOUTS FIELD
 UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76205

DATE: 01/29/2013
 DRAWN BY: TWM
 DESIGNED BY: RTR
 CHECKED BY: WAW
 PROJ. NO: 03-1240-04
 SHEET: S702



NO.	DATE	DESCRIPTION
0		100% SUBMITTAL

PROJECT 2 - 28 ROW X 378'-0" CURVED
LOCATION NORTH TEXAS STATE UNIV
 DENTON, TX
CUSTOMER

Studsteel
 A DIVISION OF SCHULTZ INDUSTRIES, INC.
 PO BOX 2655 WACO, TEXAS 76702 800 433-3116

APPROVED FOR CONSTRUCTION
 DATE: _____
 BY: _____

DATE 13 DEC 93
 DRAWN BY JES, BPL
 CHECKED BY JPH
 JOB NUMBER 661-7460

SHEET NO.
E6

FOR INFORMATION ONLY

FOUNDATION PLAN - SOUTH END ZONE - STAND "B"
 SCALE: 3/32" = 1'-0"

SEE SHT. E-R FOR STAIR DETAILS

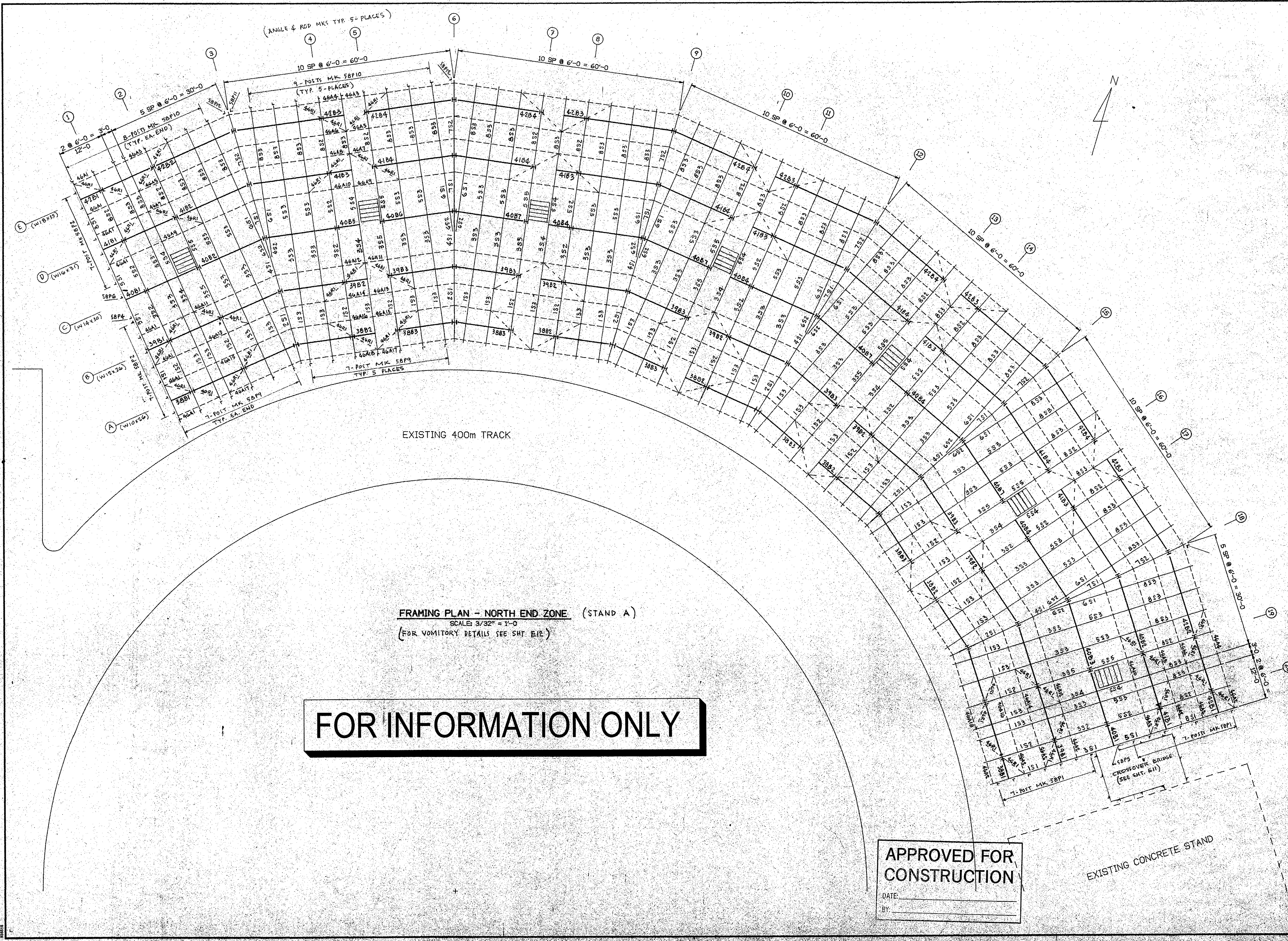
NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

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 Huitzoliars, Inc.
 Fort Worth
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-0025

EXISTING DRAWINGS CLARIFICATION ONLY
UNT FOOTS FIELD
 UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

DATE: 01/29/2013
 DRAWN BY: TWM
 DESIGNED BY: RTR
 CHECKED BY: WAW
 PROJ. NO. 03-1240-04

SHEET: S703



FOR INFORMATION ONLY

APPROVED FOR CONSTRUCTION
 DATE: _____
 BY: _____



NO.	DATE	DESCRIPTION
0		100% SUBMITTAL

PROJECT LOCATION CUSTOMER
 2 - 28' ROW x 378'-0" CURVED
 NORTH TEXAS STATE UNIV.
 DENTON, TX

Sturtevant
 A DIVISION OF SCHULTZ INDUSTRIES, INC.
 P.O. BOX 2655 WACO, TEXAS 76702 800 433-3116

DATE 4 DEC 93
DRAWN BY JES JBH
CHECKED BY
JOB NUMBER 601-7460
SHEET NO. E7

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

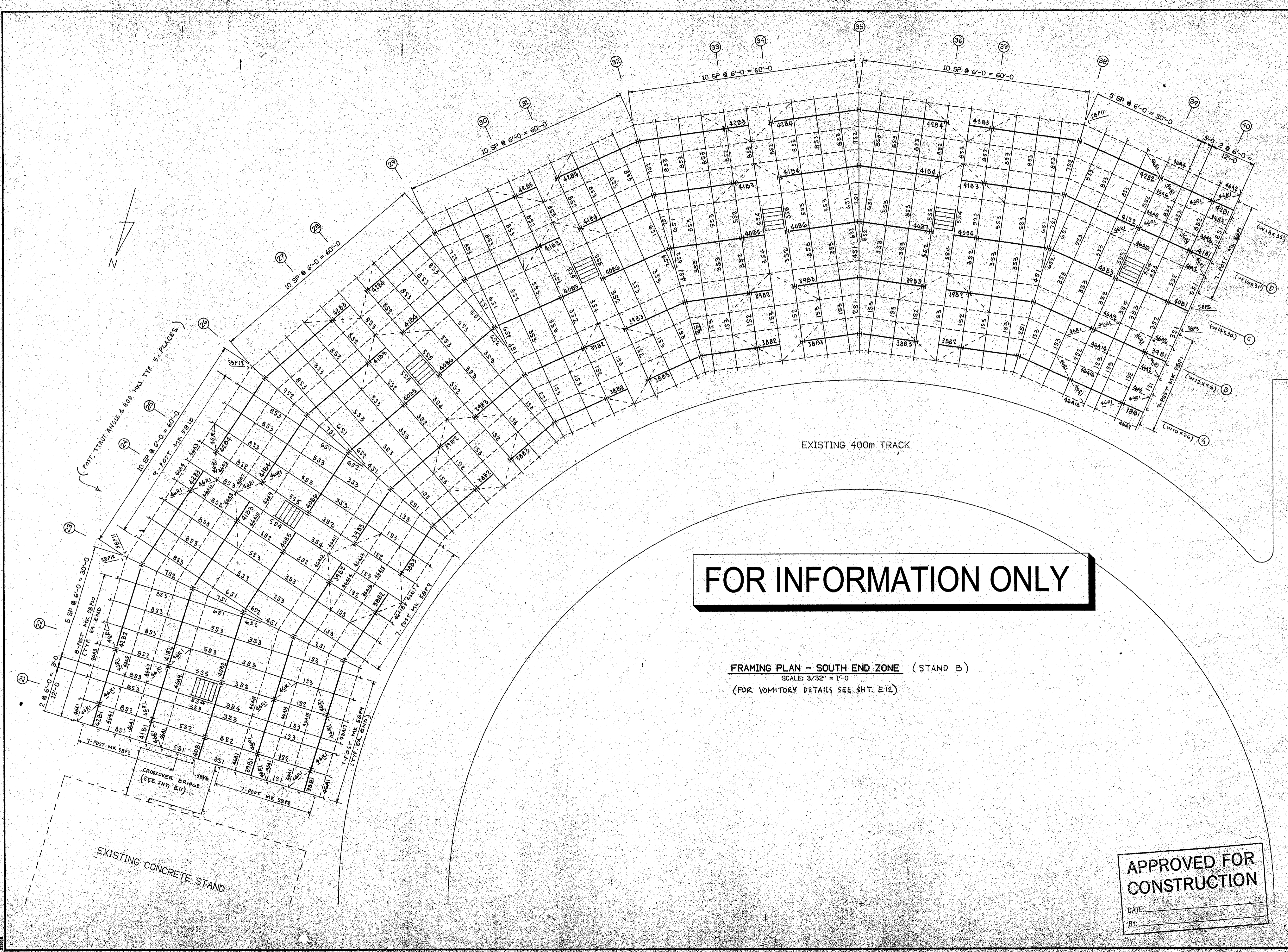
HUITZOLLARS
 Huitzollars, Inc.
 Fort Worth, Texas 76102-4728
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-1025

EXISTING DRAWINGS CLARIFICATION ONLY

UNT FOOTS FIELD
 UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76205

DATE: 01/29/2013
 DRAWN BY: TWM
 DESIGNED BY: RTR
 CHECKED BY: WAW

PROJ. NO. 03-1240-04
SHEET: S704



FOR INFORMATION ONLY

FRAMING PLAN - SOUTH END ZONE (STAND B)
 SCALE: 3/32" = 1'-0"
 (FOR VOMITORY DETAILS SEE SHT. E.12)

APPROVED FOR
CONSTRUCTION

DATE: _____
 BY: _____



NO.	DATE	DESCRIPTION
0		100% SUBMITTAL

PROJECT 2 - 28 ROW X 378'-0" CURVED
LOCATION NORTH TEXAS STATE UNIV
 DENTON, TX
CUSTOMER

Stuctural
 A DIVISION OF SCHULTZ INDUSTRIES, INC.
 PO BOX 2655 WACO, TEXAS 76702 800 433-3116

DATE 6 DEC 93
DRAWN BY JES J.B.H.
CHECKED BY
JOB NUMBER 601-7460
SHEET NO. E0

NO.	REVISION	DATE
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HUITZOLLARS

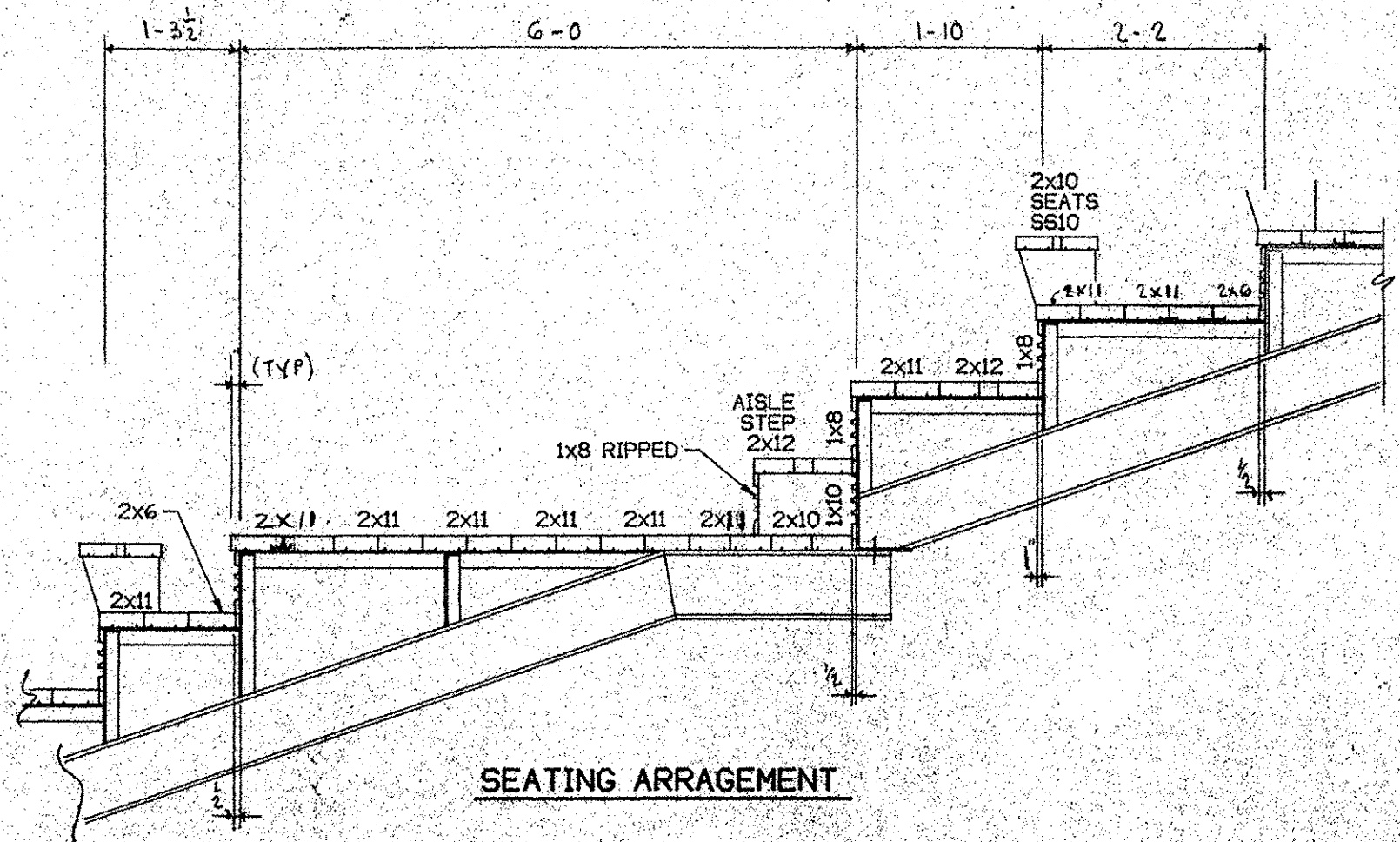
Huitzollars, Inc.
 Fort Worth
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-1025

EXISTING DRAWINGS CLARIFICATION ONLY

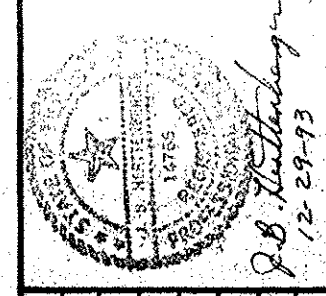
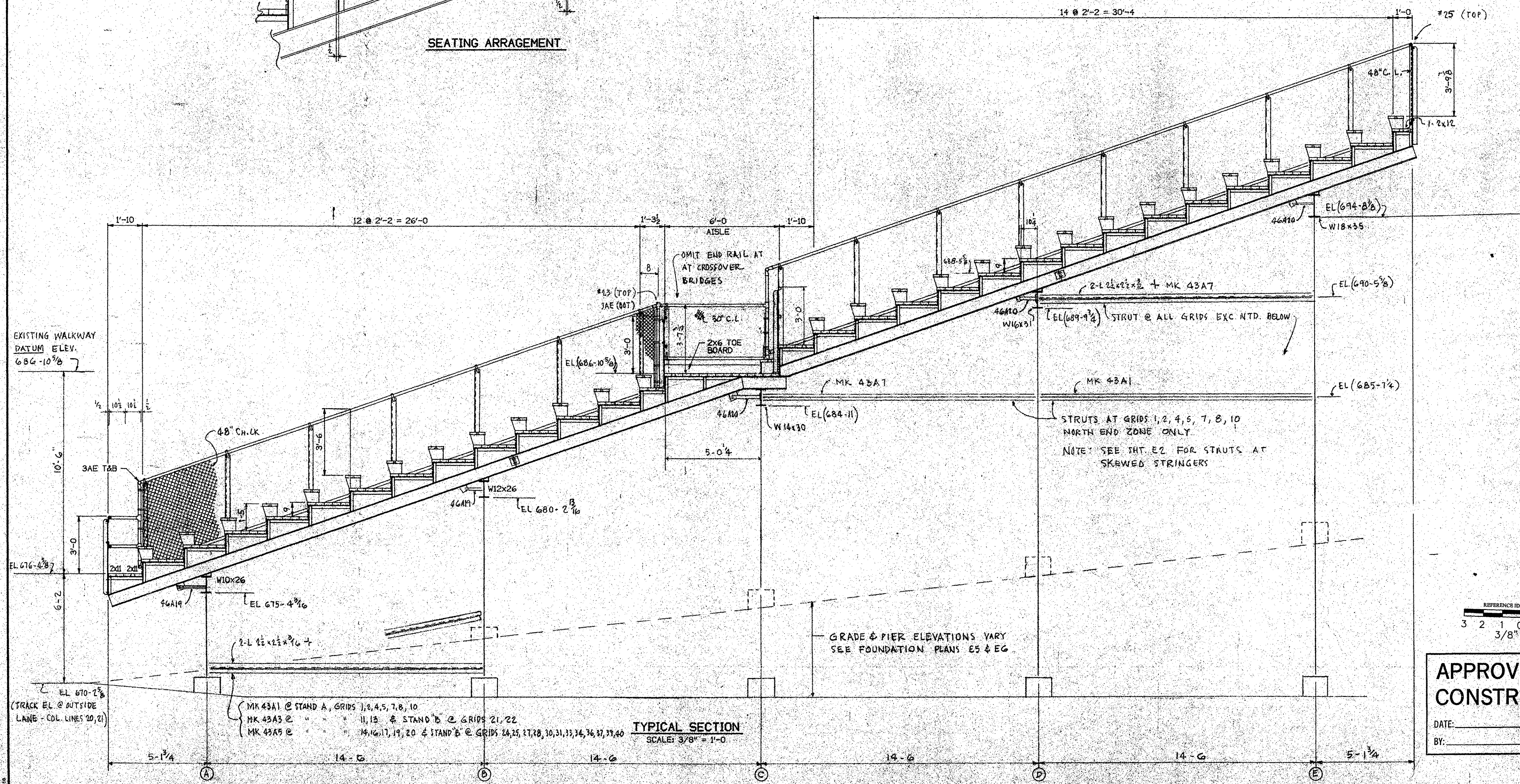
UNT FOOTS FIELD

UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

DATE: 01/29/2013
DRAWN BY: TWM
DESIGNED BY: RTR
CHECKED BY: WAW
PROJ. NO. 03-1240-04
SHEET: S705



FOR INFORMATION ONLY



NO.	DATE	DESCRIPTION
0		100% SUBMITTAL

PROJECT: 2 - 28 ROW X 378'-0" CURVED
 LOCATION: NORTH TEXAS STATE UNIV DENTON, TX
 CUSTOMER:

Studdiart
 A DIVISION OF SCHULTZ INDUSTRIES, INC.
 PO BOX 2655, WACO, TEXAS 76702 800 433-3116

DATE: 6 DEC 93
 DRAWN BY: JES
 CHECKED BY: J.B.H.
 JOB NUMBER: 601-7460
 SHEET NO.: E1

APPROVED FOR CONSTRUCTION

DATE: _____
 BY: _____

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

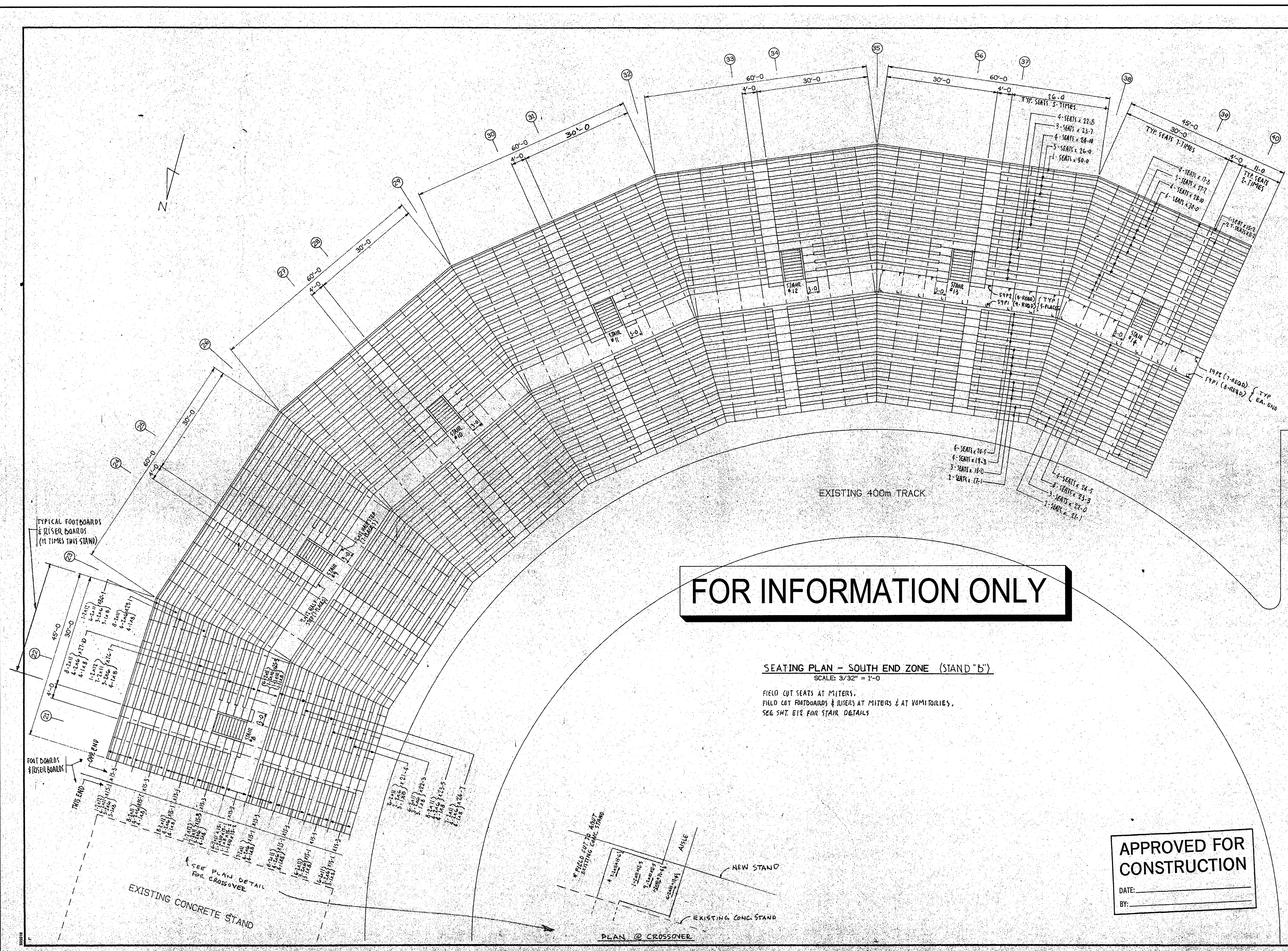
HUTT-ZOLLARS
 Hutt-Zollars, Inc.
 Fort Worth
 500 West 7th Street, Suite 300
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-1025

EXISTING DRAWING CLARIFICATION ONLY

UNT FOOTS FIELD

UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

DATE: 02/14/13
 DRAWN BY: TWM
 DESIGNED BY: RTR
 CHECKED BY: WAW
 PROJ. NO. 03-1240-04
 SHEET: S706



FOR INFORMATION ONLY

SEATING PLAN - SOUTH END ZONE (STAND "B")
SCALE: 3/32" = 1'-0"

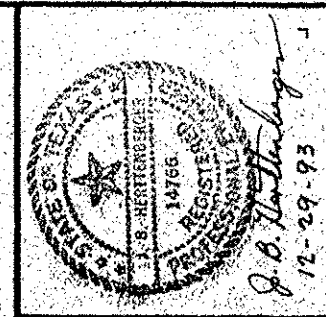
FIELD CUT SEATS AT MITERS,
FIELD CUT FOOTBOARDS & RISERS AT MITERS & AT VOMITORIES,
SEE SHT. E12 FOR STAIR DETAILS

APPROVED FOR CONSTRUCTION

DATE: _____
BY: _____

DATE: 6 DEC 09
DRAWN BY: JBS
CHECKED BY: JBS
JOB NUMBER: 601-7400
SHEET NO.:

E4



NO.	DATE	DESCRIPTION
0		100% SUBMITTAL

PROJECT: 2 - 28 ROW X 378'-0" CURVED
LOCATION: NORTH TEXAS STATE UNIV
DENTON, TX
CUSTOMER:

Stuebel
A DIVISION OF SCHULTZ INDUSTRIES, INC.
PO BOX 2655 WACO, TEXAS 76702 800.433.3116

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

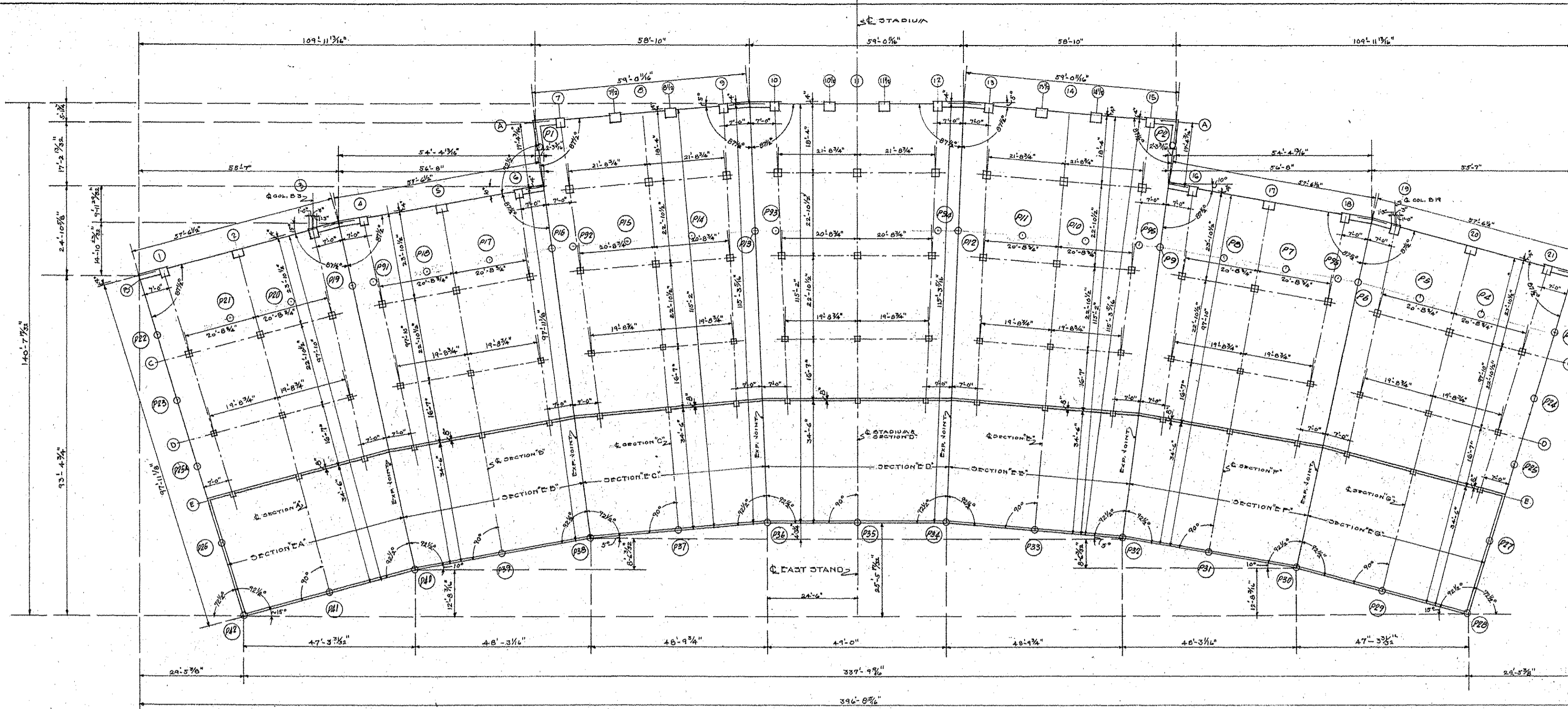
HUITZOLARS
Huitzolars, Inc. Fort Worth
500 West 7th Street, Suite 300
Fort Worth, Texas 76102-4728
Phone (817) 335-3000 Fax (817) 335-025

EXISTING DRAWING CLARIFICATION ONLY

UNT FOUTS FIELD

UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76205

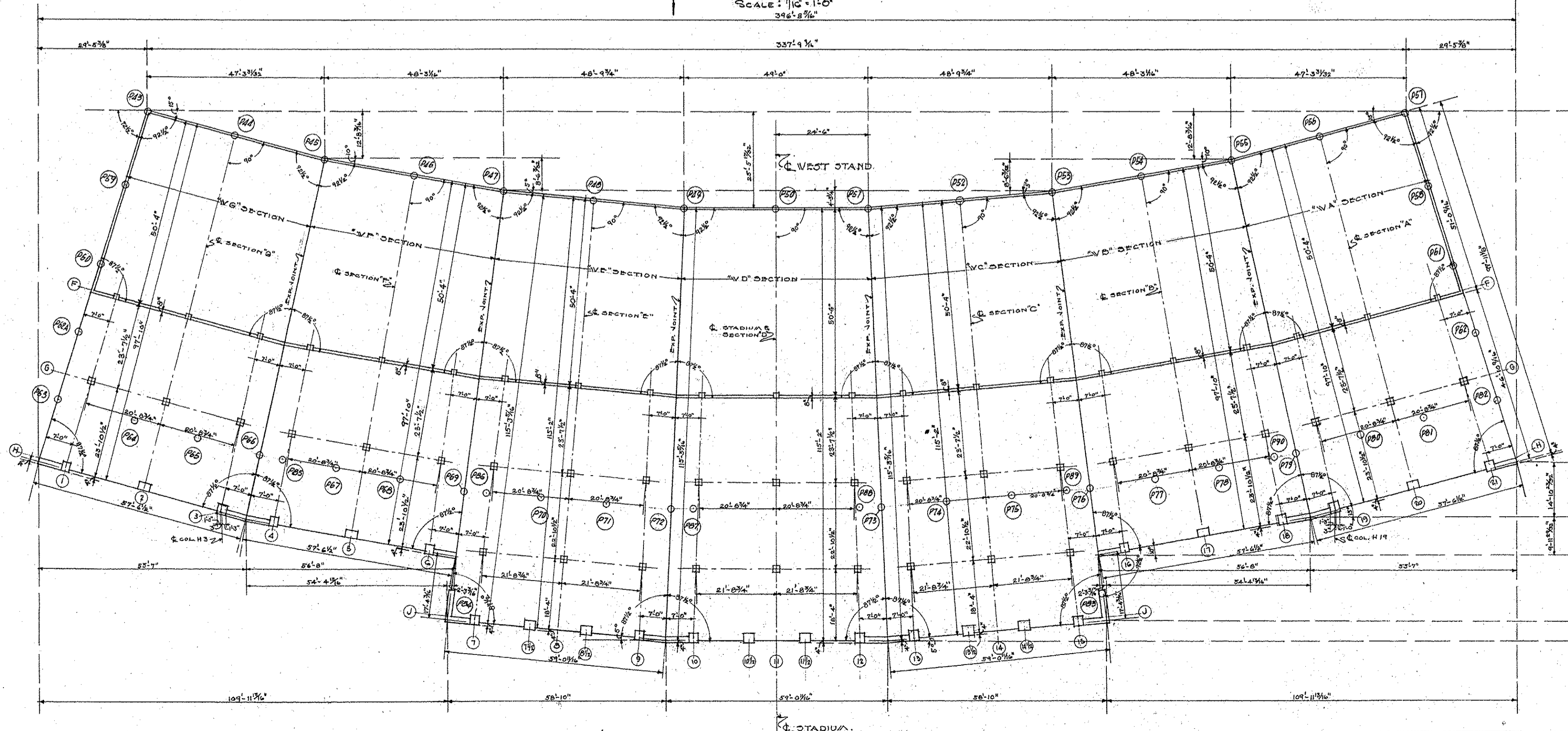
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DRAWN BY: TWM
DESIGNED BY: RTR
CHECKED BY: WAW
PROJ. NO. 03-1240-04
SHEET: S708



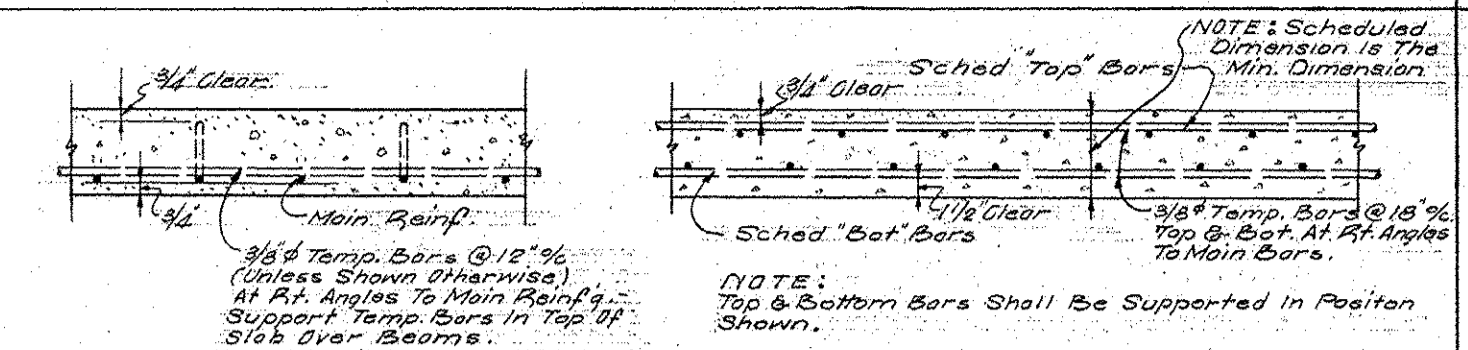
EAST STAND
SCALE: 1/16" = 1'-0"

COLUMN LOCATION PLANS

WEST STAND
SCALE: 1/16" = 1'-0"

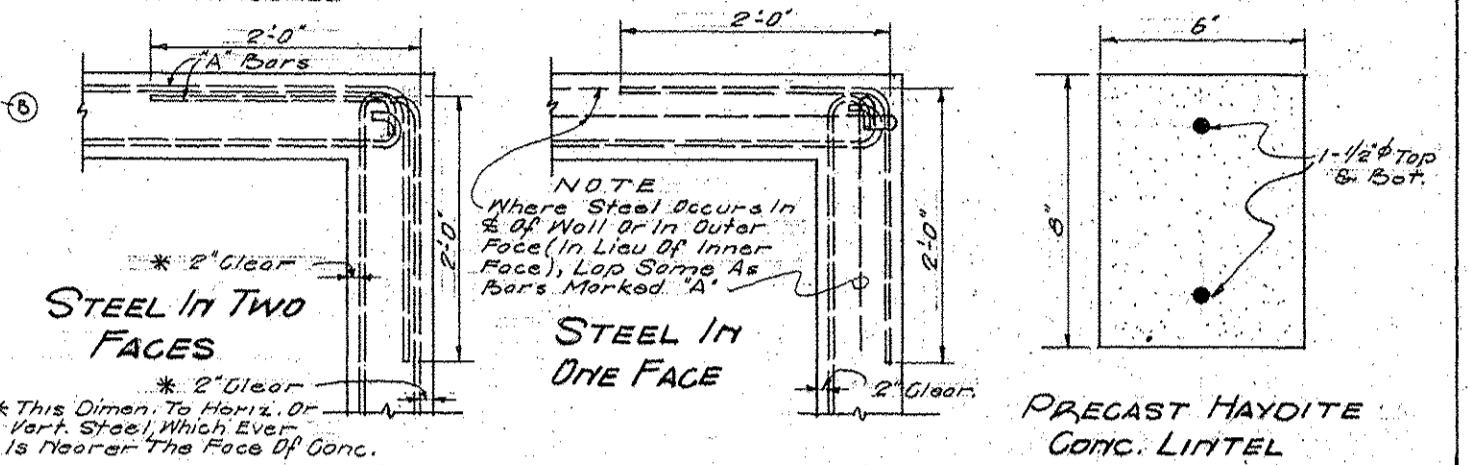


FOR INFORMATION ONLY

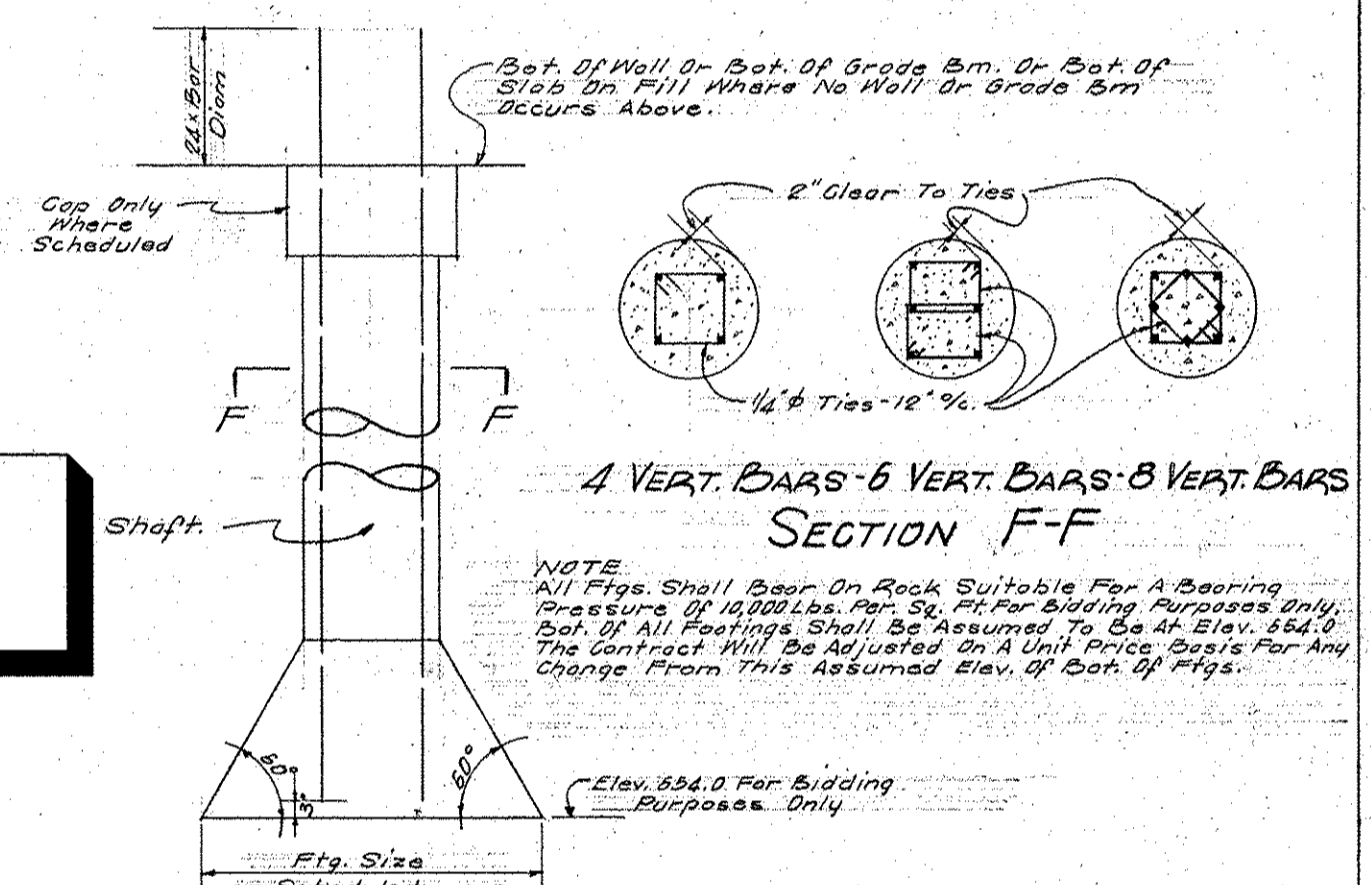


TYP. SECT. THRU SOLID SLAB EXCEPT SCHEDULED GROUND FLOOR SLABS
NO SCALE

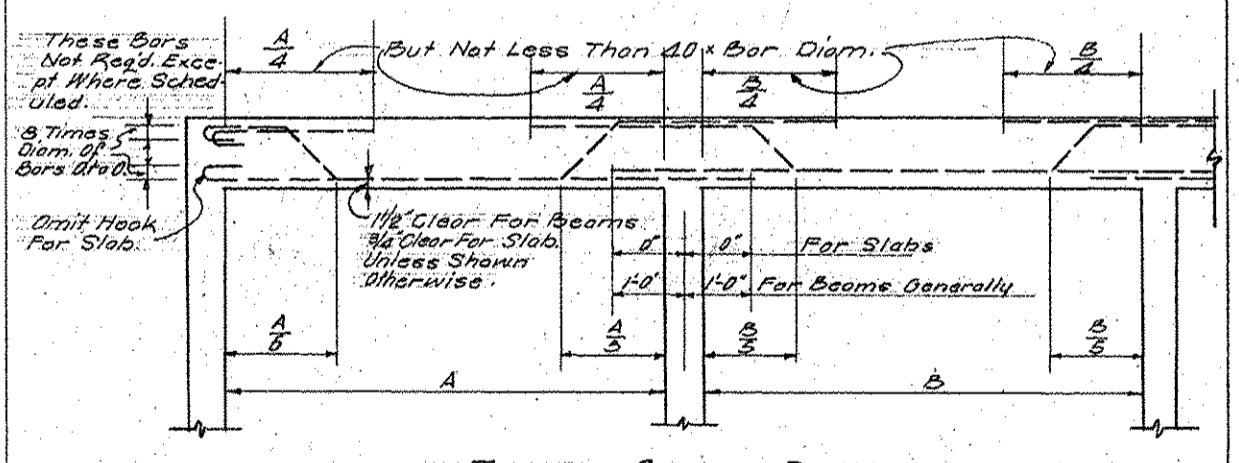
TYP. SECT. THRU SCHEDULED GROUND FLOOR SLABS
NO SCALE



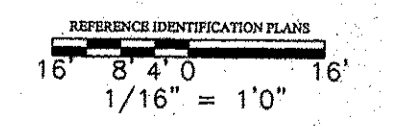
TYP. DETAILS SHOWING ARRANGEMENT OF HORIZ. STEEL AT CONG. WALL CORNERS (& BEAMS OVER 3'-0" IN DEPTH)



TYPICAL DETAIL OF FOOTINGS



TYPICAL BENDING DETAILS
NOTE: Where Straight Bars Are Noted 'Lap' In Schedule They Shall Extend Into Adj. Clear Span 2'-0" Top Bars Shall Extend Into Adj. Span Same As Bent Bars Shown Above.



APPROVED: *[Signature]*
PRESIDENT, NORTH TEXAS STATE COLLEGE, SEPT. 15, 1950

JOB NO. 507-3	DRAWING OF A STADIUM	DATE 15 Sept 50
DRAWN BY H.P. WEAVER	FOR NORTH TEXAS STATE COLLEGE, DENTON, TEXAS	REVISED
TRACED BY H.P. WEAVER	WILSON AND PATTERSON ARCHITECTS	SHEET NO. S-1
CHECKED BY G.R. R.	MAJESTIC BLDG., FORT WORTH, TEXAS	OF 55 SHEETS

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

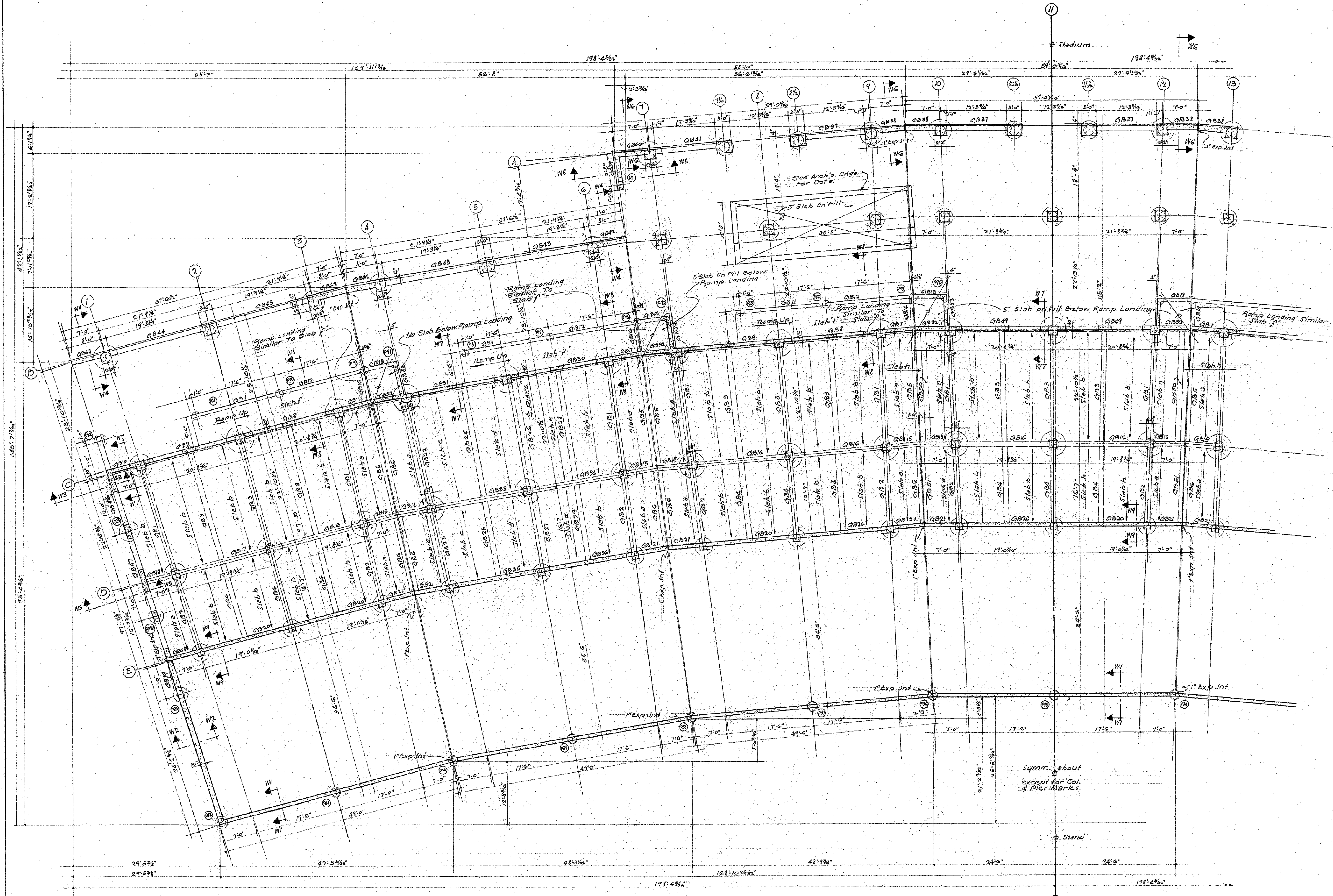
HUIZZOLLARS
HuiZZollars, Inc.
Fort Worth
500 West 7th Street, Suite 500
Fort Worth, Texas 76102-4728
Phone (817) 335-3000 Fax (817) 335-1025

EXISTING DRAWINGS CLARIFICATION ONLY

UNT FOUTS FIELD

UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

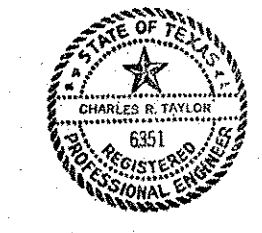
DATE: 01/29/2013
DRAWN BY: TWM
DESIGNED BY: RTR
CHECKED BY: WAW
PROJ. NO. 03-1240-04
SHEET: S709



GRADE BEAM & FOOTING PLAN - EAST STAND - NORTH HALF

REFERENCE IDENTIFICATION PLANS
 8' 6" 4" 2" 0"
 1/8" = 1' 0"

FOR INFORMATION ONLY



JOB NO.	5073	DATE	03/29/10
DRAWINGS	of 2 STADIUM	DESIGNED BY	TWM
FOR	NORTH TEXAS STATE COLLEGE, DENTON, TEXAS	CHECKED BY	WAW
DRAWN BY	C.V.C.	PROJ. NO.	03-1240-04
TRACED BY	C.V.C.	SHEET NO.	5-4
CHECKED BY	C.A.T.	DATE	03/15/13

EXISTING DRAWINGS CLARIFICATION ONLY

UNT FOOTS FIELD

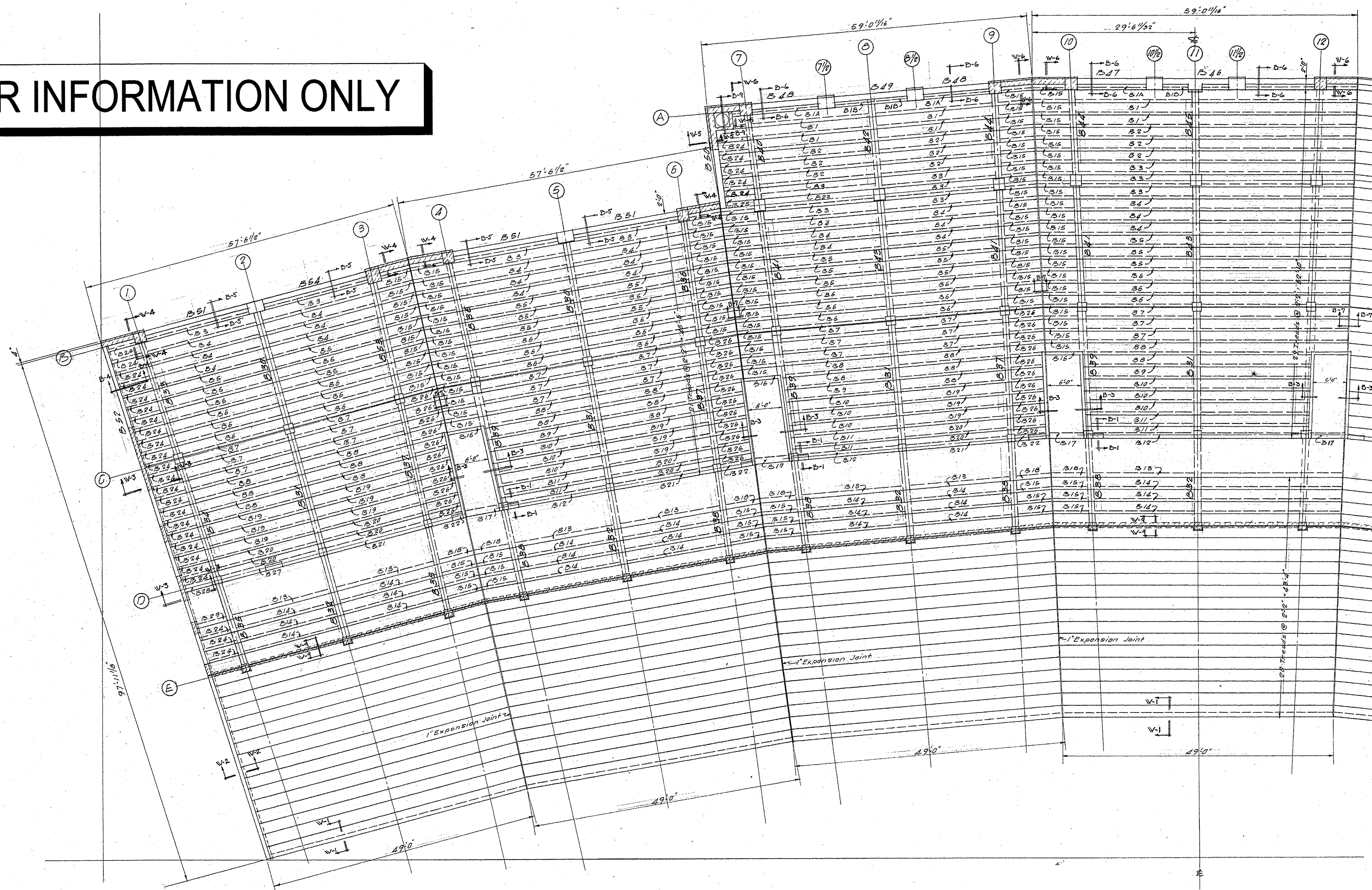
UNIVERSITY OF NORTH TEXAS
 1155 UNION CIRCLE
 DENTON, TX 76203

DATE:	01/29/2013
DRAWN BY:	TWM
DESIGNED BY:	RTR
CHECKED BY:	WAW
PROJ. NO.	03-1240-04
SHEET:	S710

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

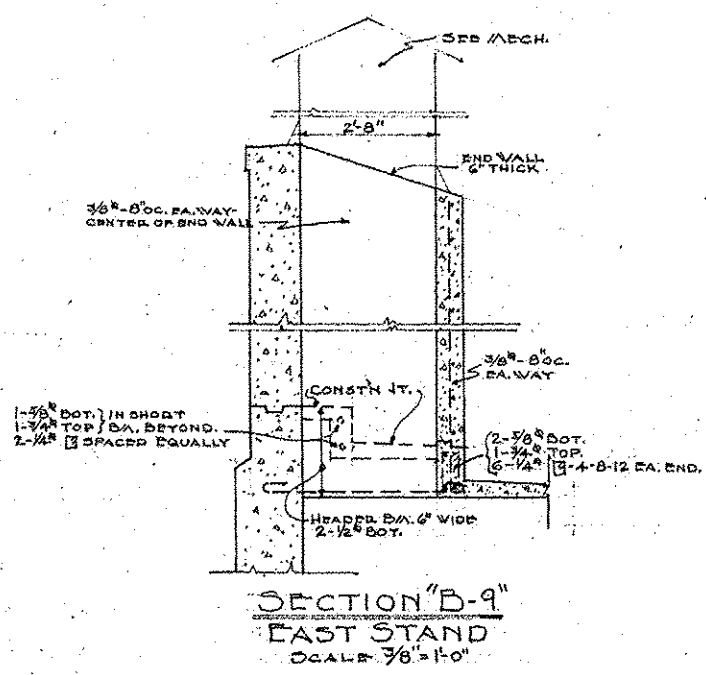
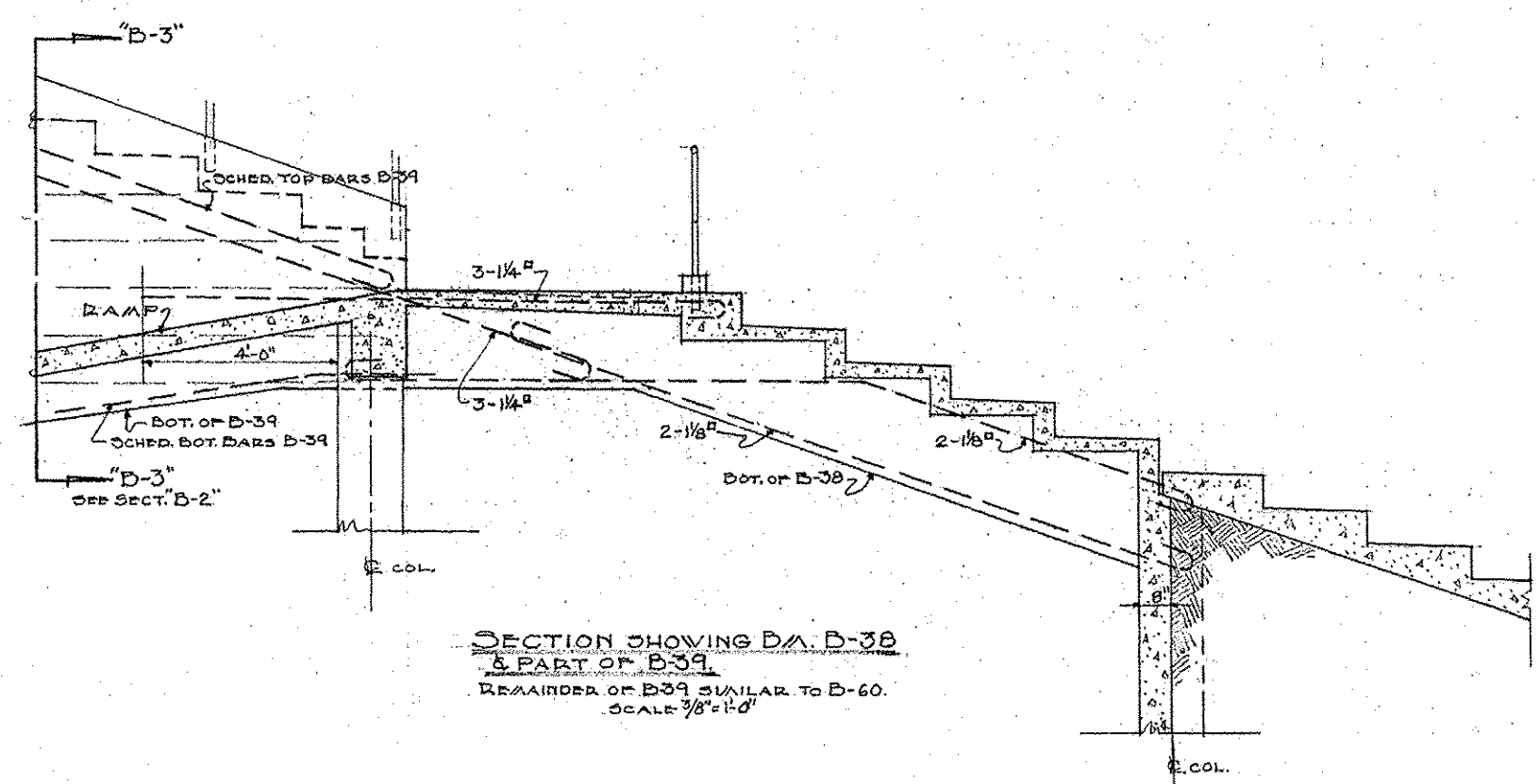
HUITZOLLARS
 Huitzollars, Inc.
 Fort Worth
 500 West 7th Street, Suite 900
 Fort Worth, Texas 76102-4728
 Phone (817) 335-3000 Fax (817) 335-1025

FOR INFORMATION ONLY

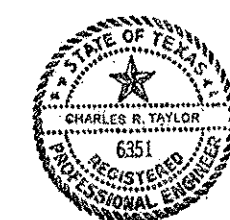


— ONE HALF BLEACHER PLAN —
EAST STAND
SCALE 1/8" = 1'-0"

NOTE: INDICATIONS THUS DENOTE SOLID CONCRETE WALL BELOW.



REFERENCE IDENTIFICATION PLANS
8' 6" 4' 2' 0" 8"
1/8" = 1'-0"



JOB NO. 507-3	DRAWING OF A STADIUM	DATE 15 SEPT. 90
DRAWN BY Rence	CHECKED BY Wilson and Patterson	REVISIONS
PROJECT COLLEGE DENTON, TEXAS	ARCHITECTS WILSON AND PATTERSON	SHEET NO. 3-6
CHECKED BY C.R.T.	ARCHITECTS MAJESTIC BLDG., FORT WORTH, TEXAS	3/8-3-81/STG

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

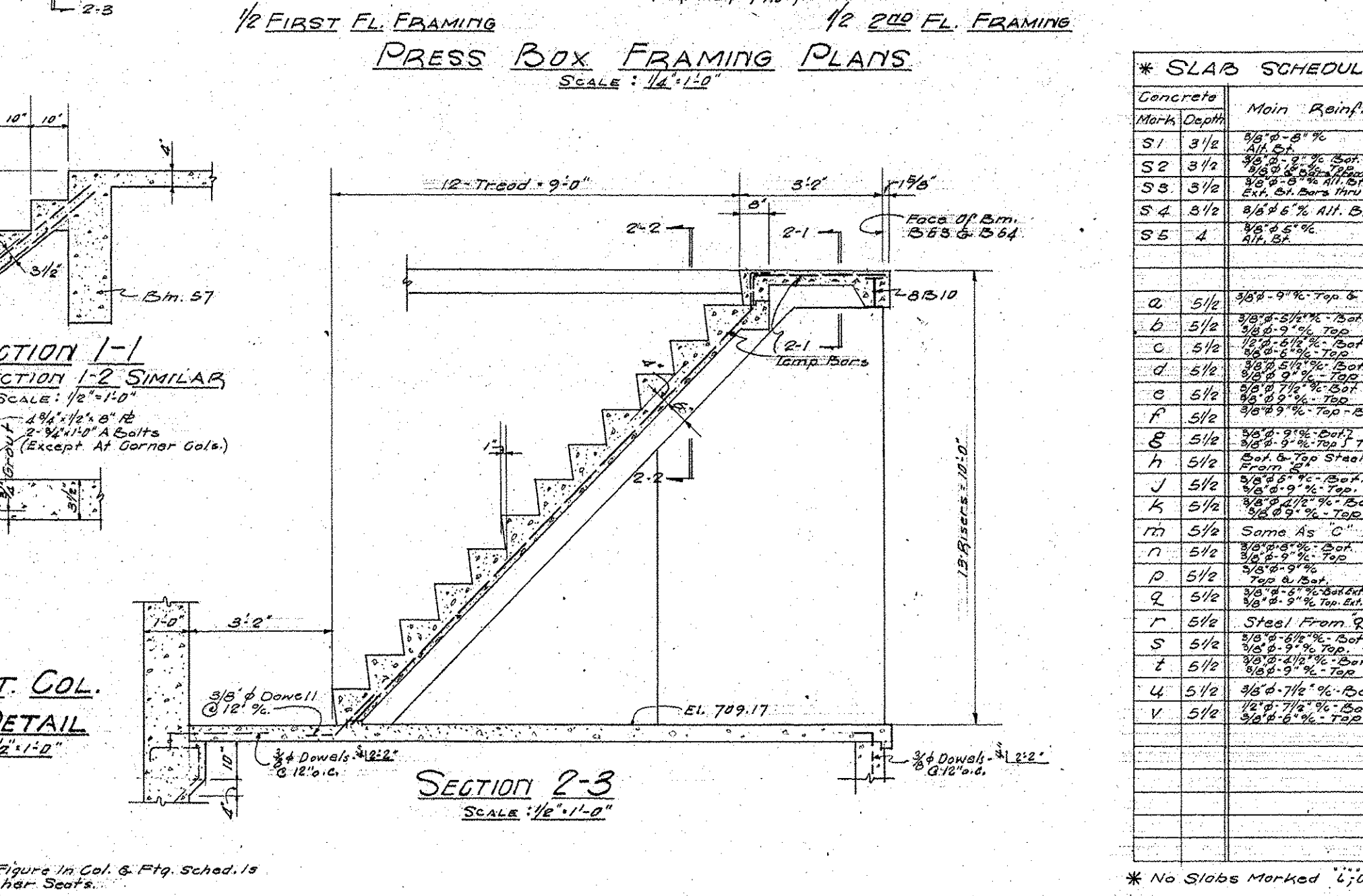
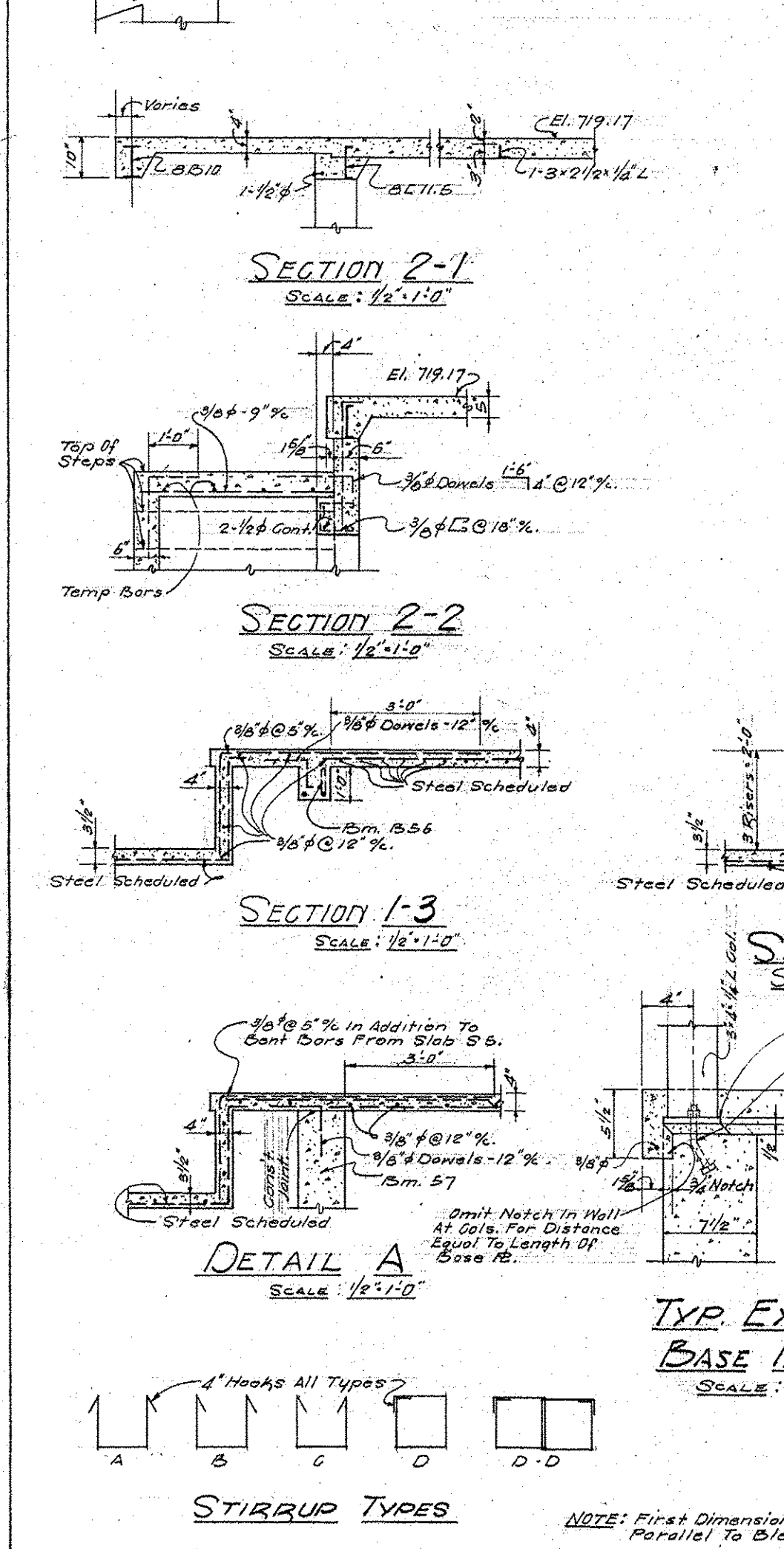
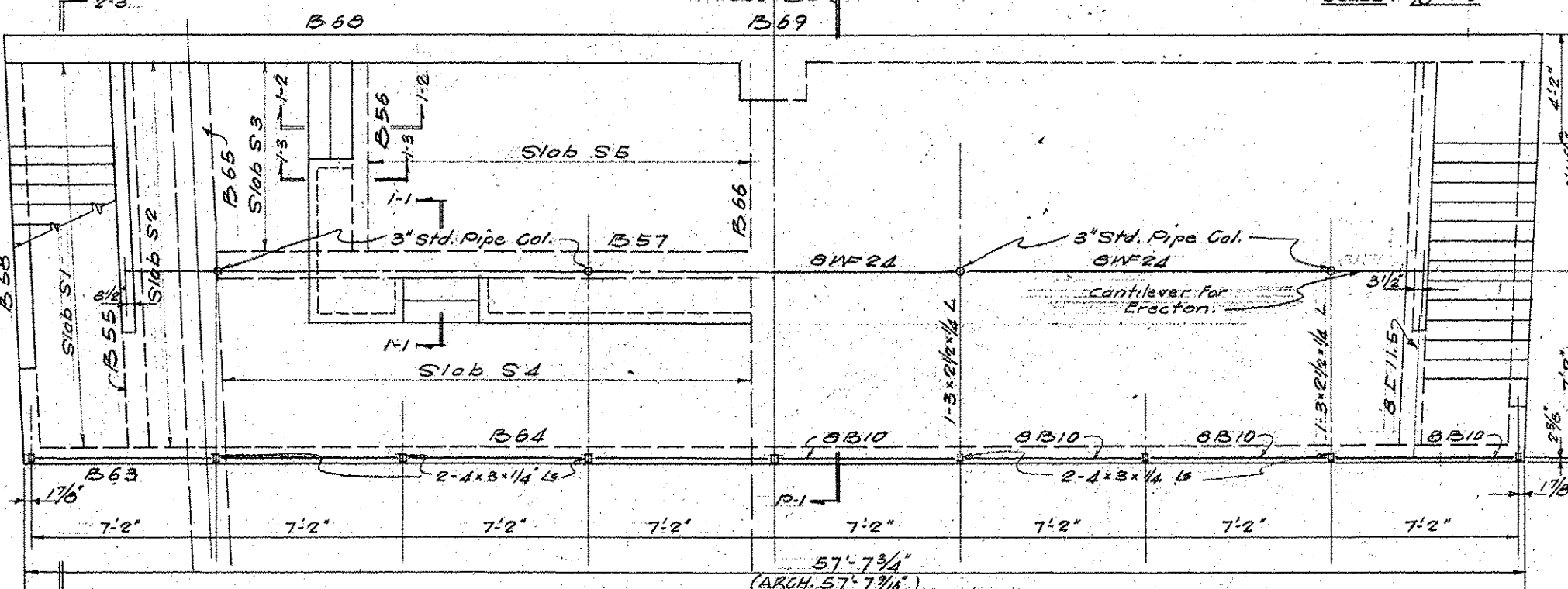
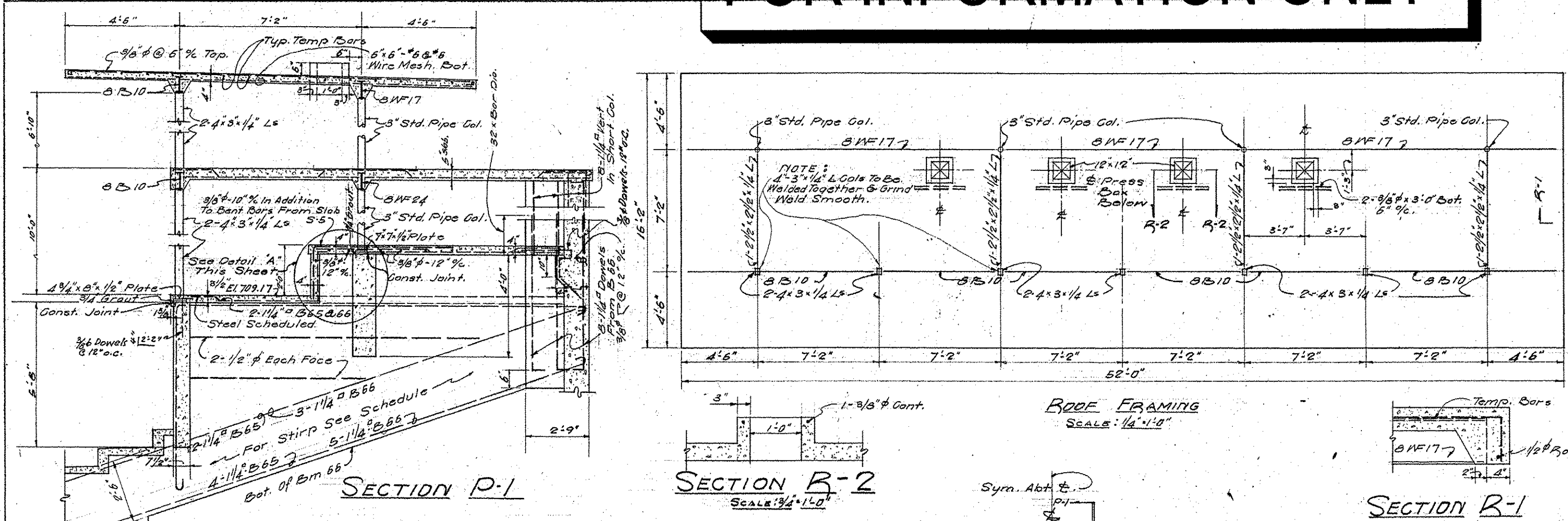
HUITZOLARS
Fort Worth
500 West 7th Street, Suite 300
Fort Worth, Texas 76102-4728
Phone (817) 335-3000 Fax (817) 335-1025

EXISTING DRAWINGS CLARIFICATION ONLY

UNT FOUTS FIELD
UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

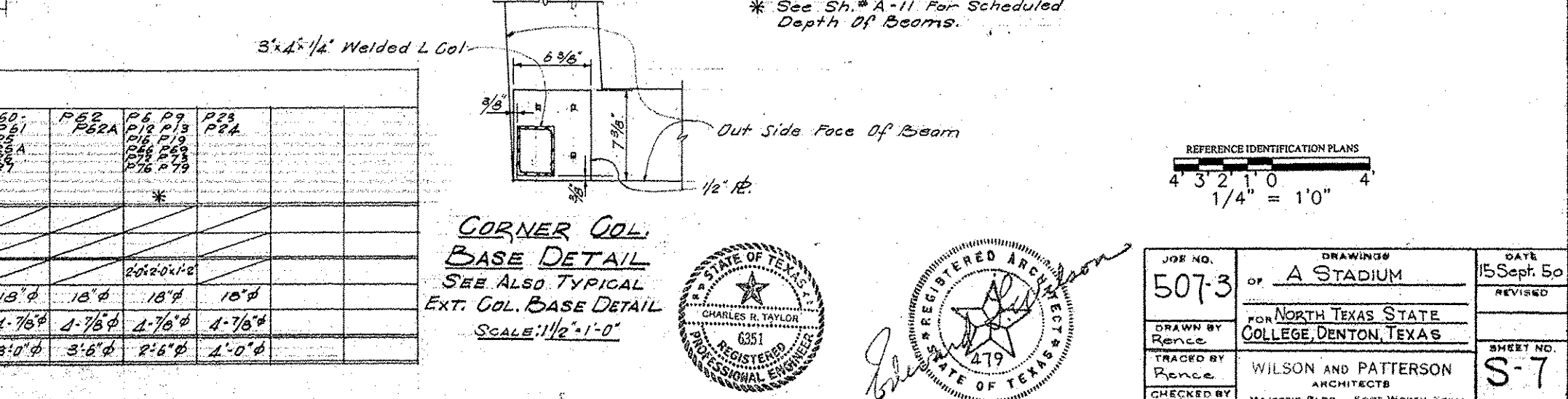
DATE:	01/29/2013
DRAWN BY:	TWM
DESIGNED BY:	RTR
CHECKED BY:	WAW
PROJ. NO.	03-1240-04
SHEET:	S711

FOR INFORMATION ONLY



Grade Beam Schedule table with columns: Concrete Mark, Bottom Bars, Top Bars, Stirrups, Spacing, etc.

Column & Footing Schedule table with columns: Column No., Dia, Height, etc.

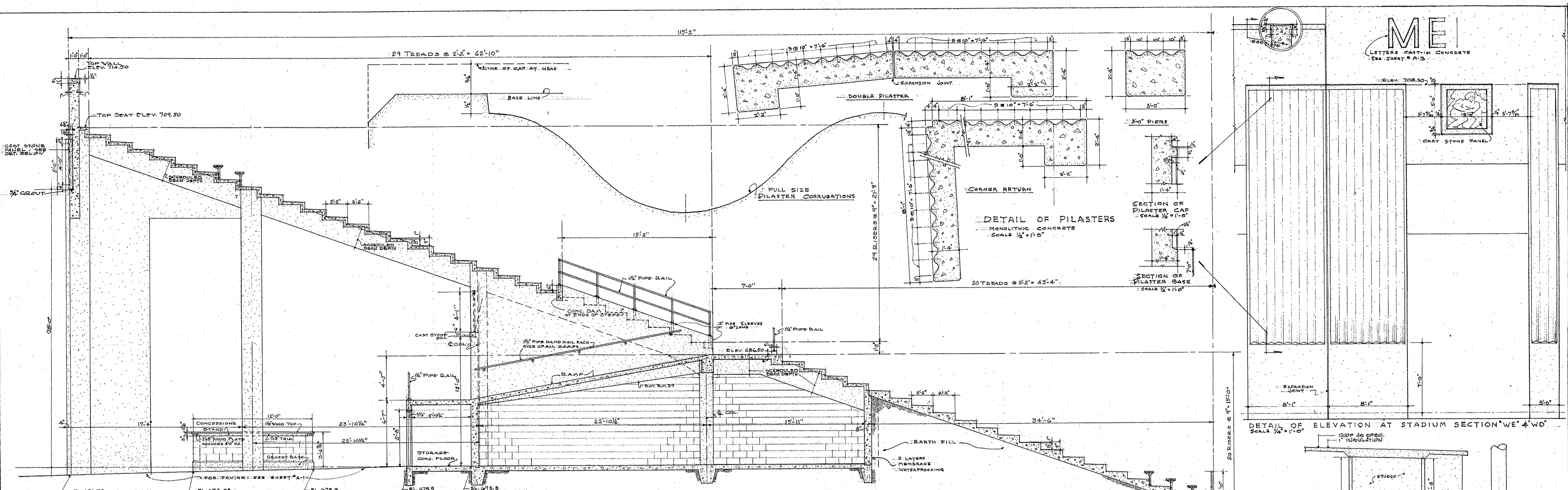


NO. 0 REVISION 100% SUBMITTAL DATE 03/15/13

HUII-ZOLIARS Inc. Fort Worth, Texas 76102-4728

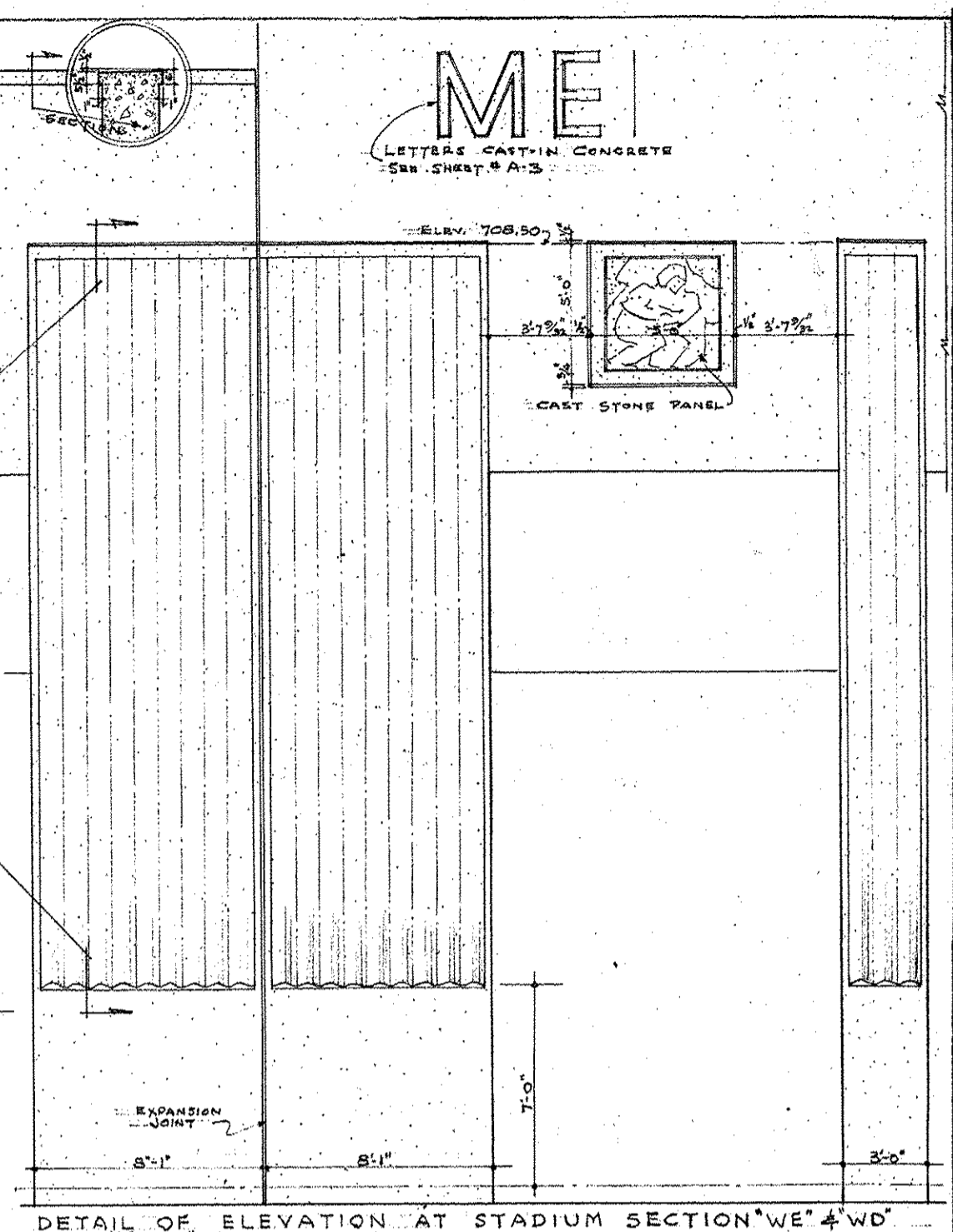
EXISTING DRAWINGS CLARIFICATION ONLY UNT FOUTS FIELD UNIVERSITY OF NORTH TEXAS 1155 UNION CIRCLE DENTON, TX 76205

DATE: 01/29/2013 DRAWN BY: TWM DESIGNED BY: RTR CHECKED BY: WAW PROJ. NO. 03-1240-04 SHEET: S712

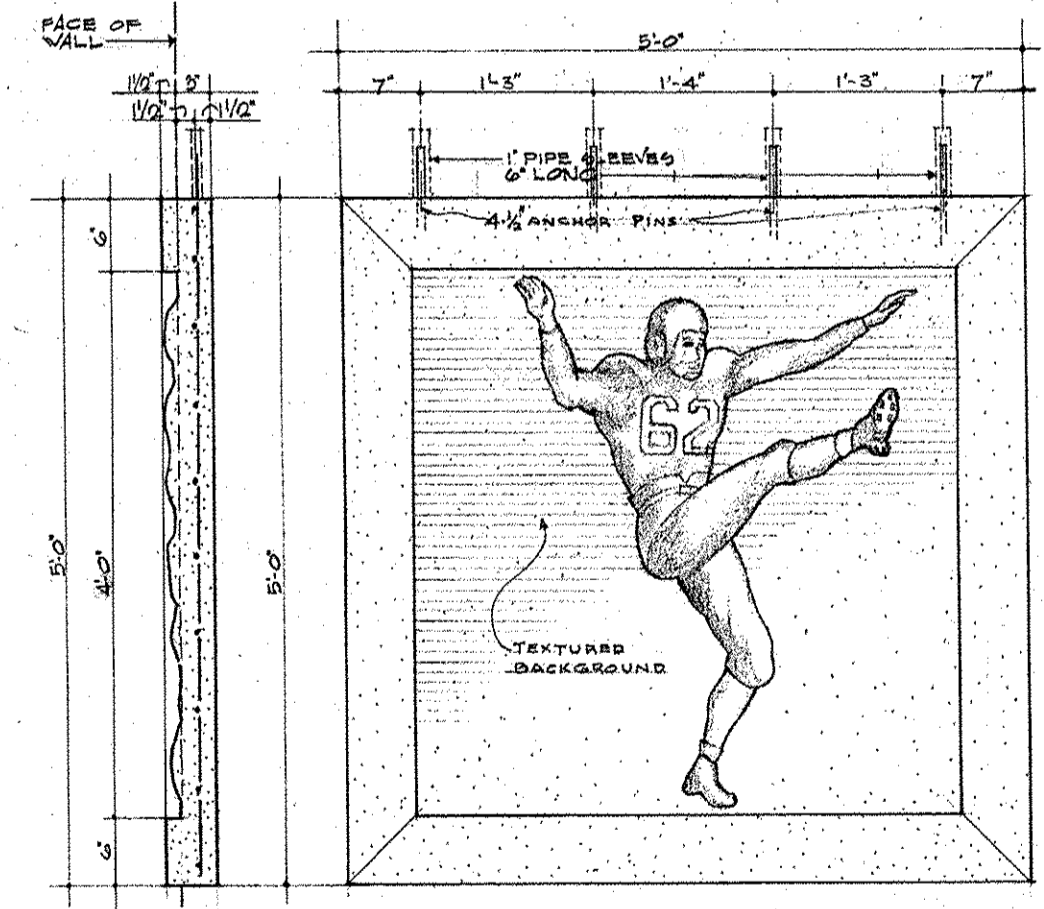


SECTION B-B
EAST STAND
SCALE 1/4" = 1'-0"

FOR INFORMATION ONLY

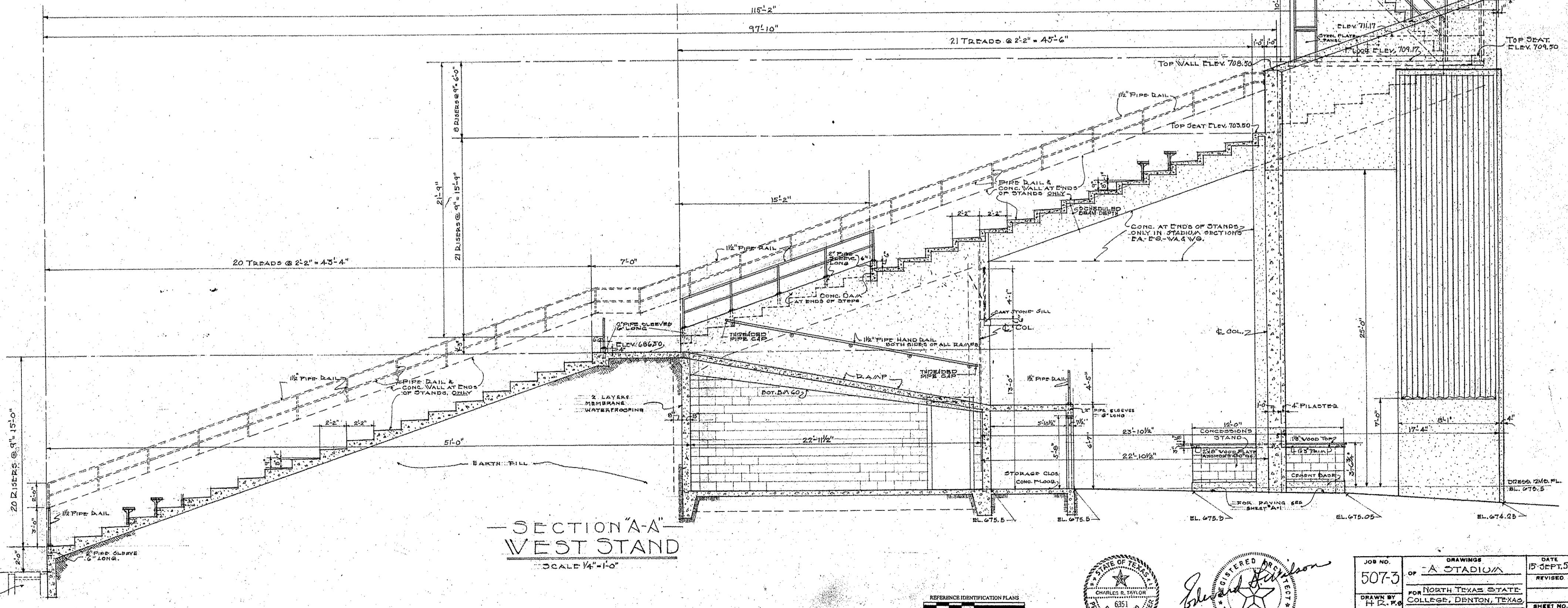


DETAIL OF ELEVATION AT STADIUM SECTION WE' & WD'
SCALE 1/4" = 1'-0"

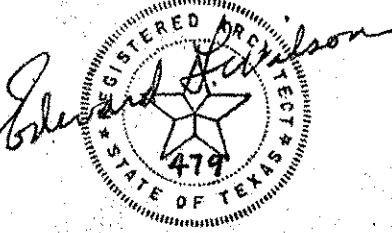
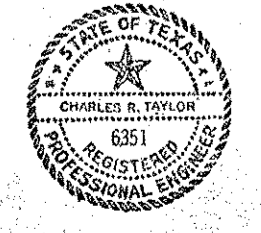
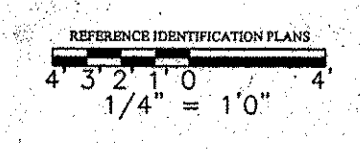


ORNAMENTAL CAST STONE PANEL
SCALE 1" = 1'-0"

NOTE: PRECAST CAST STONE PANELS & MODELS REQ'D FOR 3 DIFFERENT TYPE PANELS SEE SPEC. ALL PANELS TO BE SECURELY REINFORCED.



SECTION A-A
WEST STAND
SCALE 1/4" = 1'-0"



JOB NO. 507-3	DRAWING OF STADIUM	DATE 10/07/10
DRAWN BY H.S.P.	FOR NORTH TEXAS STATE COLLEGE, DENTON, TEXAS	REVISED
TRACED BY H.S.P.	WILSON AND PATTERSON ARCHITECTS	SHEET NO.
CHECKED BY C.S.S.	MAJESTIC BLDG., FORT WORTH, TEXAS	OF SHEETS

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

HUNT-ZOLLARS
Fort Worth
500 West 7th Street, Suite 900
Fort Worth, Texas 76102-4728
Phone (817) 385-3000 Fax (817) 385-1025

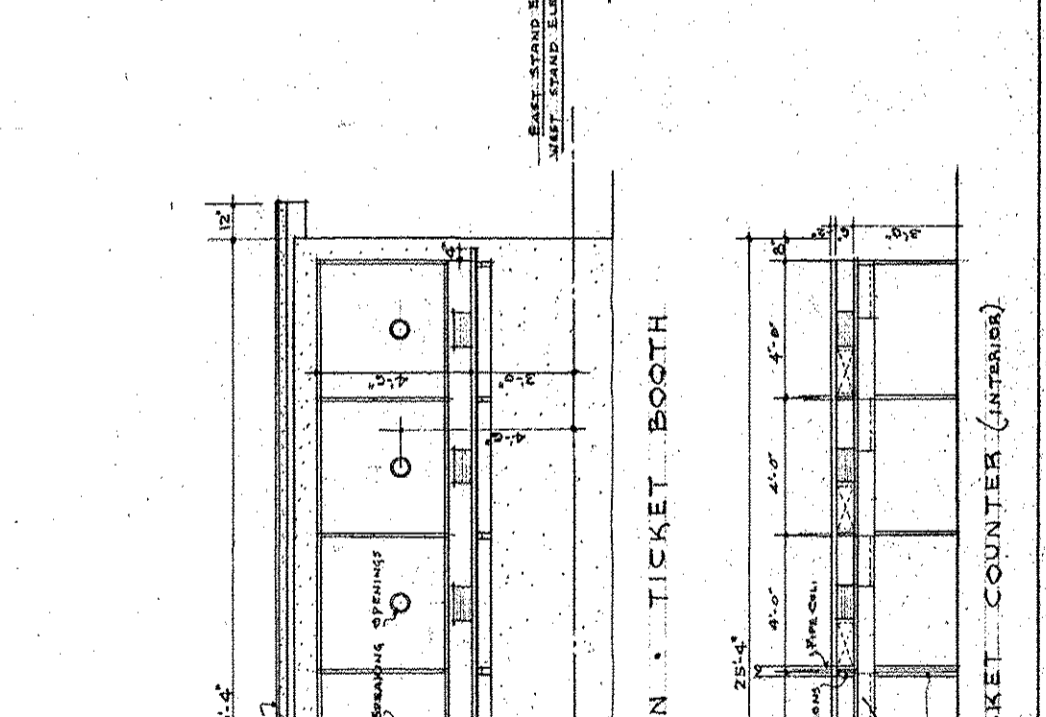
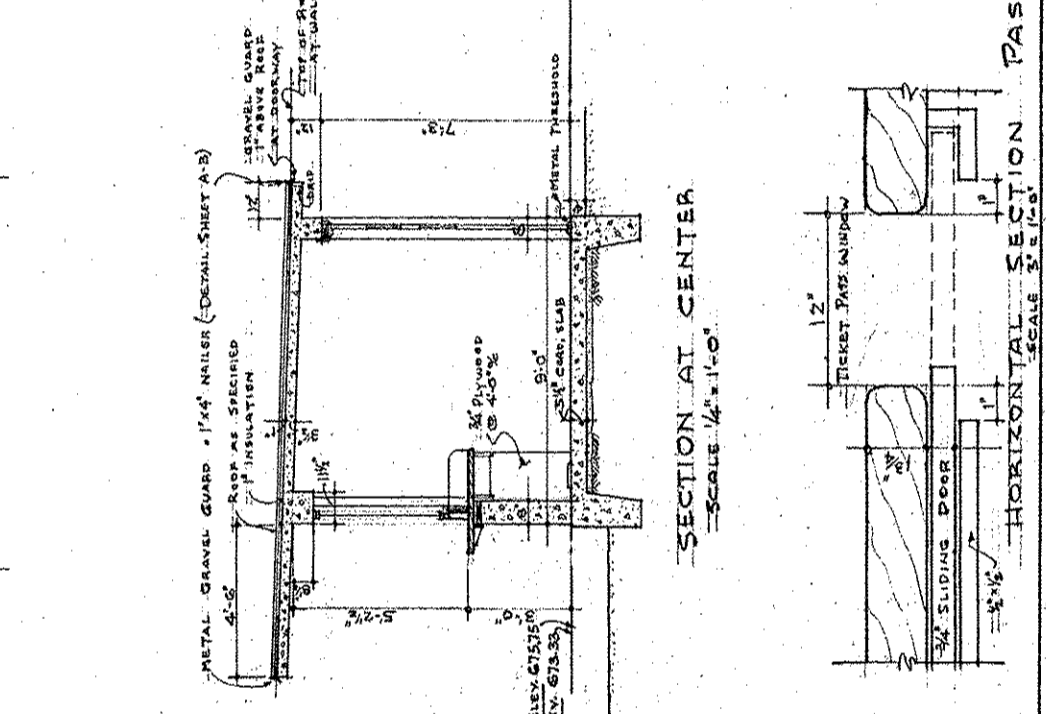
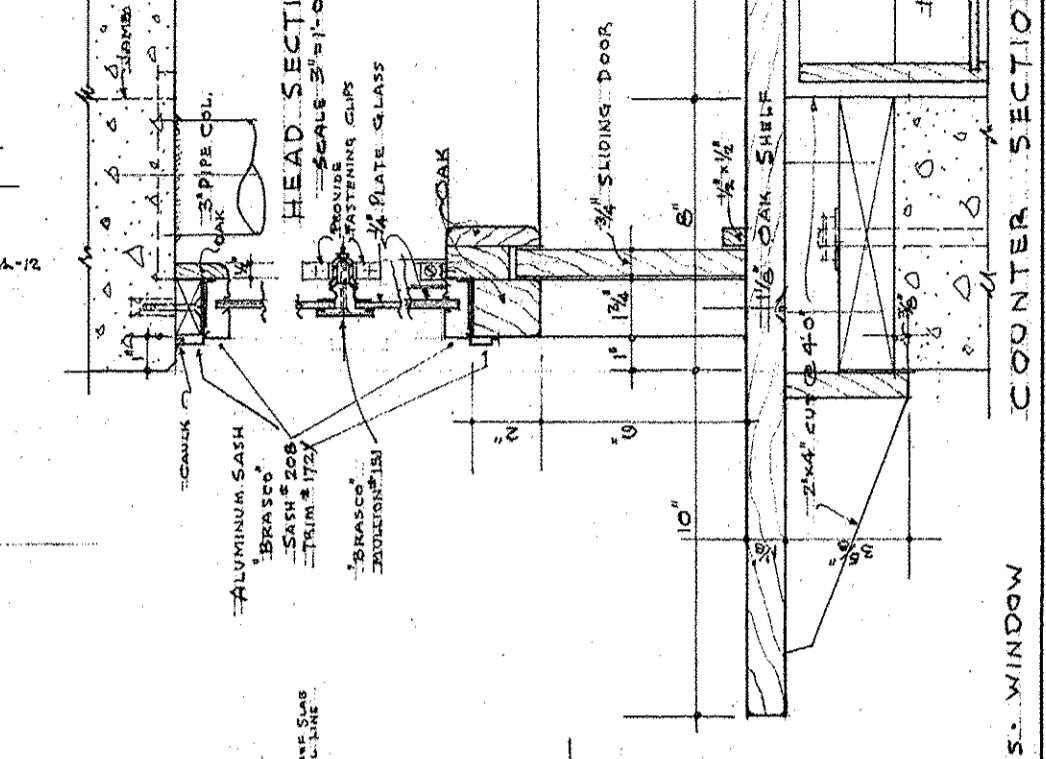
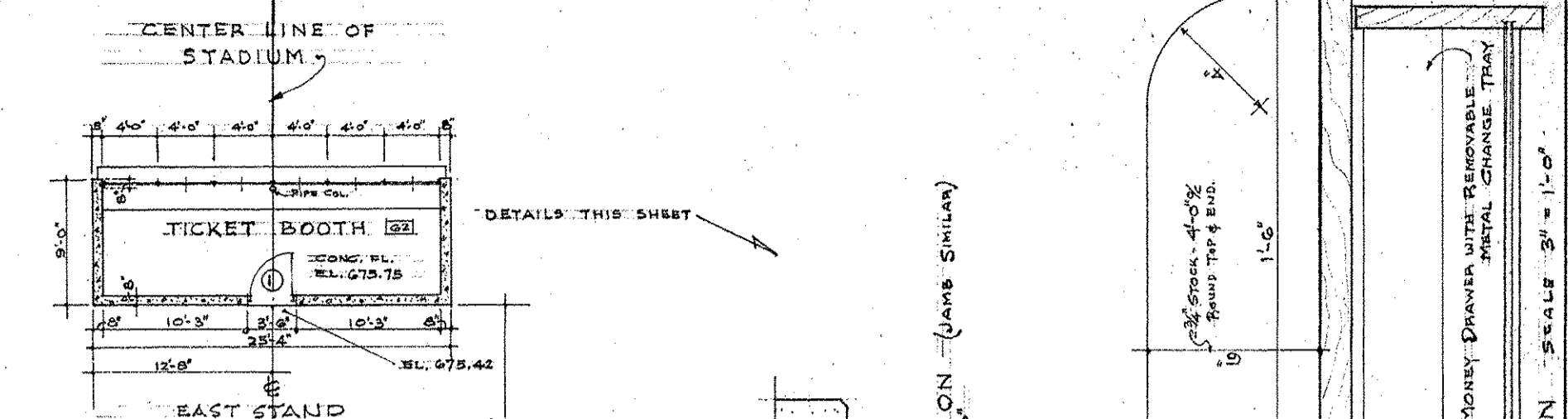
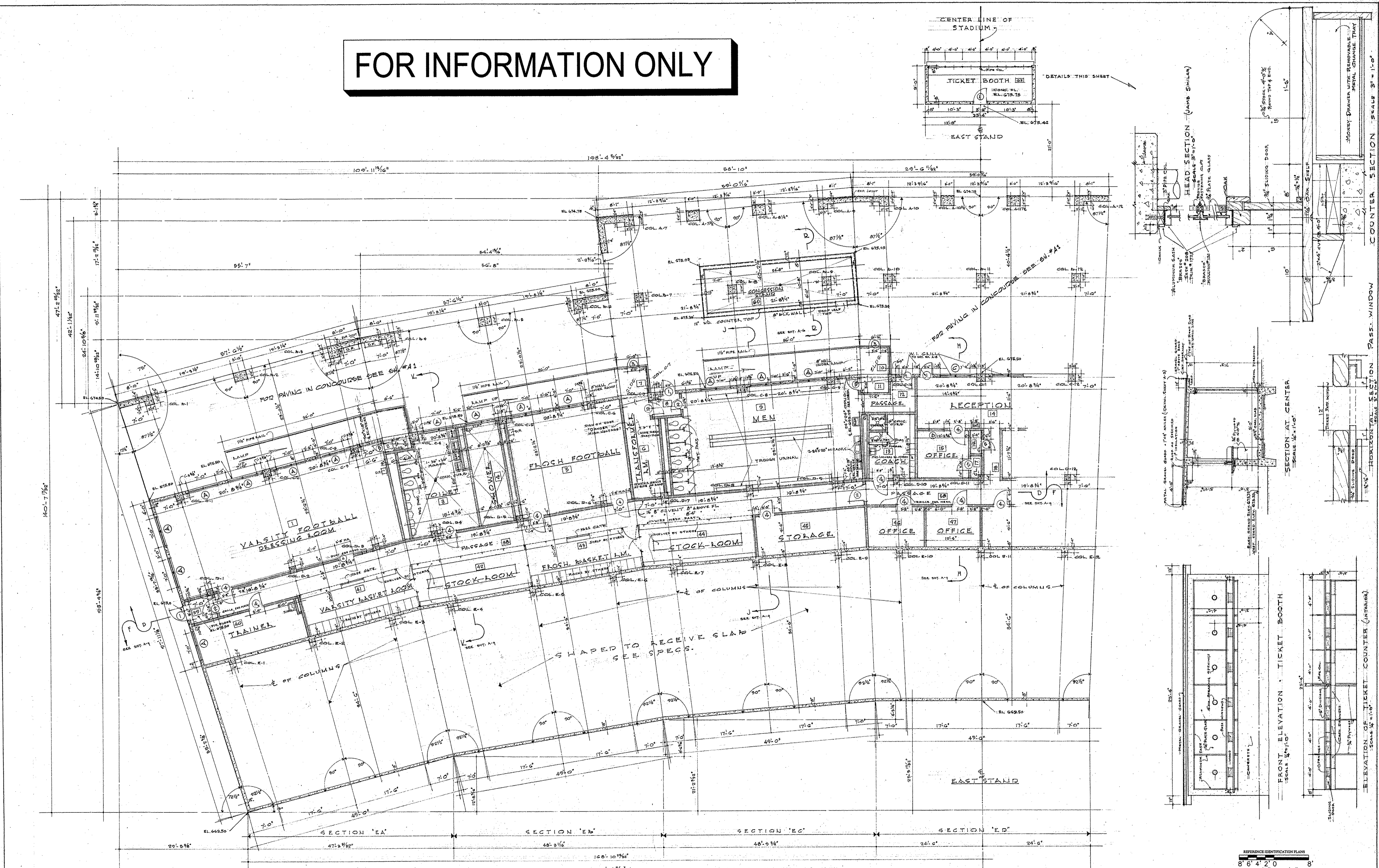
EXISTING DRAWINGS CLARIFICATION ONLY

UNT FOUTS FIELD

UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

DATE:	01/29/2013
DRAWN BY:	TWM
DESIGNED BY:	RTR
CHECKED BY:	WAW
PROJ. NO.	03-1240-04
SHEET:	S713

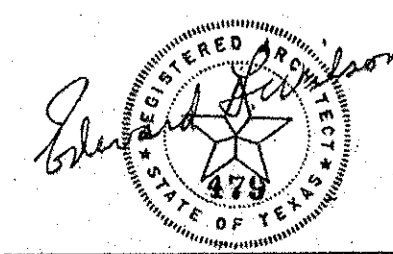
FOR INFORMATION ONLY



ALL GRILL AND VENT OPENINGS IN TRANSFORMER ROOMS TO HAVE PUBLIC LINK BUFFERS BY GENERAL CONTRACTOR.

HALF PLAN OF EAST STAND
SCALE: 1/8" = 1'-0" (NORTH HALF)

REFERENCE IDENTIFICATION PLAN
8' 6" 4" 2" 0
1/8" = 1' 0"



JOB NO. 507-3	DRAWING OF A STADIUM	DATE 15 SEPT 90
DRAWN BY J.H.S. CUP	FOR NORTH TEXAS STATE COLLEGE, DENTON, TEXAS	REVISION
TRACED BY L.C.S. CUP	WILSON AND PATTERSON ARCHITECTS	SHEET NO. A-7
CHECKED BY G.F.S.	MASTERS PLAN, FORT WORTH, TEXAS	OF 23A SHEETS

EXISTING DRAWINGS CLARIFICATION ONLY

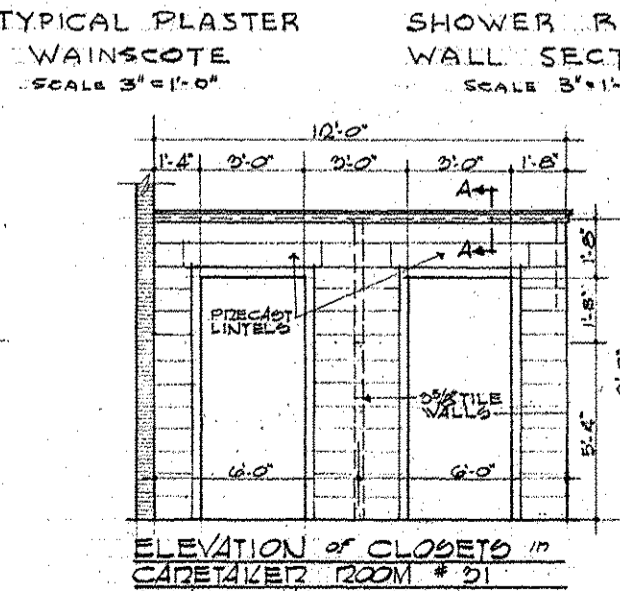
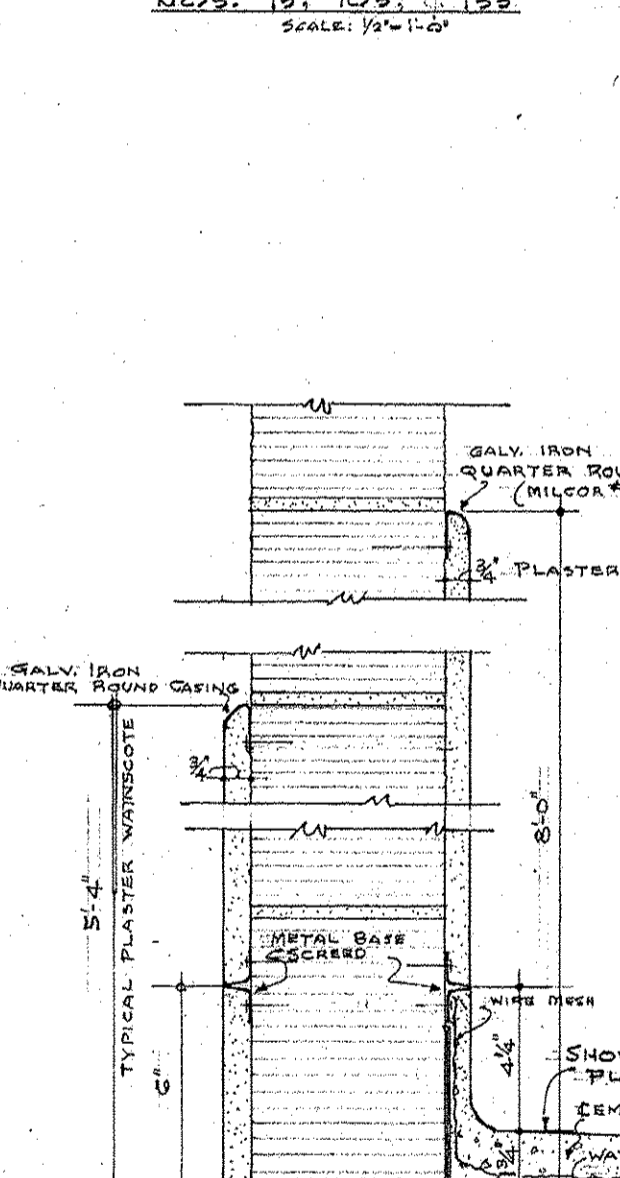
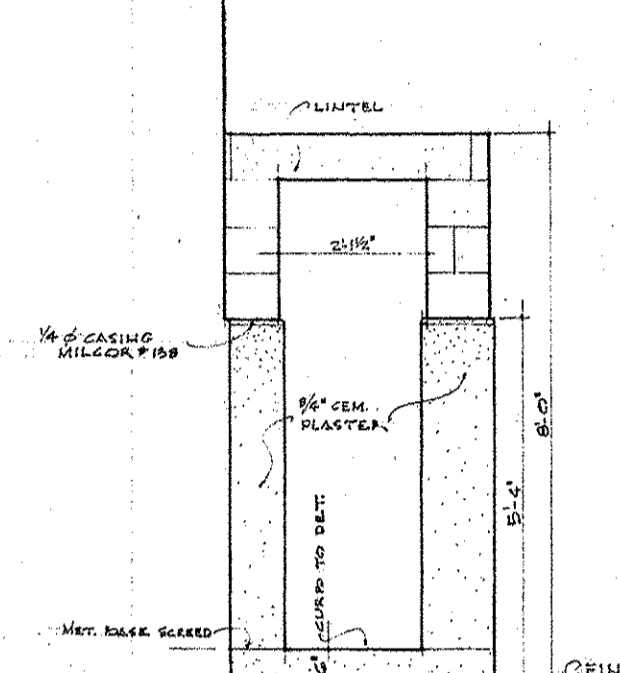
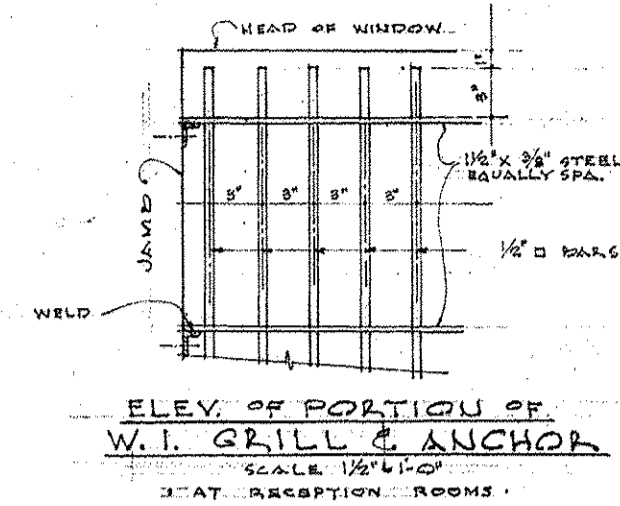
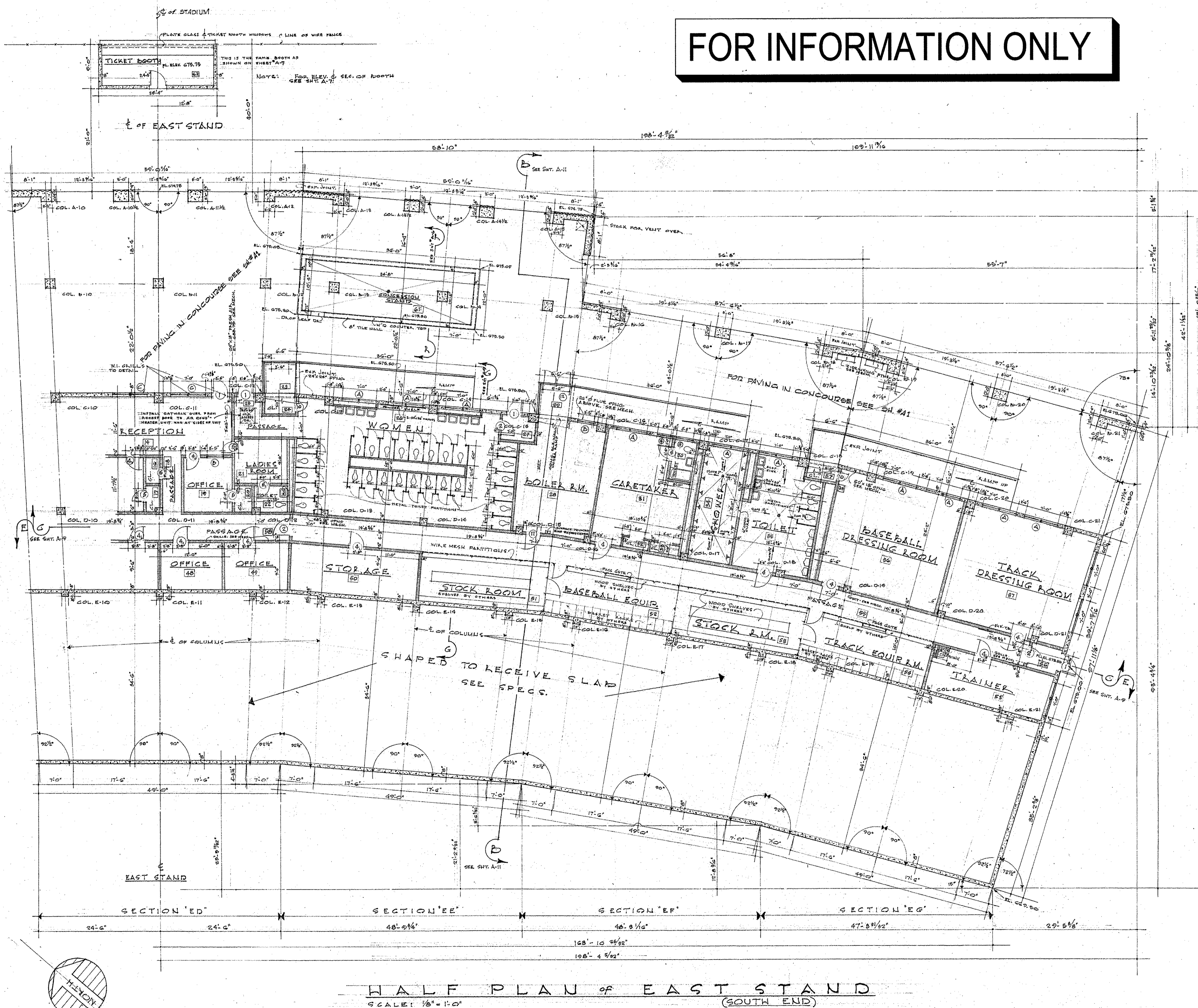
UNT FOUTS FIELD
UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

DATE: 01/29/2013
DRAWN BY: TWM
DESIGNED BY: RTR
CHECKED BY: WAW
PROJ. NO. 03-1240-04
SHEET: S714

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

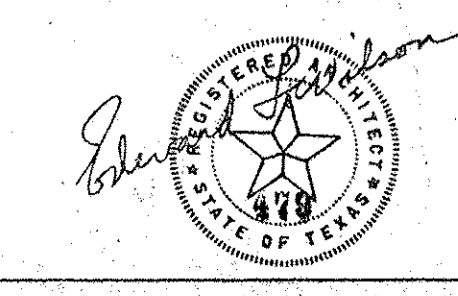
HUNT-ZOLLARS
Hunt-Zollars, Inc.
Fort Worth
500 West 7th Street, Suite 300
Fort Worth, Texas 76102-4728
Phone (817) 335-3000 Fax (817) 335-1025

FOR INFORMATION ONLY



HALF PLAN OF EAST STAND (SOUTH END)
SCALE: 1/8" = 1'-0"

REFERENCE IDENTIFICATION PLANS
8' 6" 4' 2" 0
1/8" = 1' 0" 8'



JOB NO. 507-3	DRAWINGS OF A STADIUM	DATE 15-SEPT. 50
DRAWN BY J.M.G.	FOR NORTH TEXAS STATE COLLEGE, DENTON, TEXAS	REVISION
TRACED BY A.C.B.	WILSON AND PATTERSON ARCHITECTS	SHEET NO. A-8
CHECKED BY S.S.S.	MEMPHIS AVE., FORT WORTH, TEXAS	DAYS SHEETS

NO.	REVISION	DATE
0	100% SUBMITTAL	03/15/13

HUNT-ZOLLARS
Fort Worth
500 West 7th Street, Suite 300
Fort Worth, Texas 76102-4728
Phone (817) 335-3000 Fax (817) 335-1025

EXISTING DRAWINGS CLARIFICATION ONLY

UNT FOUTS FIELD

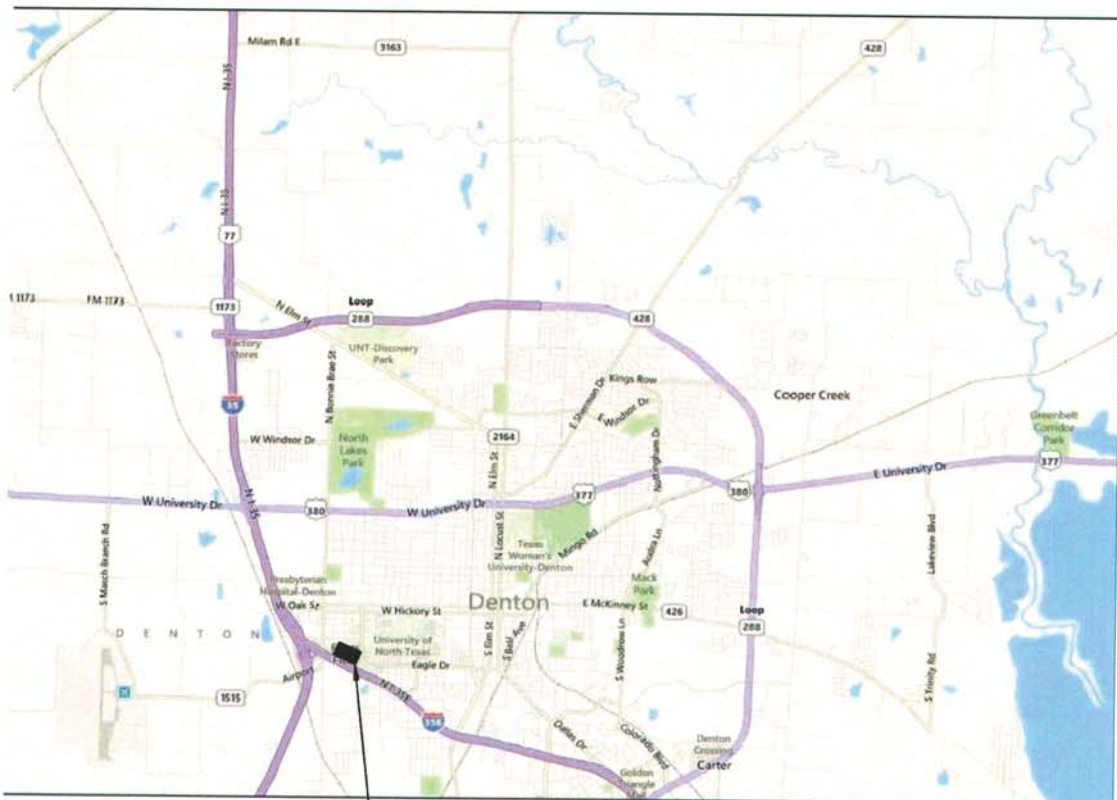
UNIVERSITY OF NORTH TEXAS
1155 UNION CIRCLE
DENTON, TX 76203

DATE:	01/29/2013
DRAWN BY:	TWM
DESIGNED BY:	RTR
CHECKED BY:	WAW
PROJ. NO.	03-1240-04
SHEET:	S715

UNIVERSITY OF NORTH TEXAS

DENTON, TX

FOUTS FIELD DEMOLITION AND RESTORATION



PROJECT LOCATION



PROJECT LOCATION MAP
NOT TO SCALE

TECHNICAL SPECIFICATIONS

100% Submittal

March 15, 2013



HUITT-ZOLLARS

Huitt-Zollars, Inc.
500 W. 7th St., Ste. 300
Phone (817) 335-3000

Engineering / Architecture
Fort Worth, Texas 76102
Fax (817) 335-1025

HZI PROJECT NUMBER. 03-1240-04

UNT[®]

University of North Texas
1155 Union Circle #311040
Denton, TX 76203-5017
Phone (940) 565-2973
Fax (940) 565-4650

Division	Section Title
----------	---------------

DIVISION 00 = PROCUREMENT AND CONTRACTING

000100 Title Page
000110 Table of Contents
007000 Uniform General Conditions and Supplementary General Conditions for Construction and Design Contracts 2010 Amended

DIVISION 01 – GENERAL REQUIREMENTS

011000 Summary of Work
012300 Alternates
012500 Substitution Procedures
012500.13 Substitution Request Form
012600 Contract Modification Procedures
012900 Payment Procedures
013100 Project Management and Coordination
013200 Construction Progress Documentation
013233 Photographic Documentation
013300 Submittal Procedures
013516 Alteration Project Procedures
014000 Quality Requirements
014200 References
015000 Temporary Facilities and Controls
015639 Temporary Tree and Plant Protection
015713 Erosion and Sediment Control
016000 Product Requirements
017300 Execution
017419 Construction Waste Management and Disposal
017700 Closeout Procedures
017823 Operation and Maintenance Data
017839 Project Record Documents

DIVISION 02 - EXISTING CONDITIONS

024116 STRUCTURE DEMOLITION
024119 SELECTIVE DEMOLITION

DIVISION 03 - CONCRETE

033053 MISCELLANEOUS CAST-IN-PLACE CONCRETE

DIVISION 26 - ELECTRICAL

260513 MEDIUM-VOLTAGE CABLES
260519 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
260526 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
260543 UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

260553	IDENTIFICATION FOR ELECTRICAL SYSTEMS
261200	MEDIUM-VOLTAGE TRANSFORMERS
262416	PANELBOARDS

DIVISION 31 – EARTHWORK

311000	SITE CLEARING
312000	EARTH MOVING
313211	SOIL SURFACE EROSION CONTROL
316329	DRILLED CONCRETE PIERS AND SHAFTS

DIVISION 32 - EXTERIOR IMPROVEMENTS

323113	CHAIN LINK FENCES AND GATES
329200	TURF AND GRASSES

DIVISION 33 – UTILITIES

330500	COMMON WORK RESULTS FOR UTILITIES
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END OF TABLE OF CONTENTS

SECTION 011000

SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 1. Project information.
 2. Work covered by Contract Documents.
 3. Phased construction.
 4. Work by Owner.
 5. Owner-furnished products.
 6. Access to site.
 7. Coordination with occupants.
 8. Work restrictions.
 9. Specification and drawing conventions.

1.3 PROJECT INFORMATION

- A. Project Identification:
 1. Project Location: Fout Field UNT Denton Campus
- B. Owner: University of North Texas, Office of Facilities Planning, and Construction.
- C. Project Manager: Ms. Traci Jones RLA.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of the Project is defined by the Contract Documents and consists of the following:
 1. Demolition of the east concourse of Fout Field, removal of the north and south seating area stands, removal of the north scoreboard, associated utility adjustments for the demolition, site renovation.
- B. Type of Contract
 1. Project will be constructed under a single prime contract.

1.5 PHASED CONSTRUCTION

- A. The Work shall be conducted in a manner to allow continuous access around the perimeter of the Fouts Field fence and adjacent parking areas

~~4.81.6~~ ACCESS TO SITE

- ~~B-A.~~ General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- ~~C-B.~~ Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
- ~~D-C.~~ Condition of Existing Track: The existing track must be protected during the project. Any damage to the track and areas adjacent to the project site will be repaired to as good or better condition prior to the demolition work.

~~4.91.7~~ COORDINATION WITH OCCUPANTS

Owner Occupancy: Owner will occupy the west concourse and possibly need the utilities for that area. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Notify the Owner not less than 72 (3 business days) hours in advance of activities that will affect Owner's operations.

~~4.101.8~~ WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.

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Formatted: Bullets and Numbering

- 1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, except as otherwise indicated.
- ~~2.1.~~ Hours for Core Drilling and other noisy activities: Coordinate with Owner.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two business days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than two business days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- ~~F.E.~~ Employee Identification: Provide identification tags for Contractor personnel working on the Project site. Require personnel to utilize identification tags at all times.

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~~4.441.9~~ SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
 - B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
 - C. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.
- 1.10 DRAWING ADDENDA
- A. See attached addenda notes affecting work indicated on the drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

SECTION 012300
ALTERNATES

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
- A. Section includes administrative and procedural requirements for alternates.
- 1.3 DEFINITIONS
- A. Alternate: An amount proposed by Contractor and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.
- 1.4 PROCEDURES
- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

- 3.1 SCHEDULE OF ALTERNATES
- A. Alternate No. [Insert number]: [Insert title of alternate].
1. Base Bid: [Insert brief description of base bid requirement] [as indicated on Sheet [Insert title of sheet]] [and] [as specified in Division [Insert Division number] Section [Insert Section Number], "[Insert Section Title]"].
 2. Alternate: [Insert brief description of alternate requirement] [as indicated on Sheet [Insert title of sheet]] [and] [as specified in Division [Insert Division number] Section [Insert Section Number], "[Insert Section Title]"].

END OF SECTION

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 SUBMITTALS

- A. Substitution Requests: Submit one PDF file of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use "Substitution Request Form" attached.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of project manager and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
 3. Project manager's Action: If necessary, Project manager will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Project manager

will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

- a. Forms of Acceptance: Change Order, Construction Change Directive, or Project manager's Supplemental Instructions for minor changes in the Work.
- b. Use product specified if Project manager does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 1. Conditions: Project manager will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Project manager will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed, unless otherwise indicated.
- C. Substitutions for Convenience: Project manager will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Project manager.
 1. Conditions: Project manager will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Project manager will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Project manager for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Substitution request is fully documented and properly submitted.
 - e. Requested substitution will not adversely affect Contractor's construction schedule.
 - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. Requested substitution is compatible with other portions of the Work.
 - h. Requested substitution has been coordinated with other portions of the Work.
 - i. Requested substitution provides specified warranty.
 - j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012500.13

SUBSTITUTION REQUEST FORM

PROJECT: _____

(After Contract Award)

TO: _____

NO. _____

DATE: _____

Contractor hereby requests acceptance of the following product or system as a substitution in accordance with provisions of Division 01 Section "Substitution Procedures:"

1. SPECIFIED PRODUCT OR SYSTEM

Substitution request for: _____

Specification Section No.: _____ Article/ Paragraph: _____

2. REASON FOR SUBSTITUTION REQUEST

SPECIFIED PRODUCT . . .

PROPOSED PRODUCT . . .

- | | |
|--|---|
| <input type="checkbox"/> Is no longer available. | <input type="checkbox"/> Will reduce construction time |
| <input type="checkbox"/> Is unable to meet project schedule. | <input type="checkbox"/> Will result in cost savings of |
| <input type="checkbox"/> Is unsuitable for the designated application. | \$ _____ to Project |
| <input type="checkbox"/> Cannot interface with adjacent materials. | <input type="checkbox"/> Is for supplier's convenience |
| <input type="checkbox"/> Is not compatible with adjacent materials. | <input type="checkbox"/> Is for subcontractor's convenience |
| <input type="checkbox"/> Cannot provide the specified warranty. | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Cannot be constructed as indicated | _____ |
| <input type="checkbox"/> Cannot be obtained due to one or more of the following: | |
| <input type="checkbox"/> Strike | <input type="checkbox"/> Bankruptcy of manufacturer or supplier |
| <input type="checkbox"/> Lockout | <input type="checkbox"/> Similar occurrence (explain below) |

3. SUPPORTING DATA

- Drawings, specifications, product data, performance data, test data, and any other necessary information to facilitate review of the Substitution Request is attached.
- Sample is attached. Sample will be sent if requested.

4. QUALITY COMPARISON

Provide all necessary side-by-side comparative data as required to facilitate review of Substitution Request:

SPECIFIED PRODUCT

PROPOSED PRODUCT

Manufacturer: _____

Name / Brand: _____

Catalog No.: _____

Vendor: _____

Variations: _____

(Add Additional Sheets If Necessary)

Local Distributor or Supplier: _____

Maintenance Service Available: Yes No

Spare Parts Source: _____

Warranty: Yes No _____ Years

5. PREVIOUS INSTALLATIONS

Identification of at least three similar projects on which proposed substitution was used:

PROJECT #1:

Project: _____

Address: _____

Architect: _____

Owner: _____

Contractor: _____

Date Installed: _____

PROJECT #2:

Project: _____

Address: _____

Architect: _____

Owner: _____

Contractor: _____

Date Installed: _____

6. EFFECT OF SUBSTITUTION

Proposed substitution affects other work or trades: No Yes (if yes, explain)

Proposed substitution requires dimensional revisions or redesign of architectural, structural, M-E-P, life safety, or other work:

- No Yes (if yes, attach data explaining revisions)

7. STATEMENT OF CONFORMANCE OF REQUEST TO CONTRACT REQUIREMENTS

Contractor and Subcontractor have investigated the proposed substitution and hereby represent that:

- A. They have personally investigated the proposed substitution and believe that it is equal to or superior in all respects to specified product, except as stated above;
- B. The proposed substitution is in compliance with applicable codes and ordinances;
- C. The proposed substitution will provide same warranty as specified for specified product;
- D. They will coordinate the incorporation of the proposed substitution into the Work, and will include modifications to the Work as required to fully integrate the substitution;
- E. They have included complete cost data and implications of the substitution (attached);
- F. They will pay any redesign fees incurred by the Architect or any of the Architect's consultants, and any special inspection costs incurred by the Owner, caused by the use of this product;
- G. They waive all future claims for added cost or time to the Contract related to the substitution, or that become known after substitution is accepted.
- H. The Architect's approval, if granted, will be based upon reliance upon data submitted and the opinion, knowledge, information, and belief of the Architect at the time decision is rendered and Addendum is issued; and that Architect's approval therefore is interim in nature and subject to reevaluation and reconsideration as additional data, materials, workmanship, and coordination with other work are observed and reviewed.

Contractor: _____
(Name of Contractor)

Date: _____ By: _____

Subcontractor: _____
(Name of Subcontractor)

Date: _____ By: _____

Note: Unresponsive or incomplete requests will be rejected and returned without review.

8. ARCHITECT'S REVIEW AND ACTION

- Substitution is accepted.
- Substitution is accepted, with the following comments: _____

- Resubmit Substitution Request:
 - Provide more information in the following areas: _____

 - Provide proposal indicating amount of savings / credit to Owner

- Bidding Contractor shall sign Bidder's Statement of Conformance
- Bidding Subcontractor shall sign Bidder's Statement of Conformance
- Substitution is not accepted:
 - Substitution Request received too late.
 - Substitution Request received directly from subcontractor or supplier.
 - Substitution Request not submitted in accordance with requirements.
 - Substitution Request Form is not properly executed.
 - Substitution Request does not indicate what item is being proposed.
 - Insufficient information submitted to facilitate proper evaluation.
 - Proposed product does not appear to comply with specified requirements.
 - Proposed product will require substantial revisions to Contract Documents.

By: _____

Date: _____

Architect has relied upon the information provided by the Contractor, and makes no claim as to the accuracy, completeness, or validity of such information. If an accepted substitution is later found to be not in compliance with the Contract Documents, Contractor shall provide the specified product.

9. OWNER'S REVIEW AND ACTION

- Substitution is accepted; Architect to prepare Change Order.
- Substitution is not accepted.
- Owner will pay Architect directly for redesign fees.
- Include Architect's Additional Service fee for implementing the substitution in the Change Order.

By: _____

Date: _____
 (Owner's Representative)

END OF FORM

SECTION 012600
CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections:
1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Project manager will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Project manager's Supplemental Instructions." or Project manager's Bulletin form.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
1. Proposal Requests issued by are not instructions either to stop work in progress or to execute the proposed change.
 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use CSI Form 13.6B "Proposal Worksheet Summary" and 13.6C "Proposal Worksheet Detail". AIA G709 or Project manager's Bulletin form.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to project manager .
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 7. Proposal Request Form: Use Contractors standard proposal request forma as approved by Owner and Project manager.

1.5 CHANGE ORDER PROCEDURES

- A. Owner will prepare and issue a Change Order for signatures on AIA Document G701 or Owner approved form.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Work Change Directive: may issue a Work Change Directive on AIA Document G714 or Project manager's Bulletin form. Work Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012900

PAYMENT PROCEDURES

Part 1 – General

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract including General and Supplementary Conditions and other Division 01 Specifications Sections apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
 - 1. Division 01 Section “Contract Modification Procedures” for administrative procedures for handling changes to the Contract.
 - 2. Division 01 Section “Construction Progress Documentation” for administrative requirements governing preparation and submittal of Contractor’s Construction Schedule and Submittal Schedule.
 - 3. Section 007000 - University of North Texas System Uniform General Conditions and Supplementary General Conditions 2005, Amended.

1.3 DEFINITIONS

- A. **Schedule of Values:** A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor’s Application for Payment.

1.4 SCHEDULE OF VALUES

- A. **Coordination:** Coordinate preparation of the Schedule of Values with preparation of Contractor’s Construction Schedule
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules including the following:
 - a. Application for Payment forms with Continuation Sheets
 - b. Submittal Schedule
 - c. Contractor’s Construction Schedule
 - 2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Application for Payment.
 - 3. **Sub schedules:** Where the Work is separated into phases requiring separately phased payments. Provide sub schedules showing values correlated with each phase of payment.
- B. **Format and Content:** Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1. **Identification:** Include the following Project identification on the Schedule of Values:
 - a. Project name and location
 - b. Name of Architect
 - c. Architect's project number
 - d. Contractor's name and address
 - e. Date of submittal
2. **Draft Submittals:** Submit in same format as final payment application
3. **Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:**
 - a. Related Specification Section or Division
 - b. Brief description of the Work
 - c. Name of subcontractor
 - d. Name of manufacturer of fabricator
 - e. Name of supplier
 - f. Change Orders (numbers) that affect value
 - g. Dollar value
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent adjusted to total 100 percent.
4. **Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Owner and A/E will review Contractor's Schedule of Values and approve upon receipt of sufficient detail as deemed satisfactory to Owner and/or A/E.**
5. **Round amounts to nearest whole dollar; total shall equal the Contract Sum.**
6. **Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored but not yet installed.**
 - a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance and storage in bonded warehousing for materials stored off-site.
 - b. For major items provide separate line items for materials and labor.
7. **Provide separate line items in the Schedule of Values for initial cost of materials for each subsequent stage of completion and for total installed value of that part of the Work.**
8. **Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.**
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place shall be shown as separate line items in the Schedule of Values as requested by Owner.
9. **In addition to line item costs of Sections in Division 02-39, furnish line item costs for each item of the following general administrative and procedural cost items.**
 - a. Bonds
 - b. Insurance
 - c. Mobilization
 - d. Field Superintendence
 - e. Temporary Facilities

- f. Trench Safety
 - g. Clean-up and Disposal
 - h. Project Close Out
 - i. Final Cleaning
 - j. Demobilization
 - k. Overhead and General Conditions
 - l. Contractor's Fee
10. **Schedule Updating:** Update and resubmit the Schedule of Values before the next Application for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. **Remit all Application for Payment to:**
University of North Texas System
Facilities Planning and Construction
1155 Union Circle #311040
Denton, Texas 76203-5017
- B. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
1. Initial Application for Payment Application for Payment at time of Substantial Completion and final Application for Payment involve additional requirements.
- C. **Payment Application Times:** The date for each progress payment is the 1st day of each month. The period covered by each Application for Payment starts on the following the end of the preceding period and ends 15 days before the date for each progress payment.
- D. **Payment Application Forms:** Use AIA Document G702 and AIA Document G703 Continuation Sheets as the form for Application for Payment or substantially similar forms furnished by or acceptable to the Owner.
- E. **Application Preparation:** Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Order and Construction Change Directives issued before the last day of construction period covered by application.
3. Include supporting documentation including subcontractor and supplier invoices.
- F. **Transmittal:** Prepare 3 copies with original signatures and original notary of each Application for Payment by a method ensuring receipt within 24 hours. One copy is for the Contractor, one is for the Architect and one is for the Owner. One copy shall include waivers of lien, schedule updates, contractor's executive summary and similar attachments.
1. Transmit each package with a transmittal form listing attachments and recording appropriate information about application including subcontractor supplemental documentation and required general conditions documents.

- G. Waivers of Mechanic's Lien:** With each Application for Payment submit waivers of mechanic's lien from subcontractors, sub-subcontractors and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous applications after deduction for retain age of each item.
 2. When an application shows completion of an item submit final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with; or proceeded by, final waivers from every entity involved with performance of the Work covered by the application that is lawfully entitled to a lien.
 5. Waiver Forms: Submit waivers of lien on forms executed in a manner acceptable to Owner.
- H. Initial Application for Payment:** Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment.
1. Include the following:
 - a. List of subcontractors
 - b. Schedule of Values
 - c. Contractor's Construction Schedule (preliminary if not final)
 - d. Products list
 - e. Submittal Schedule (preliminary if not final)
 - f. List of Contractor's staff assignments
 - g. List of Contractor's principal consultants
 - h. Initial progress report
 - i. Report of preconstruction conference
 - j. Certificates of insurance and insurance policies
 - k. Performance and payment bonds
 - l. Data needed to acquire Owner's insurance
- I. Application for Payment at Substantial Completion:** After issuing the Certificate of Substantial Completion submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application:** Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted including but not limited to the following:
1. Evidence of completion of Project closeout requirements.

2. Insurance certificate for products and completed operations where required and proof taxes, fees and similar obligations were paid.
3. Updated final statement accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims".
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens.
6. AIA Document G707, "Consent of Surety to Final Payment".
7. Evidence that claims have been settled.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 1. General project coordination procedures.
 2. Administrative and supervisory personnel.
 3. Requests for Information (RFIs).
 4. Project meetings.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information from each other during construction.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-Installation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
 9. Project closeout activities.

1.5 KEY PERSONNEL

- A. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
 1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.6 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI. All RFIs should be sent directly to the Architect via email or posted to project collaboration site (if one is being utilized). The Architect will redistribute to

the appropriate reviewer.

1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. RFI Question
 9. Specification Section number and title and related paragraphs, as appropriate.
 10. Drawing number and detail references, as appropriate.
 11. Field dimensions and conditions, as appropriate.
 12. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 13. Contractor's signature.
 14. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect. RFIs should be emailed to Architect with the following format standards.. 1) RFI should include RFI # in subject line of email along with brief description. 2) Body of email should include question or description of RFI and suggestion. Sketches or other necessary documents should be attached to email in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow 7 business days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. log with not less than the following:]
1. RFI Log Date
 2. Project name.
 3. Name and address of Contractor.
 4. Name and address of Architect and Construction Manager.
 5. RFI number including RFIs that were dropped and not submitted.
 6. RFI description.
 7. Date the RFI was submitted.
 8. Request Date
 9. Date Architect's and Construction Manager's response was received.
 10. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

11. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Pre-construction Conference: Schedule and conduct a pre-construction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
 - 1. Conduct the conference to review responsibilities and personnel assignments.
 - 2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Discuss items of significance that could affect progress.
 - 4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Progress Meetings: Conduct progress meetings at agreed upon intervals.
 - 1. Coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of Owner, Owner's Commissioning Authority, Construction Manager, and Architect, each contractor, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - 4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
- D. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
 - 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - 3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013200

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUBMITTALS

- A. Within 10 days after date of Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. Within 10 days after joint review, submit complete schedule.
- C. Submit updated schedule with each Application for Payment.
- D. Submit the number of opaque reproductions that Contractor requires, plus two copies which will be retained by Project manager.

1.3 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with one years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.4 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Diagram Sheet Size: Maximum 22 x 17 inches or width required.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.2 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- E. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, Products identified under Allowances, and dates reviewed submittals will be required from Project manager. Indicate decision dates for selection of finishes.
- F. Indicate delivery dates for owner-furnished products.
- G. Coordinate content with schedule of values specified in Section 012900.
- H. Provide legend for symbols and abbreviations used.

3.3 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.4 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Project manager at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.5 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

3.6 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to Subcontractors, suppliers, Project manager, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

END OF SECTION

SECTION 013233

PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 1. Pre-construction photographs
 2. Periodic construction photographs
 3. Final completion construction photographs
 4. Owner may elect to retain an independent firm to photographically document the progress of the work. Work of this firm shall not diminish or replace responsibilities of the Contractor for documentation required by this section. Contractor to cooperate fully with independent photographer.

1.3 UNIT PRICES

- A. Basis for Bids: Base number of construction photographs on average of 20 photographs per week over the duration of Project.

1.4 INFORMATIONAL SUBMITTALS

- A. Digital Photographs: Submit image files within three days of taking photographs.
 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
 2. Format: Minimum 1600 by 1200 pixels, 400 dpi minimum, in unaltered original files, with same aspect ratio as the sensor, un-cropped, date- and time- stamped, in folder named by date of photograph, accompanied by key plan file.
 3. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project
 - b. Name of Architect
 - c. Name of Contractor
 - d. Date photograph was taken
 - e. Description of location, direction (by compass point), and elevation or story of construction

1.5 COORDINATION

- A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs.

1.6 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 1600 by 1200 pixels and 400 dpi.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- C. Pre-construction Photographs: Before commencement of excavation, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
1. Flag construction limits before taking construction photographs
 2. Take [20] photographs to show existing conditions adjacent to property before starting the Work
 3. Take [20] photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction
 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Periodic Construction Photographs: Take [20] photographs monthly (or mutually agreed number) , coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- E. Time-Lapse Sequence Construction Photographs: Take photographs as indicated, to show status of construction and progress since last photographs were taken.
1. Frequency: Take photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment.
 2. Vantage Points: Following suggestions by Architect and Contractor, photographer to select vantage points. During each of the following construction phases, take not less than two of the required shots from same vantage point each time to create a time-lapse sequence as follows:
 - a. Commencement of the Work, through completion of subgrade construction
 - b. Above-grade structural framing
 - c. Exterior building enclosure
 - d. Interior Work, through date of Substantial Completion

END OF SECTION

SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Project manager and additional time for handling and reviewing submittals required by those corrections.

1.3 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Project manager's Digital Data Files: Electronic copies of CAD Drawings will be provided by Project manager for Contractor's use in preparing coordination submittals.
 - 1. Project manager will furnish Contractor one set of drawing files for use in preparing Shop Drawings and Project record drawings.
 - 2. Project manager makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - 3. Digital Drawing Software Program: The Contract Drawings are available in AutoCAD, version 2007.
 - 4. Contractor shall execute a data licensing agreement with Project manager.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are approved by Project manager.
 - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 - 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - 5. Project manager reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Project manager's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals. Submittals received after 1:00 pm will be considered to have been received the following day.
 - 1. Allow 10 business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Project manager will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Resubmittal Review: Allow 10 business days for review of each resubmittal.
 - 3. Sequential Review: Where sequential review of submittals by Project manager's consultants, Owner, or other parties is indicated, allow 20 business days for initial review of each submittal.
- D. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:
 - 1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
 - 2. Include the following information on an inserted cover sheet:
 - a. Project name.
 - b. Date.
 - c. Name and address of Project manager.
 - d. Name of Contractor.
 - e. Name of firm or entity that prepared submittal.
 - f. Name of subcontractor.
 - g. Name of supplier.

- h. Name of manufacturer.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Related physical samples submitted directly.
 - m. Other necessary identification.
- E. Options: Identify options requiring selection by the Project manager.
 - F. Deviations: Identify deviations from the Contract Documents on submittals.
 - G. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Project manager will return submittals, without review, received from sources other than Contractor.
 - 1. Transmittal Form: Use standard contractor form as approved by Project manager Owner.
 - H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
 - J. Use for Construction: Use only final submittals that are marked with 'Reviewed' , 'Furnish as Corrected' notation from Project manager's action stamp. , or with approval notation from alternate reviewer.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Email or upload electronic submittals as PDF electronic files directly to Project manager's Info Exchange Website specifically established for Project.
 - a. Project manager will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - 2. Action Submittals: For large format drawings and submittals (larger than 11 x 17), submit PDF file plus 2 hard copies. For smaller format drawings and submittals (11x17 or less), provide only PDF file. Project manager will return only the marked-up PDF.
 - 3. Informational Submittals: Submit two paper copies of each submittal, unless otherwise indicated. Project manager will not return copies.
 - 4. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
 - 5. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
 - 6. Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Submit Product Data in the following format:
 - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches 215 by 280 mm but no larger than 30 by 42 inches 750 by 1067 mm.
 3. Submit Shop Drawings in the following format:
 4. For large format drawings and submittals (larger than 11 x 17), submit PDF file plus 2 hard copies. For smaller format drawings and submittals (11x17 or less), provide only PDF file. Project manager will return only the marked-up PDF.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of project managers and owners, and other information specified.
- F. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Project manager.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally-signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Project manager.
- B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 01 Section "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 PROJECT MANAGER'S ACTION

- A. General: Project manager will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Project manager will review each submittal, make marks to indicate corrections or modifications required, and return it. Project manager will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:
 - 1. Reviewed
 - 2. Revise and Resubmit
 - 3. Rejected
 - 4. Furnish As Corrected
 - 5. No Action Taken.
- C. Informational Submittals: Project manager will review each submittal and will not return it, or will return it if it does not comply with requirements. Project manager will forward each submittal to appropriate party.
- D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Project manager.
- E. Incomplete submittals are not acceptable, will be considered non-responsive, and will be returned without review.
- F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION

SECTION 013516

ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.2 UTILITY SERVICE OUTAGES
- A. Keep utility and service outages to minimum and perform only after written approval of Owner is received.
1. Requests for outages will not be considered unless they include an identification of areas which will be affected by proposed outage.
 2. Schedule outages for times other than normal business hours.
 3. Make requests for outages minimum of **five calendar** days in advance of proposed outage.
- B. Contractor: Responsible for investigating utility and service lines to determine effect of outage upon building operations outside of limit of operations. Obtain approval in advance from Owner to execute investigations.

PART 2 - PRODUCTS

- 2.1 MATERIALS
- A. Type and Quality of Existing Products: Use products or types of construction that exist in structure, as needed to patch, extend, or match existing Work.
1. Generally, Contract Documents do not define products or standards of workmanship present in existing construction.
 2. Determine by inspecting and testing products where necessary, referring to existing work as quality standard.
- B. New Materials: Comply with Specifications for each product involved.
1. Match existing products and work for patching existing work.
- C. Materials for Temporary Fire-Rated Partitions: Comply with provisions of Division 01 Section "Temporary Facilities and Controls."
- D. Salvaged Materials: Salvage sufficient quantities of cut or removed material to replace damaged Work of existing construction, when material is not readily obtainable on current market.
1. Store salvaged items in dry, secure place on site.

PART 3 - EXECUTION

- 3.1 EXAMINATION
- A. Comply with provisions of Section 017300.
1. Verify that areas are ready for alteration and remodeling.
- B. Discrepancies: Verify dimensions and elevations indicated in layout of existing work.
1. Prior to commencing work, carefully compare and check Contract Documents for discrepancies in locations or elevations of work to be executed.
 2. Refer discrepancies among Drawings and existing conditions to Project manager for adjustment before work affected is performed.
- 3.2 PREPARATION
- A. Construct temporary fire-rated partitions to separate existing occupied areas from construction and alteration areas. Comply with provisions of Division 01 Section "Temporary Facilities and Controls."
- B. Cut, move, or remove items as necessary for access to alteration and renovation Work.
1. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, deteriorated masonry and concrete, and other deteriorated materials. Replace materials as specified for finished Work.
 2. Remove debris and abandoned items from area and from concealed spaces.
- C. Cutting and Removal: Perform cutting and removal work to remove minimum necessary, and in manner to avoid damage to adjacent work. Cut finish surfaces such as masonry, tile, plaster, or metals by methods to terminate surfaces in straight line at natural point of division.
- D. Prepare surface and remove surface finishes as necessary to provide for proper installation of new materials and finishes.

- E. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

3.3 INSTALLATION

- A. Coordinate Work of alterations and renovations to expedite completion and to accommodate Owner occupancy.
- B. Remove, cut, and patch Work in manner to minimize damage and to provide means of restoring products and finishes to specified condition.
 - 1. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.
- C. Install products as specified in individual Specification sections.
- D. Where new Work abuts or aligns with existing, perform smooth and even transition to match existing adjacent surface in texture and appearance.
 - 1. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and request instructions from Project manager as to method of making transition.

3.4 ADJUSTMENTS

- A. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to provide smooth plane without breaks, steps, or soffits.
- B. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.
- C. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections. Repair substrate prior to application of finishes.

3.5 FINISHES

- A. Finish new surfaces as specified in individual Specification sections.
- B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.6 CLEANING

- A. Comply with Section 017700. Thoroughly clean areas and spaces affected by Work. Completely remove paint, mortar, oils, putty and items of similar nature.
- B. Clean Owner-occupied areas daily. Clean spillage, overspray, and heavy collection of dust in Owner-occupied areas immediately.

END OF SECTION

SECTION 014000

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Project manager for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Project manager for a decision before proceeding.

1.3 REPORTS AND DOCUMENTS

- A. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of technical representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Statement that products at Project site comply with requirements.
 - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 6. Statement whether conditions, products, and installation will affect warranty.
 - 7. Other required items indicated in individual Specification Sections.
- B. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of factory-authorized service representative making report.
 - 2. Statement that equipment complies with requirements.
 - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 4. Statement whether conditions, products, and installation will affect warranty.
 - 5. Other required items indicated in individual Specification Sections.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.4 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

- E. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- F. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- G. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- H. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Project manager.
 - 2. Notify Project manager 5 days in advance of dates and times when mockups will be constructed.
 - 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at the Project.
 - 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 5. Obtain Project manager's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 - 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 7. Demolish and remove mockups when directed, unless otherwise indicated.

1.5 QUALITY CONTROL

- A. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- B. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- C. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- D. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 014200

REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Project manager's action on Contractor's submittals, applications, and requests, "approved" is limited to Project manager's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Project manager. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the United States."

END OF SECTION

SECTION 015000

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's own forces, Project manager, testing agencies, and authorities having jurisdiction.
- B. Water Service: Owner will pay water service use charges for water used by all entities for construction operations.
- C. Electric Power Service: Owner will pay electric power service use charges for electricity used by all entities for construction operations.
- D. Water Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- E. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Project managerural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide galvanized steel bases for supporting posts.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Project manager, Construction Manager, and construction personnel office activities and to accommodate project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
 - 1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
 - 2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- (1.2-m-) square tack and marker boards.
 - 3. Drinking water and private toilet.
 - 4. Coffee machine and supplies.
 - 5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F (20 to 22 deg C).
 - 6. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - 1. Store combustible materials apart from building.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- E. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- F. Telephone Service: Provide cellular telephone service to superintendent.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 - 2. Maintain support facilities until Project manager schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties

- nor endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.
 - E. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 - 3. Maintain and touchup signs so they are legible at all times.
- 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Division 01 Section "Summary."
 - B. Temporary Erosion and Sedimentation Control: Comply with requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Division 31 Section "Site Clearing."
 - C. Tree and Plant Protection: Comply with requirements specified in Division 01 Section "Temporary Tree and Plant Protection."
 - D. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
 - E. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
 - F. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- 3.5 OPERATION, TERMINATION, AND REMOVAL
- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
 - B. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 - C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION

SECTION 015639

TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

1.3 DEFINITIONS

- A. Caliper: Diameter of a trunk measured by a diameter tape at 6 inches above the ground for trees up to, and including, 4-inch size; and 12-inches above the ground for trees larger than 4-inch size.
- B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.
- C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated.
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of the following:
 - 1. Organic Mulch: 1-pint volume of organic mulch; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch.
 - 2. Protection-Zone Fencing: Assembled Samples of manufacturer's standard size made from full-size components.
- C. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.
 - 1. Species and size of tree
 - 2. Location on site plan. Include unique identifier for each.
 - 3. Reason for pruning
 - 4. Description of pruning to be performed
 - 5. Description of maintenance following pruning
- D. Qualification Data: For qualified arborist and tree service firm.
- E. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.
- F. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes pre-construction conditions that might be misconstrued as damage caused by construction activities.
 - 1. Use sufficiently detailed photographs or videotape.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.5 QUALITY ASSURANCE

- A. Arborist Qualifications: Certified Arborist as certified by ISA.
- B. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.
- C. Pre-installation Conference: Will conduct conference at Pre-Construction Meeting.
 - 1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
 - a. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.
 - b. Enforcing requirements for protection zones

- c. Arborist's responsibilities
- d. Field quality control

1.6 PROJECT CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material
 - 2. Parking vehicles or equipment
 - 3. Foot traffic
 - 4. Erection of sheds or structures
 - 5. Impoundment of water
 - 6. Excavation or other digging unless otherwise indicated
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil: Natural or cultivated top layer of the soil profile or manufactured topsoil; containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, or gray than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch in diameter; and free of weeds, roots, and toxic and other non-soil materials.
 - 1. Obtain topsoil only from well-drained sites where topsoil is 4-inches deep or more; do not obtain from bogs or marshes.
- B. Topsoil: Stockpiled topsoil from location shown on Drawings.
- C. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of the following:
 - 1. Type: Shredded hardwood, fully composted.
 - 2. Size Range: 3-inches maximum, ½ -inch minimum
 - 3. Color: Natural
- D. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements (previously used materials may be used when approved by Architect):
 - 1. Chain-Link Protection-Zone Fencing: Galvanized-steel fencing fabricated from minimum 2-inch opening, 0.148-inch diameter wire chain-link fabric; with pipe posts, minimum 2¾-inch OD line posts, and 2¾-inch OD corner and pull posts; with 1½-inch OD top rails and 0.177-inch diameter bottom tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.
 - a. Height: 6-feet
 - b. Polymer-Coating Color: Dark green
 - 2. Gates: Single swing access gates matching material and appearance of fencing, to allow for maintenance activities within protection zones; leaf width 36-inches.
- E. Root Sealant: Tar based root-pruning sealant.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PREPARATION

- A. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Flag each tree trunk at 54-inches above the ground.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated.

1. Apply 3-inch average thickness of organic mulch. Do not place mulch within 6-inches of tree trunks.

3.3 TREE- AND PLANT-PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones [before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people[and animals] from easily entering protected area except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
 1. Chain-Link Fencing: Install to comply with ASTM F 567 and with manufacturer's written instructions.
 2. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to Architect.
 3. Access Gates: Install as necessary; adjust to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Maintain protection zones free of weeds and trash.
- C. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner and time period approved by Architect.
- D. Maintain protection-zone fencing and signage in good condition as acceptable to Architect and remove when construction operations are complete and equipment has been removed from the site.
 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 2. Temporary access is permitted subject to pre-approval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Division 31 Section [Insert Section number], "Earth Moving."
- B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, air spade, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.
- C. Redirect roots in backfill areas where possible. If encountering large roots, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.
- D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

- A. Prune roots that are affected by temporary and permanent construction.
 1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 2. Cut Ends: Coat cut ends of roots more than 1-inch in diameter with an approved root sealant.
 3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 4. Cover exposed roots with burlap and water regularly.
 5. Backfill as soon as possible according to requirements in Division 31 Section.
- B. Root Pruning at Edge of Protection Zone: Prune roots 12-inches outside of the protection zone, by cleanly cutting all roots to the depth of the required excavation. Apply root sealant
- C. Root Pruning within Protection Zone: Clear and excavate by hand to the depth of the required excavation to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible. Apply root sealant.

3.6 CROWN PRUNING

- A. Prune branches that are affected by temporary and permanent construction.
 - 1. Prune trees to remain to compensate for root loss caused by damaging or cutting root system at the direction of the Owner and Architect. Provide subsequent maintenance during Contract period as recommended by arborist.
 - 2. Pruning Standards: Prune trees according to ANSI A300 (Part 1) and the following:
 - a. Type of Pruning: Cleaning.
 - b. Specialty Pruning: Restoration.
 - 3. Cut branches with sharp pruning instruments; do not break or chop.
- B. Chip removed branches and spread over areas identified by Architect.

3.7 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist unless otherwise indicated.
 - 1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.
- C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- D. Minor Fill within Protection Zone: Where existing grade is 2-inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single un-compacted layer and hand grade to required finish elevations.

3.8 FIELD QUALITY CONTROL

- A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.9 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.
 - 1. Submit details of proposed root cutting and tree and shrub repairs.
 - 2. Have arborist perform the root cutting, branch pruning, and damage repair of trees and shrubs.
 - 3. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
 - 4. Perform repairs within 24 hours.
 - 5. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Architect.
- B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
 - 1. Provide new trees of same size and species as those being replaced for each tree that measures 6 inches or smaller in caliper size.
 - 2. Provide one new tree(s) of 6-inch caliper size for each tree being replaced that measures more than 6-inches in caliper size.
 - a. Species: Species selected by Architect.
 - 3. Plant and maintain new trees as specified in Division 32 Section "Landscape Planting".
- C. Soil Aeration: Where directed by Architect, aerate surface soil compacted during construction. Aerate 10 feet beyond drip line and no closer than 36-inches to tree trunk. Use Air Spade Technology, 12-inches deep for aeration.

3.10 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

END OF SECTION

SECTION 015713

EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes providing temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and paving where required by authorities having jurisdiction. Temporary measures include the following.
 - 1. Silt fences and straw bales.
 - 2. Sediment barriers and check dams.
 - 3. Stabilized construction entrance.
 - 4. Construction of temporary swales and sedimentation basins as required.
 - 5. Seeding, sodding, and hydromulching.
- B. Comply with all local, state, and federal regulations regarding erosion control including the applicable provisions of the National Pollution Discharge Elimination System (NPDES) regulations from the Federal Clean Water Act.
- C. Should any provisions of this section be at variance with erosion control plan prepared by the civil engineer, the civil engineer's directive shall take precedence.

1.2 NOTICE OF INTENT

- A. Contractor and Owner shall jointly submit an EPA Notice of Intent (NOI) prior to construction.
- B. Contractor shall prepare the report, coordinate with Owner, and file in accordance with regulations.

PART 2 - PRODUCTS

2.1 SILT FENCE

- A. Filter Fabric: Non-woven polypropylene, polyethylene or polyamide thermoplastic fibers with non-raveling edges. The fabric shall be non-biodegradable, inert to most soil chemicals, ultraviolet resistant, unaffected by moisture or other weather conditions, and permeable to water while retaining sediment. The filter fabric shall be supplied in rolls a minimum of 36 inches (0.9 meter) wide.
 - 1. Acceptable Products: Lundin "Silt Buster", Mirafi "Envirofence" or acceptable substitution.
- B. Wire Fence Support: Welded wire fabric 2 x 4 - W1.0 x W1.0 (50 x 100 - MW7 x MW7).
- C. Fence Posts: Painted or galvanized steel Tee or Y-posts with anchor plates, not less than 5 feet (1.5 meters) in length with a minimum weight of 1.3 pounds per foot (1.9 k/m). Hangers shall be adequate to secure fence and fabric to posts. Posts and anchor plates shall conform to ASTM A-702.

2.2 STRAW BALES

- A. Standard rectangular hay bales bound by baling wire.

2.3 SEDIMENT TRAPS

- A. Standard manufacture designed to fit the intended inlet.

2.4 STABILIZED CONSTRUCTION ENTRANCE

- A. Aggregate: Graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448 and TEX 401-A coarse-aggregate; with 0 percent being retained by a 5-inch sieve and 100 percent being retained by a 3-inchesieve.

2.5 GRASS

- A. Materials and seeding and sodding shall conform to applicable Division 32 section.

2.6 FERTILIZER

- A. Use commercial grade fertilizers to insure germination and growth. Analysis by weight shall be 16-4-8 or 15-5-10 for Nitrogen, Phosphoric Acid and Potash.

2.7 WATER

- A. Use clean potable water for maintaining the grass.

PART 3 - EXECUTION

3.1 GENERAL

- A. Keep disturbed areas to a minimum required to adequately perform the work. At all times maintain the site in such a manner that minimizes erosion of the site. The execution of work under this section shall be in conformance with the NPDES rulings and the site Storm Water Pollution Prevention Plan.

3.2 SILT FENCES

- A. Silt fence shall be a minimum of 24 inches (0.6 meter) high. Posts shall be embedded a minimum of 12 inches (300 mm) in the ground, placed a maximum of 8 feet (2.4 meters) apart and set on a slight angle toward the anticipated runoff source.
 - 1. When directed by the Engineer or designated representative, posts shall be set at specified intervals to support concentrated loads.
- B. Securely attach filter fabric to posts and wire support fence, with the bottom 12 inches (300 mm) of filter fabric buried in a trench a minimum of 6 inches (150 mm) deep and 6 inches (150 mm) wide to prevent sediment from passing under the fence.
 - 1. When silt fence is constructed on impervious material, a 12-inch (300-mm) flap of fabric shall be extended upstream from the bottom of the silt fence and weighted to limit particulate loss.
 - 2. No horizontal joints will be allowed in the filter fabric.
 - 3. Vertical joints shall be overlapped a minimum of 12 inches (300 mm) with the ends sewn or otherwise securely tied.
- C. Silt fence shall be maintained for the duration of the project, and repaired, replaced, and/or relocated when necessary or as directed by the Engineer or designated representative. Accumulated silt shall be removed when it reaches a depth of 6 inches (150 mm).

3.3 EROSION CONTROL BARRIERS

- A. Provide erosion control barriers at intervals along swales and ditches as shown on the Drawings or as necessary to meet the requirements of the Storm Water Pollution Prevention Plan.
- B. Barriers: Silt fence or hay bales placed as indicated on the Drawings.
- C. Maintain barriers in good working condition and replace when damaged.

3.4 STABILIZED CONSTRUCTION ENTRANCE

- A. Remove trees, brush, stumps, obstructions, and other objectionable material and disposed of in a manner that will not interfere with the excavation, grading, and construction of the entrance as indicated on the Drawings.
 - 1. Stabilized construction entrance shall not drain onto the public right-of-way and shall not allow surface water runoff to exit the construction site.
 - 2. When necessary, vehicle wheels shall be cleaned to remove sediment prior to entrance onto public right of way.
 - a. When vehicle washing is required, it shall be done on an area stabilized with crushed stone, which drains into an approved sediment trap or sediment basin.
 - 3. Sediment shall be prevented from entering any storm drain, ditch or watercourse through use of sand bags, gravel, boards, silt fence or other methods approved by the Engineer or designated representative.
- B. The entrance shall be maintained in a condition that will prevent tracking or disposition of sediment onto public right of way. Provide periodic top dressing with additional stone as conditions demand, as well as the repair and/or cleanout of any measures used to trap sediment. Sediment that is spilled, dropped, washed, or tracked onto public right-of-way shall be removed immediately.

3.5 TEMPORARY AND PERMANENT SWALES

- A. Description:
 - 1. Provide temporary and permanent drainage swales as required to carry drainage away from the work area to an approved outfall point.
 - 2. Unless otherwise shown on the drawings, swales shall be earthen "V" shaped channels graded to a sufficient depth and slope to carry the anticipated runoff, but at least 2 feet deep with a slope of 0.1 percent.
 - 3. Swales not designated to remain in place at the completion of the contract shall be cleaned of any muck, debris and other unsuitable material and filled with approved fill before final grading operations begin.
 - 4. Swales shall have erosion control barriers as required.
 - 5. All permanent swales shall be sodded to a minimum width of 10 feet on either side of the centerline of the swale.
- B. Maintenance:

1. During the course of construction maintain temporary swales constructed for this contract so as to allow proper drainage from the construction area. Before Contractor leaves the site at the end of construction, place temporary swales to remain in good working condition.
2. Work with other contractors at the site in maintaining existing swales and ditches.
3. Where necessary for access to the work areas, install adequately sized culverts and maintain to provide the access without disturbing the site drainage.
4. Take care not to rut and damage sodded swales. Immediately repair damaged swales.
5. Keep sodded swales mowed.

3.6 DRAINAGE DITCHES

- A. Immediately hydromulch drainage ditches upon final grading.
- B. Repair erosion of the banks of the drainage ditches immediately and re-stabilize.
- C. Place sediment barriers at intervals along the ditch as shown on the plans or as necessary to help trap sediment on the site. Daily remove sediment and other debris trapped by the barriers.
- D. Maximum Ditch Side Slopes: 3 feet horizontal to 1 foot vertical.
- E. Maintenance of the ditches during construction shall include but not be limited to mowing, re-grading, sediment removal, re-hydromulching, bank repair and debris removal.
- F. Sediment removed from the ditches may be respread on the site as directed by the Owner.

3.7 FILL AND CUT SLOPES

- A. Fill slopes in all cases shall be no steeper than 3:1 unless specifically stated on the plans or approved by the Owner's soils engineer.
- B. When cut slopes exceed 2:1 for depths over 3 feet, proper bracing and shoring per OSHA requirements shall be used and maintained.
- C. For permanent slopes, cut or fill, between 2:1 and 10:1, erosion protection shall be provided with hydromulching, sodding, seeding, or other method as approved.

3.8 SEDIMENTATION BASINS

- A. Description:
 1. Provide sedimentation ponds where indicated.
 2. Route drainage from cleared areas through the sedimentation basin.
 3. Operate and maintain the pond during construction.
- B. Maintenance:
 1. Maintain the pond and the outfall and sediment retarding structure in good working condition throughout the time the pond is to be in operation.
 2. When sediment and debris fill the pond to over one third (1/3) its designed capacity, clean out the pond.
 3. Stockpile, in its' own separate area, the sediment from the clearing operation, or remove from the site, as required. Make adequate drainage provisions such that drainage from the sediment stockpile drains back into the sediment pond. When approved by the Owner, sediment removed from the pond may be spread over the site.

3.9 SEEDING

- A. Seed disturbed portions of the site and stockpile areas within 14 days if the phasing of the construction operations are anticipated to leave those portions of the areas unworked for 21 days or more.
- B. Maintain seeded areas until the project is accepted by the Owner. Maintain by watering, fertilizing, reseeding, mowing and erosion repair as may be required. Cut grass when the average height of the grass reaches 6 inches. Clippings may be mulched back into the seeded areas.

END OF SECTION

SECTION 016000

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 2. Project manager's Action: If necessary, Project manager will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Project manager will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
 - b. Use product specified if Project manager does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
 2. Store materials in a manner that will not endanger Project structure.
 3. Store products that are subject to damage by the elements, under cover in a weather-tight enclosure above ground, with ventilation adequate to prevent condensation.
 4. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 6. Protect stored products from damage and liquids from freezing.
 7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. Refer to Divisions 02 through 49. Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Project manager will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered, unless otherwise indicated.
 - b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered, unless otherwise indicated.
 - b. Non-restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
 - C. Visual Matching Specification: Where Specifications require "match Project manager's sample", provide a product that complies with requirements and matches Project manager's sample. Project manager's decision will be final on whether a proposed product matches.
 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.
 - D. Visual Selection Specification: Where Specifications include the phrase "as selected by Project manager from manufacturer's full range" or similar phrase, select a product that complies with requirements. Project manager will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.
- 2.2 COMPARABLE PRODUCTS
- A. Conditions for Consideration: Project manager will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Project manager may return requests without action, except to record noncompliance with these requirements:
 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of project managers and owners, if requested.
 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 017300

EXECUTION

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
1. Construction layout.
 2. Field engineering and surveying.
 3. Installation of the Work.
 4. Cutting and patching.
 5. Coordination of Owner-installed products.
 6. Progress cleaning.
 7. Starting and adjusting.
 8. Protection of installed construction.
 9. Correction of the Work.
- 1.3 DEFINITIONS
- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

~~1.4~~ 1.4 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Project manager of locations and details of cutting and await directions from the Project manager before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 - ~~4.2~~ Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Project manager's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

- 2.1 MATERIALS
- A. General: Comply with requirements specified in other Sections.
1. For projects requiring compliance with sustainable design and construction practices and procedures, utilize products for patching that comply with requirements of Division 01 Section "Sustainable Design Requirements."
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Project manager for the visual and functional performance of in-

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EXECUTION

place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, [mechanical and electrical systems,] and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - ~~2-1.~~ Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - ~~3-2.~~ Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - ~~4-3.~~ Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - ~~5-4.~~ Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

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3.2 PREPARATION

- A. Existing Utility Information: Furnish information to [local utility] [Owner] that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Project manager according to requirements in Division 01 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Project manager promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Project manager when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Project manager.
- 3.4 FIELD ENGINEERING
- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
 - B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Project manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Project manager before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
 - C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- 3.5 INSTALLATION
- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
 - B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
 - C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
 - D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
 - E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
 - F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
 - G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Project manager.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
 - H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
 - I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- 3.6 CUTTING AND PATCHING
- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other

- construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
 - C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
 - D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements of Division 01 Section "Summary."
 - E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to [minimize] [prevent] interruption to occupied areas.
 - F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
 - G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Ceilings: Patch, repair, or re-hang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather-tight condition.

3-93.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Utilize containers intended for holding waste materials of type to be stored.
 - 4. Coordinate progress cleaning for joint-use areas where more than one installer has worked.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

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EXECUTION

1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

~~3-403.8~~ PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

~~3-443.9~~ CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

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SECTION 017419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

Editor Note: Make selection in 1.4A below for level of performance required. Remove references to demolition in this section if that is not a part of the work of this project.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging non-hazardous demolition and construction waste
 - 2. Recycling non-hazardous demolition and construction waste
 - 3. Disposing of non-hazardous demolition and construction waste

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of [50] [75] percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:
 - 1. Demolition Waste:
 - a. Concrete
 - b. Concrete reinforcing steel
 - c. Brick
 - d. Concrete masonry units
 - e. Doors and frames
 - f. Door hardware
 - g. Metal studs
 - h. Gypsum board
 - i. Acoustical tile and panels
 - j. Carpet
 - k. Carpet pad
 - l. Plumbing fixtures
 - m. Piping
 - n. Mechanical equipment
 - o. Refrigerants
 - p. Electrical conduit
 - q. Copper wiring
 - r. Lighting fixtures
 - s. Switchgear and panelboards
 - t. Transformers
 - 2. Construction Waste:
 - a. Site-clearing waste

- b. Masonry and CMU
- c. Lumber
- d. Wood sheet materials
- e. Wood trim
- f. Metals
- g. Carpet and pad
- h. Gypsum board
- i. Piping
- j. Electrical conduit
- k. Packaging: Regardless of salvage/recycle goal indicated in paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper
 - 2) Cardboard
 - 3) Boxes
 - 4) Plastic sheet and film
 - 5) Polystyrene packaging
 - 6) Wood crates
 - 7) Plastic pails

1.5 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 30 days of date established for commencement of the Work.

1.6 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with LEED Submittal. Include the following information:
 - 1. Material category
 - 2. Generation point of waste
 - 3. Total quantity of waste in tons
 - 4. Quantity of waste salvaged, both estimated and actual in tons.
 - 5. Quantity of waste recycled, both estimated and actual in tons.
 - 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- D. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- E. LEED Submittal: LEED letter template for Credit MR 2.1 and 2.2, signed by Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.
- F. Qualification Data: For waste management coordinator refrigerant recovery technician.
- G. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.7 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of Projects with similar requirements.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section 013100 "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Review and discuss waste management plan including responsibilities of waste management coordinator.
 - 2. Review requirements for documenting quantities of each type of waste and its disposition.
 - 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - 4. Review procedures for periodic waste collection and transportation to recycling and disposal

- facilities.
5. Review waste management requirements for each trade.
- 1.8 WASTE MANAGEMENT PLAN
- A. General: Develop a waste management plan according to ASTM E 1609 and requirements of this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of [demolition] [site clearing] [and] [construction] waste generated by the Work. Use attached form or comparable generated by Contractor. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.
- D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

- 3.1 PLAN IMPLEMENTATION
- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
1. Comply with Division 01 Section 015000, "Temporary Facilities and Controls" for operation, termination, and removal requirements.
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 2. Comply with Division 01 Section 015000, "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.
- 3.2 SALVAGING DEMOLITION WASTE
- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until installation.
 4. Protect items from damage during transport and storage.
 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for

- use indicated.
- B. Salvaged Items for Sale and Donation: Permitted on Project site.
 - C. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's storage area [on-site] [off-site] [designated by Owner].
 - 5. Protect items from damage during transport and storage.
 - D. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
 - E. Plumbing Fixtures: Separate by type and size.
 - F. Lighting Fixtures: Separate lamps by type and protect from breakage.
- 3.3 RECYCLING [DEMOLITION] [AND] [CONSTRUCTION] WASTE, GENERAL
- A. General: Recycle paper and beverage containers used by on-site workers.
 - B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
 - C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
 - D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.
 - 5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.
- 3.4 DISPOSAL OF WASTE
- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - B. Burning: Do not burn waste materials.
 - C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION

SECTION 017700
CLOSEOUT PROCEDURES

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
1. Substantial Completion procedures.
 2. Final completion procedures.
 3. Warranties.
 4. Final cleaning.
- 1.3 SUBSTANTIAL COMPLETION
- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete with request.
1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 2. Advise Owner of pending insurance changeover requirements.
 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 5. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - ~~10-8.~~ Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - ~~14-9.~~ Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Project manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Project manager will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Project manager, that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.
- 1.4 FINAL COMPLETION
- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
 2. Submit certified copy of Project manager's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Project manager. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report and warranty.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Project manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Project

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CLOSEOUT PROCEDURES

manager will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected. Include cost for re-inspection based on incomplete work of the Contractor.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 1. Organize list of spaces in sequential order, starting with exterior areas first .
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Project manager.
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. PDF electronic file.
 - b. Three Insert number paper copies of product schedule or list, unless otherwise indicated. Project manager will return two copies.

1.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Project manager for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 4. Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide table of contents at beginning of document.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS – not used

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

CLOSEOUT PROCEDURES

- d. Remove tools, construction equipment, machinery, and surplus material from Project site.
- e. Remove snow and ice to provide safe access to building.
- f. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

END OF SECTION

SECTION 017823

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
1. Operation and maintenance documentation directory.
 2. Emergency manuals.
 3. Operation manuals for systems, subsystems, and equipment.
 4. Product maintenance manuals.
 5. Systems and equipment maintenance manuals.
- 1.3 DEFINITIONS
- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.
- 1.4 CLOSEOUT SUBMITTALS
- A. Manual Content: Operations and maintenance manual content is specified in individual specification sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
1. Where applicable, clarify and update reviewed manual content to correspond to modifications and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
1. PDF electronic file. Assemble each manual into a composite electronically-indexed file. Submit on digital media acceptable to [Architect/Project manager](#).
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically-linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 2. One paper copy. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. [Architect/Project manager](#) will return.
- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. [Architect/Project manager](#) [and Commissioning Agent] will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. [Architect/Project manager](#) [and Commissioning Agent] will return copy with comments.
1. Correct or modify each manual to comply with [Architect/Project manager's](#) [and Commissioning Agent's] comments. Submit copies of each corrected manual within 15 days of receipt of [Architect/Project manager's](#) [and Commissioning Agent's] comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

- 2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY
- A. Organization: Include a section in the directory for each of the following:
1. List of documents.
 2. List of systems.
 3. List of equipment.
 4. Table of contents.

- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Manager.
 - 7. Name and contact information for [Architect/Project manager](#).
 - 8. Name and contact information for Commissioning Agent.
 - 9. Names and contact information for major consultants to the [Architect/Project manager](#) that designed the systems contained in the manuals.
 - 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Enable bookmarking of individual documents based upon file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel upon opening file.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
 - 1. Binders: Heavy-duty, three-ring, vinyl-covered, [loose-leaf] [post-type] binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name,[and] subject matter of contents[, and indicate Specification Section number on bottom of spine]. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
 1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor is delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
 1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.

4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.
- 2.5 PRODUCT MAINTENANCE MANUALS
- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.
- 2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS
- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION AND DELIVERY

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of operation and maintenance manuals.
 2. Comply with requirements of newly prepared record Drawings in Division 01 Section "Project Record Documents."
- G. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and

- H. maintenance documentation.
- H. Include transmittal with all deliveries to Owner. Request receipt confirmation.

END OF SECTION

SECTION 017839

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal: Submit one paper copy and PDF electronic files of marked-up record prints and one set(s) of plots from corrected record digital data files. [ArchitectProject manager](#) will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal: Submit one paper copy and PDF electronic files of marked-up record prints. Print each Drawing, whether or not changes and additional information were recorded.
 - c. Final Submittal: Submit one paper copy and PDF electronic files of marked-up record prints, one set(s) of record digital data files, and three set(s) of record digital data file plots. Plot each drawing file, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one paper copy and one pdf copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy and one pdf copy of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Miscellaneous Record Submittals: Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy of each submittal.
- E. Reports: Submit written report indicating items incorporated in Project record documents concurrent with progress of the Work, including modifications, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.

- e. Cross-reference record prints to corresponding archive photographic documentation.
2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following [Architect/Project manager](#)'s written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with [Architect/Project manager](#). When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
 1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
 2. Format: DWG [DXF] [DGN], Version [Insert designation], operating in Microsoft Windows Apple Macintosh operating system.
 3. Format: Annotated PDF electronic file with comment function enabled.
 4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 5. Refer instances of uncertainty to [Architect/Project manager](#) through Construction Manager for resolution.
- C. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing record Drawings where [Architect/Project manager](#) determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
 1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
 2. Consult [Architect/Project manager](#) and Construction Manager for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared record Drawings into record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- D. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of [Architect/Project manager](#) and Construction Manager.

e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
 5. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as annotated PDF electronic file paper copy scanned PDF electronic file(s) of marked up paper copy of Specifications.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file paper copy scanned PDF electronic file(s) of marked up paper copy of Product Data.
1. Include record Product Data directory organized by specification section number and title, electronically linked to each item of record Product Data.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file paper copy scanned PDF electronic file(s) of marked up miscellaneous record submittals.
1. Include miscellaneous record submittals directory organized by specification section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and modifications to project record documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for [Architect/Project manager](#)'s and Construction Manager's reference during normal working hours.

END OF SECTION

UNT | SYSTEM™

Uniform General Conditions and
Supplementary General Conditions
for Construction and Design Contracts
2010 Amended

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Article 1. Definitions

Unless the context clearly requires another meaning, the following terms have the meaning assigned herein.

- 1.1 *Agreement means the specific written Agreement between the Owner and the Contractor or Architect/Engineer.*
- 1.2 Application for Payment means Contractor's monthly partial invoice for payment that includes any portion of the Work that has been completed for which an invoice has not been submitted and performed in accordance with the requirements of the Contract Documents. The Application for Payment accurately reflects the progress of the Work, is itemized based on the Schedule of Values, bears the notarized signature of Contractor, and shall not include subcontracted items for which Contractor does not intend to pay.
- 1.3 Application for Final Payment means Contractor's final invoice for payment that includes any portion of the Work that has been completed for which an invoice has not been submitted, amounts owing to adjustments to the final Contract Sum resulting from approved change orders, and release of remaining Contractor's retainage.
- 1.4 Architect/Engineer (A/E) means a person registered as an architect pursuant to Tex. Occ. Code Ann., Chapter 1051, as a landscape architect pursuant to Tex. Occ. Code Ann., Chapter 1052, a person licensed as a professional engineer pursuant Tex. Occ. Code Ann., Chapter 1001, and/or a firm employed by Owner or Design-Build Contractor to provide professional architectural or engineering services and to exercise overall responsibility for the design of a Project or a significant portion thereof, and to perform the contract administration responsibilities set forth in the Contract.
- 1.5 Baseline Schedule means the initial time schedule prepared by Contractor for Owner's information and acceptance that conveys Contractor's and Subcontractors' activities (including coordination and review activities required in the Contract Documents to be performed by A/E and Owner), durations, and sequence of work related to the entire Project to the extent required by the Contract Documents. The schedule clearly demonstrates the critical path of activities, durations and necessary predecessor conditions that drive the end date of the schedule. The Baseline Schedule shall not exceed the time limit current under the Contract Documents.
- 1.6 Certificate of Final Completion means the certificate issued by A/E that documents, to the best of A/E's knowledge and understanding, Contractor's completion of all Contractor's Punchlist items and pre-final Punchlist items, final cleanup and Contractor's provision of Record Documents, operations and maintenance manuals, and all other closeout documents required by the Contract Documents.
- 1.7 Change Order means a written modification of the Contract between Owner and Contractor, signed by Owner, Contractor and A/E.
- 1.8 Change Order Proposal Evaluation (CPE) means a Contractor-generated document in response to a Change Order Request (COR) which states the adjustment necessary to Contract Amount and Time, if any, in response to the changed work described in the Change Order Request (COR).
- 1.9 Change Order Request (COR) means an Owner generated document which describes a change in the Work, including a description and Drawings and Specifications, as necessary, to inform the Contractor of the nature of the change.

- 1.10 Close-out Documents mean the product brochures, submittals, product/equipment maintenance and operations instructions, manuals, and other documents/warranties, record documents, affidavit of payment, release of lien and claim, and as may be further defined, identified, and required by the Contract Documents.
- 1.11 Contract means the *Agreement, including all attachments thereto, and all of the Contract Documents* between Owner and Contractor.
- 1.12 Contract Date is the date when the agreement between Owner and Contractor becomes effective.
- 1.13 Contract Documents mean those documents identified as a component of the agreement (Contract) between Owner and Contractor. These may include, but are not limited to, Drawings; Specifications; *Uniform General, Supplementary General, and Special Conditions; Owner's Design Criteria Package for Design Build Projects, Owner's Request for Proposal and/or Request for Qualifications; Contractor's response to the Owner's Request for Proposal and/or Request for Qualifications, the Guaranteed Maximum Price Proposal executed by the Owner and Contractor, all change orders executed by the Owner and Contractor* and all pre-bid and/or pre-proposal addenda.
- 1.14 Contract Duration means *the period between the start date identified in the Notice to Proceed and the end of the Warranty Period.*
- 1.15 Contract Sum means the total compensation payable to Contractor for completion of the Work in accordance with the terms of the Contract.
- 1.16 Contract Time means the period between the start date identified in the Notice to Proceed with construction and the Substantial Completion date identified in the Notice to Proceed or as subsequently amended by a Change Order.
- 1.17 Contractor means the individual, corporation, limited liability company, partnership, firm, or other entity contracted to perform the Work, regardless of the type of construction contract used, so that the term as used herein includes a Construction Manager-at-Risk or a Design-Build firm as well as a general or prime Contractor. The Contract Documents refer to Contractor as if singular in number.
- 1.18 Construction Documents mean the Drawings, Specifications, and other documents issued to build the Project. Construction Documents become part of the Contract Documents when listed in the Contract or any Change Order.
- 1.19 Construction Manager-at-Risk, in accordance with Tex. Gov't Code, Chapter 2166, means a sole proprietorship, partnership, corporation, or other legal entity that assumes the risk for construction, rehabilitation, alteration or repair of a facility at the contracted price as a general contractor and provides consultation to Owner regarding construction during and after the design of the facility.
- 1.20 Date of Commencement means the date designated in the Notice to Proceed for Contractor to commence the Work.
- 1.21 Day means a calendar day unless otherwise specifically stipulated.
- 1.22 Design-Build means a project delivery method in which the detailed design and subsequent construction is provided through a single contract with a Design-Build firm; a team, partnership, or legal entity that includes design professionals and a builder. The Design-Build Project delivery

shall be implemented in accordance with Tex. Gov't Code § 2166.2531.

- 1.23 Drawings mean that product of A/E which graphically depicts the Work.
- 1.24 Final Completion means the date determined and certified by A/E and Owner on which the Work is fully and satisfactorily complete in accordance with the Contract.
- 1.25 Final Payment means the last and final monetary compensation made to Contractor for any portion of the Work that has been completed and accepted for which payment has not been made, amounts owing to adjustments to the final Contract Sum resulting from approved change orders, and release of Contractor's retainage.
- 1.26 *Float means the period in the Critical Path schedule that allows an excusable delay when the original schedule allows more than enough time to perform the work.*
- 1.27 Historically Underutilized Business (HUB) pursuant to Tex. Gov't Code, Chapter 2161, means a business that is at least 51% owned by an Asian Pacific American, a Black American, a Hispanic American, a Native American and/or an American Woman; is an entity with its principal place of business in Texas; and has an owner residing in Texas with proportionate interest that actively participates in the control, operations, and management of the entity's affairs.
- 1.28 Notice to Proceed means written document *furnished by the Owner* informing Contractor of the dates beginning Work and the dates anticipated for Substantial Completion.
- 1.29 Open Item List means a list of work activities, Punchlist items, changes or other issues that are not expected by Owner, A/E and Contractor to be complete prior to Substantial Completion.
- 1.30 Owner means the *University of North Texas System, as an entity of the State of Texas*, and any agency of the State of Texas, acting through the responsible entity of the State of Texas identified in the Contract as Owner. *The University of North Texas System is the party identified in the Contract as the Owner.*
- 1.31 Owner's Construction Manager (OCM) means the individual assigned by the Owner to act on its behalf and to undertake certain activities as specifically outlined in the Contract. *The OCM does not have the authority to bind the Owner in regards to changes in the schedule, scope or project costs.*
- 1.32 Owner's Designated Representative (ODR) means the individual assigned by Owner to act on its behalf and to undertake certain activities as specifically outlined in the Contract. *The ODR is the only party authorized to direct changes to the scope, cost, or time of the Contract.*
- 1.33 Project means all activities necessary for realization of the Work. This includes design, contract award(s), execution of the Work itself, and fulfillment of all Contract and warranty obligations.
- 1.34 Progress Assessment Report (PAR) means the monthly compliance report to Owner verifying compliance with the HUB subcontracting plan (HSP).
- 1.35 Proposed Change Order (PCO) means a document that informs Contractor, *Owner and A/E* of a proposed change in the Work and appropriately describes or otherwise documents such change including Contractor's response of pricing for the proposed change.
- 1.36 Punchlist means a list of items of Work to be completed or corrected by Contractor after Substantial Completion. Punchlist indicate items to be finished, remaining Work to be performed, or Work that

does not meet quality or quantity requirements as required in the Contract Documents.

- 1.37 *Reasonably Inferable* means a fair, proper and moderate conclusion reached by considering all of the facts and deducing a logical conclusion from them.
- 1.38 Record Documents mean the drawing set, Specifications, and other materials maintained by Contractor that documents all addenda, Architect's Supplemental Instructions, Change Orders and postings and markings that record the as-constructed conditions of the Work and all changes made during construction.
- 1.39 Request for Information (RFI) means a written request by Contractor directed to A/E and Owner for a clarification of the information provided in the Contract Documents or for direction concerning information necessary to perform the Work that may be omitted from the Contract Documents.
- 1.40 Samples mean representative physical examples of materials, equipment, or workmanship used to confirm compliance with requirements and/or to establish standards for use in execution of the Work.
- 1.41 Schedule of Values means the detailed breakdown of the cost of the materials, labor, and equipment necessary to accomplish the Work as described in the Contract Documents, submitted by Contractor for approval by Owner and A/E.
- 1.42 Shop Drawings mean the drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data prepared by Contractor or its agents which detail a portion of the Work.
- 1.43 Site means the geographical area of the location of the Work.
- 1.44 Special Conditions mean the documents containing terms and conditions which may be unique to the Project. Special Conditions are a part of the Contract Documents and have precedence over the Uniform General Conditions and Supplementary General Conditions.
- 1.45 Specifications mean the written product of A/E that establishes the quality and/or performance of products utilized in the Work and processes to be used, including testing and verification for producing the Work.
- 1.46 Subcontractor means a business entity that enters into an agreement with Contractor to perform part of the Work or to provide services, materials, or equipment for use in the Work.
- 1.47 Submittal Register means a list provided by Contractor of all items to be furnished for review and approval by A/E and Owner and as identified in the Contract Documents including anticipated sequence and submittal dates.
- 1.48 Substantial Completion means the date determined and certified by Contractor, A/E and Owner when the Work, or a designated portion thereof, is sufficiently complete, in accordance with the Contract, so as to be operational and fit for the use intended.
- 1.49 Supplementary General Conditions mean procedures and requirements that modify the Uniform General Conditions. Supplementary General Conditions, when used, have precedence over the Uniform General Conditions.
- 1.50 Unit Price Work means the Work or a portion of the Work, paid for based on incremental units of measurement.

- 1.51 Unilateral Change Order (ULCO) means a Change Order issued by Owner without the complete agreement of Contractor as to cost and/or time.
- 1.52 Work means the administration, procurement, materials, equipment, construction and all services necessary for Contractor, and/or its agents, to fulfill Contractor's obligations under the Contract.
- 1.53 Work Progress Schedule means the continually updated time schedule prepared and monitored by Contractor that accurately indicated all necessary appropriate revisions as required by the conditions of the Work and the Project while maintaining a concise comparison to the Baseline Schedule.
- 1.54 *The terms "bid", "bidder", or similar terms used in the Uniform General Conditions and Supplementary General Conditions also mean "proposal", "proposer", or "respondent", as appropriate for the type of project for which these General Conditions are used.*

Article 2. Wage Rates and Other Laws Governing Construction

- 2.1 Environmental Regulations. Contractor shall conduct activities in compliance with applicable laws and regulations and other requirements of the Contract relating to the environment and its protection at all times. Unless otherwise specifically determined, *Contractor* is responsible for obtaining and maintaining permits related to stormwater run-off. Contractor shall conduct operations consistent with stormwater run-off permit conditions. Contractor is responsible for all items it brings to the Site, including hazardous materials, and all such items brought to the Site by its Subcontractors and suppliers, or by other entities subject to direction of Contractor. Contractor shall not incorporate hazardous materials into the Work without prior approval of Owner, and shall provide an affidavit attesting to such in association with request for Substantial Completion inspection.
- 2.2 Wage Rates. Contractor shall not pay less than the wage scale of the various classes of labor as shown on the prevailing wage schedule *as established by the United States Department of Labor in accordance with the Davis-Bacon Act.* The specified wage rates are minimum rates only. Owner is not bound to pay any claims for additional compensation made by any Contractor because the Contractor pays wages in excess of the applicable minimum rate contained in the Contract. The prevailing wage schedule is not a representation that qualified labor adequate to perform the Work is available locally at the prevailing wage rates. *When requested, competent evidence of compliance with the Texas Prevailing Wage Law shall be furnished.*
- 2.2.1 Notification to Workers. Contractor shall post the prevailing wage schedule in a place conspicuous to all workers on the Project Site and shall notify each worker, in writing, of the following as they commence work on the Contract: the worker's job classification, the established minimum wage rate requirement for that classification, as well as the worker's actual wage. The notice must be delivered to and signed in acknowledgement of receipt by the worker and must list both the wages and fringe benefits to be paid or furnished for each classification in which the worker is assigned duties. When requested by Owner, Contractor shall furnish evidence of compliance with the Texas Prevailing Wage Law and the addresses of all workers.
- 2.2.1.1 Contractor shall submit a copy of each worker's wage-rate notification to *Owner* with the application for progress payment for the period during which the worker was engaged in activities on behalf of the Project.
- 2.2.1.2 The prevailing wage schedule is determined by Owner in compliance with Tex. Gov't Code, Chapter 2258. Should Contractor at any time become aware that a particular skill or trade not reflected on Owner's prevailing wage schedule will be or is being employed in the Work, whether by Contractor or by Subcontractor, Contractor shall promptly inform *Owner* of the proposed wage to be paid for the skill along with a justification for same and *Owner* shall promptly concur with or reject the proposed wage and classification.
- Contractor is responsible for determining the most appropriate wage for a particular skill in relation to similar skills or trades identified on the prevailing wage schedule. In no case, shall any worker be paid less than the wage indicated for laborers.

2.2.2 Penalty for Violation. Contractor, and any Subcontractor, will pay to the State a penalty of sixty dollars (\$60) for each worker employed for each day, or portion thereof, that the worker is paid less than the wage rates stipulated in the prevailing wage schedule.

2.2.3 Complaints of Violations.

2.2.3.1 Owner's Determination of Good Cause. Upon receipt of information concerning a violation, Owner will conduct an investigation in accordance with Tex. Gov't Code, Chapter 2258 and make an initial determination as to whether good cause exists that a violation occurred. Upon making a good cause finding, Owner will retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the prevailing wage schedule and any supplements thereto, together with the applicable penalties, such amounts being subtracted from successive progress payments pending a final decision on the violation.

2.2.3.2 No Extension of Time. If Owner's determination proves valid that good cause existed to believe a violation had occurred, Contractor is not entitled to an extension of time for any delay arising directly or indirectly from the arbitration procedures.

2.3 Venue for Suits. The venue for any suit arising from the Contract will be in a court of competent jurisdiction in *the county in which the Project is located*, or as may otherwise be designated in the Supplementary General Conditions, *the Special Conditions or the Contract*.

2.4 Licensing of Trades. Contractor shall comply with all applicable provisions of State law related to license requirements for skilled tradesmen, contractors, suppliers and or laborers, as necessary to accomplish the Work. In the event Contractor, or one of its Subcontractors, loses its license during the term of performance of the Contract, Contractor shall promptly hire or contract with a licensed provider of the service at no additional cost to Owner.

2.5 Royalties, Patents, and Copyrights. Contractor shall pay all royalties and license fees, defend suits or claims for infringement of copyrights and patent rights, and shall hold Owner harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by Owner or A/E. However, if Contractor has reason to believe that the required design, process, or product is an infringement of a copyright or a patent, Contractor shall be responsible for such loss unless such information is promptly furnished to A/E.

2.6 State Sales and Use Taxes. Owner qualifies for exemption from certain State and local sales and use taxes pursuant to the provisions of Tex. Tax Code, Chapter 151. Upon request from Contractor, Owner shall furnish evidence of tax exempt status. Contractor may claim exemption from payment of certain applicable State taxes by complying with such procedures as prescribed by the State Comptroller of Public Accounts. Owner acknowledges not all items qualify for exemption. Owner is not obligated to reimburse Contractor for taxes paid on items that qualify for tax exemption.

2.7 Antiquities. Contractor shall take precaution to avoid disturbing primitive records and antiquities of archaeological, paleontological or historical significance. *No objects of this nature shall be*

disturbed without written permission of Owner and the Texas Historical Commission. When such objects are uncovered unexpectedly, the Contractor shall stop all Work in close proximity and notify the OCM and the Texas Historical Commission of their presence and shall not disturb them until written permission and permit to do so is granted. All primitive rights and antiquities, as defined in Chapter 191, Texas Natural Resource Code, discovered on the Owner's property shall remain property of State of Texas. If it is determined by Owner, in consultation with the Texas Historical Commission that exploration or excavation of primitive records or antiquities on Project Site is necessary to avoid loss, Contractor shall cooperate in salvage work attendant to preservation. If the Work stoppage or salvage work causes an increase in the Contractor's cost of, or time required for, performance of the Work, Contractor may file with the Owner a Notice of Claim as described in § 21.1.2.2.

- 2.8 Franchise Tax Status. *Upon request, the Contractor agrees to execute and provide to the Owner a Certification of Franchise Tax Payment, on a form approved by the Owner.*

Article 3. General Responsibilities of Owner and Contractor

- 3.1 Owner's General Responsibilities. Owner is the entity identified as such in the Contract and referred to throughout the Contract Documents as if singular in number.
- 3.1.1 Preconstruction Conference. Prior to, or concurrent with, the issuance of Notice to Proceed with construction, a conference will be convened for attendance by Owner, Contractor, A/E and appropriate Subcontractors. The purpose of the conference is to establish a working understanding among the parties as to the Work, the operational conditions at the Project Site, and general administration of the Project. Topics include communications, schedules, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, maintaining required records and all other matters of importance to the administration of the Project and effective communications between the Project team members.
- 3.1.2 OCM. Prior to the start of construction, Owner will identify *OCM*, who has the express authority to act *on behalf of the* Owner to the extent and for the purposes described in the various Articles of the Contract, including responsibilities for general administration of the Contract.
- 3.1.2.1 Unless otherwise specifically defined elsewhere in the Contract Documents, *OCM* is the single point of contact between Owner and Contractor. Notice to *OCM*, unless otherwise noted, constitutes notice to Owner under the Contract.
- 3.1.2.2 All directives on behalf of Owner will be conveyed to Contractor and A/E by *OCM* in writing.
- 3.1.2.3 Owner will furnish or cause to be furnished, free of charge, *up to ten (10)* complete sets *and an electronic set* of the Drawings, Specifications, and addenda.
- 3.1.3 Owner Supplied Materials and Information.
- 3.1.3.1 Owner will furnish to Contractor those surveys *the Owner possesses* describing the physical characteristics, legal description, limitations of the Site, Site utility locations, and other information used in the preparation of the Contract Documents.
- 3.1.3.2 Owner will provide information, equipment, or services under Owner's control to Contractor with reasonable promptness.
- 3.1.4 Availability of Lands. Owner will furnish, as indicated in the Contract, all required rights to use the lands upon which the Work occurs. This includes rights-of-way and easements for access and such other lands that are designated for use by Contractor. Contractor shall comply with all Owner identified encumbrances or restrictions specifically related to use of lands so furnished. Owner will obtain and pay for easements for permanent structures or permanent changes in existing facilities, unless otherwise required in the Contract Documents.

3.1.5 Limitation on Owner's Duties.

3.1.5.1 Owner will not supervise, direct, control or have authority over or be responsible for Contractor's means, methods, technologies, sequences or procedures of construction or the safety precautions and programs incident thereto. Owner is not responsible for any failure of Contractor to comply with laws and regulations applicable to the Work. Owner is not responsible for the failure of Contractor to perform or furnish the Work in accordance with the Contract Documents. Except as provided in Section 2.5, Owner is not responsible for the acts or omissions of Contractor, or any of its Subcontractors, suppliers or of any other person or organization performing or furnishing any of the Work on behalf of Contractor.

3.1.5.2 Owner will not take any action in contravention of a design decision made by A/E in preparation of the Contract Documents, when such actions are in conflict with statutes under which A/E is licensed for the protection of the public health and safety.

3.2 Role of Architect/Engineer. Unless specified otherwise in the Contract between Owner and Contractor, A/E shall provide general administration services for Owner during the construction phase of the project. Written correspondence, requests for information, and Shop Drawings/submittals shall be directed to A/E for action. A/E has the authority to act on behalf of Owner to the extent provided in the Contract Documents, unless otherwise modified by written instrument, which will be furnished to Contractor by *OCM*, upon request.

3.2.1 Site Visits.

3.2.1.1 A/E will make visits to the Site at intervals as provided in the A/E's Contract with Owner, to observe the progress and the quality of the various aspects of Contractor's executed Work and report findings to *OCM*.

3.2.1.2 A/E has the authority to interpret Contract Documents and inspect the Work for compliance and conformance with the Contract. Except as referenced in Paragraph 3.1.5.2, Owner retains the sole authority to accept or reject Work and issue direction for correction, removal, or replacement of Work.

3.2.2 Clarifications and Interpretations. It may be determined that clarifications or interpretations of the Contract Documents are necessary. Upon direction by *OCM*, such clarifications or interpretations will be provided by A/E consistent with the intent of the Contract Documents. A/E will issue these clarifications with reasonable promptness to Contractor as A/E's supplemental instruction ("ASI") or similar instrument. If Contractor believes that such clarification or interpretation justifies an adjustment in the Contract Sum or the Contract Time, Contractor shall so notify Owner in accordance with the provisions of Article 11.

3.2.3 Limitations on Architect/Engineer Authority. A/E is not responsible for:

3.2.3.1 Contractor's means, methods, techniques, sequences, procedures, safety, or programs incident to the Project, nor will A/E supervise, direct, control or have authority over the same;

- 3.2.3.2 The failure of Contractor to comply with laws and regulations applicable to the furnishing or performing the Work;
- 3.2.3.3 Contractor's failure to perform or furnish the Work in accordance with the Contract Documents; or
- 3.2.3.4 Acts or omissions of Contractor, or of any other person or organization performing or furnishing any of the Work.

3.3 Contractor's General Responsibilities. Contractor is solely responsible for implementing the Work in full compliance with all applicable laws and the Contract Documents and shall supervise and direct the Work using the best skill and attention to assure that each element of the Work conforms to the Contract requirements. Contractor is solely responsible for all construction means, methods, techniques, safety, sequences, coordination and procedures.

3.3.1 Project Administration. Contractor shall provide Project administration for all Subcontractors, vendors, suppliers, and others involved in implementing the Work and shall coordinate administration efforts with those of A/E and OCM in accordance with these general conditions and other provisions of the Contract, and as outlined in the pre-construction conference.

3.3.2 Contractor's Management Personnel. Contractor shall employ a competent person or persons who will be present at the Project Site during the progress of the Work to supervise or oversee the work. The competent persons are subject to the approval of OCM. Contractor shall not change approved staff during the course of the project without the written approval of OCM unless the staff member leaves the employment of Contractor. Contractor shall provide additional quality control, safety and other staff as stated in the Supplementary General Conditions.

3.3.3 Labor. Contractor shall provide competent, suitably qualified personnel to survey, lay-out, and construct the Work as required by the Contract Documents and maintain good discipline and order at the Site at all times.

3.3.4 Services, Materials, and Equipment. Unless otherwise specified, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities, incidentals, and services necessary for the construction, performance, testing, start-up, inspection and completion of the Work. *The Contractor shall provide, without extra charge, all incidental items required as a part of the Work, even if not particularly specified or indicated in the Contract Documents.*

3.3.5 No Substitutions Without Approval. *The Contractor may make substitutions only with the consent of the Owner, after evaluation and recommendation by the A/E and in accordance with a Change Order.*

3.3.6 Contractor General Responsibility. For Owner furnished equipment or material that will be in the care, custody, and control of Contractor, Contractor is responsible for damage or loss.

- 3.3.7 Non-Compliant Work. Should A/E and/or *OCM* identify Work as noncompliant with the Contract Documents, A/E and/or *OCM* shall communicate the finding to Contractor, and Contractor shall correct such Work at no additional cost to the Owner. The approval of Work by either A/E or *OCM* does not relieve Contractor from the obligation to comply with all requirements of the Contract Documents.
- 3.3.8 Subcontractors. Contractor shall not employ any Subcontractor, supplier or other person or organization, whether initially or as a substitute, against whom Owner shall have reasonable objection. Owner will communicate such objections in writing within ten (10) days of receipt of Contractor's intent to use such Subcontractor, supplier, or other person or organization. Contractor is not required to employ any Subcontractor, supplier or other person or organization to furnish any of the work to whom Contractor has reasonable objection. Contractor shall not substitute Subcontractors without the acceptance of Owner.
- 3.3.8.1 All Subcontracts and supply contracts shall be consistent with and bind the Subcontractors and suppliers to the terms and conditions of the Contract Documents including provisions of the Contract between Contractor and Owner.
- 3.3.8.2 Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor. Require all Subcontractors, suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with Owner only through Contractor. Contractor shall furnish to Owner a copy, at Owner's request, of each first-tier subcontract promptly after its execution. Contractor agrees that Owner has no obligation to review or approve the content of such contracts and that providing Owner such copies in no way relieves Contractor of any of the terms and conditions of the Contract, including, without limitation, any provisions of the Contract which require the Subcontractor to be bound to Contractor in the same manner in which Contractor is bound to Owner.
- 3.3.9 Continuing the Work. Contractor shall carry on the Work and adhere to the progress schedule during all disputes, disagreements, or alternative resolution processes with Owner. Contractor shall not delay or postpone any Work because of pending unresolved disputes, disagreements or alternative resolution processes, except as Owner and Contractor may agree in writing.
- 3.3.10 Cleaning. Contractor shall at all times, keep the Site and the Work clean and free from accumulation of waste materials or rubbish caused by the construction activities under the Contract. Contractor shall ensure that the entire Project is thoroughly cleaned prior to requesting Substantial Completion inspection and, again, upon completion of the Project prior to the final inspection.
- 3.3.11 Acts and Omissions of Contractor, its Subcontractors and Employees. Contractor shall be responsible for acts and omissions of his employees and all its Subcontractors, their agents and employees. Owner may, in writing, require Contractor to remove from the Project any of Contractor's or its Subcontractor's employees whom *OCM* finds to be careless, incompetent, unsafe, uncooperative, disruptive, or otherwise objectionable.

3.3.12 **Indemnification of Owner.** Contractor covenants and agrees to FULLY INDEMNIFY and HOLD HARMLESS, Owner *and its component institutions* and the *Regents*, elected and appointed officials, employees, officers, directors, volunteers, and representatives of Owner *and its component institutions*, individually or collectively, from and against any and all costs, claims, liens, damages, losses, expenses, fees, fines, penalties, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including but not limited to, personal or bodily injury, death or property damage, made upon Owner directly or indirectly arising out of, resulting from or related to Contractor's activities under this Contract, including any acts or omissions of Contractor, or any agent, officer, director, representative, employee, consultant or the Subcontractor of Contractor, and their respective officers, agents, employees, directors and representatives while in the exercise of performance of the rights or duties under this Contract. The indemnity provided for in this paragraph does not apply to any liability resulting from the negligence of the Owner, officers or employees, separate contractors or assigned contractors, in instances where such negligence causes personal injury, death or property damage. **IN THE EVENT CONTRACTOR AND OWNER ARE FOUND JOINTLY LIABLE BY A COURT OF COMPETENT JURISDICTION, LIABILITY WILL BE APPORTIONED COMPARATIVELY IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, WITHOUT WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE STATE UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW.**

3.3.12.1 The provisions of this indemnification are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

3.3.12.2 Contractor shall promptly advise Owner in writing of any claim or demand against Owner or against Contractor known to Contractor related to or arising out of Contractor's activities under this Contract.

3.3.13 **Ancillary Areas.** Contractor shall operate and maintain operations and associated storage areas at the site of the Work in accordance with the following:

3.3.13.1 Confine all Contractor operations, including storage of materials and employee parking upon the Site of Work, to areas designated by *OCM*.

3.3.13.2 Contractor may erect, at its own expense, temporary buildings that will remain its property. Remove such buildings and associated utility service lines upon completion of the Work, unless Contractor requests and Owner provides written consent that it may abandon such buildings and utilities in place.

3.3.13.3 Use only established roadways or construct and use such temporary roadways as may be authorized by *OCM*. Do not allow load limits of vehicles to exceed the limits prescribed by appropriate regulations or law. Provide protection to road surfaces, curbs, sidewalks, trees, shrubbery, sprinkler systems, drainage structures and other like existing improvements to prevent damage and repair any damage thereto at the expense of Contractor.

- 3.3.13.4 Owner may restrict Contractor's entry to the Site to specifically assigned entrances and routes.
- 3.3.14 Separate Contracts. Owner reserves the right to award other contracts in connection with other portions of the Project under these same or substantially similar contract conditions, including those portions related to insurance and waiver of subrogation. Owner reserves the right to perform operations related to the Project with Owner's own forces.
- 3.3.15 Under a system of separate contracts, the conditions described herein continue to apply except as may be amended by change order.
- 3.3.16 Contractor shall cooperate with other contractors or forces employed on the Project by Owner, including providing access to Site and Project information as requested.
- 3.3.17 Owner shall be reimbursed by Contractor for costs incurred by Owner which are payable to a separate contractor because of delays, improperly timed activities, or defective construction by Contractor. Owner will equitably adjust the Contract by Change Order for costs incurred by Contractor because of delays, improperly timed activities, damage to the Work or defective construction by a separate contractor.

Article 4. Historically Underutilized Business (HUB) Subcontracting Plan

- 4.1 General Description. The purpose of the Historically Underutilized Business (HUB) program is to promote equal business opportunities for economically disadvantaged persons (as defined by Tex. Gov't Code, Chapter 2161) to contract with the State of Texas in accordance with the goals specified in the State of Texas Disparity Study. The HUB program annual procurement utilization goals are defined in 34 T.A.C. § 20.13(b).
- 4.1.1 State agencies are required by statute to make a good faith effort to assist HUBs in participating in contract awards issued by the State. 34 T.A.C. § 20.13(b) outlines the State's policy to encourage the utilization of HUBs in State contracting opportunities through race, ethnic and gender neutral means.
- 4.1.2 A Contractor who contracts with the State in an amount of \$100,000 or greater is required to make a good faith effort to award subcontracts to HUBs in accordance with 34 T.A.C. § 20.14(a)(2)(A) by submitting a HUB subcontracting plan within twenty-four (24) hours after the bid or response is due and complying with the HUB subcontracting plan after it is accepted by Owner and during the term of the Contract.
- 4.2 Compliance with Approved HUB Subcontracting Plan. Contractor, having been awarded this Contract in part by complying with the HUB program statute and rules, hereby covenants to continue to comply with the HUB program as follows:
- 4.2.1 Prior to adding or substituting a Subcontractor, promptly notify Owner in the event a change is required for any reason to the accepted HUB subcontracting plan.
- 4.2.2 Conduct the good-faith effort activities required and provide Owner with necessary documentation to justify approval of a change to the approved HUB subcontracting plan.
- 4.2.3 Cooperate in the execution of a Change Order or such other approval of the change in the HUB subcontracting plans as Contractor and Owner may agree to.
- 4.2.4 Maintain and make available to Owner upon request business records documenting compliance with the accepted HUB subcontracting plan.
- 4.2.5 Upon receipt of payment for performance of Work, submit to Owner a compliance report, in the format required by Owner that demonstrates Contractor's performance of the HUB subcontracting plan.
- 4.2.5.1 Progress Assessment Report (PAR): monthly compliance reports to Owner (contracting agency), verifying their compliance with the HUB subcontracting plan, including the use/expenditures they have made to Subcontractors. (The PAR is available at <http://www.window.state.tx.us/procurement/prog/hub/hub-forms/>).
- 4.2.6 Promptly and accurately explain and provide supplemental information to Owner to assist in Owner's investigation of Contractor's good-faith effort to fulfill the HUB subcontracting plan and the requirements under 34 T.A.C. § 20.14(a)(1).
- 4.3 Failure to Demonstrate Good-Faith Effort. Upon a determination by Owner that Contractor has

failed to demonstrate a good-faith effort to fulfill the HUB subcontracting plan or any Contract covenant detailed above, Owner may, in addition to all other remedies available to it, report the failure to perform to the Comptroller of Public Accounts, Texas Procurement and Support Services Division, Historically Underutilized Business Program and may bar Contractor from future contracting opportunities with Owner.

Article 5. Bonds and Insurance

5.1 Construction Bonds. Contractor is required to tender to Owner, prior to commencing the Work, performance and payment bonds, as required by Tex. Gov't Code, Chapter 2253.

5.1.1 Bond Requirements. Each bond shall be executed by a corporate surety or sureties authorized to do business in the State of Texas and acceptable to Owner, on Owner's *approved* form, and in compliance with the relevant provisions of the Texas Insurance Code. If any bond is for more than ten (10) percent of the surety's capital and surplus, Owner may require certification that the company has reinsured the excess portion with one or more reinsurers authorized to do business in the State. A reinsurer may not reinsure for more than ten (10) percent of its capital and surplus. If a surety upon a bond loses its authority to do business in the State, Contractor shall, within thirty (30) days after such loss, furnish a replacement bond at no added cost to Owner.

5.1.1.1 A Performance bond is required if the Contract Sum is in excess of \$100,000. The performance bond is solely for the protection of Owner. The performance bond is to be for the Contract Sum to guarantee the faithful performance of the Work in accordance with the Contract Documents. *For Design-Build Projects the performance bond is to be for the full amount of both the construction and design services in accordance with the Contract Documents.* The form of the bond shall be approved by the *Owner*. The performance bond shall be effective through Contractor's warranty period.

5.1.1.2 A Payment bond is required if the Contract price is in excess of \$25,000. The payment bond is to be for the Contract Sum and is payable to Owner solely for the protection and use of payment bond beneficiaries. *For Design-Build Projects the payment bond is to be for the full amount of both the construction and design services in accordance with the Contract Documents.* The form of the bond shall be approved by the *Owner*.

5.1.2 When Bonds Are Due.

Payment and performance bonds are due *before the Contractor begins work.*

5.1.3 Power of Attorney. Each bond shall be accompanied by a valid power of attorney (issued by the surety company and attached, signed and sealed with the corporate embossed seal, to the bond) authorizing the attorney-in-fact who signs the bond to commit the company to the terms of the bond, and stating any limit in the amount for which the attorney can issue a single bond.

5.1.4 Bond Indemnification. The process of requiring and accepting bonds and making claims there under shall be conducted in compliance with Tex. Gov't Code, Chapter 2253. **IF FOR ANY REASON A STATUTORY PAYMENT OR PERFORMANCE BOND IS NOT HONORED BY THE SURETY, CONTRACTOR SHALL FULLY INDEMNIFY AND HOLD OWNER AND ITS COMPONENT INSTITUTIONS AND THE ELECTED AND APPOINTED OFFICIALS, EMPLOYEES, OFFICERS, DIRECTORS, VOLUNTEERS AND REPRESENTATIVES OF OWNER HARMLESS OF AND FROM ANY COSTS, LOSSES,**

OBLIGATIONS OR LIABILITIES IT INCURS AS A RESULT.

- 5.1.5 Furnishing Bond Information. Owner shall furnish certified copies of the payment bond and the related Contract to any qualified person seeking copies who complies with Tex. Gov't Code § 2253.026.
- 5.1.6 Claims on Payment Bonds. Claims on payment bonds must be sent directly to Contractor and his surety in accordance with Tex. Gov't Code § 2253.041. All payment bond claimants are cautioned that no lien exists on the funds unpaid to Contractor on such Contract, and that reliance on notices sent to Owner may result in loss of their rights against Contractor and/or his surety. Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by any agent or employee.
- 5.1.7 Payment Claims when Payment Bond not Required. The rights of Subcontractors regarding payment are governed by Tex. Prop. Code § 53.231 – 53.239 when the value of the Contract between Owner and Contractor is less than \$25,000.00. These provisions set out the requirements for filing a valid lien on funds unpaid to Contractor as of the time of filing the claim, actions necessary to release the lien and satisfaction of such claim.
- 5.1.8 Sureties. A surety shall be listed on the US Department of the Treasury's Listing of Approved Sureties maintained by the Bureau of Financial Management Service (FMS), www.fms.treas.gov/c570, stating companies holding Certificates of Authority as acceptable sureties on Federal bonds and acceptable reinsuring companies (FMS Circular 570). *The Owner will consider acceptable any corporate surety which is qualified under this paragraph and which has a rating of at least B in Best's Insurance Reports – Property – Casualty. If any surety upon any bond furnished in connection with the Contract becomes insolvent, or otherwise not authorized to do business in the State, the Contractor shall within thirty (30) days after the date of insolvency or lack of authority furnish equivalent security to protect the interests of the State of Texas and of persons supplying labor, materials and/or equipment in the prosecution of the Work contemplated by the Contract.*
- 5.2 Insurance Requirements. *Architect shall carry insurance in the types and amounts indicated in the Agreement for the duration of the Contract. Unless otherwise provide for in the Supplementary General Conditions, or Special Conditions or elsewhere in the Contract, the Contractor shall carry insurance in the types and amounts indicated in this Article for the duration of the Contract. The insurance shall be evidenced by delivery to Owner of certificates of insurance executed by the insurer or its authorized agent stating coverage, limits, expiration dates and compliance with all applicable required provisions. Upon request, Owner, and/or its agents, shall be entitled to receive without expense, copies of the policies and all endorsements. Contractor shall update all expired policies prior to submission for monthly payment. Failure to update policies shall be reason for withholding of payment until renewal is provided to Owner.*
- 5.2.1 Contractor shall provide and maintain all insurance coverage with the minimum amounts described below until the end of the warranty period unless otherwise stated in Supplementary General Conditions or Special Conditions. Failure to maintain insurance coverage, as required, is grounds for suspension of Work for cause pursuant to Article 14.
- 5.2.2 Coverage shall be written on an occurrence basis by companies authorized and admitted to

do business in the State of Texas and rated A- or better by A.M. Best Company or similar rating company or otherwise acceptable to Owner.

5.2.2.1 Insurance Coverage Required.

5.2.2.1.1 Workers' Compensation. Insurance with limits as required by the Texas Workers' Compensation Act, with the policy endorsed to provide a waiver of subrogation as to Owner, employer's liability insurance of not less than:

\$100,000 each accident;

\$100,000 disease each employee ; and

\$500,000 disease policy limit.

5.2.2.1.2 Commercial General Liability Insurance. Including premises, operations, independent contractor's liability, products and completed operations and contractual liability, covering, but not limited to, the liability assumed under the indemnification provisions of this Contract, fully insuring Contractor's liability for bodily injury (including death) and property damage with a minimum limit of:

\$1,000,000 per occurrence

\$2,000,000 general aggregate

\$2,000,000 products and completed operations aggregate; and

Coverage shall be on an "occurrence" basis.

The policy shall include coverage extended to apply to completed operations and explosion, collapse, and underground hazards. The policy shall include endorsement CG2503 Amendment of Aggregate Limits of Insurance (per Project) or its equivalent.

If the Work involves any activities within fifty (50) feet of any railroad, railroad protective insurance as may be required by the affected railroad, written for not less than the limits required by such railroad.

5.2.2.1.3 Asbestos Abatement Liability Insurance, including coverage for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos containing materials. *This requirement applies if the Work or the Project includes asbestos containing materials.

The combined single limit for bodily injury and property damage will be a minimum of \$1,000,000 per occurrence.

*Specific requirement for claims-made form: Required period of coverage will be determined by the following formula: continuous coverage for life of the Contract, plus one (1) year (to provide coverage for the warranty period), and an extended discovery period for a minimum of five (5) years which shall begin at the end of the warranty period.

Employer's liability limits for asbestos abatement will be:

\$500,000 each accident;

\$500,000 disease each employee; and

\$500,000 disease policy limit.

If this Contract is for asbestos abatement only, the all-risk builder's risk or all-risk installation floater (e) is not required.

- 5.2.2.1.4 Comprehensive Automobile Liability Insurance, covering owned, hired, and non-owned vehicles, with a minimum combined single limit for bodily injury (including death) and property damage of \$1,000,000 per occurrence. No aggregate shall be permitted for this type of coverage.

Such insurance is to include coverage for loading and unloading hazards.

- 5.2.2.1.5 All-Risk Builder's Risk Insurance, if applicable (or all-risk installation floater for instances in which the project involves solely the installation of material and/or equipment). Coverage shall be all-risk, including, but not limited to, fire, extended coverage, vandalism and malicious mischief, theft and, if applicable, flood, earth movement and named storm. Builder's risk and installation floater limits shall be equal to 100 percent of the Contract Sum plus, if any, existing property and Owner-furnished equipment specified by Owner. The policy shall be written jointly in the names of Owner and Contractor. Subcontractors shall be named as additional insureds. The policy shall have endorsements as follows:

5.2.2.1.5.1 This insurance shall be specific as to coverage and not contributing insurance with any permanent insurance maintained on the property.

5.2.2.1.5.2 This insurance shall not contain an occupancy clause suspending or reducing coverage should Owner partially occupy the Site and before the parties have determined Substantial Completion.

5.2.2.1.5.3 Loss, if any, shall be adjusted with and made payable to Owner as trustee for the insureds as their interests may

appear. Owner shall be named as loss payee.

5.2.2.1.5.4 For renovation projects or projects that involve portions of Work contained within an existing structure, refer to Supplementary General and Special Conditions for possible additional builder's risk insurance requirements.

5.2.2.1.5.5 For Owner furnished equipment or materials that will be in care, custody or control of Contractor, Contractor will be responsible for damage and loss.

5.2.2.1.5.6 For those properties located within a Tier 1 or 2 windstorm area, named storm coverage must be provided with limits specified by Owner.

5.2.2.1.5.7 For those properties located in flood prone areas, flood insurance coverage must be provided with limits specified by Owner.

5.2.2.1.5.8 Builder's risk insurance policy shall remain in effect until Substantial Completion.

5.2.2.1.6 "Umbrella" Liability Insurance. Contractor shall obtain, pay for and maintain umbrella liability insurance during the Contract term, insuring Contractor for an amount of not less than amount specified in the Supplementary General Conditions or Special Conditions that provides coverage at least as broad as and applies in excess and follows form of the primary liability coverage required hereinabove. The policy shall provide "drop down" coverage where underlying primary insurance coverage limits are insufficient or exhausted.

5.2.3 Policies must include the following clauses, as applicable:

5.2.3.1 This insurance shall not be canceled, materially changed, or non-renewed except after thirty (30) days written notice has been given to Owner.

5.2.3.2 It is agreed that Contractor's insurance shall be deemed primary with respect to any insurance or self insurance carried by Owner for liability arising out of operations under the Contract with Owner.

5.2.3.3 Owner, its officials, directors, employees, representatives, and volunteers are added as additional insureds as respects operations and activities of, or on behalf of the named insured performed under Contract with Owner. The additional insured status must cover completed operations as well. This is not applicable to workers' compensation policies.

5.2.3.4 A waiver of subrogation in favor of Owner shall be provided in all policies.

5.2.4 Without limiting any of the other obligations or liabilities of Contractor, Contractor shall

require each Subcontractor performing work under the Contract to maintain during the term of the Contract, the same stipulated minimum insurance including the required provisions and additional policy conditions as shown above. As an alternative, Contractor may include its Subcontractors as additional insureds on its own coverage as prescribed under these requirements. Contractor's certificate of insurance shall note in such event that Subcontractors are included as additional insureds and that Contractor agrees to provide workers' compensation for Subcontractors and their employees. Contractor shall obtain and monitor the certificates of insurance from each Subcontractor in order to assure compliance with the insurance requirements. Contractor must retain the certificates of insurance for the duration of the Contract plus five (5) years and shall have the responsibility of enforcing these insurance requirements among its Subcontractors. Owner shall be entitled, upon request and without expense, to receive copies of these certificates.

- 5.2.5 Workers' compensation insurance coverage must meet the statutory requirements of Tex. Lab. Code § 401.011(44) and specific to construction projects for public entities as required by Tex. Lab. Code § 406.096.

Article 6. Construction Documents, Coordination Documents, and Record Documents

6.1 Drawings and Specifications.

- 6.1.1 Copies Furnished. Contractor will be furnished, free of charge, the number of complete sets of the Drawings, Specifications, and Addenda as provided in the Supplementary General Conditions or Special Conditions, *or Project Manual prepared by the A/E or elsewhere in the Contract.* Additional complete sets of Drawings and Specifications, if requested, will be furnished at reproduction cost to the one requesting such additional sets. Electronic copies of such documents will be provided to Contractor without charge.
- 6.1.2 Ownership of Drawings and Specifications. All Drawings, Specifications and copies thereof furnished by A/E *shall be considered by the Owner as property of the Owner.* These documents are not to be used *by the A/E* on any other project. *The Owner may use the Contract record set and electronic versions as needed for warranty operations or future renovations or additions without written approval of the A/E.* All additional or confirmatory land survey field notes, sketches and related data and additional or confirmatory soils engineering or investigations, samples, calculations, test results and reports, for which the Owner has paid for such direct services, shall become the sole property of the Owner.
- 6.1.3 Interrelation of Documents. The Contract Documents as referenced in the Contract between Owner and Contractor are complimentary, and what is required by one shall be as binding as if required by all.
- 6.1.4 Resolution of Conflicts in Documents. Where conflicts may exist within the Contract Documents, the documents shall govern in the following order: (a) Change Orders, addenda, and written amendments to the Contract; (b) the Contract; (c) Drawings; (d) Specifications (but Specifications shall control over Drawings as to quality of materials); and (e) other Contract Documents. Among other categories of documents having the same order of precedence, the term or provision that includes the latest date shall control. Contractor shall notify A/E and *Owner* for resolution of the issue prior to executing the Work in question.
- 6.1.5 Contractor's Duty to Review Contract Documents. In order to facilitate its responsibilities for completion of the Work in accordance with and as reasonably inferable from the Contract Documents, prior to commencing the Work, Contractor shall examine and compare the Contract Documents, information furnished by Owner, relevant field measurements made by Contractor and any visible or reasonably anticipated conditions at the Site affecting the Work. This duty extends throughout the construction phase prior to commencing each particular work activity and/or system installation.
- 6.1.6 Discrepancies and Omissions in Drawings and Specifications.
- 6.1.6.1 *Contractor shall promptly report to OCM and to A/E the discovery of any apparent error, omission or inconsistency in the Contract Documents prior to execution of the Work.*

- 6.1.6.2 It is recognized that Contractor is not acting in the capacity of a licensed design professional, unless it is performing as a Design-Build firm.
- 6.1.6.3 It is further recognized that Contractor's examination of Contract Documents is to facilitate construction and does not create an affirmative responsibility to detect errors, omissions or inconsistencies or to ascertain compliance with applicable laws, building codes or regulations, unless it is performing as a Design-Build firm or a Construction Manager-at-Risk.
- 6.1.6.4 When performing as a Design-Build firm, Contractor has sole responsibility for discrepancies, errors, and omissions in the Drawings and Specifications.
- 6.1.6.5 When performing as a Construction Manager-at-Risk, Contractor has a shared responsibility with A/E for discovery and resolution of discrepancies, errors, and omissions in the Contract Documents. In such case, Contractor's responsibility pertains to review, coordination, and recommendation of resolution strategies within budget constraints.
- 6.1.6.6 *With the exception of the Contractor in a Design Build Contract, the Contractor has no liability for errors, omissions, or inconsistencies unless Contractor knowingly failed to report a recognized problem to Owner or the Work is executed under a Design-Build or Construction Manager-at-Risk Contract as outlined above. Should Contractor fail to perform the examination and reporting obligations of these provisions, Contractor is responsible for avoidable costs and direct and/or consequential damages.*
- 6.1.6.7 *Owner makes no representations, express or implied, about the adequacy or accuracy of the drawing, specifications or other Construction Documents provided or their suitability for their intended use. Owner expressly disclaims any implied warranty that the Construction Documents are adequate, accurate or suitable for their intended use.*

6.2 Requirements for Record Documents. Contractor shall:

- 6.2.1 Maintain at the Site one copy of all Drawings, Specifications, addenda, approved submittals, Contract modifications, and all Project correspondence *and one record copy of approved Shop Drawings, Samples and similar required submittals.* Keep current and maintain Drawings and Specifications in good order with postings and markings to record actual conditions of Work and show and reference all changes made during construction. Provide Owner and A/E access to these documents.
- 6.2.2 Maintain this record set of Drawings and Specifications which reflect the actual field conditions and representations of the Work performed, whether it be directed by addendum, Change Order or otherwise. Make available all records prescribed herein for reference and examination by Owner and its representatives and agents.
- 6.2.3 Update the Record Documents at least monthly prior to submission of periodic partial pay estimates. Failure to maintain current Record Documents constitutes cause for denial of a progress payment otherwise due.

- 6.2.4 *Within thirty (30) days of substantial* Completion inspection Contractor shall furnish a copy of its marked-up Record Documents and a preliminary copy of each instructional manual, maintenance and operating manual, parts catalog, wiring diagrams, spare parts, specified written warranties and like publications, or parts for all installed equipment, systems, and like items and as described in the Contract Documents.
- 6.2.5 Once determined acceptable by *OCM* with input from A/E, provide one (1) reproducible copy and one (1) electronic media copy of all Record Documents, unless otherwise required by the Supplementary General Conditions or Special Conditions.
- 6.2.6 Contractor shall be responsible for updating the Record Documents for all Contractor initiated documents and changes to the Contract Documents due to coordination and actual field conditions, including RFIs.
- 6.2.7 A/E shall be responsible for updating the Record Documents for any addenda, Change Orders, A/E supplemental instructions and any other alterations to the Contract Documents generated by A/E or Owner.

Article 7. Construction Safety

- 7.1 General. It is the duty and responsibility of Contractor and all of its Subcontractors to be familiar with, enforce and comply with all requirements of Public Law No. 91596, 29 U.S.C. § 651 et. seq., the Occupational Safety and Health Act of 1970, (OSHA) and all amendments thereto. Contractor shall prepare a safety plan specific to the Project and submit it to *Owner* and A/E prior to commencing Work. In addition, Contractor and all of its Subcontractors shall comply with all applicable laws and regulations of any public body having jurisdiction for safety of persons or property to protect them from damage, injury or loss and erect and maintain all necessary safeguards for such safety and protection.
- 7.2 Notices. Contractor shall provide notices as follows:
- 7.2.1 Notify owners of adjacent property including those that own or operate utility services and/or underground facilities, and utility owners, when prosecution of the Work may affect them or their facilities, and cooperate with them in the protection, removal, relocation and replacement, and access to their facilities and/or utilities.
- 7.2.2 Coordinate the exchange of material safety data sheets (MSDSs) or other hazard communication information required to be made available to or exchanged between or among employers at the site in connection with laws and regulations. Maintain a complete file of MSDSs for all materials in use on site throughout the construction phase and make such file available to Owner and its agents as requested.
- 7.3 Emergencies. In any emergency affecting the safety of persons or property, Contractor shall act to minimize, mitigate, and prevent threatened damage, injury or loss.
- 7.3.1 Have authorized agents of Contractor respond immediately upon call at any time of day or night when circumstances warrant the presence of Contractor to protect the Work or adjacent property from damage or to take such action pertaining to the Work as may be necessary to provide for the safety of the public.
- 7.3.2 Give *OCM* and A/E prompt notice of all such events.
- 7.3.3 If Contractor believes that any changes in the Work or variations from Contract Documents have been caused by its emergency response, promptly notify Owner within seventy-two (72) hours of the emergency response event.
- 7.3.4 Should Contractor fail to respond, Owner is authorized to direct other forces to take action as necessary and Owner may deduct any cost of remedial action from funds otherwise due Contractor.
- 7.4 Injuries. In the event of an incident or accident involving outside medical care for an individual on or near the Work, Contractor shall notify *OCM* and other parties as may be directed promptly, but no later than twenty-four (24) hours after Contractor learns that an event required medical care.
- 7.4.1 Record the location of the event and the circumstances surrounding it, by using photography or other means, and gather witness statements and other documentation which describes the event.

- 7.4.2 Supply *OCM* and A/E with an incident report no later than thirty-six (36) hours after the occurrence of the event. In the event of a catastrophic incident (one (1) fatality or three (3) workers hospitalized), barricade and leave intact the scene of the incident until all investigations are complete. A full set of incident investigation documents, including facts, finding of cause, and remedial plans shall be provided within one (1) week after occurrence, unless otherwise directed by legal counsel. Contractor shall provide *OCM* with written notification within one week of such catastrophic event if legal counsel delays submission of full report.
- 7.5 Environmental Safety. Upon encountering any previously unknown potentially hazardous material, or other materials potentially contaminated by hazardous material, Contractor shall immediately stop work activities impacted by the discovery, secure the affected area, and notify *OCM* immediately.
- 7.5.1 *Contractor shall bind* all Subcontractors to the same duty.
- 7.5.2 Upon receiving such notice, *OCM* will promptly engage qualified experts to make such investigations and conduct such tests as may be reasonably necessary to determine the existence or extent of any environmental hazard. Upon completion of this investigation, *OCM* will issue a written report to Contractor identifying the material(s) found and indicate any necessary steps to be taken to treat, handle, transport or dispose of the material.
- 7.5.3 Owner may hire third-party Contractors to perform any or all such steps.
- 7.5.4 Should compliance with *OCM's* instructions result in an increase in Contractor's cost of performance, or delay the Work, Owner will make an equitable adjustment to the Contract Sum and/or the time of completion, and modify the Contract in writing accordingly.
- 7.6 Trenching Plan. When the project requires excavation which either exceeds a depth of four (4) feet, or results in any worker's upper body being positioned below grade level, Contractor is required to submit a trenching plan to *OCM* prior to commencing trenching operations unless an engineered plan is part of the Contract Documents. The plan is required to be prepared and sealed by a professional engineer registered in the State of Texas, and hired or employed by Contractor or Subcontractor to perform the work. Said engineer cannot be anyone who is otherwise either directly or indirectly engaged on this project.

Article 8. Quality Control

- 8.1 Materials & Workmanship. Contractor shall execute Work in a good and workmanlike matter in accordance with the Contract Documents. Contractor shall develop and provide a quality control plan specific to this Project and acceptable to Owner. Where Contract Documents do not specify quality standards, complete and construct all Work in compliance with generally accepted construction industry standards. Unless otherwise specified, incorporate all new materials and equipment into the Work under the Contract.
- 8.2 Testing.
- 8.2.1 Owner is responsible for coordinating and paying for routine and special tests required to confirm compliance with quality and performance requirements, except as stated below or otherwise required by the Contract Documents. Contractor shall provide the following testing:
- 8.2.1.1 Any test of basic material or fabricated equipment included as part of a submittal for a required item in order to establish compliance with the Contract Documents.
- 8.2.1.2 Any test of basic material or fabricated equipment offered as a substitute for a specified item on which a test may be required in order to establish compliance with the Contract Documents.
- 8.2.1.3 Preliminary, start-up, pre-functional and operational testing of building equipment and systems as necessary to confirm operational compliance with requirements of the Contract Documents.
- 8.2.1.4 All subsequent tests on original or replaced materials conducted as a result of prior testing failure.
- 8.2.2 All testing shall be performed in accordance with standard test procedures by an accredited laboratory, or special consultant as appropriate, acceptable to Owner. Results of all tests shall be provided promptly to *OCM*, *A/E*, and Contractor.
- 8.2.3 Non-Compliance (Test Results). Should any of the tests indicate that a material and/or system does not comply with the Contract requirements, the burden of proof remains with Contractor, subject to:
- 8.2.3.1 Contractor selection and submission of the laboratory for Owner acceptance.
- 8.2.3.2 Acceptance by Owner of the quality and nature of tests.
- 8.2.3.3 All tests taken in the presence of *A/E* and/or *OCM*, or their representatives.
- 8.2.3.4 If tests confirm that the material/systems comply with Contract Documents, Owner will pay the cost of the test.
- 8.2.3.5 If tests reveal noncompliance, Contractor will pay those laboratory fees and costs of that particular test and all future tests, of that failing Work, necessary to

eventually confirm compliance with Contract Documents.

8.2.3.6 Proof of noncompliance with the Contract Documents will make Contractor liable for any corrective action which *OCM* determines appropriate, including complete removal and replacement of noncompliant work or material.

8.2.4 Notice of Testing. Contractor shall give *OCM* and A/E timely notice of its readiness and the date arranged so *OCM* and A/E may observe such inspection, testing, or approval.

8.2.5 Test Samples. Contractor is responsible for providing Samples of sufficient size for test purposes and for coordinating such tests with their Work Progress Schedule to avoid delay.

8.2.6 Covering Up Work. If Contractor covers up any Work without providing Owner an opportunity to inspect, Contractor shall, if requested by *OCM*, uncover and recover the work at Contractor's expense.

8.3 Submittals.

8.3.1 Contractor's Submittals. Contractor shall submit with reasonable promptness consistent with the Project schedule and in orderly sequence all Shop Drawings, Samples, or other information required by the Contract Documents, or subsequently required by Change Order. Prior to submitting, Contractor shall review each submittal for general compliance with Contract Documents and approve submittals for review by A/E and Owner by an approval stamp affixed to each copy. Submittal data presented without Contractor's stamp will be returned without review or comment, and any delay resulting from failure is Contractor's responsibility.

8.3.1.1 Contractor shall within twenty-one (21) days of the effective date of the Notice To Proceed with construction, submit to *OCM* and A/E, a submittal schedule/register, organized by specification section, listing all items to be furnished for review and approval by A/E and Owner. The list shall include Shop Drawings, manufacturer's literature, certificates of compliance, materials Samples, materials colors, guarantees, and all other items identified throughout the Specifications.

8.3.1.2 Contractor shall indicate the type of item, Contract requirements reference, and Contractor's scheduled dates for submitting the item along with the requested dates for approval answers from A/E and Owner. The submittal register shall indicate the projected dates for procurement of all included items and shall be updated at least monthly with actual approval and procurement dates. Contractor's Submittal Register must be reasonable in terms of the review time for complex submittals. Contractor's submittal schedule must be consistent with the Work Progress Schedule and identify critical submittals. Show and allow a minimum of fifteen (15) days duration after receipt by A/E and *OCM* for review and approval. If re-submittal required, allow a minimum of an additional seven (7) days for review. Submit the updated Submittal Register with each request for progress payment. Owner may establish routine review procedures and schedules for submittals at the preconstruction conference and/or elsewhere in the Contract Documents. If Contractor fails to update and provide the Submittal Register as required, Owner may, after seven (7) days' notice to Contractor withhold a

reasonable sum of money that would otherwise be due Contractor.

- 8.3.1.3 Contractor shall coordinate the Submittal Register with the Work Progress Schedule. Do not schedule Work requiring a submittal to begin prior to scheduling review and approval of the related submittal. Revise and/or update both schedules monthly to ensure consistency and current project data. Provide to *OCM* the updated Submittal Register and schedule with each application for progress payment. Refer to requirements for the Work Progress Schedule for inclusion of procurement activities therein. Regardless, the Submittal Register shall identify dates submitted and returned and shall be used to confirm status and disposition of particular items submitted, including approval or other action taken and other information not conveniently tracked through the Work Progress Schedule.
- 8.3.1.4 By submitting Shop Drawings, Samples or other required information, Contractor represents that it has determined and verified all applicable field measurements, field construction criteria, materials, catalog numbers and similar data; and has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and the Contract Documents.
- 8.3.2 Review of Submittals. A/E and *OCM* review is only for conformance with the design concept and the information provided in the Contract Documents. Responses to submittals will be in writing. The approval of a separate item does not indicate approval of an assembly in which the item functions. The approval of a submittal does not relieve Contractor of responsibility for any deviation from the requirements of the Contract unless Contractor informs A/E and *OCM* of such deviation in a clear, conspicuous, and written manner on the submittal transmittal and at the time of submission, and obtains Owner's written specific approval of the particular deviation.
- 8.3.3 Correction and Resubmission. Contractor shall make any corrections required to a submittal and resubmit the required number of corrected copies promptly so as to avoid delay, until submittal approval. Direct attention in writing to A/E and *OCM*, when applicable, to any new revisions other than the corrections requested on previous submissions.
- 8.3.4 Limits on Shop Drawing Review. Contractor shall not commence any Work requiring a submittal until review of the submittal under Subsection 8.3.2. Construct all such work in accordance with reviewed submittals. Comments incorporated as part of the review in Subsection 8.3.2 of Shop Drawings and Samples is not authorization to Contractor to perform extra work or changed work unless authorized through a Change Order. A/E's and *OCM*'s review, if any, does not relieve Contractor from responsibility for defects in the Work resulting from errors or omissions of any kind on the submittal, regardless of any approval action.
- 8.3.5 No Substitutions Without Approval. *OCM* and A/E may receive and consider Contractor's request for substitution when Contractor agrees to reimburse Owner for review costs and satisfies the requirements of this section. If Contractor does not satisfy these conditions, *OCM* and A/E will return the request without action except to record noncompliance with these requirements. Owner will not consider the request if Contractor cannot provide the

product or method because of failure to pursue the Work promptly or coordinate activities properly. Contractor's request for a substitution may be considered by *OCM* and A/E when:

- 8.3.5.1 The Contract Documents do not require extensive revisions; and
- 8.3.5.2 Proposed changes are in keeping with the general intent of the Contract Documents and the design intent of A/E and do not result in an increase in cost to Owner; and
- 8.3.5.3 The request is timely, fully documented, properly submitted and one or more of the following apply:
 - 8.3.5.3.1 Contractor cannot provide the specified product, assembly or method of construction within the Contract Time;
 - 8.3.5.3.2 The request directly relates to an "or-equal" clause or similar language in the Contract Documents;
 - 8.3.5.3.3 The request directly relates to a "product design standard" or "performance standard" clause in the Contract Documents;
 - 8.3.5.3.4 The requested substitution offers Owner a substantial advantage in cost, time, energy conservation or other considerations, after deducting additional responsibilities Owner must assume;
 - 8.3.5.3.5 The specified product or method of construction cannot receive necessary approval by an authority having jurisdiction, and *OCM* can approve the requested substitution;
 - 8.3.5.3.6 Contractor cannot provide the specified product, assembly or method of construction in a manner that is compatible with other materials and where Contractor certifies that the substitution will overcome the incompatibility;
 - 8.3.5.3.7 Contractor cannot coordinate the specified product, assembly or method of construction with other materials and where Contractor certifies they can coordinate the proposed substitution; or
 - 8.3.5.3.8 The specified product, assembly or method of construction cannot provide a warranty required by the Contract Documents and where Contractor certifies that the proposed substitution provides the required warranty.
- 8.3.6 Unauthorized Substitutions at Contractor's Risk. Contractor is financially responsible for any additional costs or delays resulting from unauthorized substitution of materials, equipment or fixtures other than those specified. Contractor shall reimburse Owner for any increased design or contract administration costs resulting from such unauthorized substitutions.

8.4 Field Mock-up.

8.4.1 Mock-ups shall be constructed prior to commencement of a specified scope of work to confirm acceptable workmanship.

8.4.1.1 As a minimum, field mock-ups shall be constructed for roofing systems, exterior veneer / finish systems, glazing systems, and any other Work requiring a mock-up as identified throughout the Contract Documents. Mock-ups for systems not part of the Project scope shall not be required.

8.4.1.2 Mock-ups may be incorporated into the Work if allowed by the Contract Documents and if acceptable to *OCM*. If mock-ups are freestanding, they shall remain in place until otherwise directed by Owner.

8.4.1.3 Contractor shall include field mock-ups in their Work Progress Schedule and shall notify *OCM* and A/E of readiness for review sufficiently in advance to coordinate review without delay.

8.5 Inspection During Construction.

8.5.1 Contractor shall provide sufficient, safe, and proper facilities, including equipment as necessary for safe access, at all reasonable times for observation and/or inspection of the Work by Owner and its agents.

8.5.2 Contractor shall not cover up any Work with finishing materials or other building components prior to providing Owner and its agents an opportunity to perform an inspection of the Work.

8.5.2.1 Should corrections of the Work be required for approval, Contractor shall not cover up corrected Work until Owner indicates approval.

8.5.2.2 Contractor shall provide notification of at least five (5) working days or otherwise as mutually agreed, to *OCM* of the anticipated need for a cover-up inspection. Should *OCM* fail to make the necessary inspection within the agreed period, Contractor may proceed with cover-up Work, but is not relieved of responsibility for Work to comply with requirements of the Contract Documents.

Article 9. Construction Schedules

- 9.1 Contract Time. **TIME IS AN ESSENTIAL ELEMENT OF THE CONTRACT.** The Contract Time is the time between the dates indicated in the Notice to Proceed for commencement of the Work and for achieving Substantial Completion. The Contract Time can be modified only by Change Order. Failure to achieve Substantial Completion within the Contract Time as otherwise agreed to in writing will cause damage to Owner and may subject Contractor to liquidated damages as provided in the Contract Documents. If Contractor fails to achieve Final Completion *within 30 calendar days* after Substantial Completion, Contractor shall be responsible for Owner's additional inspection, project management, and maintenance cost to the extent caused by Contractor's failure to achieve Final Completion.
- 9.2 Notice to Proceed. Owner will issue a Notice to Proceed which shall state the dates for beginning Work and for achieving Substantial Completion of the Work.
- 9.3 Work Progress Schedule. Refer to Supplementary General Conditions or Special Conditions for additional schedule requirements. Unless indicated otherwise in those documents, Contractor shall submit their initial Work Progress Schedule for the Work in relation to the entire Project not later than twenty-one (21) days after the effective date of the Notice to Proceed to ODR and A/E. Unless otherwise indicated in the Contract Documents, the Work Progress Schedule shall be computerized Critical Path Method (CPM) with fully editable logic. This initial schedule shall indicate the dates for starting and completing the various aspects required to complete the Work, including mobilization, procurement, installation, testing, inspection, delivery of Close-out Documents and acceptance of all the Work of the Contract. When acceptable to Owner, the initially accepted schedule shall be the Baseline Schedule for comparison to actual conditions throughout the Contract duration.
- 9.3.1 Schedule Requirements. Contractor shall submit electronic and paper copy of the initial Work Progress Schedule reflecting accurate and reliable representations of the planned progress of the Work, the Work to date if any, and of Contractor's actual plans for its completion. Contractor shall organize and provide adequate detail so the schedule is capable of measuring and forecasting the effect of delaying events on completed and uncompleted activities.
- 9.3.1.1 Contractor shall re-submit initial schedule as required to address review comments from A/E and *Owner* until such schedule is accepted as the Baseline Schedule.
- 9.3.1.2 Submittal of a schedule, schedule revision or schedule update constitutes Contractor's representation to Owner of the accurate depiction of all progress to date and that Contractor will follow the schedule as submitted in performing the Work.
- 9.3.2 Schedule Updates. Contractor shall update the Work Progress Schedule and the Submittal Register monthly, at a minimum, to reflect progress to date and current plans for completing the Work, while maintaining original schedule as Baseline Schedule and submit paper and electronic copies of the update to A/E and *OCM* as directed, but at a minimum with each request for payment. Owner has no duty to make progress payments unless accompanied by the updated Work Progress Schedule. Show the anticipated date of completion

reflecting all extensions of time granted through Change Order as of the date of the update. Contractor may revise the Work Progress Schedule when in Contractor's judgment it becomes necessary for the management of the Work. Contractor shall identify all proposed changes to schedule logic to Owner and to A/E via an executive summary accompanying the updated schedule for review prior to final implementation of revisions into a revised Baseline Schedule. Schedule changes that materially impact Owner's operations shall be communicated promptly to *OCM* and shall not be incorporated into the revised Baseline Schedule without ODR's consent.

9.3.3 The Work Progress Schedule is for Contractor's use in managing the Work and submittal of the schedule, and successive updates or revisions, is for the information of Owner and to demonstrate that Contractor has complied with requirements for planning the Work. Owner's acceptance of a schedule, schedule update or revision constitutes Owner's agreement to coordinate its own activities with Contractor's activities as shown on the schedule.

9.3.3.1 Acceptance of the Work Progress Schedule, or update and/or revision thereto does not indicate any approval of Contractor's proposed sequences and duration.

9.3.3.2 Acceptance of a Work Progress Schedule update or revision indicating early or late completion does not constitute Owner's consent, alter the terms of the Contract, or waive either Contractor's responsibility for timely completion or Owner's right to damages for Contractor's failure to do so.

9.3.3.3 Contractor's scheduled dates for completion of any activity or the entire Work do not constitute a change in terms of the Contract. Change Orders are the only method of modifying the Substantial Completion Date(s) and Contract Time.

9.4 Ownership of Float. Unless indicated otherwise in the Contract Documents, Contractor shall develop its schedule, pricing, and execution plan to provide a minimum of ten (10) percent total float at acceptance of the Baseline Schedule. Float time contained in the Work Progress Schedule is not for the exclusive benefit of Contractor or Owner, but belongs to the Project and may be consumed by either party as needed on a first-used basis.

9.5 Completion of Work. Contractor is accountable for completing the Work within the Contract Time stated in the Contract, or as otherwise amended by Change Order.

9.5.1 If, in the judgment of Owner, the work is behind schedule and the rate of placement of work is inadequate to regain scheduled progress to insure timely completion of the entire work or a separable portion thereof, Contractor, when so informed by Owner, shall immediately take action to increase the rate of work placement by:

9.5.1.1 An increase in working forces.

9.5.1.2 An increase in equipment or tools.

9.5.1.3 An increase in hours of work or number of shifts.

9.5.1.4 Expedite delivery of materials.

9.5.1.5 Other action proposed if acceptable to Owner.

9.5.2 Within ten (10) days after such notice from *OCM*, Contractor shall notify *OCM* in writing of the specific measures taken and/or planned to increase the rate of progress. Contractor shall include an estimate as to the date of scheduled progress recovery and an updated Work Progress Schedule illustrating Contractor's plan for achieving timely completion of the Project. Should *Owner* deem the plan of action inadequate, Contractor shall take additional steps or make adjustments as necessary to its plan of action until it meets with *Owner's* approval.

9.6 Modification of the Contract Time.

9.6.1 Delays and extension of time as hereinafter described are valid only if executed in accordance with provisions set forth in Article 11.

9.6.2 When a delay defined herein as excusable prevents Contractor from completing the Work within the Contract Time, Contractor is entitled to an extension of time. Owner will make an equitable adjustment and extend the number of days lost because of excusable delay or Weather Days, as measured by Contractor's progress schedule. All extensions of time will be granted in calendar days. In no event, however, will an extension of time be granted for delays that merely extend the duration of non-critical activities, or which only consume float without delaying the project Substantial Completion date(s).

9.6.2.1 A "Weather Day" is a day on which Contractor's current schedule indicates Work is to be done, and on which inclement weather and related site conditions prevent Contractor from performing seven (7) continuous hours of Work between the hours of 7:00 a.m. and 6:00 p.m. Weather days are excusable delays. When weather conditions at the site prevent work from proceeding, Contractor shall immediately notify *OCM* for confirmation of the conditions. At the end of each calendar month, submit to *OCM* and A/E a list of Weather Days occurring in that month along with documentation of the impact on critical activities. Based on confirmation by ODR, any time extension granted will be issued by Change Order. If Contractor and Owner cannot agree on the time extension, Owner may issue a ULCO for fair and reasonable time extension.

9.6.2.2 Excusable Delay. Contractor is entitled to an equitable adjustment of the Contract Time, issued via change order, for delays caused by the following:

9.6.2.2.1 Errors, omissions and imperfections in design, which A/E corrects by means of changes in the Drawings and Specifications.

9.6.2.2.2 Unanticipated physical conditions at the Site, which A/E corrects by means of changes to the Drawings and Specifications or for which ODR directs changes in the Work identified in the Contract Documents.

9.6.2.2.3 Changes in the Work that effect activities identified in Contractor's schedule as "critical" to completion of the entire Work, if such changes are ordered by ODR or recommended by A/E and ordered by ODR.

9.6.2.2.4 Suspension of Work for unexpected natural events, civil unrest, strikes or other events which are not within the reasonable control of Contractor.

9.6.2.2.5 Suspension of Work for convenience of *Owner*, which prevents Contractor from completing the Work within the Contract Time.

9.6.3 Contractor's relief in the event of such delays is the time impact to the critical path as determined by analysis of Contractor's schedule. In the event that Contractor incurs additional direct costs because of the excusable delays other than described in Subparagraph 9.6.2.2.4 and within the reasonable control of Owner, the Contract price and Contract Time are to be equitably adjusted by Owner pursuant to the provisions of Article 11.

9.7 No Damages for Delay. Contractor has no claim for monetary damages for delay or hindrances to the work from any cause, including without limitation any act or omission of Owner.

9.8 Concurrent Delay. When the completion of the Work is simultaneously delayed by an excusable delay and a delay arising from a cause not designated as excusable, Contractor may not be entitled to a time extension for the period of concurrent delay.

9.9 Other Time Extension Requests. Time extensions requested in association with changes to the Work directed or requested by Owner shall be included with Contractor's proposed costs for such change. Time extensions requested for inclement weather are covered by Paragraph 9.6.2.1 above. If Contractor believes that the completion of the Work is delayed by a circumstance other than for changes directed to the Work or weather, they shall give *OCM* written notice, stating the nature of the delay and the activities potentially affected, within five (5) days after the onset of the event or circumstance giving rise to the excusable delay. Contractor shall provide sufficient written evidence to document the delay. In the case of a continuing cause of delay, only one claim is necessary. State claims for extensions of time in numbers of whole or half days.

9.9.1 Within ten (10) days after the cessation of the delay, Contractor shall formalize its request for extension of time in writing to include a full analysis of the schedule impact of the delay and substantiation of the excusable nature of the delay. All changes to the Contract Time or made as a result of such claims is by Change Order, as set forth in Article 11.

9.9.2 No extension of time releases Contractor or the Surety furnishing a performance or payment bond from any obligations under the Contract or such a bond. Those obligations remain in full force until the discharge of the Contract.

9.9.3 Contents of Time Extension Requests. Contractor shall provide with each Time Extension Request a quantitative demonstration of the impact of the delay on project completion time, based on the Work Progress Schedule. Contractor shall include with Time Extension Requests a reasonably detailed narrative setting forth:

9.9.3.1 The nature of the delay and its cause; the basis of Contractor's claim of entitlement to a time extension.

9.9.3.2 Documentation of the actual impacts of the claimed delay on the critical path indicated in Contractor's Work Progress Schedule, and any concurrent delays.

9.9.3.3 Description and documentation of steps taken by Contractor to mitigate the effect of the claimed delay, including, when appropriate, the modification of the Work Progress Schedule.

9.9.4 Owner's Response. Owner will respond to the Time Extension Request by providing to Contractor written notice of the number of days granted, if any, and giving its reason if this number differs from the number of days requested by Contractor.

9.9.4.1 Owner will not grant time extensions for delays that do not affect the Contract Substantial Completion date.

9.9.4.2 Owner will respond to each properly submitted Time Extension Request within fifteen (15) days following receipt. If Owner cannot reasonably make a determination about Contractor's entitlement to a time extension within that time, Owner will notify Contractor in writing. Unless otherwise agreed by Contractor, Owner has no more than fifteen (15) additional days to prepare a final response. If Owner fails to respond within forty-five (45) days from the date the Time Extension Request is received, Contractor is entitled to a time extension in the amount requested.

9.10 Failure to Complete Work Within the Contract Time. **TIME IS AN ESSENTIAL ELEMENT OF THE CONTRACT.** Contractor's failure to substantially complete the Work within the Contract Time or to achieve Substantial Completion as required will cause damage to Owner. These damages shall be liquidated by agreement of Contractor and Owner, in the amount per day as set forth in *Section 9.11 below or elsewhere in the Contract Documents. Notwithstanding the foregoing, the Owner may waive the requirement for liquidated damages with an explicit written statement of waiver in the Contract Documents or amendments.*

9.11 Liquidated Damages. *For each consecutive calendar day after the date of Substantial Completion, plus any extensions of time granted by Change Order, that the Work is not substantially complete, Contractor shall pay the Owner, within ten (10) days following written demand, an amount determined by the following schedule:*

<i>Project Cost</i>		<i>Liquidated Damages</i>
<i>From</i>	<i>To</i>	<i>per day</i>
<i>Under \$1,000,000</i>		<i>\$ 250</i>
<i>\$1,000,000</i>	<i>\$24,999,999.99</i>	<i>\$ 1,000</i>
<i>\$25,000,000</i>	<i>\$49,999,999.99</i>	<i>\$ 2,500</i>
<i>\$50,000,000</i>	<i>\$74,999,999.99</i>	<i>\$ 5,000</i>
<i>\$75,000,000</i>	<i>\$99,999,999.99</i>	<i>\$ 7,500</i>
<i>\$100,000,000 and over</i>		<i>\$10,000</i>

Not as a penalty but as liquidated damages representing the parties' estimate at the time of contract execution of the damages that Owner will sustain for late completion. Owner may also recover the liquidated damages from any money due or that becomes due Contractor. The amount of liquidated damages may be adjusted by the terms of the Agreement.

The parties stipulate and agree that the actual damages sustained by Owner for late completion of

the Project will be uncertain and difficult to ascertain, that calculating Owner's actual damages would be impractical, unduly burdensome and cause unnecessary delay and that the amount of daily liquidated damages set forth above is a reasonable estimate.

Payment of the liquidated damages does not preclude recovery of the Contract, except for claims related to delays in Substantial Completion or Final Completion. Owner's right to receive liquidated damages shall not affect Owner's right to terminate the Contract as provided in these Uniform General Conditions and Supplementary General Conditions or elsewhere in the Contract Documents, nor shall termination of the Contract release Contractor from the obligation to pay liquidated damages.

Article 10. Payments

- 10.1 Schedule of Values. Contractor shall submit to *OCM* and A/E for acceptance a Schedule of Values accurately itemizing material and labor for the various classifications of the Work based on the organization of the specification sections and of sufficient detail acceptable to *OCM*. The accepted Schedule of Values will be the basis for the progress payments under the Contract.
- 10.1.1 No progress payments will be made prior to receipt and acceptance of the Schedule of Values, provided in such detail as required by *OCM*, and submitted not less than twenty-one (21) days prior to the first request for payment. The Schedule of Values shall follow the order of trade divisions of the Specifications and include itemized costs for general conditions, costs for preparing close out documents, fees, contingencies, and Owner cash allowances, if applicable, so that the sum of the items will equal the Contract price. As appropriate, assign each item labor and/or material values, the subtotal thereof equaling the value of the work in place when complete.
- 10.1.1.1 *Except for Construction Manager at Risk and Design Build projects* Owner requires that the Work items be inclusive of the cost of the Work items only. Any contract markups for overhead and profit, general conditions, etc., shall be contained within separate line items for those specific purposes which shall be divided into at least two (2) lines, one (1) for labor and one (1) for materials.
- 10.1.2 Contractor shall retain a copy of all worksheets used in preparation of its bid or proposal, supported by a notarized statement that the worksheets are true and complete copies of the documents used to prepare the bid or proposal. Make the worksheets available to *OCM* at the time of Contract execution. Thereafter Contractor shall grant Owner during normal business hours access to said copy of worksheets at any time during the period commencing upon execution of the Contract and ending one year after final payment.
- 10.2 Progress Payments. Contractor will receive periodic progress payments for Work performed, materials in place, suitably stored on Site, or as otherwise agreed to by Owner and Contractor. Payment is not due until receipt by *Owner* or his designee of a correct and complete Pay Application in electronic and/or hard copy format as set forth in Supplementary General Conditions, Special Conditions, and certified by A/E. Progress payments are made provisionally and do not constitute acceptance of work not in accordance with the Contract Documents. Owner will not process progress payment applications for Change Order Work until all parties execute the Change Order.
- 10.2.1 Preliminary Pay Worksheet. Once each month that a progress payment is to be requested, the Contractor shall submit to A/E and *OCM* a complete, clean copy of a preliminary pay worksheet or preliminary pay application, to include the following:
- 10.2.1.1 Contractor's estimate of the amount of Work performed, labor furnished and materials incorporated into the Work, using the established Schedule of Values;
- 10.2.1.2 An updated Work Progress Schedule including the executive summary and all required schedule reports;

10.2.1.3 HUB subcontracting plan Progress Assessment Report as required in Paragraph 4.2.5.1;

10.2.1.4 Such additional documentation as Owner may require as set forth in the Supplementary General Conditions or elsewhere in the Contract Documents; and

10.2.1.5 Construction payment affidavit.

10.2.2 Contractor's Application for Payment. As soon as practicable, but in no event later than seven (7) days after receipt of the preliminary pay worksheet, A/E and OCM will meet with Contractor to review the preliminary pay worksheet and to observe the condition of the Work. Based on this review, OCM and A/E may require modifications to the preliminary pay worksheet prior to the submittal of an Application for Payment, and will promptly notify Contractor of revisions necessary for approval. As soon as practicable, Contractor shall submit its Application for Payment on the appropriate and completed form, reflecting the required modifications to the Schedule of Values required by A/E and/or OCM. Attach all additional documentation required by OCM and/or A/E, as well as an affidavit affirming that all payrolls, bills for labor, materials, equipment, subcontracted work and other indebtedness connected with Contractor's Application for Payment are paid or will be paid within the time specified in Tex. Gov't Code, Chapter 2251. No Application for Payment is complete unless it fully reflects all required modifications, and attaches all required documentation including Contractor's affidavit.

10.2.3 Certification by Architect/Engineer. Within five (5) days or earlier following A/E's receipt of Contractor's formal Application for Payment, A/E will review the Application for Payment for completeness, and forward it to OCM. A/E will certify that the application is complete and payable, or that it is incomplete, stating in particular what is missing. If the Application for Payment is incomplete, Contractor shall make the required corrections and resubmit the Application for Payment for processing.

10.3 Owner's Duty to Pay. Owner has no duty to pay the Contractor except on receipt by OCM of: 1) a complete Application for Payment certified by A/E; 2) Contractor's updated Work Progress Schedule.

10.3.1 Retainage. Owner will withhold from each progress payment, as retainage, *whichever is more of the following three options: (a) five (5) percent of the total earned amount; (b) the amount authorized by law; or (c) as otherwise set forth in the Supplementary General Conditions or Special Conditions.* Retainage is managed in conformance with Tex. Gov't Code, Chapter 2252, Subchapter B.

10.3.1.1 Contractor shall provide written consent of its surety *and concurrence of A/E* for any request for reduction or release of retainage.

10.3.1.2 At least *fifty (50) percent* of the Contract, or such other discrete Work phase as set forth in Subsection 12.1.6 or Work package delineated in the Contract Documents, must be completed before Owner can consider a retainage reduction or release. *Release of retainage must be permissible by law.*

10.3.1.3 Contractor shall not withhold retainage from their Subcontractors and suppliers in

amounts that are any percentage greater than that withheld in its Contract with Owner under this subsection, unless otherwise acceptable to Owner.

10.3.2 Price Reduction to Cover Loss. Owner may reduce any Application for Payment, prior to payment to the extent necessary to protect Owner from loss on account of actions of Contractor including, but not limited to, the following:

10.3.2.1 Defective or incomplete Work not remedied;

10.3.2.2 Damage to Work of a separate Contractor;

10.3.2.3 Failure to maintain scheduled progress or reasonable evidence that the Work will not be completed within the Contract Time;

10.3.2.4 Persistent failure to carry out the Work in accordance with the Contract Documents;

10.3.2.5 Reasonable evidence that the Work cannot be completed for the unpaid portion of the Contract Sum;

10.3.2.6 Assessment of fines for violations of prevailing wage rate law; or

10.3.2.7 Failure to include the appropriate amount of retainage for that periodic progress payment.

10.3.3 Title to all material and Work covered by progress payments transfers to Owner upon payment.

10.3.3.1 Transfer of title to Owner does not relieve Contractor and its Subcontractors of the sole responsibility for the care and protection of materials and Work upon which payments have been made until final acceptance, or the restoration of any damaged Work, or waive the right of Owner to require the fulfillment of all the terms of the Contract.

10.3.4 For a Contract in any amount less than \$25,000.00, payment will be made in one lump sum at the Final Completion of the Work, including punch list items and change orders.

10.4 Progress Payments. Progress payments to Contractor do not release Contractor or its surety from any obligations under the Contract.

10.4.1 Upon Owner's request, Contractor shall furnish manifest proof of the status of Subcontractor's accounts in a form acceptable to Owner.

10.4.2 Pay estimate certificates must be signed by a corporate officer or a representative duly authorized by Contractor.

10.4.3 Provide copies of bills of lading, invoices, delivery receipts or other evidence of the location and value of such materials in requesting payment for materials.

10.4.4 For purposes of Tex. Gov't Code § 2251.021(a)(2), the date the performance of service is complete is the date when ODR approves the Application for Payment.

10.5 Off-Site Storage. With prior approval by Owner and in the event Contractor elects to store materials at an off-site location, abide by the following conditions, unless otherwise agreed to in writing by Owner.

10.5.1 Store materials in a commercial warehouse meeting the criteria stated below.

10.5.2 Provide insurance coverage adequate not only to cover materials while in storage, but also in transit from the off-site storage areas to the Project Site. Copies of duly authenticated certificates of insurance, made out to insure the State agency which is signatory to the Contract, must be filed with Owner's representative.

10.5.3 Inspection by Owner's representative is allowed at any time. *OCM* must be satisfied with the security, control, maintenance, and preservation measures.

10.5.4 Materials for this Project are physically separated and marked for the Project in a sectioned-off area. Only materials which have been approved through the submittal process are to be considered for payment.

10.5.5 Owner reserves the right to reject materials at any time prior to final acceptance of the complete Contract if they do not meet Contract requirements regardless of any previous progress payment made.

10.5.6 With each monthly payment estimate, submit a report to ODR and A/E listing the quantities of materials already paid for and still stored in the off-site location.

10.5.7 Make warehouse records, receipts and invoices available to Owner's representatives, upon request, to verify the quantities and their disposition.

10.5.8 In the event of Contract termination or default by Contractor, the items in storage off-site, upon which payment has been made, will be promptly turned over to Owner or Owner's agents at a location near the jobsite as directed by *OCM*. The full provisions of performance and payment bonds on this Project cover the materials off-site in every respect as though they were stored on the Project Site.

10.6 Time for Payment by Contractor Pursuant to Tex. Gov't Code § 2255.022.

10.6.1 Contractor who receives a payment from a governmental entity shall pay Subcontractor the appropriate share of the payment not later than the tenth (10th) day after the date the Contractor receives the payment.

10.6.2 The appropriate share is overdue on the eleventh (11th) day after the date Contractor receives the payment.

Article 11. Changes

- 11.1 Change Orders. A Change Order issued after execution of the Contract is a written order to Contractor, signed by ODR, Contractor, and A/E, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time can only be changed by Change Order. A Change Order signed by Contractor indicates his agreement therewith, including the adjustment in the Contract Sum and/or the Contract Time. ODR may issue a written authorization for Contractor to proceed with Work of a Change Order in advance of final execution by all parties in accordance with Section 11.9.
- 11.1.1 Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, and the Contract Sum and the Contract Time will be adjusted accordingly. All such changes in the Work shall be authorized by Change Order or ULCO, and shall be performed under the applicable conditions of the Contract Documents. If such changes cause an increase or decrease in Contractor's cost of, or time required for, performance of the Contract, an equitable adjustment shall be made and confirmed in writing in a Change Order or a ULCO.
- 11.1.2 It is recognized by the parties hereto and agreed by them that the Specifications and Drawings may not be complete or free from errors, omissions and imperfections or that they may require changes or additions in order for the Work to be completed to the satisfaction of Owner and that, accordingly, it is the express intention of the parties, notwithstanding any other provisions in this Contract, that any errors, omissions or imperfections in such Specifications and Drawings, or any changes in or additions to same or to the Work ordered by Owner and any resulting delays in the Work or increases in Contractor's costs and expenses arising out of such errors, shall not constitute or give rise to any claim, demand or cause of action of any nature whatsoever in favor of Contractor, whether for breach of Contract, or otherwise; provided, however, that Owner shall be liable to Contractor for the sum stated to be due Contractor in any Change Order approved and signed by all parties, it being agreed hereby that such sum, together with any extension of time contained in said Change Order, shall constitute full compensation to Contractor for all costs, expenses and damages to Contractor, as permitted under Tex. Gov't Code, Chapter 2260.
- 11.1.3 Procedures for administration of Change Orders shall be established by Owner and stated in Supplementary General Conditions, Special Conditions, or elsewhere in the Contract Documents.
- 11.1.4 No verbal order, verbal statement, or verbal direction of Owner or his duly appointed representative shall be treated as a change under this article or entitle Contractor to an adjustment.
- 11.1.5 Contractor agrees that Owner or any of its duly authorized representatives shall have access and the right to examine any directly pertinent books, documents, papers, and records of Contractor. Further, Contractor agrees to include in all its subcontracts a provision to the effect that Subcontractor agrees that Owner or any of its duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers and records of such Subcontractor relating to any claim arising from the Contract, whether or not the Subcontractor is a party to the claim. The period of access and examination described herein which relates to appeals under the Disputes article of the

Contract, litigation, or the settlement of claims arising out of the performance of the Contract shall continue until final disposition of such claims, appeals or litigation.

- 11.2 Unit Prices. If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed in a Proposed Change Order that application of the agreed unit prices to the quantities of work proposed will cause substantial inequity to Owner or Contractor, the applicable unit prices shall be equitably adjusted as provided in the Supplementary General Conditions or Special Conditions or as agreed to by the parties and incorporated into a Change Order.
- 11.3 Claims for Additional Costs.
- 11.3.1 If Contractor wishes to make a claim for an increase in the Contract Sum not related to a requested change, they shall give Owner and A/E written notice thereof within twenty-one (21) days after the occurrence of the event giving rise to such claim, but, in any case before proceeding to execute the Work considered to be additional cost or time, except in an emergency endangering life or property in which case Contractor shall act in accordance with Subsection 7.2.1. No such claim shall be valid unless so made. If Owner and Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined as set forth under Article 15. Any change in the Contract Sum resulting from such claim shall be authorized by a Change Order or a ULCO.
- 11.3.2 If Contractor claims that additional cost is involved because of, but not limited to, 1) any written interpretation of the Contract Documents, 2) any order by Owner to stop the Work pursuant to Article 14 where Contractor was not at fault, or 3) any written order for a minor change in the Work issued pursuant to Section 11.4, Contractor shall make such claim as provided in Subsection 11.3.1.
- 11.3.3 Should Contractor or his Subcontractors fail to call attention of A/E to discrepancies or omissions in the Contract Documents, but claim additional costs for corrective Work after Contract award, Owner may assume intent to circumvent competitive bidding for necessary corrective Work. In such case, Owner may choose to let a separate Contract for the corrective Work, or issue a ULCO to require performance by Contractor. Claims for time extensions or for extra cost resulting from delayed notice of patent Contract Document discrepancies or omissions will not be considered by Owner.
- 11.4 Minor Changes. A/E, with concurrence of *OCM*, will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time. Such changes shall be effected by written order which Contractor shall carry out promptly and record on as-built record documents.
- 11.5 Concealed Site Conditions. Contractor is responsible for visiting the Site and being familiar with local conditions such as the location, accessibility, and general character of the Site and/or building. If, in the performance of the Contract, subsurface, latent, or concealed conditions at the Site are found to be materially different from the information included in the Contract Documents, or if unknown conditions of an unusual nature are disclosed differing materially from the conditions usually inherent in Work of the character shown and specified, *OCM* and A/E shall be notified in writing of such conditions before they are disturbed. Upon such notice, or upon its own observation of such conditions, A/E, with the approval of ODR, will promptly make such changes

in the Drawings and Specifications as they deem necessary to conform to the different conditions, and any increase or decrease in the cost of the Work, or in the time within which the Work is to be completed, resulting from such changes will be adjusted by Change Order, subject to the prior approval of ODR.

11.6 Extension of Time. All changes to the Contract Time shall be made as a consequence of requests as required under Section 9.6, and as documented by Change Order as provided under Section 11.1.

11.7 Administration of Change Order Requests. All changes in the Contract shall be administered in accordance with procedures approved by Owner, and when required, make use of such electronic information management system(s) as Owner may employ.

11.7.1 Routine changes in the construction Contract shall be formally initiated by A/E by means of a PCO form detailing requirements of the proposed change for pricing by Contractor. This action may be preceded by communications between Contractor, A/E and OCM concerning the need and nature of the change, but such communications shall not constitute a basis for beginning the proposed Work by Contractor. Except for emergency conditions described below, approval of Contractor's cost proposal by A/E and ODR will be required for authorization to proceed with the Work being changed. Owner will not be responsible for the cost of Work changed without prior approval and Contractor may be required to remove Work so installed.

11.7.2 All proposed costs for change order Work must be supported by itemized accounting of material, equipment and associated itemized installation costs in sufficient detail, following the outline and organization of the established Schedule of Values, to permit analysis by A/E and ODR using current estimating guides and/or practices. Photocopies of Subcontractor and vendor proposals shall be furnished unless specifically waived by ODR. Contractor shall provide written response to a change request within twenty-one (21) days of receipt.

11.7.3 Emergency changes to save life or property may be initiated by Contractor alone (see Section 7.3) with the claimed cost and/or time of such work to be fully documented as to necessity and detail of the reported costs and/or time.

11.7.4 The method of incorporating approved Change Orders into the parameters of the accepted Schedule of Values must be coordinated and administered in a manner acceptable to *Owner*.

11.8 Pricing Change Order Work. The amounts that Contractor and/or its Subcontractor adds to a Change Order for profit and overhead will also be considered by Owner before approval is given. The amounts established hereinafter are the maximums that are acceptable to Owner.

11.8.1 For Work performed by its forces, Contractor will be allowed their actual costs for materials, the total amount of wages paid for labor, plus the total cost of State and Federal payroll taxes and of worker's compensation and comprehensive general liability insurance, plus additional bond and builders risk insurance cost if the change results in an increase in the premium paid by Contractor. To the total of the above costs, Contractor will be allowed to add a percentage as noted below to cover overhead and profit combined.

Allowable percentages for overhead and profit on any specific change shall not exceed fifteen (15) percent for the first \$10,000 of value for self-performed work or portion thereof, ten (10) percent for the second \$10,000 of value for self-performed work or portion thereof and seven and a half (7.5) percent for any value of the self-performed work that exceeds \$20,000.

11.8.2 For subcontracted Work each affected Subcontractor shall figure its costs, overhead and profit as described above for Contractor's Work, all Subcontractor costs shall be combined, and to that total Subcontractor cost Contractor will be allowed to add a maximum mark-up of ten (10) percent for the first \$10,000 of subcontracted Work value or portion thereof, seven and half (7.5) percent for the second \$10,000 of subcontracted Work value or portion thereof, and five (5) percent for any value of the subcontracted Work exceeding \$20,000.

11.8.3 On changes involving both additions and deletions, percentages for overhead and profit will be allowed only on the net addition. Owner does not accept and will not pay for additional Contract cost identified as indirect or consequential damages.

11.8.4 For Contracts based on a Guaranteed Maximum Price (GMP), the Construction Manager-at-Risk or Design Builder shall NOT be entitled to a percentage mark-up on any Change Order Work unless the Change Order increases the Guaranteed Maximum Price.

11.9 Unilateral Change Order (ULCO). Owner may issue a written ULCO directing a change in the Work prior to reaching agreement with Contractor on the adjustment, if any, in the Contract price and/or the Contract Time.

11.9.1 Owner and Contractor shall negotiate for appropriate adjustments, as applicable, to the Contract Sum or the Contract Time arising out of a ULCO. As the changed Work is performed, Contractor shall submit its costs for such Work with its Application for Payment beginning with the next Application for Payment within thirty (30) days of the issuance of the ULCO. The Parties reserve their rights as to the disputed amount, subject to Article 15.

11.10 Final Resolution of Changes. Upon execution of a Change Order and/or a ULCO by Owner, Contractor and A/E, all costs and time issues regarding that change are final and not subject to adjustment.

Article 12. Project Completion and Acceptance

12.1 Closing Inspections.

12.1.1 Substantial Completion Inspection. When Contractor considers the entire Work or part thereof Substantially Complete, it shall notify *OCM* in writing that the Work will be ready for Substantial Completion inspection on a specific date. Contractor shall include with this notice Contractor's Punchlist to indicate that it has previously inspected all the Work associated with the request for inspection, noting items it has corrected and included all remaining work items with date scheduled for completion or correction prior to final inspection. The failure to include any items on this list does not alter the responsibility of Contractor to complete all Work in accordance with the Contract Documents. If any of the items on this list prevents the Project from being used as intended, Contractor shall not request a Substantial Completion Inspection. Owner and its representatives will review the list of items and schedule the requested inspection, or inform Contractor in writing that such an inspection is premature because the Work is not sufficiently advanced or conditions are not as represented on Contractor's list.

12.1.1.1 Prior to the Substantial Completion inspection, Contractor shall furnish a copy of its marked-up Record Documents and a preliminary copy of each instructional manual, maintenance and operating manual, parts catalog, wiring diagrams, spare parts, specified written warranties, and like publications or parts for all installed equipment, systems, and like items as described in the Contract Documents. Delivery of these items is a prerequisite for requesting the Substantial Completion inspection.

12.1.1.2 On the date requested by Contractor, or as mutually agreed upon pending the status of the Open Items List, *A/E*, *OCM*, Contractor, and other Owner representatives as determined by Owner will jointly attend the Substantial Completion inspection, which shall be conducted by *OCM* or their delegate. If *Owner and A/E* determines that the Work is Substantially Complete, *A/E* will issue a Certificate of Substantial Completion to be signed by *A/E*, Owner, and Contractor establishing the date of Substantial Completion and identifying responsibilities for security and maintenance. *A/E* will provide with this certificate a list of Punchlist items (the pre-final Punchlist) for completion prior to final inspection. This list may include items in addition to those on Contractor's Punchlist, which the inspection team deems necessary to correct or complete prior to final inspection. If Owner occupies the Project upon determination of Substantial Completion, Contractor shall complete all corrective Work at the convenience of Owner, without disruption to Owner's use of the Project for its intended purposes.

12.1.2.1 *Contractor shall correct* or complete all items on the final Punchlist before requesting Final Payment. Unless otherwise agreed to in writing by the parties, complete this work within seven (7) days of receiving the final Punchlist. Upon completion of the final Punchlist, notify *A/E* and *OCM* in writing stating the disposition of each final Punchlist item. *A/E*, Owner, and Contractor shall promptly inspect the completed items. When the final Punchlist is complete, and

the Contract is fully satisfied according to the Contract Documents *A/E* will issue a certificate establishing the date of Final Completion. Completion of all Work is a condition precedent to Contractor's right to receive Final Payment.

12.1.3 Annotation. Any Certificate issued under this Article may be annotated to indicate that it is not applicable to specified portions of the Work, or that it is subject to any limitation as determined by Owner.

12.1.4 Purpose of Inspection. Inspection is for determining the completion of the Work, and does not relieve Contractor of its overall responsibility for completing the Work in a good and competent fashion, in compliance with the Contract. Work accepted with incomplete Punchlist items or failure of Owner or other parties to identify Work that does not comply with the Contract Documents or is defective in operation or workmanship does not constitute a waiver of Owner's rights under the Contract or relieve Contractor of its responsibility for performance or warranties.

12.1.5 Additional Inspections.

12.1.5.1 If Owner's inspection team determines that the Work is not substantially complete at the Substantial Completion inspection, *Owner* or *A/E* will give Contractor written notice listing cause(s) of the rejection. Contractor will set a time for completion of incomplete or defective work acceptable to *Owner*. Contractor shall complete or correct all work so designated prior to requesting a second Substantial Completion inspection.

12.1.5.2 If Owner's inspection team determines that the Work is not complete at the final inspection, *Owner* or *A/E* will give Contractor written notice listing the cause(s) of the rejection. Contractor will set a time for completion of incomplete or defective work acceptable to *Owner*. Contractor shall complete or correct all Work so designated prior to again requesting a final inspection.

12.1.5.3 The Contract contemplates three (3) comprehensive inspections: the Substantial Completion inspection, the Final Completion inspection, and the inspection of completed final Punchlist items. The cost to Owner of additional inspections resulting from the Work not being ready for one or more of these inspections is the responsibility of Contractor. Owner may issue a ULCO deducting these costs from Final Payment. Upon Contractor's written request, Owner will furnish documentation of any costs so deducted. Work added to the Contract by Change Order after Substantial Completion inspection is not corrective Work for purposes of determining timely completion, or assessing the cost of additional inspections.

12.1.6 Phased Completion. The Contract may provide, or Project conditions may warrant, as determined by ODR, that designated elements or parts of the Work be completed in phases. Where phased completion is required or specifically agreed to by the parties, the provisions of the Contract related to closing inspections, occupancy, and acceptance apply independently to each designated element or part of the Work. For all other purposes, unless otherwise agreed by the parties in writing, Substantial Completion of the Work as a whole is the date on which the last element or part of the Work completed receives a Substantial Completion certificate. Final Completion of the Work as a whole is the date on

which the last element or part of the Work completed receives a Final Completion certificate.

12.2 Owner's Right of Occupancy. Owner may occupy or use all or any portion of the Work following Substantial Completion, or at any earlier stage of completion. Should Owner wish to use or occupy the Work, or part thereof, prior to Substantial Completion, *Owner* will notify Contractor in writing and identify responsibilities for security and maintenance Work performed on the premises by third parties on Owner's behalf does not constitute occupation or use of the Work by Owner for purposes of this Article. All Work performed by Contractor after occupancy, whether in part or in whole, shall be at the convenience of Owner so as to not disrupt Owner's use of, or access to occupied areas of the Project.

12.3 Acceptance and Payment.

12.3.1 Request for Final Payment. Following the certified completion of all work, including all final Punchlist items, cleanup, and the delivery of record documents, Contractor shall submit a certified Application for Final Payment and include all sums held as retainage and forward to A/E and *OCM* for review and approval.

12.3.2 Final Payment Documentation. Contractor shall submit, prior to or with the Application for Final Payment, final copies of all close out documents, maintenance and operating instructions, guarantees and warranties, certificates, Record Documents and all other items required by the Contract. Contractor shall submit evidence of return of access keys and cards, evidence of delivery to Owner of attic stock, spare parts, and other specified materials. Contractor shall submit consent of surety to Final Payment form and an affidavit that all payrolls, bills for materials and equipment, subcontracted work and other indebtedness connected with the Work, except as specifically noted, are paid, will be paid, after payment from Owner or otherwise satisfied within the period of time required by Tex. Gov't Code, Chapter 2251. Contractor shall furnish documentation establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of claims and liens arising out of the Contract. Contractor may not subsequently submit a claim on behalf of Subcontractor or vendor unless Contractor's affidavit notes that claim as an exception.

12.3.3 Architect/Engineer Approval. A/E will review a submitted Application for Final Payment promptly but in no event later than ten (10) days after its receipt. Prior to the expiration of this deadline, A/E will either: 1) return the Application for Final Payment to Contractor with corrections for action and resubmission; or 2) accept it, note their approval, and send to Owner.

12.3.4 Offsets and Deductions. Owner may deduct from the Final Payment all sums due from Contractor. If the Certificate of Final Completion notes any Work remaining, incomplete, or defects not remedied, Owner may deduct the cost of remedying such deficiencies from the Final Payment. On such deductions, Owner will identify each deduction, the amount, and the explanation of the deduction on or by the twenty-first (21st) day after Owner's receipt of an approved Application for Final Payment. Such offsets and deductions shall be incorporated via a final Change Order, including a ULCO as may be applicable.

12.3.5 Final Payment Due. Final Payment is due and payable by Owner, subject to all allowable offsets and deductions, on the thirtieth (30th) day following Owner's approval of the

Application for Payment. If Contractor disputes any amount deducted by Owner, Contractor shall give notice of the dispute on or before the thirtieth (30th) day following receipt of Final Payment. Failure to do so will bar any subsequent claim for payment of amounts deducted.

12.3.6 Effect of Final Payment. Final Payment constitutes a waiver of all claims by Owner, relating to the condition of the Work except those arising from:

12.3.6.1 Faulty or defective Work appearing after Substantial Completion (latent defects);

12.3.6.2 Failure of the Work to comply with the requirements of the Contract Documents;

12.3.6.3 Terms of any warranties required by the Contract, or implied by law; or

12.3.6.4 Claims arising from personal injury or property damage to third parties.

12.3.7 Waiver of Claims. Final payment constitutes a waiver of all claims and liens by Contractor except those specifically identified in writing and submitted to ODR prior to the application for Final Payment.

12.3.8 Effect on Warranty. Regardless of approval and issuance of Final Payment, the Contract is not deemed fully performed by Contractor and closed until the expiration of all warranty periods.

Article 13. Warranty and Guarantee

- 13.1 Contractor's General Warranty and Guarantee. Contractor warrants to Owner that all Work is executed in accordance with the Contract, complete in all parts and in accordance with approved practices and customs, and of the required finish and workmanship. Contractor further warrants that unless otherwise specified, all materials and equipment incorporated in the Work under the Contract are new. Owner may, at its option, agree in writing to waive any failure of the Work to conform to the Contract, and to accept a reduction in the Contract price for the cost of repair or diminution in value of the Work by reason of such defect. Absent such a written agreement, Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute and is not waived by any inspection or observation by Owner, A/E or others, by making any progress payment or final payment, by the use or occupancy of the Work or any portion thereof by Owner, at any time, or by any repair or correction of such defect made by Owner.
- 13.2 Warranty Period. Except as may be otherwise specified or agreed, Contractor shall repair all defects in materials, equipment, or workmanship appearing within one year from the date of Substantial Completion of the Work. If Substantial Completion occurs by phase, then the warranty period for that particular Work begins on the date of such occurrence, or as otherwise stipulated on the Certificate of Substantial Completion for the particular Work.
- 13.3 Limits on Warranty. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
- 13.3.1 Modification or improper maintenance or operation by persons other than Contractor, Subcontractors, or any other individual or entity for whom Contractor is not responsible, unless Owner is compelled to undertake maintenance or operation due to the neglect of Contractor.
 - 13.3.2 Normal wear and tear under normal usage after acceptance of the Work by Owner.
- 13.4 Events Not Affecting Warranty. Contractor's obligation to perform and complete the Work in a good and workmanlike manner in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of defective Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
- 13.4.1 Observations by Owner and/or A/E;
 - 13.4.2 Recommendation to pay any progress or final payment by A/E;
 - 13.4.3 The issuance of a certificate of Substantial Completion or any payment by Owner to Contractor under the Contract Documents;
 - 13.4.4 Use or occupancy of the Work or any part thereof by Owner;
 - 13.4.5 Any acceptance by Owner or any failure to do so;
 - 13.4.6 Any review of a Shop Drawing or sample submittal; or

13.4.7 Any inspection, test or approval by others.

- 13.5 Separate Warranties. If a particular piece of equipment or component of the Work for which the Contract requires a separate warranty is placed in continuous service before Substantial Completion, the warranty period for that equipment or component will not begin until Substantial Completion, regardless of any warranty agreements in place between suppliers and/or Subcontractors and Contractor. *Owner* will certify the date of service commencement in the Substantial Completion certificate.
- 13.5.1 In addition to Contractor's warranty and duty to repair, Contractor expressly assumes all warranty obligations required under the Contract for specific building components, systems and equipment.
- 13.5.2 Contractor may satisfy any such obligation by obtaining and assigning to Owner a complying warranty from a manufacturer, supplier, or Subcontractor. Where an assigned warranty is tendered and accepted by Owner which does not fully comply with the requirements of the Contract, Contractor remains liable to Owner on all elements of the required warranty not provided by the assigned warranty.
- 13.6 Correction of Defects. Upon receipt of written notice from Owner, or any agent of Owner designated as responsible for management of the warranty period, of the discovery of a defect, Contractor shall promptly remedy the defect(s), and provide written notice to Owner and designated agent indicating action taken. In case of emergency where delay would cause serious risk of loss or damage to Owner, or if Contractor fails to remedy within thirty (30) days, or within another period agreed to in writing, Owner may correct the defect and be reimbursed the cost of remedying the defect from Contractor or its surety.
- 13.7 Certification of No Asbestos Containing Materials or Work. Contractor shall ensure compliance with the Asbestos Hazard Emergency Response Act (AHERA– 40 C.F.R § 763-99(7)) from all Subcontractors and materials suppliers, and shall provide a notarized certification to Owner that all equipment and materials used in fulfillment of their Contract responsibilities are non Asbestos Containing Building Materials (ACBM). This certification must be provided no later than Contractor's application for Final Payment.

Article 14. Suspension and Termination

- 14.1 Suspension of Work for Cause. Owner may, at any time without prior notice, suspend all or any part of the Work, if after reasonable observation and/or investigation, Owner determines it is necessary to do so to prevent or correct any condition of the Work, which constitutes an immediate safety hazard, or which may reasonably be expected to impair the integrity, usefulness or longevity of the Work when completed.
- 14.1.1 Owner will give Contractor a written notice of suspension for cause, setting forth the reason for the suspension and identifying the Work suspended. Upon receipt of such notice, Contractor shall immediately stop the Work so identified. As soon as practicable following the issuance of such a notice, Owner will initiate and complete a further investigation of the circumstances giving rise to the suspension, and issue a written determination of the findings.
- 14.1.2 If it is confirmed that the cause was within the control of Contractor, Contractor will not be entitled to an extension of time or any compensation for delay resulting from the suspension. If the cause is determined not to have been within the control of Contractor, and the suspension has prevented Contractor from completing the Work within the Contract Time, the suspension is an excusable delay and a time extension will be granted through a Change Order.
- 14.1.3 Suspension of Work under this provision will be no longer than is reasonably necessary to remedy the conditions giving rise to the suspension.
- 14.2 Suspension of Work for Owner's Convenience. Upon seven (7) days written notice to Contractor, Owner may at any time without breach of the Contract suspend all or any portion of the Work for its own convenience. When such a suspension prevents Contractor from completing the Work within the Contract Time, it is an excusable delay. A notice of suspension for convenience may be modified by Owner at any time on seven (7) days written notice to Contractor. If Owner suspends the Work for its convenience for more than sixty (60) consecutive days, Contractor may elect to terminate the Contract pursuant to the provisions of the Contract.
- 14.3 Termination by Owner for Cause.
- 14.3.1 Upon written notice to Contractor and its surety, Owner may, without prejudice to any right or remedy, terminate the Contract and take possession of the Site and of all materials, equipment, tools, construction equipment, and machinery thereon owned by Contractor under any of the following circumstances:
- 14.3.1.1 Persistent or repeated failure or refusal, except during complete or partial suspensions of work authorized under the Contract, to supply enough properly skilled workmen or proper materials;
- 14.3.1.2 Persistent disregard of laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, including *Owner*;
- 14.3.1.3 Persistent failure to prosecute the Work in accordance with the Contract, and to

ensure its completion within the time, or any approved extension thereof, specified in the Contract;

- 14.3.1.4 Failure to remedy defective work condemned by *Owner*;
 - 14.3.1.5 Failure to pay Subcontractors, laborers, and material suppliers pursuant to Tex. Gov't Code, Chapter 2251;
 - 14.3.1.6 Persistent endangerment to the safety of labor or of the Work;
 - 14.3.1.7 Failure to supply or maintain statutory bonds or to maintain required insurance, pursuant to the Contract;
 - 14.3.1.8 Any material breach of the Contract; or
 - 14.3.1.9 Contractor's insolvency, bankruptcy, or demonstrated financial inability to perform the Work.
- 14.3.2 Failure by Owner to exercise the right to terminate in any instance is not a waiver of the right to do so in any other instance.
- 14.3.3 Should Owner decide to terminate the Contract under the provisions of Section 14.3, it will provide to Contractor and its surety thirty (30) days prior written notice.
- 14.3.4 Should Contractor or its surety, after having received notice of termination, demonstrate to the satisfaction of Owner that Contractor or its surety are proceeding to correct such default with diligence and promptness, upon which the notice of termination was based, the notice of termination may be rescinded in writing by Owner. If so rescinded, the Work may continue without an extension of time.
- 14.3.5 If Contractor or its surety fails, after written notice from Owner to commence and continue correction of such default with diligence and promptness to the satisfaction of Owner within thirty (30) days following receipt of notice, Owner may arrange for completion of the Work and deduct the cost of completion from the unpaid Contract Sum.
- 14.3.5.1 This amount includes the cost of additional Owner costs such as A/E services, other consultants, and contract administration.
 - 14.3.5.2 Owner will make no further payment to Contractor or its surety unless the costs to complete the Work are less than the Contract balance, then the difference shall be paid to Contractor or its surety. If such costs exceed the unpaid balance, Contractor or its surety will pay the difference to Owner.
 - 14.3.5.3 This obligation for payment survives the termination of the Contract.
 - 14.3.5.4 Owner reserves the right in termination for cause to take assignment of all the Contracts between Contractor and its Subcontractors, vendors, and suppliers. *Owner* will promptly notify Contractor of the contracts Owner elects to assume. Upon receipt of such notice, Contractor shall promptly take all steps necessary to

effect such assignment.

- 14.4 Conversion to Termination for Convenience. In the event that any termination of Contractor for cause under Section 14.3 is later determined to have been improper, the termination shall automatically convert to a termination for convenience under Section 14.5 and Contractor's recovery for termination shall be strictly limited to the payments allowable under Section 14.5.
- 14.5 Termination for Convenience of Owner. Owner reserves the right, without breach, to terminate the Contract prior to, or during the performance of the Work, for any reason. Upon such an occurrence, the following shall apply:
- 14.5.1 Owner will immediately notify Contractor and A/E in writing, specifying the reason for and the effective date of the Contract termination. Such notice may also contain instructions necessary for the protection, storage or decommissioning of incomplete work or systems, and for safety.
- 14.5.2 Upon receipt of the notice of termination, Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due at that point in the Contract:
- 14.5.2.1 Stop all work.
- 14.5.2.2 Place no further subcontracts or orders for materials or services.
- 14.5.2.3 Terminate all subcontracts for convenience.
- 14.5.2.4 Cancel all materials and equipment orders as applicable.
- 14.5.2.5 Take action that is necessary to protect and preserve all property related to the Contract which is in the possession of Contractor.
- 14.5.3 When the Contract is terminated for Owner's convenience, Contractor may recover from Owner payment for all Work executed. Contractor may not claim lost profits on other work or lost business opportunities.
- 14.6 Termination By Contractor. If the Work is stopped for a period of ninety (90) days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of Contractor or Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with Contractor, then Contractor may, upon thirty (30) additional days written notice to ODR, terminate the Contract and recover from Owner payment for all Work executed, but not lost profits on other work or lost business opportunities. If the cause of the Work stoppage is removed prior to the end of the thirty (30) day notice period, Contractor may not terminate the Contract.
- 14.7 Settlement on Termination. When the Contract is terminated for any reason, at any time prior to one hundred eighty (180) days after the effective date of termination, Contractor shall submit a final termination settlement proposal to Owner based upon recoverable costs as provided under the Contract. If Contractor fails to submit the proposal within the time allowed, Owner may determine

the amount due to Contractor because of the termination and pay the determined amount to Contractor.

Article 15. Dispute Resolution

- 15.1 Unresolved Contractor Disputes. The dispute resolution process provided for in Tex. Gov't Code, Chapter 2260, shall be used by Contractor to attempt to resolve any claim for breach of Contract made by Contractor that is not resolved under procedures described throughout the Uniform General Conditions, Supplementary Conditions, or Special Conditions of the Contract.
- 15.2 Alternative Dispute Resolution Process. Owner may establish a dispute resolution process to be utilized in advance of that outlined in Tex. Gov't Code, Chapter 2260.
- 15.3 Nothing herein shall hinder, prevent, or be construed as a waiver of Owner's right to seek redress on any disputed matter in a court of competent jurisdiction.
- 15.4 Nothing herein shall waive or be construed as a waiver of the State's sovereign immunity.

Article 16. Miscellaneous

- 16.1 Supplementary General and Special Conditions. When the Work contemplated by Owner is of such a character that the foregoing Uniform General Conditions of the Contract cannot adequately cover necessary and additional contractual relationships, the Contract may include Supplementary General and Special Conditions as described below:
- 16.1.1 Supplementary General Conditions may describe the standard procedures and requirements of contract administration followed by a contracting agency of the State. Supplementary General Conditions may expand upon matters covered by the Uniform General Conditions, where necessary, provided the expansion does not weaken the character or intent of the Uniform General Conditions. Supplementary General Conditions are of such a character that it is to be anticipated that a contracting agency of the State will normally use the same, or similar, conditions to supplement each of its several projects.
- 16.1.2 Special Conditions shall relate to a particular Project and be unique to that Project but shall not weaken the character or intent of the Uniform General Conditions.
- 16.2 Federally Funded Projects. On Federally funded projects, Owner may waive, suspend or modify any Article in these Uniform General Conditions which conflicts with any Federal statute, rule, regulation or procedure, where such waiver, suspension or modification is essential to receipt by Owner of such Federal funds for the Project. In the case of any Project wholly financed by Federal funds, any standards required by the enabling Federal statute, or any Federal rules, regulations or procedures adopted pursuant thereto, shall be controlling.
- 16.3 Internet-based Project Management Systems. At its option, Owner may administer its design and construction management through an Internet-based management system. In such cases, Contractor shall conduct communication through this media and perform all Project related functions utilizing this database system. This includes correspondence, submittals, Requests for Information, vouchers or payment requests and processing, amendment, Change Orders and other administrative activities.
- 16.3.1 Accessibility and Administration.
- 16.3.1.1 When used, Owner will make the software accessible via the Internet to all Project team members.
- 16.3.1.2 Owner shall administer the software.
- 16.3.2 Training. When used, Owner shall provide training to the Project team members.
- 16.4 Computation of Time. *In computing any time period set forth in this Contract, the first day of the period shall not be included, but the last day shall be.*
- 16.5 Survival of Obligations. *All representations, indemnifications, warranties and guarantees made in accordance with the Contract Documents will survive final payment, completion and acceptance of the Work, as well as termination for any reason. All duties imposed upon the Contractor by reason of termination, including without limitation the duty to assign subcontracts and contracts with vendors and suppliers, shall likewise survive the termination of the Contract.*

- 16.6 No Waiver of Performance. *The failure of either party in any instance to insist on the performance of any of the terms, covenants or conditions of the Contract Documents, or to exercise any of the rights granted thereunder, shall not be construed as waiver of any such term, covenant, condition or right with respect to further performance.*
- 16.7 Governing Law. *This Contract shall be governed by the law of the State of Texas.*
- 16.8 Captions and Catch Lines. *The captions and catch lines used throughout the Uniform General Conditions and the Supplementary General Conditions, and elsewhere in the Contract Documents are for ease of reference only and have no effect on the meaning of the terms and conditions set forth herein.*
- 16.9 Independent Contractor Status. *The Contract Documents create an independent contractor relationship between the Owner and Contractor and neither party's employees or contractors shall be considered employees, contractors, partners or agents of the other party.*
- 16.10 No third party beneficiaries. *The parties do not intend, nor shall any clause be interpreted to create in any third party, any obligations to, or right of benefit by, such third party under these Contract Documents from either the Owner or Contractor.*
- 16.11 Child Support Obligor. *Notwithstanding anything to the contrary within the Contract Documents, it is understood and agreed between the parties that in accordance with the laws of the State of Texas, a child support obligor who is more than thirty (30) days delinquent in paying child support, and a business entity in which an obligor is a sole proprietor, partner, shareholder, or owner with an ownership interest of at least twenty-five percent (25%), is not eligible to receive payments from state funds under a contract to provide property, materials or services until all arrearages have been paid or the obligor is in compliance with a written repayment agreement.*
- 16.12 Entire Agreement. *These Contract Documents supersede in full all prior discussions and agreements (oral and written) between the parties relating to the subject matter hereof and constitutes the entire agreement.*
- 16.13 Assignment. *This Contract may not be assigned by either party without the prior written consent of the other, except either party may, upon notice to the other party but without the other party's consent, assign this Contract to a present or future Affiliate or successor, provided that any such assignment by Contractor shall be contingent on Owner's determination that the assignee is qualified to perform the work, is in good standing with the State of Texas and otherwise eligible to do business with the State of Texas.*
- 16.14 Severability. *If any provision, sentence, clause or article of this Contract is found to be invalid or unenforceable for any reason, the remaining provisions shall continue in effect as if the invalid or unenforceable provision were not in the Contract. All provisions, sentences, clauses and articles of this Contract are severable for this purpose.*
- 16.15 Parties Bound. *Execution of this Contract by each party binds the entity represented as well as its employees, agents, successors and assigns to its faithful performance.*

**End of Uniform General Conditions and
Supplementary General Conditions**

SECTION 024116 - STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of buildings and site improvements.
 - 2. Abandoning in-place or removing below-grade construction.
 - 3. Disconnecting, capping or sealing, and abandoning in-place or removing site utilities.
 - 4. Salvaging items for reuse by Owner.
- B. Related Sections:
 - 1. Section 024119 "Selective Demolition" for partial demolition of buildings, structures, and site improvements.
 - 2. Section 311000 "Site Clearing" for site clearing and removal of above- and below-grade site improvements not part of building demolition.
 - 3. Section 330500 "Common Work Results for Utilities" for shutting off, disconnecting, removing, and sealing or capping utilities.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse. Include fasteners or brackets needed for reattachment elsewhere.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified refrigerant recovery technician.

- B. Proposed Protection Measures: Submit informational report, including Drawings, that indicates the measures proposed for protecting individuals and property for dust control. Indicate proposed locations and construction of barriers.
 - 1. Adjacent Buildings: Detail special measures proposed to protect adjacent buildings to remain.
- C. Schedule of Building Demolition Activities: Indicate the following:
 - 1. Detailed sequence of demolition work, with starting and ending dates for each activity.
 - 2. Temporary interruption of utility services.
 - 3. Shutoff and capping or re-routing of utility services.
- D. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- E. Predemolition or Video on DVD: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Submit before the Work begins.
- F. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- G. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.
- D. Predemolition Conference: Conduct conference at a location to be determined.
 - 1. Inspect and discuss condition of construction to be demolished.
 - 2. Review structural load limitations of existing structures.
 - 3. Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review and finalize protection requirements.
 - 5. Review procedures for dust control.
 - 6. Review procedures for protection of adjacent buildings.
 - 7. Review items to be salvaged and returned to Owner.

1.7 PROJECT CONDITIONS

- A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.
- B. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.
 - 1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.
 - 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
 - a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.
- C. Owner assumes no responsibility for buildings and structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 2. Before building demolition, Owner will remove the following items:
 - a. See Electrical Drawings.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.

1.8 COORDINATION

- A. Arrange demolition schedule so as not to interfere with Owner's on-site operations or operations of adjacent occupied buildings.

PART 2 - PRODUCTS (Not Used)

2.1 SOIL MATERIALS

- A. Satisfactory Soils: Comply with requirements in Section 312000 "Earth Moving."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting demolition operations.
- B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

- C. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations. Comply with Section 013233 "Photographic Documentation."
- D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

3.2 PREPARATION

- A. Refrigerant: Remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction before starting demolition.
- B. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
 - 1. Owner will arrange to shut off indicated utilities when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
 - 4. Cut off pipe or conduit a minimum of 24 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
- C. Existing Utilities: See civil and electrical Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.
- D. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of demolition.
- E. Salvaged Items: Comply with the following:
 - 1. Clean salvaged items of dirt and demolition debris.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.

3.3 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.
- B. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.
 - 1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.
 - a. Provide at least 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.
- C. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated. Comply with requirements in Section 015000 "Temporary Facilities and Controls."
 1. Protect adjacent buildings and facilities from damage due to demolition activities.
 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
 4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 5. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 6. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
 7. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.
- D. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.4 DEMOLITION, GENERAL

- A. General: Demolish indicated buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:
 1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
 2. Maintain fire watch during and for at least 2 hours after flame cutting operations.
 3. Maintain adequate ventilation when using cutting torches.
 4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- B. Engineering Surveys: During demolition, perform surveys as necessary to detect hazards that may result from building demolition activities.
- C. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
 2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage

adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

- D. Explosives: Use of explosives is not permitted.

3.5 DEMOLITION BY MECHANICAL MEANS

- A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.
- B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.
- C. Salvage: Items to be removed and salvaged are indicated on Drawings.
- D. Below-Grade Construction: Demolish foundation walls and other below-grade construction.
 - 1. Remove below-grade construction, including basements, foundation walls, and footings, to at least 24 inches below grade.
- E. Existing Utilities: Demolish and remove existing utilities and below-grade utility service lines. Protect all existing utility mains.
 - 1. Piping: Disconnect piping at unions, flanges, valves, or fittings.
 - 2. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.

3.6 DEMOLITION BY EXPLOSIVES

- A. Explosives: Demolition with explosives is not allowed.

3.7 SITE RESTORATION

- A. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements in Section 312000 "Earth Moving."
- B. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.8 REPAIRS

- A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.9 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill acceptable to authorities having jurisdiction. See Section 017419 "Construction Waste Management and Disposal" for recycling and disposal of demolition waste.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Do not burn demolished materials.

3.10 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.
 - 1. Clean roadways of debris caused by debris transport.

END OF SECTION 024116

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Demolition and removal of selected site elements.
 - 3. Salvage of existing items to be reused or recycled.
- B. Related Requirements:
 - 1. Section 311000 "Site Clearing" for site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property for environmental protection and for dust control. Indicate proposed locations and construction of barriers.
- C. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- D. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- E. Predemolition Video: Submit DVD before Work begins.
- F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- G. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.7 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
 - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - 3. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.
- E. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.
- F. Storage or sale of removed items or materials on-site is not permitted.
- G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.9 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding. Contact UNT Systems Project Manager regarding existing warranties.
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Not used.
- F. Not used.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary."
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. UNT System Facilities Manager will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

- f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- 1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- 1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
- 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 9. Dispose of demolished items and materials promptly.
- B. Work in Historic Areas: Selective demolition may be performed only in areas of the Project that are not designated as historic. In historic spaces, areas, and rooms or on historic surfaces, the terms "demolish" or "remove" shall mean historic "removal" or "dismantling" as specified in Section 013591 "Historic Treatment Procedures."
- C. Not used.
- D. Removed and Salvaged Items:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transport and storage.
- E. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- F. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- ### 3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS
- A. Not used.
- B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.

- C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.
- E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."
- F. Not used.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 033053 - MISCELLANEOUS CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including reinforcement, concrete materials, mixture design, placement procedures, and finishes.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Other Action Submittal:
 - 1. Design Mixtures: For each concrete mixture.

1.4 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- B. Comply with the following sections of ACI 301, unless modified by requirements in the Contract Documents:
 - 1. "General Requirements."
 - 2. "Formwork and Formwork Accessories."
 - 3. "Reinforcement and Reinforcement Supports."
 - 4. "Concrete Mixtures."
 - 5. "Handling, Placing, and Constructing."
- C. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

PART 2 - PRODUCTS

2.1 FORMWORK

- A. Furnish formwork and formwork accessories according to ACI 301.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.
- D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150, Type I/II.
- B. Normal-Weight Aggregate: ASTM C 33, graded, 1-1/2-inch nominal maximum aggregate size.
- C. Water: ASTM C 94/C 94M.

2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.5 CONCRETE MIXTURES

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:
 - 1. Minimum Compressive Strength: 4000 psi at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: .55 .
 - 3. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
 - 4. Slump Limit: max. 4 inches, min. 1 inch.

5. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of trowel-finished floor slabs to exceed 3 percent.

2.6 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.4 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
- C. Do not add water to concrete during delivery, at Project site, or during placement.
- D. Consolidate concrete with mechanical vibrating equipment.

3.5 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.
 1. Apply to concrete surfaces exposed to public view.

- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Tests: Perform according to ACI 301.
 - 1. Testing Frequency: One composite sample shall be obtained for each day's pour of each concrete mix exceeding 5 cu. yd. but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
 - 2. Testing Frequency: One composite sample shall be obtained for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.

3.7 REPAIRS

- A. Remove and replace concrete that does not comply with requirements in this Section.

END OF SECTION 033053

SECTION 260513 - MEDIUM-VOLTAGE CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes cables and related cable splices, terminations, and accessories for medium-voltage (2001 to 35,000 V) electrical distribution systems.

1.3 DEFINITIONS

- A. Jacket: A continuous nonmetallic outer covering for conductors or cables.
- B. NETA ATS: Acceptance Testing Specification.
- C. Sheath: A continuous metallic covering for conductors or cables.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of cable. Include splices and terminations for cables and cable accessories.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Material Certificates: For each type of cable and accessory.
- C. Source quality-control reports.
- D. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Installer: Engage a cable splicer, trained and certified by splice material manufacturer, to install, splice, and terminate medium-voltage cable.

1.7 FIELD CONDITIONS

- A. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
1. Notify Owner no fewer than ten days in advance of proposed interruption of electric service.
 2. Do not proceed with interruption of electric service without Owner's written permission.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Cables:
 - a. General Cable Technologies Corporation.
 - b. Kerite; a Marmon Wire & Cable/Berkshire Hathaway company.
 - c. Okonite Company (The).
 - d. Southwire Company.
 2. Cable Splicing and Terminating Products and Accessories:
 - a. Adalet; a Scott Fetzer company.
 - b. Engineered Products Company.
 - c. G&W Electric Company.
 - d. MP Husky.
 - e. RTE Components; Cooper Power Systems, Inc.
 - f. Thomas & Betts Corporation.
 - g. Thomas & Betts Corporation/Elastimold.
 - h. 3M; Electrical Markets Division.
 - i. Tyco Electronics; Raychem Products.
- B. Source Limitations: Obtain cables and accessories from single source from single manufacturer.

2.2 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with IEEE C2 and NFPA 70.

2.3 CABLES

- A. Cable Type: Type MV 90.
- B. Comply with UL 1072, AEIC CS8, ICEA S-93-639/NEMA WC 74
- C. Conductor: Copper.

- D. Conductor Stranding: Concentric lay, Class B.
- E. Strand Filling: Conductor interstices are filled with impermeable compound.
- F. Conductor Insulation: Ethylene-propylene rubber.
 - 1. Voltage Rating: 5 kV.
 - 2. Insulation Thickness: 133 percent insulation level.
- G. Shielding: Copper tape, helically applied over semiconducting insulation shield.
- H. Cable Jacket: Sunlight-resistant PVC.

2.4 CONNECTORS

- A. Comply with ANSI C119.4 for connectors between aluminum conductors or for connections between aluminum to copper conductors.
- B. Copper-Conductor Connectors: Copper barrel crimped connectors.

2.5 SOLID TERMINATIONS

- A. Shielded-Cable Terminations: Comply with the following classes of IEEE 48. Insulation class shall be equivalent to that of cable. Include shield ground strap for shielded cable terminations.
 - 1. Class 1 Terminations: Modular type, furnished as a kit, with stress-relief tube; multiple, molded-silicone-rubber, insulator modules; shield ground strap; and compression-type connector.
 - 2. Class 1 Terminations: Heat-shrink type with heat-shrink inner stress control and outer nontracking tubes; multiple, molded, nontracking skirt modules; and compression-type connector.

2.6 SPLICE KITS

- A. Splice Kits: Comply with IEEE 404; type as recommended by cable or splicing kit manufacturer for the application.
- B. Splicing Products: As recommended, in writing, by splicing kit manufacturer for specific sizes, materials, ratings, and configurations of cable conductors. Include all components required for complete splice, with detailed instructions.
 - 1. Combination tape and cold-shrink-rubber sleeve kit with re-jacketing by cast-epoxy-resin encasement or other waterproof, abrasion-resistant material.
 - 2. Premolded, cold-shrink-rubber, in-line splicing kit.
 - 3. Premolded, EPDM splicing body kit with cable joint sealed by interference fit of mating parts and cable.

2.7 MEDIUM-VOLTAGE TAPES

- A. Ethylene/propylene rubber-based, 30-mil splicing tape, rated for 130 deg C operation. Minimum 3/4 inch wide.

- B. Silicone rubber-based, 12-mil self-fusing tape, rated for 130 deg C operation. Minimum 1-1/2 inches wide.

2.8 SOURCE QUALITY CONTROL

- A. Test and inspect cables according to ICEA S-97-682 before shipping.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install cables according to IEEE 576.
- B. Proof conduits prior to conductor installation by passing a wire brush mandrel and then a rubber duct swab through the conduit. Separate the wire brush and the rubber swab by 48 to 72 inches on the pull rope.
 - 1. Wire Brush Mandrel: Consists of a length of brush approximately the size of the conduit inner diameter with stiff steel bristles and an eye on each end for attaching the pull ropes. If an obstruction is felt, pull the brush back and forth repeatedly to break up the obstruction.
 - 2. Rubber Duct Swab: Consists of a series of rubber discs approximately the size of the conduit inner diameter on a length of steel cable with an eye on each end for attaching the pull ropes. Pull the rubber duct swab through the duct to extract loose debris from the duct.
- C. Pull Conductors: Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
 - 1. Where necessary, use manufacturer-approved pulling compound or lubricant that does not deteriorate conductor or insulation.
 - 2. Use pulling means, including fish tape, cable, rope, and basket-weave cable grips, that do not damage cables and raceways. Do not use rope hitches for pulling attachment to cable.
 - 3. Use pull-in guides, cable feeders, and draw-in protectors as required to protect cables during installation.
 - 4. Do not pull cables with ends unsealed. Seal cable ends with rubber tape.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.
- E. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."
- F. Install "buried-cable" warning tape 12 inches above cables.
- G. In manholes, handholes, pull boxes, junction boxes, and cable vaults, train cables around walls by the longest route from entry to exit; support cables at intervals adequate to prevent sag.
- H. Install sufficient cable length to remove cable ends under pulling grips. Remove length of conductor damaged during pulling.

- I. Install cable splices at pull points and elsewhere as indicated; use standard kits.
- J. Install terminations at ends of conductors, and seal multiconductor cable ends with standard kits.
- K. Ground shields of shielded cable at one point only. Maintain shield continuity and connections to metal connection hardware at all connection points.
- L. Identify cables according to Section 260553 "Identification for Electrical Systems." Identify phase and circuit number of each conductor at each splice, termination, pull point, and junction box. Arrange identification so that it is unnecessary to move the cable or conductor to read the identification.

3.2 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters.
 - 2. After installing medium-voltage cables and before electrical circuitry has been energized, test for compliance with requirements. Testing shall be conducted after all cable splicing and termination is complete.
 - 3. Perform direct-current High Potential test of each new conductor according to NETA ATS, Ch. 7.3.3. Do not exceed cable manufacturer's recommended maximum test voltage.
 - 4. Perform Partial Discharge test of each new conductor according to NETA ATS, Ch. 7.3.3 and to test equipment manufacturer's recommendations.
- B. Medium-voltage cables will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

END OF SECTION 260513

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.
- B. Related Requirements:
 - 1. Section 260513 "Medium-Voltage Cables" for single-conductor and multiconductor cables, cable splices, and terminations for electrical distribution systems with 2001 to 35,000 V.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Field quality-control reports.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA or an NRTL.
 - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Alcan Products Corporation; Alcan Cable Division.
 - 2. Alpha Wire.
 - 3. Belden Inc.
 - 4. General Cable Technologies Corporation.

5. Southwire Incorporated.

B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.

C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THW-2, Type THHN-2-THWN-2 and Type XHHW-2.

2.2 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.
2. Gardner Bender.
3. Hubbell Power Systems, Inc.
4. Ideal Industries, Inc.
5. O-Z/Gedney; a brand of the EGS Electrical Group.
6. 3M; Electrical Markets Division.
7. Tyco Electronics.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Exposed Feeders: Type THHN-2-THWN-2, single conductors in raceway. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-2-THWN-2, single conductors in raceway

B. Exposed Branch Circuits, Including in Crawlspace: Type THHN-2-THWN-2, single conductors in raceway

- C. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-2-THWN-2, single conductors in raceway

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

3.6 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies.

3.7 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 1. After installing conductors and cables and before electrical circuitry has been energized, test conductors for compliance with requirements.
 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 3. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in 5kV conductors. Remove box and

equipment covers so splices are accessible to portable scanner. Correct deficiencies determined during the scan.

- a. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
- b. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

B. Test and Inspection Reports: Prepare a written report to record the following:

1. Procedures used.
2. Results that comply with requirements.
3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

C. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes grounding and bonding systems and equipment.
- B. Section includes grounding and bonding systems and equipment, plus the following special applications:
 - 1. Underground distribution grounding.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 INFORMATIONAL SUBMITTALS

- A. As-Built Data: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article, including the following:
 - 1. Ground rods.
 - 2. Grounding arrangements and connections for separately derived systems.
- B. Qualification Data: For testing agency and testing agency's field supervisor.
- C. Field quality-control reports.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Burndy; Part of Hubbell Electrical Systems.
2. ERICO International Corporation.
3. Galvan Industries, Inc.; Electrical Products Division, LLC.
4. Harger Lightning and Grounding.
5. ILSCO.
6. O-Z/Gedney; A Brand of the EGS Electrical Group.
7. Robbins Lightning, Inc.
8. Siemens Power Transmission & Distribution, Inc.

2.2 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

2.3 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
 1. Solid Conductors: ASTM B 3.
 2. Stranded Conductors: ASTM B 8.
 3. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
 4. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
 5. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.4 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.5 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Underground Grounding Conductors: Install barecopper conductor, No. 2/0 AWG minimum.
 - 1. Bury at least 24 inches below grade.
- C. Conductor Terminations and Connections:
 - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
 - 2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
 - 3. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

- A. Comply with IEEE C2 grounding requirements.

3.3 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
 - 1. Feeders and branch circuits.
 - 2. Lighting circuits.
 - 3. Receptacle circuits.
 - 4. Single-phase motor and appliance branch circuits.
 - 5. Three-phase motor and appliance branch circuits.
 - 6. Flexible raceway runs.
- C. Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.4 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

- C. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.
 - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.

- D. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
 - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
 - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
 - 3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

- E. Grounding and Bonding for Piping:
 - 1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
 - 2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
 - 3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

3.5 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
 - 2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
 - 3. Test completed grounding system at each location where a maximum ground-resistance level is specified at individual ground rods. Make tests at ground rods before any conductors are connected.
 - a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
 - b. Perform tests by fall-of-potential method according to IEEE 81.
 - 4. Prepare dimensioned Drawings locating each test well, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

- B. Grounding system will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.
- D. Report measured ground resistances that exceed the following values:
 - 1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 5 ohms.
 - 2. Substations and Pad-Mounted Equipment: 5 ohms.
- E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Owner's Representative promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

SECTION 260543 - UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Direct-buried conduit, ducts, and duct accessories.
 - 2. Concrete-encased conduit, ducts, and duct accessories.
 - 3. Handholes and boxes.
 - 4. Manholes.

1.3 DEFINITIONS

- A. Trafficways: Locations where vehicular or pedestrian traffic is a normal course of events.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include duct-bank materials, including separators and miscellaneous components.
 - 2. Include ducts and conduits and their accessories, including elbows, end bells, bends, fittings, and solvent cement.
 - 3. Include accessories for handholes, boxes.
 - 4. Include warning tape.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For concrete and steel used in precast concrete handholes, as required by ASTM C 858.
- B. Source quality-control reports.
- C. Field quality-control reports.

1.6 MAINTENANCE MATERIALS SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.7 FIELD CONDITIONS

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions, and then only after arranging to provide temporary electrical service according to requirements indicated:
 - 1. Notify Owner no fewer than five days in advance of proposed interruption of electrical service.
 - 2. Do not proceed with interruption of electrical service without Owner's written permission.
- B. Ground Water: Assume ground-water level is 36 inches below ground surface unless a higher water table is noted on Drawings.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR DUCTS AND RACEWAYS

- A. Comply with ANSI C2.

2.2 CONDUIT

- A. Rigid Steel Conduit: Galvanized. Comply with ANSI C80.1.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, UL 651, with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 514B.

2.3 NONMETALLIC DUCTS AND DUCT ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. ARNCO Corp.
 - 2. Beck Manufacturing.
 - 3. Cantex, Inc.
 - 4. CertainTeed Corporation.
 - 5. Condux International, Inc.
 - 6. ElecSys, Inc.
 - 7. Electri-Flex Company.
 - 8. IPEX Inc.
 - 9. Lamson & Sessions; Carlon Electrical Products.
 - 10. Spiraduct/AFC Cable Systems, Inc.
- B. Underground Plastic Utilities Duct: NEMA TC 2, UL 651, ASTM F 512, Type EPC-40, with matching fittings complying with NEMA TC 3 by same manufacturer as the duct.
- C. Duct Accessories:
 - 1. Duct Separators: Factory-fabricated rigid PVC interlocking spacers, sized for type and size of ducts with which used, and selected to provide minimum duct spacing indicated while supporting ducts during concreting or backfilling.

2. Warning Tape: Underground-line warning tape specified in Section 260553 "Identification for Electrical Systems."

2.4 PRECAST CONCRETE HANDHOLES AND BOXES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Christy Concrete Products.
 2. Elmhurst-Chicago Stone Co.
 3. Oldcastle Precast Group.
 4. Rinker Group, Ltd.
 5. Riverton Concrete Products.
 6. Utility Concrete Products, LLC.
 7. Utility Vault Co.
 8. Wausau Tile Inc.
- B. Comply with ASTM C 858 for design and manufacturing processes.
- C. Description: Factory-fabricated, reinforced-concrete, monolithically poured walls and bottom unless open-bottom enclosures are indicated. Frame and cover shall form top of enclosure and shall have load rating consistent with that of handhole or box.
 1. Frame and Cover: Weatherproof cast-iron frame, with cast-iron cover with recessed cover hook eyes and tamper-resistant, captive, cover-securing bolts.
 2. Frame and Cover: Weatherproof steel frame, with steel cover with recessed cover hook eyes and tamper-resistant, captive, cover-securing bolts.
 3. Frame and Cover: Weatherproof steel frame, with hinged steel access door assembly with tamper-resistant, captive, cover-securing bolts.
 - a. Cover Hinges: Concealed, with hold-open ratchet assembly.
 - b. Cover Handle: Recessed.
 4. Frame and Cover: Weatherproof aluminum frame with hinged aluminum access door assembly with tamper-resistant, captive, cover-securing bolts.
 - a. Cover Hinges: Concealed, with hold-open ratchet assembly.
 - b. Cover Handle: Recessed.
 5. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
 6. Cover Legend: Molded lettering, "ELECTRIC."
 7. Configuration: Units shall be designed for flush burial and have closed bottom unless otherwise indicated.
 8. Joint Sealant: Asphaltic-butyl material with adhesion, cohesion, flexibility, and durability properties necessary to withstand maximum hydrostatic pressures at the installation location with the ground-water level at grade.
 9. Windows: Precast openings in walls, arranged to match dimensions and elevations of approaching ducts and duct banks, plus an additional 12 inches vertically and horizontally to accommodate alignment variations.
 - a. Windows shall be located no less than 6 inches from interior surfaces of walls, floors, or frames and covers of handholes, but close enough to corners to facilitate racking of cables on walls.
 - b. Window opening shall have cast-in-place, welded-wire fabric reinforcement for field cutting and bending to tie in to concrete envelopes of duct banks.

- c. Window openings shall be framed with at least two additional No. 3 steel reinforcing bars in concrete around each opening.
10. Duct Entrances in Handhole Walls: Cast end-bell or duct-terminating fitting in wall for each entering duct.
 - a. Type and size shall match fittings to duct or conduit to be terminated.
 - b. Fittings shall align with elevations of approaching ducts and be located near interior corners of handholes to facilitate racking of cable.
11. Handholes 18 inches wide by 24 inches long and larger shall have inserts for cable racks and pulling-in irons installed before concrete is poured.

2.5 HANDHOLES AND BOXES OTHER THAN PRECAST CONCRETE

- A. General Requirements for Handholes and Boxes: Comply with SCTE 77. Comply with tier requirements in "Underground Enclosure Application" Article.
 1. Configuration: Units shall be designed for flush burial and have closed bottom unless otherwise indicated.
 2. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure.
 3. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
 4. Cover Legend: Molded lettering, "ELECTRIC."
 5. Direct-Buried Wiring Entrance Provisions: Knockouts equipped with insulated bushings or end-bell fittings, selected to suit box material, sized for wiring indicated, and arranged for secure, fixed installation in enclosure wall.
 6. Duct Entrance Provisions: Duct-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.
 7. Handholes 18 inches wide by 24 inches long and larger shall have factory-installed inserts for cable racks and pulling-in irons.
- B. Polymer Concrete Handholes and Boxes with Polymer Concrete Cover: Molded of sand and aggregate, bound together with a polymer resin, and reinforced with steel or fiberglass or a combination of the two.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Armorcast Products Company.
 - b. Carson Industries LLC.
 - c. NewBasis.
 - d. Quazite: Hubbell Power System, Inc.
- C. Fiberglass Handholes and Boxes: Molded of fiberglass-reinforced polyester resin, with covers made of polymer concrete, reinforced concrete, cast iron or fiberglass.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Carson Industries LLC.
 - b. Christy Concrete Products.
 - c. Nordic Fiberglass, Inc.
 - d. Quazite: Hubbell Power System, Inc.
- D. High-Density Plastic Boxes: Injection molded of high-density polyethylene or copolymer-polypropylene. Cover shall be made of plastic.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Carson Industries LLC.
 - b. Nordic Fiberglass, Inc.
 - c. PenCell Plastics.
 - d. Quazite: Hubbell Power System, Inc.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate elevations of ducts and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of ducts and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as required to suit field conditions and to ensure that duct runs drain to manholes and handholes, and as approved by Engineer.

3.2 UNDERGROUND DUCT APPLICATION

- A. Ducts for Electrical Cables More than 600 V: RNC, NEMA Type EPC-40-PVC, in concrete-encased duct bank unless otherwise indicated.
- B. Ducts for Electrical Feeders 600 V and Less: RNC, NEMA Type EPC-40-PVC, in direct-buried duct bank unless otherwise indicated.
- C. Ducts for Electrical Branch Circuits: RNC, NEMA Type EPC-40-PVC, in direct-buried duct bank unless otherwise indicated.

3.3 UNDERGROUND ENCLOSURE APPLICATION

- A. Handholes and Boxes for 600 V and Less:
 1. Units in Roadways and Other Deliberate Traffic Paths: Precast concrete. AASHTO HB 17, H-20 structural load rating.
 2. Units in Sidewalk and Similar Applications with a Safety Factor for Nondeliberate Loading by Vehicles: Heavy-duty fiberglass units with polymer concrete frame and cover, SCTE 77, Tier 8 or High-density plastic, SCTE 77, Tier 8 structural load rating.
 3. Units Subject to Light-Duty Pedestrian Traffic Only: High-density plastic, structurally tested according to SCTE 77 with 3000-lbf vertical loading.
 4. Cover design load shall not exceed the design load of the handhole or box.

3.4 EARTHWORK

- A. Restore surface features at areas disturbed by excavation, and re-establish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.

- B. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching.
- C. Cut and patch existing pavement in the path of underground ducts and utility structures.

3.5 DUCT INSTALLATION

- A. Install ducts according to NEMA TCB 2.
- B. Slope: Pitch ducts a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between two manholes, to drain in both directions.
- C. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches, both horizontally and vertically, at other locations unless otherwise indicated.
- D. Joints: Use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.
- E. Installation Adjacent to High-Temperature Steam Lines: Where duct banks are installed parallel to underground steam lines, perform calculations showing the duct bank will not be subject to environmental temperatures above 40 deg C. Where environmental temperatures are calculated to rise above 40 deg C, and anywhere the duct bank crosses above an underground steam line, install insulation blankets listed for direct burial to isolate the duct bank from the steam line.
- F. Duct Entrances to Manholes and Concrete and Polymer Concrete Handholes: Use end bells, spaced approximately 10 inches o.c. for 5-inch ducts, and vary proportionately for other duct sizes.
 - 1. Begin change from regular spacing to end-bell spacing 10 feet from the end bell without reducing duct line slope and without forming a trap in the line.
 - 2. Direct-Buried Duct Banks: Install an expansion and deflection fitting in each conduit in the area of disturbed earth adjacent to manhole or handhole. Install an expansion fitting near the center of all straight line direct-buried duct banks with calculated expansion of more than 3/4 inch.
 - 3. Grout end bells into structure walls from both sides to provide watertight entrances.
- G. Building Wall Penetrations: Make a transition from underground duct to rigid steel conduit at least 10 feet outside the building wall, without reducing duct line slope away from the building, and without forming a trap in the line. Use fittings manufactured for duct-to-conduit transition.
- H. Sealing: Provide temporary closure at terminations of ducts that have cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig hydrostatic pressure.
- I. Pulling Cord: Install 100-lbf- test nylon cord in empty ducts.

- J. Concrete-Encased Ducts: Support ducts on duct separators.
1. Excavate trench bottom to provide firm and uniform support for duct bank.
 2. Width: Excavate trench 3 inches wider than duct bank on each side.
 3. Depth: Install top of duct bank at least 36 inches below finished grade .
 4. Support ducts on duct separators coordinated with duct size, duct spacing, and outdoor temperature.
 5. Separator Installation: Space separators close enough to prevent sagging and deforming of ducts, with not less than four spacers per 20 feet of duct. Secure separators to earth and to ducts to prevent floating during concreting. Stagger separators approximately 6 inches between tiers. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.
 6. Minimum Space between Ducts: 3 inches between ducts and exterior envelope wall, 2 inches between ducts for like services, and 4 inches between power and signal ducts.
 7. Elbows: Use manufactured duct elbows for stub-ups at poles and equipment, at building entrances through floor, and at changes of direction in duct run unless otherwise indicated. Extend concrete encasement throughout length of elbow.
 8. Elbows: Use manufactured rigid steel conduit elbows for stub-ups at poles and equipment, at building entrances through floor, and at changes of direction in duct run.
 - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.
 - b. Stub-Ups to Equipment: For equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of base. Install insulated grounding bushings on terminations at equipment.
 9. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inclusions; otherwise, use forms.
 10. Concrete Cover: Install a minimum of 3 inches of concrete cover at top and bottom, and a minimum of 2 inches on each side of duct bank.
 11. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation.
 - a. Start at one end and finish at the other, allowing for expansion and contraction of ducts as their temperature changes during and after the pour. Use expansion fittings installed according to manufacturer's written recommendations, or use other specific measures to prevent expansion-contraction damage.
 - b. If more than one pour is necessary, terminate each pour in a vertical plane and install 3/4-inch reinforcing-rod dowels extending a minimum of 18 inches into concrete on both sides of joint near corners of envelope.
 12. Pouring Concrete: Place concrete carefully during pours to prevent voids under and between conduits and at exterior surface of envelope. Do not allow a heavy mass of concrete to fall directly onto ducts. Allow concrete to flow to center of bank and rise up in middle, uniformly filling all open spaces. Do not use power-driven agitating equipment unless specifically designed for duct-bank application.

3.6 INSTALLATION OF CONCRETE MANHOLES, HANDHOLES, AND BOXES

- A. Precast Concrete Handhole and Manhole Installation:
1. Comply with ASTM C 891 unless otherwise indicated.
 2. Install units level and plumb and with orientation and depth coordinated with connecting ducts, to minimize bends and deflections required for proper entrances.

3. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.

B. Elevations:

1. Handhole Covers: In paved areas and trafficways, set surface flush with finished grade. Set covers of other handholes 1 inch above finished grade.
2. Where indicated, cast handhole cover frame integrally with handhole structure.

- C. Hardware: Install removable hardware, including pulling eyes, cable stanchions, and cable arms, as required for installation and support of cables and conductors and as indicated.

3.7 INSTALLATION OF HANDHOLES AND BOXES OTHER THAN PRECAST CONCRETE

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting ducts, to minimize bends and deflections required for proper entrances. Use box extension if required to match depths of ducts, and seal joint between box and extension as recommended by manufacturer.

- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.

- C. Elevation: In paved areas and trafficways, set cover flush with finished grade. Set covers of other handholes 1 inch above finished grade.

- D. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables, but short enough to preserve adequate working clearances in enclosure.

- E. Field cut openings for ducts and conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

- F. For enclosures installed in paved areas and subject to occasional, nondeliberate, heavy-vehicle loading, form and pour a concrete ring encircling, and in contact with, enclosure and with top surface screeded to top of box cover frame. Bottom of ring shall rest on compacted earth.

1. Concrete: 3000 psi, 28-day strength with a troweled finish.
2. Dimensions: 6 inches wide by 6 inches deep.

3.8 GROUNDING

- A. Ground underground ducts and utility structures according to Section 260526 "Grounding and Bonding for Electrical Systems."

3.9 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:

1. Demonstrate capability and compliance with requirements on completion of installation of underground ducts and utility structures.
 2. Pull solid aluminum or wood test mandrel through duct to prove joint integrity and adequate bend radii, and test for out-of-round duct. Provide a minimum 6-inch- long mandrel equal to 80 percent fill of duct. If obstructions are indicated, remove obstructions and retest.
- B. Correct deficiencies and retest as specified above to demonstrate compliance.

3.10 CLEANING

- A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of ducts. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.
- B. Clean internal surfaces of manholes, including sump. Remove foreign material.

END OF SECTION 260543

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 1. Identification for raceways.
 2. Identification of power and control cables.
 3. Identification for conductors.
 4. Underground-line warning tape.
 5. Warning labels and signs.
 6. Equipment identification labels.
 7. Miscellaneous identification products.

1.3 ACTION SUBMITTALS

- A. Product Data: For each electrical identification product indicated.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with ANSI Z535.4 for safety signs and labels.
- D. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes. Use consistent designations throughout Project.
- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.

- D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 POWER AND CONTROL RACEWAY IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- B. Colors for Raceways Carrying Circuits at More Than 600 V:
 - 1. Black letters on an orange field.
 - 2. Legend: "DANGER CONCEALED HIGH VOLTAGE WIRING."
- C. Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing ends of legend label.
- D. Tape and Stencil for Raceways Carrying Circuits More Than 600 V: 4-inch- wide black stripes on 10-inch centers diagonally over orange background that extends full length of raceway or duct and is 12 inches wide. Stop stripes at legends.

2.2 POWER CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.
- B. Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing ends of legend label.
- C. Self-Adhesive, Self-Laminating Polyester Labels: Preprinted, 3-mil- thick flexible label with acrylic pressure-sensitive adhesive that provides a clear, weather- and chemical-resistant, self-laminating, protective shield over the legend. Labels sized to fit the cable diameter such that the clear shield overlaps the entire printed legend.

2.3 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.
- B. Self-Adhesive, Self-Laminating Polyester Labels: Preprinted, 3-mil- thick flexible label with acrylic pressure-sensitive adhesive that provides a clear, weather- and chemical-resistant, self-laminating, protective shield over the legend. Labels sized to fit the conductor diameter such that the clear shield overlaps the entire printed legend.

2.4 UNDERGROUND-LINE WARNING TAPE

- A. Tape:

1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
2. Printing on tape shall be permanent and shall not be damaged by burial operations.
3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.

B. Color and Printing:

1. Comply with ANSI Z535.1 through ANSI Z535.5.
2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE .
3. Inscriptions for Orange-Colored Tapes: COMMUNICATIONS CABLE.

2.5 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.
- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

2.6 EQUIPMENT IDENTIFICATION LABELS

- A. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
- B. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.
- C. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

2.7 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.

- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- F. Attach plastic raceway and cable labels that are not self-adhesive type with clear vinyl tape with adhesive appropriate to the location and substrate.
- G. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.
- H. Painted Identification: Comply with requirements in painting Sections for surface preparation and paint application.

3.2 IDENTIFICATION SCHEDULE

- A. Accessible Raceways, Armored and Metal-Clad Cables, More Than 600 V: Self-adhesive vinyl labels. Install labels at 10-foot maximum intervals.
- B. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A, and 120 V to ground: Identify with self-adhesive vinyl label. Install labels at 30-foot maximum intervals.
- C. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
 - 1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded feeder and branch-circuit conductors.
 - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG.
 - b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - c. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- D. Power-Circuit Conductor Identification, More than 600 V: For conductors in vaults, pull and junction boxes, manholes, and handholes, use nonmetallic plastic tag holder with adhesive-backed phase tags, and a separate tag with the circuit designation.

- E. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
 - 1. Install underground-line warning tape for both direct-buried cables and cables in raceway.

- F. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.

- G. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
 - 1. Labeling Instructions:
 - a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch- high label; where two lines of text are required, use labels 2 inches high.
 - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
 - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
 - d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
 - 2. Equipment to Be Labeled:
 - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be self-adhesive, engraved, laminated acrylic or melamine label.
 - b. Enclosures and electrical cabinets.
 - c. Access doors and panels for concealed electrical items.
 - d. Transformers: Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
 - e. Enclosed switches.

END OF SECTION 260553

SECTION 261200 - MEDIUM-VOLTAGE TRANSFORMERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following types of transformers with medium-voltage primaries:
 - 1. Dry-type distribution and power transformers.

1.3 DEFINITIONS

- A. NETA ATS: Acceptance Testing Specification.

1.4 ACTION SUBMITTALS

- A. Product Data: Include rated nameplate data, capacities, weights, dimensions, minimum clearances, installed devices and features, location of each field connection, and performance for each type and size of transformer indicated.
- B. Shop Drawings: Diagram power wiring.

1.5 INFORMATIONAL SUBMITTALS

- A. Source quality-control test reports.
- B. Field quality-control test reports.
- C. Follow-up service reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For transformer and accessories to include in emergency, operation, and maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Product Options: Drawings indicate size, ratings,, and voltage of transformers and are based on the specific system indicated.

- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with IEEE C2.
- D. Comply with ANSI C57.12.10, ANSI C57.12.28, IEEE C57.12.70, and IEEE C57.12.80.
- E. Comply with NFPA 70.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store transformers protected from weather and so condensation will not form on or in units. Provide temporary heating according to manufacturer's written instructions.

1.9 PROJECT CONDITIONS

- A. Service Conditions: IEEE C37.121, usual service conditions.

1.10 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.
- B. Coordinate installation of louvers, doors, spill retention areas, and sumps. Coordinate installation so no piping or conduits are installed in space allocated for medium-voltage transformers except those directly associated with transformers.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Acme Electric Corporation; Power Distribution Products Division.
 - 2. Cooper Industries; Cooper Power Systems Division.
 - 3. Cutler-Hammer.
 - 4. Federal Pacific Transformer Company; Division of Electro-Mechanical Corp.
 - 5. GE Electrical Distribution & Control.
 - 6. Hammond Manufacturing; Transformer Group.
 - 7. Siemens Energy & Automation, Inc.
 - 8. Square D; Schneider Electric.
 - 9. Virginia Transformer Corp.

2.2 DRY-TYPE DISTRIBUTION AND POWER TRANSFORMERS

- A. Description: NEMA ST 20, IEEE C57.12.01, ANSI C57.12.50, UL 1562 listed and labeled, dry-type, 2-winding transformers.
 - 1. Outdoor, ventilated or totally enclosed, nonventilated, cast coil/encapsulated coil, with primary and secondary windings individually cast in epoxy; with insulation system rated at 185 deg C with an 115 deg C average winding temperature rise above a maximum ambient temperature of 40 deg C.
- B. Primary Connection: Air terminal compartment with removable door. Tin-plated copper bar for incoming line termination, predrilled to accept terminals for indicated conductors.
- C. Secondary Connection: Air terminal compartment with removable door. Tin-plated copper bar for incoming line termination, predrilled to accept terminals for indicated conductors.
- D. Secondary Connection: Transition terminal compartment with connection pattern to match metallic conduit(s).
- E. Insulation Materials: IEEE C57.12.01, rated at 220 deg C.
- F. Basic Impulse Level: 30 kV.
- G. Full-Capacity Voltage Taps: Four nominal 2.5 percent taps below rated primary voltage.
- H. Cooling System: Class AA, self-cooled, complying with IEEE C57.12.01.

2.3 IDENTIFICATION DEVICES

- A. Nameplates: Engraved, laminated-plastic or metal nameplate for each transformer, mounted with corrosion-resistant screws. Nameplates and label products are specified in Section 260553 "Identification for Electrical Systems."

2.4 SOURCE QUALITY CONTROL

- A. Factory Tests: Perform design and routine tests according to standards specified for components. Conduct transformer tests according to ANSI C57.12.50 IEEE C57.12.90.
- B. Factory Tests: Perform the following factory-certified tests on each transformer:
 - 1. Resistance measurements of all windings on rated-voltage connection and on tap extreme connections.
 - 2. Ratios on rated-voltage connection and on tap extreme connections.
 - 3. Polarity and phase relation on rated-voltage connection.
 - 4. No-load loss at rated voltage on rated-voltage connection.
 - 5. Excitation current at rated voltage on rated-voltage connection.
 - 6. Impedance and load loss at rated current on rated-voltage connection and on tap extreme connections.
 - 7. Applied potential.
 - 8. Induced potential.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for medium-voltage transformers.
- B. Examine roughing-in of conduits and grounding systems to verify the following:
 - 1. Wiring entries comply with layout requirements.
 - 2. Entries are within conduit-entry tolerances specified by manufacturer and no feeders will have to cross section barriers to reach load or line lugs.
- C. Examine walls, floors, roofs, and concrete bases for suitable mounting conditions where transformers will be installed.
- D. Verify that ground connections are in place and that requirements in Section 260526 "Grounding and Bonding for Electrical Systems" have been met. Maximum ground resistance shall be 5 ohms at location of transformer.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install transformers on concrete bases.
 - 1. Anchor transformers to concrete bases according to manufacturer's written instructions.
 - 2. Construct concrete bases of dimensions indicated, but not less than 4 inches larger in both directions than supported unit and 4 inches high.
 - 3. Use 3000-psi, 28-day compressive-strength concrete and reinforcement.
 - 4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
- B. Maintain minimum clearances and workspace at equipment according to manufacturer's written instructions and NFPA 70.

3.3 IDENTIFICATION

- A. Identify field-installed wiring and components and provide warning signs as specified in Section 260553 "Identification for Electrical Systems."

3.4 CONNECTIONS

- A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.5 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. After installing transformers but before primary is energized, verify that grounding system at substation is tested at specified value or less.
 - 2. After installing transformers and after electrical circuitry has been energized, test for compliance with requirements.
 - 3. Perform visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters.
 - 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Remove and replace malfunctioning units and retest as specified above.
- C. Test Reports: Prepare written reports to record the following:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.
 - 3. Test results that do not comply with requirements and corrective actions taken to achieve compliance with requirements.

3.6 FOLLOW-UP SERVICE

- A. Voltage Monitoring and Adjusting: If requested by Owner, perform the following voltage monitoring after Substantial Completion but not more than six months after Final Acceptance:
 - 1. During a period of normal load cycles as evaluated by Owner, perform seven days of three-phase voltage recording at secondary terminals of each transformer. Use voltmeters with calibration traceable to National Institute of Science and Technology standards and with a chart speed of not less than 1 inch per hour.
 - 2. Corrective Actions: If test results are unacceptable, perform the following corrective actions, as appropriate:
 - a. Adjust transformer taps.
 - 3. Retests: After corrective actions have been performed, repeat monitoring until satisfactory results are obtained.
 - 4. Report: Prepare written report covering monitoring and corrective actions performed.

END OF SECTION 261200

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Distribution panelboards.
 - 2. Lighting and appliance branch-circuit panelboards.

1.3 DEFINITIONS

- A. SVR: Suppressed voltage rating.
- B. TVSS: Transient voltage surge suppressor.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - 6. Include wiring diagrams for power, signal, and control wiring.
 - 7. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards.

1.5 INFORMATIONAL SUBMITTALS

- A. Field Quality-Control Reports:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.

3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

B. Panelboard Schedules: For installation in panelboards.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
 2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Keys: Two spares for each type of panelboard cabinet lock.
 2. Circuit Breakers Including GFCI and Ground Fault Equipment Protection (GFEP) Types: Provide spares as indicated in drawings.
 3. Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
 4. Fuses for Fused Power-Circuit Devices: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

1.8 QUALITY ASSURANCE

- A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with NEMA PB 1.
- D. Comply with NFPA 70.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Handle and prepare panelboards for installation according to NEMA PB 1.

1.10 PROJECT CONDITIONS

- A. Environmental Limitations:
1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary

- HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:
 - a. Ambient Temperature: Not exceeding 10 deg F to plus 104 deg F.
 - b. Altitude: Not exceeding 6600 feet.
- B. Service Conditions: NEMA PB 1, usual service conditions, as follows:
1. Ambient temperatures within limits specified.
 2. Altitude not exceeding 6600 feet.
- C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
1. Notify Owner no fewer than five days in advance of proposed interruption of electric service.
 2. Do not proceed with interruption of electric service without Owner's written permission.
 3. Comply with NFPA 70E.

1.11 COORDINATION

- A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

1.12 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Section 260548.16 "Seismic Controls for Electrical Systems."
- B. Enclosures: Surface-mounted cabinets.
1. Rated for environmental conditions at installed location.
 - a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
 - b. Outdoor Locations: NEMA 250, Type 3R.
 2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.

3. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
4. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
5. Finishes:
 - a. Panels and Trim: Steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
 - b. Back Boxes: Same finish as panels and trim.
 - c. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.
6. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.

C. Incoming Mains Location: Top.

D. Phase, Neutral, and Ground Buses:

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.

E. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Main and Neutral Lugs: Mechanical type.
3. Ground Lugs and Bus-Configured Terminators: Mechanical type.

F. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

G. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.2 DISTRIBUTION PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
3. Siemens Energy & Automation, Inc.
4. Square D; a brand of Schneider Electric.

B. Panelboards: NEMA PB 1, power and feeder distribution type.

C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.

1. For doors more than 36 inches high, provide two latches, keyed alike.

D. Mains: Circuit breaker.

E. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.

- F. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers; plug-in circuit breakers where individual positive-locking device requires mechanical release for removal.

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Mains: Circuit breaker.
- D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- E. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
- B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.
 - 1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Receive, inspect, handle, and store panelboards according to NEMA PB 1.1.
- B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.
- C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install panelboards and accessories according to NEMA PB 1.1.
- B. Comply with mounting and anchoring requirements listed criteria.
- C. Mount panelboard cabinet plumb and rigid without distortion of box.
- D. Install overcurrent protective devices and controllers not already factory installed.
- E. Install filler plates in unused spaces.
- F. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- G. Comply with NECA 1.

3.3 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Section 260553 "Identification for Electrical Systems."
- B. Create a directory to indicate installed circuit loads; incorporate Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

- A. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- B. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- C. Panelboards will be considered defective if they do not pass tests and inspections.

- D. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

END OF SECTION 262416

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Protecting existing vegetation to remain.
 - 2. Removing existing vegetation.
 - 3. Clearing and grubbing.
 - 4. Stripping and stockpiling topsoil.
 - 5. Removing above- and below-grade site improvements.
 - 6. Disconnecting, capping or sealing, and removing site utilities.
 - 7. Temporary erosion- and sedimentation-control measures.
- B. Related Sections:
 - 1. Section 024116 "Structure Demolition" for demolition of buildings, structures, and site improvements.
 - 2. Section 024119 "Selective Demolition" for partial demolition of buildings or structures.

1.3 DEFINITIONS

- A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.
- D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.
- E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated.

- F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

- A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
 - 1. Use sufficiently detailed videotape on DVD.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
 - 1. Do not proceed with work on adjoining property until directed by Engineer.
- C. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises. Coordinate storage location prior to start of demolition.
- D. Utility Locator Service: Notify DIGTESS/811 for area where Project is located before site clearing.
- E. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.
- F. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.

7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- G. Do not direct vehicle or equipment exhaust towards protection zones.
- H. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.
- I. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."
 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Establish benchmarks and survey control points and protect and maintain from disturbance during construction.
- B. Locate and clearly identify trees, shrubs, and other vegetation to remain.
- C. Protect existing site improvements to remain from damage during construction.
 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

- A. General: Protect trees and plants remaining on-site according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.

3.4 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed.
 - 1. Arrange with utility companies to shut off indicated utilities.
 - 2. The Contractor shall coordinate with the UNT System Project Manager when ready to shut off utilities.
- B. Locate, identify, and disconnect utilities indicated to be abandoned in place.
- C. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Engineer and Owner not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.
- D. Removal of underground utilities is included in earthwork sections and with applicable fire suppression, plumbing, HVAC, electrical, communications, electronic safety and security and utilities sections and Section 024116 "Structure Demolition" and Section 024119 "Selective Demolition."

3.5 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
 - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
 - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.
 - 2. Compact to 95% proctor density per Section 312000 "Earth Moving."

3.6 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.
1. Limit height of topsoil stockpiles to 72 inches.
 2. Do not stockpile topsoil within protection zones.
 3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
 4. Stockpile surplus topsoil to allow for respraying deeper topsoil.

3.7 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
 2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
- B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Preparing subgrades for turf and grasses.
 - 2. Excavating and backfilling trenches for utilities and pits for buried utility structures.
- B. Related Sections:
 - 1. Section 033053 "Miscellaneous Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
 - 2. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
 - 3. Section 329200 "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.

1.3 UNIT PRICES - NOT USED

1.4 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
 - 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.

3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- E. Fill: Soil materials used to raise existing grades.
 - F. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
 1. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 230-hp flywheel power and developing a minimum of 47,992-lbf breakout force with a general-purpose bare bucket; measured according to SAE J-732.
 - G. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D 1586.
 - H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
 - I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
 - J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
 - K. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.
- 1.5 ACTION SUBMITTALS – NOT USED
- 1.6 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For qualified testing agency.
 - B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
 1. Classification according to ASTM D 2487.
 2. Laboratory compaction curve according to ASTM D 1557.
 - C. Preexcavation Video on DVD: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earth moving operations. Submit on DVD before earth moving begins.

1.7 QUALITY ASSURANCE

- A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

1.8 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
 - 1. Do not proceed with work on adjoining property until directed by Architect.
- C. Utility Locator Service: Notify DIG-TESS/811 for area where Project is located before beginning earth moving operations.
- D. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, specified in the StormWater Pollution Prevention Plan and Section 311000 "Site Clearing," are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- E. Sand: ASTM C 33; fine aggregate.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - b. 6 inches beneath bottom of concrete slabs-on-grade.
 - c. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.
- B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Architect. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
 - a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - b. 6 inches Insert dimension beneath pipe in trenches, and the greater of 24 inches Insert dimension wider than pipe or 42 inches Insert dimension wide.

3.5 EXCAVATION FOR STRUCTURES – NOT USED

3.6 EXCAVATION FOR WALKS AND PAVEMENTS – NOT USED

3.7 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
 1. Clearance: 6 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
 3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
 4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- D. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.
 1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.8 SUBGRADE INSPECTION – NOT USED

3.9 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings with satisfactory fill material compacted to requirement of Paragraph 3.15 “Compaction of Soil Backfills and Fills” without altering top elevation.

3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.11 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
 - 2. Surveying locations of underground utilities for Record Documents.
 - 3. Testing and inspecting underground utilities.
 - 4. Removing concrete formwork.
 - 5. Removing trash and debris.
 - 6. Removing temporary shoring and bracing, and sheeting.
 - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill voids with satisfactory soil while removing shoring and bracing.
- D. Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.
 - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- E. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches over the pipe or conduit. Coordinate backfilling with utilities testing.

- F. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- G. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.

3.13 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
 - 2. Under walks and pavements, use satisfactory soil material.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.14 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers. Use hand-operated tampers only in areas listed to contain existing utilities.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry density according to ASTM D 1557:
 - 1. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
 - 2. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
 - 3. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.

3.16 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Turf or Unpaved Areas: Plus or minus 1 inch.
 - 2. Walks: Plus or minus 1 inch.

3.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS – NOT USED

3.18 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
 - 1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
 - 2. Determine that fill material and maximum lift thickness comply with requirements.
 - 3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.
- B. Testing Agency: Contractor will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
 - 1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
 - 2. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length, but no fewer than one test.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.19 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.
 - 1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 313211 - SOIL SURFACE EROSION CONTROL

PART 1 - GENERAL

1.1 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

- ASTM D1777 (1996; E 2011; R 2011) Thickness of Textile Materials
- ASTM D3776/D3776M (2009a; E 2011; E 2011) Standard Test Method for Mass Per Unit Area (Weight) of Fabric
- ASTM D3787 (2007; R 2011) Bursting Strength of Textiles - Constant-Rate-of-Traversal (CRT), Ball Burst Test
- ASTM D3884 (2009) Abrasion Resistance of Textile Fabrics (Rotary Platform, Double-Head Method)
- ASTM D4355 (2007) Deterioration of Geotextiles from Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus
- ASTM D4491 (1999a; R 2009) Water Permeability of Geotextiles by Permittivity
- ASTM D4533 (2011) Trapezoid Tearing Strength of Geotextiles
- ASTM D4632 (2008) Grab Breaking Load and Elongation of Geotextiles
- ASTM D4751 (2012) Determining Apparent Opening Size of a Geotextile
- ASTM D4833 (2007) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
- ASTM D5852 (2000; R 2007) Standard Test Method for Erodibility Determination of Soil in the Field or in the Laboratory by the Jet Index Method
- ASTM D6629 (2001; R 2007) Selection of Methods for Estimating Soil Loss by Erosion

1.2 SYSTEM DESCRIPTION

- A. The work consists of furnishing and installing temporary soil surface erosion control materials to prevent the pollution of air, water, and land, including fine grading, blanketing, stapling, mulching, vegetative measures, structural measures, and miscellaneous related work, within project limits and in areas outside the project limits where the soil surface is disturbed from work under this contract at the designated locations. This work includes all necessary materials, labor, supervision and equipment for installation of a complete system. Submit a listing of equipment to be used for the application of erosion control materials. Coordinate this section with the requirements of Section 31 12 00 "EARTH MOVING."

1.3 SUBMITTALS

Shop Drawings

- Layout
- Obstructions Below Ground
- Seed Establishment Period
- Maintenance Record

Product Data

- Geotextile Fabrics

Operation and Maintenance Data

- Maintenance Instructions

1.4 QUALITY ASSURANCE

- A. Installer's Qualification
1. The installer shall be certified by the manufacturer for training and experience installing the material. Submit the installer's company name and address, and/or certification.
- B. Erosion Potential
1. Assess potential effects of soil management practices on soil loss in accordance with ASTM D6629. Assess erodibility of soil with dominant soil structure less than 2.8 to 3.1 inches in accordance with ASTM D5852.
- C. Substitutions
1. Substitutions will not be allowed without written request and approval from the Engineer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Prior to delivery of materials, submit certificates of compliance attesting that materials meet the specified requirements. Store materials in designated areas and as recommended by the manufacturer protected from the elements, direct exposure, and damage. Do not drop containers from trucks. Material shall be free of defects that would void required performance or warranty. Deliver geosynthetic binders and synthetic soil binders in the manufacturer's original sealed containers and stored in a secure area.
1. Furnish geotextile fabric in rolls with suitable wrapping to protect against moisture and extended ultraviolet exposure prior to placement. Label erosion control blanket and

geotextile fabric rolls to provide identification sufficient for inventory and quality control purposes.

1.6 SCHEDULING

- A. Submit a construction work sequence schedule with the approved erosion control plan a minimum of 30 days prior to start of construction. The work schedule shall coordinate the timing of land disturbing activities with the provision of erosion control measures to reduce on-site erosion and off-site sedimentation. Coordinate installation of temporary erosion control features with the construction of permanent erosion control features to assure effective and continuous control of erosion, pollution, and sediment deposition. Include a vegetative plan with planting and seeding dates and fertilizer, lime, and mulching rates. Distribute copies of the work schedule and erosion control plan to site subcontractors. Address the following in the erosion control plan:
1. Statement of erosion control and stormwater control objectives.
 2. Description of temporary and permanent erosion control, stormwater control, and air pollution control measures to be implemented on site.
 3. Description of the type and frequency of maintenance activities required for the chosen erosion control methods.
 4. Comparison of proposed post-development stormwater runoff conditions with predevelopment conditions.

1.7 WARRANTY

- A. Erosion control material shall have a warranty for use and durable condition for project specific installations. Temporary erosion control materials shall carry a minimum eighteen month warranty.

PART 2 - PRODUCTS

2.1 GEOTEXTILE FABRICS

- A. Geotextile fabrics shall be woven of polyester or polypropylene filaments formed into a stable network so that the filaments retain their relative position to each other. Sewn seams shall have strength equal to or greater than the geotextile itself. Install fabric to withstand maximum velocity flows as recommended by the manufacturer. The geotextile shall conform to the following minimum average roll values:

Property	Performance	Test Method
Weight	264 g/m ²	ASTM D3776/D3776M
Thickness	0.635 mm	ASTM D1777
Permeability	0.12 cm/sec	ASTM D4491

Property	Performance	Test Method
Abrasion Resistance, Type (percent strength retained)	58 percent X 81 percent	ASTM D3884
Tensile Grab Strength	1467 N X 1933 N	ASTM D4632
Grab Elongation	15 percent X 20 percent	ASTM D4632
Burst Strength	5510 kN/m ²	ASTM D3787
Puncture Strength	733 N	ASTM D4833
Trapezoid Tear	533 N X 533 N	ASTM D4533
Apparent Opening Size	40 US Std Sieve	ASTM D4751
UV Resistance @ 500 hours	90 percent	ASTM D4355

2.2 EROSION CONTROL BLANKETS

- A. Staking. Stakes shall be 100 percent biodegradable manufactured from recycled plastic or wood and shall be designed to safely and effectively secure erosion control blankets for temporary or permanent applications. The biodegradable stake shall be fully degradable by biological activity within a reasonable time frame. The bio-plastic resin used in production of the biodegradable stake shall consist of polylactide, a natural, completely biodegradable substance derived from renewable agricultural resources. The biodegradable stake must exhibit ample rigidity to enable being driven into hard ground, with sufficient flexibility to resist shattering. Serrate the biodegradable stake on the leg to increase resistance to pull-out from the soil.

2.3 SYNTHETIC GRID AND SHEET SYSTEMS – NOT USED

2.4 SILT FENCE

- A. Description
1. Silt Fence is a barrier consisting of geotextile fabric supported by posts to prevent soil and sediment loss from a site. This includes all labor and materials associated with installation and maintenance of the silt fence as shown in the construction drawings or similar document.
 2. The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas to a limited extent. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence shall remain in place until the disturbed area is permanently stabilized. Silt fence shall not be used where there is a concentration of water in a channel or drainage way or where soil conditions prevent a minimum toe-in depth of 6-inches or installation of support post to depth of 12-inches. If concentrated flow occurs after

installation, corrective action shall be taken such as placing a stone overflow in the areas of concentrated flow.

B. Materials

1. Geotextile. Silt Fence fabric must meet the following minimum criteria:
 - a. Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 90-lbs.
 - b. Puncture Rating, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 60-lbs.
 - c. Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 280-psi.
 - d. Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 30 (max) to 100 (min).
2. Posts. Fence posts shall be galvanized steel and may be T-section or L-section, 1.3 pounds per linear foot minimum, and 4 feet in length minimum. Wood posts may be used depending on anticipated length of service and provided they are 4 feet in length minimum and have a nominal cross section of 2 inches by 4 inches for pine or 2 inches by 2 inches for hardwoods.
3. Wire Support. Silt fence shall be supported by galvanized steel wire fence fabric as follows:
 - a. 4" x 4" mesh size, W1.4 /1.4, minimum 14-gauge wire fence fabric;
 - b. Hog wire, 12 gauge wire, small openings installed at bottom of silt fence;
 - c. Standard 2" x 2" chain link fence fabric; or
 - d. Other welded or woven steel fabrics consisting of equal or smaller spacing as that listed herein and appropriate gauge wire to provide support.
4. Stone. When a stone overflow is specified, the stone shall be 1-1/2 -inches washed stone containing no fines.

C. Construction. Silt Fence shall consist of synthetic fabric supported by wire mesh and galvanized steel posts set a minimum of 1-foot depth and spaced not more than 6-feet on center. A 6-inch wide trench is to be cut 6-inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel. This entrenchment prevents any bypass of runoff under the fence. Fabric shall overlap at abutting ends a minimum of 3-feet and shall be joined such that no leakage or bypass occurs. A stone overflow structure constructed in accordance with Standard Drawing 1020A shall be installed at all low points or spaced approximately every 300 feet if there is no apparent low point.

D. Measurement. If included in the Contract as a unit price item, measurement for payment for Silt Fence will be made by the linear foot, complete, in place and ready for use inclusive of all components necessary for a complete and working installation.

2.5 INLET PROTECTION

A. Description

1. Inlet protection consists of a variety of methods of intercepting sediment at low point inlets through the use of stone, filter fabric, inlet inserts, and other materials. This is normally located at the inlet, providing either detention or filtration to reduce sediment and floatable materials in storm water. Clogging can greatly reduce or completely stop the flow into the inlet.

2. Special caution must be exercised when installing inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed and maintained to avoid flooding of the roadway or adjacent properties and structures.
3. The different measures are used for different site conditions and inlet types. These measures include all labor and materials associated with installation and maintenance of inlet protection as shown in the construction drawings or similar document.
 - a. Filter barrier protection using silt fence is appropriate for drop inlets when the drainage area is less than 1 acre and the basin slope is less than 5-percent. This type of protection is not applicable in paved areas.
 - b. Block and gravel protection is used for curb and drop inlets when flows exceed 0.5-cubic-feet-per-second and it is necessary to allow for overtopping to prevent flooding. This form of protection is also useful for curb type inlets as it works well in paved areas.
 - c. Excavated impoundment protection around a drop inlet may be used for protection against sediment entering a storm drain inlet. With this method, it is necessary to install weep holes to allow the impoundment to drain completely. The impoundment shall be sized such that the volume of excavation shall be 1800-to 3600-cubic-feet-per-acre of disturbed area entering the inlet.

B. Materials

1. Geotextile. The fabric must meet the following minimum criteria:
 - a. Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 90-lbs.
 - b. Puncture Rating, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 60-lbs.
 - c. Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 280-psi.
 - d. Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 30 (max) to 100 (min).
2. Posts. Fence posts shall be galvanized steel and may be T-section or L-section, 1.3 pounds per linear foot minimum, and 4 feet in length minimum. Wood Posts may be used depending on anticipated length of service and provided they are 4 feet in length minimum and have a nominal cross section of 2 inches by 4 inches for pine or 2 inches by 2 inches for hardwoods.
3. Filter Gravel. Filter gravel shall be 3/4 inch (Block and Gravel Protection) or 1-1/2 to 2 inch (Excavated Impoundment Protection) washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
4. Concrete Blocks. Concrete blocks shall be standard 8" x 8" x 16" concrete masonry units and shall be in accordance with ASTM C139, Concrete Masonry Units for Construction.
5. Wire Mesh. Wire mesh shall be standard hardware cloth or comparable wire mesh with an opening size not to exceed 1/2-inch.

C. Construction and Maintenance

1. Filter Barrier Protection. Silt Fence shall consist of geotextile supported by galvanized steel posts set a minimum of 1-foot depth and spaced not more than 6-feet on center. A 6-inch wide trench is to be cut 6-inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel. This entrenchment prevents any bypass of runoff under the fence.
2. Block and Gravel Protection. Concrete blocks are to be placed on their sides in a single row around the perimeter of the inlet, with ends abutting. Openings in the blocks should

face outward, not upward. Wire mesh shall then be placed over the outside face of the blocks covering the holes. Filter stone shall then be piled against the wire mesh to the top of the blocks with the base of the stone being a minimum of 18-inches from the blocks. Alternatively, where loose stone is a concern (streets, etc.), the filter stone may be placed in appropriately sized geotextile fabric bags. Periodically, when the stone filter becomes clogged, the stone shall be removed and cleaned in a proper manner or replaced with new stone and piled back against the wire mesh.

3. Excavated Impoundment Protection. An excavated impoundment shall be sized to provide a storage volume of between 1800-and 3600-cubic-feet-per-acre of disturbed area. The trap shall have a minimum depth of 1-foot and a maximum depth of 2-feet as measured from the top of the inlet and shall have sideslopes of 2:1 or flatter. Weep holes shall be installed in the inlet walls to allow for the complete de-watering of the trap. When the storage capacity of the impoundment has been reduced by one-half, the silt shall be removed and disposed in a proper manner.

- D. Measurement. If included in the Contract as a unit price item, measurement for payment for all forms of inlet protection will be made by the individual unit as necessary for one storm drain inlet, complete, in place and ready for use inclusive of all components necessary for a complete and working installation.

2.6 WATER

- A. Unless otherwise directed, water is the responsibility of the Contractor. Water shall be potable or supplied by an existing irrigation system.

PART 3 - EXECUTION

3.1 WEATHER CONDITIONS

- A. Perform erosion control operations under favorable weather conditions; when excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped as directed. When special conditions warrant a variance to earthwork operations, submit a revised construction schedule for approval. Do not apply erosion control materials in adverse weather conditions which could affect their performance.
- B. Finished Grade. Provide condition of finish grade status prior to installation, location of underground utilities and facilities. Verify that finished grades are as indicated on the drawings; complete finish grading and compaction in accordance with Section 31 00 00 EARTHWORK, prior to the commencement of the work. Verify and mark the location of underground utilities and facilities in the area of the work. Repair damage to underground utilities and facilities at the Contractor's expense.

3.2 SITE PREPARATION

- A. Protecting Existing Vegetation. When there are established lawns in the work area, the turf shall be covered and/or protected or replaced after construction operations. Identify existing trees, shrubs, plant beds, and landscape features that are to be preserved on site by appropriate tags and barricade with reusable, high-visibility fencing along the dripline. Mitigate damage to

existing trees at no additional cost to the Government. Damage shall be assessed by a state certified arborist or other approved professional using the National Arborist Association's tree valuation guideline.

3.3 INSTALLATION

- A. Sediment Fencing. Install posts at the spacing indicated on drawings and at an angle between 2 degrees and 20 degrees towards the potential silt load area. Sediment fence height shall be approximately 16 inches. Do not attach filter fabric to existing trees. Secure filter fabric to the post and wire fabric using staples, tie wire, or hog rings. Imbed the filter fabric into the ground as indicated on drawings. Splice filter fabric at support pole using a 6 inches overlap and securely seal.

3.4 CLEAN-UP

- A. Dispose of excess material, debris, and waste materials offsite at an approved landfill or recycling center. Clear adjacent paved areas. Immediately upon completion of the installation in an area, protect the area against traffic or other use by erecting barricades and providing signage as required, or as directed.

END OF SECTION 313211

SECTION 316329 - DRILLED CONCRETE PIERS AND SHAFTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Dry-installed drilled piers.
 - 2. Slurry displacement-installed drilled piers.
 - 3. Dry-installed or slurry displacement-installed drilled piers at Contractor's choice.

1.3 UNIT PRICES – NOT USED

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at a location to be determined.
 - 1. Review methods and procedures related to drilled piers including, but not limited to, the following:
 - a. Geotechnical report to be provided by Contractor.
 - b. Discuss existing utilities and subsurface conditions.
 - c. Review coordination with temporary controls and protections.
 - d. Review measurement and payment of unit prices.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture. Submit alternative design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Shop Drawings: For concrete reinforcement, detailing fabricating, bending, supporting, and placing.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer land surveyor professional engineer and testing agency.
- B. Welding certificates.

- C. Material Certificates: From manufacturer, for the following:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Steel reinforcement and accessories.

- D. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

- A. Record drawings.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer that has specialized in drilled-pier work.
- B. Testing Agency Qualifications: Qualified according to ASTM C 1077, ASTM D 3740, and ASTM E 329 for testing indicated.
- C. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 - 2. AWS D1.4/D1.4M, "Structural Welding Code - Reinforcing Steel."

1.9 TRIAL DRILLED PIER

- A. Trial Drilled Pier: Construct trial drilled pier of diameter and depth and at location indicated or, if not indicated, of same diameter and depth as largest drilled piers, located at least three diameters clear of permanent drilled piers, to demonstrate Installer's construction methods, equipment, standards of workmanship, and tolerances.
 - 1. Install reinforcement, fill with concrete, remove temporary casings, and terminate trial drilled pier 24 inches below subgrade and leave in place.
 - 2. Install permanent casings, excavate bell, excavate rock socket, and place slurry, as required for permanent drilled piers.
 - 3. If Architect determines that trial drilled pier does not comply with requirements, excavate for and cast another until it is accepted.

1.10 FIELD CONDITIONS

- A. Existing Utilities: Locate existing underground utilities before excavating drilled piers. If utilities are to remain in place, provide protection from damage during drilled-pier operations.
 - 1. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, adapt drilling procedure if necessary to prevent damage to utilities. Cooperate with Owner and utility companies in keeping services and facilities in operation without interruption. Repair damaged utilities to satisfaction of utility owner.
- B. Interruption of Existing Utilities: Do not interrupt any utility to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:
 - 1. Notify Owner no fewer than two days in advance of proposed interruption of utility.

2. Do not proceed with interruption of utility without Owner's written permission.
- C. Project-Site Information: A geotechnical report has not been prepared for this Project. Contractor shall obtain the services of a geotechnical engineer. The geotechnical engineer shall provide interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer. Contractor is responsible for interpretations or conclusions drawn from this data.
 1. Make test borings and conduct other exploratory operations necessary for drilled piers.
- D. Survey Work: Engage a qualified land surveyor or professional engineer to perform surveys, layouts, and measurements for drilled piers. Before excavating, lay out each drilled pier to lines and levels required. Record actual measurements of each drilled pier's location, shaft diameter, bottom and top elevations, deviations from specified tolerances, and other specified data.
 1. Record and maintain information pertinent to each drilled pier and indicate on record Drawings. Cooperate with Owner's testing and inspecting agency to provide data for required reports.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Drilled-Pier Standard: Comply with ACI 336.1 except as modified in this Section.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source, throughout Project:
 1. Portland Cement: ASTM C 150/C 150M, Type I/II:
 - a. Fly Ash: ASTM C 618, Class C or Class F.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregate: ASTM C 33/C 33M, graded, 3/4-inch nominal maximum coarse-aggregate size. Provide aggregate from a single source.
 1. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.
- D. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 2. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

3. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 4. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- E. Sand-Cement Grout: Portland cement, ASTM C 150/C 150M, Type II; clean natural sand, ASTM C 404; and water to result in grout with a minimum 28-day compressive strength of 1000 psi, of consistency required for application.

2.4 STEEL CASINGS

- A. Steel Pipe Casings: ASTM A 283/A 283M, Grade C, or ASTM A 36/A 36M, carbon-steel plate, with joints full-penetration welded according to AWS D1.1/D1.1M.
- B. Corrugated-Steel Pipe Casings: ASTM A 929/A 929M, steel sheet, zinc coated.
- C. Liners: Comply with ACI 336.1.

2.5 SLURRY

- A. Slurry: Pulverized bentonite mixed with water to form stable colloidal suspension; complying with ACI 336.1 for density, viscosity, sand content, and pH.

2.6 CONCRETE MIXTURES

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 limits as if concrete were exposed to deicing chemicals.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- D. Proportion normal-weight concrete mixture as follows:
 1. Compressive Strength (28 Days): 3000 psi.
 2. Maximum Water-Cementitious Materials Ratio: 0.50.
 3. Minimum Slump: Capable of maintaining the following slump until completion of placement:
 - a. 4 inches for dry, uncased, or permanent-cased drilling method.
 - b. 6 inches for temporary-casing drilling method.
 - c. 7 inches for slurry displacement method.
 4. Air Content: Do not air entrain concrete.

2.7 REINFORCEMENT FABRICATION

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, vibration, and other hazards created by drilled-pier operations.

3.2 EXCAVATION

- A. Unclassified Excavation: Excavate to bearing elevations regardless of character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions.
 - 1. Obstructions: Unclassified excavation may include removal of unanticipated boulders, concrete, masonry, or other subsurface obstructions. No changes in the Contract Sum or the Contract Time are authorized for removal of obstructions.
 - 2. Obstructions: Unclassified excavated materials may include removal of unanticipated boulders, concrete, masonry, or other subsurface obstructions. Payment for removing obstructions that cannot be removed by conventional augers fitted with soil or rock teeth, drilling buckets, or underreaming tools attached to drilling equipment of size, power, torque, and downthrust necessary for the Work is according to Contract provisions for changes in the Work.
- B. Classified Excavation: Excavation is classified as standard excavation, special excavation, and obstruction removal and includes excavation to bearing elevations as follows:
 - 1. Standard excavation includes excavation accomplished with conventional augers fitted with soil or rock teeth, drilling buckets, or underreaming tools attached to drilling equipment of size, power, torque, and downthrust necessary for the Work.
 - 2. Special excavation includes excavation that requires special equipment or procedures where drilled-pier excavation equipment used in standard excavation, operating at maximum power, torque, and downthrust, cannot advance the shaft.
 - a. Special excavation requires use of special rock augers, core barrels, air tools, blasting, or other methods of hand excavation.
 - b. Earth seams, rock fragments, and voids included in rock excavation area are considered rock for full volume of shaft from initial contact with rock.
 - 3. Obstructions: Payment for removing unanticipated boulders, concrete, masonry, or other subsurface obstructions that cannot be removed by conventional augers fitted with soil or rock teeth, drilling buckets, or underreaming tools attached to drilling equipment of size, power, torque, and downthrust necessary for the Work is according to Contract provisions for changes in the Work.

- C. Prevent surface water from entering excavated shafts. Conduct water to site drainage facilities.
- D. Excavate shafts for drilled piers to indicated elevations. Remove loose material from bottom of excavation.
 - 1. Excavate bottom of drilled piers to level plane within 1:12 tolerance.
 - 2. Remove water from excavated shafts before concreting.
 - 3. Excavate rock sockets of dimensions indicated.
 - 4. Cut series of grooves about perimeter of shaft to height from bottom of shaft, vertical spacing, and dimensions indicated.
- E. Notify and allow testing and inspecting agency to test and inspect bottom of excavation. If unsuitable bearing stratum is encountered, make adjustments to drilled piers as determined by Architect.
 - 1. Do not excavate shafts deeper than elevations indicated unless approved by Engineer.
 - 2. Payment for additional authorized excavation is according to Contract provisions for changes in the Work.
- F. End-Bearing Drilled Piers: Probe with auger to a depth below bearing elevation, equal to diameter of the bearing area of drilled pier. Determine whether voids, clay seams, or solution channels exist.
 - 1. Test first three drilled piers and one of every six drilled piers thereafter.
 - 2. Fill augur-probe holes with grout.
- G. Excavate shafts for closely spaced drilled piers and for drilled piers occurring in fragile or sand strata only after adjacent drilled piers are filled with concrete and allowed to set.
- H. Slurry Displacement Method: Stabilize excavation with slurry maintained a minimum of 60 inches above ground-water level and above unstable soil strata to prevent caving or sloughing of shaft. Maintain slurry properties before concreting.
 - 1. Excavate and complete concreting of drilled pier on same day, or redrill, clean, and test slurry in excavation before concreting.
- I. Temporary Casings: Install watertight steel casings of sufficient length and thickness to prevent water seepage into shaft; to withstand compressive, displacement, and withdrawal stresses; and to maintain stability of shaft walls.
 - 1. Remove temporary casings, maintained in plumb position, during concrete placement and before initial set of concrete.
- J. Tolerances: Construct drilled piers to remain within ACI 336.1 tolerances.
 - 1. If location or out-of-plumb tolerances are exceeded, provide corrective construction. Submit corrective construction proposals to Architect for review before proceeding.

3.3 STEEL REINFORCEMENT INSTALLATION

- A. Comply with recommendations in CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy bond with concrete.

- C. Fabricate and install reinforcing cages symmetrically about axis of shafts in a single unit.
- D. Accurately position, support, and secure reinforcement against displacement during concreting. Maintain minimum cover over reinforcement.
- E. Use templates to set anchor bolts, leveling plates, and other accessories furnished in work of other Sections. Provide blocking and holding devices to maintain required position during final concrete placement.
- F. Protect exposed ends of extended reinforcement, dowels, or anchor bolts from mechanical damage and exposure to weather.

3.4 CONCRETE PLACEMENT

- A. Place concrete in continuous operation and without segregation immediately after inspection and approval of shaft by a qualified Special Inspector.
 - 1. Construct a construction joint if concrete placement is delayed more than one hour. Level top surface of concrete and insert joint dowel bars. Before placing remainder of concrete, clean surface laitance, roughen, and slush concrete with commercial bonding agent or with sand-cement grout mixed at ratio of 1:1.
- B. Dry Method: Place concrete to fall vertically down the center of drilled pier without striking sides of shaft or steel reinforcement.
 - 1. Where concrete cannot be directed down shaft without striking reinforcement, place concrete with chutes, tremies, or pumps.
 - 2. Vibrate top 60 inches of concrete.
- C. Slurry Displacement Method: Place concrete in slurry-filled shafts by tremie methods or pumping. Control placement operations to ensure that tremie or pump pipe is embedded no less than 60 inches into concrete and that flow of concrete is continuous from bottom to top of drilled pier.
- D. Coordinate withdrawal of temporary casings with concrete placement to maintain at least a 60-inch head of concrete above bottom of casing.
 - 1. Vibrate top 60 inches of concrete after withdrawal of temporary casing.
- E. Screed concrete at cutoff elevation level and apply scoured, rough finish. Where cutoff elevation is above the ground elevation, form top section above grade and extend shaft to required elevation.
- F. Protect concrete work, according to ACI 301, from frost, freezing, or low temperatures that could cause physical damage or reduced strength.
 - 1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - 2. Do not use calcium chloride, salt, or other mineral-containing antifreeze agents or chemical accelerators.
- G. If hot-weather conditions exist that would seriously impair quality and strength of concrete, place concrete according to ACI 301 to maintain delivered temperature of concrete at no more than 90 deg F.

1. Place concrete immediately on delivery. Keep exposed concrete surfaces and formed shaft extensions moist by fog sprays, wet burlap, or other effective means for a minimum of seven days.

3.5 FIELD QUALITY CONTROL

- A. Special Inspections: Engage a qualified special inspector to perform the following special inspections:
 1. Drilled piers.
 2. Excavation.
 3. Concrete.
 4. Steel reinforcement welding.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- C. Drilled-Pier Tests and Inspections: For each drilled pier, before concrete placement.
 1. Soil Testing: Bottom elevations, bearing capacities, and lengths of drilled piers indicated have been estimated from available soil data. Actual elevations and drilled-pier lengths and bearing capacities are determined by testing and inspecting agency. Final evaluations and approval of data are determined by Architect.
 - a. Bearing Stratum Tests: Testing agency takes undisturbed rock core samples from drilled-pier bottoms; tests each sample for compression, moisture content, and density; and reports results and evaluations.
- D. Concrete Tests and Inspections: ASTM C 172/C 172M except modified for slump to comply with ASTM C 94/C 94M.
 1. Slump: ASTM C 143/C 143M; one test at point of placement for each compressive-strength test but no fewer than one test for each concrete load.
 2. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and 80 deg F and above, and one test for each set of compressive-strength specimens.
 3. Compression Test Specimens: ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test unless otherwise indicated. Mold and store cylinders for laboratory-cured test specimens unless field-cured test specimens are required.
 4. Compressive-Strength Tests: ASTM C 39/C 39M; one set for each drilled pier but not more than one set for each truck load. Test one specimen at seven days, test two specimens at 28 days, and retain one specimen in reserve for later testing if required.
 5. If frequency of testing provides fewer than five strength tests for a given class of concrete, conduct tests from at least five randomly selected batches or from each batch if fewer than five are used.
 6. If strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
 7. Strength of each concrete mixture is satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
 8. Report test results in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. List Project identification name and number, date of concrete

- placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests in reports of compressive-strength tests.
9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but not be used as sole basis for approval or rejection of concrete.
 10. Additional Tests: Testing and inspecting agency to make additional tests of concrete if test results indicate that slump, compressive strengths, or other requirements have not been met, as directed by Architect.
 - a. Continuous coring of drilled piers may be required, at Contractor's expense, if temporary casings have not been withdrawn within specified time limits or if observations of placement operations indicate deficient concrete quality, presence of voids, segregation, or other possible defects.
 11. Perform additional testing and inspecting, at Contractor's expense, to determine compliance of replaced or additional work with specified requirements.
 12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- E. An excavation, concrete, or a drilled pier will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports for each drilled pier as follows:
1. Actual top and bottom elevations.
 2. Actual drilled-pier diameter at top, bottom, and bell.
 3. Top of rock elevation.
 4. Description of soil materials.
 5. Description, location, and dimensions of obstructions.
 6. Final top centerline location and deviations from requirements.
 7. Variation of shaft from plumb.
 8. Shaft excavating method.
 9. Design and tested bearing capacity of bottom.
 10. Depth of rock socket.
 11. Levelness of bottom and adequacy of cleanout.
 12. Properties of slurry and slurry test results at time of slurry placement and at time of concrete placement.
 13. Ground-water conditions and water-infiltration rate, depth, and pumping.
 14. Description, purpose, length, wall thickness, diameter, tip, and top and bottom elevations of temporary or permanent casings. Include anchorage and sealing methods used and condition and weather tightness of splices if any.
 15. Description of soil or water movement, sidewall stability, loss of ground, and means of control.
 16. Bell dimensions and variations from original design.
 17. Date and time of starting and completing excavation.
 18. Inspection report.
 19. Condition of reinforcing steel and splices.
 20. Position of reinforcing steel.
 21. Concrete placing method, including elevation of consolidation and delays.
 22. Elevation of concrete during removal of casings.
 23. Locations of construction joints.

24. Concrete volume.
25. Concrete testing results.
26. Remarks, unusual conditions encountered, and deviations from requirements.

3.6 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION 316329

SECTION 323113 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Chain-link fences.
- B. Related Sections:
 - 1. Section 033053 "Miscellaneous Cast-in-Place Concrete" for cast-in-place concrete post footings.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Fence and gate posts, rails, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware, gate operation, and operational clearances.
- C. Samples for Initial Selection: For components with factory-applied color finishes.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For framing strength according to ASTM F 1043.
- B. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For the following to include in emergency, operation, and maintenance manuals:
 - 1. Gate hardware.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.7 WARRANTY

- A. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:
1. Fabric Height: Match to surrounding fence.
 2. Steel Wire Fabric: Wire with a diameter of 0.120 inch.
 - a. Mesh Size: Match to surrounding fence.
 - b. Aluminum-Coated Fabric: ASTM A 491, Type I, 0.30 oz./sq. ft..
 - c. Zinc-Coated Fabric: ASTM A 392, Type II, Class 1, 1.2 oz./sq. ft. with zinc coating applied before weaving.
 - d. Zn-5-Al-MM Aluminum-Mischmetal-Coated Fabric: ASTM F 1345, Type III, Class 1, 0.60 oz./sq. ft..
 3. Aluminum Wire Fabric: ASTM F 1183, with mill finish, and wire diameter of 0.148 inch.
 - a. Mesh Size: Match to surrounding fence.
 4. Selvage: Twisted top and knuckled bottom.

2.2 FENCE FRAMING

- A. Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 or ASTM F 1083 based on the following:
1. Fence Height: Match to surrounding fence.
 2. Light Industrial Strength: Material Group IC-L, round steel pipe, electric-resistance-welded pipe.
 - a. Line Post: Match to surrounding fence.
 - a. End, Corner and Pull Post: Line Post: Match to surrounding fence.
 3. Horizontal Framework Members: Top rails complying with ASTM F 1043.
 - a. Top Rail: Line Post: Match to surrounding fence.
 4. Brace Rails: Comply with ASTM F 1043.
 5. Metallic Coating for Steel Framing:
 - a. Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating per ASTM A 653/A 653M.
 - b. Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film.
 - c. External, Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film. Internal, Type D, consisting of 81 percent, not less than 0.3-mil- thick, zinc-pigmented coating.

- d. Type C, Zn-5-Al-MM alloy, consisting of not less than 1.8-oz./sq. ft. coating.
- e. Coatings: Any coating above.

2.3 TENSION WIRE

- A. Metallic-Coated Steel Wire: 0.177-inch- diameter, marcelled tension wire complying with ASTM A 817 and ASTM A 824, with the following metallic coating:
 - 1. Type II, zinc coated (galvanized) by hot-dip process, with the following minimum coating weight:
 - a. Class 3: Not less than 0.8 oz./sq. ft. of uncoated wire surface.
- B. Aluminum Wire: 0.192-inch- diameter tension wire, mill finished, complying with ASTM B 211, Alloy 6061-T94 with 50,000-psi minimum tensile strength.

2.4 FITTINGS

- A. General: Comply with ASTM F 626.
- B. Post Caps: Provide for each post.
 - 1. Provide line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
 - 1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
 - 2. Rail Clamps: Line and corner boulevard clamps for connecting rails in the fence line-to-line posts.
- E. Tension and Brace Bands: Pressed steel.
- F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
- G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.
- H. Tie Wires, Clips, and Fasteners: According to ASTM F 626.
 - 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 - a. Hot-Dip Galvanized Steel: 0.106-inch- diameter wire.
- I. Finish:
 - 1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz. /sq. ft. zinc.

2.5 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer, for exterior applications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
 - 1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

- A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.

3.4 CHAIN-LINK FENCE INSTALLATION

- A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Concealed Concrete: Top 2 inches below grade to allow covering with surface material.

- C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 30 degrees or more.
- D. Line Posts: Space line posts uniformly at 10 feet o.c.
- E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- F. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:
 - 1. Extended along bottom of fence fabric. Install top tension wire through post cap loops. Install bottom tension wire within 6 inches of bottom of fabric and tie to each post with not less than same diameter and type of wire.
- G. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- H. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2 inches between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- I. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.
- J. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

END OF SECTION 323113

SECTION 330500 - COMMON WORK RESULTS FOR UTILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 1. Piping joining materials.
 2. Transition fittings.
 3. Dielectric fittings.
 4. Sleeves.
 5. Identification devices.
 6. Grout.
 7. Flowable fill.
 8. Piped utility demolition.
 9. Piping system common requirements.
 10. Equipment installation common requirements.
 11. Painting.
 12. Concrete bases.
 13. Metal supports and anchorages.

1.3 DEFINITIONS

- A. Exposed Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions.
- B. Concealed Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.
- C. ABS: Acrylonitrile-butadiene-styrene plastic.
- D. CPVC: Chlorinated polyvinyl chloride plastic.
- E. PE: Polyethylene plastic.
- F. PVC: Polyvinyl chloride plastic.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:

1. Dielectric fittings.
2. Identification devices.

1.5 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.6 QUALITY ASSURANCE

- A. Steel Piping Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
 1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
 2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- B. Comply with ASME A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.

1.8 COORDINATION

- A. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
- B. Coordinate installation of identifying devices after completing covering and painting if devices are applied to surfaces.

PART 2 - PRODUCTS

2.1 PIPING JOINING MATERIALS

- A. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
 1. ASME B16.21, nonmetallic, flat, asbestos free, 1/8-inch maximum thickness, unless otherwise indicated.
 - a. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
 - b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
 2. AWWA C110, rubber, flat face, 1/8 inch thick, unless otherwise indicated; and full-face or ring type, unless otherwise indicated.

- B. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
- C. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.
- D. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- E. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAgl, silver alloy for refrigerant piping, unless otherwise indicated.
- F. Welding Filler Metals: Comply with AWS D10.12/D10.12M for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
- G. Solvent Cements for Joining Plastic Piping:
 - 1. ABS Piping: ASTM D 2235.
 - 2. CPVC Piping: ASTM F 493.
 - 3. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
 - 4. PVC to ABS Piping Transition: ASTM D 3138.
- H. Fiberglass Pipe Adhesive: As furnished or recommended by pipe manufacturer.

2.2 TRANSITION FITTINGS

- A. Transition Fittings, General: Same size as, and with pressure rating at least equal to and with ends compatible with, piping to be joined.
- B. Transition Couplings NPS 1-1/2 and Smaller:
 - 1. Underground Piping: Manufactured piping coupling or specified piping system fitting.
 - 2. Aboveground Piping: Specified piping system fitting.
- C. AWWA Transition Couplings NPS 2 and Larger:
 - 1. Description: AWWA C219, metal sleeve-type coupling for underground pressure piping.
- D. Plastic-to-Metal Transition Fittings:
 - 1. Description: CPVC and PVC one-piece fitting with manufacturer's Schedule 80 equivalent dimensions; one end with threaded brass insert, and one solvent-cement-joint or threaded end.
- E. Plastic-to-Metal Transition Unions:
 - 1. Description: MSS SP-107, CPVC and PVC four-part union. Include brass or stainless-steel threaded end, solvent-cement-joint plastic end, rubber O-ring, and union nut.
- F. Flexible Transition Couplings for Underground Nonpressure Drainage Piping:
 - 1. Description: ASTM C 1173 with elastomeric sleeve, ends same size as piping to be joined, and corrosion-resistant metal band on each end.

2.3 DIELECTRIC FITTINGS

- A. Dielectric Fittings, General: Assembly of copper alloy and ferrous materials or ferrous material body with separating nonconductive insulating material suitable for system fluid, pressure, and temperature.
- B. Dielectric Unions:
 - 1. Description: Factory fabricated, union, NPS 2 and smaller.
 - a. Pressure Rating: 150 psig minimum at 180 deg F.
 - b. End Connections: Solder-joint copper alloy and threaded ferrous; threaded ferrous.
- C. Dielectric Flanges:
 - 1. Description: Factory-fabricated, bolted, companion-flange assembly, NPS 2-1/2 to NPS 4 and larger.
 - a. Pressure Rating: 150 psig minimum.
 - b. End Connections: Solder-joint copper alloy and threaded ferrous; threaded solder-joint copper alloy and threaded ferrous.
- D. Dielectric-Flange Kits:
 - 1. Description: Nonconducting materials for field assembly of companion flanges, NPS 2-1/2 and larger.
 - a. Pressure Rating: 150 psig minimum.
 - b. Gasket: Neoprene or phenolic.
 - c. Bolt Sleeves: Phenolic or polyethylene.
 - d. Washers: Phenolic with steel backing washers.
- E. Dielectric Couplings:
 - 1. Description: Galvanized-steel coupling with inert and noncorrosive, thermoplastic lining, NPS 3 and smaller.
 - a. Pressure Rating: 300 psig at 225 deg F.
 - b. End Connections: Threaded.
- F. Dielectric Nipples:
 - 1. Description: Electroplated steel nipple with inert and noncorrosive, thermoplastic lining.
 - a. Pressure Rating: 300 psig at 225 deg F.
 - b. End Connections: Threaded or grooved.

2.4 SLEEVES

- A. Mechanical sleeve seals for pipe penetrations are specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."
- B. Galvanized-Steel Sheet Sleeves: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.
- C. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized, plain ends.
- D. Cast-Iron Sleeves: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

- E. Molded PVC Sleeves: Permanent, with nailing flange for attaching to wooden forms.
- F. PVC Pipe Sleeves: ASTM D 1785, Schedule 40.
- G. Molded PE Sleeves: Reusable, PE, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.

2.5 IDENTIFICATION DEVICES

- A. General: Products specified are for applications referenced in other utilities Sections. If more than single type is specified for listed applications, selection is Installer's option.
- B. Equipment Nameplates: Metal permanently fastened to equipment with data engraved or stamped.
 - 1. Data: Manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and essential data.
 - 2. Location: Accessible and visible.

2.6 GROUT

- A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
 - 1. Characteristics: Post hardening, volume adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
 - 2. Design Mix: 5000-psi, 28-day compressive strength.
 - 3. Packaging: Premixed and factory packaged.

2.7 FLOWABLE FILL

- A. Description: Low-strength-concrete, flowable-slurry mix.
 - 1. Cement: ASTM C 150, Type I, portland.
 - 2. Density: 115- to 145-lb/cu. ft..
 - 3. Aggregates: ASTM C 33, natural sand, fine and crushed gravel or stone, coarse.
 - 4. Aggregates: ASTM C 33, natural sand, fine.
 - 5. Admixture: ASTM C 618, fly-ash mineral.
 - 6. Water: Comply with ASTM C 94/C 94M.
 - 7. Strength: 100 to 200 psig at 28 days.

PART 3 - EXECUTION

3.1 PIPED UTILITY DEMOLITION

- A. Refer to Section 024119 "Selective Demolition" for general demolition requirements and procedures.
- B. Disconnect, demolish, and remove piped utility systems, equipment, and components indicated to be removed.

1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 2. Piping to Be Abandoned in Place: Drain piping. Fill abandoned piping with flowable fill, and cap or plug piping with same or compatible piping material.
 3. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 4. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make operational.
 5. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
- C. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

3.2 DIELECTRIC FITTING APPLICATIONS

- A. Dry Piping Systems: Connect piping of dissimilar metals with the following:
1. NPS 2 and Smaller: Dielectric unions.
 2. NPS 2-1/2 to NPS 12: Dielectric flanges or dielectric flange kits.
- B. Wet Piping Systems: Connect piping of dissimilar metals with the following:
1. NPS 2 and Smaller: Dielectric couplings, couplings or dielectric nipples, nipples.
 2. NPS 2-1/2 to NPS 4: Dielectric nipples.
 3. NPS 2-1/2 to NPS 8: Dielectric nipples or dielectric flange kits.
 4. NPS 10 and NPS 12: Dielectric flange kits.

3.3 PIPING INSTALLATION

- A. Install piping according to the following requirements and utilities Sections specifying piping systems.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on the Coordination Drawings.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- D. Install piping to permit valve servicing.
- E. Install piping at indicated slopes.
- F. Install piping free of sags and bends.
- G. Install fittings for changes in direction and branch connections.

- H. Select system components with pressure rating equal to or greater than system operating pressure.
- I. Permanent sleeves are not required for holes formed by removable PE sleeves.
- J. Install sleeves for pipes passing through concrete and masonry walls and concrete floor and roof slabs.
 - 1. Cut sleeves to length for mounting flush with both surfaces.
 - 2. Install sleeves in new walls and slabs as new walls and slabs are constructed.
 - a. PVC Pipe Sleeves: For pipes smaller than NPS 6.
 - b. Steel Sheet Sleeves: For pipes NPS 6 and larger, penetrating gypsum-board partitions.
- K. Verify final equipment locations for roughing-in.
- L. Refer to equipment specifications in other Sections for roughing-in requirements.

3.4 PIPING JOINT CONSTRUCTION

- A. Join pipe and fittings according to the following requirements and utilities Sections specifying piping systems.
- B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- D. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- E. Welded Joints: Construct joints according to AWS D10.12/D10.12M, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article.
- F. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.
- G. Grooved Joints: Assemble joints with grooved-end pipe coupling with coupling housing, gasket, lubricant, and bolts according to coupling and fitting manufacturer's written instructions.
- H. Soldered Joints: Apply ASTM B 813 water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy (0.20 percent maximum lead content) complying with ASTM B 32.
- I. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8.

- J. Pressure-Sealed Joints: Assemble joints for plain-end copper tube and mechanical pressure seal fitting with proprietary crimping tool to according to fitting manufacturer's written instructions.
- K. Plastic Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
 - 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
 - 2. ABS Piping: Join according to ASTM D 2235 and ASTM D 2661 appendixes.
 - 3. CPVC Piping: Join according to ASTM D 2846/D 2846M Appendix.
 - 4. PVC Pressure Piping: Join schedule number ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
 - 5. PVC Nonpressure Piping: Join according to ASTM D 2855.
 - 6. PVC to ABS Nonpressure Transition Fittings: Join according to ASTM D 3138 Appendix.
- L. Plastic Pressure Piping Gasketed Joints: Join according to ASTM D 3139.
- M. Plastic Nonpressure Piping Gasketed Joints: Join according to ASTM D 3212.
- N. Plastic Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
 - 1. Plain-End PE Pipe and Fittings: Use butt fusion.
 - 2. Plain-End PE Pipe and Socket Fittings: Use socket fusion.
- O. Bonded Joints: Prepare pipe ends and fittings, apply adhesive, and join according to pipe manufacturer's written instructions.

3.5 PIPING CONNECTIONS

- A. Make connections according to the following, unless otherwise indicated:
 - 1. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment.
 - 2. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment.
 - 3. Install dielectric fittings at connections of dissimilar metal pipes.

3.6 EQUIPMENT INSTALLATION

- A. Install equipment level and plumb, unless otherwise indicated.
- B. Install equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference with other installations. Extend grease fittings to an accessible location.
- C. Install equipment to allow right of way to piping systems installed at required slope.

3.7 PAINTING

- A. Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

3.8 GROUTING

- A. Mix and install grout for equipment base bearing surfaces, pump and other equipment base plates, and anchors.
- B. Clean surfaces that will come into contact with grout.
- C. Provide forms as required for placement of grout.
- D. Avoid air entrapment during placement of grout.
- E. Place grout, completely filling equipment bases.
- F. Place grout on concrete bases and provide smooth bearing surface for equipment.
- G. Place grout around anchors.
- H. Cure placed grout.

END OF SECTION 330500

ATTACHMENT D

GENERAL CONSTRUCTION AGREEMENT



GENERAL CONSTRUCTION/DEMOLITION AGREEMENT

This Agreement made the _____ day of _____, _____, by and between **University of North Texas System (UNTS)**, 1155 Union Circle #311040, Denton, Texas 76203-5017, hereinafter called "Owner", and _____ hereinafter called "Contractor" (also hereinafter referred to as "Party" individually or collectively as "Parties"). This Agreement is for general construction and/or demolition services work as hereinafter defined related to the following project:

ARTICLE 1 SCOPE OF THE WORK

1.1 The Owner does hereby engage the Contractor and the Contractor does hereby agree to provide all labor, materials, equipment, and services necessary to complete the Work, all of which shall be provided in full accord with and reasonably inferable from the Contract Documents for the _____ project.

1.2 Insert Scope of Work

ARTICLE 2 GENERAL PROVISIONS

2.1 The Owner, through its Design Professional, shall provide all architectural and engineering design services necessary for the completion of the Work. These specifications, drawings and addenda (Exhibit A) have been prepared for the Owner by _____, acting as and in these Contract Documents entitled the Architect/Engineer. The Contractor shall do everything required by this Agreement, the Specifications and the Contract Documents as herein defined. Contractor's responsibilities include but are not limited to supervision, furnishing labor, materials, equipment, employment of and responsibility for subcontractors, payment of taxes where applicable, patent fees, royalties, license fees, permit fees and other governmental charges.

2.3 The Contract Documents consist of this Agreement and all Exhibits attached hereto, the Drawings; Specifications; the Instruction to Bidders; Owner's Request for Proposal and/or Request for Qualifications; University of North Texas System, Uniform General Conditions and Supplementary General Conditions 2010 Amended (UNTS UGC/SGC), hereby incorporated by reference for all purposes, all Addenda and/or negotiated changes in the scope of the work issued prior to execution of this Agreement and all Modifications issued subsequent thereto. The Contract Documents form the entire and integrated Contract between Owner and Contractor and contain all of the promises, agreements, conditions, representations and understandings between Owner and Contractor.

2.4 The Contractor represents that it is an independent contractor and that it is familiar with the type of Services it is undertaking. The Contractor shall furnish construction administration and management services and use the Contractor's diligent efforts to perform the Work in an expeditious manner consistent with the Contract Documents.

2.5 Neither the Contractor nor any of its agents or employees shall act on behalf of or in the name of the Owner except as provided in this Agreement or unless authorized in writing by the Owner's Representative.

2.6 The Parties shall perform their obligations with integrity, ensuring at a minimum that each: (a) avoids conflicts of interest and promptly discloses any to the other Party; and (b) warrants that it has not and shall not pay or receive any contingent fees or gratuities to or from the other Party, including its agents, officers, and employees, Subcontractors or others for whom they may be liable, to secure preferential treatment.

2.7 This Agreement represents the entire and integrated Agreement between the Owner and the Contractor with respect to the Project. This Agreement supersedes all prior negotiations, representations or agreements, either written or oral, with respect to the Project and shall constitute the entire Agreement and understanding between the parties with respect to the subject matter hereof. This Agreement and each of its provisions shall be binding upon the parties and may not be waived, modified, amended or altered except by a subsequent writing signed by Owner and Contractor.

ARTICLE 3 CONTRACTOR'S RESPONSIBILITIES

3.1 The Contractor shall be responsible for the supervision and coordination of the Work, including the construction means, methods, techniques, sequences, and procedures utilized, unless the Contract Documents give other specific instructions. In such case, the Contractor shall not be liable to the Owner for damages resulting from compliance with such instructions unless the Contractor recognized and failed to timely report to the Owner any error, inconsistency, omission, or unsafe practice that it discovered in the specified construction means, methods, techniques, sequences, or procedures.

3.2 The Contractor shall perform Work only within locations allowed by the Contract Documents, Laws, and applicable permits.

3.3 The Owner may perform work at the Worksite directly or by others. If the Owner elects to perform work at the Worksite directly or by others, the Contractor and the Owner shall coordinate the activities of all forces at the Worksite and agree upon fair and reasonable schedules and operational procedures for Worksite activities.

3.3.1 With regard to the work of the Owner and others, the Contractor shall (a) proceed with the Work in a manner that does not hinder, delay, or interfere with the work of the Owner or others or cause the work of the Owner or others to become defective, (b) afford the Owner or others reasonable access for introduction and storage of their materials and equipment and performance of their activities, and (c) coordinate the Contractor's Work with theirs.

3.3.2 Before proceeding with any portion of the Work affected by the construction or operations of the Owner or others, the Contractor shall give the Owner prompt written notification of any defects the Contractor discovers in their work, which will prevent the proper execution of the Work. The Contractor's obligations in this subsection do not create a responsibility for the work of the Owner or others, but are for the purpose of facilitating the Work. If the Contractor does not notify the Owner of defects interfering with the performance of the Work, the Contractor acknowledges that the work of the Owner or others is not defective and is acceptable for the proper execution of the Work. Following receipt of written notice from the Contractor of defects, the Owner shall promptly inform the Contractor what action, if any, the Contractor shall take with regard to the defects.

3.4 Prior to commencing the Work, the Contractor shall examine and compare the drawings and specifications with information furnished by the Owner that are Contract Documents, relevant field measurements made by the Contractor, and any visible conditions at the Worksite affecting the Work.

3.4.1 Should the Contractor discover any errors, omissions, or inconsistencies in the Contract Documents, the Contractor shall promptly report them to the Owner. It is recognized, however, that the Contractor is not acting in the capacity of a licensed design professional, and that the Contractor's examination is to facilitate construction and does not create an affirmative responsibility to detect errors, omissions, or inconsistencies or to ascertain compliance with applicable laws, building codes, or regulations. Following receipt of written notice from the Contractor of defects, the Owner shall promptly inform the Contractor what action, if any, the Contractor shall take with regard to the defects.

3.4.2 The Contractor shall have no liability for errors, omissions, or inconsistencies discovered under this section unless the Contractor knowingly fails to report a recognized problem to the Owner. This does not relieve the Contractor of responsibility for its own errors, inconsistencies, and omissions.

3.5 The Contractor shall provide competent supervision for the performance of the Work. Before commencing the Work, the Contractor shall notify the Owner in writing of the name and qualifications of its proposed superintendent(s) and project manager so the Owner may review the individual's qualifications. If, for reasonable cause, the Owner refuses to approve the individual, or withdraws its approval after once giving it, the Contractor shall name a different superintendent or project manager for the Owner's review. Any disapproved superintendent shall not perform in that capacity thereafter at the Worksite. The Contractor's Representative shall possess full authority to receive instructions from the Owner and to act on those instructions. If the Contractor changes its representative or their authority, the Contractor shall immediately notify the Owner in writing.

3.5.1 The Contractor shall be responsible to the Owner for acts or omissions of parties or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

3.5.2 The Contractor shall permit only qualified persons to perform the Work. The Contractor shall enforce safety procedures, strict discipline, and good order among persons performing the Work. If the Owner determines that a particular person does not follow safety procedures, or is unfit or unskilled for the assigned Work, the Contractor shall immediately reassign the person upon receipt of the Owner's written notice to do so.

3.6 The Contractor shall submit to the Owner and the Design Professional all shop drawings, samples, product data, and similar submittals required by the Contract Documents for review and approval. Submittals shall be submitted in accordance with the UNTS UGC/SGC document. The Contractor shall be responsible for the accuracy and conformity of its submittals to the Contract Documents.

3.7 The Contractor acknowledges that it has visited, or has had the opportunity to visit, the Worksite to visually inspect the general and local conditions which could affect the Work.

3.8 The Work shall be executed in accordance with the Contract Documents in a competent manner. All materials used in the Work shall be furnished in sufficient quantities to facilitate the proper and expeditious execution of the Work and shall be new except such materials as may be expressly provided in the Contract Documents to be otherwise.

3.9 If the Work includes installation of materials or equipment furnished by the Owner or others, it shall be the responsibility of the Contractor to examine the items so provided and thereupon handle, store, and install the items, unless otherwise provided in the Contract Documents, with such skill as to provide a satisfactory and proper installation. Loss or damage due to acts or omissions of the Contractor shall be the responsibility of the Contractor and may be deducted from any amounts due or to become due the Contractor. Any defects discovered in such materials or equipment shall be reported at once to the Owner. Following receipt of written notice from the Contractor of defects, the Owner shall promptly inform the Contractor what action, if any, the Contractor shall take with regard to the defects.

3.10 The Contractor shall have overall responsibility for safety precautions and programs in the performance of the Work. However, such obligation does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work or for compliance with Laws.

3.10.1 The Contractor shall seek to avoid injury, loss, or damage to persons or property by taking reasonable steps to protect:

- a. its employees and other persons at the Worksite;
- b. materials and equipment stored at onsite or offsite locations for use in the Work; and
- c. property located at the Worksite and adjacent to Work areas, whether or not the property is part of the Worksite.

3.10.2 The Contractor's Worksite safety representative shall have a duty to prevent accidents. The safety representative shall perform their duty in accordance with the UNTS UGC/SGC document.

3.10.3 If the Owner deems any part of the Work or Worksite unsafe, the Owner, without assuming responsibility for the Contractor's safety program, may require the Contractor to stop performance of the Work or take corrective measures satisfactory to the Owner, or both. If the Contractor does not adopt corrective measures, the Owner may perform them and deduct their cost from the Contract Price. The Contractor agrees to make no claim for damages, for an increase in the Contract Price or for a change in the Contract Time based on the Contractor's compliance with the Owner's reasonable request.

3.11 If the conditions encountered at the Worksite are (a) subsurface or other physical conditions materially different from those indicated in the Contract Documents, or (b) unusual and unknown physical conditions materially different from conditions ordinarily encountered and generally recognized as inherent in Work provided for in the Contract Documents, the Contractor shall stop affected Work after the condition is first observed and give prompt written notice of the condition to the Owner and the Design Professional.

3.12 The Contractor shall regularly remove debris and waste materials at the Worksite resulting from the Work. Prior to discontinuing Work in an area, the Contractor shall clean the area and remove all rubbish and its construction equipment, tools, machinery, waste, and surplus materials. The Contractor shall minimize and confine dust and debris resulting from construction activities. At the completion of the Work, the Contractor shall remove from the Worksite all construction equipment, tools, surplus materials, waste materials, and debris.

3.12.1 If the Contractor fails to commence compliance with cleanup duties within two (2) Business Days after written notification from the Owner of non-compliance, the Owner may implement appropriate cleanup measures without further notice and shall deduct the reasonable costs from any amounts due or to become due the Contractor in the next payment period.

3.13 The Contractor shall facilitate the access of the Owner, Design Professional, and others to Work in progress.

3.14 The Contractor shall comply with all Laws at its own costs. The Contractor shall be liable to the Owner for all loss, cost, or expense attributable to any acts or omissions by the Contractor, its employees, subcontractors, and agents for failure to comply with Laws, including fines, penalties, or corrective measures.

3.15 The Contractor warrants that all materials and equipment shall be new unless otherwise specified, of good quality, in conformance with the Contract Documents, and free from defective workmanship and materials. The Contractor shall furnish satisfactory evidence of the quality and type of materials and equipment furnished. The Contractor further warrants that the Work shall be free from material defects not intrinsic in the design or materials required in the Contract Documents. The Contractor's warranty shall commence on the Date of Substantial Completion of the Work.

3.15.1 The Contractor shall obtain from its Subcontractors and Material Suppliers any special or extended warranties required by the Contract Documents. The Contractor's liability for such warranties shall be limited to a one-year period. After that period, the Contractor shall provide reasonable assistance to the Owner in enforcing the obligations of Subcontractors or Material Suppliers for such extended warranties.

3.16 If, prior to Substantial Completion and within one year after the date of Substantial Completion of the Work, any Defective Work is found, the Owner shall promptly notify the Contractor in writing. Unless the Owner provides written acceptance of the condition, the Contractor shall promptly correct the Defective Work at its own cost and time and bear the expense of additional services required for correction of any Defective Work for which it is responsible.

3.16.1 With respect to any portion of Work first performed after Substantial Completion, the one-year period shall be extended by the period between Substantial Completion and the actual performance of the later Work. Correction periods shall not be extended by corrective work performed by the Contractor.

3.16.2 If the Contractor fails to correct Defective Work within a reasonable time after receipt of written notice from the Owner prior to final payment, the Owner may correct it in accordance with the Owner's right to carry out the Work. In such case, an appropriate Change Order shall be issued deducting the cost of correcting the Defective Work from payments then or thereafter due the Contractor. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

3.16.3 If the Contractor's correction or removal of Defective Work causes damage to or destroys other completed or partially completed Work or existing buildings, the Contractor shall be responsible for the cost of correcting the destroyed or damaged property.

3.17 The Contractor has provided a Historically Underutilized Businesses Subcontracting Approach ("HUB Subcontracting Approach") in Contractor's Response to the Owner's Request for Proposals ("RFP Response"). Contractor agrees to comply with the established HUB Subcontracting Approach and shall make no changes to the HUB Subcontracting Approach without the prior written approval of Owner.

ARTICLE 4 HAZARDOUS WASTE

4.1 The Owner represents that it has disclosed to the Contractor any Hazardous Waste known by the Owner to exist on or near the Worksite. If unanticipated Hazardous Waste is discovered at the Worksite, the Contractor will be entitled to immediately stop work in the affected area. The Contractor will promptly report the condition to the Owner and, if required, the governmental agency with jurisdiction. The Contractor shall not be obligated to commence or continue Services until any Hazardous Waste discovered at the Worksite has been removed, rendered harmless, or determined to be harmless by the Owner.

4.2 The Contractor shall not be required to perform any Services relating to or in the area of unanticipated Hazardous Waste without written mutual agreement.

4.3 The Owner shall be responsible for retaining an independent testing laboratory to determine the nature of the unanticipated material encountered and whether it is a Hazardous Waste requiring corrective measures or remedial actions. Such measures and actions shall be the sole responsibility of the Owner, and shall be performed in a manner minimizing any adverse effect upon the Services of the Contractor.

4.4 Material Safety Data (MSD) sheets as required by law and pertaining to materials or substances used or consumed in the performance of the Services, whether obtained by the Contractor,

Subcontractors, Owner, or Others, shall be maintained at the Worksite by the Contractor and made available to the Owner and Subcontractors.

4.5 During the Contractor's performance of the Services, the Contractor shall be responsible for the proper handling of all materials brought to the Worksite by the Contractor.

ARTICLE 5 SUBCONTRACTS

5.1 With the prior written approval of the Owner, the Contractor may subcontract such services as the Contractor deems necessary to meet its obligations under this Agreement. Subcontractors shall be qualified and experienced in the type of work they will be performing. Owner shall have the right to reject any subcontractor but such right shall not relieve the responsibility of the Contractor for his work and the work of the subcontractors. Contractor expressly assumes such responsibility and liability.

5.2 The Contractor shall be responsible for the management of the Subcontractors in the performance of their work.

5.3 If this Agreement is terminated, each subcontract agreement shall be assigned by the Contractor to the Owner, subject to the prior rights of any surety, provided that: (a) this Agreement is terminated by the Owner pursuant to Sections 11.2 or 11.3; and (b) the Owner accepts such assignment, after termination by notifying the Subcontractor and the Contractor in writing, and assumes all rights and obligations of the Contractor pursuant to each subcontract agreement.

5.4 The Contractor agrees to bind every Subcontractor and material supplier (and require every Subcontractor to so bind its sub-subcontractors and material suppliers) to all provisions of this Agreement as they apply to the Subcontractors' or material Suppliers' portions of the Services.

ARTICLE 6 OWNER'S RESPONSIBILITIES

6.1 The Owner shall provide the Contractor with reasonable access to the Worksite to assist the Contractor in its performance of all tasks reasonably necessary for the completion of services.

6.2 The Owner's representative shall: (a) be fully acquainted with the Project, Services, and Worksite; (b) agree to furnish the information and services required of the Owner in a timely manner; and (c) have the authority to bind the Owner (to the extent of their authority) in all matters requiring the Owner's approval or authorization. If the Owner changes its Representative, the Owner shall promptly notify the Contractor in writing.

6.3 Owner hereby expressly reserves the right from time to time to designate by notice to Contractor one or more representatives to act partially or wholly for Owner in connection with the performance of Owner's obligations hereunder. Contractor shall act only upon instructions from such representatives unless otherwise specifically notified to the contrary.

6.4 The Owner will furnish the site plan to document existing conditions to the extent requested by the Contractor and as reasonably necessary for the completion of Contractor's Services.

6.5 The Owner shall examine, or cause its representative(s) to examine documents submitted by the Contractor and render decisions pertaining thereto promptly or within a reasonable time to avoid unreasonable delay in the progress of the Contractor's Services. Review and approval of a document by the Owner shall not waive the contractual responsibility or liability of the Contractor.

6.6 The Owner shall furnish information required as expeditiously as necessary for the orderly progress of Contractor's Services.

6.7 Except for those permits and fees related to the Work which are the responsibility of the Contractor, the Owner shall secure and pay for all other permits, approvals, easements, assessments, and fees required for the development, construction, use or occupancy of permanent structures or for permanent changes in existing facilities, including the building permit.

ARTICLE 7 COMMENCEMENT AND COMPLETION

7.1 The Owner shall provide a Notice to Proceed in which a date for commencement of the work to be performed shall be stated. The Contractor shall achieve substantial completion of the work no later than _____ calendar days from the date of the Notice to Proceed. Final completion, including correction of deficiencies, shall be achieved no later than _____ calendar days from the date of the substantial completion, as such completion date may be extended only by approved Change Orders. Contractor understands that the completion date shall not be extended regardless of weather, strikes, or for any other reason unless a change order so indicates. The time set forth for completion of the work is an essential element of this Agreement.

7.1.1 Time is of the essence for this Agreement and the Contract Documents.

7.1.2 Unless instructed by the Owner in writing, the Contractor shall not knowingly commence the Work before the effective date of insurance to be provided by the Contractor.

7.2 The Contractor shall submit to the Owner and Design Professional, a Schedule of the Work showing the dates on which the Contractor plans to commence and complete various parts of the Work, including dates on which information and approvals are required from the Owner. The Contractor shall comply with the approved Schedule of the Work, unless directed by the Owner to do. The Contractor shall update the Schedule of the Work on a monthly basis or at appropriate intervals as required by the conditions of the Work and the Project.

7.2.1 The Owner may determine the sequence in which the Work shall be performed, provided it does not unreasonably interfere with the Schedule of the Work. The Owner may require the Contractor to make reasonable changes in the sequence at any time during the performance of the Work in order to facilitate the performance of work by the Owner or others. To the extent such changes increase the Contractor's costs or time, the Contract Price and Contract Time shall be equitably adjusted.

7.3 If the Contractor is delayed at any time in the commencement or progress of the Work by any cause beyond the control of the Contractor, the Contractor shall be entitled to an equitable extension of the Contract Time. Examples of causes beyond the control of the Contractor include, but are not limited to, the following:

- a. acts or omissions of the Owner, the Design Professional, or Others;
- b. changes in the Work or the sequencing of the Work ordered by the Owner, or arising from decisions of the Owner that impact the time of performance of the Work;
- c. encountering Hazardous Materials, or concealed or unknown conditions;
- d. delay authorized by the Owner pending dispute resolution or suspension by the Owner under Articles 10 and 11;
- e. labor disputes not involving the Contractor;
- f. fire; Terrorism; epidemics; adverse governmental actions; unavoidable accidents or circumstances; adverse weather conditions not reasonably anticipated.

The Contractor shall submit any requests for equitable extensions of Contract Time in accordance with the UNTS UGC/SGC document.

7.4 If delays to the Work are encountered for any reason, the Contractor shall provide prompt written notice to the Owner of the cause of such delays after the Contractor first recognizes the delay. The Owner and the Contractor agree to take reasonable steps to mitigate the effect of such delays.

7.5 If the Contractor requests an equitable extension of the Contract Time or an equitable adjustment in the Contract Price as a result of a delay described in the section above, the Contractor shall give the Owner written notice of the claim in accordance with UNTS UGC/SGC document. If the Contractor causes delay in the completion of the Work, the Owner shall be entitled to recover its additional costs.

7.6 Owner will collect Liquidated Damages as set forth in the UNTS UGC/SGC document.

ARTICLE 8 COMPENSATION AND PAYMENT

8.1 The Owner shall pay the Contractor for performance of this Agreement, subject to additions and deductions provided herein, the sum of _____ (_____), in Periodic Progress Payments as hereinafter provided.

The contract sum is the total of the following:

Materials Cost	\$ _____
Other Cost	\$ _____
Payment and Performance Bonds	\$ _____
 TOTAL	 \$ _____

8.2 Based on Applications for Payment submitted by the Contractor, the Owner shall make a progress payment to the Contractor of the cost of labor, materials and equipment incurred by Contractor in relation to the Work during the previous month, except that the percentage of the total amount paid shall not exceed the percentage amount of the Work that has been completed as determined in the reasonable judgment of the Owner. On or about the first day of each month, the Contractor will provide the Owner with an invoice for payment, which shall include a breakdown of materials and labor, supporting subcontractor invoices and a certified statement as to the Work completed. Each invoice may only reference one purchase order. Multiple purchase orders will require separate invoices. Upon verification of costs incurred and amount of work completed, the Owner will make payment to the Contractor within thirty (30) working days or will notify Contractor of any objection to the invoiced amount.

8.3 Owner shall have the right to withhold from payments due Contractor such sums as are necessary to protect Owner against any loss or damage which may result from negligence by Contractor or failure of Contractor to perform Contractor's obligations under this Agreement.

8.4 The final request for payment shall not be made until Contractor delivers to Owner a complete release of all liens arising out of this Agreement and an affidavit that so far as Contractor has knowledge or information, the release includes and covers all materials and services over which Contractor has control for which a lien could be filed, but Contractor may, if any agent or consultant refuses to furnish a release in full, furnish a bond satisfactory to Owner to indemnify Owner against any lien. If any lien remains unsatisfied after all payments are made, Contractor shall refund to Owner all moneys Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees, and Owner shall have all remedies at law and in equity.

8.5 In addition to the procedures contained in UNTS UGC/SGC, Owner shall have no obligation to make final payment until a final accounting of the Work has been submitted by Contractor and has been verified by Owner or Owner's representatives. The aggregate total of payments to Contractor shall not

exceed the total of the actual Work as verified by Owner or Owner's representative from Contractor's final accounting, as certified for payment in accordance with the Agreement. If payments made to Contractor exceed that which is due and owing pursuant to this Article 8, then Contractor shall promptly refund such excess to Owner.

8.6 Any provision hereof to the contrary notwithstanding, Owner shall not be obligated to make any payment (whether a progress payment or final payment) to Contractor hereunder if any one or more of the following conditions precedent exist:

- a. Contractor is in breach or default under this Agreement;
- b. Any part of such payment is attributable to services which are not performed in accordance with this Agreement; provided, however, such payment shall be made as to the part thereof attributable to services which were performed in accordance with this Agreement;
- c. Contractor has failed to make payments promptly to consultants or other third parties used in connection with the services for which Owner has made payment to Contractor; or
- d. If Owner, in its good faith judgment, determines that the portion of the compensation then remaining unpaid will not be sufficient to complete the services in accordance with this Agreement, no additional payments will be due Contractor hereunder unless and until Contractor, at Contractor's sole cost, performs a sufficient portion of the remaining services so that such portion of the compensation then remaining unpaid is determined by Owner to be sufficient to so complete the then remaining services.
- e. Nothing contained herein shall require the Owner to pay the Contractor an aggregate amount exceeding the Agreement or to make payment if in the Owner's belief the cost to complete the Work would exceed the Agreement less previous payments to Contractor.

8.7 No partial payment made hereunder shall be, or shall be construed to be, final acceptance or approval of that part of the services to which such partial payment relates, or a release of Contractor of any Contractor's obligations hereunder or liabilities with respect to such services.

8.8 Contractor shall promptly pay all bills validly due and owing for labor and material performed and furnished by others in connection with the performance of the construction of the Work.

8.9 Owner shall have the right to verify and audit the details set forth in Contractor's billings, certificates, accountings, cost data, and statements, either before or after payment therefore, by (1) inspecting the books and records of Contractor during normal business hours; (2) examining any reports with respect to this Project; (3) interviewing Contractor's business employees; (4) visiting the Project site; and (5) other reasonable action.

8.10 The acceptance by Contractor or Contractor's successors of final payment under this Agreement, shall constitute a full and complete release of Owner from any and all claims, demands, and causes of action whatsoever which Contractor or Contractor's successors have or may have against Owner under the provisions of this Agreement except those previously made in writing and identified by Contractor as unsettled at the time of the final request for payment.

8.11 UNTS shall be billed in accordance with Chapter 2251 of the Texas Government Code and interest, if any, on past due payments shall accrue and be paid in accordance with Chapter 2251 of the Texas Government Code. Payee must be in good standing, not indebted to the State of Texas, and current on all taxes owed to the State of Texas for payment to occur.

8.12 All invoices submitted for payment must include a HUB Progress Assessment Report (PAR). The PAR should document compliance with the HUB Plan in Section 3.9.

**ARTICLE 9
INDEMNITY, INSURANCE, AND BONDS**

9.1 INDEMNITY

Contractor covenants and agrees to FULLY INDEMNIFY and HOLD HARMLESS, Owner and the CAMPUS NAME (CAMPUS INITIALS) and the UNTS Board of Regents, elected and appointed officials, employees, officers, directors, volunteers, and representatives of Owner and the CAMPUS INITIALS, individually or collectively, from and against any and all costs, claims, liens, damages, losses, expenses, fees, fines, penalties, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including but not limited to, personal or bodily injury, death or property damage, made upon Owner directly or indirectly arising out of, resulting from or related to Contractor's activities under this Contract, including any acts or omissions of the Contractor, or any agent, officer, director, representative, employee, consultant or the Subcontractor of Contractor, and their respective officers, agents, employees, directors and representatives while in the exercise of performance of the rights or duties under this Contract. The indemnity provided for in this paragraph does not apply to any liability resulting from the negligence of the Owner, officers or employees, separate contractors or assigned contractors, in instances where such negligence causes personal injury, death or property damage. IN THE EVENT CONTRACTOR AND OWNER ARE FOUND JOINTLY LIABLE BY A COURT OF COMPETENT JURISDICTION, LIABILITY WILL BE APPORTIONED COMPARATIVELY IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, WITHOUT WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE STATE UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW.

9.1.1 The provisions of this indemnification are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

9.1.2 Contractor shall promptly advise Owner in writing of any claim or demand against Owner or against Contractor known to Contractor related to or arising out of Contractor's activities under this Agreement.

9.2 INSURANCE

9.2.1 The Contractor shall not commence work under the Agreement until it has obtained all insurance required in accordance with this Agreement and the UNTS UGC/SGC and until such insurance has been reviewed and approved in writing by the Owner. Approval of the insurance by the Owner shall not relieve nor decrease the liability of the Contractor hereunder. Prior to commencing any of the construction the Contractor shall provide evidence as required by this Agreement that demonstrates coverage for Employer's Liability, Workers' Compensation, Commercial General Liability, Owner's and Contractor's Protective Liability and Builder's Risk as set forth in the UNTS UGC/SGC are in full force and effect. Builder's Risk shall be increased as necessary for each separate bid package, phase, or Stage of construction prior to the commencement of construction for that package, phase, or Stage.

9.2.2 The Contractor shall not cause or allow any of its insurance to be canceled nor permit any insurance to lapse during the term of the Agreement or as required in the Agreement.

9.2.3 Contractor shall include Owner, CAMPUS INITIALS and UNTS Board of Regents as loss payees and Additional Insured's on General Liability and Business Auto Liability. The Commercial General Liability, Business Auto Liability, Worker's Compensation, and Professional Liability policies shall include a waiver of subrogation in favor of the Owner.

9.2.4 Insurance policies required under this article shall contain a provision that the insurance company must give the Owner written notice transmitted in writing: (a) thirty (30) calendar days before coverage is non-renewed by the insurance company and (b) within ten (10) business days after cancellation of coverage by the insurance company. Prior to start of Services and upon renewal or replacement of the insurance policies, the Contractor shall furnish the Owner with certificates of insurance until one year after

acceptance of the Services. If any insurance policy required under this article is not to be immediately replaced without lapse in coverage when it expires, exhausts its limits, or is to be cancelled, the Contractor will give the Owner prompt written notice upon actual or constructive knowledge of such condition.

9.2.5 The Owner reserves the right to review the insurance requirements set forth in this Article during the effective period of the Agreement and to make reasonable adjustments to the insurance coverage and their limits when deemed necessary and prudent by the Owner based upon changes in statutory law, court decisions, or the claims history of the industry as well as the Contractor.

9.2.6 The Owner shall be entitled, upon request, and without expense, to receive copies of the policies, all endorsements thereto and documentation to support costs and may make any reasonable requests for deletion, or revision or modification of particular policy terms, conditions, limitations, exclusions and costs, except where policy provisions are established by law or regulation binding upon either of the Parties or the underwriter of any of such policies. Any price credits determined in the insurance review will be refundable to the Owner. Actual losses not covered by insurance as required by this Article shall be paid by the Contractor.

9.3 BONDS

9.3.1 Prior to commencing work, the Contractor shall provide performance and payment bonds in accordance with the requirements set forth in the UNTS UGC/SGC. The penal sum of the payment and performance bonds shall be for 100% of the Contract Sum. Any increase in the Contract Price that exceeds ten percent (10%) in the aggregate shall require a rider to the Bonds increasing penal sums accordingly. Up to such ten percent (10%) amount, the penal sum of the bond shall remain equal to one hundred percent (100%) of the Contract Price. The Contractor shall endeavor to keep its surety advised of changes potentially impacting the Contract Time and Contract Price. UNTS will pay Contractor the bonding costs as a pass through amount up to _____ (\$ _____) with proper documentation provided along with an Application for Payment.

ARTICLE 10 DISPUTE RESOLUTION

10.1 If the Parties cannot reach resolution on a matter relating to or arising out of this Agreement, the Parties shall endeavor to reach resolution through good faith direct discussions between the Parties' representatives, who shall possess the necessary authority to resolve such matter and who will document discussions. If the Parties' representatives are not able to resolve such matter, the Parties' representatives shall immediately inform Associate Vice Chancellor for System Facilities in writing. The Associate Vice Chancellor for System Facilities shall meet with the Contractor to endeavor to reach resolution. If the matter is not resolved, the Contractor shall use the dispute resolution process provided for in Tex. Gov't Code, Chapter 2260, to attempt to resolve any claim for breach of Contract made by Contractor.

10.2 Owner may establish a dispute resolution process to be utilized in advance of that outlined in Tex. Gov't Code, Chapter 2260.

10.3 Nothing herein shall hinder, prevent, or be construed as a waiver of Owner's right to seek redress on any disputed matter in a court of competent jurisdiction.

10.4 Nothing herein shall waive or be construed as a waiver of the State's sovereign immunity.

10.5 Unless otherwise agreed in writing, the Contractor shall continue the Services during any dispute mitigation or resolution proceedings. If the Contractor continues to perform, the Owner shall continue to make payments in accordance with the Agreement.

ARTICLE 11 SUSPENSION AND TERMINATION

11.1 The Owner reserves and has the right and privilege of canceling, suspending or abandoning execution of all or any Work in connection with this Agreement at any time upon written notice to the Contractor. The Contractor may terminate this Agreement upon seven (7) days written notice to the Owner only if the Owner substantially fails to perform obligations under Article 7 of this Agreement or fails to timely pay the Contractor as required under Article 9, and after adequate written notice is delivered to Owner and Owner has failed to take action within thirty (30) days in order to begin to correct the problem.

11.1.1 In the event of termination, cancellation, suspension, or abandonment that is not the fault of the Contractor, the Owner shall pay to the Contractor as full payment for all services performed and all expenses incurred under this Agreement, the appropriate portion of sum due under Paragraph 9.1 as shall have become payable because of the progress in the Work as the services actually rendered hereunder by the Contractor bear to the total services necessary, plus any sum due the Contractor for extra services described under Paragraph 3.10 herein which were previously approved by the Owner.

11.1.2 In ascertaining the services actually rendered hereunder up to the date of termination, cancellation, suspension, or abandonment of this Agreement, consideration shall be given to both completed work and work in progress and to other related documents, whether delivered to the Owner or in possession of the Contractor.

11.1.3 For any said sum paid under this Article, the Contractor agrees to accept same in full settlement of all claims for services rendered under this Agreement.

11.2 If, upon payment of the amount required to be paid under this Article following the termination, cancellation, suspension, or abandonment of this Agreement, the Owner thereafter should determine to complete the original project or, substantially, the same project without major change in scope; the Owner, for such purposes, shall have the right of utilization of any and all original documentation prepared under this Agreement by the Contractor who shall make them available to the Owner upon request, with compensation to the Contractor limited to actual reproduction costs, but the Owner is not required to renew this Agreement.

11.3 Upon request at the termination, cancellation, suspension, or abandonment of this Agreement, the Contractor agrees to furnish to the Owner copies of the latest documents prepared by Contractor for the Project.

11.4 A termination, cancellation, suspension, or abandonment under this Article 11 shall not relieve Contractor or any of its employees of liability for violations of this Agreement, or any willful, negligent or accidental act or omission of Contractor. In the event of a termination, cancellation, suspension, or abandonment under this Article 11, Contractor hereby consents to employment by Owner of a substitute Contractor to complete the services under this Agreement, with the substitute Contractor having all rights and privileges of the original Contractor of the Project.

ARTICLE 12 MISCELLANEOUS

12.1 **ASSIGNMENT** – The terms and conditions of this Agreement shall be binding upon both Parties, their partners, successors, assigns, and legal representatives. This Agreement is a personal service contract for the services of general construction and/or demolition, and Contractor's interest in this Agreement, duties hereunder and/or fees due hereunder may not be assigned or delegated to a third party. The benefits and burdens of this Agreement are, however, assignable by Owner to a component or affiliate of the Owner or a branch or agency of the State of Texas.

12.2 DEATH OR INCAPACITY – If the Contractor transacts business as an individual, his death or incapacity shall automatically terminate this Agreement as of the date of such event, and neither he nor his estate shall have any further right to perform hereunder; and Owner shall pay him or his estate the compensation payable under the Agreement for any services rendered prior to such termination. If the Contractor is a firm comprised of more than one principal and any one of the members thereof dies or becomes incapacitated and the other members continue to render the services covered herein, the Owner will make payments to those continuing as though there had been no such death or incapacity, and the Owner will not be obliged to take any account of the person who died or became incapacitated or to make any payment to such person or his estate. This provision shall apply in the event of progressive or simultaneous occasions of death or incapacity among any group of persons named as the Contractor; and if death or incapacity befalls the last one of such group before this contract is fully performed, then the rights shall be as if there had been only one Contractor. In any event, notice of the death or incapacity of any principal shall be given to the Owner by any surviving principal within a reasonable time.

12.3 CERTIFICATIONS

12.3.1 Family Code Child Support Certification – By signing this Agreement, the undersigned certifies as follows: “Under Section 231.006, *Texas Family Code*, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.”

12.3.2 Eligibility Certification – “Under Section 2155.004, Government Code, the vendor certifies that the individual or business entity named in this bid or contract is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate.”

12.3.3 Franchise Tax Certification – If a corporate or limited liability company, Contractor certifies that it is not currently delinquent in the payment of any Franchise Taxes due under Chapter 171 of the Texas Tax Code, or that the corporation or limited liability company is exempt from the payment of such taxes, or that the corporation or limited liability company is an out-of-state corporation or limited liability company that is not subject to the Texas Franchise Tax, whichever is applicable.

12.4 GOVERNING LAW AND VENUE – This Agreement and all of the rights and obligations of the parties hereto and all of the terms and conditions hereof shall be construed, interpreted and applied in accordance with and governed by and enforced under the laws of the State of Texas and venue shall be in Denton County, Texas for any legal proceeding pertaining to this Agreement.

12.5 WAIVERS – No delay or omission by either of the parties hereto in exercising any right or power accruing upon the non-compliance or failure of performance by the other party hereto of any of the provisions of this Agreement shall impair any such right or power or be construed to be a waiver thereof. A waiver by either of the parties hereto of any of the covenants, conditions or agreements hereof to be performed by the other party hereto shall not be construed to be a waiver of any subsequent breach thereof or of any other covenant, condition or agreement herein contained.

12.6 SEVERABILITY – In case any provision hereof shall, for any reason, be held invalid or unenforceable in any respect, such invalidity or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid or unenforceable provision had not been included herein.

12.7 TITLES – The titles given to the articles and sections are for ease of reference only and shall not be relied upon or cited for any other purpose.

12.8 RECORDS – Records of Contractor costs, reimbursable expenses pertaining to the Project and payments shall be kept on a generally recognized accounting basis and shall be made available to Owner or its authorized representative during business hours for audit or other purposes as determined by

Owner. Such records shall be maintained by the Contractor and shall be available to the Owner or his authorized representative for a period of at least three (3) years after the provision of Contractor's Services.

12.9 All notices, consents, approvals, demands, requests or other communications provided for or permitted to be given under any of the provisions of this Agreement shall be in writing and shall be deemed to have been duly given or served when delivered by hand delivery or when deposited in the U.S. mail by registered or certified mail, return receipt requested, postage prepaid, and addressed as follows:

If to Owner:

Associate Vice Chancellor for System Facilities
University of North Texas System
1155 Union Circle #311040
Denton, Texas 76203-5017

If to Contractor:

or to such other person or address as may be given in writing by either party to the other in accordance with the aforesaid.

12.10 ENFORCEMENT – It is acknowledged and agreed that Contractor's services to Owner are unique, which gives Contractor a peculiar value to Owner and for the loss of which Owner cannot be reasonably or adequately compensated in damages; accordingly, Contractor acknowledges and agrees that a breach by Contractor of the provisions hereof will cause Owner irreparable injury and damage. Contractor, therefore, expressly agrees that Owner shall be entitled to injunctive and/or other equitable relief in any court of competent jurisdiction to prevent or otherwise restrain a breach of this Agreement, but only if Owner is not in breach of this Agreement.

12.11 INDEPENDENT CONTRACTOR – Contractor recognizes that it is engaged as an independent contractor and acknowledges that Owner will have no responsibility to provide transportation, insurance or other fringe benefits normally associated with employee status. Contractor, in accordance with its status as an independent contractor, covenants and agrees that it shall conduct itself consistent with such status, that it will neither hold itself out as nor claim to be an officer, partner, employee or agent of Owner by reason hereof, and that it will not by reason hereof make any claim, demand or application to or for any right or privilege applicable to an officer, partner, employee or agent of Owner, including, but not limited to, unemployment insurance benefits, social security coverage or retirement benefits. Contractor hereby agrees to make its own arrangements for any of such benefits as it may desire and agrees that it is responsible for all income taxes required by applicable law.

12.12 PAYMENT OF DEBT OR DELINQUENCY TO THE STATE – Pursuant to Sections 2107.008 and 2252.903, Texas Government Code, Contractor agrees that any payments owing to Contractor under this Agreement may be applied directly toward any debt or delinquency that Contractor owes the State of Texas or any agency of the State of Texas regardless of when it arises, until such debt or delinquency is paid in full.

12.13 FINANCIAL RECORDS – Financial records shall be kept on the basis of generally accepted accounting principles and in accordance with cost accounting standards promulgated by the Federal Office of Management and Budget Cost Accounting Standards Board and shall be available for audit by the Owner or the Owner's authorized representative on reasonable notice.

12.14 LOSS OF FUNDING – Performance by Owner under the Agreement may be dependent upon the appropriation and allotment of funds by the Texas State Legislature (the “Legislature”) and/or allocation of funds by the Board of Regents of The University of North Texas System (the “Board”). If the Legislature fails to appropriate or allot the necessary funds, or the Board fails to allocate the necessary funds, then Owner shall issue written notice to Contractor and Owner may terminate the Agreement in accordance with Article 11. Contractor acknowledges that appropriation, allotment, and allocation of funds are beyond the control of Owner.

12.15 PROPRIETARY INTERESTS – All information owned, possessed or used by Owner which is communicated to, learned, developed or otherwise acquired by Contractor in the performance of services for Owner, which is not generally known to the public, shall be confidential and Contractor shall not, beginning on the date of first association or communication between Owner and Contractor and continuing through the term of this Agreement and any time thereafter, disclose, communicate or divulge, or permit disclosure, communication or divulgence, to another or use for Contractor’s own benefit or the benefit of another, any such confidential information, unless required by law. Except when defined as part of the Work, Contractor shall not make any press releases, public statements, or advertisement referring to the Project or the engagement of Contractor as an independent contractor of Owner in connection with the Project, or release any information relative to the Project for publications, advertisement or any other purpose without the prior written approval of Owner. Contractor shall obtain assurances similar to those contained in this Subparagraph from persons, contractors, and subcontractors retained by Contractor. Contractor acknowledges and agrees that a breach by Contractor of the provisions hereof will cause Owner irreparable injury and damage. Contractor, therefore, expressly agrees that Owner shall be entitled to injunctive and/or other equitable relief in any court of competent jurisdiction to prevent or otherwise restrain a breach of this Agreement.

ARTICLE 13 EXHIBITS

13.1 The following exhibits are incorporated by reference and made a part of this Agreement for all purposes and the Parties agree to abide by the terms and conditions of the attachments as if set forth herein:

Exhibit A	Specifications, Drawings and Addenda
Exhibit B	Historically Underutilized Business Subcontracting Plan

IN WITNESS WHEREOF the parties hereto have executed this Agreement in the day and year first above written.

OWNER:
UNIVERSITY OF NORTH TEXAS SYSTEM

CONTRACTOR:
FIRM NAME

By: _____
(signature)

By: _____
(signature)

Raynard O. Kearbey
Associate Vice Chancellor for System Facilities

(typed name and title)

Street/PO Box

City, State, ZIP

Telephone

State of TX Vendor ID Number

**EXHIBIT A
SPECIFICATIONS, DRAWINGS AND ADDENDA**

SPECIFICATIONS:

As listed in project manual titled “_____”, prepared by _____
_____, issued for construction on _____.

DRAWINGS:

Entitled “_____”, as prepared by _____, issued
for construction on _____, consisting of the following pages:

<u>Sheet Number</u>	<u>Title</u>
---------------------	--------------

ADDENDA:

This Exhibit is attached to and made part of the Agreement between Owner and Contractor. All specifications and drawings listed above are made part of the General Construction Agreement and are incorporated by reference for all purposes

Initialed by Owner

Initialed by Contractor

**EXHIBIT B
HISTORICALLY UNDERUTILIZED BUSINESS
SUBCONTRACTING PLAN**

SEE ATTACHED HUB SUBCONTRACTING PLAN
Dated

This Exhibit contains the Historically Underutilized Business Subcontracting Plan and supporting documentation for that Plan, all of which is made part of this Agreement between Owner and Contractor.

Initialed by Owner

Initialed by Contractor

ATTACHMENT E

PROPOSER'S QUALIFICATIONS

ITEMS I THROUGH V TO BE SUBMITTED WITH PROPOSAL

Proposer's Name: _____

Address: _____

City, State, Zip: _____

Telephone No.: _____ Fax No. _____

State Comptroller Vendor Identification Number: _____

I. GENERAL

1. Qualification information submitted shall be applicable only to the company entity or branch that will perform this Work.
2. Attach your Project Organization Chart and resumes of individuals who would be assigned to this project including project manager, superintendent, scheduler, quality controller, etc.
3. Proposed project schedule (Bar chart acceptable).

II. HISTORY

1. Corporation Partnership Sole Proprietorship Joint Venture

State of Incorporation: _____

2. In continuous business since: _____

Remarks (if required):

3. Corporate Officers, Partners or Owners of Organization:

<u>Name</u>	<u>Branch Manager</u>	<u>Telephone Number</u>
-------------	-----------------------	-------------------------

_____	_____	_____
_____	_____	_____
_____	_____	_____

4. Check box(es) corresponding to the nature of your business:

- Large Business (100 or more employees)
- Small Business (fewer than 100 employees)
- HUB Business
- Other (Define) _____

5. Has your organization ever defaulted or failed to complete any work awarded?

- Yes No

If yes, stipulate where and why: _____

6. Has your organization ever paid liquidated damages or a penalty for failure to complete a contract on time?

- Yes No

If yes, stipulate where and why: _____

III. EXPERIENCE

1. Normally performs _____ % of the work with own forces.

(List Trades) _____

2. Propose to perform _____% of the work for this project with own forces.

(List Trades) _____

3. List major projects your organization has in-progress using format below:
(Include as an attachment identified by item and sub-item).

Name and Location of Project: _____

Contract Amount: _____

Percent Complete: _____

Project Completion Date: _____

Owner Reference Contact with Address and Telephone Number:

Architect Reference Contact with Address and Telephone Number:

4. Total number and dollar amount of contracts currently in progress:

Number _____ \$ _____

5. Largest contract currently in-process: _____

Anticipated date of completion: _____

6. Volume of work completed over last 5 years: (Through 12/31)

2011 \$ _____

2010 \$ _____

2009 \$ _____

2008 \$ _____

2007 \$ _____

7. List major projects your organization has completed in the last 5 years with completion date and references. Other projects of particular significance may also be listed.

(Include as an attachment identified by item and sub-item.)

Name and Location of Project: _____

Contract Amount: _____

Percent Complete: _____

Project Completion Date: _____

Owner Reference Contact with Address and Telephone Number:

Name Telephone Number

Address

Architect Reference Contract with Address and Telephone Number:

Name Telephone Number

Address

8. Has your organization had any claims and/or litigations in the last 5 years?

If yes, list project name, date or project, owner, owner's contact person with telephone number and summary explanation.

IV. SAFETY PROGRAM

1. List your organization's Workers Compensation Experience Modification Rate (EMR) for the last five years, as obtained from your insurance agent.

EMR

2011 _____

2010 _____

2009 _____

2008 _____

2007 _____

2. Complete matrix for the five past years, as obtained from OSHA N. 200 Log:

	2011	2010	2009	2008	2007
Number of injuries and illness					
Number of lost time accidents					
Number of recordable cases					
Number of fatalities					

3. Are regular project safety meetings held for Field Supervisor(s)?

Yes No

If yes, frequency: Weekly Bi-monthly Monthly
 As Needed

4. Are project safety inspections conducted? Yes No

If yes, who performs inspection?

How often?

5. Does organization have a written safety program? Yes No

If yes, provide a copy. It will become a compliance document upon contract award.

6. Does your organization have a safety orientation program for new employees? Yes No

For employees promoted to Field Supervisors? Yes No

If yes, does your Supervisor Safety Program include instructions on the following:

	Yes	No
Safety work practices	<input type="checkbox"/>	<input type="checkbox"/>
Tool box safety meetings	<input type="checkbox"/>	<input type="checkbox"/>
First aid procedures	<input type="checkbox"/>	<input type="checkbox"/>
Accident investigation	<input type="checkbox"/>	<input type="checkbox"/>
Fire protection	<input type="checkbox"/>	<input type="checkbox"/>
New worker's orientation	<input type="checkbox"/>	<input type="checkbox"/>

V. FINANCIAL

1. Attach an audited Financial Statement, including a profit and loss statement and other supporting schedules. If the last audited statement is over 12 months old, include the most current unaudited statement.

2. Surety Company: _____

Agent: _____

Name of Contact: _____ Telephone No. _____

3. Total Bonding Capacity: _____

Limit per project: _____

Unencumbered bonding capacity: _____

4. Trade References (Additional references may be included as attached sheets.)

Organization: _____

Agent: _____

Name of Contract: _____ Telephone No. _____

Organization: _____

Agent: _____

Name of Contract: _____ Telephone No. _____

Organization: _____

Agent: _____

Name of Contract: _____ Telephone No. _____

Organization: _____

Agent: _____

Name of Contract: _____ Telephone No. _____

5. Bank Reference (Additional references may be included as attached sheets).

Organization: _____

Agent: _____

Name of Contract: _____ Telephone No. _____

Organization: _____

Agent: _____

Name of Contract: _____ Telephone No. _____

Organization: _____

Agent: _____

Name of Contract: _____ Telephone No. _____