STEPHEN F. AUSTIN STATE UNIVERSITY

NACOGDOCHES, TEXAS

PROCUREMENT AND BUSINESS SERVICES
P. O. Box 13030
NACOGDOCHES, TX 75962

REQUEST FOR PROPOSAL

RFP NUMBER
ELECTRICAL RENOVATION

ADDENDUM NO. 2
DATED: 08/16/2024

PROPOSAL MUST BE RECEIVED BEFORE:
5:00PM, CST, TUESDAY, AUGUST 27. 2024

MAIL PROPOSAL TO:

Stephen F. Austin State University
Procurement and Business Services
P. O. Box 13030, SFA Station
Nacogdoches, TX 75962-3030

HAND DELIVER AND/OR EXPRESS MAIL TO:

Stephen F. Austin State University
Procurement and Business Services
2102 Alumni Drive, Austin Bldg., Room 131
Nacogdoches, TX 75962

Show RFP Number, Due Date and Time on Return Envelope

NOTE: PROPOSAL must be time stamped at **Stephen F. Austin State University Procurement and Business Services** before the hour and date specified for receipt of proposal.

REFER INQUIRIES TO:

Kim Jones
Stephen F. Austin State University
Procurement and Business Services,
Phone: 936.468.6551
Email: joneskk2@sfasu.edu

STEPHEN F. AUSTIN STATE UNIVERSITY
Request for Proposal #
ELECTRICAL RENOVATION

ADDENDUM NO. 2

THIS ADDENDUM DOES NOT HAVE TO BE ACKNOWLEDGED FOR THE RESPONSE TO RECEIVE CONSIDERATION.

Updates in Red

Please see attached sign in sheets from the Pre-proposal meeting held 08/02/2024.

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: Capstar Electric Email: bvalerio@capstarelectric

Representative Name: Bill Valerio Phone: 512-260-2400 Fax:

Address: 3871 E University Ave City: Georgetown Tx St/Zip: 78626

CONTACT FOR HUB PAPERWORK (name, phone, email): George Pickens 512-917-4691 gpickens@capstarelectric.com

Company Name: EMA Engineering & Consulting Email: MBekka@emaengineer.com

Representative Name: Malek Bekka Phone: 918 633 3050 Fax:

Address: 328 South Broadway Ave City: Tyler St/Zip: Tx 75702

CONTACT FOR HUB PAPERWORK (name, phone, email):

Company Name: EMA Engineering Email: lloveras@emaengineer.com

Representative Name: Lucas Pereira Phone: 903-425-4209 Fax:

Address: 328 S Broadway Ave City: Tyler St/Zip: TX 75702

CONTACT FOR HUB PAPERWORK (name, phone, email):

Please Print Legibly

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: TLC Engineering Inc Email: b.buckmaster@TLCENG.com

Representative Name: Bill Buckmaster Phone: 832 849 7693 Fax:

Address: 8204 Westglen dr. City: Houston Texas St/Zip: 77063

CONTACT FOR HUB PAPERWORK (name, phone, email): Bill Buckmaster 832 849 7693

Company Name: Drexel Corvak Email: Rich@Drexel-Corvair.com

Representative Name: Richard Neal Phone: 346 264 6682 Fax:

Address: 14090 FM 2920 STE G180 City: Tomball St/Zip: TX 77377

CONTACT FOR HUB PAPERWORK (name, phone, email): Bill Buckmaster 832-849-7693

Company Name: Construction Managers of SETX Email: Fvelasquez@CMOSETX.com

Representative Name: Fernando Velasquez Phone: 936-674-6231 Fax:

Address: 1600 South Chestnut St. City: Lufkin St/Zip: TX 75901

CONTACT FOR HUB PAPERWORK (name, phone, email): Nick Moore (936) 672-6144

nmoore@CMOSETX.com

Please Print Legibly

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: NEXT EDGE NETWORKS Email: SCOTT.ELLIS@NEXTEDGENETWORKS.COM

Representative Name: SCOTT ELLIS Phone: 346-254-5946 Fax: _____

Address: 1504 FAIRWAY DR. City: LEWISVILLE St/Zip: TX 75057

CONTACT FOR HUB PAPERWORK (name, phone, email): SAME AS ABOVE

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Please Print Legibly

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: Two Fifteen Consulting Email: TDavis@twofifteen.net

Representative Name: Travis Davis Phone: 936-569-0505 Fax:

Address: 412 N Street City: Nacogdoches, Tx St/Zip: 75965

CONTACT FOR HUB PAPERWORK (name, phone, email):

Company Name: Two Fifteen Consulting Email: michael@twofifteen.net

Representative Name: Michael Delaney Phone: 936.569.0505 Fax: N/A

Address: 412 North St. City: Nacogdoches St/Zip: TX

CONTACT FOR HUB PAPERWORK (name, phone, email):

Company Name: Email:

Representative Name: Phone: Fax:

Address: City: St/Zip:

CONTACT FOR HUB PAPERWORK (name, phone, email):

Please Print Legibly

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: Michael Lynch Email: mlynch@TLCENG.com

Representative Name: TLC Engineering INC Phone: 832-319-7165 Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Company Name: Kel-Electric Email: Jeremy Strang@kel-Electric.com

Representative Name: Jeremy Strang Phone: 713-205-0834 Fax: _____

Address: 1318 Alpha Ln City: Crosby St/Zip: Tx. 77532

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Please Print Legibly

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: Construction Managers of Southeast Texas Email: nmoore@cmosetx.com

Representative Name: Nick Moore Phone: (936) 676-6144 Fax: _____

Address: 1600 South Chestnut St. City: Lufkin St/Zip: TX . 75901

CONTACT FOR HUB PAPERWORK (name, phone, email): Same as above

---

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Please Print Legibly

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: Ryan Sales - G3W Electric Email: RVinson@RyanSales.Net

Representative Name: Ryan Vinson Phone: 423.763.8900 Fax: _____

Address: 86 S Bardsbrook Cir City: The Woodlands St/Zip: TX 77382

CONTACT FOR HUB PAPERWORK (name, phone, email): Same as Above

---

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Please Print Legibly

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: TLC Engineering INC Email: _____

Representative Name: Bill Buck Master Phone: _____ Fax: _____

Address: 8204 Westglenn Drive City: Houston TX St/Zip: 77063

CONTACT FOR HUB PAPERWORK (name, phone, email): Michael Lynch, 832-319-7165 mlynch@tlceng@.com

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Company Name: _____ Email: _____

Representative Name: _____ Phone: _____ Fax: _____

Address: _____ City: _____ St/Zip: _____

CONTACT FOR HUB PAPERWORK (name, phone, email): _____

Please Print Legibly

REQUEST FOR PROPOSAL #ELECTRICAL RENOVATION

PRE-PROPOSAL MEETING HELD 08/02/2024 AT 9:30 am

SIGN IN SHEET

Company Name: Ludco Inc. Email: jason@Ludco.com

Representative Name: Jason Yeley Phone: 936-569-0816 Fax: 936-560-3085

Address: 3210 SW Stallings Dr City: Nac. St/Zip: 75964

CONTACT FOR HUB PAPERWORK (name, phone, email): Kerry@Ludco.com

---

Company Name: LUDCO Email: lud@ludco.com

Representative Name: LUIS DAVIS Phone: 936-569-0816 Fax: 936-560-3085

Address: 3210 SW STALLINGS DR City: NACOGDOCHES St/Zip: TX. 75964

CONTACT FOR HUB PAPERWORK (name, phone, email): KERRY@ludco.com

---

Company Name: Email:

Representative Name: Phone: Fax:

Address: City: St/Zip:

CONTACT FOR HUB PAPERWORK (name, phone, email):

Please Print Legibly

STEPHEN F. AUSTIN STATE UNIVERSITY

NACOGDOCHES, TEXAS

PROCUREMENT AND BUSINESS SERVICES
P. O. Box 13030
NACOGDOCHES, TX 75962

REQUEST FOR PROPOSAL

RFP NUMBER
ELECTRICAL RENOVATION

ADDENDUM NO. 1
DATED: 08/14/2024

PROPOSAL MUST BE RECEIVED BEFORE:
5:00PM, CST, TUESDAY, AUGUST 27. 2024

MAIL PROPOSAL TO:

Stephen F. Austin State University
Procurement and Business Services
P. O. Box 13030, SFA Station
Nacogdoches, TX 75962-3030

HAND DELIVER AND/OR EXPRESS MAIL TO:

Stephen F. Austin State University
Procurement and Business Services
2102 Alumni Drive, Austin Bldg., Room 131
Nacogdoches, TX 75962

Show RFP Number, Due Date and Time on Return Envelope

NOTE: PROPOSAL must be time stamped at **Stephen F. Austin State University Procurement and Business Services** before the hour and date specified for receipt of proposal.

REFER INQUIRIES TO:

Kim Jones
Stephen F. Austin State University
Procurement and Business Services,
Phone: 936.468.6551
Email: joneskk2@sfasu.edu

STEPHEN F. AUSTIN STATE UNIVERSITY
Request for Proposal #
ELECTRICAL RENOVATION

ADDENDUM NO. 1

THIS ADDENDUM MUST BE ACKNOWLEDGED FOR THE RESPONSE TO RECEIVE CONSIDERATION.

Updates in Red

REVISED EXHIBIT C (SEE ATTACHED AT END OF ADDENDA NO. 1)

Please see attached sign in sheets from the Pre-proposal meeting held 08/02/2024 following these questions, answers and statements.

Q. Will parking be disrupted next to the side of the surplus building?
A. Yes, but only one spot will be taken.

Q. Can contractor do a directional bore for electrical installation?
A. No

Q. What is your traffic control plan?
A. The contractor is responsible for providing and implementing traffic control. Special notes outlining the project specific requirements of traffic control implementation are documented on Plan Sheet C-002. Any changes to the requirements shall be coordinated with Two Fifteen and SFA. Ultimately the contractor is responsible for maintaining safe pedestrian routes and routes for emergency services vehicles throughout construction.

Q. What is the depth and width for light pole bases?
A. Refer to "Pole Base – 12' – 30' "detail for exact dimensions. 4" or 2'-6" AFG depending on location. Underground width and depth to be determined by structural engineer. 10' UFG is acceptable for bidding purposes only.

Q. Will SFA be in charge of haul-away of items/dirt?
A. Contractor is responsible for disposal of any excess excavated trench spoils and all concrete/asphalt debris generated as a product of the work. The SFA Grounds Dept has limited availability (less than 90 cubic yards) for clean trench spoils that are free of deleterious materials such as pavement rubble and debris. The awarded vendor shall coordinate with SFA PPD for any spoils that are identified as acceptable for transfer to the SFA Grounds Dept.

Q. Will SFA or the contractor be in charge of temporary support of lines?
A. Temporary support of poles will be the responsibility of the contractor.

Q. Can we directional bore to bury the electrical lines?
A. No.

Q. Who is responsible for traffic and pedestrian control?
A. Awarded vendor is responsible for traffic control during duration of project.

Q. Who is responsible for temporary support of electric poles during the project?
A. The awarded vendor.

Q. We are unclear on what is to be done with the sidewalks where the power wires will be placed underground. Do the sidewalks get removed and replaced after the high voltage wires are placed in the conduit in the trench?

A. All concrete or asphalt paving disturbed by underground work is to be replaced in a like-for-like condition.

Q. Please clarify, are the existing overhead power lines owned by the university or are they owned by a utility company? If they are owned by a utility company, please provide the contact information for whomever is responsible for the system.
A. All overhead and underground power lines located on campus property are owned and serviced by SFA.

Statements from Assistant Director - Construction, Bill Richardson:
- **Keep traffic in mind. Students are crossing at multiple points along the route.**
- **You must be able to comply with the academic calendar.**
- **There will be a plaza on the north side of the dining hall. Electrical will need to be done before the dining hall contractors plan to pour concrete.**

EXHIBIT C
PRICING PROPOSAL
(Revised)

Having carefully reviewed the specifications and related documents affecting the proposal to provide contractor services to perform electrical renovations on East College Street for Stephen F. Austin State University, the undersigned submits the following Financial Proposal in accordance with the Request for Proposal documents:

Respondent Name/Vendor Name: _____

Authorized Signature: _____

One Lot Price: $_____

Alternate (Fiberglass wall conduit) DEDUCT: $_____

Final Lot Price: $_____

STEPHEN F. AUSTIN STATE UNIVERSITY

NACOGDOCHES, TEXAS

PROCUREMENT AND BUSINESS SERVICES
P. O. Box 13030
NACOGDOCHES, TX 75962

REQUEST FOR PROPOSAL

RFP NUMBER
ELECTRICAL RENOVATION

PROPOSAL MUST BE RECEIVED BEFORE:
5:00PM, TUESDAY, AUGUST 27, 2024

MAIL PROPOSAL TO:

Stephen F. Austin State University
Procurement and Business Services
P. O. Box 13030, SFA Station
Nacogdoches, TX 75962-3030

HAND DELIVER AND/OR EXPRESS MAIL TO:

Stephen F. Austin State University
Procurement and Business Services
2102 Alumni Drive, Austin Bldg., Room 131
Nacogdoches, TX 75962

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REFER INQUIRIES TO:

Kim Jones
Stephen F. Austin State University
Procurement and Business Services
936.468.6551
Email: joneskk2@sfasu.edu

STEPHEN F. AUSTIN STATE UNIVERSITY
Request for Proposal #ELECTRICAL RENOVATION

TABLE OF CONTENTS

SECTION 1
INTRODUCTION

1.1 SCOPE OF PROPOSAL

Stephen F. Austin State University, hereafter referred to as "SFA" or "the University", is seeking proposals for the installation of underground electrical conduits and conductors as well as other above ground facilities at Stephen F. Austin State University in Nacogdoches, Texas. This initiative aims to enhance campus safety and aesthetics by transitioning from overhead electrical lines to an underground system. Additionally, the project includes the replacement of existing street lights with modern, energy-efficient fixtures in accordance with SFA standards. This is in accordance with Gov't Code 51.783, and in accordance with the Engineering and Consulting Documents, Uniform General Conditions, Supplemental Conditions and other Exhibits herein and attached.

1.2 SFA INFORMATION

Stephen F. Austin State University, the newest member of The University of Texas System, began a century ago as a teachers' college in Texas' oldest town, Nacogdoches. Today, it has grown into a regional institution comprising six colleges — business, education, fine arts, forestry and agriculture, liberal and applied arts, and sciences and mathematics. Accredited by the Southern Association of Colleges and Schools, SFA enrolls approximately 11,000 students while providing the academic breadth of a state university with the personalized attention of a private school. The main campus encompasses 421 acres that include 36 academic facilities, nine residence halls, and 68 acres of recreational trails that wind through its six gardens. The university offers more than 80 bachelor's degrees, more than 40 master's degrees and four doctoral degrees covering more than 120 areas of study. Learn more at sfasu.edu

1.3 PROJECT COMPLETION

The University requires that the job be substantially completed by October 3, 2025 and final completion, including clean-up by October 24, 2025. Planned construction start date is on or after September 16, 2024. All work is to be coordinated with Bill Richardson, Assistant Director of Construction, 936.553.8787, William.Richardson@sfasu.edu and/or Kristopher Orheim, Construction Manager, 936.468.4574, Kristopher.Orheim@sfasu.edu .

1.4 SCHEDULE OF EVENTS

*DATE	EVENT
July 19, 2024	Issuance of Request for Proposal
August 2, 2024 at 9:30 AM	Mandatory Pre-Proposal Meeting
August 8, 2024 by 5:00 PM	Deadline for Questions
August 13, 2024 by 5:00 PM	Question and Answer Addenda Document Posted
August 27, 2024 by 5:00 PM	Requests for Proposals Due
August 28, 2024 at 8:45 AM	Requests for Proposals Opened
August 29, 2024 – September 13, 2024	Notification of Award/Contract Fully Executed
September 16, 2024 – October 3, 2025	Work to be performed/Substantial Completion
October 24, 2025	Final Completion

Dates are tentative and subject to change.

1.5 OPEN RECORDS

SFA anticipates that the review of the proposals will be completed and awarded in September 2024. Due to the nature of the proposals, the parties understand the information exchanged in the negotiation process is confidential to the fullest extent permitted by law, and neither party will disclose such information to anyone other than representatives of the negotiating parties except as required by Texas law. Final awards and agreements, after all negotiations are completed, may be subject to open records request. Additionally, state law requires each contract for the purchase of goods or services to be posted on the University's website. By entering into a contract with the University, the firm acknowledges and accepts the University will comply with all applicable laws regarding the public posting of contracts.

1.6 HISTORICALLY UNDERUTILIZED BUSINESSES (HUB)

SEE EXHIBIT E – HUB SUBCONTRACTING PLAN
READ CAREFULLY

Each respondent is required to make a good faith effort to subcontract with historically underutilized businesses and shall submit a HUB Subcontracting Plan using the HUB Subcontracting Plan documents provided in **Exhibit E**.

Stephen F. Austin State University is committed to making a good faith effort to increase business with historically underutilized businesses (HUBs) by contracting with HUBs either directly or indirectly through subcontracting opportunities. Respondents are encouraged to actively subcontract or collaborate with HUBs in an effort to create an environment that actively acknowledges and values diversity.

The university has determined that subcontracting opportunities are probable under this contract.

The university's HUB goal for this procurement is:
32.9 % for Special Trades Construction

Each HUB subcontracting plan is evaluated independently of the response. If the HSP does not reflect a good faith effort to subcontract with HUBs, the entire response is disqualified.

All questions regarding the HUB Subcontracting Plan may be directed to Contracting Specialist II/HUB Coordinator, Lacey Bradshaw, 936.468.4412, Lacey.Bradshaw@sfasu.edu.

Failure to submit the HUB Subcontracting Plan will disqualify the bid from consideration.

1.7 BONDS AND INSURANCE

The cost of all required bonds shall be included in the response.

Bid Bond:
A bid bond or bid security in the form of a Certified or Cashier's check on a State or National Bank in the State of Texas, or a Bid Bond from a Surety Company authorized to transact business in the State of Texas, and made payable to Stephen F. Austin State University **in the amount of 5% of the largest proposed amount** must accompany each response as a guarantee that, if awarded the Purchase Order, the Contractor will execute the required Performance and Payment Bonds, if required, in such form and with such Sureties as SFA may prescribe or approve.

Proposals submitted without a bid bond or bid security will not be considered.

Performance and Payment Bonds:
Performance bonds are required on contracts exceeding $100,000. Payment bonds are required on contracts exceeding $25,000. Refer to Article 5.1 in the Uniform General Conditions. Should the Contractor fail to execute and return the required Performance and Payment Bonds within ten (10) days after the date of notice of award, the Bid Guarantee shall become the property of SFASU, not as a penalty but as liquidated damages.

Insurance:
Certificates of Insurance are to be provided as required in Article 5.2 of the Uniform General Conditions and Supplementary General Conditions.

1.8 TITLE IX

Stephen F. Austin State University strictly adheres to Title IX of the Education Amendments of 1972, the federal Campus Sexual Violence Elimination Act; United States Department of Education regulations and directives; and the University's sexual harassment policy and procedures ("Regulations"). Specifically, the Regulations apply to all students, employees, visitors, and other third parties on Stephen F. Austin State University-controlled property, including institutions and entities with whom Stephen F. Austin State University places its students. Further, such Regulations prohibit unequal treatment on the basis of sex as well as sexual harassment and sexual misconduct. As a condition of employment, enrollment, doing business, or being permitted on the campus, the above-mentioned individuals, organizations, and entities must agree to: 1) Report immediately to the Title IX coordinator any and all claims of sex discrimination or sexual misconduct; 2) Cooperate with Stephen F. Austin State University's Title IX investigation; and, 3) Cooperate fully with all sanctions that Stephen F. Austin State University may impose against such individual, organization, or entity, who is found to have violated the Regulations. If the individual, organization, or entity fails to adhere to any of the aforementioned requirements, Stephen F. Austin State University reserves the right to take appropriate action, including but not necessarily limited to, immediate removal from campus; discipline of employees and students (including termination of employment and/or expulsion from school); and termination of business or contractual relationships.

1.9 PARKING ON CAMPUS

All vehicles parked on the University campus must properly display a valid parking permit and comply with all University parking rules. The Parking and Traffic Office supervises and coordinates all parking transportation and traffic related functions on the campus. Permits expire each August 31.

Contractor shall be responsible for obtaining parking permits from the Parking and Traffic Office and for resolving, should they arise, any parking regulation disputes and violations. The Parking and Traffic Office telephone number is 936-468-7275

1.10 ADDITIONAL TERMS AND CONDITIONS

https://www.sfasu.edu/docs/procurement-business-services/purchase-order-general-terms-conditions.pdf

END OF SECTION 1

SECTION 2
STATEMENT OF WORK

2.1 SCOPE OF WORK

Scope of Work:

1. **Underground Electrical Conduits and Conductors:**
   - Excavation and installation of underground conduits and conductors for electrical distribution along East College St. and across specified areas of the campus in accordance with the plans and specifications.
   - Placement of associated appurtenances such as vaults, junction boxes, and pull boxes as required.
   - Compliance with all local and national electrical codes and safety standards.
2. **Street and Sidewalk Pavement Repairs:**
   - Restoration of disturbed street and sidewalk pavements due to trenching and other construction activities in accordance with the plans and specifications.
   - Utilization of appropriate materials and techniques to ensure durability and aesthetic continuity with existing surfaces as well as the continuity of existing drainage paths.
   - Coordination with SFA Physical Plant and UPD to minimize campus disruptions during construction.
3. **Abandonment of Existing Overhead Electrical Lines:**
   - Removal and disposal of existing overhead electrical lines in accordance with plans and specifications.
   - Proper termination and sealing of abandoned lines to prevent safety hazards and ensure compliance with environmental regulations.
4. **Replacement of Existing Street Lights:**
   - Removal of current street light fixtures and installation of new, energy-efficient LED street lights in accordance with the plans and specifications.
   - Coordinate with SFA to salvage existing poles, lights, or fixtures as directed.

Project Objectives:

- Enhance campus aesthetics by eliminating overhead wires and enhancing street lighting.
- Improve campus safety by reducing potential hazards associated with overhead electrical lines.
- Ensure long-term operational efficiency and reliability of the electrical distribution system.

Conclusion: The burying of underground electrical conduits, conductors, and associated improvements at SFA represents a significant enhancement to the campus infrastructure. Upon completion, these enhancements will improve campus safety and create a more attractive and efficient campus environment for students, faculty, and visitors alike. in accordance with the Project Manual, Uniform General Conditions, Supplemental Conditions and other Exhibits herein and attached.

Please refer to t Engineering and Consulting Documents and Drawings dated June 21, 2, 2024 for a complete detailed scope of work. See **Exhibit F**

2.2 STANDARD FORM OF CONTRACT

By submitting a proposal, the Respondent agrees to accept a contract including the specifications, terms and conditions, Uniform General Conditions, Supplementary General Conditions and drawings herein and attached to this Request for Proposal.

After award, the University will issue a General Contractor contract document. The base contract document will be “AIA 101 1997 Standard Form of Agreement between Owner and Contractor where the basis of payment if a stipulated sum”. The contract will be modified by SFA as needed to comply with the Uniform and Supplementary General Conditions and state law.

2.3 UNIFORM GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS

The attached Uniform General Conditions (UGC) and Supplementary General Conditions (SGC), **Exhibit G**, are an integral part of this document. The respondent is responsible for reading and being familiar with all of the requirements of the Uniform and Supplementary General Conditions. Failure to consider all the requirements of the UGC and SGC does not relieve the Contractor from the obligation to fulfill all requirements of the UGC and SGC.

2.4 LIQUIDATED DAMAGES

The liquidated damages are standard in our contract document at $500 per calendar day.

2.5 PREVAILING WAGE RATES

In accordance with Texas Gov't Code 2258.022, Stephen F. Austin State University completed a determination of wage rates for Nacogdoches County. The attached "Minimum Wage Rate Determination" provides additional documentation about the determination and requirements for compensation. The total hourly compensation to each worker must equal or exceed the minimum wage rates stated in the "2015 SFA Prevailing Wage" attachment, Total Column. See Exhibit F.

The attached "Worker Wage Rate Form" is to be used by the construction manager and all subcontractors engaged in this project. The completed notice must be accepted by all workers involved in the project and delivered to the Physical Plant prior to substantial completion or with pay applications. Separate Worker Wage Rates Forms are to be completed for each worker engaged in multiple classifications. See **Exhibit H**.

For additional information regarding the applicability of Prevailing Wage Rates, refer to Uniform General Conditions, Article 2, and Paragraph 2.2.

End of Section 2
SECTION 3
INSTRUCTIONS TO RESPONDENTS

3.1 MANDATORY PRE-PROPOSAL CONFERENCE

A **MANDATORY** pre-proposal meeting and site visit is scheduled for 9:30 AM Friday, August 2, 2024 in the Physical Plant Training Room 2104 Wilson Drive Nacogdoches, TX 75962 located on the campus of Stephen F. Austin State University A site visit is scheduled following the pre-proposal meeting.

Failure to attend the pre-proposal meeting and site visit will forfeit consideration of the Respondent's bid.

3.2 CONTACT INFORMATION

All questions regarding the RFP or response must be forwarded to the Assistant Director - Purchasing

Kim Jones
P.O. Box 13030, SFA Station
Nacogdoches, TX 75962
Phone: 936.468.6551
Fax: 936.468.4282
Email: joneskk2@sfasu.edu

3.3 SUBMITTAL DEADLINE AND LOCATION

3.3.1 All proposals must be received by SFA no later than **5:00pm, Tuesday, August 27, 2024**.

3.3.2. Proposals are to be submitted to:

MAIL PROPOSAL TO:	**HAND DELIVER AND/OR EXPRESS MAIL TO:**
Stephen F. Austin State University Procurement and Business Services P.O. Box 13030, SFA Station Nacogdoches, TX 75962-3030	Stephen F. Austin State University Procurement and Business Services 2102 Alumni Dr, Austin Bldg., Room 131 Nacogdoches, TX 75962

EMAIL to:
bids@sfasu.edu
(Subject line should read: **RFP #ELECTRICAL RENOVATION**)

3.3.3 All U.S. Mail addressed to any component of SFA is delivered to a central mailroom and redistributed by SFA personnel to the addressee's on-campus post office box. Consequently, there is a possibility of delay between receipt of mail at the central mailroom and receipt in the Procurement and Business Services Department. Proposals must be in the office of the Procurement and Business Services Department by the time set for RFP closing in order to be considered, and receipt by SFA at the central mailroom will not be deemed sufficient. The University shall not be responsible for responses received after the due date and time. Late responses will not be considered under any circumstances. Properly identified late responses will be returned to the Respondent unopened.

3.3.4 Proposals will be publicly opened **Wednesday, August 28, 2024 at 8:45 am** in the office of the Procurement and Business Services, 2102 Alumni Drive, Austin Building, Room 131. Only the names of the Respondents will be read aloud.

3.3.5 Proposals received after the time for closing will be returned to Respondent unopened regardless of the circumstance. It is the responsibility of the Respondent to get the proposals delivered in a timely manner, regardless of delivery method or circumstances.

3.3.6 Faxed proposals will **not** be accepted.

3.3.7 Electronically mailed proposals are acceptable and submission of email responses to bids@sfasu.edu. The University shall not be responsible for responses or portions of responses received late, illegible, incomplete, or otherwise non-responsive due to failure of electronic equipment, technology error, or operator error

3.3.8 Proposals may be withdrawn at any time prior to the time and date set for proposal closing.

3.3.9 Stephen F. Austin State University reserves the right to accept or reject any or all proposals and to waive irregularities or technicalities provided such waiver does not substantially change the offer or provide a competitive advantage to any Respondent in the judgment of Stephen F. Austin State University.

3.4 SUBMITTAL INSTRUCTIONS

3.4.1 All proposals must be submitted in the format prescribed in Section 3.7.

3.4.2 **Respondent may email proposal response to bids@sfasu.edu OR may submit one (1) complete electronic copy of the Proposal on electronic media** (e.g., USB Drive) in a Microsoft Office (Word, Excel, Project and PowerPoint files) version 2003 or later format, or searchable Adobe .PDF files. All response submittal information must be in electronic form.

3.4.3 All proposals must be complete and convey all of the information requested to be considered responsive. If the proposal fails to conform to the essential requirements of the RFP, SFA alone will determine whether the variance is significant enough to consider the proposal susceptible to being made acceptable and therefore, a candidate for further consideration, or not susceptible to being made acceptable and therefore not considered for award.

3.4.4 Each respondent, by submitting a proposal, represents that the respondent has read and completely understands the request for proposal documents and agrees to abide by the terms of this RFP and any resulting agreement. Failure of the selected contractor to fulfill the provisions of this request for proposal shall in no way relieve the obligation of the Contractor to furnish all services necessary to carry out the provisions of the agreement.

3.4.5 Proposals shall be signed by a legally authorized representative of the Respondent. Unsigned proposals **(Exhibit A)** will be rejected as a material failure.

3.5 ACCEPTANCE AND FORMATION OF AGREEMENT

3.5.1 No recommendation for award will be made until Stephen F. Austin State University is fully satisfied that the Respondent is professionally competent and properly equipped to render the specified service.

3.5.2 The University reserves the right to negotiate further with any respondent that submits a proposal, once proposals have been opened. SFA may award a contract(s) based on initial proposals received without any discussion of such proposals. Therefore, each proposal should be submitted on the most favorable and complete price and terms possible.

3.5.3 SFA reserves the right to enter into an agreement not based only on the cost to the University, but which, in the sole opinion of SFA, is deemed to represent the best value to SFA. The University shall be the sole judge of determining which proposal represents the best value to the University.

3.5.4 By submitting a response, the Respondent agrees to accept a contract including the Engineer's Drawings, Uniform General Conditions, Supplementary General Conditions and other specifications herein and attached to this Request for Proposal.

3.5.5 The base contract document will be "AIA 101 1997 Standard Form of Agreement between Owner and Contractor where the basis of payment is a stipulated sum". The contract will be modified by SFA as needed to comply with the Uniform and Supplementary General Conditions and state law.

3.6 EVALUATION CRITERIA

3.6.1 Award will be based on a comprehensive review and analysis based on weighted value of averaged evaluation scores and negotiation of the proposal that best meets the needs of the University. Submission of a proposal represents concurrence with this method of evaluation and award. Furthermore, Respondents will not, under any circumstances, dispute any award made using this method.

3.6.2 An evaluation committee representing Stephen F. Austin State University will perform evaluation of the proposals. Proposals will be evaluated using the following criteria, which are listed below in no particular order. Stephen F. Austin State University reserves the right to award an agreement not based only on lowest cost to the University, but on the criteria that best meet the university's requirements and goals. The university shall be the sole judge of determining which proposal represents the best value to the University.

3.6.3 <u>Evaluation Criteria</u>

A. 50% - Cost

B. 20% - Experience of Firm

C. 20% - Past Performance

D. 10% - Commitment and Ability

3.7 PROPOSAL FORMAT

3.7.2 Proposals shall be prepared in a straightforward and concise manner, identifying clearly and concisely any deviations, enhancements and other differences that exist between the RFP and the respondent's proposed services. Emphasis should be placed on responsiveness to the RFP requirements, completeness and clarity of content and conformance to the RFP instructions. **Respondents shall organize their proposal in a point-by-point format according to Section 3.7.2.** Failure to follow point-by-point presentation could be grounds for disqualification.

3.7.2 Proposal should include the following information and is to be submitted in the following order:

a) Required Submittal – **failure to provide any of the following documents will result in disqualification of the proposal from further consideration**

i. Exhibit **A** – Signed Execution of Offer

ii. Exhibit **B** – Acknowledgement of Addenda, if any

iii. Exhibit **C** – Pricing Proposal

iv. Exhibit **D** –Non-Collusion Affidavit

v. Exhibit **E**—HUB Subcontracting Plan

vi. Bid Bond

b) Other Qualification Submittals

i. Experience

a. State how many years prime company has been in business as a contractor and whether company have operated under other or former names;

b. Describing the contractor's methodology and approach to electrical renovation projects, particularly regarding organizing and managing projects; and

c. List four (4) higher education projects similar in size, scope and time to that described herein; provide contact name, phone number and brief description of the project; and

ii. Past Performance

a. List four (4) electrical renovation projects (commercial, institutional, or educational) similar in size, scope and time to that described herein; provide contact name, phone number and brief description of the project; and

b. Identify the personnel that will be assigned to the project and their experience in general construction, including specific examples of projects similar in size, scope and time to that described herein.

iii. Commitment and Ability

a. Provide a statement indicating the company's commitment to the accurate and timely completion of the project including personnel and resources available to support the project and ensure a successful completion if circumstances require extra effort; and

b. Provide a summary of the company's safety record for the past 3 years.

Stephen F. Austin State University reserves the right to check references prior to award. Any Negative responses received may be grounds for disqualification of the bid. SFA reserves the Right to enter into an agreement not based only on lowest cost to the University, but which, in the Sole opinion of SFA, is deemed to represent the best value to SFA.

END OF SECTION 3

EXHIBIT A
EXECUTION OF OFFER

In compliance with this RFP, and subject to all the conditions herein, the undersigned offers and agrees to furnish any or all commodities or services and to comply with all terms, conditions and requirements set forth in the RFP documents and contained herein.

By signature hereon, Respondent affirms that he/she 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 Qualifications. Failure to sign the response, or signing it with a false statement, shall void the submitted response or any resulting contracts, and the Respondent may be removed from all bid lists.

By the signature hereon affixed, the Respondent hereby certifies that 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 response made to any competitor or any other person engaged in such line of business.

By signature hereon, Respondent certifies that if a Texas address is shown as the address of the Respondent, Respondent qualifies as a Texas Resident Bidder as defined in Rule 34 TAC 20.38.

Certifications:
Texas Family Code Child Support Certification. By signature hereon, Respondent certifies as follows: "Under Section 231.006, Texas Family Code, the Contractor certifies it is not ineligible to receive the payments specified in the Agreement and acknowledges that this Agreement may be terminated and payment may be withheld if this certification is inaccurate."

Sales Tax Certification. By signing the Agreement, the Respondent certifies as follows: "Under Section 2155.004, Texas Government Code, the Contractor certifies that the individual or business entity named in this Agreement is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate."

Franchise Tax Certification. By signing the Agreement, a corporate or limited liability company, Respondent 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. Contractor acknowledges and agrees that if this certification is false or inaccurate, at University's option, the Agreement may be terminated and payment withheld.

Payment of Debts to the State of Texas. That pursuant to Section 403.0551, Texas Government Code, the Respondent agrees that any payments owing to the Contractor under this contract may be applied towards any debt or delinquent taxes that the Contractor owes the State of Texas or any agency of the State of Texas, until such debt or delinquent taxes are paid in full.

The person signing the Response should show title or authority to bind his/her firm in contract.

Federal Employer's Identification Number:_____

Sole Owner should also enter Social Security No.:_____

Respondent/Company:_____

Signature (INK):_____

Name (Typed/Printed):_____

Title:_____

Street:_____

City/State/Zip:_____

Telephone No/Fax No:_____

Email.:_____

THIS SHEET MUST BE COMPLETED, SIGNED, AND RETURNED WITH RESPONDENT'S PROPOSAL. FAILURE TO SIGN AND RETURN THIS SHEET MAY RESULT IN THE REJECTION OF YOUR RESPONSE.

EXHIBIT B
ACKNOWLEDGEMENT OF ADDENDA

Receipt is hereby acknowledged of the following addenda to this RFP.

Addenda No. _____ Dated _____

Addenda No. _____ Dated _____

Addenda No. _____ Dated _____

Addenda No. _____ Dated _____

Respondent/Vendor Name:_____

Authorized Signature:_____

Refer to the SFA Procurement and Business Services Department website to confirm all addenda issued: https://www.sfasu.edu/procurement-business-services/do-business/bids-rfps

EXHIBIT C
PRICING PROPOSAL

Having carefully reviewed the specifications and related documents affecting the proposal to provide contractor services to perform electrical renovations on East College Street for Stephen F. Austin State University, the undersigned submits the following Financial Proposal in accordance with the Request for Proposal documents:

Respondent Name/Vendor Name:

_____

Authorized Signature:

_____

_____

One Lot Price: $_____

EXHIBIT D - NON-COLLUSION AFFIDAVIT

The undersigned, duly authorized to represent the persons, firms and corporations joining and participating in the submission of the foregoing Proposal (such persons, firms and corporations hereinafter being referred to as the "Respondents"), being duly sworn, on his or her oath, states that to the best of his or her belief and knowledge no person, firm or corporation, nor any person duly representing the same joining and participating in the submission of the foregoing Proposal, has directly or indirectly entered into any agreement or arrangement with any other Respondent, or with any official of SFA or any employee thereof, or any person, firm or corporation under contract with SFA whereby the Respondent, in order to induce acceptance of the foregoing Proposal by said SFA, has paid or is to pay to any other Respondent or to any of the aforementioned persons anything of value whatsoever, and that the Respondent has not, directly or indirectly entered into any arrangement or agreement with any other Respondent or Respondent which tends to or does lessen or destroy free competition in the letting of the contract sought for by the foregoing Proposal.

The Respondent hereby certifies that neither it, its officers, partners, owners, providers, representatives, employees and/or parties in interest, including the affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Respondent, potential Respondent, firm or person, in connection with this solicitation, to submit a collusive or sham bid, to refrain from bidding, to manipulate or ascertain the price(s) of other Respondents or potential Respondents, or to obtain through any unlawful act an advantage over other Respondents or SFA.

The prices submitted herein have been arrived at in an entirely independent and lawful manner by the Respondent without consultation with other Respondents or potential Respondents or foreknowledge of the prices to be submitted in response to this solicitation by other Respondents or potential Respondents on the part of the Respondent, its officers, partners, owners, providers, representatives, employees or parties in interest including the affiant.

CONFLICT OF INTEREST

The undersigned Respondent and each person signing on behalf of the Respondent certifies, and in the case of a sole proprietorship, partnership or corporation, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of their knowledge and belief, no member of SFA, nor any member of its Board of Regents, employee, or person whose salary is payable in whole or in part by SFA, has a direct or indirect financial interest in the award of the Proposal, or in the services to which this Proposal relates, or any of the profits, real or potential, thereof, except as noted otherwise herein.

Respondent Name/Vendor Name: _____

Signature: _____

Date: _____

EXHIBIT E
HUB SUBCONTRACTING PLAN

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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 <u>all</u> of the subcontracting work you have to offer under the contract to <u>only</u> 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 <u>do not</u> have a *<u>continuous contract</u>** in place for more than five (5) years *<u>meets or exceeds</u>* 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 <u>do not</u> have a *<u>continuous contract</u>** in place for more than five (5) years *<u>does not meet or exceed</u>* 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. - 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 (i.e., employees, supplies, materials and/or equipment), 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

***<u>Continuous Contract</u>:** 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, to include 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.*

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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) §20.284 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,***
- ***32.9 percent for all special trade construction contracts,***
- ***23.7 percent for professional services contracts,***
- ***26.0 percent for all other services contracts, and***
- ***21.1 percent for commodities contracts.***

- - Agency Special Instructions/Additional Requirements - -

*In accordance with 34 TAC §20.285(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 the aggregate percentage of the contracts expected to be subcontracted to HUBs with which the respondent **does not** have a **continuous contract*** in place for **more than five (5) years** shall qualify for meeting the HUB goal. This limitation is designed to encourage vendor rotation as recommended by the 2009 Texas Disparity Study.*

The HUB Subcontracting GOAL for this procurement is: 32.9% for Special Trades

Vendors are required to provide a minimum 7 working days notice of subcontracting opportunities.

Failure to submit a HUB Subcontracting Plan will disqualify the entire response from consideration. The HUB Subcontracting Plan (HSP) will be evaluated independently of the response. If the HSP does not reflect a good faith effort to subcontract with HUBs, the entire response will be disqualified

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 #: RFP #ELECTRICAL RENOVATION Bid Open Date: 08/28/2024 (mm/dd/yyyy)

Enter your company's name here: _____ Requisition #: RFP #ELECTRICAL RENOVATION

SECTION 2: RESPONDENT's 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 contracted staffing, goods and services will be subcontracted**. Note: In accordance with 34 TAC §20.282, a "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, including employees, goods and services. (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 do not have a continuous contract* in place for more than five (5) years.	**Percentage of the contract expected to be subcontracted to HUBs with which you have a continuous contract* 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 https://www.comptroller.texas.gov/purchasing/vendor/hub/forms.php).

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 **do not** have a **continuous contract*** in place with for **more than five (5) years**, **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 #: RFP #ELECTRICAL RENOVATION

SECTION 2: RESPONDENT's SUBCONTRACTING INTENTIONS (CONTINUATION SHEET)

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 do not have a continuous contract* in place for more than five (5) years.	**Percentage of the contract expected to be subcontracted to HUBs with which you have a continuous contract* in place for more than five (5) years.**	**Percentage of the contract expected to be subcontracted to non-HUBs.**
16		%	%	%
17		%	%	%
18		%	%	%
19		%	%	%
20		%	%	%
21		%	%	%
22		%	%	%
23		%	%	%
24		%	%	%
25		%	%	%
26		%	%	%
27		%	%	%
28		%	%	%
29		%	%	%
30		%	%	%
31		%	%	%
32		%	%	%
33		%	%	%
34		%	%	%
35		%	%	%
36		%	%	%
37		%	%	%
38		%	%	%
39		%	%	%
40		%	%	%
41		%	%	%
42		%	%	%
43		%	%	%
	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.*

Enter your company's name here: _____ Requisition #: RFP #ELECTRICAL RENOVATION

SECTION 3: SELF PERFORMING JUSTIFICATION

(If you responded "No" to SECTION 2, Item a, you must complete this SECTION and continue to SECTION 4.) If you responded "No" to SECTION 2, Item a, in the space provided below **explain how** your company will perform the entire contract with its own employees, supplies, materials and/or equipment.

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 https://www.comptroller.texas.gov/purchasing/docs/hub-forms/ProgressAssessmentReportForm.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)

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Enter your company's name here: ____________________ Requisition #: RFP #ELECTRICAL RENOVATION

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 https://www.comptroller.texas.gov/purchasing/docs/hub-forms/hub-sbcont-plan-gfe-achm-a.pdf

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 the attachment.

Item Number: _____ 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 Texas Vendor Identification (VID) Number or federal Employer Identification Number (EIN), the approximate dollar value of the work to be subcontracted, and the expected percentage of work to be subcontracted. When searching for Texas certified HUBs and verifying their HUB status, ensure that you use the State of Texas' Centralized Master Bidders List (CMBL) - Historically Underutilized Business (HUB) Directory Search located at http://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp. HUB status code "**A**" signifies that the company is a Texas certified HUB.

Company Name	Texas certified HUB	Texas VID or federal EIN Do not enter Social Security Numbers. If you do not know their VID / EIN, leave their VID / EIN field blank.	Approximate Dollar Amount	Expected Percentage of Contract
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - 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)

Rev. 2/17

Enter your company's name here: _____ Requisition #: RFP #ELECTRICAL RENOVATION

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 https://www.comptroller.texas.gov/purchasing/docs/hub-forms/hub-sbcont-plan-gfe-achm-b.pdf..

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 the attachment.

Item Number: _____ 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*, 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 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 https://www.comptroller.texas.gov/purchasing/docs/hub-forms/HUBSubcontractingOpportunityNotificationForm.pdf.

Retain supporting documentation (i.e., certified letter, fax, e-mail) demonstrating evidence of your good faith effort to notify the Texas certified HUBs and 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 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 you submitting your bid response to the contracting agency. When searching for Texas certified HUBs and verifying their HUB status, ensure that you use the State of Texas' Centralized Master Bidders List (CMBL) - Historically Underutilized Business (HUB) Directory Search located at http://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp. 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 Texas Vendor Identification (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	Texas VID (Do not enter Social Security Numbers.)	Date Notice Sent (mm/dd/yyyy)	Did the HUB Respond?
			☐ - Yes ☐ - No
			☐ - Yes ☐ - No
			☐ - Yes ☐ - No

c. Provide written notification of the subcontracting opportunity you listed in SECTION B-1 to two (2) or more 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 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 https://www.comptroller.texas.gov/purchasing/vendor/hub/resources.php.

d. List **two (2) 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.

Trade Organizations or Development Centers	Date Notice Sent (mm/dd/yyyy)	Was the Notice Accepted?
		☐ - Yes ☐ - No
		☐ - Yes ☐ - No

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

Rev. 2/17

Enter your company's name here: _____ Requisition #: RFP #ELECTRICAL RENOVATION

SECTION B-4: SUBCONTRACTOR SELECTION

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 the attachment.

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

Item Number: _____ 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 Texas Vendor Identification (VID) Number or federal Emplioyer Identification Number (EIN), the approximate dollar value of the work to be subcontracted, and the expected percentage of work to be subcontracted. When searching for Texas certified HUBs and verifying their HUB status, ensure that you use the State of Texas' Centralized Master Bidders List (CMBL) - Historically Underutilized Business (HUB) Directory Search located at http://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp. HUB status code "**A**" signifies that the company is a Texas certified HUB.

Company Name	Texas certified HUB	Texas VID or federal EIN Do not enter Social Security Numbers. If you do not know their VID / EIN, leave their VID / EIN field blank.	Approximate Dollar Amount	Expected Percentage of Contract
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - 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.

Rev. 2/17

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, §20.285 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, at least seven (7) working days prior to submitting its bid response to the contracting agency, the respondent must provide notice of each of its subcontracting opportunities to two (2) or more trade organizations or development centers (in Texas) that serves members of groups (i.e., Asian Pacific American, Black American, Hispanic American, Native American, Woman, Service Disabled Veteran) identified in Texas Administrative Code §20.282(19)(C).

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: Stephen F. Austin State University

Point-of-Contact: Lacey Bradshaw Phone #: 936.468.4412

Requisition #: RFP #ELECTRICAL RENOVATION Bid Open Date: 08/28/2024 (mm/dd/yyyy)

SECTION C: SUBCONTRACTING OPPORTUNITY RESPONSE DUE DATE, DESCRIPTION, REQUIREMENTS AND RELATED INFORMATION

1. Potential Subcontractor's Bid Response Due Date:

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 _____ (Central Time) on _____ (Date (mm/dd/yyyy)).

In accordance with 34 TAC §20.285, 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, at least seven (7) working days prior to us submitting our bid response to the contracting agency, we must provide notice of each of our subcontracting opportunities to two (2) or more trade organizations or development centers (in Texas) that serves members of groups (i.e., Asian Pacific American, Black American, Hispanic American, Native American, Woman, Service Disabled Veteran) identified in Texas Administrative Code, §20.282(19)(C).

(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 trade organizations or development centers is considered to be "day zero" and does not count as one of the seven (7) working days.)

2. Subcontracting Opportunity Scope of Work:

3. Required Qualifications: ☐ - Not Applicable

4. Bonding/Insurance Requirements: ☐ - Not Applicable

5. Location to review plans/specifications: ☐ - Not Applicable

EASY HUB LOOKUP on the CMBL

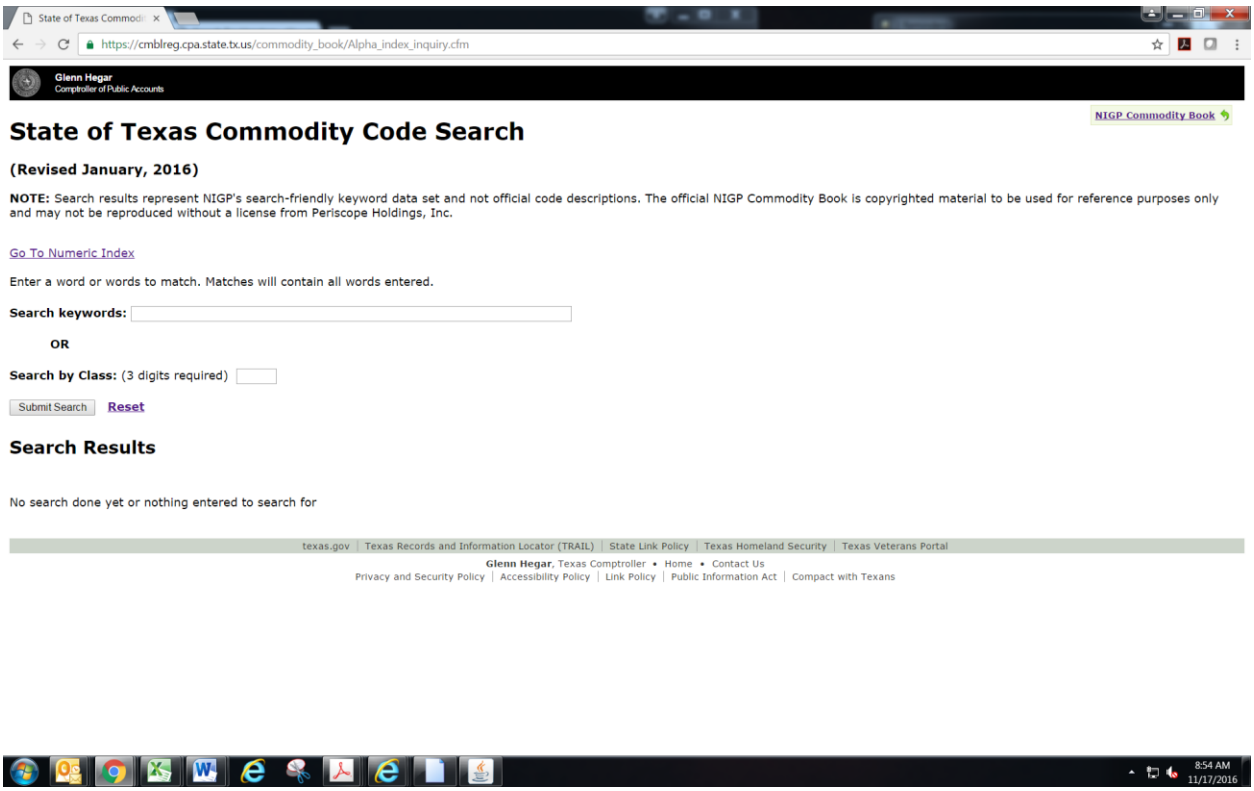
In accordance with Texas Administrative Code 20.14, the following HUB lookup procedures have been developed utilizing the Comptroller of Public Accounts website to identify possible HUB Vendors for subcontracting opportunities.

To that end the following easy step by step instructions to identify NIGP codes and search for potential HUB subcontractors is provided by Stephen F. Austin State University. In addition, the University may have already completed searches that may be beneficial and include a list of potential HUB subcontractors that may be used by the Respondent. If you have a hard time reading the webpages cited, increase the page view to 200% or better.

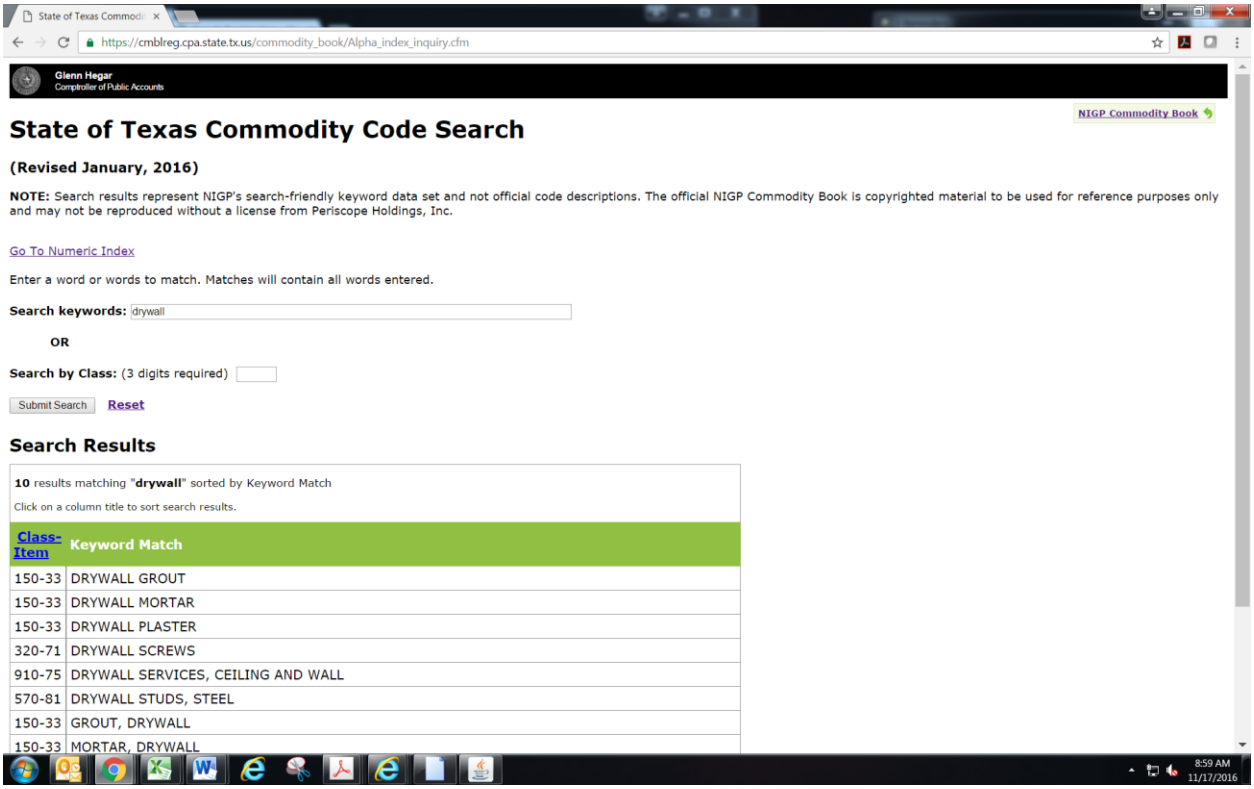
For assistance with this instruction or further assistance in identifying potential HUB subcontractors, please contact Lacey Bradshaw, HUB Coordinator at 936-468-4412.

STEP 1: After identifying what areas that are going to be subcontracted for the project go to the following web address at Comptroller of Public Accounts:

https://cmblreg.cpa.state.tx.us/commodity_book/Alpha_index_inquiry.cfm



At this point type in the item you are looking for in Search keywords: (for this example we are looking for drywall services). Press Submit Search and the results will appear. See example below:



The page will list Keyword Match for drywall. In this example the Class-Item for Drywall Services, Ceiling and Wall is 910-75. Remember to write down the Class and Item numbers. You will do the same for other items that you will be subcontracting on the project. Once you have completed collecting all Class and Item numbers for sub-contracting opportunities you can precede to Step 2

STEP 2: With the Class and Item numbers you can search for HUB Vendors on the Centralized Master Bidders List – HUB Directory Search. Go to the following web address at Texas Comptroller of Public Accounts:

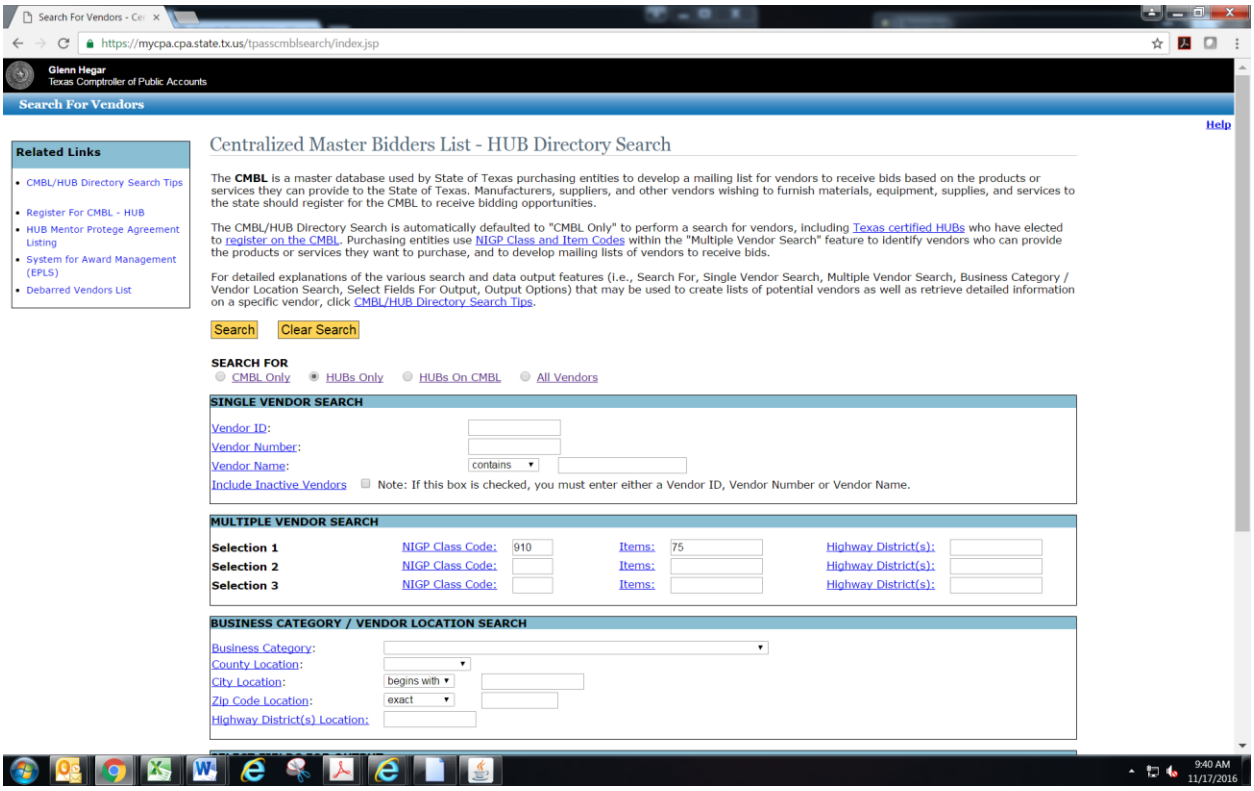
https://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp

Under **SEARCH FOR** mark HUBs Only (you are looking for HUB vendors)

The EXAMPLE below is how the form should be filled out. Search for HUBs on CMBL; Selection 1: Class-Item; Select Fields For Output (Vendor ID, Company Name, Contact Person, City, Email, Phone, Business Description, HUB Eligibility, HUB Gender)

In the example below we are searching for NIGP Class Code 910, Items 75 (Drywall Services).

Once all the information needed has been marked. Click : **SEARCH.**



Once the search is completed, a page like the one below will appear listing all the HUB companies that are Class 910 and Item 75.

The search found 222 vendors where are HUB's.

At this point you should look at the Business Description to confirm that the company does indeed provide drywall services. Note that the first company listed 1DZ ENTERPRISE, L.L.C. does not list drywall services, instead the company business description list Janitorial Service – if at all possible you should not use this company in your Good Faith Efforts as there are other companies that list dry wall in their business description.

3 B'S CONTSTRUCTION does list drywall and is a good candidate for sending a request to bid the project.

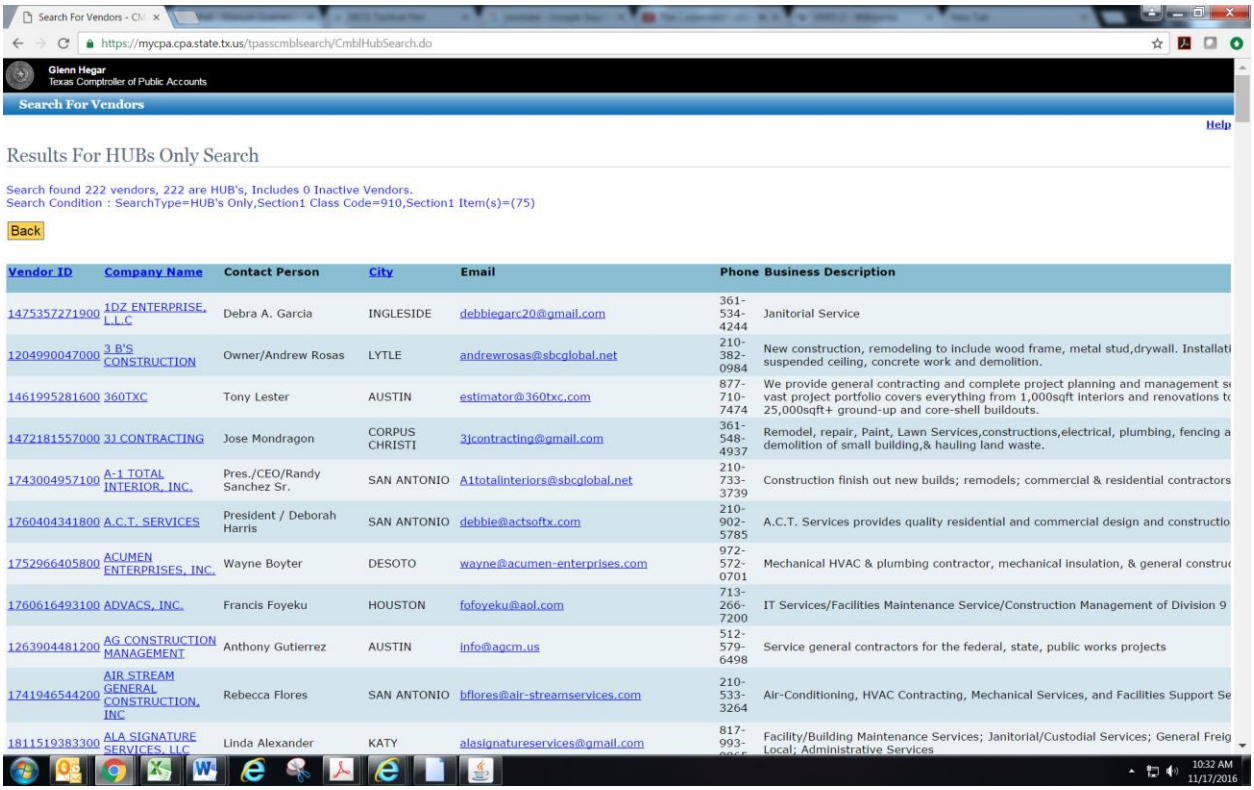
YOU ARE REQUIRED TO SELECT THREE (3) HUB VENDORS TO CONTACT.

When looking for HUB Vendors to support you at SFA look for these vendors that are close to Nacogdoches and East Texas. If none can be found in our area, expand your search to the Dallas/Fort Worth area, Austin and Houston market areas.

NOTES:

1) SELECTING HUBS THAT ARE FROM EL PASO, AND FAR WEST TEXAS DOES NOT SHOW GOOD FAITH IN YOUR SELECTION PROCESS.

2) IF YOU DO NOT UNDERSTAND THESE DIRECTIONS OR NEED ASSISTANCE PLEASE CONTACT THE SFA PROCUREMENT OFFICE FOR HELP.



Search For Vendors - Ch

https://mycpa.cpa.state.tx.us/tpasscmblsearch/CmblHubSearch.do

Glenn Hegar
Texas Comptroller of Public Accounts

Search For Vendors

Help

Results For HUBs Only Search

Search found 222 vendors, 222 are HUB's, Includes 0 Inactive Vendors.
Search Condition : SearchType=HUB's Only,Section1 Class Code=910,Section1 Item(s)=(75)

Back

Vendor ID	Company Name	Contact Person	City	Email	Phone	Business Description
1475357271900	1DZ ENTERPRISE, L.L.C	Debra A. Garcia	INGLESIDE	debbiegarc20@gmail.com	361-534-4244	Janitorial Service
1204990047000	3 B'S CONSTRUCTION	Owner/Andrew Rosas	LYTLE	andrewrosas@sbcglobal.net	210-382-0984	New construction, remodeling to include wood frame, metal stud,drywall. Installati suspended ceiling, concrete work and demolition.
1461995281600	360TXC	Tony Lester	AUSTIN	estimator@360txc.com	877-710-7474	We provide general contracting and complete project planning and management s vast project portfolio covers everything from 1,000sqft interiors and renovations t 25,000sqft+ ground-up and core-shell buildouts.
1472181557000	3J CONTRACTING	Jose Mondragon	CORPUS CHRISTI	3jcontracting@gmail.com	361-548-4937	Remodel, repair, Paint, Lawn Services,constructions,electrical, plumbing, fencing a demolition of small building,& hauling land waste.
1743004957100	A-1 TOTAL INTERIOR, INC.	Pres./CEO/Randy Sanchez Sr.	SAN ANTONIO	A1totalinteriors@sbcglobal.net	210-733-3739	Construction finish out new builds; remodels; commercial & residential contractors
1760404341800	A.C.T. SERVICES	President / Deborah Harris	SAN ANTONIO	debbie@actsoftx.com	210-902-5785	A.C.T. Services provides quality residential and commercial design and constructio
1752966405800	ACUMEN ENTERPRISES, INC.	Wayne Boyter	DESOTO	wayne@acumen-enterprises.com	972-572-0701	Mechanical HVAC & plumbing contractor, mechanical insulation, & general construc
1760616493100	ADVACS, INC.	Francis Foyeku	HOUSTON	fofoyeku@aol.com	713-266-7200	IT Services/Facilities Maintenance Service/Construction Management of Division 9
1263904481200	AG CONSTRUCTION MANAGEMENT	Anthony Gutierrez	AUSTIN	info@agcm.us	512-579-6498	Service general contractors for the federal, state, public works projects
1741946544200	AIR STREAM GENERAL CONSTRUCTION, INC	Rebecca Flores	SAN ANTONIO	bflores@air-streamservices.com	210-533-3264	Air-Conditioning, HVAC Contracting, Mechanical Services, and Facilities Support Se
1811519383300	ALA SIGNATURE SERVICES, LLC	Linda Alexander	KATY	alasignatureservices@gmail.com	817-993-	Facility/Building Maintenance Services; Janitorial/Custodial Services; General Freig Local; Administrative Services

10:32 AM
11/17/2016

L V

SFASU Project: RFP #ELECTRICAL RENOVATION

This list of potential HUB subcontractors is provided for information only and SFA does not endorse, recommend, nor attest to the capabilities of any company or individual listed. A complete list of State certified HUBs can be searched on-line at https://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp

The Respondent is responsible for compliance with the Good Faith Effort requirements outlined in HUB Subcontracting Plan documents.

□□ e □ □en □□ in □he □in i□□ □□ e□ □e i en□i ie n □he □in p e□ he □en □i□ □e□p n□i e □ i en□i □ i□□ □□e□ □h □ □ □ep□e□en□□□ n□□ □in pp □□□ni□ie□

914-38	Electrical

914-84	Trade Services, Construction, (Not Otherwise Classified)

910-17 Energy Computerized Control System, HVAC, Lighting, Utilities, etc., Installation, Maintenance and Repair Services

910-82 Wiring and Other Electrical Maintenance and Repair Services

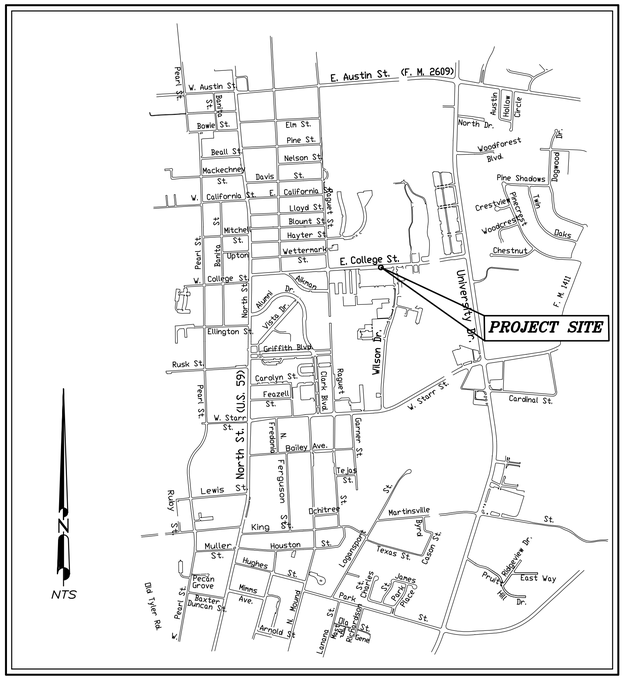
911-00 CONSTRUCTION AND UTILITIES, HIGHER EDUCATION

911-77 Facilities and Other Improvements

912-00 CONSTRUCTION SERVICES, GENERAL, INCLUDING MAINTENANCE AND REPAIR SERVICES)

EXHIBIT F
ENGINEERING AND CONSULTING DOCUMENTS AND DRAWINGS DATED JUNE 21, 2024

ELECTRICAL RENOVATION
EAST COLLEGE STREET



STEPHEN F. AUSTIN
STATE UNIVERSITY
NACOGDOCHES, TEXAS

SHEET LIST

NO.	SHEET ID.	TITLE
1.	G-000	COVER SHEET
2.	C-002	OVERALL SITE PLAN & CIVIL NOTES
3.	C-700	PAVEMENT REPAIR PLAN AND LIMITS
4.	C-701	PAVEMENT REPAIR PLAN AND LIMITS
5.	C-800	UNDERGROUND ELECTRICAL ROUTE – PLAN AND PROFILE 10+00 TO 15+00
6.	C-801	UNDERGROUND ELECTRICAL ROUTE – PLAN AND PROFILE 15+00 TO 20+00
7.	C-802	UNDERGROUND ELECTRICAL ROUTE – PLAN AND PROFILE LATERAL A
8.	C-803	UNDERGROUND ELECTRICAL ROUTE – PLAN AND PROFILE LATERAL B
9.	C-900	CIVIL DETAILS
10.	EDS1.1	ELECTRICAL DEMOLITION SITE PLAN
11.	ES1.1	ELECTRICAL SITE PLAN
12.	ES1.2	PHOTOMETRIC SITE PLAN
13.	EP7.1	ELECTRICAL DETAILS
14.	EP9.1	ELECTRICAL RISER DIAGRAM

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EMA Engineering and Consulting
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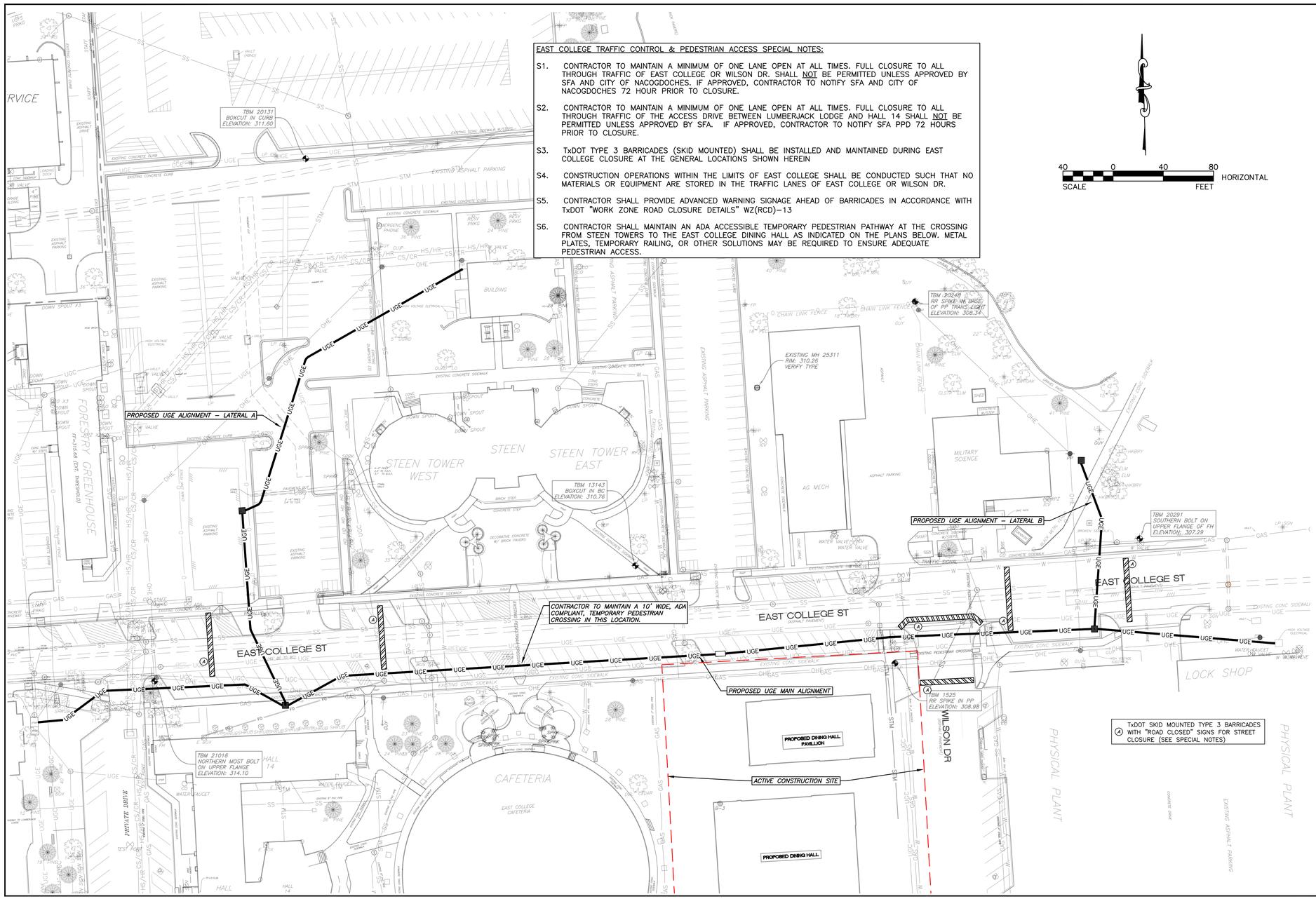
TBPE Firm Registration No. F-893
www.EMAengineer.com
Phone: 1 . 800 . 933 . 0538

TWO FIFTEEN CONSULTING
ENGINEERS + SURVEYORS
412 North St.
Nacogdoches, TX 75961
p: 936-569-0505
TBPE F-17461
TBPLS 10194339



GENERAL CIVIL NOTES:

1. CONTRACTOR SHALL CONTACT THE OWNER (SFASU PHYSICAL PLANT DEPARTMENT) AND Texas811 SYSTEM 48 HOURS PRIOR TO BEGINNING EXCAVATION AND SHALL NOTIFY THE LOCAL GAS, TELEPHONE AND ELECTRIC UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.
2. EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL NOTIFY THE AGENCY RESPONSIBLE FOR EACH SPECIFIC UTILITY PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR IS HEREBY NOTIFIED THAT ALL EXISTING BURIED UTILITIES ARE NOT SHOWN AND THAT HE IS RESPONSIBLE FOR LOCATING AND REPAIRING ANY UTILITIES DAMAGED AS A RESULT OF HIS OPERATIONS.
3. CONTRACTOR SHALL PROVIDE THE NECESSARY FLAGMEN AND EQUIPMENT REQUIRED TO SAFELY MANAGE THE LOCAL TRAFFIC DURING THE CONSTRUCTION. BARRICADES AND SIGNAGE SHALL BE ADEQUATELY PLACED TO RELOCATE THRU TRAFFIC AROUND THE WORK ZONES. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL, LIGHTS, BARRICADES, SIGNAGE, ETC. IN ACCORDANCE WITH TXDOT'S MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST REVISION. (SEE SPECIAL CONSTRUCTION NOTES)
4. WATER FOR CONSTRUCTION SHALL BE FURNISHED BY THE OWNER. THE OWNER SHALL PROVIDE A METER AND BACKFLOW ASSEMBLY FOR CONNECTION BY THE CONTRACTOR.
5. CONTRACTOR SHALL INCORPORATE THE USE OF A TRENCH BOX AND/OR OTHER ACCEPTABLE SAFETY SYSTEM IN ANY TRENCH THAT EXCEEDS FIVE (5) FEET IN DEPTH. THE BOX OR SAFETY SYSTEM SHALL MEET ALL OSHA REQUIREMENTS.
6. CONTRACTOR SHALL USE CARE TO NOT DAMAGE GRASS, TREES, SHRUBS, ETC. OUTSIDE THE IMMEDIATE WORKING AREA. ALL ITEMS DAMAGED OR REMOVED BY THE CONTRACTOR AS A RESULT OF CONSTRUCTION PROCEDURES SHALL BE REPLACED AND ALL COSTS SHALL BE BORNE BY THE CONTRACTOR.
7. ALL IMPROVED ROADWAYS/DRIVEWAYS DAMAGED DUE TO CONSTRUCTION PROCEDURES SHALL BE REPAIRED WITH LIKE MATERIALS. AS A MINIMUM, THE REPAIRED SECTION SHALL CONTAIN AT LEAST 6" OF COMPACTED LIKE MATERIAL.
8. ALL UTILITY COVERS (MANHOLES, VALVE BOXES, ETC.) IN PAVED AREAS SHALL BE ADJUSTED TO BE FLUSH WITH FINISHED SURFACES.
9. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL SURPLUS MATERIAL NOT INCORPORATED INTO THE PROJECT.
10. CONTRACTOR SHALL PERIODICALLY WATER THE WORK ZONES TO CONTROL DUST.
11. CONTRACTOR SHALL EXERCISE CARE WHEN WORKING IN THE VICINITY OF LANDSCAPE SPRINKLER SYSTEMS. ALL SPRINKLER SYSTEMS DAMAGED DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
12. CONTRACTOR SHALL COORDINATE WITH THE SFA FOR PROPER STORAGE OF ALL EQUIPMENT AND MATERIALS.
13. NO ADDITIONS OR DELETIONS TO THE CONSTRUCTION SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND ENGINEER. ANY CHANGES MADE WITHOUT APPROVAL MAY RESULT IN NON-PAYMENT FOR THE MATERIALS AND LABOR ASSOCIATED WITH THE ADDED OR DELETED WORK.
14. ENGINEER SHALL PROVIDE HORIZONTAL AND VERTICAL CONTROL FOR CONSTRUCTION STAKING BY CONTRACTOR. COST FOR CONSTRUCTION STAKING SHALL BE CONSIDERED SUBSIDIARY TO PROJECT COST.
15. CONTRACTOR SHALL PROVIDE A PROPOSED WORK AND SEQUENCING PLAN TO SFA FOR APPROVAL PRIOR TO CONSTRUCTION. CONTRACTOR SHALL SCHEDULE WORK TO PROGRESS SUCH THAT NO STREET IS LEFT IN A CLOSED OR INCOMPLETE STATE PRIOR TO BEGINNING WORK SOMEWHERE ELSE, UNLESS APPROVAL IN WRITING FROM THE OWNER IS PROVIDED OTHERWISE.
16. CONTRACTOR SHALL COORDINATE WITH SFA PHYSICAL PLANT DEPARTMENT FOR SEQUENCING AND INTERNAL CAMPUS COMMUNICATIONS PRIOR TO ANY ROAD CLOSURE. CONTRACTOR SHALL MAINTAIN EMERGENCY SERVICES ACCESS TO CRITICAL LOCATIONS (I.E. FIRE DEPT. CONNECTIONS, EMERGENCY CALL STATIONS, ETC.) THROUGHOUT CONSTRUCTION.
17. CONTRACTOR SHALL PROVIDE PLASTIC DRUM BARRICADES ALONG EAST COLLEGE STREET FOR PROTECTION OF THE WORK ZONE AND ENHANCED PEDESTRIAN VISIBILITY AND PROVIDE RIGID PERIMETER CONSTRUCTION FENCING ALONG THE SIDEWALK TO DIRECTING PEDESTRIAN TRAFFIC TO SAFE ROUTES TO AND FROM ADJACENT BUILDINGS AND PARKING FACILITIES.
18. EXISTING STREET STORM INLETS SHALL BE PROTECTED FROM SILT AND EXCAVATED MATERIAL, AND REMAIN FUNCTIONAL, AT ALL TIMES OF CONSTRUCTION. SEDIMENT ACCUMULATED AROUND INLETS SHALL BE CLEARED PER THE SWPPP OR AT A MINIMUM AFTER EACH RAINFALL EVENT.
19. CONTRACTOR TO SALVAGE EXISTING STREET LIGHTS AND FIXTURES LOCATED ON EXISTING POWER POLES. COORDINATE WITH SFA PHYSICAL PLANT FOR REMOVAL AND STORAGE.

General Notes

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3. THE CONTRACTOR SHALL NOTIFY SFASU PHYSICAL PLANT DEPT. FOR INSPECTION PRIOR TO COVERING UNDERGROUND IMPROVEMENTS, BEFORE CLOSING ANY STREETS OR SIDEWALKS, OR MAKING ANY UTILITY TAPS OR CURB CUTS.
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TWO FIFTEEN CONSULTING
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Nacogdoches, TX 75961
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TBPE F-17461
TBPLS 10194339

Engineer Seal:

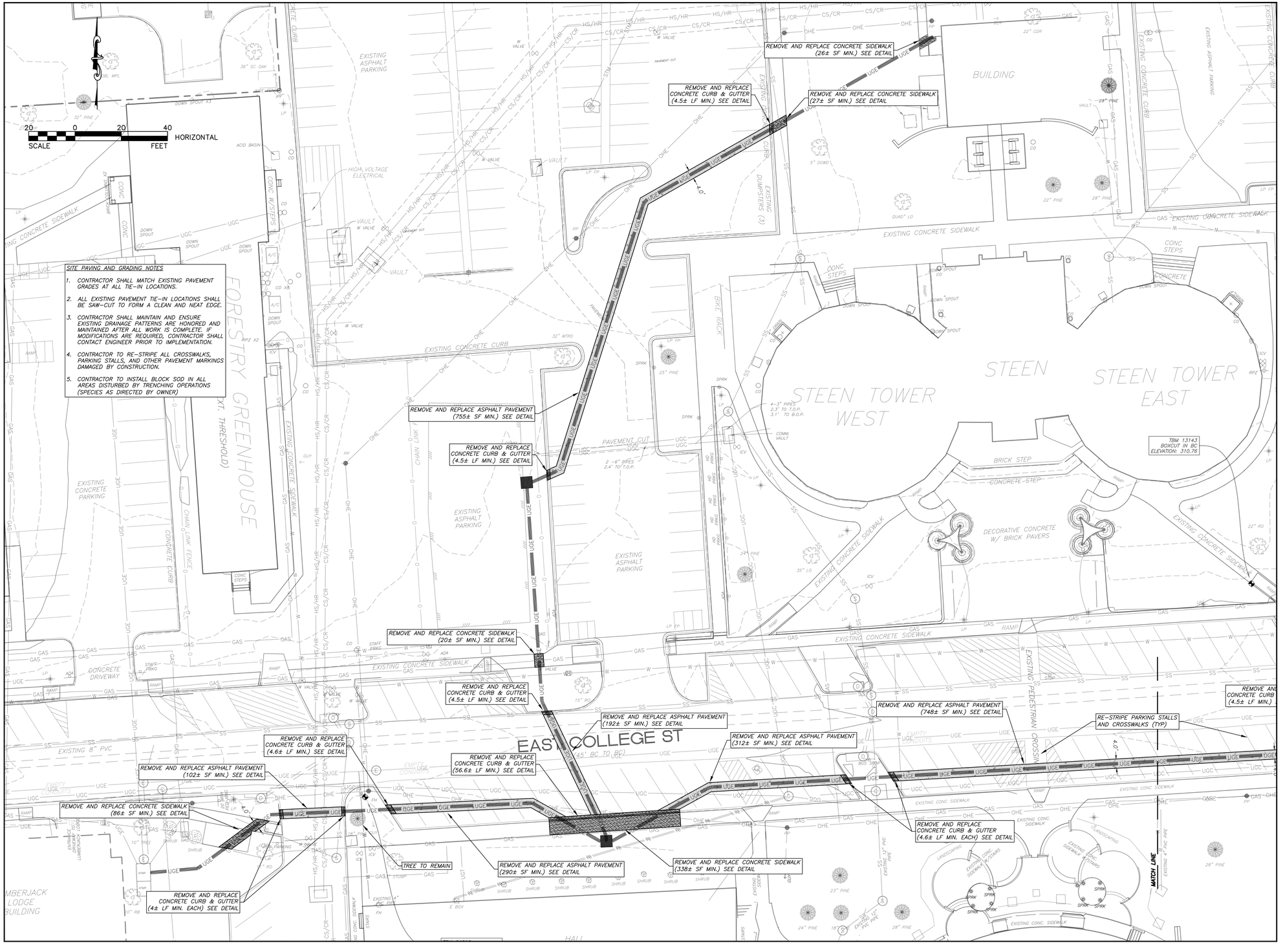
6/21/24
STATE OF TEXAS
MICHAEL P. DELANEY
120455
LICENSED
PROFESSIONAL ENGINEER

OVERALL SITE PLAN & CIVIL NOTES

EAST COLLEGE ELECTRICAL REROUTE

STEPHEN F. AUSTIN S.U.
NACOGDOCHES, TEXAS

Scale:	Issue Date:
SEE PLAN	06/21/2024
Drawn By:	Checked By:
TAD	MPD
File:	Drawing No.
22078_002.dwg	**C-002**



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STATE OF TEXAS
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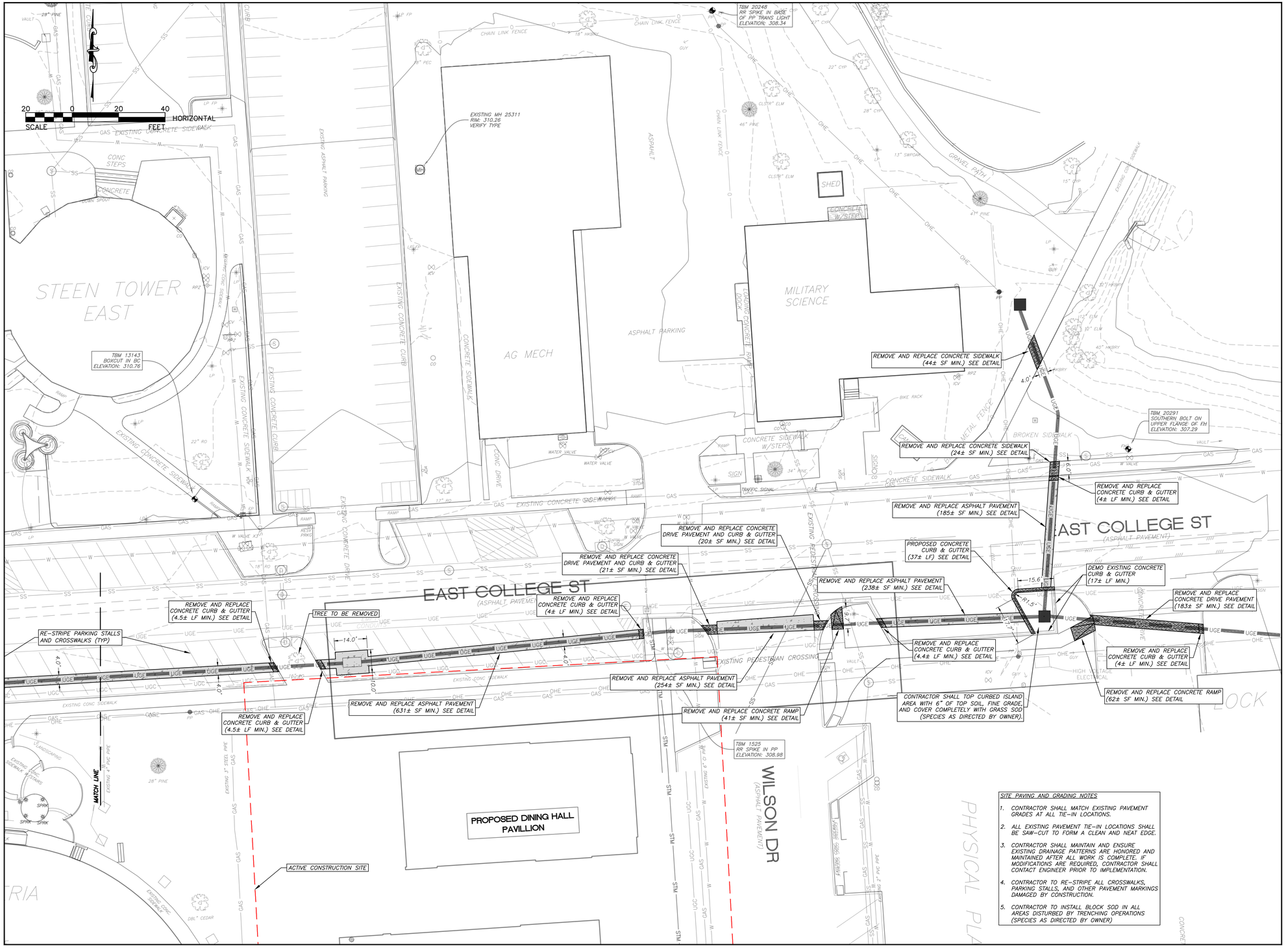
SITE PAVEMENTS REPAIR PLAN AND LIMITS

EAST COLLEGE ELECTRICAL REROUTE

STEPHEN F. AUSTIN S.U.
NACOGDOCHES, TEXAS

Scale:	Issue Date:
SEE PLAN	06/21/2024
Drawn By: TAD	Checked By: MPD
File: 22078_700.dwg	Drawing No. **C-700**



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SITE PAVEMENTS REPAIR PLAN AND LIMITS

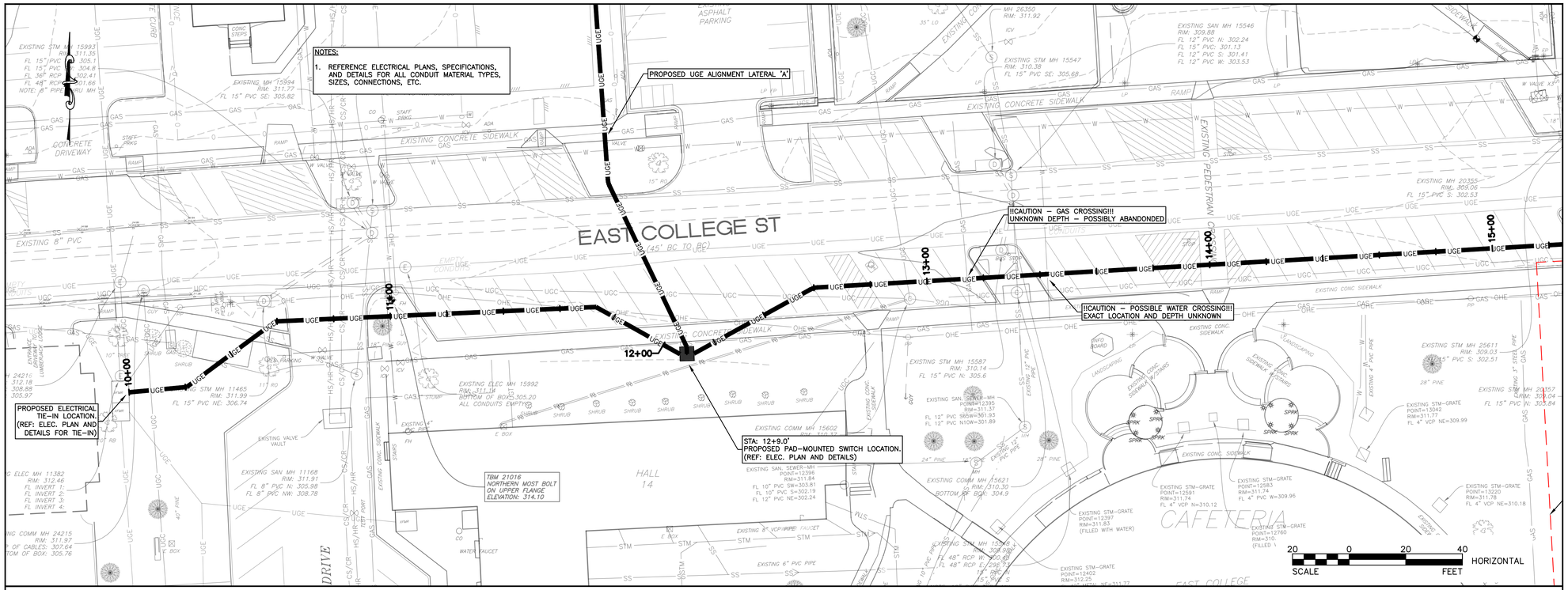
EAST COLLEGE ELECTRICAL REROUTE

STEPHEN F. AUSTIN S.U.
NACOGDOCHES, TEXAS

SITE PAVING AND GRADING NOTES

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT GRADES AT ALL TIE-IN LOCATIONS.
2. ALL EXISTING PAVEMENT TIE-IN LOCATIONS SHALL BE SAW-CUT TO FORM A CLEAN AND NEAT EDGE.
3. CONTRACTOR SHALL MAINTAIN AND ENSURE EXISTING DRAINAGE PATTERNS ARE HONORED AND MAINTAINED AFTER ALL WORK IS COMPLETE. IF MODIFICATIONS ARE REQUIRED, CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO IMPLEMENTATION.
4. CONTRACTOR TO RE-STRIPE ALL CROSSWALKS, PARKING STALLS, AND OTHER PAVEMENT MARKINGS DAMAGED BY CONSTRUCTION.
5. CONTRACTOR TO INSTALL BLOCK SOD IN ALL AREAS DISTURBED BY TRENCHING OPERATIONS (SPECIES AS DIRECTED BY OWNER)

Scale:	Issue Date:
SEE PLAN	06/21/2024
Drawn By: TAD	Checked By: MPD
File: 22078_700.dwg	Drawing No. **C-701**



NOTES:

1. REFERENCE ELECTRICAL PLANS, SPECIFICATIONS, AND DETAILS FOR ALL CONDUIT MATERIAL TYPES, SIZES, CONNECTIONS, ETC.

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TBPLS 10194339

Engineer Seal:

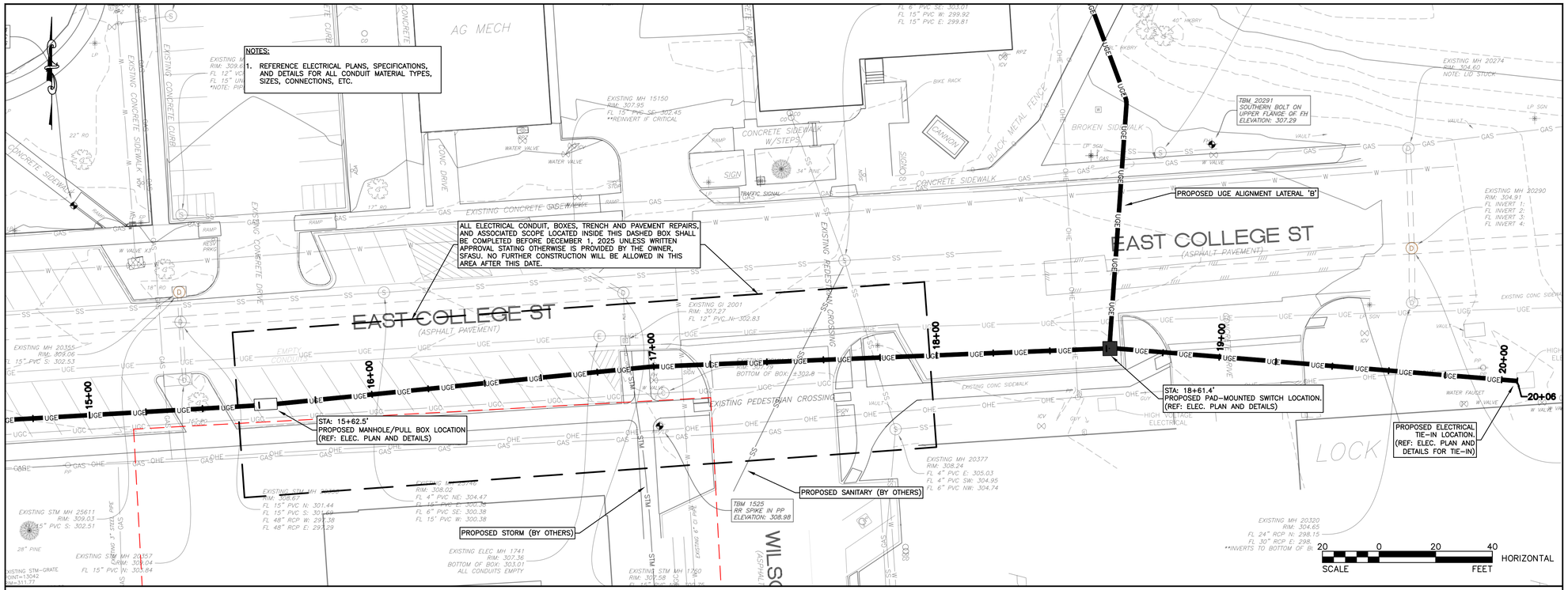
6/21/24
MICHAEL P. DELANEY
120455
Michael Delaney

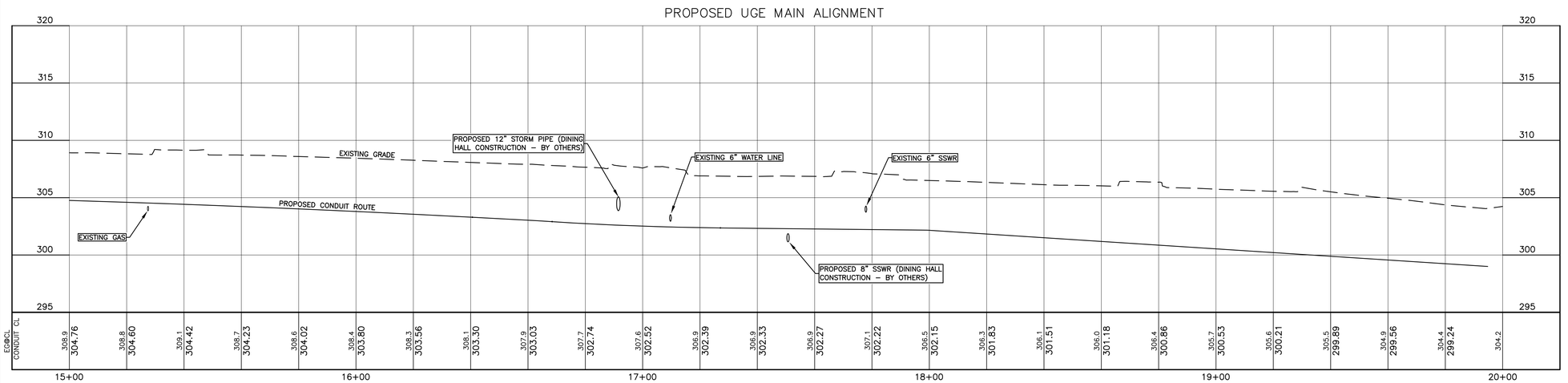
UNDERGROUND ELECTRICAL ROUTE - PLAN AND PROFILE

EAST COLLEGE ELECTRICAL REROUTE

STEPHEN F. AUSTIN S.U.
NACOGDOCHES, TEXAS

Scale: SEE PLAN	Issue Date: 06/21/2024
Drawn By: TAD	Checked By: MPD
File: 22078_800.dwg	Drawing No. **C-800**





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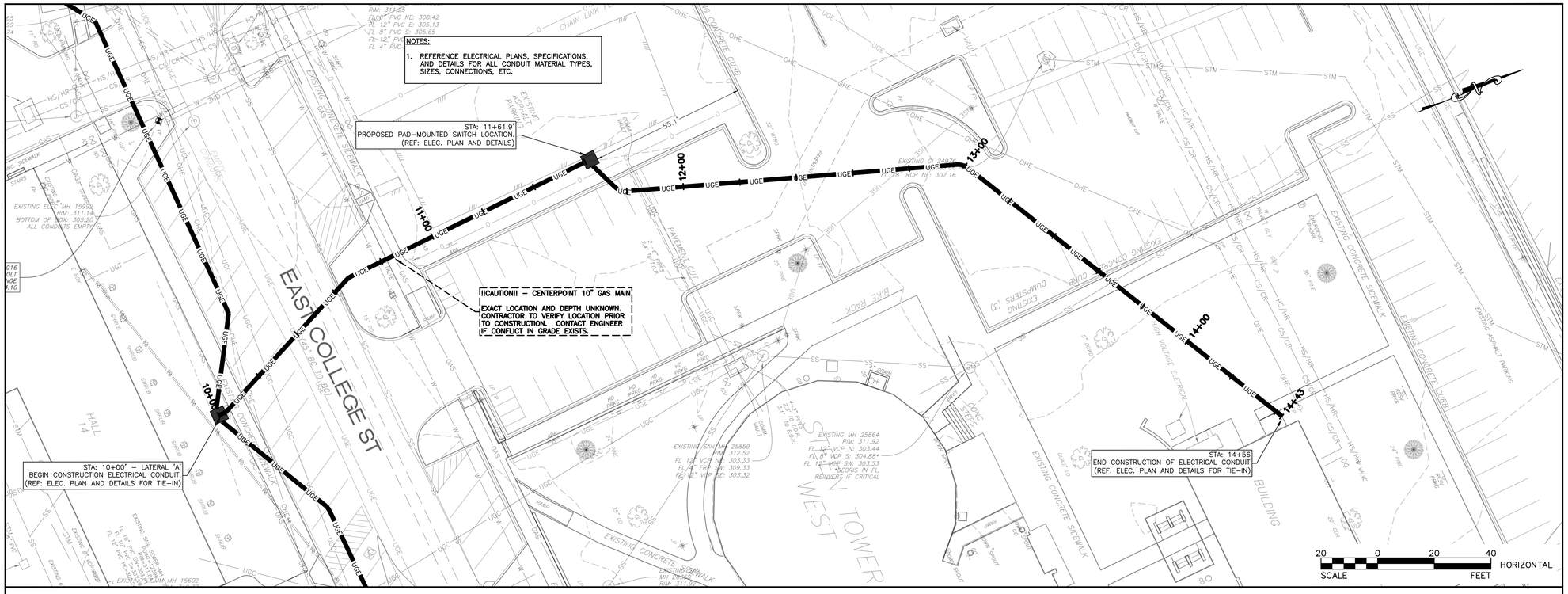
6/21/2024

UNDERGROUND ELECTRICAL ROUTE - PLAN AND PROFILE

EAST COLLEGE ELECTRICAL REROUTE

STEPHEN F. AUSTIN S.U.
NACOGDOCHES, TEXAS

Scale:	Issue Date:
SEE PLAN	06/21/2024
Drawn By: TAD	Checked By: MPD
File: 22078_800.dwg	Drawing No. **C-801**



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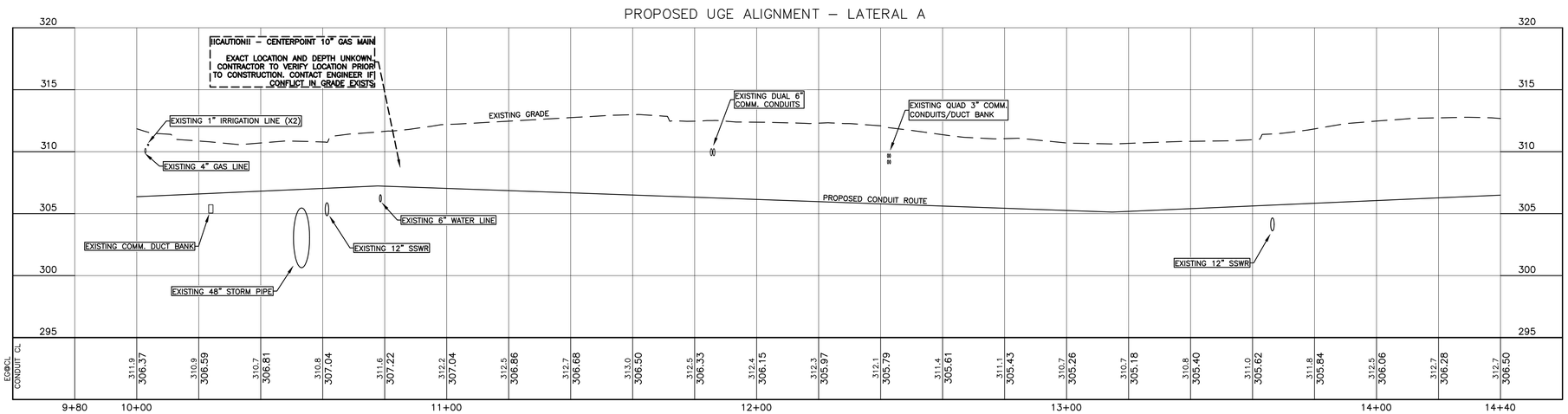

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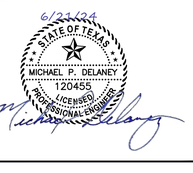
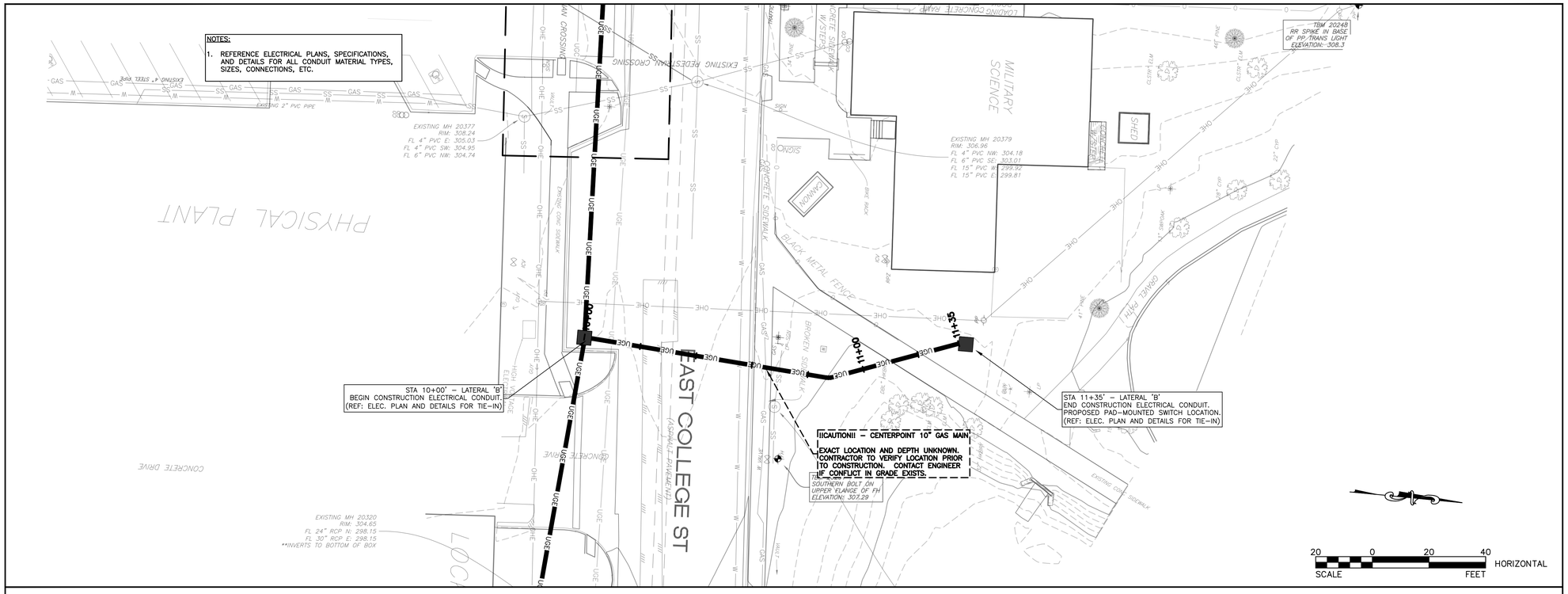


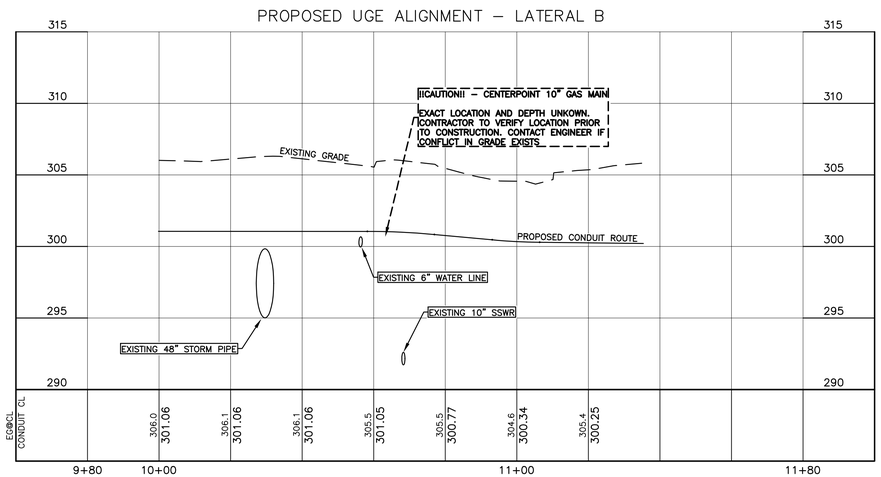
UNDERGROUND ELECTRICAL ROUTE - PLAN AND PROFILE

EAST COLLEGE ELECTRICAL REROUTE

STEPHEN F. AUSTIN S.U. NACOGDOCHES, TEXAS

Scale:	Issue Date:
SEE PLAN	06/21/2024
Drawn By: TAD	Checked By: MPD
File: 22078_800.dwg	Drawing No. **C-802**





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UNDERGROUND ELECTRICAL ROUTE - PLAN AND PROFILE

EAST COLLEGE ELECTRICAL REROUTE

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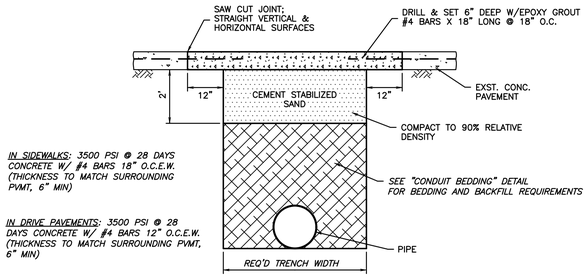
File: 22078_800.dwg	Drawing No. **C-803**



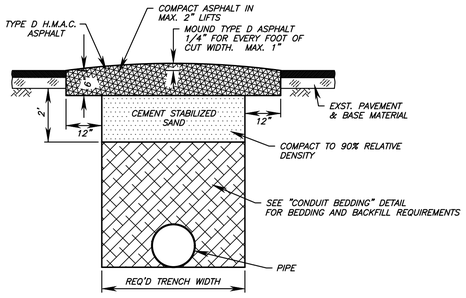
IN SIDEWALKS: 3500 PSI @ 28 DAYS CONCRETE W/ #4 BARS 18" O.C.E.W. (THICKNESS TO MATCH SURROUNDING PVMT, 6" MIN)

IN DRIVE PAVEMENTS: 3500 PSI @ 28 DAYS CONCRETE W/ #4 BARS 12" O.C.E.W. (THICKNESS TO MATCH SURROUNDING PVMT, 6" MIN)

SEE PLANS FOR TRENCH BACKFILL TESTING AND REPORTING REQUIREMENTS (PRIOR TO PAVING).

EXISTING CONCRETE PAVEMENT REPAIR OVER NEW UTILITY TRENCHES

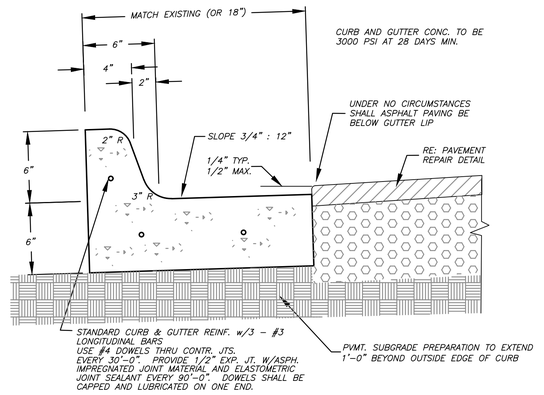
(NOT TO SCALE)



SEE PLANS FOR TRENCH BACKFILL TESTING AND REPORTING REQUIREMENTS (PRIOR TO PAVING).

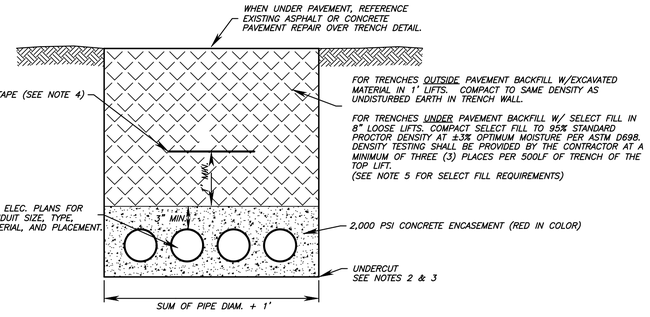
EXISTING ASPHALT PAVEMENT REPAIR OVER NEW UTILITY TRENCHES

(NOT TO SCALE)



STANDARD CURB AND GUTTER DETAIL

(NOT TO SCALE)

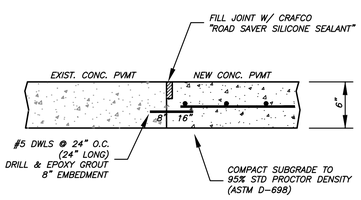


NOTES:

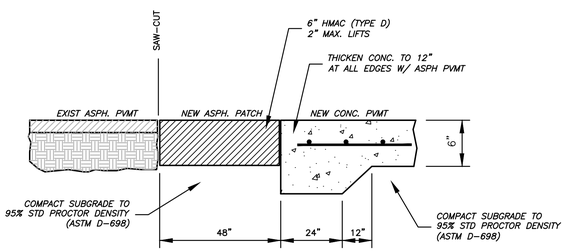
1. CLASS B BEDDING SHALL BE CLEAN BANK SAND OR SELECT FILL MATERIAL.
2. WHERE AN UNSTABLE TRENCH BOTTOM IS ENCOUNTERED WHICH WILL NOT PROVIDE ADEQUATE PIPE SUPPORT, THE TRENCH SHALL BE OVER EXCAVATED AT LEAST 12" AND BACKFILLED WITH SELECT FILL PRIOR TO PLACEMENT OF THE PIPE. NO EXTRA PAY.
3. ALL UNDERCUT SHALL BE BACKFILLED WITH SELECT FILL SOIL CUSHION.
4. WARNING TAPE SHALL BE ACID AND ALKALI RESISTANT 5 MIL THICK VINYL FILM WITH SOLID ALUMINUM CORE 6-INCH WIDE. TAPE SHALL BE OF A TYPE SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES.
5. SELECT FILL SHALL CONSIST OF CLAYEY SAND (SC) OR SANDY LEAN CLAY (CL) WITH A PLASTICITY INDEX NOT LESS THAN 4 AND NOT GREATER THAN 18 WITH A LIQUID LIMIT LESS THAN 40. MATERIAL SHALL BE FREE OF DELETERIOUS MATERIAL, CLODS GREATER 3", ORGANIC MATERIAL AND THE LIKE.

CONDUIT BEDDING DETAIL

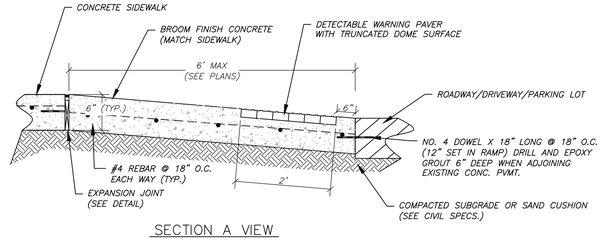
(NOT TO SCALE)



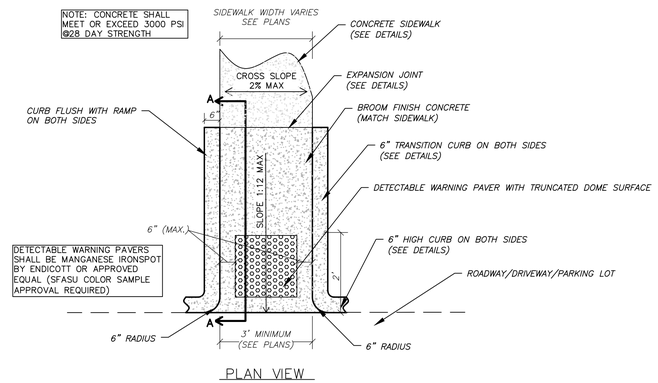
CONCRETE TO CONCRETE TRANSITION



ASPHALT TO CONCRETE TRANSITION



SECTION A VIEW



PLAN VIEW

STRAIGHT CURB RAMP WITH DETECTABLE PAVERS

NOT TO SCALE

General Notes

1. EXISTING UTILITY LOCATIONS AND/OR MATERIALS SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR IS HEREBY NOTIFIED THAT ALL EXISTING UTILITIES, WHETHER BURIED OR OVERHEAD, MAY OR MAY NOT BE SHOWN AND THAT THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REPAIRING AND/OR REPLACING ANY AND ALL UTILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS AND THE COST(S) FOR WHICH SHALL BE BORNE BY THE CONTRACTOR.
2. THE CONTRACTOR IS HEREBY NOTIFIED THAT DANGEROUS UTILITIES MAY EXIST IN THE PROJECT AREA. THESE MAY INCLUDE BUT ARE NOT LIMITED TO: OVERHEAD OR UNDERGROUND ELECTRIC LINES, TELEPHONE LINES, FIBER-OPTIC LINES, AND GAS LINES.
3. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEERING DEPT. FOR INSPECTION PRIOR TO COVERING UNDERGROUND IMPROVEMENTS, BEFORE POURING BUILDING SLABS, OR MAKING ANY UTILITY TAPS OR CURB CUTS.
4. THIS IS NOT A BOUNDARY SURVEY.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING EROSION CONTROL (SILT FENCING) ON ALL DOWNHILL SLOPE AREAS OF THIS SITE.

No.	Revision/Issue	Date
1	ISSUED FOR PERMIT & CONSTRUCTION	06/21/24

TWO FIFTEEN CONSULTING
ENGINEERS + SURVEYORS
412 North St.
Nacogdoches, TX 75961
p: 936-569-0505
TBPE F-17461
TBPLS 10194339

Engineer Seal:

6/21/24

STATE OF TEXAS
MICHAEL P. DELANEY
120455
LICENSED PROFESSIONAL ENGINEER

CIVIL DETAILS SHEET

EAST COLLEGE ELECTRICAL REROUTE

STEPHEN F. AUSTIN S.U. NACOGDOCHES, TEXAS

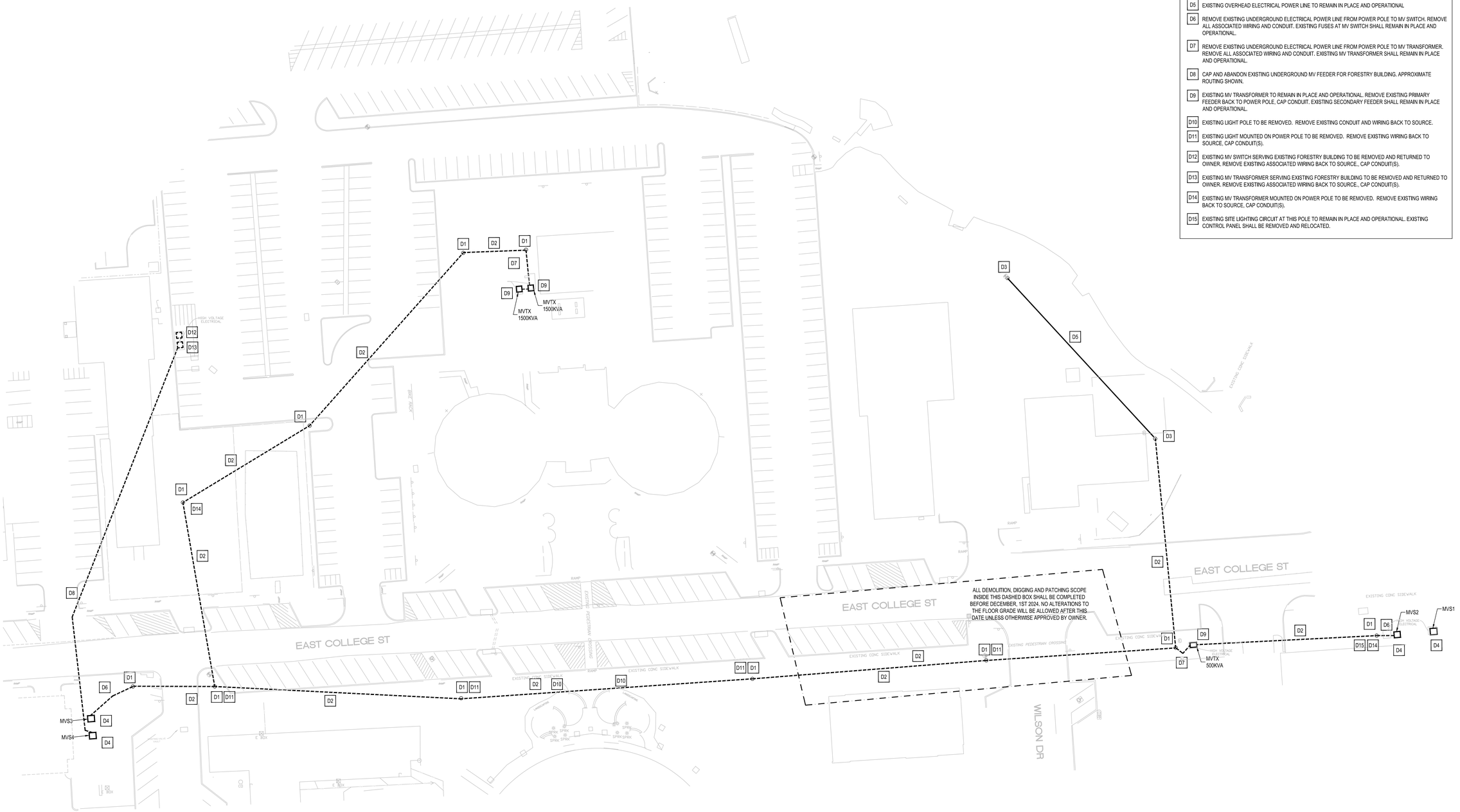
Scale:	Issue Date:
SEE PLAN	06/21/2024
Drawn By: TAD	Checked By: MPD
File: 22078_900.dwg	Drawing No. **C-900**

ELECTRICAL DEMOLITION GENERAL NOTES

1. REFER TO SPECIFICATION SECTION 26 05 05, ELECTRICAL DEMOLITION REMODELING, FOR GENERAL DEMOLITION REQUIREMENTS.
2. ALL MATERIAL REMOVED AND NOT RETAINED BY THE OWNER SHALL BE DISPOSED OF OFF SITE IN A LAWFUL MANNER.
3. COORDINATE WITH ENGINEER AND OWNER PRIOR TO DEMOLISHING OR DISCONNECTING ANY EXISTING POWER LINES OR SWITCHES.

ELECTRICAL DEMOLITION PLAN NOTES

- D1 REMOVE EXISTING POWER POLE. CAP POWER POLE HOLE AS INSTRUCTED BY CIVIL ENGINEER.
- D2 REMOVE EXISTING OVERHEAD ELECTRICAL POWER LINE.
- D3 EXISTING POWER POLE TO REMAIN IN PLACE AND OPERATIONAL.
- D4 EXISTING MV SWITCH TO REMAIN IN PLACE AND OPERATIONAL.
- D5 EXISTING OVERHEAD ELECTRICAL POWER LINE TO REMAIN IN PLACE AND OPERATIONAL
- D6 REMOVE EXISTING UNDERGROUND ELECTRICAL POWER LINE FROM POWER POLE TO MV SWITCH. REMOVE ALL ASSOCIATED WIRING AND CONDUIT. EXISTING FUSES AT MV SWITCH SHALL REMAIN IN PLACE AND OPERATIONAL.
- D7 REMOVE EXISTING UNDERGROUND ELECTRICAL POWER LINE FROM POWER POLE TO MV TRANSFORMER. REMOVE ALL ASSOCIATED WIRING AND CONDUIT. EXISTING MV TRANSFORMER SHALL REMAIN IN PLACE AND OPERATIONAL.
- D8 CAP AND ABANDON EXISTING UNDERGROUND MV FEEDER FOR FORESTRY BUILDING. APPROXIMATE ROUTING SHOWN.
- D9 EXISTING MV TRANSFORMER TO REMAIN IN PLACE AND OPERATIONAL. REMOVE EXISTING PRIMARY FEEDER BACK TO POWER POLE, CAP CONDUIT. EXISTING SECONDARY FEEDER SHALL REMAIN IN PLACE AND OPERATIONAL.
- D10 EXISTING LIGHT POLE TO BE REMOVED. REMOVE EXISTING CONDUIT AND WIRING BACK TO SOURCE.
- D11 EXISTING LIGHT MOUNTED ON POWER POLE TO BE REMOVED. REMOVE EXISTING WIRING BACK TO SOURCE, CAP CONDUIT(S).
- D12 EXISTING MV SWITCH SERVING EXISTING FORESTRY BUILDING TO BE REMOVED AND RETURNED TO OWNER. REMOVE EXISTING ASSOCIATED WIRING BACK TO SOURCE., CAP CONDUIT(S).
- D13 EXISTING MV TRANSFORMER SERVING EXISTING FORESTRY BUILDING TO BE REMOVED AND RETURNED TO OWNER. REMOVE EXISTING ASSOCIATED WIRING BACK TO SOURCE., CAP CONDUIT(S).
- D14 EXISTING MV TRANSFORMER MOUNTED ON POWER POLE TO BE REMOVED. REMOVE EXISTING WIRING BACK TO SOURCE, CAP CONDUIT(S).
- D15 EXISTING SITE LIGHTING CIRCUIT AT THIS POLE TO REMAIN IN PLACE AND OPERATIONAL. EXISTING CONTROL PANEL SHALL BE REMOVED AND RELOCATED.



1 ELECTRICAL DEMOLITION SITE PLAN
1"=30'-0"

SUBMISSION OF BID WILL BE CONSIDERED ACKNOWLEDGMENT THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS VERIFIED ALL EXISTING JOB CONDITIONS AND INCLUDED ANY NECESSARY MODIFICATION TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND WORKING SYSTEM.

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147169
LICENSED PROFESSIONAL ENGINEER
06-21-2024

ISSUE DATE
JUNE 21, 2024

ISSUE STATUS	DATE

ELECTRICAL RENOVATION
STEPHEN F AUSTIN
STATE UNIVERSITY
NACOGDOCHES, TX

EMA JOB #: 1-001-1269-007
DRAWN BY: LPL
CHECKED: QS

ELECTRICAL DEMOLITION SITE PLAN

SHEET NUMBER
EDS1.1

SPECIALTY LUMINAIRE SCHEDULE: ELEC RENOV MAIN CIRCUIT 3

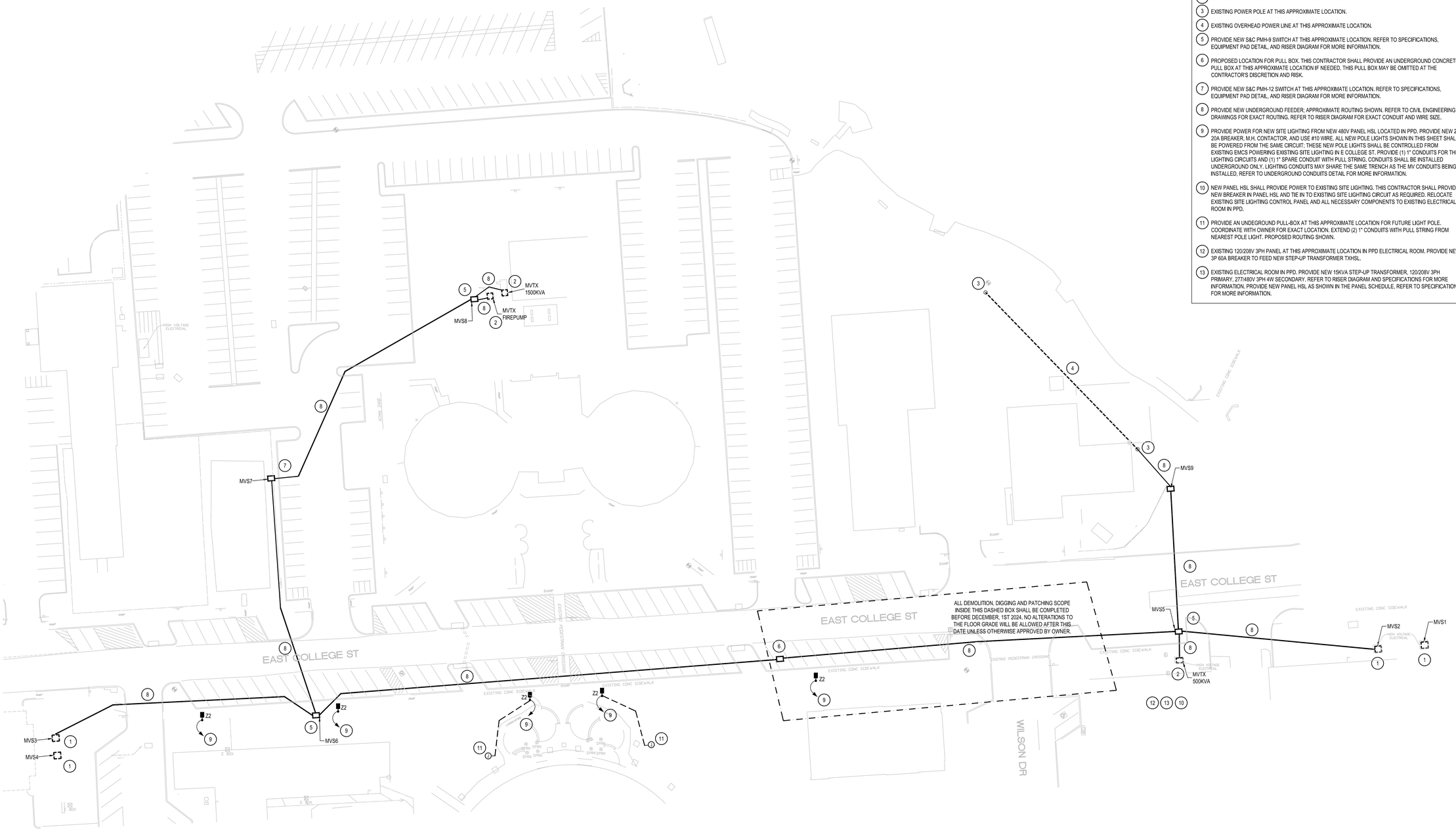
Alina P - (903) 581-2677
APereira@emaengineer.com
EMA Project # 1 001 1269 007

General Requirements:
See Luminaire Schedule for all General Requirements. No equals accepted to any listed fixture on this schedule only.

Project Specific Comments and Requirements:
Type project specific notes here

Comments Key:

Type	Description	Luminaire Equivalents	Delivered Lumens	Comments	Volts	Watts Max
Z2	Pole-Mounted LED Area Luminaire, 30' Square Straight Steel Pole with Base Cover (5" shaft, 11-gauge wall thickness, 100MPH), with 1 Head, T2 Medium Distribution, Color: Bronze	McGraw Edison GALN-SA6B-740-8-T2-BZ/RPSQ-30-5-11-AB-D4-DB, No Equal, No Equal	33935		480V	243
ZZZ	END OF SCHEDULE, , with , Color:					



1 ELECTRICAL SITE PLAN
1"=30'-0"

ELECTRICAL GENERAL NOTES

1. COORDINATE WITH CIVIL ENGINEER FOR EXACT ROUTING.
2. ALL NEW POWER LINES INSTALLED SHALL BE INSTALLED UNDERGROUND. NO NEW OVERHEAD POWER LINES ARE ACCEPTABLE.
3. THIS CONTRACTOR IS RESPONSIBLE FOR SAW CUTTING, DITCHING, PATCHING, BACKFILLING, ETC. AS REQUIRED TO EXECUTE THE EXACT ROUTING SPECIFIED BY THE CIVIL ENGINEER.
4. UTILITY - THE CONTRACTOR AND SUBCONTRACTORS SHALL COORDINATE WITH ALL UTILITY COMPANIES AND THE OWNER'S REPRESENTATIVE TO DETERMINE THE LOCATION OF ALL EXISTING LINES AND UTILITIES BEFORE DITCHING IS PERFORMED. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR REPAIR OF ANY CUT OR DAMAGED LINES OR UTILITIES THAT ARE NOT SHOWN ON ANY PLANS.

ELECTRICAL PLAN NOTES

1. EXISTING MV SWITCH AT THIS APPROXIMATE LOCATION.
2. EXISTING MV TRANSFORMER AT THIS APPROXIMATE LOCATION.
3. EXISTING POWER POLE AT THIS APPROXIMATE LOCATION.
4. EXISTING OVERHEAD POWER LINE AT THIS APPROXIMATE LOCATION.
5. PROVIDE NEW S&C PMH-9 SWITCH AT THIS APPROXIMATE LOCATION. REFER TO SPECIFICATIONS, EQUIPMENT PAD DETAIL, AND RISER DIAGRAM FOR MORE INFORMATION.
6. PROPOSED LOCATION FOR PULL BOX. THIS CONTRACTOR SHALL PROVIDE AN UNDERGROUND CONCRETE PULL BOX AT THIS APPROXIMATE LOCATION IF NEEDED. THIS PULL BOX MAY BE OMITTED AT THE CONTRACTOR'S DISCRETION AND RISK.
7. PROVIDE NEW S&C PMH-12 SWITCH AT THIS APPROXIMATE LOCATION. REFER TO SPECIFICATIONS, EQUIPMENT PAD DETAIL, AND RISER DIAGRAM FOR MORE INFORMATION.
8. PROVIDE NEW UNDERGROUND FEEDER; APPROXIMATE ROUTING SHOWN. REFER TO CIVIL ENGINEERING DRAWINGS FOR EXACT ROUTING. REFER TO RISER DIAGRAM FOR EXACT CONDUIT AND WIRE SIZE.
9. PROVIDE POWER FOR NEW SITE LIGHTING FROM NEW 480V PANEL HSL LOCATED IN PPD. PROVIDE NEW 2P 20A BREAKER, M.H. CONTACTOR, AND USE #10 WIRE. ALL NEW POLE LIGHTS SHOWN IN THIS SHEET SHALL BE POWERED FROM THE SAME CIRCUIT; THESE NEW POLE LIGHTS SHALL BE CONTROLLED FROM EXISTING EMCS POWERING EXISTING SITE LIGHTING IN E COLLEGE ST. PROVIDE (1) 1" CONDUITS FOR THE LIGHTING CIRCUITS AND (1) 1" SPARE CONDUIT WITH PULL STRING. CONDUITS SHALL BE INSTALLED UNDERGROUND ONLY. LIGHTING CONDUITS MAY SHARE THE SAME TRENCH AS THE MV CONDUITS BEING INSTALLED, REFER TO UNDERGROUND CONDUITS DETAIL FOR MORE INFORMATION.
10. NEW PANEL HSL SHALL PROVIDE POWER TO EXISTING SITE LIGHTING. THIS CONTRACTOR SHALL PROVIDE NEW BREAKER IN PANEL HSL AND TIE IN TO EXISTING SITE LIGHTING CIRCUIT AS REQUIRED. RELOCATE EXISTING SITE LIGHTING CONTROL PANEL AND ALL NECESSARY COMPONENTS TO EXISTING ELECTRICAL ROOM IN PPD.
11. PROVIDE AN UNDERGROUND PULL-BOX AT THIS APPROXIMATE LOCATION FOR FUTURE LIGHT POLE. COORDINATE WITH OWNER FOR EXACT LOCATION. EXTEND (2) 1" CONDUITS WITH PULL STRING FROM NEAREST POLE LIGHT. PROPOSED ROUTING SHOWN.
12. EXISTING 120/208V 3PH PANEL AT THIS APPROXIMATE LOCATION IN PPD ELECTRICAL ROOM. PROVIDE NEW 3P 60A BREAKER TO FEED NEW STEP-UP TRANSFORMER TXHSL.
13. EXISTING ELECTRICAL ROOM IN PPD. PROVIDE NEW 15KVA STEP-UP TRANSFORMER, 120/208V 3PH PRIMARY, 277/480V 3PH 4W SECONDARY. REFER TO RISER DIAGRAM AND SPECIFICATIONS FOR MORE INFORMATION. PROVIDE NEW PANEL HSL AS SHOWN IN THE PANEL SCHEDULE, REFER TO SPECIFICATIONS FOR MORE INFORMATION.

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STEPHEN F AUSTIN
STATE UNIVERSITY
NACOGDOCHES, TX

EMA JOB #: 1-001-1269-007
DRAWN BY: LPL
CHECKED: QS

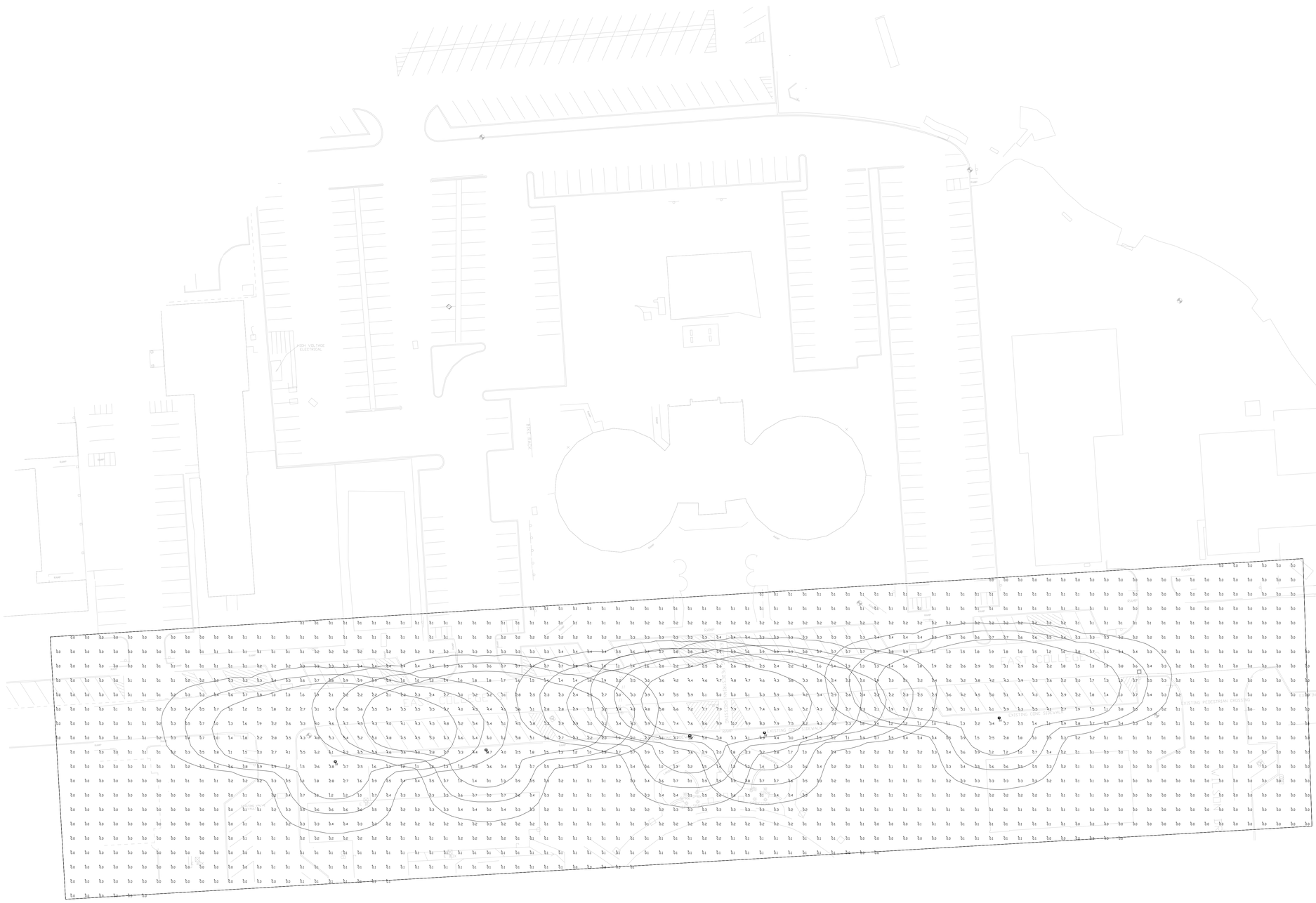
ELECTRICAL SITE PLAN

SHEET NUMBER
ES1.1

SUBMISSION OF BID WILL BE CONSIDERED ACKNOWLEDGMENT THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS VERIFIED ALL EXISTING JOB CONDITIONS AND INCLUDED ANY NECESSARY MODIFICATION TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND WORKING SYSTEM.

Luminaire Schedule						
Symbol	Qty	Label	Description	LLF	Luminaire Lumens	Luminaire Watts
	5	Z2	GALN-SA6B-740-U-T2	0.900	33935	243

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE_Top	Illuminance	Fc	0.91	10.7	0.0	N.A.	N.A.



1 PHOTOMETRIC SITE PLAN
N.T.S.

SITE PLAN PHOTOMETRIC CALCULATIONS GENERAL NOTES

1. ALL CALCULATION POINTS SHOWN ARE AT THE GROUND LEVEL AND ARE MEASURED HORIZONTALLY.
2. LIGHTING CALCULATIONS HAVE BEEN PRODUCED USING AGI32 LIGHTING SOFTWARE BY LIGHTING ANALYSTS, INC.

SUBMISSION OF BID WILL BE CONSIDERED ACKNOWLEDGMENT THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS VERIFIED ALL EXISTING JOB CONDITIONS AND INCLUDED ANY NECESSARY MODIFICATION TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND WORKING SYSTEM.

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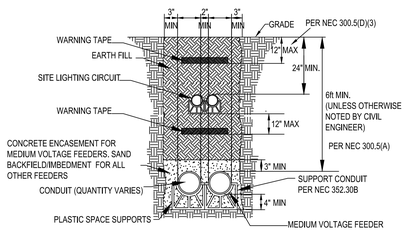
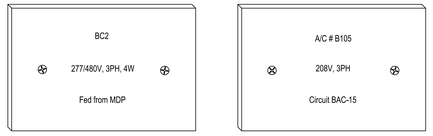
PHOTOMETRIC SITE PLAN

SHEET NUMBER
ES1.2



SEE SPECIFICATIONS FOR MORE INFORMATION.

1 UNDERGROUND CONDUITS
N.T.S.

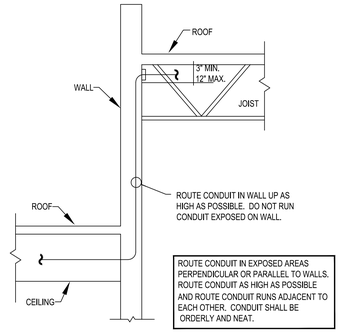


PANELBOARD LABEL (TYPICAL) HVAC DISCONNECT SWITCH LABEL (TYPICAL)

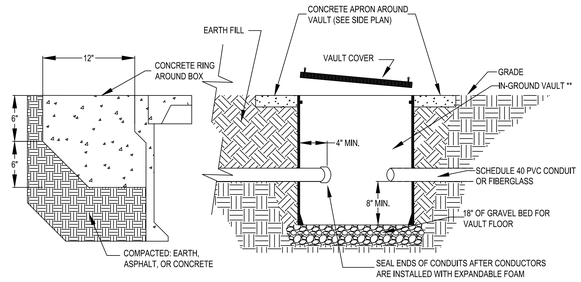
NOTES:

1. ATTACH SECURELY WITH NON-CORRODING STAINLESS STEEL SCREWS, NON-CORRODING POP RIVETS ARE ACCEPTABLE, ADHESIVE ATTACHMENT IS NOT ACCEPTABLE.
2. LABEL ALL PANELBOARDS, SWITCHBOARDS, TRANSFORMERS, HVAC DISCONNECT SWITCHES, AND MOTOR CONTROL CENTERS AS REQUIRED, REFERENCE SPECIFICATION SECTION 260553.

5 ELECTRICAL EQUIPMENT IDENTIFICATION
N.T.S.

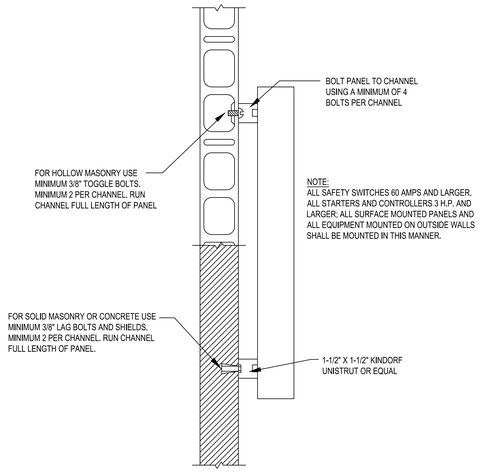


8 EXPOSED CONDUIT ROUTING
N.T.S.

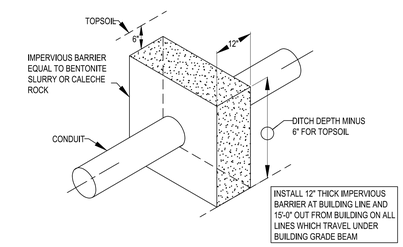


** IN-GROUND VAULT: CONSTRUCTION SHALL BE FIBERGLASS OR POLYMER-CONCRETE WITH A LOAD RATING APPROPRIATE FOR THE INSTALLED LOCATION. EACH ENCLOSURE SHALL BE AN IN-GROUND VAULT WITH A SURFACE-LEVEL COVER AND GRAVEL FLOOR. THE ENCLOSURE SHOULD BE SIZED FOR THE NUMBER OF CONDUITS AND CONFIGURATION REQUIRED. HATCH COVER SHALL BE SECURED WITH AT LEAST TWO PENTAGONAL-HEAD BOLTS.

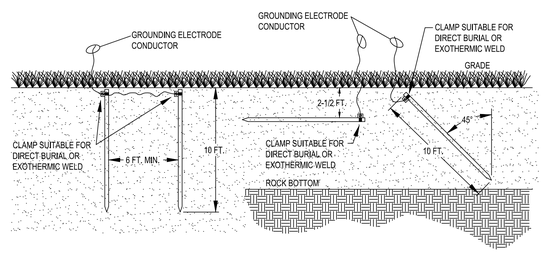
2 PULL BOX DETAIL
N.T.S.



6 EQUIPMENT MOUNTED ON SURFACE/WALL
N.T.S.

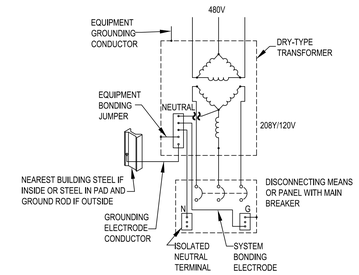


9 IMPERVIOUS BARRIER EQUAL TO BENTONITE SLURRY OR CALECHE ROCK
N.T.S.

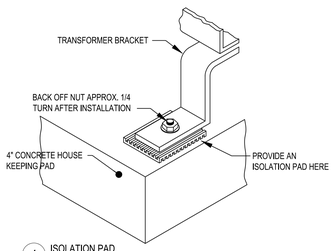


NOTE: ALL PIPE AND ROD ELECTRODES MUST HAVE 8 FEET OF LENGTH IN CONTACT WITH SOIL REGARDLESS OF ROCK BOTTOM IN ORDER TO ENSURE THAT THE UPPER END OF THE ELECTRODE IS FLUSH WITH OR BELOW GROUND LEVEL UNLESS THE ABOVEGROUND PORTION IS PROTECTED FROM PHYSICAL DAMAGE.

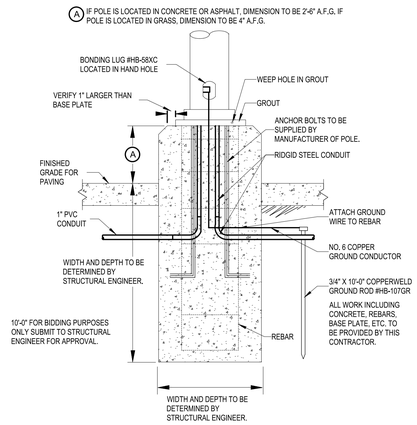
3 NEC GROUNDING ROD DETAILS
N.T.S.



7 TRANSFORMER GROUNDING
N.T.S.



4 ISOLATION PAD
N.T.S.



SUBMIT POLE BASE DRAWINGS TO STRUCTURAL ENGINEER FOR APPROVAL. COORDINATE EACH POLE WITH STREETS, CURBS AND SIDEWALKS SUCH THAT THE POLE BASE IS AT LEAST 12" AWAY.

10 POLE BASE - 12' - 30'
N.T.S.

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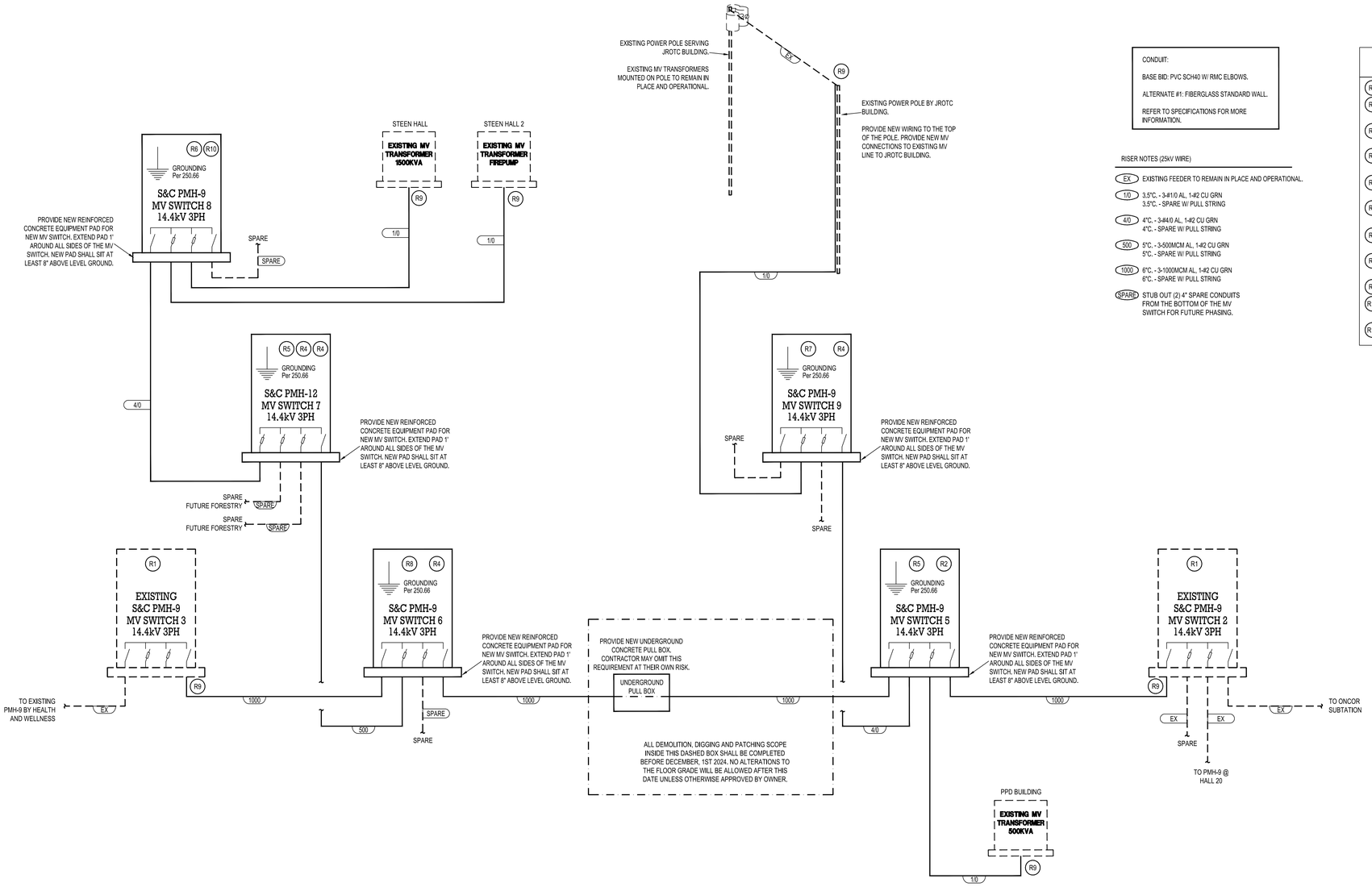
ELECTRICAL DETAILS

SHEET NUMBER
EP7.1



1 ELECTRICAL RISER DIAGRAM
N.T.S.

CONDUIT:

BASE BID: PVC SCH40 W/ RMC ELBOWS.

ALTERNATE #1: FIBERGLASS STANDARD WALL.

REFER TO SPECIFICATIONS FOR MORE INFORMATION.

RISER NOTES (25kV WIRE)

- EX — EXISTING FEEDER TO REMAIN IN PLACE AND OPERATIONAL.
- 1/0 — 3.5"C. - 3-#1/0 AL, 1-#2 CU GRN; 3.5"C. - SPARE W/ PULL STRING
- 4/0 — 4"C. - 3-#4/0 AL, 1-#2 CU GRN; 4"C. - SPARE W/ PULL STRING
- 500 — 5"C. - 3-500MCM AL, 1-#2 CU GRN; 5"C. - SPARE W/ PULL STRING
- 1000 — 6"C. - 3-1000MCM AL, 1-#2 CU GRN; 6"C. - SPARE W/ PULL STRING
- SPARE — STUB OUT (2) 4" SPARE CONDUITS FROM THE BOTTOM OF THE MV SWITCH FOR FUTURE PHASING.

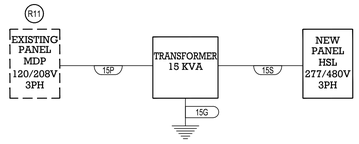
ELECTRICAL RISER NOTES

- R1 EXISTING MV SWITCH TO REMAIN IN PLACE AND OPERATIONAL.
- R2 PROVIDE NEW (6) S&C SM-20 40E FUSES AND 3 SETS OF COMPATIBLE END-FITTINGS/SILENCERS TO SERVE EXISTING MV TRANSFORMER.
- R3 PROVIDE NEW (6) S&C SM-20 150E FUSES AND 3 SETS OF COMPATIBLE END-FITTINGS/SILENCERS TO SERVE NEW UG POWER LINE TO EXISTING ROTC BUILDING.
- R4 THIS CONTRACTOR DOES NOT NEED TO PROVIDE FUSES FOR THE SPARE CABINET. SPARE FUSED CABINET SHALL REMAIN OPEN AND BE USED FOR A FUTURE PROJECT.
- R5 PROVIDE NEW (6) S&C SM-40 245E FUSES AND 3 SETS OF COMPATIBLE END-FITTINGS/SILENCERS TO SERVE NEW UG POWER LINE TO NEW MV SWITCH #7.
- R6 PROVIDE NEW (6) S&C SM-20 100E FUSES AND 3 SETS OF COMPATIBLE END-FITTINGS/SILENCERS TO SERVE EXISTING MV TRANSFORMER.
- R7 PROVIDE NEW (6) S&C SM-20 165E FUSES AND 3 SETS OF COMPATIBLE END-FITTINGS/SILENCERS TO SERVE NEW UG POWER LINE TO EXISTING ROTC BUILDING.
- R8 PROVIDE NEW (6) S&C SM-40 400E FUSES AND 3 SETS OF COMPATIBLE END-FITTINGS/SILENCERS TO SERVE NEW UG POWER LINE TO NEW MV SWITCH #7.
- R9 PROVIDE NEW MV TERMINATIONS TO EXISTING EQUIPMENT AS REQUIRED.
- R10 PROVIDE NEW (6) S&C SM-20 20E FUSES AND 3 SETS OF COMPATIBLE END-FITTINGS/SILENCERS TO SERVE EXISTING MV TRANSFORMER.
- R11 PROVIDE NEW 3P 60A BREAKER IN EXISTING PANEL MDP.

PRIMARY SIDE OF XFMR [208v 3ph]
15P 3-#4, 1-#10 GRN, 1 1/2"C.

SECONDARY SIDE OF XFMR [480v 3ph]
15S 4-#10, 1-#10 GRN, 1"C.

TRANSFORMER GROUNDS
15G #8 GRN



2 PPD ELECTRICAL ROOM - RISER DIAGRAM
N.T.S.

Panel - HSL
Fed from - TXHSL (480V 3PH)

Bus - 60A / 30MCB
Service - 277/480 3PH 4Wire

In Room - PPD ELECTRICAL ROOM
Surface Mount - Inside (NEMA 1)
Branch AIC - 10KA (1.27kA - Available)
Div. Load - 11A (A), 5A (B), 5A (C)

* See Riser Diagram for more information DEVICES & EQUIPMENT SERVED	Phase	Trip	Wire	Ckt#	@ LOAD in KiloWatts	Ckt#	Wire	Trip	Phase	* See Riser Diagram for wire size DEVICES & EQUIPMENT SERVED
EXISTING SITE LIGHTING	2	20	*	1	1.2 (a) 0	2	-	-	1	SPACE
FIELD VERIFY EXACT BREAKER REQUIREMENTS.				3	1.2 (b) 0	4	-	-	1	SPACE
NEW SITE LIGHTING	2	20	10	5	1.2 (c) 0	6	-	-	1	SPACE
				7	1.2 (a) 0	8	-	-	1	SPACE
SPARE	1	20	-	9	0 (b) 0	10	-	-	1	SPACE
SPARE	1	20	-	11	0 (c) 0	12	-	-	1	SPACE

SUBMISSION OF BID WILL BE CONSIDERED ACKNOWLEDGMENT THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS VERIFIED ALL EXISTING JOB CONDITIONS AND INCLUDED ANY NECESSARY MODIFICATION TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND WORKING SYSTEM.

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LUCAS PEREIRA LLOVERAS
147169
LICENSED PROFESSIONAL ENGINEER
06-21-2024

ISSUE DATE
JUNE 21, 2024

ISSUE STATUS	DATE

ELECTRICAL RENOVATION
STEPHEN F AUSTIN
STATE UNIVERSITY
NACOGDOCHES, TX

EMA JOB #: 1-001-1269-007
DRAWN BY: LPL
CHECKED: QS

ELECTRICAL RISER DIAGRAM

SHEET NUMBER
EP9.1

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26 00 00		ELECTRICAL	
26 05 05		SELECTIVE DEMOLITION FOR ELECTRICAL	
26 05 19		LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES	
26 05 26		GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS	
26 05 33		RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS	
26 05 53		IDENTIFICATION FOR ELECTRICAL SYSTEMS	
26 05 73		POWER SYSTEM STUDIES	
26 10 00		MEDIUM VOLTAGE ELECTRICAL DISTRIBUTION	
26 20 00		LOW VOLTAGE ELECTRICAL DISTRIBUTION	
26 50 00		LIGHTING	

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SECTION 26 00 00

ELECTRICAL

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01, apply to this Division. Refer to these articles in the specifications for additional information.

B. Provide all materials, equipment, labor, and transportation required to install a complete and working electrical system. It is the intent of the drawings and specifications to provide complete installations even though each and every item necessary is not specifically mentioned or shown.

C. Bidders shall determine the contents of a complete set of Drawings and Specifications and be aware that they may be bidding from a partial set of drawings, applicable only to the various separate contracts, subcontracts, or trades as may be issued for bidding purposes only. The submission of bids shall be deemed evidence of the review and examination of all existing conditions on site and all drawings, specifications, and addenda issued for this project as no allowances will be made because of unfamiliarity with any portion of the complete set of documents or site conditions.

D. Perform all Division 26 work in strict accordance with the requirements and recommendations stated in the latest adopted version of all federal, state, and local codes, ordinances, and standards (NFPA, NEC, IECC, etc.) except when requirements are modified by the Authority Having Jurisdiction.

E. Where local codes or practices exceed or conflict with the NEC, it shall be the Contractor's responsibility to perform the work in accordance with the local code prevailing and local interpretations thereof by the Authority Having Jurisdiction. This Contractor shall bear all costs for correcting any deficiencies due to non-compliance.

1.2 REFERENCES AND STANDARDS

A. All adopted State and Local Building Codes and Facility Standards.

B. All requirements of the local authority having jurisdiction.

C. CSA - Canadian Standards Association.

D. NEC - the abbreviation is the National Electrical Code (NFPA Ch 70). Where used, this shall mean the latest adopted version of the NEC.

E. NEMA - National Electrical Manufacturers Association

F. NFPA - National Fire Protection Association. Where used, this shall mean the latest adopted version of the NFPA.

G. UL - Underwriters' Laboratories (One of several listing agencies accepted by the NEC)

1.3 ABBREVIATIONS

A. AFF - Above finished floor

B. AFG - Above finished grade

C. AHJ - Authority Having Jurisdiction

D. ALT - Alternate

E. ATS - Automatic transfer switch

F. CLG - Ceiling

G. DFA - Down from above

H. DISC - Disconnect

I. EOR - Engineer of Record

J. EWC - Electric water cooler

K. EXIST / EX - Existing

L. FAP - Fire alarm plan

M. FACP - Fire alarm control panel

N. FAGA - Fire alarm graphic annunciator

O. FARA - Fire alarm remote annunciator

P. GND, GRN - Ground

Q. GFCI - Ground-fault circuit interrupters

R. LED - Light Emitting Diode

S. MTS - Manual transfer switch

T. MCC - Motor control center

U. NC - Normally closed

V. NO - Normally open

W. NTS - Not to scale

X. NIC - Not in contract

Y. PNL - Panel

Z. RCP - Reflected ceiling plans

AA. RTU - Roof-top unit

BB. SFD - Smoke / Fire Damper

CC. TX - Transformer

DD. TYP - Typical

1.4 DEFINITIONS

A. Owner's Representative - Indicates the entity designated or hired to represent an owner on a project. This entity could be the owner themselves, an Architect or could be another third party hired to represent the owner. Verify who will be representing the owner on this project before bidding.

B. Contract Documents - Shall include, but not limited to Drawings, Specifications, Addenda, etc.

C. Approval - It is understood that approval must be obtained from the Owner's Representative in writing before proceeding with the proposed work. Approval by the Owner's Representative of any changes, submitted by the Contractor, will be considered as general in nature and only to aid the Contractor in expediting his work.

D. As required - Indicates that the contractor shall perform the work or provide the material as indicated in accordance with manufacturer's installation instructions and in accordance with the latest adopted version of applicable codes or regulations.

E. Contractor - Where the word(s) "contractor" or "this contractor" is used herein it refers to the contractor engaged to execute the work under this division of the specifications only, even though they may be technically described as a sub-contractor.

F. Directed - Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Owner's Representative, requested by the Owner's Representative, and similar phrases.

G. Furnish - The term furnish means to equip with what is needed, supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

H. Indicated - The term indicated refers to graphic representations, notes, or schedules on the Drawings, or other Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as shown, noted, scheduled, and specified are used to help the reader locate the reference. There is no limitation on location.

I. Install - The term install describes operations at the Project site including setting in position, connecting or adjusting for use, the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

J. Or equal - Indicates that the contractor may substitute equipment by another manufacturer if the salient features of the equipment indicated by manufacturer's name and / or described are adequate in the judgment of the Owner's Representative.

K. Provide - Furnish and install all material and labor required for a complete installation ready for operation as required in accordance with the intent of the Contract Documents.

L. Shall - Indicates a mandatory requirement or requirements.

M. Unless otherwise noted, refer to NEC 100 for additional definitions used in these specifications.

1.5 COORDINATION

A. For additional requirements, see Section 01 30 00 - Administrative Requirements.

B. Electrical service to all portions of existing buildings at the construction site not involved with the project shall remain in operation throughout construction. Coordinate with the Owner's Representative for possible downtime.

C. All metering and temporary electrical service charges and / or costs of utilities shall be paid by the Contractor.

D. The Drawings are not to be construed as shop drawings but indicate the extent, general locations, arrangement, etc., of conduit systems and equipment. Electrical drawings are diagrammatic and shall not be scaled for exact size. If the contractor has any questions regarding the layout of a particular device or equipment item, he shall contact the Owner's Representative for clarification. This Contractor shall, in laying out their work, refer to other sections of the specifications and other drawings such as air conditioning, structural, plumbing, architectural, civil, etc., to eliminate conflicts and undue delays in the progress of the work. Where items are furnished by other trades require connections by this Contractor, they shall be held responsible for providing rough-in drawings and assistance upon request.

E. In the event of interferences, piping or equipment requiring set grades or elevations shall have precedence over conduit, luminaires, outlet boxes, etc.

F. Plans, specifications, and other documents have been prepared and developed with reasonable professional care and coordination. It is the intent that all documents are supportive and complimentary, one to the other; and as such what is required by one shall be considered as required and binding as if indicated by all. Work indicated shall include, regardless of whether or not specifically stated, such supportive or required items or work as consistent with what is indicated, is reasonably inferable from what is indicated, and / or is common construction procedure or knowledge with regard to what is indicated.

G. In the event of a conflict between manufacturer's installation instructions and the Drawings, the manufacturer's installation instructions shall govern.

H. Should discrepancies be found among the Contract Documents and / or an interpretation is required, and a decision or interpretation to the contractor is not rendered by the Owner's Representative, it shall be assumed the contractor has reviewed all the documents to find the most costly method or items in question which then shall be required. One document does not take precedence over another when interpreting a discrepancy.

1.6 SUBMITTALS

A. The submittals required in this Division shall conform to and be submitted in accordance with the General Conditions, Instructions to Bidders, Division 1 and requirements listed in all sections of Division 26.

B. Provide submittals in PDF format. Paper submittals shall be rejected.

C. Shop drawings, manufacturer's data materials lists, etc., are required for all equipment and material where submittals are required.

D. Each submittal shall contain data relevant to the particular equipment (including options). The data shall be identified by "highlighting", arrows, underlining, etc. Do not submit pages of non-relevant information. Broad general data is not acceptable. If equipment submitted is not as specified in the Contract Documents, then the submittal shall contain specific details prominently identifying any differences in form, fit or function. If the equipment submitted is not as specified, then the Contractor shall be responsible for any additional costs necessary to install and connect the equipment. This includes, but is not limited to, increased panelboard size, circuit breaker size, disconnect size or circuit size.

E. Submit warranty information on all equipment specified in this division. Warranty shall start at the time of substantial completion, unless otherwise indicated in subsequent sections.

F. Submit dimensional layout of all electrical equipment locations, drawn to scale, with equipment locations shown. Clearances shall be in accordance with NEC and local codes. Panelboard and switchgear submittals will be rejected without dimensioned room or equipment location layouts.

G. Some products require that a color selection be coordinated with the Owner's Representative. Information regarding such products shall be submitted to the Owner's Representative for review.

H. If materials or equipment are installed before being reviewed without comment by the engineer, the contractor shall be liable for the removal and replacement of such unapproved materials and equipment, at no additional expense to the owner. Additionally, if the removal and replacement of unapproved materials or equipment necessitates the removal and replacement of other related materials or equipment, then the contractor shall be liable for the removal and replacement of the related materials and equipment at no additional expense to the owner.

I. Failure to submit items that meet the requirements of the contract documents in ample time for review shall not entitle the contractor to an extension of contract time, and no claim for extension by reason of such default shall be allowed. The contractor may be held liable for delays so occasioned.

1.7 CLOSEOUT SUBMITTALS

A. This Contractor shall accumulate during the job's progress the below list of data and shall keep it updated during construction as a set of Record Documents:
   1. Exact dimensioned locations of all new and existing switchgear, devices, luminaires, controls, all other equipment and new or existing site utilities.
   2. All warranties, as described in this section and in each subsequent specification section.
   3. All shop drawings.
   4. Submittals.
   5. Set of operation and maintenance manuals.
      a. Each operating and maintenance manual shall apply specifically to the equipment installed. In those cases where one manual covers a general class of equipment, the contractor shall be required to identify (highlighting, underlining, etc.) those portions which apply to the installed equipment.
   6. Repair parts lists of all major items and equipment.
   7. Additional items that may be required in Divisions 00 and 01.

B. Upon submitting their request for final payment, this contractor shall turn over to the Owner's Representative, all data mentioned above in the form of a PDF file.

C. Organize all information by specification section and put them in the O&M manual.

D. Training Documentation: Provide a letter in the closeout submittals documenting that the end user (determined by the Owner) received training as required in any section in this division. Documentation to include name of person, date, duration, and content of training.

1.8 QUALIFICATIONS

A. For a product or manufacturer to be considered, all products shall be submitted ONLY from manufacturers that:
   1. Specialize in the manufacturing of the products specified for a minimum of five (5) consecutive years.
   2. Has been producing this product for at least two (2) years.

1.9 ATTIC STOCK

A. Provide additional fuses as noted in the drawings.

B. Provide an additional 250' of 1000MCM wiring for the owner to keep as stock.

1.10 QUALITY ASSURANCE

A. Certification: This contractor shall be certified / licensed to install the products and equipment they are providing.

B. Regulatory Requirements: All products provided under this division shall be manufactured and listed for the intended use and environment installed.

C. See Manufacturers section below for more information.

1.11 DELIVERY, STORAGE, AND HANDLING

A. For additional requirements, see Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. For additional requirements, see Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

C. Storage and Protection: Material shall be stored in a clean and dry location until installation.

D. Contractor shall handle in accordance with manufacturer's recommendations to avoid damaging equipment, installed devices, and finish.

1.12 EXISTING FIELD CONDITIONS

A. The drawings are prepared from the best information available and reflect all conditions commensurate with this information. However, the contractor should visit the site prior to submitting a proposal and should verify the locations, sizes, depths, pressures, etc., of all existing utilities and familiarize themselves with working conditions, hazards, existing grades, soil conditions, obstructions, etc. If it becomes evident that existing site conditions will impair the proper operation of the utilities, the Owner's Representative shall be notified in writing.

B. All proposals shall take these existing conditions and any revisions required into consideration, and the lack of specific site information on the drawings shall not relieve the contractor of any responsibility.

C. This Contractor shall familiarize themselves with working conditions to the extent that they shall be responsible for damage to concealed piping, wiring and other equipment meant to remain, and shall repair any damage caused by their negligence at no cost to the owner.

1.13 WARRANTY

A. This Contractor shall guaranty fully all workmanship, material, equipment, systems, etc., provided by them for a period of one (1) year after substantial completion of the project, unless otherwise indicated in other specification sections. The use of building equipment for temporary service and testing does not constitute the beginning of the warranty. This guaranty means that this Contractor shall make good to the owner, at no cost, any defects that become apparent during the year following substantial completion. This guaranty is in addition to any other guaranties or warranties and is not intended to limit such other guaranties or warranties.

B. Neither the final payment nor any provisions in the Contract Documents shall relieve this Contractor, or the Contractor, of the responsibility for faulty materials or workmanship.

C. The contractor shall remedy any defects due thereto, and pay for any damage to other work resulting there from, which shall appear.

D. This Warranty shall not be construed to include the normal maintenance of the various components of the system covered by these specifications.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Unless otherwise noted, products shall be only from manufacturers that have been in business for at least five (5) consecutive years.

B. The listing of specific manufacturers does not guarantee acceptance of their products. All manufacturers, whether specified or listed as an equal, shall meet the specified ratings, features, and functions as outlined in these specifications.

2.2 SUBSTITUTION OF PRODUCTS

A. Substitutions: Shall meet any Division 01 requirements in addition to the substitution requirements listed here.

B. All proposed substitutions are subject to PRIOR APPROVAL and must be received by the Engineer and / or Owner's Representative no less than ten business days prior to the schedule date for opening of bids.

C. Items noted as "No Substitutes" or "No Alternates" shall be as specified only. No substitutions will be accepted.

D. Only such items as specified or approved as acceptable will be installed on this project.

E. Substitution of products specified herein will be considered only when a complete list of proposed alternative equipment is submitted to the Engineer and / or Owner's Representative in writing, supported by adequate technical and cost data. This includes a complete description of the proposed substitution, drawings, catalog cut sheets, performance data, test data, or any other data or information necessary for proper evaluation.

F. Manufacturers' names are listed herein and on the plans to establish a standard of quality and design. Where a manufacturer's name is mentioned, products of other manufacturers may be considered if, in the opinion of the Engineer and / or Owner's Representative, the substitution is of equivalent quality or better than that of the material specified.

G. The Contractor's Bid represents that the bid price is based solely upon the materials and equipment described in the Contract Documents and that he contemplates no substitutions or extras.

H. Requests for substitution are understood to mean that the Contractor:
1. Has personally investigated the proposed substitution and determined that it is equivalent or superior in all respects to that specified.
2. Will provide the same guarantee for the substitution that they would for that specified.
3. Will, at no cost to the Owner, replace the substitute item with the specified product if the substitute item fails to perform satisfactorily.

I. After Award of the Contract, substitutions will be considered only under one or more of the following circumstances:
1. The substitution is required for compliance with subsequent interpretations of code or insurance requirements.

2. The specified product is unavailable through no fault of the Contractor.
3. The manufacturer refuses to warranty the specified products as required.
4. Subsequent information that the specified product is unable to perform properly or to fit in the designated space.

J. Revisions to the electrical system caused by substitutions shall be under the supervision of the Engineer at a standard hourly rate charged by the Engineer and shall be paid by the Contractor originating the changes.

2.3 PERFORMANCE REQUIREMENTS

A. All materials, components, products, assemblies, equipment, etc. shall be new, free from defects, listed (by an NEC accepted listing agency), and approved / rated for the environment and purpose.

PART 3 - EXECUTION

3.1 EXAMINATION

A. For additional requirements, see Section 01 30 00 - Administrative Requirements (Coordination and verification of existing project / site conditions before starting work).

3.2 INSTALLATION

A. The Contractor shall obtain all permits required to commence work and, upon completion of the Work, obtain and deliver to the Owner's Representative a Certificate of Inspection by an AHJ in the project city and state. The Contractor shall pay required permit fees.

B. All work shall be done by experienced craftsmen skilled in the applicable trade.

C. All equipment shall be installed in strict compliance with manufacturer's installation instructions and properly torqued using a calibrated torque tool.

D. Unprofessional and incomplete work shall be rejected and corrected at no additional expense. The judgement of professionalism and completeness of work shall be made by the Engineer and / or Owner's Representative and shall be final.

E. All electrical connections shall be made per NEC 110.14 and torqued per manufacturer's instructions.

F. Where existing utilities already exist or where renovation / addition work is to be done, maintain all utility services during construction to existing structures and / or portions of a project that are to remain in place and operational.

G. This Contractor assumes all responsibility for the safety of their personnel on the project during construction. The Contract Documents do not include materials, procedures, components, etc., required to ensure construction safety. Refer to General Conditions for additional information.

H. This Contractor shall be responsible for damage to the project caused by this Contractor's failure to recognize hazards associated with items such as lack of power, scheduling of work (tardiness), inexperienced workmen, excessive cutting, etc. This Contractor shall repair at no expense to the owner any such damage.

I. Contract Documents do not show exact location and elevations of lines. Deviate from drawings as required to conform to the general construction, provide proper grading and installation.

3.3 INTERFACE WITH OTHER WORK

A. Cooperation with trades of adjacent, related or affected materials or operations, and / or trades performing continuations of this work under subsequent contracts is considered a part of this work in order to affect timely and accurate placing of work and to bring together, in proper and correct sequence, the work of such trades, including under the general contractor Division 1 and Division 23.

B. The Electrical Contractor shall coordinate installation of the electrical system with the General Contractor, Mechanical, Plumbing, and Communications Contractors to insure a complete working system for the Owner.

C. The Electrical plans are based on the equipment and device schedules shown on the drawings or as called for in the specifications. Should any mechanical equipment or device associated devices be changed or accepted from those which are shown or noted, all electrical and / or mechanical changes shall be made at the expense of the trade or contractor initiating the change with no expense to the Owner's Representative, Engineer, etc.

D. Coordinate all utility services and / or revisions with utility companies.

E. Make permanent connection to new utilities or existing lines. Determine depth and location, and bid accordingly. Relocate and repair any existing lines cut by general construction work.

F. Provide all lighting contactors with control relay. Coordinate required coil voltage with controls system.

3.4 EQUIPMENT CONNECTIONS

A. This Contractor shall bring all required electrical service to all equipment items furnished under other sections of these specifications or by the Owner, make final connections, and leave equipment ready for operation. This Contractor shall coordinate with any affected trade to assure correct operation of the equipment item, i.e., phase rotation, switching, control location, accessibility, etc.

B. When the contractor is uncertain about the method of installation, proper location, etc., they shall ask for further instructions or details. Failure to request such information will not excuse non-compliance.

3.5 INSTALLATION - OTHER WORK

A. Cutting and Patching:
1. All cutting required by the installation of sleeves, conduit, equipment, etc., shall be coordinated with the General Contractor, but performed by this Contractor. Patching shall be by General Contractor. This Contractor shall not cut any structural element or any finished work without written permission from the Owner's Representative.
2. This Contractor shall cut and patch all paving as required by the installation of buried conduit or wire.

B. Concrete Work:
1. This Contractor shall provide all forming, reinforcing and concrete as indicated or required for equipment bases, transformer pads, etc. Work shall conform to the applicable portion of Division 03 - Concrete.

C. Painting:
1. All painting except "touch-up" shall be provided under Division 09 - Painting unless otherwise noted on Drawings. All exposed conduit, equipment, etc., shall be left clean and free from rust or grease and ready for the painter.

2. Where equipment finishes are damaged, this Contractor shall obtain touch-up paint in matching colors from the equipment manufacturer and paint as required.

D. Trenching and Backfill:
1. This Contractor shall perform all trenching, excavation, shoring, pumping and backfill required in the installation of their work. All trenches shall be maintained dry until all circuits have been satisfactorily tested and then filled in tamped 6" layers immediately after approval of tests by the Owner's Representative. All backfill shall be free of construction debris and any other foreign material which might damage any circuit runs. Stability of backfilled soil shall match adjacent undisturbed soil.
2. All exterior raceway or cable shall be laid with at least a minimum cover as indicated in the NEC.
3. The contractor shall exercise all possible care to avoid damage to trees and roots in excavation. Where possible, the contractor shall excavate beyond the drip line of trees. If it is necessary to cut roots 1" to 2 1/2" in diameter, the contractor shall excavate around, cut clean and paint severed ends of roots with a tree wound sealer. Do not cut roots 2 1/2" and larger.

E. Flashing and Waterproofing:
1. All building penetrations to the outside shall be flashed and counter-flashed as required to eliminate leaks. Provide link-seal fitting on all below grade conduit penetrations greater than 2".

3.6 PROTECTION

A. The Contractor shall continuously maintain adequate protection of stored materials and installed equipment. Fixtures and equipment, whether located inside or outside, shall be tightly covered with sheet polyethylene or waterproof tarpaulin as protection against dirt, rust, moisture and abuse from other trades. Adequate air circulation shall be provided under any protective sheet to prevent condensation build-up. Materials and equipment shall not be stored where it can come into direct contact with the ground. Conduit, conduit hangars, cable tray and equipment shall not be used by other trades as supports for their equipment, scaffolds or personnel. At the completion of the work, equipment, luminaires, exposed supports and piping shall be cleaned of loose dirt, construction debris, overspray, etc., to the satisfaction of the Owner's Representative. Repairs made necessary by damage shall be paid for by the Contractor.

3.7 QUALITY CONTROL

A. For additional requirements, see Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. For additional requirements, see Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting, and balancing.

3.8 SYSTEM STARTUP

A. All circuit and operational tests of the electrical systems shall be made by this Contractor and repeated until equipment meets or exceeds testing requirements.

3.9 CLEANING

A. For additional requirements, see Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Where all work has been finally tested, this Contractor shall clean all work installed by them, including all luminaires, equipment, and all exposed work.

END OF SECTION

SECTION 26 05 05

SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Selective demolition of electrical and lighting systems and equipment and the off-site removal of the portions of those systems and equipment not reused, in a code-compliant and lawful manner.

1.2 RELATED REQUIREMENTS

A. Section 26 00 00 - Electrical

B. Section 26 05 53 - Identification for Electrical Systems

PART 2 - PRODUCTS

2.1 NOT APPLICABLE.

PART 3 - EXECUTION

3.1 ELECTRICAL EXAMINATION

A. Verify existing field measurements, circuiting arrangements, wiring and equipment served in areas as shown on the Drawings. Adjust all circuiting, wiring and materials to be provided as required by job conditions.

B. Verify abandoned wiring and existing equipment.

C. Drawings are based on casual field observation and existing record documents. Report discrepancies to the Engineer before disturbing existing installation.

D. The Contractor accepts all existing conditions when beginning demolition, whether or not those conditions are reflected in the Contract Documents.

3.2 PREPARATION

A. Coordinate utility service outage with the respective utility company and the Owner.

B. Provide temporary wiring and connections to maintain required existing systems that must remain operational during construction.

C. When work must be performed on energized equipment or circuits, use personnel experienced in such operations. Verify phasing on existing equipment and coordinate new phasing before energizing revised service.

D. Clean and repair existing raceway, boxes, wiring devices, etc. that are to remain in place or are to be reinstalled.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Demolish and extend existing electrical work under provision of Division 01 and this section.

B. Remove, relocate and extend existing installations to accommodate new construction as required.

C. Remove abandoned wiring to the source of the supply.

D. Disconnect and remove electrical devices and equipment serving equipment that has been removed.

E. Confirm with Owner's Representative regarding the handling and disposal/reuse of removed material, equipment, devices, luminaires, etc.

F. Where demolition of equipment or materials is required, this Contractor shall minimize cutting and exercise all due caution to leave undamaged surfaces, material and equipment meant to remain.

G. All existing items that are to be removed shall remain property of the owner unless declared as salvage. Salvage materials shall become property of the contractor and be removed from the site. Items declared as the owner's property shall be neatly stored on the site as directed by the owner.

3.4 MAINTAIN EXISTING ELECTRICAL

A. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

B. Maintain access to existing wiring, devices, boxes, panels, distribution equipment, etc. to remain in place, operational and accessible. Modify installation or provide access panels as required.

C. Where a circuit is interrupted by removal of a device or luminiare from that circuit, install wire and conduit as required to restore service to the remaining devices and luminaires on that circuit.

D. Repair adjacent construction and finishes damaged during demolition and extension work.

3.5 REPAIR / RESTORATION

A. Clean and repair existing materials and equipment, in areas of revision, which remain or which are to be reused.

B. Labelling Requirements:
1. Install identification on all existing unmarked equipment to remain in accordance with Section 26 05 53 - Identification for Electrical Systems. Replace all lost nameplates, labels or markers.

3.6 RE-INSTALLATION

A. Install all relocated materials and equipment under the provisions of Divisions 01 and 26.

END OF SECTION

SECTION 26 05 19

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. This section includes conductors for power circuits, including terminations and connectors.

1.2 REFERENCES AND STANDARDS

A. ICEA S-61-402 - Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy

B. NECA 1 - Standard Practices for Good Workmanship in Electrical Construction

C. UL 44 - Thermoset-Insulated Wires and Cables

D. UL 83 - Thermoplastic-Insulated Wires

E. UL 493 - Thermoplastic Insulated Underground Feeder and Branch Circuit Cables

F. UL 1569 - Conductor properties

1.3 SUBMITTALS

A. Submittals required in this section shall conform to and be submitted in accordance with the General Conditions, Division 01, and Division 26.

B. Submit product data for the following:
   1. Building wiring and all conductors on this project.
   2. Conductor terminations.
   3. Connectors.

1.4 CLOSEOUT SUBMITTALS

A. Submit per Closeout Submittals requirements in 26 00 00 - Electrical and any additional requirements listed below:
   1. Record of all actual locations of components and circuits.

1.5 QUALITY ASSURANCE

A. General work practices for electrical construction shall be in accordance with NECA 1.

B. Regulatory Requirements: All products provided under this section shall be listed for the intended use.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection: Material shall be stored in a clean and dry location until installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Conductors shall be manufactured in the United States. Acceptable manufacturers are:

1. Alan Wire (Sikeston, MO)
2. Cerrowire (Hartselle, AL)
3. Encore Wire (McKinney, TX)
4. General Cable (Highland Heights, KY)
5. Southwire (Carrollton, GA)

B. All other manufacturers shall require pre-approval in accordance with Section 26 00 00 - Electrical.

2.2 MATERIALS

A. All low-voltage feeders to be soft-drawn annealed copper.

B. All branch circuit conductors shall be soft-drawn annealed copper.

C. Aluminum is permissible ONLY where specifically indicated on the Drawings. Aluminum used shall be AA-8xxx rated and compact stranding is preferred.

2.3 MANUFACTURED UNITS

A. Manufactured Power Circuit Conductors:
1. Conductors for shall be rated for at least 600 volts and 90°C. No exceptions.
2. Conductor insulation shall be type THHN / THWN-2 or XHHW-2.
3. Conductors shall be #12 AWG or larger.
4. Conductors that are #8 AWG and larger shall be stranded. Conductors that are #12 AWG and #10 AWG may be stranded if crimp on fork terminals are used for device terminations. Otherwise, #12 AWG and #10 AWG shall be solid conductors. Never place bare stranded conductors directly under device screws.
5. Conductors sized #6 AWG and smaller shall have factory colored insulation.

B. Manufactured Conductor Terminations and Connectors:
1. All accessory materials such as connectors, splice and tap fittings, and terminations shall be of a type designed or intended and suitable for the use. They shall be compatible with the conductor material. Installation, compression, and torque settings shall be per manufacturer's recommendations.
2. Conductors shall be connected and terminated using suitable clamps, pressure connectors, compression terminals or lugs and hardware of the proper size and listed for the application.
3. Only connection devices that require the complete removal of the conductor jacket or insulation and result in a connection to the complete conductor surface area are suitable for use. Insulation piercing type connectors, press in type connectors or Wago style connectors shall NOT be used.
4. Splices and taps shall have a mechanical strength and insulation rating at least as that of the conductors.
5. Compression systems shall include crimped die index and company logo for purposes of inspection.

PART 3 - EXECUTION

3.1 EXAMINATION (SITE VERIFICATION)

A. Do not install the conductors until conduit / raceway system is complete.

B. Before installing the conductors for any branch circuit or feeder, verify that the conductor ampacity is at least as large as the rating of the overcurrent device protecting it, except where approved for use and correctly sized for motor loads per NEC. In the event that the conductors would not be adequately protected, notify the Engineer before installation.

3.2 INSTALLATION

A. More than one conductor shall not be installed in any termination unless the termination is marked as suitable for more than one conductor.

B. Wire Sizing: Provide conductors sized as indicated on Drawings unless modified as described below. Where conductor sizes have been omitted from Drawings, bid shall include conductors with ampacity as least as large as the overcurrent protection device protecting the conductors, or at least as large as the amp rating of the load being served, whichever is greater. In such cases, notify the Engineer before installation for size verification.

C. Voltage Drop: The intent of the drawings is to limit the voltage drop from the service entrance conductors to each branch circuit to less than 5%. The electrician is responsible to ensure proper voltage drop values are maintained as mentioned here and as required per the NEC.

D. Wire Lengths: For 120v branch circuits, #12 AWG wire shall not be run more than 90', #10 AWG wire shall not be run more than 120', #8 AWG wire shall not be run more than 150', etc.

E. Neutral Conductors: Provide a separate neutral conductor for each feeder or branch circuit. Multiple circuits shall not share a common neutral. Neutral conductors shall be sized as large as the phase conductors. Neutral conductors shall not be of a reduced size.

F. Equipment Grounding Conductors: Provide equipment grounding conductors in accordance with Section 26 05 26 - Grounding and Bonding for Electrical Systems.

G. Number of Current Carrying Conductors (CCC) per conduit:
1. #12 AWG Wire - no more than six (6) CCCs in a single conduit.
2. #10 AWG Wire - no more than nine (9) CCCs in a single conduit.
3. ELSE - no more than three (3) CCCs in a single conduit.
4. When more than three (3) CCCs are in a single conduit, the electrician is responsible for derating the available ampacity to current carrying conductors per NEC requirements and provide calculations to the Engineer, when requested.
5. The equipment grounding conductor shall not be counted for the preceding statements.

H. Terminations:
1. Use pressure type lugs or connectors for terminations or splices of all stranded conductors. Use ring tongue type terminators on all control wiring. More than one conductor shall not be installed in any termination unless the termination is marked as suitable for more than one conductor. With the written approval of the Engineer, an exception to this may be allowed for the installation of the surge protective devices required in Section 26 43 00 - Surge Protective Devices.
2. Conductors shall not be supported solely by their terminations.
3. Terminations shall be made such that the stripped length of the conductor is no longer than required for the terminal, lug, or connector. Excessive stripped length shall be trimmed prior to installation.
4. Conductive antioxidant shall be applied on all connections per manufacturer's instructions, regardless of conductor material.

I. Splices:
1. Conductor splices shall be kept to a minimum.
2. Where splices are required, they shall be in a box or enclosure. Splices within a conduit run are not acceptable.

J. Color Coding:
1. Provide factory colored insulated conductors for #6 AWG and smaller.
2. Color code larger insulated conductors with an approved field-applied tape 2" wide on each end of conductors.

3. If existing wiring in renovation or addition work has a consistent color coding, then match the existing and note in record documents. Otherwise, colors shall be as follows:

Line	208/120V	240/208V 1ph	240/120V	480/277V
A	Black	Black	Black	BROWN
B	Red	n/a	Orange	ORANGE
C	Blue	Red	Blue	Yellow
Neutral	White	White	White	Gray
Ground	Green	Green	Green	Green
Isol Grnd	Green +Yellow	Green + Yellow	Green + Yellow	Green + Yellow

4. Switch leg shall be the same color as the un-switched phase wiring. Travelers, and special systems as selected by the Contractor. Note in record drawings.

K. Identification: All conductors in a panelboard shall be identified by means of tags or tape.

3.3 SITE TESTS

A. Perform in accordance with manufacturer's printed testing procedures, applicable industry standards, ANSI standards, IEEE standards, and NEMA standards. Provide calibrated testing equipment in good working order and which complies with the above requirements. The below test shall be performed after the conductors have been pulled into the conduit and after terminations have been added, but before final connections are made. Document all readings and testing and make documentation available to Owner upon request.

B. Feeder Insulation Test: The insulation of new service entrance conductors and each new feeder run shall be tested using a megger. Readings must indicate not less than one (1) megohm to be acceptable.

C. Branch Circuit Insulation Test: The insulation of each new branch circuit shall be tested using an ohm meter. Readings must indicate not less than one (1) megohm to be acceptable.

END OF SECTION

SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Grounding and bonding shall include the solid grounding of the various electrical systems and equipment and the proper bonding of all electrical system components and equipment to meet NEC 250 and all other applicable codes and ordinances. These systems shall be provided for the proper protection of life, equipment, circuits, and systems.

B. Permanently ground entire lighting and power systems in accordance with the latest adopted version of the NEC, including service equipment, distribution, panelboards, switch and starter enclosures, motor frames, devices, transformers, grounding type receptacles, and other exposed non-current carrying metal parts of electrical equipment.

C. Grounding and bonding requirements specified in this section may be supplemented in other sections of these Specifications.

1.2 RELATED REQUIREMENTS

A. Section 26 00 00 - Electrical

1.3 REFERENCES AND STANDARDS

A. IEEE 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.

B. IEEE 1100 (Green book) - Recommended Practice for Powering and Grounding Electronic Equipment.

C. NFPA 54 - National Fuel Gas Code

D. NFPA 78 - Lightning Protection Code

E. NFPA 99 - Health Care Facilities Code

F. UL 467 - Safety Standard for Grounding and Bonding Equipment.

G. UL 486 A & B - Wire Connectors

1.4 SUBMITTALS

A. Submittals required in this section shall conform to and be submitted in accordance with the General Conditions, Division 01, and Division 26 requirements.

B. Product Data: Submit data on grounding electrodes and connections.

1.5 CLOSEOUT SUBMITTALS

A. Submit per Closeout Submittals requirements in 26 00 00 - Electrical and any additional requirements listed below.

1.6 DELIVERY, STORAGE AND HANDLING

A. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging and with plastic sheathing.

1.7 COORDINATION

A. Complete grounding and bonding of building reinforcing steel (rebar) to the satisfaction of the local AHJ prior to concrete placement.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer List
   1. Apache Grounding
   2. Copperweld, Inc.
   3. ILSCO Corporation
   4. nVent (Cadweld, Critec, Erico)
   5. O-Z Gedney Co.
   6. Thermoweld
   7. Thomas & Betts

2.2 PERFORMANCE REQUIREMENTS

A. General:
   1. All materials used for grounding and bonding and all work performed shall conform to requirements of NEC, IEEE 142, and be listed for the application and environment.
   2. All grounding and bonding shall be in strict accordance with NEC 250, 517, etc.
   3. Grounding electrode system shall have a resistance to earth of five (5) ohms or less. Where this cannot be met, provide two additional ground rods to form a "triple ground rod" installation. Under no conditions shall the system have a resistance greater than twenty-five (25) ohms to ground, per NEC 250, at any location in the system.

B. Ground Rods:
   1. Copper cladding permanently bonded to a high-strength steel core.
   2. 3/4 inch by 10 feet (19mm by 3m) straight, conform to UL 467.

C. Conductors:
   1. Grounding Conductor: Copper, insulated (green) where required or uninsulated where allowed in the Specifications or by code, sized per drawings or NEC Table 250.95.
   2. Bonding Jumpers - Insulated conductor, sized to be minimum cross-sectional area greater than or equal to that of the equivalent grounding conductor as determined from NEC Table 250.95.
      a. Where braided bonding jumpers are indicated or otherwise required, provide copper tape, braided #3/0 AWG bare copper wire, terminated with copper ferrules.
   3. Grounding Ring around a building - #2 AWG uninsulated copper, otherwise sized per NEC.
   4. Grounding Ring around a utility transformer - #2 AWG uninsulated copper (unless sized per drawings), otherwise sized per NEC or by utility requirements.

D. Connections:
   1. General: All connectors shall be listed and labeled as grounding connectors for the materials used.
   2. Welded Bond - Exothermic welded connection or bond such as "Cadweld". No phosphorous or any other caustic, toxic or explosive substance may be used.
      a. Provide exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

3. Clamps - Listed bronze connectors, suitable for grounding and bonding applications, in configurations required for a particular installation.

E. Buss Bars:
1. Bare annealed copper bars, 1/4" x 4" x 20" unless otherwise noted on the drawings.

PART 3 - EXECUTION

3.1 PREPARATION

A. Remove paint, rust, mill oils, and all surface contaminants at connection points.

3.2 APPLICATION

A. Unless otherwise indicated, the below list of connection styles shall be followed.

B. Outdoor Below Grade Grounding Connections:
1. Welded bond only, no exception.

C. Outdoor Above Grade Grounding Connections:
1. Clamps may be used. Use welded bond where clamping is not accessible or practical.

D. Indoor Grounding and Power Connections:
1. Clamps may be used. Use low-smoke/low emission welded bond where clamping is not accessible or practical.

3.3 INSTALLATION

A. General:
1. Ground and bond electrical systems and equipment in accordance with NEC requirements except where the Drawings or Specifications exceed NEC requirements, then follow the Drawings or Specifications.
2. Bond all ground electrodes together to form the grounding electrode system including metal underground water pipe, metal frame of the building or structure, concrete encased electrodes, ground ring, rod and pipe electrodes and plate electrodes.
3. At all electrical system components, assemblies, circuits, etc. that are over 120v to ground, provide locknuts and / or listed fittings per NEC 250.97 for bonding of metal raceways. In case of oversized, concentric or eccentric knockouts, comply with NEC 250.92(B). The use of snap-in, wedge-type, or pivot-type connectors is prohibited.
4. Permanently attach equipment and grounding conductors prior to energizing equipment.
5. Refer to Drawings for additional special grounding systems or grounding requirements not mentioned here.

B. Concrete Encased Electrode:
1. Fabricate with twenty (20) feet (6m) of conductor laid lengthwise in excavation for foundation or footings. Install so conductor is within two (2) inches (50mm) of the bottom of the concrete. Where base of foundation is less than twenty (20) feet (6m) in length, coil excess conductor at base of foundation. Bond conductor to reinforcing steel at four (4) locations, minimum. Extend conductor below grade and connect to building grounding electrode.

C. Main Electrode:
1. Provide a building ground rod and bond it to the grounding electrode system. Where ohmic values exceed 5 ohms to ground, the building ground rod shall consist of three ground rods, arranged in an equilateral triangular pattern located at least five (5) feet outside an exterior building wall or as otherwise directed. Space fiveteen (15) feet apart and drive into the earth to a point two (2) feet below finished grade to top of rods. Grounding electrode conductor shall form a continuous loop around rods, and

conductor shall be properly bonded to each rod by a fusion weld similar to "Cadweld".
2. Extend grounding electrode conductor from this ground rod(s) to the grounded service conductor (neutral) in the building main switchboard at an accessible point on the ground bus per NEC 250.24.
3. Install grounding electrode conductor of #3/0 AWG copper.

D. Main Bonding Jumper: Shall be sized in accordance with NEC 250.66, if not indicated on the Drawings, and installed within the same enclosure as the point of bonding of the system neutral service entrance.

E. Water Pipe Electrode: A ten (10) foot minimum length of electrically-continuous underground metal water pipe. Bond around insulating joints or sections, insulating pipe, and water meters to make pipe electrically continuous.

F. Fuel Gas Piping:
1. Each above ground portion of a gas piping system upstream from the equipment shutoff valve shall be made electrical continuous and bonded to the building grounding electrode system, as required in NFPA 54.
2. Gas piping shall not be used as a grounding electrode.

G. Transformers: Ground as a separately derived source.
1. Where transformer secondary includes a neutral, the neutral shall be bonded to the equipment enclosure and connected to the system ground conductor.
2. Size bonding jumper per NEC Table 250.66.
3. Grounding conductor shall be in raceway and shall be bonded to nearest available point of interior metal water piping system.

H. Equipment Grounding Conductor (EGC):
1. Comply with NEC 250 for sizes and quantities of equipment grounding conductors, except where larger sizes or more conductors are indicated.
2. All power circuits shall be provided with a separate copper insulated EGC run in the raceway with the power conductors. The conduit shall not be used as the sole means of grounding. The insulation of the EGC shall be green.
3. Bonding to the EGC shall be provided at each end of metallic conduit runs and at all boxes and enclosures.
4. Connect wiring device grounding terminal to outlet box with bonding jumper and branch circuit equipment grounding conductor.

I. Isolated Ground (IG) Equipment Grounding Conductor:
1. All branch circuits and feeders that require an IG equipment grounding conductor shall be provided with a separate copper insulated IG equipment grounding conductor run in the raceway with the power conductors. The IG equipment grounding conductor shall be provided in addition to the normal EGC. The insulation of the IG equipment grounding conductor shall be green with a yellow stripe.
2. Conduits and boxes of IG circuits shall be bonded to the normal EGC as stated above. At outlet locations, the IG equipment grounding conductor shall connect only to the isolated ground terminal of an isolated ground outlet. There shall be no connection, either directly or indirectly, between the normal EGC and the IG equipment grounding conductor at any point other than at the source of a separately derived system (transformer) or at the service entrance.
3. The following circuits shall be provided with an IG equipment grounding conductor:
   a. Feeders providing power to panels equipped with an IG buss.
   b. All branch circuits originating at a panel with an IG buss.

J. Exterior Lighting:
1. All metallic outdoor poles and luminaries on metallic or non-metallic lighting poles shall be grounded by bonding in an approved manner to the circuit grounding conductor. In

addition to this, bond pole to a #6 AWG bare copper wire which shall also be bonded to a ground rod. Install the ground rod adjacent to the pole base with the top driven at least two (2) feet below grade.

K. Grounding Busses:
1. Provide a copper buss bar where indicated on Drawings or in rooms containing any of the below list. Provide a #2 AWG insulated grounding electrode conductor from the grounding electrode system to each grounding buss.
2. Provide in each IDF and MDF room.
3. Provide at each CATV / MATV head-end mounting board.
4. Provide at each building communications rack.
5. Provide at each sound reinforcement equipment rack.

L. Communications Systems:
1. Bond each server, patch panel, data and other communications equipment ground (buss type or grounding conductor type) at each piece of equipment and each equipment rack back to the copper grounding buss installed in the room with a bare #6 AWG ground wire.

M. Engine Generator Neutral:
1. Ground the generator neutral as a separately derived system per NEC 250.20(D), unless noted otherwise on Drawings.
2. Sign: Provide a sign at the service entrance equipment indicating type and location of on-site generator. See Section 26 05 53 - Identification of Electrical Systems for more information.

N. Lightning Protection System:
1. Bond grounding conductors or grounding conductor conduits to lightning protection down conductors or grounding conductors in compliance with NFPA 78.
2. Bond electric power system ground directly to lightning protection system grounding conductor at closest point to electric service grounding electrode. Use bonding conductor sized same as system ground conductor and installed in conduit.

O. Other Grounding Systems:
1. Other buildings served from common service:
a. The main building service is the source for electric service.
b. Bond grounding conductor of building main feeder to grounding electrode system.

3.4 CONNECTIONS

A. General:
1. Make connections in such a manner as to minimize possibility of galvanic action or electrolysis. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
2. Use electroplated or hot-tin-coated materials to assure high conductivity and make contact points closer in order of galvanic series. Make connections with clean bare metal at points of contact.
3. Aluminum to steel connections shall be with stainless steel separators and mechanical clamps. Aluminum to galvanized steel connections will be with tin-plated copper jumpers and mechanical clamps.
4. Coat and seal connections involving dissimilar metals with inert material such as red lead paint to prevent future penetration of moisture to contact surfaces.
5. Tighten grounding and bonding connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values for connectors and bolts. Where manufacturer's torquing requirements are not indicated, tighten connections to comply with torque tightening valves specified in UL 486A and UL 486B.

B. Exothermic Welded Connections:
   1. Use for connections to structural steel and for underground connections except those at test wells. Install at connections to ground rods and plate electrodes. Comply with manufacturer's written recommendations. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.
   2. Terminate insulated EGCs for feeders and branch circuits with pressure-type grounding lugs. Where metallic raceways terminate at metallic housings without mechanical and electrical connection to the housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to the ground buss in the housing. Bond electrically noncontinuous conduits at both entrances and exits with grounding bushing and bare grounding conductors.

C. Compression Type Connections:
   1. Use hydraulic compression tools to provide the correct circumferential pressure for compression connectors. Use tools and dies recommended by the manufacturer of the connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the ground conductor.

D. Moisture Protection:
   1. Where insulated ground conductors are connected to ground rods or ground busses, insulate the entire area of the connection and seal against moisture penetration of the insulation and cable.

3.5 SITE TESTING

A. Testing:
   1. Test the electrical system after installation is complete. Inspect and test for stray currents, unintended ground shorts, and proper physical condition of grounding system. Correct any deficiencies and re-test to verify satisfactory installation.
   2. Document all readings and testing and make documentation available to Owner upon request.
   3. Perform ground resistance and continuity testing in accordance with IEEE 142.
   4. Perform leakage current tests in accordance with NFPA 99.
   5. Use true-RMS meters for all voltage and current measurements.
   6. Test telecommunications grounding riser to verify continuity.
   7. Check all isolated ground receptacles for correct polarity.
   8. Test all subpanels of separately derives systems to verify subpanel neutral is isolated from ground.
   9. Test isolated power systems for the sound reinforcement system to verify isolation of ground system from other building systems.
   10. Verify continuity and isolation of audio system ground buss and grounding riser.

END OF SECTION

SECTION 26 05 33

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Provide all raceway and conduits, pull and splice boxes, and associated fittings as indicated on the Drawings and as required for feeders, branch circuits, splices, taps, equipment connections, and for compliance with regulatory requirements. All locations shown on the Drawings are approximate unless dimensioned.

B. Provide complete, separate conduit systems for all electrical systems on this project to include, but not limited to service entrance, feeders, branch circuit, control wiring furnished by this contractor, emergency and standby power and lighting circuits, critical power, communication systems, and other electrical systems as required.

C. Provide outlet wiring boxes of the type, shape and size, including depth of box, to suit each respective location and installation; constructed with knockouts or threaded hubs in back and sides, and with threaded holes with screws for securing box covers or wiring devices. Provide outlets as shown, as required and per NEC.

1.2 RELATED REQUIREMENTS

A. Section 26 00 00 - Electrical

B. Section 26 05 26 - Grounding and Bonding for Electrical Systems

C. Section 26 05 53 - Identification for Electrical Systems

1.3 REFERENCES AND STANDARDS

A. ANSI C80.1 - Zinc-Coated Rigid Steel Conduit

B. ANSI C80.4 - Zinc Coated Electrical Metallic Tubing

C. ANSI C80.4 - Fittings for Rigid Metal Conduit and Electrical Metallic Tubing

D. ANSI / NEMA Publication No. OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers and Box Supports, and Cast Aluminum Covers.

E. ANSI / NEMA Publication No. OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports.

F. ANSI 77 - Load Ratings for Underground Boxes

G. ETL PVC-001 - PVC-Coated Rigid Steel Conduit

H. NEMA TC 2 - Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80) and Fittings

I. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing

J. NEMA FB 1 - Metallic Fittings, Cast Metal Boxes and Conduit Bodies

K. NEMA RN 1 - PVC Externally Coated Galvanized Rigid Steel Conduit and IMT

L. NEMA 250 - Enclosure Ingress Protection Testing

M. UL 1 - Flexible Metal Conduit

N. UL 5 - Surface Metal Raceways and Fittings

O. UL 6 - Rigid Metal Electrical Conduit

P. UL 360 - Liquid tight Flexible Steel Conduit

Q. UL 467 - Electrical Grounding and Bonding Equipment

R. UL 514 - Electrical Outlet Boxes and Fittings

S. UL 651 - Rigid Nonmetallic Conduit

T. UL 797 - Electrical Metallic Tubing

U. UL 870 - Safety Standard for Wireways, Auxiliary Gutters and Associated Fittings

1.4 ABBREVIATIONS AND ACRONYMS

A. This specification uses the acronyms and abbreviations from the NEC unless otherwise noted.

1.5 DEFINITIONS

A. Raceway - Conduit, raceway, tubing, wireway and similar.

B. See NEC 100 for additional definitions used in these specificatoins, unless otherwise noted.

1.6 DESIGN REQUIREMENTS

A. All conduit, wireway, raceways, boxes, fittings, installation hardware, accessories, and similar products whether directly or indirectly referenced in the Specifications or Drawings shall be:
   1. Suitable and listed for the space / area / environment where they are installed.
   2. Installed / mounted / suspended per latest adopted version of the NEC, NECA "Standard of Installation" and manufacturer's installation instructions. This work includes but is not limited to clamping, cutting, threading, bending, assembly, supporting, patch coating, etc.

B. Boxes and fittings shall be made of the same material as the conduit material they are installed with, unless modified below or otherwise noted on the Drawings.

1.7 SUBMITTALS

A. Submittals required in this section shall conform to and be submitted in accordance with the General Conditions, Division 01, and Division 26 requirements.

B. Submit from the following list, all items used on this project: Rigid metal and non-metallic conduit, accessories, etc.

1.8 CLOSEOUT SUBMITTALS

A. Submit per Closeout Submittals requirements in Section 26 00 00 - Electrical and any additional requirements listed below:
   1. Record on as-built actual routing of all conduits larger than 3/4".

1.9 DELIVERY, STORAGE AND HANDLING

A. Protect all conduit from corrosion, entrance of debris, moisture and sunlight, prior to and after installation.

1.10 COORDINATION

A. Coordinate mounting heights, orientation and locations of back boxes for outlets mounted above counters, benches, back splashes, etc.

B. Conduit systems shall not be covered or otherwise concealed until review has been made and approvals obtained from the AHJ.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Raceways, Wireways, Gutters and Conduits: Aflex, Atkore (AFC, Allied, FRE, Power Strut, TJ Cope), American Conduit, Calbond, Cantex, Carlon, Champion, Hoffman, Hubbell, KorKap, Nepco, Nucor, Omega, Plasti-Bond, Perma-Cote, Pittsburgh, Sedco, Spang, Square-D, Thomas & Betts, Western Tube and Wheatland, Walker and Wiremold.

B. Boxes and Fittings: Appleton, Atkore (AFC, Allied, Power Strut, TJ Cope), Cantex, Eaton, ECN Korns, Hoffman, Hubbell, Keystone, Lew, Madison, nVent Caddy, Orbit Industries, Raco, Regal, Stahlin, Steel City, Thomas & Betts and Walker.

C. Others: Where specifically listed on Drawings.

2.2 GENERAL PERFORMANCE REQUIREMENTS

A. Minimum conduit / raceway size shall be 1"C for all circuits.

B. Fittings shall be threaded or compression type. Set screw or bolt-on fittings are NOT acceptable.

C. All fittings shall have an insulated throat bushing, no exceptions.

2.3 RIGID METAL CONDUIT - STEEL (RMC)(IMC) - PER ANSI C80

A. Steel: Hot-dipped galvanized rigid steel (GRC) and galvanized intermediate metallic conduit (IMC) with zinc-coated threads and an outer coating of zinc chromate.

B. Fittings: Per NEMA FB 1.
   1. Malleable iron, either cadmium plated or hot-dipped galvanized. Die cast zinc.
   2. Clamps shall be steel.
   3. Use deflection and expansion couplings with bonding jumpers at all expansion joints where required.

2.4 ELECTRICAL METALLIC TUBING (EMT) - ANSI C80.3

A. Galvanized thin wall steel or aluminum tubing.

B. Fittings: Per NEMA FB 1.
   1. Die cast zinc, pressure cast, malleable iron or steel. Clamps shall be steel. Where aluminum tubing is allowed, aluminum fittings are required unless otherwise noted.

C. Conditions: Aluminum conduit shall not be installed in direct contact with concrete or masonry construction.

2.5 RIGID NONMETALLIC CONDUIT (RNC)

A. RTRC: Fiberglass, NEMA TC 14, standard wall.

B. Fittings: Per NEMA TC 3 & 14, solvent weld socket type.

2.6 PULL / SPLICE BOXES AND HAND HOLES

A. Manholes: Concrete manhole with concrete cover noted as specified by the owner.

PART 3 - EXECUTION

3.1 PREPARATION

A. Place conduit sleeves in the cavities of walls and floor slabs for the free passage of conduits.

B. Set all conduit sleeves in place a sufficient time ahead of concrete placement so as not to delay the work.

3.2 GENERAL INSTALLATION

A. The Drawings indicate an approximate location of boxes. The Drawings may not give complete and accurate information in regard to locations of such items. The exact locations shall be determined by reference to the Drawings and by actual measurements during construction of the building, subject to approval by the Owner's Representative.

B. The Owner's Representative reserves the right to adjust locations of raceway and boxes up to six (6) feet in any direction prior to rough-in to accommodate intended purpose at no additional cost.

C. Ground and bond all raceway and boxes in accordance with Section 26 05 26 - Grounding and Bonding for Electrical Systems.

D. Identify all raceway and boxes in accordance with Section 26 05 53 - Identification for Electrical Systems.

E. All installations shall meet NEC requirements for acceptable fill ratings. NO exceptions. No derating shall be allowed without explicit permission from the EOR. Listed partitions are acceptible in gutters or similar for proper partitioning.

3.3 CONDUIT AND RACEWAY APPLICATION

A. General Application:
   1. Conduit Sleeves: Provide RMC sleeves at all locations where conduits pass through beams, outside walls, fire rated walls, or structural members. The size of these sleeves shall be such as to permit readily the subsequent insertion of conduit of the proper size with adequate clearance for movement due to expansion and contraction. Where conduits pass through outside walls, the inside diameter of each pipe sleeve shall be at least 1/2" greater than the outside diameter of the service pipe. After the conduits are installed, fill the annular space between the conduit and its sleeve with a mastic or caulk. Use packing as required to accomplish this.

B. Underground:
   1. Acceptable Conduit:
      a. Base Bid: RMC and PVC.
      b. Alternate #1: Fiberglass.
   2. Fittings: All elbows shall be galvanized steel or fiberglass, no PVC. Other fittings shall match conduit material.
   3. Boxes: Shall be cast metal, concrete or fiberglass. Shall be ANSI 77 traffic rated for the location.
      a. Street / Drive: Vehicle Tier 22 rated.
      b. Sidewalk: Personnel or vehicle Tier 8 rated.
      c. Grass: Personnel Light Duty rated.

4. Conditions: Conduit risers from elbow to above grade shall be RMC.

C. Imbedded in / Passing through concrete:
1. Acceptable Conduit: RMC.
2. Fittings: Shall match the conduit material.
3. Masonry Boxes: Galvanized steel masonry rated box.
4. Conditions:
   a. PVC allowed only where required by utility provider.
   b. Where allowed, conduit imbedded in concrete shall not be larger than 3/4". Verify with project Structural Engineer prior to placing.

D. Outdoor Above Grade:
1. Acceptable Conduit:
   a. Base Bid: PVC with coated painting for sun exposure.
   b. Alternate #1: Fiberglass with coated painting for sun exposure.
2. Fittings: Shall match the conduit material.
3. Boxes: Weatherproof cast steel or cast aluminum.
4. Conditions: TThe only conditions where conduit shall be exposed outdoor above grade is when running up/down a power pole to make a connection to an existing overhead line. Any other instances where conduit is installed outdoor above grade must be submitted to the EOR and approved prior to installation.

3.4 CONDUITS AND RACEWAY INSTALLATION

A. General:
1. Unless otherwise indicated on the Drawings, conduits shall be concealed in walls, partitions and above the ceiling. In rooms where ceilings are not present or scheduled, orient conduit parallel or perpendicular to structure.
2. Completely install each entire conduit system before pulling in any conductors. Clean the interior of every run of conduit before pulling in conductors.
3. Capping
   a. Cap open ends of raceways until conductors are installed to prevent ingress of dirt and moisture.
4. Sealing
   a. Seal both ends of underground conduits as required to prevent ingress of water and other contaminates from outside.
5. Moisture traps: Provide junction box with drain fitting at low points in conduit system to avoid moisture traps.
6. Grounding: The installation shall comply with all NEC grounding requirements. See Section 26 05 26 - Grounding and Bonding for Electrical Systems for additional grounding requirements.
7. Use expansion-deflection fittings on conduits two (2) inches and larger crossing structural expansion joints and on exposed conduit runs where necessary. Provide bonding jumpers across fittings in metal raceway systems. Provide fittings to accommodate expansion and deflection where raceway crosses seismic, control and expansion joints.

B. Pull String:
1. Provide a nylon pulling line (5000 lbs. or higher) in conduits where wiring is not installed under Division 26 work. Greenlee 3/4" X 1200' Double-Braided Composite Rope or equal. Identify both ends of the line by means of labels or tags reading "Pulling Line".

END OF SECTION

SECTION 26 05 53

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Identification required for electrical equipment and systems.

B. All identification required by code or ordinance shall be provided, whether or not shown on Drawings or specified herein.

1.2 RELATED REQUIREMENTS

A. Section 26 00 00 - Electrical

B. Section 26 20 00 - Low-Voltage Electrical Distribution

1.3 REFERENCES AND STANDARDS

A. ANSI Z535.4 - Safety labels and signs

B. Federal Specification (L-P-387) - labelling, materials and color standards

1.4 SUBMITTALS

A. Submittals required in this section shall conform to and be submitted in accordance with the General Conditions, Division 01 and Division 26.

B. Product Data:
1. Submit product data for sign materials. Refer to Electrical Identification detail on the Drawings for additional information.
2. Submit manufacturer’s catalog literature for each product required.
3. Submit Electrical Identification schedule including list of wording, symbols, letter size, color coding, tag number, location, and function.

1.5 CLOSEOUT SUBMITTALS

A. Submit per Closeout Submittals requirements in 26 00 00 - Electrical and any additional requirements listed below:
1. After the owner’s room number list is finalized, submit a list of all electrical identification tags. The list shall include the actual text that will appear on each tag. Include the owner’s and architects room numbers on all tags. Upon request, this list shall be submitted to the Owner's Representative for review.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with a minimum of three (3) years experience.

1.7 DELIVERY, STORAGE AND HANDLING

A. Accept identification products on site in original containers. Inspect for damage.

B. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General Requirements:
   1. Lettering shall be Arial font.
   2. All means of identification referenced in this section shall be of sufficient durability to withstand the environment per NEC 110.21. Where plastic is used outdoors, it shall be UV rated or treated.
   3. Colors shall conform to FS L-P-387.
   4. Thickness for signs and engraved labels shall be 1/16" thick minimum.

B. Signs: For identifying multiple electrical services.
   1. Outdoors: Aluminum.
   2. Indoors: Plastic.
   3. Appearance: White with black lettering, lettering to be 1/4" tall minimum.

C. Equipment Labels: For panelboards, switchboards, switchgear, disconnects, equipment, etc.
   1. Outdoors: UV rated engravable plastic (L-P-387).
   2. Indoors: Engravable plastic (L-P-387).
   3. Appearance:
      a. Non-Emergency - White with black lettering, lettering to be 1/4" tall minimum.
      b. Emergency - Red with black lettering, lettering to be 1/4" tall minimum.

D. Electrical Safety Labels: For arc flash labelling.
   1. Inside building or enclosure to be self-adhesive vinyl.
   2. Appearance: Industry standard colors and layout.

E. Marker Labels / Sleeves: For circuit identification and other labelling.
   1. Marker Label - 2" or wider write-on marker label with white writing portion and clear laminating portion for protection.
   2. Marker Sleeves - 2" or wider sleeve colored to identify electrical systems per requirements in Part 3.

F. Wire Markers: For circuit or voltage identification.
   1. Conductor Marking: Electrical tape.
   2. Circuit Marking: Tubing type, cloth tape, split sleeve.
   3. Appearance: Colors to match requirements in Part 3.

G. Underground Warning Tape:
   1. Four (4) inch wide plastic tape.
   2. Appearance: Colored red and yellow with suitable warning legend describing buried electrical lines.

H. Mechanical Fasteners: Stainless steel screws, non-corroding pop rivets.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate with the Owner's Representative to obtain a list of the finalized owner’s room number list before ordering identification tags.

B. Degrease and clean surfaces to receive adhesive for identification materials.

3.2 APPLICATION OF EQUIPMENT LABELLING

A. Main Service Disconnecting Means:
   1. Mark the label on the main service disconnecting means with the calculated fault current listed on the panel schedule along with the issue date of the Drawings per NEC 110.24(A). The calculated fault current shall be labelled "Maximum Fault Current" and the date shall be labelled "Date Calculations Performed".
   2. Provide a sign at each service at each structure per NEC 230.2(E).

B. Panelboards, Switchboards, Switchgear:
   1. Circuit directory shall be frame mounted inside the door with heat-resistant transparent face and a directory card that is type written and completely filled out.
   2. Circuit directory shall coordinate each breaker with the proper load served. Each circuit shall be uniquely identifiable per NEC 408.4(A) including room numbers. Room numbers shall be as directed by Owner.
   3. Circuit directory shall indicate all spares and spaces in erasable pencil.
   4. Equipment Label shall indicate the high leg per NEC 408.3.

C. Instantaneous Fault Current (AIC): Electrician to field-mark the equipment labels with the calculated instantaneous fault current (as shown on panel boards) per NEC 110.24(A) and use the issue date of the drawings as the calculation date.

D. When series rated panels are specifically allowed, provide a label affixed by the manufacturer indicating the tested and approved series rating combinations per NEC 240.86. Provide an additional label affixed behind the panel door to be field marked in accordance with NEC 110.22(C).

3.3 INSTALLATION OF EQUIPMENT IDENTIFICATION

A. General:
   1. Install all identification per manufacturer's installation instructions, NEC and NECA standards.
   2. Install all labels in an easily visible location and parallel to equipment lines.
   3. Provide signs and tags for equipment requiring identification as shown on Drawings and for equipment as required by the NEC.
   4. All signs and tags to be mechanically fastened. Double-sided tape or other fastening methods are not acceptable.
   5. Provide for each main disconnect not grouped together.
   6. Install signs on outside of cover for safety switches and time clocks.
   7. Install signs on outside top, not on door, and at each circuit for panelboards, switchboards and motor control centers.
   8. All labeling identification shall contain both the owner’s and architect’s room names and numbers. Coordinate with General Contractor to secure construction room numbers.
   9. Provide all additional signage required by the AHJ at no cost to the Owner.
   10. Install identification only when ambient temperature and humidity conditions are within range recommended by the manufacturer.

B. Conduit Identification:
   1. When any of the below systems are required to be run in conduits (per Drawings, Div. 27, Div. 28, AHJ or Owner Requirements), conduits shall be colored with painted band, marker labels or marker sleeves every ten feet (10') maximum and at back box locations using paint or marker labels. All colors shall be by system per the below list:
      a. Fire Alarm System: Red
      b. Voice / Data cabling: Blue
      c. Security System: Green
      d. Intercom, A/V, etc. (Media Mgmt.): Yellow
      e. CATV / MATV: Black
      f. Lighting Controls: Orange

C. Back Box Cover Identification:
   1. When any of the below systems are required to be run in conduits (per Drawings, Div. 27, Div. 28, AHJ or Owner Requirements), identify the back box covers per system. by painting the entire cover or by using marker labels. Marker labels not acceptable for back box covers for Fire Alarm. See below for colors.
   2. Cover Identification: Paint the entire cover or use marker labels. Marker labels not acceptable for back box covers for Fire Alarm. See below for colors.
   3. Back Box Cover Information: Label the back box with the source panel and circuiting using Marker Labels or Sharpie. Label as "Future Use" if there are no conductors pulled.
   4. Back Box Cover Color:
      a. Fire Alarm System: Red
      b. Voice / Data cabling: Blue
      c. Security System: Green
      d. Intercom, A/V, etc. (Media Mgmt.): Yellow
      e. CATV / MATV: Black
      f. Lighting Controls: Orange
      g. Other (unless otherwise specified herein): White

D. Electrical Distribution Nameplates:
   1. Application: Panelboards, Switchboards, Switchgear, Transformers, MCCs, etc.
   2. Identification: Sign or Equipment Label with mechanical fasteners, per NEC 408.4(B).
   3. Information shall include (Example in parenthesis):
      a. Panel designation (CHAC).
      b. Voltage, phase and wires (277/480v 3ph 4w).
      c. Source of service (Fed from MSB).

E. Electrical Equipment Nameplates:
   1. Application: Safety switches, disconnects for HVAC, motors, time clocks, water heaters, etc. and enclosure for controls, relays, contactors, solenoids, other electrical assemblies.
   2. Identification: Sign or Equipment Label with mechanical fasteners.
   3. Information shall include (Example in parenthesis):
      a. Load served (A/H #C206) or (Parking Lot Lighting).
      b. Voltage and phase (480v 3ph).
      c. Circuits used (CHAC-15,17,19).

END OF SECTION

SECTION 26 05 73

POWER SYSTEM STUDIES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Provide calculation of various parameters of the new and / or existing electrical system along with feedback to the Electrical Contractor to ensure:
   1. Proper adjustment of all adjustable breakers for efficient operation.
   2. Proper labelling for equipment and personnel safety.

B. Provide Protective Device Coordination Studies.

C. Provide Arc Flash analysis with proper equipment labelling.

1.2 REFERENCES AND STANDARDS

A. ANSI / IEEE Standard 242 - Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems.

1.3 COORDINATION

A. Coordinate special tests and / or equipment start-up as specified or implied in related sections.

1.4 SUBMITTALS

A. Submittals required in this section shall conform to and be submitted in accordance with the General Conditions, Division 1, and Division 26 requirements.

1.5 CLOSEOUT SUBMITTALS

A. Submit per Closeout Submittals requirements in 26 00 00 - Electrical and any additional requirements listed below:

PART 2 - PRODUCTS

2.1 PERFORMANCE / DESIGN CRITERIA

A. Submit studies in accordance with ANSI / IEEE Standard 242.

B. Submit one-line diagram for each electrical service. Key all equipment and components on diagram to items in the studies.

PART 3 - EXECUTION

3.1 GENERAL

A. This Contractor shall coordinate with the submitted equipment manufacturer to provide the below studies per the requirements in the Specifications. This Contractor shall coordinate all wire and conduit sizes and feeder lengths to the equipment manufacturer for the purposes of conducting the studies.

B. The submitted equipment manufacturer shall provide the below studies, complete with a report including any cautionary items, equipment adjustments and proper equipment labels.

3.2 APPLICATION

A. Short-Circuit Current Study (SCCS):
1. Provide a short-circuit current analysis for each main switchboard and all downstream distribution as required to complete the breaker coordination study and arc flash study requirements below. Short-circuit analysis shall calculate short-circuit levels at service transformer secondary, switchboard main breaker, each feeder breaker and all levels of downstream distribution equipment. Assume infinite source buss at the utility transformer primary if the primary short-circuit current information cannot be obtained from the utility company.
2. Coordinate the Short Circuit Current Ratings (SCCR / Withstand Rating) of mechanical equipment with the available short circuit current. The SCCR of all electrical and mechanical equipment shall exceed the available short circuit current.
3. Label each switchboard and panelboard with the Instantaneous Fault Current per Section 26 05 53 - Identification for Electrical Systems.

END OF SECTION

SECTION 26 10 00

MEDIUM VOLTAGE ELECTRICAL DISTRIBUTION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Medium voltage electrical service including underground and overhead conductor requirements, transformer and secondary enclosure requirements, service entrance requirements, metering, and final connections.

B. Provide and install all components of the medium voltage distribution system(s) including all switchgear, transformers, fuses, circuit breakers, testing, etc. as shown on the Drawings and as required for a complete and working system. All equipment shall be sized to meet the latest adopted version of NEC requirements as a minimum.

C. Construction shall allow installation in locations accessible to the general public without the need for protective fencing or vaults.

1.2 RELATED REQUIREMENTS

A. Section 26 00 00 - Electrical

B. Section 26 05 26 - Grounding and Bonding for Electrical Systems

1.3 REFERENCES AND STANDARDS

A. Switchgear:
1. CAN / CSA C88-M90 - Electrical Power Systems and Equipment.
2. IEEE C37.47 - Specifications for Distribution Fuse Disconnecting Switches, Fuse Supports, and Current-Limiting Fuses.
3. IEEE 386 - Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600v.
4. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

B. Conductors:
1. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire
2. ASTM B8 - Concentric-Lay-Stranded Copper Conductors
3. ASTM B230 - Aluminum, H1350-H19 Wire for Electrical Purposes
4. ASTM B231 - Aluminum 1350 Conductors, Concentric-Lay-Stranded
5. ASTM B609 - Aluminum 1350 Round Wire, Annealed etc., for Electrical Purposes
6. IEEE C48 - Test Procedures and Requirements for Alternating-Current
7. IEEE C386 - Separable Insulated Connector Systems for Power Distribution Systems above 600v.
8. IEEE 400 - Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems
9. IEEE 400.2 - Guide for Field Testing of Shielded Power Cable Systems
10. IEEE 400.3 - Guide for Partial Discharge Testing of Shielded Power Cable Systems in a Field Environment
11. IEEE 404 - Extruded and Laminated Dielectric Shielded Cable Joints Rated 2500v to 500kV.
12. NEMA WC 71 - Non-Shielded Cables Rated 2001-5000 Volts for Use in the Distribution of Electric Energy

13. NEMA WC 74 - 5kV-46kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy
14. UL 1072 - Medium Voltage Power Cables

1.4 SUBMITTALS

A. Submittals required in this section shall conform to and be submitted in accordance with the General Conditions, Division 01, and Division 26 requirements.

B. Provide scaled shop drawings for each electrical equipment area showing the placement of all switchgear, transformers, and equipment of other trades, drawn to scale and dimensioned. Such shop drawings will be reviewed for compliance with the intent of the Drawings and the spaces available for all electrical equipment.

C. Arrangement: Arrange switchgear submittals in the order the schedules appear on the switchgear sheets of the Drawings as read from top to bottom, then left to right.

D. Include the following parameters as applicable in the submittal: equipment name, description, voltage, phase, ampacity, kVA rating, K-rating, control voltage, impedance, AIC rating, MCB vs MLO, shunt-trip, etc.

1.5 CLOSEOUT SUBMITTALS

A. Submit per Closeout Submittals requirements in 26 00 00 - Electrical and any additional requirements listed below:

1.6 MAINTENANCE MATERIALS

A. Provide one set of any special tools required to operate and maintain transformers.

B. Provide one set of each unique fuse size.

1.7 EXISTING FIELD CONDITIONS

A. Verify field measurements of pad, conduit locations, and so on, prior ordering or fabrication of enclosures, supports, equipment etc.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Switchgear Manufacturers Include:
   1. S&C Equipment

B. Pickup Relays
   1. Schweitzer Engineering Laboratories (SEL)

C. Conductor Manufacturers Include:
   1. Okinite
   2. Pirelli
   3. Southwire
   4. Alan Wire
   5. General Cable

D. Terminations Manufacturers Include:
   1. TE (Raychem)
   2. 3M
   3. Elastimold (ABB)

E. All other manufacturers shall require pre-approval in accordance with Section 26 00 00 - Electrical.

2.2 GENERAL REQUIREMENTS:

A. All products / equipment in these Specifications shall meet the requirements outlined below, unless specifically noted otherwise on the Drawings.

B. Switchgear / Disconnects shall be sized per the Drawings and conductor material shall be copper.

C. Provide a NEMA rated enclosure for all switchgear suitable for the environment in which the equipment is installed -
   1. NEMA 3R - All equipment located in damp, wet or exterior locations.

D. All equipment shall have a factory applied S&C Olive Green finish applied over a rust inhibiting treatment.

E. Provide all labelling / identification per Section 26 05 53 - Identification of Electrical Systems.

F. The momentary rating of the buss and all interrupting ratings of fuses and / or circuit breakers shall equal or exceed the short-circuit ratings of the pad-mounted gear.

2.3 FUSIBLE INTERRUPTOR SWITCHGEAR REQUIREMENTS (S&C PMH-9):

A. Fusible Switchgear - shall consist of self-supporting enclosures containing interrupter switches and power fuses with the necessary accessory components, factory assembled and checked.

B. Equipment Ratings - 14.4kV (nominal voltage at 60hz) - 600A buss rating, 25kA short-circuit rating min. (for bussing and OCPD's), BIL (insulation rating) = 95.

C. Fusing - Fuses shall be sized per the Drawings.

D. Enclosure Construction - shall have NEMA 3R enclosure rated for the environment.

2.4 CONDUCTORS:

A. General Properties:
   1. Shall have a rating of MV-105 for normal operation and shall be sized per the Drawings.
   2. Shall be treated to prevent the migration of water into the cable.
   3. Conductor shield and insulation shield shall both be semi-conducting.
   4. Heavy duty, overall protective polyvinyl chloride jacket shall enclose every cable.
   5. Shall conform to ICEA S-97-682, AEIC CS6-96, UL 1072, and shall be UL listed as MV-90.
   6. Provide #2 AWG TW stranded copper ground conductor minimum in each conduit with phase conductors.
   7. Cable temperature ratings for continuous operation, emergency overload operation, and short circuit operation shall be not less than the NEC, NEMA WC 71, NEMA WC 74, or UL 1072 standard for the respective cable.

B. 25kV Conductors: For all distribution systems ranging from 16kV-25kV
   1. Shall be compressed stranded aluminum (ASTM B230, B231 and B609).
   2. Insulation level shall be 133% with the following properties:
      a. Shall be EPR (Ethylene Propylene rubber), thermosetting, light and heat stabilized, with a copper tape shield.
      b. Shall be XLPE with a copper concentric neutral.

C. Conductor Labelling: The manufacturer's name, cable type and size, and other pertinent information shall be marked or molded clearly on the overall protective jacket.

2.5 TERMINATIONS:

A. Terminations shall meet all currently adopted industry standards.

B. Materials shall be compatible with the cables being terminated, and shall be suitable for the prevailing environmental conditions.

C. Terminations:
1. Shall comply with IEEE 48. Include shield ground strap for shielded cable terminations.
2. Class 1 terminations for indoor use: Kit with stress-relief tube, molded-silicone rubber insulator modules, and compression-type connector.
3. Load-break terminations for indoor and outdoor use: load-break premolded rubber elbow connectors with bushing inserts, suitable for submersible applications. Separable connectors shall comply with the requirements of IEEE 386, and shall be interchangeable between suppliers. Allow sufficient slack in medium-voltage cable, ground, and drain wires to permit elbow connectors to be moved to their respective parking stands.
4. Ground metallic cable shields with a device designed for that purpose, consisting of a solderless connector enclosed in watertight rubber housing covering the entire assembly.
5. Indoor Terminators shall be equal to Elastimold Type 35MSCI with shield terminator.
6. Outdoor Terminators shall be equal to Elastimold 35MTG with shield terminator.
7. Provide insulated cable supports to relieve any strain imposed by cable weight or movement. Ground cable supports to the grounding system.

2.6 FIREPROOFING TAPE

A. Fireproofing tape shall be flexible, non-corrosive, self-extinguishing, arcproof, and fireproof intumescent elastomer. Securing tape shall be glass cloth electrical tape not less than 0.18 mm (7 mils) thick, and 19 mm (0.75 inch) wide.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate any / all utility requirements with the power utility company and include in the base bid.

B. Coordinate with the power utility company to obtain information regarding the available short circuit current at the service point (secondary terminals / bushings). Provide this information to the electrical gear manufacturer for use in the overcurrent protective device coordination study required by Section 26 05 73 - Power System Studies.

C. Verify pads and supports are suitable for installation.

3.2 APPLICATION

A. GFCI Protection:
1. Provide ground fault protection at all service entrance equipment in accordance with NEC 230.95.
2. At health care facilities, provide an additional level of ground fault protection in accordance with NEC 517.17.
3. Provide ground fault sensing and indication on emergency systems in accordance with NEC 700.27.
4. Provide ground fault protection at any additional locations indicated on the Drawings.

3.3 INSTALLATION

A. General:
1. Set all equipment plumb, straight and level.
2. Provide grounding and bonding in accordance with Section 26 05 26 - Grounding and Bonding.
3. Provide and install all equipment, including electrical connections, in accordance with the manufacturer's written instructions, the applicable requirements of NEC and the NECA "Standard of Installation", and in accordance with recognized industry practices to ensure that products serve the intended function.
4. Coordinate installation of all electrical equipment and enclosures with other trades, including Mechanical and Plumbing to avoid clearance issues with dedicated equipment space and working clearances.
5. Ground cable shielding at each termination.
6. Any items which have a marred / scratched finish shall be touched up or refinished to a new condition before final acceptance. This shall include, but shall not be limited to, sanding and properly removing rust or other contaminants and completely repainting equipment. Overall acceptance is subject to approval of the Engineer.

B. Switchgear and Enclosures:
1. Mount on four (4) inch thick minimum steel reinforced housekeeping pads.
2. All switchgear, disconnects, etc. shall have weatherproof threaded hubs for top / bottom / side conduit entries.

C. Conductors General:
1. Installation and sizing shall be in accordance with the NEC, as shown on the drawings, and per manufacturer’s instructions.
2. Contractor to generate wire pull calculations per NEC, prior to pulling conductors.
3. Install in raceways to mechanically protect conductors. Do not install the conductors until raceway system is complete.
4. Use suitable lubricating compounds on the cables to prevent pulling damage. Provide compounds that are not injurious to the cable jacket and do not harden or become adhesive.
5. Do not exceed manufacturer`s recommended values for maximum pulling tension, maximum pull length or bend radius either permanently or temporarily during installation.
6. All elbows shall be a minimum of 36" radius or larger as required by code.
7. Cable shall be installed in conduit above grade and duct bank below grade unless otherwise indicated.
8. All cables of a feeder shall be pulled simultaneously.
9. Conductors of different systems (e.g., 5kV and 15kV) shall not be installed in the same raceway.
10. Locate an access point / manhole / pull box every 500' maximum and splice the cables only in manholes and pullboxes.
11. Ground shields in accordance with Section 26 05 26 - Grounding and Bonding for Electrical Systems.
12. Seal the cable ends prior to pulling, to prevent the entry of moisture or lubricant.

D. Conductors - Pulling in ducts and manholes:
1. Cables shall be pulled into ducts with equipment designed for this purpose, including power-driven winches, cable-feeding flexible tube guides, cable grips, pulling eyes, and lubricants. A sufficient number of qualified workers and equipment shall be employed to ensure the careful and proper installation of the cable.
2. Cable reels shall be set up at the side of the manhole opening and above the duct or hatch level, allowing cables to enter through the opening without reverse bending. Flexible tube guides shall be installed through the opening in a manner that will prevent cables from rubbing on the edges of any structural member.

3. Cable shall be unreeled from the top of the reel. Pay-out shall be carefully controlled. Cables to be pulled shall be attached through a swivel to the main pulling wire by means of a suitable cable grip and pulling eye.
4. Woven-wire cable grips shall be used to grip the cable end when pulling small cables and short straight lengths of heavier cables.
5. Pulling eyes shall be attached to the cable conductors to prevent damage to the cable structure.
6. Cables shall be pulled into ducts at a reasonable speed. Cable pulling using a vehicle shall not be permitted. Pulling operations shall be stopped immediately at any indication of binding or obstruction and shall not be resumed until the potential for damage to the cable is corrected. Sufficient slack shall be provided for free movement of cable due to expansion or contraction.
7. Splices in manholes shall be firmly supported on cable racks. Cable ends shall overlap at the ends of a section to provide sufficient undamaged cable for splicing.

E. Conductors - Terminations:
1. Install the materials as recommended by the manufacturer, including precautions pertaining to air temperature and humidity during installation.
2. Installation shall be accomplished by qualified workers trained to perform medium-voltage equipment installations. Use tools as recommended or provided by the manufacturer. All manufacturer's instructions shall be followed.

F. Fireproofing:
1. Cover all cable segments exposed in manholes and pullboxes with fireproofing tape.
2. Apply the tape in a single layer, wrapped in a half-lap manner, or as recommended by the manufacturer. Extend the tape not less than 25 mm (1 inch) into each duct.
3. At each end of a taped cable section, secure the fireproof tape in place with glass cloth tape.

3.4 IDENTIFICATION

A. Furnish and install an engraved laminated nameplate for each circuit breaker or fused switch in switchgear.

B. Refer to Section 26 05 53 - Identification for Electrical Systems for additional requirements.

C. Identify cables as to phase and circuit at each accessible location. Identification to be accomplished by means of brass tags permanently affixed to cable embossed in letter no less than 1/2" high. Arrange tags such that they can be read without moving cables..

D. In each manhole and pullbox, install permanent identification tags on each circuit's cables to clearly designate the circuit identification and voltage. The tags shall be the embossed brass type, 40 mm (1.5 inches) in diameter and 40 mils thick. Attach tags with plastic ties. Position the tags so they will be easy to read after the fireproofing tape is installed.

3.5 SITE QUALITY CONTROL

A. Switchgear - Manufacturer shall test relays at startup / commissioning of each piece of equipment.

B. Conductor Checks and Testing:
1. Perform tests in accordance with the manufacturer's recommendations. Include the following visual and electrical inspections.
2. Test equipment, labor, and technical personnel shall be provided as necessary to perform the acceptance tests. Arrangements shall be made to have tests witnessed by the Engineer.
3. Visual Inspection:
a. Inspect exposed sections of cables for physical damage.

b. Inspect shield grounding, cable supports, splices, and terminations.
c. Verify that visible cable bends meet manufacturer's minimum bending radius requirement.
d. Verify installation of fireproofing tape and identification tags.

4. Electrical Tests:
   a. Acceptance tests shall be performed on new and service-aged cables as specified herein.
   b. Test new cable after installation, splices, and terminations have been made, but before connection to equipment and existing cable.
5. Service-Aged Cable Tests:
   a. Maintenance tests shall be performed on service-aged cable interconnected to new cable.
   b. After new cable test and connection to an existing cable, test the interconnected cable. Disconnect cable from all equipment that could be damaged by the test.
6. Insulation-Resistance Test: Test all new and service-aged cables with respect to ground and adjacent conductors.
   a. Test data shall include megohm readings and leakage current readings. Cables shall not be energized until insulation-resistance test results have been approved by the Engineer. Test voltages and minimum acceptable resistance values shall be:

Voltage Class	Test Voltage	Min. Insulation Resistance
15kV	2.5kV DC	5k megohms

   b. Submit a field test report to the Engineer that describes the identification and location of cables tested, the test equipment used, and the date tests were performed; identifies the persons who performed the tests; and identifies the insulation resistance and leakage current results for each cable section tested. The report shall provide conclusions and recommendations for corrective action.
7. Online Partial Discharge Test: Comply with IEEE 400 and 400.3. Test all new and service-aged cables. Perform tests after cables have passed the insulation-resistance test, and after successful energization.
   a. Testing shall use a time or frequency domain detection process, incorporating radio frequency current transformer sensors with a partial discharge detection range of 10 kHz to 300 MHz.
   b. Submit a field test report to the Engineer that describes the identification and location of cables tested, the test equipment used, and the date tests were performed; identifies the persons who performed the tests; and numerically and graphically identifies the magnitude of partial discharge detected for each cable section tested. The report shall provide conclusions and recommendations for corrective action.
8. Final Acceptance: Final acceptance shall depend upon the satisfactory performance of the cables under test. No cable shall be put into service until all tests are successfully passed, and field test reports have been approved by the Engineer.

END OF SECTION

SECTION 26 20 00

LOW VOLTAGE ELECTRICAL DISTRIBUTION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Electrical service including underground primary requirements, transformer and secondary enclosure requirements, overhead and underground service entrance requirements, metering, and final connections.

B. Provide and install all components of the low voltage distribution system(s) including all switchboards, panelboards, transformers, fuses, circuit breakers, disconnects, MCCs, etc. as shown on the Drawings and as required for a complete and working system. All equipment shall be sized to meet the latest adopted version of NEC 220 requirements as a minimum.

1.2 REFERENCES AND STANDARDS

A. ANSI C33.4 / C57.96 - Distribution, Power and Specialty Transformers

B. ANSI / UL 98 - Safety Standard for Enclosed Switches

C. IEEE 65 - Transformer Test Procedures

D. NEMA AB1 - Molded Case Circuit Breakers

E. NEMA AB2 - Procedures for Verifying the Performance of Molded Case Circuit Breakers

F. NEMA ICS 2 - IC System Contactors and Overload Relays

G. NEMA ICS 5 - IC System Control Circuits and Pilot Devices

H. NEMA ICS 6 - IC System Enclosures

I. NEMA KS 1 - Enclosed Switches

J. NEMA PB1 - Panelboards

K. NEMA ST 1 - Specialty Transformers (Except General Purpose Type)

L. NEMA ST 20 - Dry Type Transformers for General Applications

M. NEMA WD 1 - General Color Requirements for Wiring Devices

N. NEMA WD 6 - Wiring Devices

O. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems

P. Title 10 CFR Part 431 - Energy Efficiency Program for Certain Commercial and Industrial Equipment

Q. UL 50 - Cabinets and Boxes

R. UL 67 - Electric Panelboards

S. UL 489 - Molded Case Circuit Breakers

T. UL 1561 - Standard for Dry-Type General Purpose and Power Transformers

U. UL 5085-1 - Low Voltage Transformers, Part 1: General Requirements

V. UL 5085-2 - Low Voltage Transformers, Part 2: General Purpose Transformers

W. UL 60947 - Low Voltage Switchgear and Controlgear

1.3 COORDINATION

A. Prior to ordering disconnects and fuses or fuse holders, coordinate fuse ratings with the Mechanical Contractor to verify that fuses for all mechanical equipment matches the Maximum Over-Current Protection (MOCP) values of the mechanical equipment being provided. This Contractor to adjust upstream breaker sizes, branch circuit conductor sizes, whip sizes and disconnect sizes to accommodate the fuse (Over-Current Protection Device, OCPD) requirements for the supplied equipment.

1.4 SUBMITTALS

A. Submittals required in this section shall conform to and be submitted in accordance with the General Conditions, Division 01, and Division 26 requirements.

B. Provide scaled shop drawings for each electrical equipment room showing the placement of all panelboards, transformers, and other equipment such as mechanical equipment, drawn to scale and dimensioned. Such shop drawings will be reviewed for compliance with the intent of the Drawings and the spaces available for all electrical equipment.

C. Clearly indicate on the submittals whether equipment is fully-rated or series-rated.

D. Arrangement: Arrange panelboard submittals in the order the panelboard schedules appear on the panelboard sheets of the Drawings as read from top to bottom, then left to right.

E. Include the following parameters as applicable in the submittal: equipment name, description, voltage, phase, ampacity, kVA rating, K-rating, control voltage, impedance, etc.

1.5 CLOSEOUT SUBMITTALS

A. Submit per Closeout Submittals requirements in 26 00 00 - Electrical and any additional requirements listed below:

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. All panelboards, switchboards, disconnects, OCPDs, etc. shall be from the same manufacturer to ensure proper breaker coordination.

B. All equipment on this project shall be new. Refurbished or used equipment will not be acceptable.

C. The following are approved manufacturers.
1. ABB (formerly GE)
2. ACT Communications
3. Asco
4. Bussman
5. Eaton (formerly Cutler-Hammer)
6. Hammond Power Solutions
7. Industrial Electric Manufacturing (IEM)

8. Jefferson
9. Littlefuse
10. Mersen (Ferraz Shawmut)
11. MGM Transformer
12. Mirus International
13. Powersmith
14. Siemens
15. Square-D (Schneider Electric)

D. All other manufacturers shall require pre-approval in accordance with Section 26 00 00 - Electrical.

2.2 GENERAL REQUIREMENTS

A. Conductor material for switchboards, panelboards, disconnects, etc. shall be copper.

B. Transformer coils shall be continuous wound and conductor material shall be copper.

C. Unless otherwise indicated on the Drawings, provide the following enclosures for all panelboards, switchboards, switchgear, disconnects, transformers, etc.:
1. NEMA 1 - All equipment located in interior dry locations.
2. NEMA 3R - All equipment located in damp, wet or exterior locations.

D. All panelboards, switchboards, disconnects, etc. shall have weatherproof threaded hubs for top / bottom / side conduit entries.

E. Unless specifically noted otherwise on the Drawings, all equipment in these Specifications shall meet the the requirements outlined below.

F. All equipment shall have a factory applied gray finish applied over a rust inhibiting treatment. Any items which have the finish marred shall be touched up or refinished to a new condition before final acceptance. This shall include, but shall not be limited to, sanding and properly removing rust or other contaminants and completely repainting equipment if damage is extensive. Overall acceptance is subject to approval of the Engineer.

G. Provide all labelling / identification per Section 26 05 53 - Identification of Electrical Systems.

H. Provide, at each main switchboard and all downstream distribution, a complete (time-current) coordination study and an arc flash study with all required labels. Contractor may use the equipment manufacturer to provide both the required studies and the required labels. Contractor to adjust all settings for electronic-trip circuit breakers. See Section 26 05 73 - Power System Studies for more details.

2.3 PANELBOARD / SWITCHBOARD COMMON REQUIREMENTS

A. Construction: NEMA PB 1, interiors shall be completely factory assembled. See General Requirements above for NEMA enclosure rating requirements.

B. Enclosure Properties: Door in door construction, standard conduit knockouts in ends and sides of cabinet. Provide flush type combination catch and key door locks on all panelboards and load centers. Key all locks alike, provide two keys with each panelboard.

C. Buss Information:
1. Ground Buss: Full length, 25% phase rated, bonded to each buss, additional isolated buss in computer and communication panels.
2. Neutral Buss: Full length
   a. 100% of phase rated for all lighting and power panels.

D. OCPDs: Provide bolt-on circuit breakers unless otherwise indicated on the Drawings.

E. Fault Withstandability: Suitable for operation and able to withstand the symmetrical short circuit current as indicated on the Drawings or available at the location, whichever is larger.

F. Spaces: Install all allotted or indicated spaces so that future OCPDs can be added without additional machining, drilling, tapping or buss extensions.

G. Circuit Identification:
1. Frame-mounted directory with a heat-resistant transparent face for identifying circuits. Mount inside the panelboard door. Use equipment names as reflected by panel schedules on the Drawings. Use room names and numbers selected by the Owner's Representative, which may differ from those shown on Drawings.
2. Provide on all panelboards, revise existing panelboards per Division 26 with new information.
3. See Section 26 05 53 - Identification for Electrical Systems for more information.

H. Features & Accessories:
1. Provide metering and instrumentation per Section 26 09 13 - Electrical Power Monitoring and per Division 23 Energy Management Control System requirements.
2. Provide GFCI protection as indicated here, as shown on the Drawings and where required per NEC.
3. Provide SPDs at the main switchgear per Section 26 43 00 - Surge Protective Devices.

2.4 PANELBOARDS

A. Construction:
1. Surface mounted panelboards: Trims shall fasten to insure no overhang.

2.5 TRANSFORMERS

A. Construction:
1. NEMA ST 1, factory-assembled, enclosed, ventilated, air-cooled, dry-type, with lifting brackets, sized as indicated on Drawings.
2. Transformers shall be rated for continuous operation at rated kVA, 24 hours per day, 365 days per year with normal life expectancy as defined in IEEE 65.
3. Minimum transformer efficiency shall meet Title 10 CFR Part 431.
4. See General Requirements above for NEMA enclosure rating requirements.

B. Enclosure Properties:
1. Enclosed, with vent openings (to meet NEC 450.21), UL 1561 listed.
2. Audible sound levels shall be in accordance with NEMA ST-20.
3. Capable of operating at 115% on 115°C rise, with ambient temperature rise not exceeding 40°C.

C. Insulation: Unless otherwise noted on the Drawings, provide the following:
1. Class 155 or higher, no exceptions.
2. 1-15 kVA: Class 185 with 115°C rise.
3. 16-500 kVA: Class 220 with 115°C rise.

D. Tap arrangement: Use in the high voltage winding unless noted otherwise on the Drawings. Provide taps at 2.5% each, at least two (2) above and at least two (2) below nominal voltage.

E. Mounting Options:
1. 1-15 kVA: Suitable for wall mounting.
2. 16-75 kVA: Suitable for wall, floor stand, or trapeze mounting.
3. Larger than 75 kVA: Suitable for floor stand or trapeze mounting.
4. Floor mounting shall be bolted to a four (4) inch raised concrete pad.

2.6 SAFETY SWITCHES AND ENCLOSED CIRCUIT BREAKERS

A. Product Description:
   1. Provide single throw, horsepower rated, 100% load break and make rated, designed for locking in "ON" or "OFF" position, in code gauge steel cabinets, as required by the application and required per the NEC.
   2. Provide equipment rated for the required voltage and with the number of poles required, dependent on the equipment requirements.
   3. Provide SPDs at equipment in accordance with Section 26 43 00 - Surge Protection Devices.

B. Construction:
   1. All safety switches and enclosed circuit breakers shall be Heavy Duty (HD) type.
   2. See General Requirements above for NEMA enclosure rating requirements.

C. Disconnect / Safety Switches:
   1. Safety switches shall be fused, unless indicated as non-fused on the Drawings.
   2. All disconnects / safety switches shall be lockable in the OFF position.
   3. Use fuse clips which are rejecting type to accept Class RK or L fuses only.
   4. Size fused safety switches and upstream conductors serving motor loads at 125% to 175% of motor nameplate or per NEC values, whichever is larger, and round to the next standard size.

D. Enclosed Circuit Breakers: Provide where indicated on Drawings, otherwise provide a disconnect / safety switch.

2.7 CIRCUIT BREAKERS

A. Product Description: Bolt-on, quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers; listed and labeled as complying with UL 489; ratings, configurations, and features as indicated on the Drawings.

B. Interrupting Ratings: Provide size (ampacity) and withstand (AIC) rating as indicated on Drawings. Series rated panels are NOT allowed. All panels shall be FULLY RATED.

C. Thermal Magnetic Circuit Breaker: Bimetallic overload elements, magnetic trip, common trip type so that an overload or fault on one pole will trip all poles simultaneously. Handle ties are not acceptable.

D. Electronic Trip Circuit Breaker: Solid state, microprocessor-based, true RMS sensing trip units with the following field-adjustable trip response settings:
   1. Long time pickup, adjustable by replacing interchangeable trip unit or by setting dial.
   2. Long time delay.
   3. Short time pickup and delay.
   4. Instantaneous pickup.

E. Features and Accessories: Provide as required, as indicated in the Specifications and as shown on the Drawings.
   1. AFCI: Arc fault sensing where arc fault protection is indicated or required.
   2. GFCI: Ground fault pickup and delay where ground fault protection is indicated or required by NEC.
   3. Shunt Trip: Provide coil voltage as required for connection to indicated trip actuator.
   4. Lock-Out Provision: For locking the circuit breaker in the off position.

F. Provide number of poles indicated for the specified equipment or service, with common trip handle for all poles.

G. Independently mount so that a single unit can be removed from the front of the panel without disturbing or removing main buss, other units or other branch circuit connections.

H. All circuit breakers that have an overcurrent trip setting fixed or adjustable at 1200A or higher shall have an Energy-Reducing Maintenance Switch or similar approved method for arc energy reduction and shall meet all requirements of NEC 240.87. No exceptions.

2.8 FUSES

A. Performance Requirements:
1. All fuses shall be from the same manufacturer.
2. Provide ampacity rating as indicated on Drawings or required by NEC.
3. Unless otherwise indicated on the Drawings, size fuses serving all motor loads at 175% of motor nameplate FLA or NEC motor table ampacity, whichever is larger.

B. 600-amp and less: UL Class RK-5 dual element, time delay.

C. 601-amp and larger: UL Class L time delay.

2.9 GFCI PROTECTION

A. Ground Fault Protection System:
1. Ground sensor relay (GSR) system with ground break components, solid state construction, adjustable current pick-up and time delay settings.
2. Coordinate ground sensor (CT) with integral test winding of sufficient size to encircle all phase and neutral conductors, for zero-sequence monitoring and a solid-state relay to operate the trip circuit on the main switches.
3. Provide required transformer to supply power for tripping switches and connect phase to phase.

B. Accessories Included:
1. Ground fault relaying system for main switches to be zero-sequence type.
2. Ground fault current-detection range to be 100 to 1,200 amperes.
3. Time delay range to be instantaneous to 60 cycles.
4. Derive tripping and control power from control power transformers in switchboard.
5. Components shall include static ground fault sensor, current monitor, and test panel.

C. Where GFCI protection is required or indicated in the Specifications or Drawings, coordinate with the equipment manufacturer to provide proper GFCI requirements to determine whether they are intended to be for personnel (5ma) or equipment (30ma).

2.10 CONTACTORS AND RELAYS

A. General:
1. NEMA ICS 2, magnetic contactor with poles and contacts to match the circuit function and load. All contactors used for lighting shall be "lighting-rated".
2. Coordinate coil voltage with controls system. 120v preferred. Provide fused control circuit transformers as required.
3. Provide an enclosure to house all contactors and relays. See General Requirements above for NEMA enclosure rating requirements.
4. All contactors to be rated for the load type, voltage and continuously rated current.
5. Provide sufficient contactors and/or poles to accommodate quantity of circuits needing to be switched plus an additional 25% for future growth.
6. Mechanically-held contactors are required except where electrically-held contactors are specifically noted on the drawings.

B. Mechanically-held contactors:

1. Mechanism electrically operated by solenoids and mechanically latched.
2. Coil clearing contacts to de-energized coils when device is held closed.
3. Required remote control relay and controls for proper latching and unlatching.

C. Electrically-held contactors:
1. Mechanism electrically-held by a solenoid.
2. Required relays and controls for proper operation.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify mounting supports are properly sized and located including concealed bracing in walls.

3.2 PREPARATION

A. Coordinate with the power utility company to obtain information regarding the available short circuit current at the service point. Provide this information to the electrical gear manufacturer for use in the overcurrent protective device coordination study required by Section 26 05 73 - Power System Studies.

B. Coordinate all requirements with the power utility company and include in the base bid, including but not limited to the following:
1. Whether the service will be overhead or underground.
2. The extent of any underground primary.
3. The need for a secondary enclosure. Provide in bid if required.
4. Any charges from the power utility company for providing service.
5. The need for a transocket for utility metering.

3.3 APPLICATION

A. Panelboards and Switchboards: Provide a complete isolated ground system including isolated ground panel with 200% neutral, SPD and separate isolated ground buss where indicated on the Drawings.

B. Transformers:
1. Provide K-1 transformers when serving electrical panels, unless altered by below items.

C. Circuit Breakers:
1. Provide ground fault circuit breakers (GFCI) where indicated on the Drawings, panel schedules and / or as required by NEC 210.8(B), 422.5, etc. For example, provide protection at all EWCs, hand dryers, kitchen equipment, concessions equipment, and so on. Pull separate neutrals with each circuit to ensure correct GFCI operation.
2. Provide combination AFCI / GFCI circuit breakers where AFCI protection is required per NEC and as indicated on the Drawings.

D. GFCI Protection:
1. Provide ground fault protection at all service entrance equipment in accordance with NEC 230.95.
2. At health care facilities, provide an additional level of ground fault protection in accordance with NEC 517.17.
3. Provide ground fault sensing and indication on emergency systems in accordance with NEC 700.27.
4. Provide ground fault protection at any additional locations indicated on the Drawings.

3.4 INSTALLATION

A. General:

1. Set all equipment plumb, straight and level.
2. Provide grounding and bonding in accordance with Section 26 05 26 - Grounding and Bonding.
3. Provide and install all equipment, including electrical connections, in accordance with the manufacturer's written instructions, the applicable requirements of NEC and the NECA "Standard of Installation", and in accordance with recognized industry practices to ensure that products serve the intended function.

B. Panelboards and Switchboards:
1. Install in the locations as shown and as recommended in NEMA PB1.1. Mount the panelboards such that the top of the switch or circuit breaker in the highest position will not be more than 6-1/2 feet above the floor or working platform. Space all panelboards and switchboards to meet the requirements of NEC 110 and 408. Anchor enclosures firmly to walls and structural surfaces, ensuring that they are permanently and mechanically secured.
2. Provide required SPD breaker for each panel / switchboard as indicated on the Drawings.
3. Coordinate installation of panelboards and enclosures with other trades, including Mechanical and Plumbing to avoid clearance issues with dedicated equipment space and working clearances.
4. Furnish and install an engraved laminated nameplate for each circuit breaker or fused switch in distribution panelboards. Refer to Section 26 05 53 - Identification for Electrical Systems for more information.
5. Place all free standing or floor mounted equipment on four (4) inch housekeeping pads.
6. Where series rated panels are allowed: Field mark the factory furnished label in accordance with NEC 110.22(C).

C. Transformers:
1. Mount transformers on additional vibration isolators and / or on neoprene and spring isolators at floor or other mounting points to meet sound ratings. Install as per manufacturer's recommendations.
2. Mount floor-mounted transformers on vibration isolating pads suitable for isolating transformer noise from building structure on a four (4) inch thick reinforced concrete pad, unless indicated otherwise.
3. Exterior weatherproof transformers: Mount on six (6) inch thick minimum steel reinforced concrete slab. Extend slab one (1) foot beyond transformer on each side. Provide weather shields from the manufacturer.
4. Use flexible conduit, six (6) feet maximum length, for connections to transformer. Make conduit connections to side panel of enclosure.
5. Check for damage and tight connections prior to energizing transformer. Measure primary and secondary voltages and make appropriate tap adjustments.
6. At all floor-mounted transformers, installation to be level and equipment shall be bolted to a raised four (4) inch concrete pad.
7. Mount wall-mounted transformers using integral flanges or accessory brackets furnished by manufacturer.

D. Fuses:
1. Check fasteners on fuse clips for tightness when installing fuses.
2. Install fuses so label is in an upright, readable position. Fuses without labels are not acceptable.
3. Do not install fuses until equipment is ready to be energized.

E. Safety Switches and Enclosed Circuit Breakers:
1. Mount switches no more than six (6) inches above and within six (6) feet of the equipment served, so that operating handle is easily accessible. Align tops of switches when grouped together.

2. Provide a four (4) inch housekeeping pad for all free standing / floor mounted safety switches whether they are mounted inside or outside.
3. Mount vertically on required separate support system hardware with switch easily accessible (door to open 90 degrees minimum).
4. Permanently mount safety switches from inside with plated or stainless bolts, toggle bolts or anchors. Exposed mounting bolts, screws, etc. are not acceptable.
5. Permanently install fusible switches with Class R fuse kits so that fuses are readable when looking at open switch.
6. Do not mount switches / disconnects to access panels or on nameplate data on equipment per NEC.
7. Installation of Conductors: Switches shall not be used as “junction boxes” between HVAC units (splicing or “pig tailing” is not permitted). The maximum number of conductors allowed per termination is determined by the manufacturer’s approved rating for each terminal or lug.
8. Identification: Provide nameplate identification on all HVAC equipment regardless of equipment location per Section 26 05 53 - Identification for Electrical Systems.

F. Contactors and Relays:
1. Unless otherwise indicated on the Drawings, mount contactors in electrical enclosures in electrical room, mechanical room or designated area on Drawings in accordance with manufacturer's instructions and recommendations.
2. Provide an override toggle switch, for maintenance and testing, located beside each contactor used for lighting.
a. Provide relay with integral override switch per Exterior Lighting Controls details.

3.5 GROUNDING

A. Electrical grounding shall conform to NEC 250. See Section 26 05 26 - Grounding and Bonding for more requirements.

3.6 IDENTIFICATION

A. See Section 26 05 53 - Identification for Electrical Systems.

3.7 ADJUSTING

A. Electrical Load Balancing: Balance panels by checking each phase of all panels under full load and arrange so that all phases carry the same load as near as possible by moving individual branch circuits. After load balancing is complete, correct panel schedule directories to reflect all breakers and loads correctly.

B. Transformer Voltage Adjustments: Measure primary and secondary voltages and make appropriate tap adjustments.

C. GFCI Protection - Initial adjustments at service entrance equipment:
1. Initial settings: At the time of installation, adjust the settings of the ground fault protection device as follows:
a. Time delay: Adjust the time delay to 0.3 seconds.
b. Pick-up: In no case can the setting exceed 1,200 amps. Observing this absolute maximum, adjust the ground fault trip setting to the greater of the following two options:
1) 15% of the trip rating of the main breaker in the service entrance equipment.
2) At least as large as the trip rating of the largest downstream overcurrent device that serves a single piece of equipment.

END OF SECTION

SECTION 26 50 00

LIGHTING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Interior and exterior lighting systems including, but not limited to, luminaires, drivers, poles and pole bases, etc.

B. Exceptions include Section 26 55 61 - Theatrical Lighting and Section 26 56 68 - Exterior Athletic Lighting.

1.2 RELATED REQUIREMENTS

A. Section 26 00 00 - Electrical

B. Section 26 09 23 - Lighting Control Devices

1.3 REFERENCES AND STANDARDS

A. ANSI C78.377 - Specifications for the Chromaticity of Solid-State Lighting Products

B. ASTM C150 - American Society for Testing and Materials Standard Specification for Portland Cement

C. Code of Federal Regulations (CFR), Title 47, Part 15 - Radio Frequency Devices

D. DLC - DesignLights® Consortium

E. IESNA LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products

F. IESNA LM-80 - Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays and Modules

G. IESNA TM-21 - Projecting Long Term Lumen, Photon, and Radiant Flux Maintenance of LED Light Sources

H. NECA / IESNA 500 - Standard for Installing Indoor Commercial Lighting Systems

I. NECA / IESNA 501 - Standard for Installing Exterior Lighting Systems

J. UL 844 - Standard for Safety - Luminaires for Use in Hazardous (Classified) Locations

K. UL 924 - Standard for Safety - Emergency Lighting and Power Equipment

L. UL 1598 - Standard for Safety - Luminaires

M. UL 8750 - Standard for Safety - Light Emitting Diode (LED) Equipment for Use in Lighting Products

1.4 ABBREVIATIONS

A. CCT - Correlated color temperature

B. CRI - Color rendering index

C. EPA - Effective projected area

D. LED - Light emitting diode

E. THD - Total harmonic distortion

1.5 COORDINATION

A. Coordinate placement of poles and associated foundations with utilities, curbs, sidewalks, trees, walls, fences, striping, etc. installed under other sections or by others. Coordinate elevation to obtain specified foundation height.

1.6 SUBMITTALS

A. Submittals required in this section shall conform to and be submitted in accordance with the General Conditions, Division 01, and Division 26 requirements.

B. Submit luminaires shown on the Luminaire Schedule on the Drawings and those noted on the Drawings but not on the schedule.

C. Product Data: In addition to the above requirements, submit complete product information for the following:
1. Luminaires - complete manufacturer part number, delivered lumens, L70 rating, LM-80 testing hours, CCT, CRI, input wattage, finish, EPA.
2. Drivers - controls/dimming, power factor, THD.
3. Poles - pole height, material, thickness, finish.

D. Coordinate all luminaire finishes with the Owner's Representative before ordering per submittal requirements in Section 26 00 00 - Electrical.

E. Indicate if DLC listing applies only to certain color temperatures, beam spreads, or other luminaire options. Indicate if any luminaire options void the DLC listing.

1.7 CLOSEOUT SUBMITTALS

A. Submit per Closeout Submittals requirements in 26 00 00 - Electrical and any additional requirements listed below.

1.8 SAMPLES

A. Submit non-returnable samples of luminaires upon request. Include all components necessary for a working product.

1.9 QUALITY ASSURANCE

A. See Section 26 00 00 - Electrical for manufacturer qualifications.

1.10 WARRANTY

A. Provide a five (5) year manufacturer’s warranty for all luminaires. The warranty shall include all luminaire components including, but not limited to, LED arrays, drivers, luminaire body and hardware. LED arrays will be considered defective if a total of 15% or more of the individual diodes fail to illuminate.

B. Provide a one (1) year factory warranty on the pole.

C. Provide a five (5) year extended factory warranty on pole finishes.

D. The warranty period shall cover the cost of equipment, materials, mobilization and labor for repair and replacement.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Only those manufacturers of luminaires and poles listed on the Luminaire Schedule are acceptable.

2.2 PERFORMANCE / DESIGN CRITERIA

A. Pole assemblies shall meet wind loading requirements for the area in which they are installed or 100 mph, whichever is greater. Pole assemblies include the pole, the pole base, pole-mounted luminaires, and any other component that would affect wind loading. Pole bases shall be designed by a Structural Engineer licensed to work in the state.

B. Exterior lighting shall meet all current city ordinances for light levels, light trespass and specific shielding requirements.

C. Refer to Division 01 specifications to determine whether windstorm inspection program and corresponding windstorm certification is required.

2.3 EXTERIOR LUMINAIRES

A. Refer to luminaire schedule for exact luminaires to be provided by this contractor.

2.4 POLES & POLE BASE HARDWARE

A. Wind Load: All poles shall rated for 100 miles per hour wind speed with gust factor of 1.3.

B. Steel and Aluminum Poles: Shall be one piece, ground smooth.

C. Pole Base Hardware: Provide hot-dipped galvanized anchor bolts, pole base cover (no exposed hardware acceptable), templates, ground rods, rigid metal conduit elbows, concrete base, etc., for the installation of concrete bases as detailed on the Drawings.

D. Finishes: Unless otherwise noted, consult Owner's Representative for factory UV rated powder coat finish or clear anodized finish on all poles and associated hardware.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide all luminaires of the types indicated, in accordance with NEMA standards, manufacturer’s recommendations, and NEC requirements.

B. Install exterior lighting systems in accordance with NECA / IESNA 501.

C. Install all luminaires as shown on the Drawings. Where the layout needs to be altered, coordinate with the Owner's Representative for direction before installing luminaires to ensure even illumination and proper light levels.

D. Provide all exterior parking lot, area, site and walkway poles complete with luminaires, any required mounting hardware, wiring, controls, etc. required for a complete system.

3.2 SITE QUALITY CONTROL

A. Prior to final inspection, check all luminaires for damage during construction and replace damaged luminaires at no additional expense to the Owner. Test all luminaires for proper operation. All luminaires shall be cleaned and completely operational at the time of final acceptance of the building.

B. Where specific light levels are mentioned on the Drawings and the luminaire type, quantity, locations or lumen output is changed, the Contractor shall ensure light levels are met. Re-aim or add lighting as necessary.

C. The design intent shown on the Drawings meets the city ordinances for outdoor lighting trespass and minimum light level requirements. It is the responsibility of this Contractor to ensure that the lighting is installed to meet the design intent and city ordinances. Where required, re-aim or add shields to meet these requirements.

3.3 ADJUSTING

A. The Contractor shall move any luminaire up to six feet in any direction as directed at no additional cost.

END OF SECTION

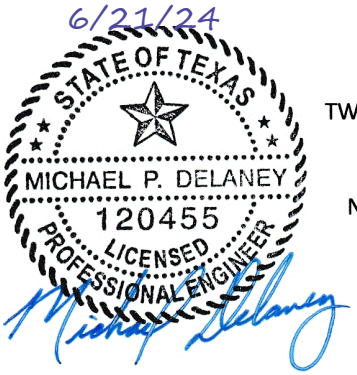
STEPHEN F. AUSTIN STATE UNIVERSITY
ELECTRICAL RENOVATIONS – EAST COLLEGE

(CIVIL) SPECIFICATIONS

DIVISION 31 - EARTHWORK

DIVISION 32 – EXTERIOR IMPROVEMENTS

DIVISION 33 - UTILITIES



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SECTION 311002 - RESTORATION AND CLEANUP

PART 1 GENERAL

1.01 The Contractor shall furnish all labor, equipment, materials and incidentals to restore any disturbed or damaged surfaces and/or items to a condition equal to or better than that which existed before work began. The Contractor shall leave the construction site clean.

PART 2 PRODUCTS

2.01 The Contractor may use equipment and materials as necessary to properly complete the restoration and cleanup phase of the project.

PART 3 EXECUTION

3.01 General

A. As soon as the pipe is laid and backfilled or structures built, clean the construction site and any adjoining areas used by the Contractor in construction and make any restorations necessary to leave the site in a condition equal to or better than prior to construction.

B. As a matter of record, the Contractor shall photograph improved or planted areas before and after working across them.

3.02 Restoration

A. The Contractor shall restore and/or replace any paving, curbing, sidewalks, culverts, gutters, shrubbery, plants, fences, sod or other disturbed surfaces or structures. The size, thickness, strength, texture or condition of restored items shall equal to that which existed before the work began.

B. All terraces, levees and water courses shall be restored to their former condition so that they shall function as originally intended.

C. Private roads used by the Contractor shall be restored to former condition.

3.03 Cleanup

A. The cleaning up shall be done by a special labor crew organized by the Contractor at the time he starts backfill operations and such work shall be diligently prosecuted until the entire construction site has been covered.

B. Any rock, including loose rock having a dimension three (3) inches or more, encountered by the grading, trenching or boring operations, not backfilled according to the specifications, shall be removed from the construction site and disposed of at locations and in a manner that is satisfactory to the Owner.

C. Unless directed otherwise by the Owner, all materials used for providing temporary roadways for construction equipment shall be removed and disposed of.

D. All debris, pavement and excess earth from excavations shall be removed and disposed of by the Contractor.

E. Seeding or sodding will be necessary in areas of excavation as required by the Owner. The seeding or sodding shall be performed according to specifications dealing with this work.

F. To prevent erosion of soil disturbed by construction, the Contractor shall construct terraces or shall place over the construction site and trench backfill suitable control devices composed of sacks filled with earth or sand, silt fences, silt dams or hay bales.

G. The Contractor should not attempt to perform cleanup operations during adverse weather or wet ground conditions.

H. At no time during the progress of the work shall the completed cleanup operation be a greater distance behind the completed pipe trench than is deemed advisable by the Engineer.

I. Before the final acceptance of the project, the entire project site shall be cleared of all surplus and waste materials from the work and otherwise restored as required above.

END OF SECTION 311002

SECTION 311100 - CLEARING AND GRUBBING

PART 1 GENERAL

1.01 "CLEARING AND GRUBBING" shall consist of the removal and disposal of trees, stumps, brush, roots, vegetation, logs, rubbish and other objectionable matter.

PART 2 PRODUCTS

Not applicable.

PART 3 EXECUTION

3.01 The site or right of way shall be cleared of stumps, brush, logs, rubbish, trees and shrubs, except such trees and shrubs and certain areas designated by the Engineer for preservation. Those trees, shrubs and other landscape features specifically designated by the Engineer for preservation shall be carefully protected from abuse, marring or damage during construction operations. On areas required for embankment construction, all stumps, roots, etc. (except for designated trees and brush) shall be removed to a depth of at least 2 feet below the existing ground surface. All holes remaining after clearing and grubbing shall be backfilled and tamped as directed by the Engineer and the entire area bladed to prevent ponding of water and to provide drainage, except, in areas to be immediately excavated, the Engineer may direct that the holes not be backfilled. When permitted by the plans, trees and stumps may be cut off as close to natural ground as practicable on areas which are to be covered by at least 3 feet of embankment and/or waste excavation.

3.02 All cleared and grubbed material shall be disposed of in a manner satisfactory to the Engineer. Unless otherwise provided, all merchantable timber removed as required above shall become the property of the Contractor.

END OF SECTION 311100

SECTION 312315 - TRENCH SAFETY SYSTEM

PART 1 GENERAL

1.01 The Contractor shall comply with the minimum requirements of this specification. Maintenance and inspection of any shoring and related equipment shall be the responsibility of the Contractor. The Owner and/or the Engineer reserves the rights to require the Contractor to remove, repair and/or replace any portions of the shoring system deemed unsafe, but the final responsibility for workers safety remains with the Contractor.

1.02 The Contractor shall determine the safety system needed for the project within the minimum requirements of this specification. The Contractor shall submit to the Owner, a certified submittal from a Registered Professional Engineer from the State of Texas that the Contractor's Trench Safety System meets the minimum requirements of this specification, and shall make adjustments as required by the Owner to meet minimum requirements at Contractor's expense. Approval of a trench safety system by the Owner shall not relieve the Contractor of his responsibility to provide a safe working place for his employees. The Contractor agrees to hold harmless and defend the Owner and/or its Engineer against any claim resulting from failure of the trench safety system or lack of one.

PART 2 PRODUCTS

2.01 Regulatory Requirements

A. Conform to applicable Occupational Safety and Health Administration (OSHA) Standards as contained in 29 CFR, Part 1926, Subpart P - Excavations (as may be amended) including OSHA "Proposed Rules: Excavations Federal Register, Vol. 52, No. 72 Wednesday, April 15, 1987, pages 12325-12339. The sections that are made part of these specifications by reference include Sections 1926.652 and 1926.653.

B. The Contractor's Trench Safety System shall be designed by a Professional Engineer registered in the State of Texas.

C. The Contractor's "Engineer" shall develop a specific trench safety system design for the project in general compliance to the requirements set forth by House Bills 662 and 665 of the 70th Legislature, and in accordance with Part 1926.652 (c)(4) of OSHA "Proposed Rules".

2.02 Definitions

A. Angle of Repose: The greatest angle above the horizontal plane at which a material will lie without sliding.

B. Bank: A mass of soil rising above a digging level.

C. Braces: The horizontal members of the shoring system whose ends bear against the uprights or stringers.

D. Excavation: Any man-made cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation. If installed forms or similar structures reduce the depth-to-width relationship, an excavation may become a trench.

E. Hard Compact Soil: All earth materials not classified as running or unstable.

F. Kickouts: Accidental release or failure of a shore or brace.

G. Sheet Pile: A pile or sheeting that may form one of a continuous interlocking line, or a row of timber, concrete or steel piles, driven in close contact to provide a tight wall to resist the lateral pressure of water, adjacent earth or other materials.

H. Sides, Walls, Faces: The vertical or inclined earth surfaces formed as a result of excavation work.

I. Slope: The angle with the horizontal at which a particular earth material will stand indefinitely without movement.

J. Stringers, Wales: The horizontal members of a shoring system whose sides bear against the uprights or earth.

K. Trench: A narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet.

L. Trench Jack: Screw or hydraulic type jacks used as cross bracing in a trench shoring system.

M. Trench Shield: A shoring system composed of steel plates and bracing, welded or bolted together, which support the walls of a trench from the ground level to the trench bottom and which can be moved along as work progresses.

N. Unstable Soil: Earth material, other than running, that because of its nature or the influence of related conditions, cannot be depended upon to remain in place without extra support, such as would be furnished by a system of shoring.

O. Uprights: The vertical members of a shoring system.

2.03 Construction Materials and Maintenance

A. Materials used for sheeting, sheet piping, cribbing, bracing, shoring and underpinning shall be in good serviceable condition, and timbers shall be sound, free from large or loose knots, and of proper dimensions as called for in the latest revision of OSHA Construction Standards, Subpart P, "Table P-2-Trench Shoring-Minimum Requirements", of which is made a part of these specifications. All materials, which are found to be defective in any way, shall be immediately removed from the job site. It shall be the responsibility of the Contractor to regularly check all trench safety equipment for soundness and adequacy.

B. Steel trench shields shall be constructed of steel plate sides, welded to a steel framework. All shields shall be constructed in order to provide protection equivalent to or greater than sheeting of shoring required for the trench. The Contractor shall provide written certification from the manufacturer's engineer to the Owner of adequacy before using any trench shield. Adjustable jacks may be used in order to adjust the shield to varying trench widths. An access ladder shall be provided at the midpoint. Pipe or flat steel runners or wheels shall be installed under the sidewalls for ease of movement of the shield during trenching operations. Substantial lifting eyes and /or rings shall be welded at proper points for moving the shield. For adaptability to deep and shallow trenches, the shield may be made with top and bottom sections. When the sides of the trench extend above the top of the shield, a reinforced roof with hatches shall be provided. Forced ventilation shall be provided for fully enclosed shields.

C. All maintenance of the trench safety equipment shall be the sole responsibility of the Contractor.

PART 3 EXECUTION

3.01 General

A. Within fifteen (15) days after the bid opening, or at least ten (10) days prior to beginning construction, the Contractor shall submit a written plan for a Trench Safety System specifically for construction of trench excavation, together with the general safety program required by OSHA standards governing the presence and activities of individuals in and around trench excavations. Failure to submit a Trench Safety System submittal as required may result in forfeiture of the bid bond. The Trench Safety System submittal shall be all inclusive of specific requirements of OSHA and the Owner.

B. The Contractor shall provide a trench safety system for all trench excavations, which exceed a depth of five (5) feet or are in unstable or unsuitable soils as designated by the responsible Engineer. The Trench Safety System shall conform to the OSHA standards, latest revision, the same of which is made a part of these specifications, along with the following additions and revisions. The types of trench safety systems currently allowed include shoring, bracing, solid shoring, sloping of the ground and trench shields. The Contractor may submit an alternative method of trench safety, but may not implement until a sealed submittal by a Registered Professional Engineer from the State of Texas is approved by the Owner. Should the Contractor decide to slope the sides of the trench, he shall have the angle of repose of the soil determined by as approved independent soils testing laboratory. At a minimum, the Contractor's design for sloping of the trench sides shall conform to the latest revision of OSHA Construction Standards, Subpart P, "Table P-1 - Approximate Angle of Repose For Sloping of Sides of Excavations", which is made a part of these specifications. Soil core samples taken to a depth of at least the depth of the trench plus four (4) feet shall be taken a minimum of every 700 feet. A minimum of two (2) copies of the results of the lab tests shall be provided to the Owner.

1. Each Contractor shall be responsible and liable for his own Trench Safety System, including self-inspections, whether or not a project representative is present on the job site. The Contractor shall install additional safety equipment if requested to do so by the Engineer or Owner, whose decision shall be final.
2. Before beginning any excavation the Contractor shall make an inspection of the job site. He shall pay special attention to the type of soil or soils in which he will be working, any adjacent roads, highways, railroads and any previous excavations. All underground installations shall be located, including utility lines, pipelines, etc., before any excavation begins.
3. The Contractor shall provide a trench safety system in every trench. The trench safety system shall be installed in a true horizontal position, be spaced vertically and shall be secured to prevent sliding, falling or kickout. The trench safety system shall be effective to the bottom of the excavation. All trenches shall be provided with an adequate means of exit at all times with spacing of 25 feet or less. These means of exit shall be anchored in place in order to aid in the event a quick exit is necessary. During trench excavation, the excavated material shall be placed a minimum of two (2) feet away from the edge of the trench.
4. The Contractor shall make an inspection of all trench excavations. He shall check for any evidence of cave-ins, slides, etc. If any change in soil conditions or failure of the trench is found, the Contractor shall remedy such. All water shall be diverted by suitable means to prevent the entrance of same into any excavation. No water shall be allowed to accumulate in any excavation and shall be removed as soon as possible.

3.02 Indemnification

A. The Contractor shall indemnify and hold harmless the Owner, its employees, agents and Engineer, from any and all damages, cost (including without limitation, legal fees, court costs and investigation costs), judgments or claims by anyone for injury or death of persons resulting from the collapse or failure of trenches constructed. These specifications for the trench safety system in no way relieve the Contractor of his responsibilities and liability to ensure the safety of the workers or any other party from the hazards of the construction operations.

B. The Trench Safety System plan by the Contractor's Engineer shall cover the situations that may be encountered during construction. It should be recognized that information contained in the required Geotechnical Report is based on the data obtained from the soil borings and conditions along the line route may differ from those found at the soil boring locations. It is the Contractor's responsibility to detect varying conditions, which may be hazardous and take appropriate action.

C. The Contractor is responsible for determining the appropriate trench safety systems necessary for specific locations based on actual subsurface conditions encountered during construction. The Owner and its Engineer shall be held harmless from any claim or liability for injury or loss that results from failure on the part of the Contractor to implement the Trench Safety System plan properly or to make necessary changes to the trench safety systems necessitated by conditions encountered during construction.

END OF SECTION 312315

SECTION 321124 - FLEXIBLE BASE – CRUSHED LIMESTONE

PART 1 GENERAL

1.01 This item specifies the furnishing and installing of a compacted base course of crusher-run, broken aggregate. The base shall be constructed in conformity with typical sections and to lines, grades and thickness as shown on the plans.

PART 2 PRODUCTS

2.01 The flexible base material shall be Type A, Grade 1 and meet all of the requirements of *TxDOT Standard Specifications for Construction of Highways, Streets and Bridges*, Item 247, latest edition.

2.02 The material shall only be from a source approved by the Owner.

PART 3 EXECUTION

3.01 Subgrade: Shape subgrade to lines and grades shown on the plans. Subgrade shall be compacted to 95 percent Standard Proctor Density, ASTM D-698. Repair all soft areas before base material is placed on the subgrade.

3.02 Density: After being properly placed and shaped in accordance with the plans, flexible base shall be compacted to 95 percent Modified Proctor Density, ASTM D-1557. Maintain moisture content between optimum and 2 percent above optimum moisture.

3.03 Protection: The Contractor shall be responsible for the protection of the subgrade and flexible base during the construction.

3.04 Testing: The Contractor shall, at his expense, utilize the services of a certified geotechnical testing laboratory to provide test results from the material source to assure conformance with these specifications prior to delivery of the material to the construction site.

END OF SECTION 321124

SECTION 321217 - HOT MIX ASPHALTIC CONCRETE PAVEMENT

PART 1 GENERAL

1.01 This item shall govern for the furnishing of materials, equipment, transporting and placement of Hot Mix Asphaltic Concrete (HMAC) Pavement in accordance with specifications contained herein.

PART 2 PRODUCTS

2.01 Materials shall be Type D (unless shown otherwise in the plans), Hot Mix Asphaltic Concrete in accordance with *TxDOT Standard Specifications for Construction of Highways, Streets and Bridges*, Item 340, 1993 edition. A HMAC design shall be submitted to Owner for approval at least twenty-four (24) hours in advance of scheduled paving operations.

PART 3 EXECUTION

3.01 PLACEMENT

Hot Mix Asphaltic Pavement - Shall be placed in accordance with TxDOT Specification Item 340, 1993 edition, and the following:

a) The Contractor will be required to establish a rolling pattern that will achieve a minimum of 95% of the laboratory molded density for new paving and maximum in-place density for overlays. The Contractor shall be responsible for providing testing equipment that will verify compliance with density requirements. The Contractor shall be responsible for testing rolling pattern as outlined in TEX-207-F, Part IV to achieve maximum compaction. When changes in asphalt mixture or placement conditions occur, a new rolling pattern shall be established. At the Engineer's request, the Contractor shall provide a periodic verification that the rolling pattern is adequate to achieve the required density when varying site conditions are noted.

b) Thickness for compacted HMAC shall be as shown on plans.

c) The HMAC shall be placed and spread on the approved surface with a self propelled spreading and finishing machine.

d) The final compacted thickness for the asphalt surface on existing pavement overlays, is considered to be a nominal desired thickness. In no case shall any portion of the overlay be less than one (1) inch in thickness at specified edges or "humps" and thicknesses of one (1) inch over the nominal depth shall be avoided. All attempts shall be made to maintain the nominal thickness shown in the plans. The contractor shall use a ski or leveling arm on the spreading machine, when necessary, to assist in maintaining desired asphalt thicknesses.

3.02 TESTING

The Owner will contract with an independent testing laboratory to perform the following tests:

a) Hveem stability, laboratory molded density, asphalt cement content, and aggregate gradation from samples that will be taken randomly from haul trucks as HMAC is off-loaded to the lay down machine.

b) Core samples of completed surface to verify compliance with density and thickness requirements.

c) Surface and ride quality shall meet TxDOT Specification Item 585, Surface Test Type A, 1993 edition.

d) Haul trucks shall obtain a ticket at the HMAC plant clearly stating the "Type of Mix" and the "Total Weight" of the mix loaded on the truck. The tickets shall be given to the Owners Representative before the HMAC is off-loaded to the lay down machine.

END OF SECTION 321217

SECTION 321314 - CONCRETE PAVEMENT

PART 1 GENERAL

This item shall consist of a pavement of Portland cement concrete, with or without reinforcement as shown on the plans, with or without monolithic curbs, constructed as herein specified on the prepared subgrade or other base course in conformity with the thickness and typical cross sections shown on the plans and to the lines and grades established by the Engineer.

PART 2 PRODUCTS

2.01 Concrete shall conform to the requirements for Class "A" Concrete as follows:

Min. Sacks Cement per Cubic Yard	Min. Comp. Strength 28 Day PSI	Max. Water/Cement Ratio	Slump Range (Inches)	Coarse Aggregate Number	Fine Aggregate Number
*	(see drawing)	7.0	1-4	1,2,3 or 4	1

* Mix designs shall be approved by the Engineer, based on documented 28-day compressive strength test results.

The use of ready mixed concrete will be permitted for all concrete provided that the plant, truck mixers, agitators and mixing equipment conform to the requirements of the Texas Department of Transportation.

2.02 Joint Materials

A. Expansion joint fillers shall be asphalt impregnated joint board or pre-formed fiber material conforming to the requirements of ASTM D-994 or D-1751 of required size and 3/4" uniform thickness. The filler for each joint shall be furnished in a single piece for the full depth and width and shall be punched to admit dowels where called for in the plans. When used in transverse joints, it shall conform approximately to the shape of the finished pavement as shown on the plans.

B. Ready mixed cold applied joint and crack sealer shall consist of a homogeneous blend of asphalt, rubber, inert filler and a suitable solvent or solvents. The material shall be a resilient, adhesive compound capable of effectively sealing properly cleaned joints in concrete pavement against the infiltration of moisture throughout repeated cycles of contraction and expansion and which will not be picked up by vehicle tires, particularly at summer temperatures. Joint sealants and fillers shall meet all requirements of *TxDOT DMS-6310*, “Joint Sealants and Fillers”.

C. The Material when tested in accordance with TxDOT Method Tex 525-C shall meet the following requirements:

Penetration:

At 77°F: (As received) 150 grams, 5 seconds ..... not less than 2.75 cm.

(After Evaporation of solvent) 200 grams, 60 seconds ..... not more than 2.20 cm.

At 32°F: (After evaporation of solvent) 200 grams, 60 seconds....not less than 2.20 cm.

Flow:

Not more than 0.5 cm.

Bond:

There shall be no cracking of the material or failure in bond between the material and the mortar test blocks during or at the end of five cycles.

2.03 Steel

A. Dowels

Approved load transmission devices for expansion and contraction joints shall consist of smooth, rust-free, steel dowel bars of the size and type indicated on plans and shall be open hearth, basic oxygen or electric furnace steel conforming to the properties specified for Grade 60 in ASTM Designation: A 615. The free end of dowel bars shall be smooth and free of shearing burrs.

When required by plans, one end of each dowel bar shall be encased in an approved cap having an inside diameter of 1/16 inch greater than the diameter of the dowel bar. The cap shall be of such strength, durability and design as to provide free movement of the dowel bar and shall be approved by the Engineer prior to use. One end of the cap shall be filled with a soft felt plug or shall be void in order to permit free movement of the dowel bar for a distance equivalent to 150 percent of the width of the joint used. The dowel caps and dowel bars shall be held securely in place and accurately aligned parallel to the subgrade and the centerline of the pavement by means of a dowel assembly, which will remain in the pavement to ensure that the dowels are not displaced during construction. Mechanical methods of implanting dowel bars in the plastic concrete may be used if approved by the Engineer. Smooth dowel bars shall be coated with heavy grease on one end.

B. Reinforcing Steel

Unless otherwise shown on the plans, or herein, all bar reinforcement shall be de-formed, conforming to ASTM A-615, grade 60. Bends shall be cold-bends only, without any signs of fatigue or cracking. Any bars that are to be bent and re-straightened during construction shall conform to ASTM A-615, grade 40. Lap splices shall conform to CRSI 5-13 or equal. Welded wire fabric reinforcement, where required, shall conform to ASTM A-185 or ASTM A-497. All rust, mud and debris shall be cleaned from steel prior to concrete placement.

C. Curing

The membrane-curing compound shall comply with the requirements of TxDOT DMS-4650 “Hydraulic Cement Concrete Curing Materials and Evaporation Retardants”, latest edition.

PART 3 EXECUTION

3.01 EQUIPMENT

A. General

All equipment necessary for the construction of this item shall be on the project and shall be approved by the Engineer as to condition before the Contractor will be permitted to begin construction operations on which the equipment is to be used. When approved by the Engineer in writing, a commercial or independently operated batching plant for measuring materials outside the limits of the project may be used.

B. Mixer

The mixer furnished may be a paving mixer (operated at the site of the construction or centrally located), a stationary mixer (central mixer) or paving mixer (truck mounted) that will produce adequately mixed concrete meeting the specified requirements.

The size of the paving mixer shall not be less than that of a 27-E paver, as established by the Mixer Manufacturer's Bureau of the Associated General Contractors. Each truck mounted paving mixer shall be approved by the Engineer prior to use on the project.

Each mixer shall be equipped with a water measuring device so constructed that it will measure the water within one (1) percent of the total amount required for each batch. Unless the water is to be weighed, the water measuring equipment shall include an auxiliary tank with a capacity greater than that of the measuring tank, and from which the measuring tank will be filled by gravity flow. The measuring tank shall be open to the atmosphere and shall be so placed and constructed that the water for a batch can be discharged into a calibrated tank or weighing device for checking the accuracy of water measurement without seriously delaying the paving operations. The Contractor shall have a calibrated tank or weighing device available at all times at a location satisfactory to the Engineer.

C. Hauling Equipment

Batch hauling equipment for the transportation of measured materials from the batching plant to the mixer shall be equipped with tight covers and shall be used when directed by the Engineer to prevent excessive evaporation of moisture or any loss of material.

If a central mixer is used, concrete may be transported to the point of delivery in truck agitators or non-agitating trucks. If, in the opinion of the Engineer, any appreciable segregation or accumulation of excess water and/or mortar occurs on the surface of the concrete, this may be cause for rejection and this method of transporting the concrete to the point of delivery shall be suspended as directed by the Engineer.

D. Subgrade or Subbase Planer and Templates

Unless a stabilized subbase is provided, an approved subbase planer shall be provided, mounted on visible rollers, riding on the forms and having adjustable cutting blades which shall trim the subgrade to the exact section shown on the plans. The planer frame shall be heavy enough to remain on the forms at all times and shall be of such strength and rigidity that, under a test made by changing the support from the wheels to the center, it shall not develop a deflection of more than 1/8 inch. Tractive power equipment used to pull the planer shall not be such as to produce ruts or indentations in the subgrade.

When the slipform method of paving is to be used, the subgrade planer will be operated on a prepared track grade or controlled by an electronic sensor system operated from a "string line" that establishes the horizontal alignment and the elevation of the subbase.

A template for checking the contour of the subbase shall be provided and operated by the Contractor. The template shall rest upon the side forms and shall be of such strength and rigidity that, under a test made by changing the support to the center, it shall not show a deflection of more than 1/8 inch. It shall be provided with accurately adjustable rods projecting downward to the subgrade at one (1) foot intervals, and these rods shall be adjusted to the required cross section of the bottom of the slab when the template is resting upon the side forms. Where stabilized subbase is provided, use of a scratch template will be required.

E. Forms

Side forms shall be of metal of approved cross-section. The preferred depth of the form shall be equal to the required edge thickness of the pavement. Forms with depth greater or less than the required edge thickness of the pavement will be permitted provided the difference between the form depth and the edge thickness is not greater than one (1) inch and further provided that forms of a depth less than the pavement edge are brought to the required edge thickness by securely attaching metal strips of approved section to the bottom of the form. Longitudinal hardwood strips not greater than one (1) inch in thickness may be used in lieu of metal strips.

The length of form sections shall not be less than 10 feet and each section shall provide for staking in position with not less than three pins. Flexible or curved forms of wood or metal of proper radius shall be used for curves of 200-foot radius or less. Forms shall be of ample strength and shall be provided with adequate devices for secure setting so that when in place they will withstand, without visible springing or settlement, the impact and vibrating of the spreading and finishing machinery. In no case shall the base be less than 8 inches for a form 8 inches or more in height. The forms shall be free from warps, bends, or kinks, and shall be

sufficiently true to provide a reasonably straight edge on the concrete and the top of each form section, and when tested with a straight edge shall conform to the requirements specified for the surface of the completed pavement. Sufficient forms shall be provided for satisfactory prosecution of the work.

Outside curb forms shall be of wood or metal of section satisfactory to the Engineer, straight, free of warp, and shall be of a depth at least equal to the depth of the curb. They shall be mounted on the paving forms and securely attached thereto and maintained in true position during the placing of the concrete.

F. Concrete Spreader

Use of a concrete spreader shall be required and it shall be a self-propelled machine having sufficient power and traction to spread and strike off concrete without slippage on the forms. It shall be equipped with a power driven device for spreading the concrete uniformly between the forms. The spreading device may be either a reciprocating blade, a screw conveyor or a belt conveyor. The spreader shall be capable of striking off the surface of the concrete between the forms in the longitudinal direction of the slab at any required elevation.

G. Slipform Paver

This paver shall be equipped with a longitudinal transangular finishing adjustable to crown and grade. The float shall extend across the pavement practically to the side forms and/or the edge of slab. A "string line" shall be used to provide grade control for the paver, unless otherwise shown on the plans.

H. Mechanical Vibratory Equipment

All concrete placed for pavement shall be consolidated by approved mechanical vibrators operated ahead of the transverse finishing machine and designed to vibrate the concrete internally and/or from the surface. Vibratory members shall extend across the pavement, practically to, but shall not come in contact with, the side forms. Mechanically operated vibrators shall be mounted in such manner as to not interfere with the transverse or longitudinal joints.

The pavement vibrators shall not be used to level or spread the concrete but shall be used only for purposes of consolidation. The vibrators shall not be operated for more than fifteen (15) seconds while the machine upon which they are installed is standing still.

Approved hand manipulated mechanical vibrators shall be furnished in the number required for provision of proper consolidation of the concrete along forms, at joints and in areas not covered by mechanically controlled vibrators. These vibrators shall be sufficiently rigid to insure control of the operating position of the vibrating head.

I. Finishing Equipment

The transverse finishing machine shall be provided with two (2) screeds accurately adjusted to the crown of the pavement, shall be power driven and mounted in a substantial frame equipped to ride on the forms, and shall be so designed and operated as to strike off and consolidate the concrete.

Where hand finishing is permitted under this specification, the Contractor shall provide a strike template and tamping template both of four (4) by ten (10) inch lumber or equivalent metal section and at least two (2) feet longer than the width of the pavement. Both templates shall conform to the crown section of the pavement, and the tamp, if of wood, shall have a steel face not less than 3/8 inch in thickness. The contractor shall also provide a longitudinal float of approved design and not less than fourteen (14) feet in length.
The Contractor shall furnish, operate and maintain at least two (2) standard ten (10) foot steel straightedges.

The Contractor shall furnish a sufficient number of bridges equipped to ride on the forms and span the pavement for finishing operations and for the installation and finishing of joints. All necessary finishing and edging tools shall be furnished as may be required to complete the pavement in accordance with the plans.

3.02 SUBGRADE AND FORMS

A. Preparation of Subgrade

Where stabilized subbase is not provided the subgrade shall be excavated as required, all unstable or otherwise objectionable material removed, and all holes, ruts and depressions filled with approved material. Rolling and sprinkling shall be performed when and to the extent directed, and the road bed shall be completed to or above the plane of the typical sections shown on the plans and the lines and grades established by the Engineer. Material excavated in the preparation of the subgrade shall be utilized in the construction of adjacent shoulders and slopes, and any additional material required for the completion of the sections shall be secured from sources indicated on the plans or designated by the Engineer. Drainage of the roadbed shall be maintained at all times.

The subgrade shall be maintained in a smooth, compacted condition in conformity with the required section and established grade until the pavement is placed and shall be kept thoroughly wetted down sufficiently in advance of placing any pavement to insure its being in a firm and moist condition for at least two (2) inches below the prepared surface. Sufficient subgrade shall always be prepared in advance to insure satisfactory prosecution of the work. No equipment or hauling shall be permitted on the prepared subgrade, except by special permission of the Engineer, which will be granted only in exceptional cases and only where suitable protection in the form of two ply timber mats or other approved materials is provided.

B. Placing and Removing Forms

The subgrade under the forms shall be firm and cut true to grade so that each form section when placed will be firmly in contact for its whole length and base width, and exactly at the established grade. Any subgrade under the forms below established grade shall be corrected, using suitable material, placed, sprinkled and rolled as directed. Forms shall be staked with at least three pins of each 10-foot section. A pin shall be placed at each side of every joint. Form sections shall be tightly joined and keyed to prevent relative displacement. Forms shall be cleaned and oiled each time they are used. Conformity of the grade and alignment of forms shall be checked immediately prior to placing concrete, and all necessary corrections made by the Contractor. Where any form has been disturbed or any subgrade becomes unstable, the form shall be reset and rechecked. In exceptional cases, the Engineer may require suitable stakes driven to the grade of the bottom of the forms to afford additional support. Sufficient stability of forms to support the equipment operated thereon and to withstand its vibration without springing or settlement shall be required. If forms settle and/or deflect over 1/8 inch under finishing operations, paving operations shall be stopped and the forms shall be reset to line and grade.

Forms shall remain in place for not less than eight (8) hours after the concrete has been placed. They shall be carefully removed in such a manner that little or no damage will be done to the edge of the pavement. Any damage resulting from this operation shall be immediately repaired. After the forms have been removed, the ends of all joints shall be cleaned, and any honeycombed areas pointed up with approved mortar. Immediately after pointing is complete, the form trench, if used, shall be filled with earth from the shoulders in such a manner as to shed water from rainfall or curing away from the edge of the pavement. Upon completion of the required curing, the subgrade or shoulders adjacent to the pavement shall be placed in condition to maintain drainage.

3.03 CONCRETE MIXING AND PLACING

The concrete shall be mixed in a mixer conforming to the requirements. Ready Mix concrete may be used for mixing concrete for pavement.

A. Mixing

The aggregates, mineral filler if required, cement and water shall be measured separately, introduced into the mixer and mixed for a period of not less than 50 seconds nor more than 90 seconds, measured from the time the last aggregate enters the drum to the time discharge of the concrete begins. The required water shall be introduced into the mixing drum during the first 15 seconds of mixing. The entire contents of the drum shall be

discharged before any materials of the succeeding batch are introduced.

If a central mixer is used, the concrete shall be discharged into the specified hauling equipment and delivered to the road site. If truck agitators are used, the concrete shall be continuously agitated at not less than one nor more than six rpm as directed by the Engineer.

B. Placing

Unless otherwise shown on the plans the concrete may be placed by using forms or by use of a slipform paver. Any concrete not placed as herein prescribed within thirty (30) minutes after mixing shall be rejected and disposed of as directed except as provided otherwise herein. Except by specific written authorization of the Engineer, concrete shall not be placed when the temperature is below 50°F and falling but may be placed when the temperature is above 45°F and rising, the temperature being taken in the shade and away from artificial heat.

Concrete shall be placed only on approved subgrade or subbase and unless otherwise indicated on the plans, the full width of the pavement shall be constructed monolithically. The concrete shall be deposited on subgrade or subbase in such manner as to require as little rehandling as possible. Where hand spreading is necessary, concrete shall be distributed to the required depth by use of shovels. The use of rakes will not be permitted. Workers will not be permitted to walk in the concrete with any earth or foreign material on their boots or shoes. The placing of concrete shall be rapid and continuous.

Concrete shall be distributed to such depth that, when consolidated and finished, the slab thickness required by the plans will be obtained at all points and the surface shall not, at any point, be below the established grade. Special care shall be exercised in placing and spreading concrete against forms and at all joints to prevent the forming of honeycombs and voids.

Concrete for the monolithic curbs shall be the same as for the pavement and, if carried back from the paving mixer, shall be placed within 20 minutes after being mixed. It may be placed while the pavement concrete is still plastic. When sawed joints are used, curbs shall be doweled as shown on the plans and poured after sawing. Curbs doweled on and placed separately may be placed with an extrusion machine.

C. Reinforcing Steel and Joint Assemblies

All reinforcing steel, including steel wire fabric reinforcement, tie bars, dowel bars and load transmission devices used in accordance with plan provisions shall be accurately placed and secured in position in accordance with details shown on the plans. Reinforcing bars shall be securely wired together at alternate intersections, following a pattern approved by the Engineer, and at all splices, and shall be securely wired to each dowel intersected. When wire fabric is used, it replaces only the longitudinal and transverse bars and shall be securely wired together at all splices and to each dowel intersected. The bars shall be installed in the required position by the method and device shown on plans or by approved method permitted. If this method of placement proves inadequate, the work shall be completed using conventional methods.

D. Construction Joints

Intentional stoppage of the placing of the concrete shall be at either an expansion joint or at a weakened plane joint, if load transmission devices are specified.

3.04 JOINTS

A. General

All transverse and longitudinal joints when required in the pavement shall be of the type or alternate type shown on the plans and shall be constructed at required location, on required alignment, in required relationship to tie bars and joint assemblies, and in accordance with details shown on the plans. Such stakes, braces, brackets or other devices shall be used as necessary to keep the entire joint assembly in true vertical and horizontal position.

Careful workmanship shall be exercised in the construction of all joints to insure that the concrete sections are completely separated by an open joint or by the joint materials and to insure that the joints will be true to the outline indicated.

B. Expansion Joints

Transverse expansion joints shall be formed perpendicular to the centerline and surface of the pavement and shall be constructed in accordance with the sequence of operations shown on plans. After the transverse finishing machine and before the longitudinal finishing machine have passed over the joint, the Contractor shall test the joint filler for correctness of position and make any required adjustment in position of the filler and shall install the joint seal space form in accordance with the plans. After removal of the joint seal form as required by the plans, the joint seal space above the joint filler shall be thoroughly sandblasted or machine routed to remove all projecting concrete, laitance, dirt or foreign matter. The concrete faces of the joint seal space shall be left true to line and section throughout the entire length of the joint. The joint faces shall be clean and dry at the time the joint sealing filler is placed. The pavement adjacent to the joint shall be left free of joint sealing material. The joint seal space shall be exactly above and not narrower than the joint filler with no concrete overhangings.

C. Weakened Plane Joints

Weakened plane joints shall consist of transverse contraction joints and longitudinal joints and shall be formed or sawed as specified on the plans. When the joints are sawed, the saw shall be power driven, shall be manufactured especially for the purpose of sawing concrete, and shall be capable of performing the work. Saw blades shall be designed to make a clean smooth cut having a width and depth of cut as detailed on the plans. Tracks adequately anchored, chalk, string line or other approved methods shall be used to provide true alignment condition an the Contractor shall keep a standby power saw on the project at all times when concrete operations are under way.

If membrane curing is used, the portion of the seal, which has been disturbed by sawing operations, shall be restored by the Contractor by spraying the areas with additional curing seal.

D. Contraction Joints

Transverse contraction joints shall be formed or sawed joints perpendicular to the centerline and surface of the pavement and shall be constructed by the method, and in the sequence of operations, as shown on the plans. Where sawed joints are used, contraction joints shall be sawed as soon as sawing can be accomplished without damage to the pavement and before 48 hours after the concrete has been placed, the exact time to be approved by the Engineer. All joints shall be completed before placing concrete in succeeding lanes and before permitting traffic to use the pavement.

E. Longitudinal Joints

Longitudinal joints shall be of the type or alternate types shown on the plans and shall be constructed of specified materials in accordance with provision of the plans. Longitudinal joints shall be constructed accurately to required lines, shall be perpendicular to the pavement surface at the joint, and the pavement surface over and adjacent to the joint shall be finished as specified.

Longitudinal joints shall be sawed as soon as sawing can be accomplished without damage to he pavement. Sawing shall not cause damage to the pavement and the groove shall be cut with a minimum of spalling. No traffic (including construction traffic) shall be permitted on the pavement until the longitudinal joint is cut.

F. Joint Sealer Material

After the joints in the hardened concrete have been thoroughly cleaned to the satisfaction of the Engineer, the material shall be installed into each joint by means of a powered, concrete joint sealing machine capable of continuously feeding the compound under pressure into the joint in such a way as to fill it solidly. The

extruding nozzle tip of the sealing machine shall be of such design as to fill the joint opening uniformly from the bottom to the top in a neat and workmanlike manner. The joints shall be completely filled.

G. Joint Filler Boards
Boards shall be anchored as indicated by the plans.

H. Curbs
The curb shall be constructed in lengths equal to the adjoining pavement slab lengths and expansion joints shall be provided in the curb opposite each transverse expansion joint in the pavement. Expansion joint material shall be of the same thickness, type and quality as specified for the pavement and shall be of the section as shown for the curb. All expansion joints shall be carried through the curb.

When sawed joints are provided for the pavement, the curb shall be sawed as all transverse joints are being sawed. To provide bond for the curb, deformed dowel bars shall be placed as indicated on the plans while the pavement concrete is still plastic. The concrete for the monolithic curb shall be placed within forty-five (45) minutes after placement of the pavement slab.

Weakened Plane joints can be formed in monolithic curbs at a spacing to coincide with the joints in the concrete pavement. When the concrete is sufficiently set, the joint on the face of curb shall be grooved with an approved type of grooving tool.

A finish coat of mortar shall be applied on the exposed surfaces of the monolithic curbs. The mortar shall be composed on one part of Portland cement and two parts of fine aggregate. A mortar coat will not be required for extruded curbs.

The curb face, lower radius and top of curb shall be plastered with sand cement mortar. The mortar shall be applied with a template or "mule" made to conform to the curb dimensions shown on the plans. All exposed surfaces of the curb shall be finished with a steel trowel and brushed to a smooth and uniform surface.

3.05 SPREADING AND FINISHING

A. Machine Finishing
All concrete pavement shall be finished mechanically with approved power-driven machines, except as herein provided. Hand finishing will be permitted on the transition from a crowned section to a super-elevation section without crown on curves, and on straight line super-elevation sections less than 300 feet in length. Hand finishing will also be permitted on that portion of a widened pavement outside the normal pavement width, on sections where the pavement width is not uniform, or required monolithic widths are greater than that of available finishing machines.

Machine finishing of pavement shall include the use of power driven spreaders, power driven vibrators, power driven transverse strike-off, and screed, or such alternate equipment as may be substituted and approved.

All concrete pavement shall be consolidated by a mechanical vibrator. As soon as the concrete has been spread between the forms, the approved mechanical vibrator shall be operated to consolidate the concrete and remove all voids. Hand manipulated vibrators shall be used for areas not covered by the mechanical vibratory unit.

The transverse finishing machine shall first be operated to compact and finish the pavement to the required section and grade, without surface voids. The machine shall be operated over each area as many times and at such intervals as directed. At least two trips will be required and the last trip over a given area shall be a continuous run of not less than 40 feet. After completion of finishing with the transverse finishing machine a transverse drag float may be used.

The consistency of the concrete as placed should allow the completion of all finishing operations without the addition of water to the surface. When field conditions are such that additional moisture is needed for the final concrete surface finishing operation, the required water shall be applied to the surface by fog spray only and shall be held to a minimum.

After finishing is complete and the concrete still workable, the surface shall be tested for trueness with an approved 10 foot steel straightedge. The straightedge shall be operated from the side of the pavement, placed parallel to the pavement centerline and passed across the slab to reveal any high spots or depressions. The straightedge shall be advanced along the pavement in successive stages of not more than one-half its length. Practically perfect contact of the straightedge with the surface will be required, and the pavement shall be leveled to this condition, in order to insure conformity with the surface test required below, after the pavement has fully hardened. Any correction of the surface required shall be accomplished by adding concrete if required and by operating the longitudinal float over the area. The surface test with the straightedge shall then be repeated.

For one-lane pavement and uniform widening, the equipment used for machine finishing of concrete pavement shall be as directed by the Engineer but shall not exceed the requirements of these specifications.

After completion of the straightedge operation, as soon as construction operations permit, texture shall be applied with 1/8 inch wide metal tines with clear spacing between the tines being not less than 1/4 inch nor more than 1/2 inch. If approved by the Engineer, other equipment and methods may be used, provided that a surface texture meeting the specified requirements is obtained. The texture shall be applied transversely. It is the intent that the average texture depth resulting from the number of tests directed by the Engineer be not less than 0.060 inch with a minimum texture depth of 0.050 inch for any one test when tested in accordance with Test Method Tex 436_A. Should the texture depth fall below that intended, the finishing procedures shall be revised to produce the desired texture.

B. Hand Finishing

Hand finishing shall be restricted to only those conditions provided for above and upon specific authorization by the Engineer. When hand finishing is permitted, the concrete shall be struck off with an approved strike-off screed to such elevation that when consolidated and finished the surface of the pavement shall conform to the required section and grade. The strike template shall be moved forward with a combined transverse and longitudinal motion in the direction the work is progressing, maintaining the template in contact with the forms, and maintaining a slight excess of material in front of the cutting edge. The concrete shall then be tamped with an approved tamping template to compact the concrete thoroughly and eliminate surface voids and the surface screeded to required section.

After completion of a strike-off, consolidation and transverse screeding, a hand operated longitudinal float shall be operated t test and level the surface to the required grade.

Workers shall operate the float from approved bridges riding on the forms and spanning the pavement. The longitudinal float shall be held in contact with the surface and parallel to the centerline and operated with short longitudinal strokes while being passed from one side of the pavement to the other. If contact with the pavement is not made at all points, additional concrete shall be placed, if required, and screeded, and the float shall be used to produce a satisfactory surface. Care shall be exercised to keep the ends of the float from digging into the surface of the pavement. After a section has been smoothed so that the float maintains contact with the surface at all points in being passed from one side to the other, the bridges may be moved forward half the length of the float and the operations repeated. Other operations and surface tests shall be as required for machine finishing.

C. Surface Test

After the concrete has been placed 12 hours or more, the Engineer will test the surface of the pavement with a

10-foot straightedge placed parallel to the centerline. Unless specified otherwise, the surface shall not vary from the straightedge by more than 1/16 inch per foot from the nearest point of contact, and in no case shall the maximum ordinate from a 10 foot straightedge to the pavement be greater than 1/8 inch. Any high spots causing a departure from the straightedge in excess of that specified shall be ground down by the Contractor to meet the surface test requirements. Where the texture of the pavement is removed by extensive grinding, the texture shall be restored by grooving the concrete to meet the surface-finishing specifications.

3.06 CURING

A. General

All concrete pavement shall be cured by protecting it against loss of moisture for a period of not less than 72 hours from the beginning of curing operations. Immediately after finishing operations have been completed, the entire surface of the newly laid concrete shall be covered and cured in accordance with the requirements specified.

B. Membrane Curing

Immediately after the finishing of the pavement has been completed and after the free surface moisture has disappeared, the pavement shall be sprayed uniformly with a curing compound. Should the film of compound be damaged from any cause before the expiration of 72 hours after original application, the damaged portions shall be repaired immediately with additional compound. Unless otherwise specified on the plans, membrane curing shall be used when the concrete (except that concrete to be used as a base) is placed with a slipform paver.

3.07 PROTECTION OF PAVEMENT AND OPENING TO TRAFFIC

A. Protection of Pavement

The Contractor shall erect and maintain the barricades required by plans and such other standard and approved devices as will exclude public traffic and traffic of his employees and agents from the newly placed pavement for the periods of time hereinafter prescribed. Portions of the roadway, or crossings of the roadbed required to be maintained open for use by traffic, shall not be obstructed by the above-required barricades. Crossings of the pavement required by the plans, or by construction sequence, during the time prior to opening to traffic as herein specified, shall be provided with an adequate and substantial bridge, approved by the Engineer.

B. Opening Pavement to Traffic

The pavement shall be closed to all traffic, including vehicles of the Contractor, until the concrete is at least seven (7) days old or has reached 75% of its 28-day design strength, whichever is shorter. At the end of this waiting period, and as long thereafter as ordered by the Engineer, and is so desired by the Contractor, the pavement may be opened for use by vehicles of the Contractor provided the gross weight (vehicle plus load) of such vehicles does not exceed 14,000 pounds. Such opening, however, shall in no manner relieve the Contractor from his responsibility of his warranty of the work. On those sections of the pavement thus opened to traffic, all joints shall first be sealed, the pavement cleaned and earth placed against the pavement edges before permitting vehicles thereon.

After the concrete in any section of pavement is 14 days old, or for a period of time as ordered by the Engineer, such section or pavement may be opened to all traffic as required by plans or when so directed by the Engineer. On those sections of the pavement thus opened to traffic, all joints shall first be sealed, the pavement cleaned, earth placed against the pavement edges and all other work performed as required for the safety of traffic.

3.08 PENALTY FOR DEFICIENT PAVEMENT THICKNESS

The unit bid price will be reduced 10% per each 1/4 inch in thickness.

END OF SECTION 321314

SECTION 321315 - CURB AND GUTTER

PART 1 GENERAL

1.01 This item shall govern for curb and gutter, with or without reinforcing steel, composed of Portland Cement Concrete constructed on approved subgrade, foundation material or finished surface in accordance with approved lines and grades in conformance with details shown on the plans. Determination of lines and grades shall be the responsibility of the Contractor, subject to approval of the Owner.

PART 2 PRODUCTS

2.01 Concrete - Concrete used shall be Class "A" Concrete. Reinforcing steel, if required, shall conform to the requirements set forth on the plans. Expansion joint filler shall be pre-molded material meeting the requirements of Specification Item, CONCRETE PAVEMENT.

2.02 Curing and Admixtures - Membrane curing materials shall meet the requirements of *TxDOT* DMS-4650, “Hydraulic Cement Concrete Curing Materials and Evaporation Retardants”. Admixtures shall meet the requirements *TxDOT* DMS-4640 “Chemical Admixtures for Concrete”.

PART 3 EXECUTION

3.01 Subgrade Preparation - The subgrade or foundation shall be shaped to line, grade and cross-section, and if considered necessary by the Engineer, hand tamped and sprinkled. If dry, the subgrade or foundation material shall be sprinkled lightly immediately before concrete is deposited thereon.

3.02 Forming - Outside forms shall be of wood or metal, of a section satisfactory to the Engineer, straight, free of warp and of a depth equal to the depth required. They shall be securely staked to line and grade and forms for curbs shall be of approved material, shall be of such design so as to provide the curb required, and shall be rigidly attached to outside forms.

3.03 Reinforcing - The reinforcing steel, if required, shall be placed in position as required by the plans. Care shall be exercised to keep all steel in its proper place. Unless otherwise designated on the plans, or herein, all bar reinforcement shall be deformed, conforming to ASTM A-615, grade 60. When required, bends shall be cold-bends only, without any signs of fatigue or cracking. All rust, mud, and debris shall be cleaned from steel prior to concrete placement.

3.04 Placement - For extruded concrete construction, the concrete shall be placed by an extrusion machine approved by the Engineer. When placement is directly on subgrade or foundation materials the foundation shall be hand tamped and sprinkled if considered necessary by the Engineer.

The line shall be maintained from a guideline set by the Contractor from survey marks established by the Engineer. The outline shall strictly conform to the details shown on the plans. The forming tube of the extrusion machine shall be readily adjustable vertically during the forward motion of the machine to provide required variable heights necessary to conform to the established grade line. To provide a continual check on the grade, a pointer or gauge shall be attached to the machine in such a manner that a comparison can be made between the extruded work and the guideline. Other methods may be used if approved in writing by the Engineer.

The approved mix shall be fed into the machine in such a manner and at such consistency that the finished work will present a well-compacted mass with a surface free from voids and honeycomb and true to established shape, line

and grade.

Any additional surface finishing specified and/or required shall be performed immediately after extrusion. Joints shall be constructed at such locations as directed by the Engineer and to the details shown on the plans.

3.05 Finishing - After the concrete has been struck off and after it has become sufficiently set, the exposed surfaces shall be thoroughly worked with a wooden float. The exposed surfaces shall be rounded by the use of an edging tool to the radius indicated on plans. All exposed surfaces shall be smooth and uniform with a brushed finish.

3.06 Joints - Curb and gutters shall be placed in sections of 50 feet maximum length unless otherwise shown on the plans. Joints shall be constructed at such locations and of the type as directed and specified on the plans. Expansion joints shall be placed at all tie-ins to existing curb and gutters.

END OF SECTION 321315

SECTION 321316 - SIDEWALKS AND DRIVEWAYS

PART 1 GENERAL

1.01 This item shall govern for sidewalks and/or driveways, with or without reinforcing steel, composed of Portland cement concrete constructed on approved subgrade, foundation material or finished surface in accordance with the lines and grades established by the Engineer, with the details shown in the plans and with City standards.

PART 2 PRODUCTS

2.01 Concrete used in conventionally formed construction shall be "Class A" Concrete. Reinforcing steel, if required, shall conform to the requirements on the plans.

PART 3 EXECUTION

3.01 For formed concrete, the subgrade or foundation shall be shaped to line, grade and cross-section and if considered necessary by the Engineer, hand tamped and sprinkled. If dry, the subgrade or foundation material shall be sprinkled lightly immediately before concrete is deposited thereon. Outside forms shall be of wood or metal, of a section satisfactory to the Engineer, straight, free of warp and of a depth equal to the depth required. They shall be securely staked to line and grade and maintained in a true position during the depositing of concrete. The reinforcing Steel, if required, shall be placed in position as required on the plans. Care shall be exercised to keep all steel in its proper location. Sidewalks shall be constructed in sections of the lengths shown on the plans. The different sections shall be separated by a pre-molded or board joint of the thickness shown on the plans, placed vertically and at right angles to the longitudinal axis of the sidewalk. Where the sidewalk or driveways abut a curb or retaining wall, approved expansion material shall be placed along their entire length. Similar expansion material shall be placed around all obstructions protruding through sidewalks or driveways. Sidewalks shall be marked into separate sections, each 6 feet in length by the use of approved jointing tools.

END OF SECTION 321316

SECTION 321317 - CURB RAMPS

PART 1 GENERAL

1.01 This item shall govern for the installation of Curb Ramps at locations as specified on plans. All Curb Ramps that are to be installed shall meet the Americans with Disabilities Act (ADA) criteria and comply with all requirements of the latest edition of the Texas Accessibility Standards (TAS) of the Architectural Barriers Act, Article 9102, Texas Civil Statutes.

PART 2 PRODUCTS

2.01 All materials and construction shall conform to the pertinent requirements of the following items:

SIDEWALKS AND DRIVEWAYS CURB AND GUTTER CONCRETE PAVEMENT

TxDOT Specification Item 421 - Hydraulic Cement Concrete
TxDOT DMS-4640 – Chemical Admixtures for Concrete
TxDOT Specification Item 440 – Reinforcement for Concrete
TxDOT DMS-4650 – Hydraulic Cement Concrete Curing Materials and Evaporation Retardants

2.02 Concrete used in conventionally formed and slip-formed construction shall be Class A concrete or concrete as specified for concrete pavement. Unless otherwise shown on the plans, concrete for extruded construction shall be Class A except that the coarse aggregates shall meet the requirements of Grade 8. Other grades of aggregates may be substituted, if approved by the Engineer.

PART 3 EXECUTION

3.01 SLOPE
The maximum slope of a curb ramp shall not exceed 1:12.

3.02 SURFACE
Surface textures shall consist of exposed crushed stone aggregate, roughened concrete, rubber, raised abrasive strips, or grooves extending the full width and depth of the curb ramp. Surfaces that are raised, etched, or grooved in a way that would allow water to accumulate are prohibited. Textures that meet the intent of this standard are: (1) truncated domes that comply with TAS 4.29.2; (2) 1/8" deep grooves that are 1/4" - 3/4" wide and 3/4" - 2" on center, arranged so that water will not accumulate (applied strips or mats that result in a surface meeting these dimensions are also acceptable); and (3) roughened concrete as long as it contrasts significantly with the surrounding walks.

3.03 COLOR
Ramps shall be of a color that will contrast with the existing sidewalk. For purposes of warning, the full width and depth of curb ramps shall have a light reflective value and texture that significantly contrasts with that of adjoining pedestrian routes.

3.04 SIDES OF CURB RAMPS
If a curb ramp is located where pedestrians must walk across the ramp, or where not protected by handrails, it shall have flared sides; the maximum slope of he flare shall be 1:10. Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp.

3.05 BUILT UP CURB RAMPS
Built up curb ramps shall be located so that they do not project into vehicular traffic lanes.

3.06 LOCATION AT MARKED CROSSINGS
Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides unless otherwise indicated on drawings.

3.07 DIAGONAL CURB RAMPS

If diagonal (or radius type) curb ramps have returned curbs or other well-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have 48 inches of clear space. If diagonal curb ramps are provided at marked crossings, the 48 inch clear space shall be within the markings. If diagonal curb ramps have flared sides, they shall also have at least a 24-inch long segment of straight curb located on each side of the curb ramp and within the marked crossing.

3.08 MINIMUM ANGLE

Curb ramps shall be designed so that the “cradle” will allow wheel chair footrests to clear the adjoining surface during transition. The minimum angle from surface to surface shall be 170 degrees.

3.09 CONSTRUCTION

A. All existing sidewalk and curb area that is to be removed shall be neatly sawcut along intersecting edges where sidewalk and curb is to remain.

B. Prior to curb ramp construction, the subgrade, foundation or pavement surface shall be shaped to the line, grade and cross section shown on the plans and, if considered necessary by the Engineer, hand tamped and sprinkled immediately before concrete is deposited thereon.

C. Forms, where needed, shall be of wood or metal, of a section satisfactory to the Engineer, straight, free of warp and of the depth required. They shall be securely staked to line and grade and maintained in a true position during the placing of concrete. Expansion joints shall be placed between existing concrete and new construction.

D. The reinforcing steel shall be of the type as indicated on the plans and shall be placed in position as shown on the plans. Care should be taken to keep all steel in its proper location during concrete placement.

E. The completed work shall be cured for a period of not less than 72 hours.

F. Care should be taken at all times to prevent accidental harm to pedestrians and/or vehicles. At the end of each work day, the area where construction is taking place shall be secured properly with lighted barricades no more than five (5) feet apart surrounding the entire work area and should have at least 2 rows of reflective flagging tape stretched between each barricade or safety netting surrounding the entire work area.

G. Clean up shall immediately follow the removal of the forms.

END OF SECTION 321317

SECTION 329223 – SODDING

PART 1 GENERAL

1.01 This item shall provide for furnishing and planting sod of the kinds specified along and across all disturbed grassed areas within the project. The work covered by this specification also includes preparation of the ground, fine grading, all required fertilizer, geo-synthetic fabrics, watering and maintenance of the sodded areas.

PART 2 PRODUCTS

2.01 The soil for areas to be repaired shall be at least of equal quality to the soil existing in areas adjacent to the areas to be repaired. The soil shall be reasonably free from subsoil, clay lumps, brush, objectionable weeds and other litter, and shall not contain stones, stumps, roots, toxic substances, other objects larger than 1-inch in diameter or any other material or substance that might be harmful to plant growth or be a hindrance to grading, planting or maintenance operations.

2.02 Geo-synthetic fabrics shall be as stated on the plans or approved equal, and shall be applied over the entire area disturbed by construction in those areas designated on the plans. Staples shall be installed in accordance with manufacturer's recommendation.

2.03 The sod shall consist of live, growing Bermuda, San Augustine, centipede or other grass as shown on the plans or as directed by the Engineer. The sod shall have a healthy, minimum one (1) inch thick, virile root system consisting of dense thickly matted roots throughout the soil. The sod shall be free from noxious weeds, other grasses and any matter deleterious to its growth or which might affect its subsistence or hardiness when transplanted. Sod material shall be kept moist from the time it is dug until the time it is planted.

2.04 Fertilizer shall be uniform in composition, free flowing and suitable for application with acceptable equipment and delivered to the site in bags or containers. Each container shall be labeled, conform to the state fertilizer laws and bear the name or trademark and warranty of the producer. Fertilizer shall be 13-13-13 at 300 pounds per acre.

PART 3 EXECUTION

3.01 Site grading shall include all cutting, filling, importing and moving of earth necessary to bring the disturbed areas to required grades. Grading shall be such as to conduct drainage away from structures and into drainage channels. Grading shall be done with selected materials as directed by the Engineer and, if necessary, top soil shall be imported to the site.

3.02 Any area being prepared to receive sod shall be brought to an elevation that will leave the block sod surface flush with the adjacent ground surfaces. After areas to be sodded have been brought to the proper grade, they shall be thoroughly tilled to a depth of two (2) inches by discing, harrowing or by other approved method until the condition of the soil is sufficiently pulverized for planting. The work shall be performed only during periods when satisfactory results are likely to be obtained. When conditions are such, by reason of drought, excessive moisture or other factors, that results are not likely to be satisfactory, the Engineer may stop the work and it shall resume only when, in the Engineer's opinion, the desired results are likely to be obtained. Any irregularities in the surface resulting from tilling or other operations shall be leveled out before planting operations are begun.

3.03 After completion of tilling operations, the surface shall be cleared of stones, stumps, other objects larger than 1-inch in thickness or diameter, roots, brush, wire and grade stakes. If required, geo-synthetic fabric shall be installed in accordance with manufacturer's instructions and as directed by the Engineer, over the prepared areas. The sod blocks shall be carefully placed on the prepared areas. The fertilizer shall then be distributed uniformly at the rate specified over all areas being sodded and thoroughly watered. When sufficiently dry, the sodded area shall be rolled or tamped to form a thoroughly compacted, solid mat. Any voids left in the block sodding shall be filled with additional sod and tamped. Surfaces of block sod which, in the opinion of the Engineer, may slide due to the height and slope of the surface or nature of the soil shall, upon direction by the Engineer, be secured with wooden pegs driven through the sod blocks into firm earth sufficiently close to hold the blocks of sod firmly in place. Any excess soil from planting operations shall be spread uniformly over adjacent areas or disposed of as directed by the Engineer so that the completed surfaces will present a neat appearance.

PART 4 ESTABLISHMENT

4.01 The Contractor shall be responsible for the proper care of the sodded areas and shall maintain, repair and water the areas as required during the construction period and, at final acceptance of the project, turn over to the Owner a prime stand of grass.

4.02 The newly planted areas shall be watered frequently to promote healthy growth. Light sprinkling shall be performed in a manner that will not cause sod displacement and surface erosion. As turf develops, the frequency of watering will be reduced and application volumes increased, as growth and moisture requirements dictate. Watering equipment shall be of a type that will not damage the finished surface.

4.03 The Contractor is responsible for establishing and maintaining a dense healthy stand of grass for the duration of the project including the one (1) year warranty period. Areas that require re-sodding will be designated by the Engineer. Re-sodding shall be completed within a period of time designated by the Engineer and in a manner that will cause minimum disturbance to the existing grass. Re-sodding shall be accomplished at no additional cost to the Owner.

4.04 If, at any time before completion and acceptance of the entire work covered by this contract, any portion of the surface becomes gullied or otherwise damaged following sodding, the affected portion shall be repaired to re-establish the condition and grade of the soil prior to sodding and re-sodded as specified above.

END OF SECTION 32 92 23

SECTION 330200 – EXCAVATION, TRENCHING AND BACKFILLING

PART 1 GENERAL

1.01 The Contractor shall comply with the minimum requirements of this specification. All excavation of trenches for sanitary sewer, water or other pipelines and backfilling after the line has been properly laid, inspected and tested, shall be done according to these specifications and subsequent to clearing the ditch line.

1.02 The work required shall include the furnishing of all labor, materials, tools, equipment and machinery necessary for the stripping or removal of top soil or sod and subsoil or rock, the furnishing, placing and maintaining of all sheeting, shoring, and bracing necessary to protect the work, adjacent properties and workers; the furnishing of all pumping, bailing and draining necessary to keep the excavation free from seepage water, water from sewers, drains, ditches, creeks, and other sources; the furnishing of provision for the uninterrupted flow of sewers and surface waters during the progress of the construction; the removal, after the completion of the work, of all sheeting, shoring and bracing not ordered left in place to support the sides of the excavation; the satisfactory disposal of excess and unsuitable materials not required or which cannot be used for backfilling, tamping, compacting and refilling after settlement of all excavated areas; the restoration of all rights-of-way and other lands or structures, private or public, damaged or occupied by the Contractor in the performance of the contract to as good a condition as they were prior to the beginning of the work; and maintenance of any trench settlement that occurs within the warranty period or as otherwise specifically provided.

PART 2 PRODUCTS

2.01 Earthen Materials

A. “Select Backfill” material shall be as specified on the plans. Native material from the trench excavation that meets the criteria of “Select Backfill” materail is suitable for proper backfill as approved by the Engineer. In all cases select backfill shall be free of trash, sticks and other organic materials as well as lumps, clods or rocks larger than six (6) inches in any dimension. Within one foot of the top of the pipe and the top one foot of the trench, select material shall meet the requirements of “crumbling earth”.

B. “Crumbling Earth” as used herein shall refer to select backfill material, free of rocks, lumps, roots and other objectionable matter excavated from the trench which at the time of use is in a crumbled, free-flowing condition and has such properties that it can be placed and made firm and free of voids.

C. “Bank Sand” shall be free flowing, fine grained sand without clay lumps or rock. Bank sand shall not have more than 25 percent passing No. 200 sieve and shall not have a plasticity index exceeding 5, when tested by standard laboratory methods. Sand shall be reasonably clean and free of large lumps of clay, loam, rubbish, vegetative matter or other deleterious substance and shall meet the approval of the Engineer.

D. “Granular Material” shall refer to the various granular, hard mineral types such as pea gravel, bank-run gravel and crushed stone with the following gradation requirements:

Sieve Size	% Passing
1”	100
1/2”	25-60
#4	0-10
#8	0-5

The characteristics of the material shall be of such quality to provide a high confined compressive strength.

2.02 Cement Stabilized Sand Backfill

A. Mixture of bank sand, Portland cement and water. Use not less than 1-1/2 sacks of cement per cubic yard of mixture unless otherwise noted. Add required amount of water and mix thoroughly in approved type mixer. Stamp batch ticket with time of loading. Material not in place within 1-1/2 hours after loading will be rejected.

B. Portland Cement shall be ASTM C150, Type 1.

C. Water shall be clean and free from injurious amounts of oils, acids, salt, organic matter or other deleterious materials.

2.03 Tracer and Warning Materials

A. When non-metallic pipe is used for construction of sanitary sewer or water lines, it shall be marked by laying a tracer wire, direct burial cable, 14 gauge THHN Stranded, directly over and running parallel to the line.

B. When metallic or non-metallic pipe is used for construction of utility lines, it shall be marked by laying plastic line marking tape directly over and running parallel to the line. The tape shall be marked with the type of line buried below it. Tape shall be “TERRA TAPE-STANDARD” as manufactured by Reef Industries or approved equal and shall act as an early warning system.

PART 3 EXECUTION

3.01 Excavation

A. Entry upon any private property for performance of any work thereon is prohibited until all required easements or rights-of-way have been obtained.

B. Contractor shall perform all special construction operations and take all special precautions to adequately protect the materials and work performed, the property and landscape of the Owner and others, existing buildings and improvements, existing utilities, workers and employees, and the public in general.

C. Clear the entire width of the permanent easement or right-of-way but clear only such timber and brush from the temporary or construction easement as is necessary for construction of the utility system. The width of the area so cleared shall not extend outside the limits of the easement or street right-of-way as the case may be, as shown on the plans. Trees and timber removed shall be disposed in a manner approved by the Owner.

D. Where trees, plants, shrubbery, etc., are adjacent to the line of the work and are designated not to be destroyed, the Contractor shall protect such trees, plants, shrubbery, etc.

E. Excavate to the approved lines and grades as shown on the drawings. Excavated materials not required for fill or backfill shall be removed from the site and disposed of by the Contractor, at a location approved by the Owner.

F. Excess excavation below the required level shall be backfilled at the Contractor's expense with earth, sand or gravel well compacted, or Class C concrete, as directed by the Engineer.

G. Water accumulated in the excavation shall be removed by pumping or other approved means at the Contractor's expense.

H. Unstable soil shall be removed and replaced with an acceptable backfill material as approved by the Engineer and compacted.

I. Excavation shall be by open cut with trenching machine or back hoe. Where machines other than ladder or wheel type trenching machines are used, excavated material composed of large chunks and clods shall not be used for backfilling.

J. When excavating through paved or otherwise improved surfaces, the Contractor shall restore such surfaces to a condition equal to or better than original, to the satisfaction of the City.

K. Contractor shall, at his own expense, shore up and otherwise protect any building or other structure which may be endangered during the work and he shall restore all buildings, culverts, fences, walls, or other properties disturbed during the work to a condition equal to that existing before his operation. Contractor shall be responsible for any injuries to persons, for damages to existing buildings or other structures affected by the work, and City shall not be liable therefor.

L. It shall be the responsibility of the Contractor to verify the existence and location of all underground utilities and structures along the route of the work. The omission from or the inclusion of utility locations on the plans shall not be considered as the non-existence of or a definite location of the existing underground utilities and structures.

M. It shall be the responsibility of the Contractor to notify the respective owners when markers or facilities are encountered and to protect and support all water, gas, telephone, electric and other conduits or facilities crossed by the excavation or work to be performed by him or to arrange for their temporary removal, and subsequent replacement. In cases where an existing sanitary sewer line crosses the new trench and is either of unsuitable material or has a joint exposed in the excavation, such sanitary sewer line shall be replaced by ductile iron or SDR 26 PVC pipe of sufficient length to span into adequately encased support points on each side.

N. At all streets, drives, walkways and other crossings where applicable, the trenches are to be promptly restored and maintained in such a manner as to prevent any serious interruption of traffic upon the roadway or sidewalks. Where trenches cannot be closed promptly, contractor shall provide temporary bridges to cross trenches when necessary to reduce nuisance and hazard to the public. Such work is to be considered part of the basic proposal item most nearly related.

O. Contractor must provide and maintain adequate detours around the work under construction. Contractor must provide sufficient lights, warning signs, and watchmen to provide adequately for the safety of the public. All lighting, barricading and traffic control devices shall be provided by the contractor in accordance with City Specifications and the Manual on Uniform Traffic Control Devices (MUTCD), latest edition.

P. Before leaving work for the night, during a storm, or at other times, care must be taken to protect and securely close and protect the unfinished end of the pipe. Any earth or other materials that may find entrance into the pipe through any such open or unplugged end of the pipe must be removed at the Contractor’s expense.

Q. The sides of all excavations shall be sufficiently sheeted, shored and braced so as to prevent slides, cave-ins, settlement or movement of the banks and to maintain the excavation clear of obstruction that will in any way hinder or delay the progress of the work. In wet, saturated or flowing materials, when it is necessary to install tight sheeting or cofferdams, wood or steel sheet piling of an approved design and type shall be used. All sheeting piling, shoring and bracing shall have sufficient strength and rigidity to withstand the pressure exerted and maintain the sides of the excavation properly in place and protect all persons or property from injury or damage. When excavations are made adjacent to existing buildings or other structures, or in paved streets, particular care shall be taken to adequately sheet, shore and brace the sides of the excavation to prevent undermining of, or settlement beneath the structures or pavement. Underpinning of adjacent structures or pavement shall be done by Contractor at his own cost and expense and in an approved manner, or when required, the pavement shall be removed, the void satisfactory refilled, compacted and the pavement replaced by Contractor; the entire expense of such removal and subsequent replacement thereof shall be borne by Contractor. Sheeting, shoring and bracing shall not be left in place unless otherwise provided for in the contract or specifically authorized. The removal of sheeting, shoring and bracing shall be done in such manner as not to endanger or damage either new or existing structures, private or public properties, and so as to avoid cave-ins, or sliding of the banks. All holes or voids left by the removal of the sheeting, shoring or bracing shall be immediately and completely filled and compacted with suitable materials.

R. Contractor shall immediately remove all surface or seepage water from sewers, drains, ditches and other sources which may accumulate during the excavation and construction work by providing pumping, bailing, or draining. Contractor shall have available at all times sufficient equipment in proper working order for doing the work herein required. All water removed from excavations shall be disposed of in an approved manner, so as to not create unsanitary conditions, nor to cause injury to persons or property or damage to the work in progress, nor to interfere unduly with the use of streets, private driveways or entrances.

S. Tracer wire shall be laid prior to backfilling operations next to the pipe. A monitoring station shall be installed approximately every 500 feet of pipe. Tracer wire and monitor station cost shall be included as part of the linear foot cost of the pipe.

T. Warning tape shall be placed during backfill operations at a depth of six (6) to eight (8) inches below final grade or pavement subgrade.

3.02 Trench Excavation

A. The trench sides shall be cut vertical from the bottom of the trench to a point one (1) foot above the top of the pipe. In material that may cave, trench sides shall be braced or cut to a stable slope as determined by the material characteristics. Contractor shall be solely responsible for maintaining the trench in a stable condition to prevent slides, cave-ins, settlement or movement of the banks. Contractor shall provide a trench safety system sealed by a Registered Professional Engineer in the State of Texas described in the Technical Specification Trench Safety System and as required by State and Federal law.

B. Complete and shape trench to provide free working space and to permit thorough tamping of backfill around pipe. The width of the trench shall be six (6) inches minimum and twelve (12) inches maximum on each side of pipe bells. In no case shall the upper portions of the trench be of less width than the bottom.

C. Where bedding is not required, grade bottom of trenches accurately to the curvature of pipe to provide uniform bearing on firm soil along entire length of each pipe section.

D. Remove rubbish, rock, or debris encountered at grade to depth of at least six (6) inches below bottom of pipe and reshape and compact trench bottom.

E. Bell holes shall be of ample size to make the joint and relieve the bell of all load. When the joint has been made, the void under the bell shall be filled with bedding material to provide uniform support to the pipe throughout it's length.

F. Keep excavated material piles so that it will not endanger work or obstruct roads and driveways. Keep drainage channels clear or provide other satisfactory means for drainage.

G. Pipe shall have been laid in any trench that has been opened and the trench backfilled at the end of each day's work, except with written permission to do otherwise.

H. Trenches for pressure line shall be of such depth as to give thirty-six (36) inches cover over the top of the pipe to natural grade and at street crossings thirty (30) inches cover over the top of the pipe to street subgrade. In drainage ditches and bar ditches the pipe shall have a minimum of thirty (30) inches cover or be concrete encased. Lines installed in highway or railroad rights-of-way shall conform to the requirements of the applicable owner or agency. Trench depth for sewer lines shall be such that the sewer pipe flow line will be as shown on the Construction Drawings when the pipe has been installed in accordance with these specifications.

3.03 Rock Excavation

When excavation is in rock, it shall be undercut four (4) inches and then brought back to grade with bank sand or other approved granular bedding material. This material shall be compacted and shaped as required and specified for pipe bedding. Rock excavation shall include removal of boulders larger than 1/3 cubic yard in volume, of ledge

rock, concrete or masonry structures or foundations that require drilling or blasting.

3.04 Bracing, Sheathing and Shoring

Bracing, sheathing and shoring shall be provided as shown on the plans or required in the trench safety system.. Sheathing designated by the Engineer to remain in place shall be cut off one (1) foot below the natural ground line and left in the trench. All sheathing not designated to remain in place shall be removed prior to backfilling the trenches.

3.05 Temporary Bridges

Temporary bridges or crossings shall be provided by the Contractor as required to maintain traffic. Such bridges or crossing shall be designed by a Registered Professional Engineer in the State of Texas.

3.06 Pipe Bedding

A. Concrete Encasement: The bottom of the trench shall be under cut to a depth of one-fourth the inside diameter of the pipe or a minimum of six (6) inches. Reinforcing shall be No. 4 bars longitudinally, spaced twelve (12) inches on-center (minimum) around the pipe. No. 2 ties placed twenty-four (24) inches on-center circumferentially shall be used to maintain proper location of the reinforcement. Concrete shall be a four(4)-sack mix and shall be poured in the trench to proper grade and pipe shall be placed in the concrete at the proper line and grade. After the initial concrete has sufficient set to support the additional load without disturbing the alignment and grade of the pipe, additional concrete shall be placed around the pipe extending up to a height of one-fourth the inside diameter or a minimum of six (6) inches above the top of the pipe. Backfill above this point shall conform to these specifications but shall not proceed until concrete has achieved a compressive strength of 75 percent of its design strength, or three (3) days, whichever is greater.

B. Cement Stabilized Sand Backfill: The bottom of the trench shall be undercut to a depth of one-fourth the inside diameter of the pipe or a minimum of four (4) inches. Cement stabilized sand shall be placed in the trench to proper grade and pipe shall be placed on this material at the proper line and grade. After the initial stabilized sand has sufficient set to support the additional load without disturbing the alignment and grade of the pipe, additional cement stabilized sand shall be placed in uniform layers around the pipe extending up to a minimum height of twelve (12) inches above the top of the pipe. Minimum compaction to this level shall be 90 percent Standard Proctor (ASTM-698). Backfill above this level shall be uniform layers not exceeding twelve (12) inches of cement stabilized sand to the top of the trench. In roadway or proposed pavement areas, the backfill from a point twelve (12) inches above the top of the pipe to the top of the trench can be approved road base material placed in layers not to exceed twelve (12) inches. Compaction above the pipe zone shall conform to these specifications.

C. Class “A” Bedding (Concrete Cradle): The bottom of the trench shall be undercut to a depth of one-fourth the inside diameter of the pipe or a minimum of four (4) inches. Concrete shall be a four (4)-sack mix and shall be poured in the trench to proper grade and pipe shall be placed in concrete at the proper line and grade. After the initial concrete has sufficient set to support the additional load without disturbing the alignment and grade of the pipe, additional concrete shall be placed around the pipe extending up to a height of at least one-fourth the pipe outside diameter. Backfill above this point shall conform to these specifications but shall not proceed until concrete has achieved a compressive strength of 75 percent of its design strength, or three (3) days, whichever is greater.

D. Class “AA” Bedding (Concrete Arch): The bottom of the trench shall be undercut to a depth of one-fourth the outside pipe diameter or a minimum of four (4) inches. The pipe shall be bedded in granular material extending up the sides of the pipe to the spring line and compacted to 90 percent Standard Proctor (ASTM D-698). The top half of the pipe shall be covered with a monolithic concrete arch having a thickness of at least four (4) inches or one-fourth the outside pipe diameter. Concrete shall be a minimum four (4)-sack mix. Backfill above this point shall conform to these specifications.

E. Class “B” Bedding: The bottom of the trench shall be undercut to a depth of one-eighth the outside diameter or a minimum of four (4) inches. Granular material or bank sand shall be placed and compacted to the proper line and grade before the pipe is laid. After the pipe has been laid additional granular material or bank sand shall be placed and compacted to the spring line of the pipe. Compaction shall be 90 percent of Standard Proctor (ASTM D-698). Care shall be taken not to disturb the grade and alignment. Backfill above this point shall conform to these specifications.

F. Class “B Modified” Bedding: The bottom of the trench shall be undercut to a depth of one-eighth the outside pipe diameter or a minimum of four (4) inches. Granular material or bank sand shall be placed and compacted to the proper line and grade before the pipe is laid. After the pipe has been laid additional granular material or bank sand shall be placed and compacted around the pipe to a minimum of six (6) inches above the top of the pipe. Compaction shall be 90 percent of Standard Proctor (ASTM D-698). Care shall be taken not to disturb the grade and alignment. Backfill above this shall conform to these specifications.

SPECIAL ‘‘HAUNCHING” REQUIREMENT - Care shall be taken to ensure that sufficient material has been

worked under the “haunch” of the pipe (bottom of pipe to spring line of pipe) to provide adequate side support. Take precautions to prevent movement of the pipe during placing of the material under the pipe haunch.

G. Class “C” Bedding: The bottom of the trench shall be undercut to a depth of one-eighth the outside pipe diameter or a minimum of four (4) inches. Granular material shall be placed and compacted to the proper line and grade before the pipe is laid. After the pipe has been laid, the same bedding material shall be placed and compacted to a minimum height of one-sixth the outside pipe diameter. Compaction shall be 90 percent of Standard Proctor (ASTM D-698). Care shall be taken not to disturb the grade and alignment. Backfill above this shall conform to these specifications.

H. Class “D” Bedding: The bottom of the trench shall be accurately graded to support the bottom of the pipe to provide uniform bearing and support for each section of pipe. Backfill above this shall conform to these specifications.

I. Class “D Modified” Bedding: The bottom of the trench shall be accurately graded and rounded to support the bottom quadrant of the pipe to provide uniform bearing and support for each section of pipe. Backfill above this shall conform to these specifications.

J. **Standard bedding for all pipes shall be Class D Bedding** unless otherwise specified in the plans. Reference plan details for circumstances where a higher class bedding may be required, if unsuitable conditions are found in the field.

3.07 Excavation of Appurtenances

Excavation for manholes and similar structures shall be sufficient to leave at least two (2) feet clearance between the outer surfaces and the embankment or timber that may be used to hold and protect the banks. Any overdepth excavated below such appurtenances that has not been directed will be considered unauthorized and shall be refilled with sand, gravel, or concrete, as directed, at no additional cost to the Owner.

3.08 Backfilling

After pipe joints have been inspected and approved by the Engineer, backfill trench to lines and grades indicted on the drawings. Suspend backfill operations during times of inclement weather or other unsatisfactory conditions in field when satisfactory results cannot be obtained.

A. Open Areas:

1. Pipe Zone: Backfill material shall be deposited in six (6) inch maximum thickness layers and compacted to 90 percent Standard Proctor Density, ASTM D-698, until there is a cover of not less than one (1) foot over the top of the pipe. The backfill material in this portion of the trench shall conform to the designated bedding classification and be placed at optimum moisture content. Special care shall be taken not to damage the coating or wrapping of pipes. No rocks, clods, or debris shall be allowed.

2. Above Pipe Zone: Deposit approved materials in uniform layers not to exceed eight (8) inches, compacted to 90 percent Standard Proctor Density, ASTM D-698. In no case shall completed backfill be at a density less than surrounding undisturbed soil. Excess material from the excavation shall be uniformly mounded over the trench unless otherwise directed by the Owner.

3. Pavement Sections:

(a) Pipe Zone: Backfill material shall be deposited in six (6) inch maximum thickness layers and compacted with mechanical hand tampers to 90 percent Standard Proctor Density, ASTM D-698, until there is a cover of not less than one (1) foot over the top of the pipe. The backfill material in this portion of the trench shall conform to the designated bedding classification and be placed at optimum moisture content. Special care shall be taken not to damage the coating or wrapping of pipes. No rocks, clods or debris shall be allowed.

(b) Above Pipe Zone: Deposit approved materials in uniform layers not to exceed eight (8) inches, compacted to 96 percent Standard Proctor Density, ASTM D-689, to within two (2) feet of final grade and to 98 percent Standard Proctor Density within the top two (2) feet.

3.09 Testing

Contractor shall be responsible for the services of a certified, commercial testing laboratory to perform density testing. Contractor is responsible for testing required by the Owner to verify that bedding and backfill materials meet or exceed specifications.

END OF SECTION 330200

EXHIBIT G
UNIFORM GENERAL CONDITIONS
AND
SUPPLEMENTARY GENERAL CONDITIONS

2013 Uniform General Conditions

for

University of Texas System Building Construction Contracts

For use on all UT System and Institution Construction Projects

Last Revision: 11/6/2023 ems

Table of Contents

Issued on August 23, 2013

Article 1. Definitions

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

1.1 *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.

1.2 *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.

1.3 *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.

1.4 *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 ODR), 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.

1.5 *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 Close-Out documents required by the Contract Documents.

1.6 *Change Order* means a written modification of the Contract between Owner and Contractor, signed by Owner, Contractor and A/E.

1.7 *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.

1.8 *Contract* means the entire agreement between Owner and Contractor, including all the Contract Documents.

1.9 *Contract Date* is the date when the agreement between Owner and Contractor becomes effective.

1.10 *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; General Conditions and Owner's Special Conditions; and all pre-bid and/or pre-proposal addenda.

1.11 *Contract Sum* means the total compensation payable to Contractor for completion of the Work in accordance with the terms of the Contract.

1.12 *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.

1.13 *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.

1.14 *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.

1.15 *Construction Manager-at-Risk*, in accordance with Tex. Educ. Code § 51.782, 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.

1.16 *Date of Commencement* means the date designated in the Notice to Proceed for Contractor to commence the Work.

1.17 *Day* means a calendar day unless otherwise specifically stipulated.

1.18 *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. Educ. Code § 51.780.

1.19 *Drawings* mean that product of A/E which graphically depicts the Work.

1.20 *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.

1.21 *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.

1.22 *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.

1.23 *Notice to Proceed* means written document informing Contractor of the dates beginning Work and the dates anticipated for Substantial Completion.

1.24 *Open Item List* means a list of work activities, Punchlist items, changes or other issues that are not expected by Owner and Contractor to be complete prior to Substantial Completion.

1.25 *Owner* means The Board of Regents of The University of Texas System, acting through the responsible entity of The University of Texas System or one of its Institutions as identified in the Contract as Owner.

1.26 *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. ODR is the only party

authorized to direct changes to the scope, cost, or time of the Contract.

1.27 *Owner's Special Conditions* mean the documents containing terms and conditions which may be unique to the Project. Owner's Special Conditions are a part of the Contract Documents and have precedence over the Uniform General Conditions

1.28 *Project* means all activities necessary for realization Owner's desired building or other structure including all ancillary and related work. This includes design, contract award(s), execution of the Work itself, work by Owner's forces and/or other contractors and fulfillment of all Contract and warranty obligations.

1.29 *Progress Assessment Report (PAR)* means the monthly compliance report to Owner verifying compliance with the HUB subcontracting plan (HSP).

1.30 *Proposed Change Order (PCO)* means a document that informs Contractor 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.

1.31 *Punchlist* means a list of items of Work to be completed or corrected by Contractor before Final Completion. The Punchlist(s) indicates 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.

1.32 *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.

1.33 *Request for Information (RFI)* means a written request by Contractor directed to A/E or ODR 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.

1.34 *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.

1.35 *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.

1.36 *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.

1.37 *Site* means the geographical area of the location of the Work.

1.38 *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.

1.39 *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.

1.40 *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.

1.41 *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.

1.42 *Unit Price Work* means the Work, or a portion of the Work, paid for based on incremental units of measurement.

1.43 *Unilateral Change Order (ULCO)* means a Change Order issued by Owner without the complete agreement of Contractor, as to cost and/or time.

1.44 *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.

1.45 *Work Progress Schedule* means the continually updated time schedule prepared and monitored by Contractor that accurately indicates all necessary appropriate revisions as required by the conditions of the Work and the Project while maintaining a concise comparison to the Baseline Schedule.

Article 2. Wage Rates and Other Laws Governing Construction

2.1 Environmental Regulations. Contractor shall always conduct activities in compliance with applicable laws and regulations and other requirements of the Contract relating to the environment and its protection. Unless otherwise specifically determined, Owner 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 provided by Owner in the bid or proposal specifications. 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 more than 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.

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 ODR 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 ODR of the proposed wage to be paid for the skill along with a justification for same and ODR 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 investigate 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 Travis County, Texas, or as may otherwise be designated in the Owner's Special Conditions.

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.

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 Owner's Designated Representative. Prior to the start of construction, Owner will identify Owner's Designated Representative (ODR), who has the express authority to act and bind 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, ODR is the single point of contact between Owner and Contractor. Notice to ODR, 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 ODR in writing.

3.1.2.3 Owner will furnish or cause to be furnished, free of charge, the number of complete sets of the Drawings, Specifications, and addenda as provided in the Agreement or Special Conditions.

3.1.3 Owner Supplied Materials and Information.

3.1.3.1 Owner will furnish to Contractor those surveys 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 ODR, 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 (or the Design/Build Contractor's Contract, if applicable) with Owner, to observe the progress and the quality of the various aspects of Contractor's executed Work and report findings to Owner.

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 ODR, 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.

Contractor shall visit the Site before commencing the Work and become familiar with local conditions such as the location, accessibility, and general character of the Site and/or building.

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 ODR in accordance with these general conditions, Division 1 of the Specifications, and other provisions of the Contract, and as outlined in the pre-construction conference.

3.3.1.1 At the request of Owner and at no additional cost, Contractor shall furnish to the ODR one copy of the current edition of the RSMeans Facilities Construction Cost Data Book in hard copy format or digital medium as directed by the ODR.

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 ODR. Contractor shall not change approved staff during the project without the written approval of ODR unless the staff member leaves the employment of Contractor. Contractor shall provide additional quality control, safety and other staff as stated in the Contract Documents.

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 always maintain good discipline and order at the Site.

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.

3.3.5 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.

3.3.6 Non-Compliant Work. Should A/E and/or ODR identify Work as non-compliant with the Contract Documents, A/E and/or ODR shall communicate the finding to Contractor, and Contractor shall correct such Work at no additional cost to the Owner. The approval of Work or the failure to find non-compliant Work by either A/E or ODR does not relieve Contractor from the obligation to comply with all requirements of the Contract Documents.

3.3.7 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.

3.3.7.1 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.

3.3.7.2 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 way Contractor is bound to Owner.

3.3.8 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.

3.3.9 Cleaning. Contractor shall always, 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.

3.3.10 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 ODR finds to be careless, incompetent, unsafe, uncooperative, disruptive, or otherwise objectionable.

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

3.3.11.1 All Contractor operations, including storage of materials and employee parking upon the Site of Work, shall be confined to areas designated by Owner.

3.3.11.2 Contractor may erect, at its own expense, temporary buildings that will remain its property. Contractor shall 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.

3.3.11.3 Contractor shall use only established roadways or construct and use such temporary roadways as may be authorized by Owner. Contractor shall not allow load limits of vehicles to exceed the limits prescribed by appropriate regulations or law. Contractor shall 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.

3.3.11.4 Owner may restrict Contractor's entry to the Site to specifically assigned entrances and routes.

3.3.12 Separate Contracts. Owner reserves the right to award other contracts in connection with the Project under the same or substantially similar contract terms, 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.

3.3.13 Under a system of separate contracts, the conditions described herein continue to apply except as may be amended by change order.

3.3.14 Contractor shall cooperate with other contractors or forces employed on the Project by Owner, including providing access to Site, integration of activities within Contractor's Work Progress Schedule and Project information as requested.

3.3.15 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.

3.4 Indemnification of Owner.

3.4.1 Contractor covenants and agrees to FULLY INDEMNIFY and HOLD HARMLESS, Owner and the elected and appointed officials, employees, officers, directors, volunteers, and representatives of Owner, 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, its 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.

3.4.2 **Contractor shall protect and indemnify the Owner from and against all claims, damages, judgments and losses arising from infringement or alleged infringement of any United States patent, or copyright that arise out of any of the work performed by the Contractor or the use by Contractor, or by Owner at the direction of Contractor, of any article or material. Upon becoming aware of a suit or threat of suit for patent or copyright infringement, Owner shall promptly notify Contractor and Contractor shall be given full opportunity to negotiate a settlement. Contractor does not warrant against infringement by reason of Owner's or Project Architect's design of articles or their use in combination with other materials or in the operation of any process. In the event of litigation, Owner agrees to cooperate reasonably with Contractor and parties shall be entitled, in connection with any such litigation, to be represented by counsel at their own expense.**

3.4.3 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.

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

3.4.5 These indemnity provisions shall survive the termination of this Agreement regardless of the reason for termination.

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 With each invoice for services provided, Contractor shall submit to Owner a Progress Assessment Report (PAR), in the format required by Owner that demonstrates Contractor's performance of the HUB subcontracting plan, including the use/expenditures Contractor has made to Subcontractors (HUB and Non-HUB certified) during the reporting period of the invoice.

4.2.5.1 The required Progress Assessment Report format can be found at https://comptroller.texas.gov/purchasing/vendor/hub/forms.php.

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. On Construction Manager-at-Risk and Design-Build Projects the Owner shall require a security bond, as described in Subsection 5.1.2 below.

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 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 more than $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. The form of the bond shall be approved by the Office of the Attorney General of Texas. 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 more than $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. The form of the bond shall be approved by the Office of the Attorney General of Texas.

5.1.2 Security Bond. The security bond provides protection to Owner if Contractor presents an acceptable guaranteed maximum price ("GMP") to Owner but is unable to deliver the required payment and performance bonds within the time stated below.

5.1.3 When Bonds Are Due

5.1.3.1 Security bonds are due before execution of a Construction Manager-at-Risk or Design-Build Contract.

5.1.3.2 Payment and performance bonds are due before execution of a contract on competitively bid or competitively sealed proposal projects or before execution of a GMP proposal on Construction Manager-at-Risk projects or Design-Build projects.

5.1.4 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.

5.1.5 Bond Indemnification. The process of requiring and accepting bonds and making claims thereunder 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 HARMLESS OF AND FROM ANY COSTS, LOSSES, OBLIGATIONS OR LIABILITIES IT INCURS AS A RESULT.

5.1.6 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.

5.1.7 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.

5.1.8 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.

5.1.9 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).

5.2 Insurance Requirements. Contractor shall carry insurance in the types and amounts indicated in this Article for the duration of the Contract. The required insurance shall include coverage for Owner's property prior to construction, during construction and during the warranty period. The insurance shall be evidenced by delivery to Owner of certificates of insurance executed by the insurer or its authorized agent stating coverages, 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, consistent with its status as an independent 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 Owner's Special Conditions. Failure to maintain insurance coverage, as required, is grounds for suspension of Work for cause pursuant to Article 14. The Contractor will be notified of the date on which the Builder's Risk insurance policy may be terminated by any means deemed appropriate by Owner.

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-, VII 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 and Employer's Liability Insurance with limits of not less than:

$1,000,000 each accident;

$1,000,000 disease each employee; and

$1,000,000 disease policy limit.

Policies must include (a) Other States Endorsement to include TEXAS if business is domiciled outside the State of Texas, and (b) a waiver of all rights of subrogation in favor of Owner.

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 (or Subcontractor'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:

$1,000,000 each accident;

$1,000,000 disease each employee; and

$1,000,000 disease policy limit.

If this Contract is for asbestos abatement only, the All-Risk Builder's Risk or all-risk installation floater (5.2.2.1.5.e) is not required.

5.2.2.1.4 Business Automobile Liability Insurance, covering all 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.

Contractor or any subcontractor responsible for transporting asbestos or other hazardous materials defined as asbestos shall provide pollution coverage for any vehicle hauling asbestos containing cargo.

The policy must include a MCS 90 endorsement with a $5,000,000 limit and the CA 9948 Pollution Endorsement, or its equivalent.

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 is determined by the Contract Sum, as detailed, below.

BUILDERS RISK REQUIREMENT FOR PROJECTS WITH A CONTRACT SUM <$20 MILLION

5.2.2.1.5.1 Contractor shall purchase and maintain in force builders risk insurance on the entire Work. Such insurance shall be written in the amount of the original contract, plus any subsequent change orders and plus the cost of materials supplied or installed by others, comprising Total Value for the entire Project at the site. The insurance shall apply on a replacement cost basis with no coinsurance provision. A sublimit may be applicable to flood coverage, but sublimit must be at least 20% of the Total Value of the Project. The limit for all other perils, including Named Windstorm, Wind, and Hail, must be equal to the Total Value for the entire Project at the site. (If Installation Floater, limit shall be equal to 100 percent of the contract cost.)

5.2.2.1.5.2 This insurance shall name as insureds the Owner, the Contractor, and all subcontractors and sub-subcontractors in the Work.

5.2.2.1.5.3 Builders risk insurance shall be on an "all risk" or equivalent policy form and shall include, without limitation, insurance against fire and extended coverage perils, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, boiler and machinery/mechanical breakdown, testing and startup, and terrorism.

5.2.2.1.5.4 This insurance shall cover the entire work at the site as required in 5.2.2.1.5.1, including, but not limited to, the following:

- Temporary works including but not limited to scaffolding, form work, fences, shoring, hoarding, falsework, and temporary buildings
- Offsite Storage
- Portions of the work in transit
- Debris removal
- Extra Expense
- Expediting Expenses
- Demolition and Increased Cost of Construction
- Pollutant Clean-Up and Removal
- Trees, Shrubs, Plants, Lawns and Landscaping (if applicable)
- Errors & Omissions (applicable to purchase of Builders Risk policy only)

5.2.2.1.5.5 This insurance shall not contain an occupancy clause suspending or reducing coverage should the Owner occupy or begin beneficial occupancy before the Owner has accepted final completion.

5.2.2.1.5.6 This insurance shall be specific as to coverage and shall be primary to any permanent insurance or self-insurance that may be maintained on the property by Owner.

5.2.2.1.5.7 This insurance shall include a waiver of subrogation in favor of Owner, the Contractor, and all subcontractors and sub-subcontractors in the work.

5.2.2.1.5.8 As applicable, Flood deductible shall not exceed $250,000 for Zone A, $100,000 for Zone B and $50,000 for all other Zones. For Tier 1 and Tier 2, Named Windstorm deductible shall not exceed 2% of the project values in place at the time of the loss.

5.2.2.1.5.9 Before the commencement of the work, Contractor shall provide to Owner an accurate certificate

of insurance that provides specific evidence of all requirements outlined in Section 5.2.2.1.5. A copy of the policy itself shall be provided to Owner within 30 days after Notice to Proceed.

5.2.2.1.5.10 Refer to Owner's Special Conditions for possible additional Builders Risk insurance requirements.

BUILDERS RISK REQUIREMENT FOR PROJECTS WITH A CONTRACT SUM ≥$20 MILLION

5.2.2.1.5.1 Contractor shall purchase and maintain in force builders risk insurance on the entire Work. Such insurance shall be written in the amount of the original contract, plus any subsequent change orders and plus the cost of materials supplied or installed by others, comprising Total Value for the entire Project at the site. The insurance shall apply on a replacement cost basis with no coinsurance provision and shall include a margin clause of plus/minus 10% on project value. A sublimit may be applicable to flood coverage, but sublimit must be at least 20% of the Total Value of the Project. A sublimit of $50 million or the Total Value of the Project, whichever is less, is acceptable for Earthquake. The limit for all other perils, including Named Windstorm, Wind, and Hail, must be equal to the Total Value for the entire Project at the site. (If Installation Floater, limit shall be equal to 100 percent of the contract cost.)

5.2.2.1.5.2 This insurance shall name as insureds the Owner, the Contractor, and all subcontractors and sub-subcontractors in the Work.

5.2.2.1.5.3 Builders risk insurance shall be on an "all risk" or equivalent policy form and shall include, without limitation, insurance against fire and extended coverage perils, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, boiler and machinery/mechanical breakdown, testing and startup, and terrorism.

5.2.2.1.5.4 This insurance shall cover the entire work at the site as required in 5.2.2.1.5.1, including, but not limited to, the following:

Coverage	Minimum Limit Required
Temporary works including but not limited to scaffolding, form work, fences, shoring, hoarding, falsework and temporary buildings	$1 million
Offsite Storage	Sufficient to cover the anticipated maximum values stored offsite
Portions of the work in Transit	Sufficient to cover the anticipated maximum values in transit
Debris Removal	25% of Physical damage amount subject to maximum of $5 million or 25% of Total Value of Project whichever is higher
Expediting Expenses	$1 million
Extra Expense	$5 million
Demolition and Increased Cost of Construction	$2 million or 10% of Total Value of Project whichever is higher
Pollutant Clean-Up and Removal	$250,000
Trees, Shrubs, Plants, Lawns and Landscaping (if applicable)	$2,500 per item subject to a maximum of $1 million
Errors & Omissions (applicable to purchase of Builders Risk policy only)	$2.5 million

5.2.2.1.5.5 This insurance shall not contain an occupancy clause suspending or reducing coverage should the Owner occupy or begin beneficial occupancy before the Owner has accepted final completion.

5.2.2.1.5.6 This insurance shall be specific as to coverage and shall be primary to any permanent insurance or self-insurance that may be maintained on the property by Owner.

5.2.2.1.5.7 This insurance shall include a waiver of subrogation in favor of Owner, the Contractor, and all subcontractors and sub-subcontractors in the work.

5.2.2.1.5.8 As applicable, Flood deductible shall not exceed $250,000 for Zone A, $100,000 for Zone B and $50,000 for all other Zones. For Tier 1 and Tier 2, Named Windstorm deductible shall not exceed 2% of the project values in place at the time of the loss.

5.2.2.1.5.9 Before the commencement of the work, Contractor shall provide to Owner an accurate certificate of insurance that provides specific evidence of all requirements outlined in Section 5.2.2.1.5. A copy of the policy itself shall be provided to Owner within 30 days after Notice to Proceed.

5.2.2.1.5.10 Refer to Owner's Insurance Specifications ~~Special Conditions~~ for possible additional Builders Risk insurance requirements.

5.2.2.1.6 "Umbrella" Liability Insurance. On Projects that are not insured under the Owner's Rolling ~~Revolving~~ Owner Controlled Insurance Program (ROCIP) or any project requiring demolition services, Contractor shall obtain, pay for and maintain umbrella liability insurance during the Contract term, insuring Contractor (or Subcontractor) that provides coverage at least as broad as and applies in excess and follows form of the primary liability coverages required above. The policy shall provide "drop down" coverage where underlying primary insurance coverage limits are insufficient or exhausted.

5.2.2.1.7 "Umbrella" Liability Insurance coverage shall be in the following amounts:

- If Contract sum is $1,000,000 or less:
  No Umbrella Required
- If Contract Sum is greater than $1,000,000 up to $3,000,000:
  $1,000,000 each occurrence and $2,000,000 annual aggregate
- If Contract Sum is greater than $3,000,000 up to $5,000,000:
  $5,000,000 each occurrence and $5,000,000 annual aggregate
- If Contract Sum is greater than $5,000,000:
  $10,000,000 each occurrence and $10,000,000 annual aggregate

5.2.3 All Policies must include the following clauses, as applicable:

5.2.3.1 Contractor must provide to Owner immediate notice of cancellation, material change, or non-renewal to any insurance coverages required herein above. This requirement may be satisfied by the Contractor providing a copy of the notice received by the insurer to Owner within two business days of date of receipt or by Endorsement of the policies that require Insurer to provide notice 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.

5.2.3.5 If Owner is damaged by the failure of Contractor (or Subcontractor) to maintain insurance as required herein and/or as further described in Owner's Insurance Specifications, then Contractor shall bear all reasonable costs properly attributable to that failure.

5.2.4 Without limiting any of the other obligations or liabilities of Contractor, Contractor shall require each Subcontractor performing work under the Contract, at Subcontractor's own expense, 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 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.

5.2.5.1 Definitions:

5.2.5.1.1 Certificate of coverage ("certificate")- A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (DWC-81, DWC-82, DWC-83, or DWC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

5.2.5.1.2 Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

5.2.5.1.3 Persons providing services on the project ("subcontractor" in §406.096) – includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

5.2.5.2 The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.

5.2.5.3 The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

5.2.5.4 If the coverage period shown on the contractor's current certificate of coverage ends during

the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

5.2.5.5 The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

(1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

(2) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

5.2.5.6 The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

5.2.5.7 The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

5.2.5.8 The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Depart of Insurance Division of Workers' Compensation, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

5.2.5.9 The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

(1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all its employees providing services on the project, for the duration of the project;

(2) provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;

(3) provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(4) obtain from each other person with whom it contracts, and provide to the contractor:

(a) a certificate of coverage, prior to the other person beginning work on the project; and

(b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

(7) contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.

5.2.5.10 By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity 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 a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

5.2.5.11 The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

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 Agreement or the Owner's Special Conditions. Additional complete sets of Drawings and Specifications, if requested, will be furnished at reproduction cost to the entity 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 are to remain A/E's property. These documents are not to be used on any other project, and except for the Contract record set and electronic versions needed for warranty operations, are to be returned to the A/E, upon request, following completion of the Work.

6.1.3 Interrelation of Documents. The Contract Documents as referenced in the Contract between Owner and Contractor are complementary, 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) Owner's Special Conditions; (d) Drawings; (e) Specifications (but Specifications shall control over Drawings as to quality of materials and installation); and (f) 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 ODR for resolution of the issue prior to executing the Work in question.

6.1.5 Contractor's Duty to Review Contract Documents. 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 work activity and/or system installation.

6.1.6 Discrepancies and Omissions in Drawings and Specifications.

6.1.6.1 Promptly report to ODR 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 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 does not warrant or make any representations as to the accuracy, suitability or completeness of any information furnished to Contractor by Owner or it representatives.

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. 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 the Record Documents which reflect the actual field conditions and representations of the Work performed, whether it be directed by addendum, Change Order or otherwise. Make available the Record Documents and 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 Prior to requesting 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 ODR with input from A/E, provide one (1) reproducible copy and one (1) electronic media copy in a format acceptable to the ODR `of all Record Documents, unless otherwise required by the Owner's 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 its Subcontractors to be familiar with, enforce and comply with all requirements of Public Law No. 91-596, 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 ODR and A/E prior to commencing Work. In addition, Contractor and all 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 ODR 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 act 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 ODR, 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 ODR 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 ODR 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 ODR immediately.

7.5.1 Bind all Subcontractors to the same duty.

7.5.2 Upon receiving such notice, ODR 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, ODR 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 ODR'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 ODR 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.

8.2.2 Contractor shall provide the following testing as well as any other testing required of Contractor by the Specifications:

8.2. 2.1 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. 2.2 Any test of basic material or fabricated equipment offered as a substitute for a specified item on which a test may be required to establish compliance with the Contract Documents.

8.2. 2.3 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. 2.4 All subsequent tests on original or replaced materials conducted because of prior testing failure.

8.2. 3 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 ODR, A/E, and Contractor.

8.2. 4 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. 4.1 Contractor selection and submission of the laboratory for Owner acceptance.

8.2. 4.2 Acceptance by Owner of the quality and nature of tests.

8.2. 4.3 All tests taken in the presence of A/E and/or ODR, or their representatives.

8.2. 4.4 If tests confirm that the material/systems comply with Contract Documents, Owner will pay the cost of the test.

8.2. 4.5 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. 4.6 Proof of noncompliance with the Contract Documents will make Contractor liable for any corrective action which ODR determines appropriate, including complete removal and replacement of non-compliant work or material.

8.2. 5 Notice of Testing. Contractor shall give ODR, and A/E timely notice of its readiness and the date arranged so ODR and A/E may observe such inspection, testing, or approval.

8.2. 6 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. 7 Covering Up Work. If Contractor covers up any Work without providing Owner an opportunity to inspect, Contractor shall, if requested by ODR, 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 of approval will be returned without review or comment. Any delay resulting from Contractor's failure to certify approval of the Submittal 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 ODR 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, material Samples, material 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 ODR for review and approval. If re-submittal required, allow a minimum of an additional fifteen (15) 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) day 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 ODR 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 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 ODR 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 ODR 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 to avoid delay, until submittal approval. Direct attention in writing to A/E and ODR, 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 ODR'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. ODR 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, ODR 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 ODR 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 ODR 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 ODR. 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 ODR 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 as otherwise mutually agreed, to ODR of the anticipated need for a cover-up inspection. Should ODR 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 or 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 in a reasonable time after Substantial Completion, Contractor shall be responsible for Owner's damages including, but not limited to, 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 Owner's Special Conditions and Division 1 of the Specifications 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) calendar 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.

Note: This article pertains to construction phase schedules. Additional requirements for design phase scheduling for Construction Manager-at-Risk and Design-Build contracts are outlined in Division 1 Project Planning and Scheduling Specifications.

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 ODR 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, as 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 ODR as directed, but as 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 ODR 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. Before Contractor uses any portion of the float Contractor must submit a written request to do so to the Owner and receive Owner's written authorization to use the float. Owner's approval shall not be unreasonably withheld.

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 ensure 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 ODR, Contractor shall notify ODR in writing of the specific measures taken and/or planned to increase the rate of progress. Contactor 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 ODR deem the plan of action inadequate, Contractor shall take additional steps or adjust as necessary its plan of action until it meets with ODR'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) 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 ODR for confirmation of the conditions. At the end of each calendar month, Contractor shall submit to ODR 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 (sometimes called "acts of God"), 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 ODR, 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. If 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. An extension of the Contract Time shall be the sole remedy of Contractor for delays in performance of the Work, whether such delays are foreseeable, except for delays caused solely by acts of Owner that constitute intentional interference with Contractor's performance of the Work and then only to the extent such acts continue after Contractor notifies Owner in writing of such interference. For delays caused by any act(s) other than the sole intentional interference of Owner, Contractor shall not be entitled to any compensation or recovery of any damages including, without limitation, consequential damages, lost opportunity costs, impact damages, loss of productivity, or other similar damages. Owner's exercise of any of its rights or remedies under the Contract including, without limitation, ordering changes in the Work or directing suspension, rescheduling, or correction of the Work, shall not be construed as intentional interference with Contractor's performance of the Work regardless of the extent or frequency of Owner's exercise of such rights or remedies.

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 ODR 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 notice of 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's request for a time extension shall be deemed rejected by Owner.

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 may be liquidated by agreement of Contractor and Owner, in the amount per day as set forth in the Contract Documents.

9.11 Liquidated Damages. Owner may collect liquidated damages due from Contractor directly or indirectly by reducing the Contract Sum in the amount of liquidated damages stated in the Agreement or the Owner's Special Conditions.

Article 10. Payments

10.1 Schedule of Values. Contractor shall submit to ODR 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 ODR. 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 ODR, 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 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 ODR 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 ODR or his designee of a correct and complete Pay Application in electronic and/or hard copy format as set forth in the Agreement or the Owner's 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 ODR 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 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 ODR will meet with Contractor to review the preliminary pay worksheet and to observe the condition of the Work. Based on this review, ODR 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 ODR. Attach all additional documentation required by ODR 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 ODR. A/E will certify that the application is complete and payable, or that it is incomplete, stating 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 ODR of: 1) a complete Application for Payment certified by A/E; 2) Contractor's updated Work Progress Schedule; and 3) confirmation that Contractor has maintained and updated the Record Documents kept at the Site.

10.3.1 Payment for stored materials and/or equipment confirmed by Owner and A/E to be on-site or otherwise properly stored is limited to eighty-five (85) percent of the invoice price or eighty-five (85) percent of the scheduled value for the materials or equipment, whichever is less.

10.3.2 Retainage. Owner will withhold from each progress payment, as retainage, five (5) percent of the total earned amount, the amount authorized by law, or as otherwise set forth in the Owner's Special Conditions. Retainage is managed in conformance with Tex. Gov't Code, Chapter 2252, Subchapter B.

10.3.2.1 Contractor shall provide written consent of its surety for any request for reduction or release of retainage.

10.3.2.2 At least sixty-five (65) 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.

10.3.2.3 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.

10.3.3 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:

10.3.3.1 Defective or incomplete Work not remedied;

10.3.3.2 Damage to Work of a separate Contractor;

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

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

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

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

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

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

10.3.4.1 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.

10.4 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 ensure 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. Owner's inspectors 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 ODR. 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 (10^{th}) day after the date Contractor receives the payment.

10.6.2 The appropriate share is overdue on the eleventh (11^{th}) 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 and without approval of Contractor's Surety, 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 Owner and Contractor acknowledge and agree that the Specifications and Drawings may not be complete or free from errors, omissions, and imperfections and that they may require changes or additions in order for the Work to be completed to the satisfaction of Owner. Therefore, any minor errors, omissions or imperfections in the Specifications or Drawings, or any changes in or additions to the Specifications or Drawings to correct minor errors or omissions or to the Work ordered by Owner 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. However, should the nature of the errors or omissions necessitate substantial changes in the Work such that a Change Order is appropriate, Owner shall be liable to Contractor for the sum stated to be due Contractor in any Change Order approved and signed by both parties. The sum established in any Change Order, 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 for the changes in the Work described in the Change Order, 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 the Owner's 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 in setting the unit prices 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 Owner's 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, it shall give Owner and A/E written notice thereof within twenty-one (21) days after the occurrence of the event or discovery of any conditions giving rise to such claim. Contractor must notify Owner and A/E before proceeding to execute any Work considered to add 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., and failure to provide the required notice will invalidate any subsequent notice or claim for additional cost or time for the Work. 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 ODR, 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 affected by written order which Contractor shall carry out promptly and record on the 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, ODR 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 because 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 Proposed Change Order (PCO) form detailing requirements of the proposed change for pricing by Contractor. Upon receipt of a PCO, the Contractor shall prepare a PCO Response. This action may be preceded by communications between Contractor, A/E and ODR 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 (the Cost of 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 Any unexpected circumstance which necessitates an immediate change to avoid a delay in progress of the Work may be expedited by verbal communication and authorization between Contractor and Owner, with written confirmation following within twenty-four (24) hours. A limited scope not-to-exceed estimate of cost and time will be requested prior to authorizing Work to proceed. Should the estimate be impractical for any reason, ODR may authorize the use of detailed cost records of such work to establish and confirm the actual costs and time for documentation in a formal Change Order.

11.7.4 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.

11.7.5 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 ODR.

11.8 Pricing Proposed Change Order Work. The Contractor and/or its Subcontractors will respond to a PCO request by preparing and submitting a PCO Response in the manner approved by the Owner. If accepted by the Owner, one or more PCO Responses will be incorporated into a Change Order. PCO Responses are required for all PCO requests regardless of the source of Project funds used to pay for the Work.

The amount that Contractor and/or its Subcontractors can add to a Change Order for any individual PCO for profit and overhead is limited to the following:

11.8.1 For Work performed by its forces, Contractor will be allowed its actual costs paid for materials, the total amount of its actual wages paid for labor, plus its actual cost paid for State and Federal payroll taxes, union, healthcare, personal time off, 401K, worker's compensation and comprehensive general liability insurance, plus its actual 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. Overhead shall be considered to include insurance other than mentioned above, field and office supervisors and assistants, including safety personnel, scheduling personnel, use of small tools, incidental job burdens and general Home Office expenses, and no separate allowance will be made therefore, unless approved by Owner in advance.

Contractor Self Performed PCO Markup on Cost of Work

Individual Proposal Cost of Work	Allowable Percentage Markup
$10,000 or less	15%
$20,000 or less	10%
Greater than $20,000	7.5%

11.8.2 For PCOs that include subcontracted Work each involved Subcontractor shall figure its costs, overhead and profit as described above for Contractor's Work. All Subcontractor costs shall be combined to determine the Cost of Work for the collective PCO Response. To this collective Cost of Work the Contractor can add the following markup:

Contractor Markup for PCO Responses that Include Subcontractor(s) Work

Individual Proposal Cost of Work	Allowable Percentage Markup
$10,000 or less	10%
$20,000 or less	7.5%
Greater than $20,000	5%

Under no circumstances will Contractor be allowed any additional or double mark-up on Work performed by its forces.

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 or as damages caused by delay.

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 PCO unless the PCO 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 to dispute the ULCO amount, subject to Article 15.

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

11.11 Audit of Changes—Owner. All Changes Orders are subject to audit by Owner or its representative at any time in accordance with Article 17.4 and Change Order amounts may be adjusted lower because of such audit.

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 ODR 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, ODR, Contractor, and other Owner representatives as determined by Owner will jointly attend the Substantial Completion inspection, which shall be conducted by ODR or their delegate. If ODR concurs with the determination of Contractor and A/E that the Work is Substantially Complete, ODR 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, insurance, 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 Final Inspection. Contractor shall complete the list of items identified on the pre-final Punchlist prior to requesting a final inspection. Unless otherwise specified, or otherwise agreed in writing by the parties as documented on the Certificate of Substantial Completion, Contractor shall complete and/or correct all Work within thirty (30) days of the Substantial Completion date. Upon completion of the pre-final Punchlist work, Contractor shall give written notice to ODR and A/E that the Work will be ready for final inspection on a specific date. Contractor shall accompany this notice with a copy of the updated pre-final Punchlist indicating resolution of all items. On the date specified or as soon thereafter as is practicable, ODR, A/E and Contractor will inspect the Work. A/E will submit to Contractor a final Punchlist of open items that the inspection team requires corrected or completed before final acceptance of the Work.

12.1.2.1 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 ODR 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 ODR 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, ODR 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 ODR. 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, ODR 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 ODR. 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 is the date on which the last element or part of the Work completed receives a Substantial Completion certificate. Final Completion of the Work is the date on which the last element or part of the Work completed receives a Final Completion certificate or notice.

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, ODR will notify Contractor in writing and identify responsibilities for security, insurance 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 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 ODR 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 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~~ the Work performed for each phase begins on the date of Substantial Completion of that phase, or as otherwise stipulated on the Certificate of Substantial Completion for the phase.

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 Work that is not in accordance with the Contract Documents or relieve the Contractor from its 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. ODR 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.

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 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 a period of up to sixty (60) days for its own convenience. Owner will give Contractor a written notice of suspension for convenience, which sets forth the number of suspension days for which the Work, or any portion of it, and the date on which the suspension of Work will cease. 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 thirty (30) days 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 ODR;

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 ODR;

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 Upon receipt of a termination notice, the Contractor or its Surety has thirty (30) days to cure the reasons for the termination or demonstrate to the satisfaction of the Owner that it is prepared to remedy to the condition(s) upon which the notice of termination was based with diligence and promptness. If the Owner is satisfied that the Contractor or its Surety can remedy the

reasons for the termination and complete the Work as required, the notice of termination shall be rescinded in writing by the Owner and the Work shall continue without an extension of time.

14.3.4 If at the conclusion of the thirty (30) day cure period the Contractor or its Surety is unable to demonstrate to the satisfaction of the Owner its ability to remedy the reasons for termination, the Owner may immediately terminate the employment of the Contractor, make alternative arrangements for completion of the Work and deduct the cost of completion from the unpaid Contract Sum.

14.3.4.1 Owner's cost to complete the Work includes, but is not limited to, fees for additional services by A/E and other consultants, and additional contract administration costs.

14.3.4.2 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.

14.3.4.3 This obligation for payment survives the termination of the Contract.

14.3.4.4 Owner reserves the right in termination for cause to take assignment of all the Contracts between Contractor and its Subcontractors, vendors, and suppliers. ODR 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. If 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 notify Contractor and A/E in writing specifying the reason for and the effective date of the Contract termination. The 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 dispute 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 appropriate 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 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 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 unilaterally 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. To the extent that it is applicable, the dispute resolution process provided for in Tex. Gov't Code, Chapter 2260, shall be used by Contractor to resolve any claim for breach of Contract made by Contractor that is not resolved under procedures described in these Uniform General Conditions or Owner's 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 In any litigation between the Owner and the Contractor arising from this Contract or this Project, neither party will be entitled to an award of legal fees or costs in any judgment regardless which one is deemed the prevailing party.

15.5 Nothing herein shall waive or be construed as a waiver of the State's sovereign immunity.

Article 16. Certification of No Asbestos Containing Material or Work

16.1 Contractor shall insure that Texas Department of State Health Services licensed individuals, consultants or companies are used for any required asbestos work including asbestos inspection, asbestos abatement plans/specifications, asbestos abatement, asbestos project management and third-party asbestos monitoring.

16.2 Contractor shall provide a notarized certification to Owner that all equipment and materials used in fulfillment of its Contract responsibilities are non-Asbestos Containing Building Materials (ACBM). This certification must be provided no later than Contractor's application for Final Payment.

16.3 The Contractor shall insure compliance with the following acts from all of his subcontractors and assigns:

- Asbestos Hazard Emergency Response Act (AHERA—40 CFR 763-99 (7));
- National Emission Standards for Hazardous Air Pollutants (NESHAP—EPA 40 CFR 61, Subpart M—National Emission Standard for Asbestos;
- Texas Asbestos Health Protection Rules (TAHPR—Tex. Admin. Code Title 25, Part 1, Ch. 295C, Asbestos Health Protection

Article 17. Miscellaneous

17.1 Owner's 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 Owner's Special Conditions that relate to the Project. In the event of a conflict between the UTUGCs and the Owner's Special Conditions, the Owner's Special Conditions will govern.

17.2 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 statue, 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.

17.3 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.

17.3.1 Accessibility and Administration.

17.3.1.1 When used, Owner will make the software accessible via the Internet to all Project team members.

17.3.1.2 Owner shall administer the software.

17.3.2 Training. When used, Owner shall provide training to the Project team members.

17.4 Right to Audit.

17.4.1 Contractor understands that acceptance of funds under this Contract acts as acceptance of the authority of the State Auditor's Office, Owner, any successor agency, and their representatives, including independent auditors, to conduct an audit or investigation in connection with those funds. Contractor further agrees to cooperate fully with any party conducting the audit or investigation, including providing all records requested.

17.4.2 Contractor shall maintain and retain supporting fiscal and any other documents relevant to showing that any payments under this Contract funds were expended in accordance with the terms of this Contact, the requirements of Owner, and with the laws and regulations of the State of Texas including, but not limited to, requirements of the Comptroller of the State of Texas and the State Auditor. Contractor shall maintain all such documents and other records relating to this Contract and Owner's property for a period of four (4) years after the date of submission of a request for Final Payment or until a resolution of all billing questions, whichever is later. Contractor shall make available at reasonable times and upon reasonable notice and for reasonable periods all documents and other information related to the Work of this Contract.

17.4.3 Contractor shall ensure that this clause concerning the authority to audit funds received indirectly by subcontractors through the Contractor and the requirement to cooperate is included in any subcontract it awards.

17.5 179 D Benefit Allocation. Owner may decide to seek the allocation of certain tax benefits pursuant to Section 179D of the Internal Revenue Code of 1986, as amended, (the "Code") through its Agreement with Contractor

If the Owner and the Internal Revenue Service (IRS) determine that the Contractor is eligible to receive the 179D deduction allocation as a "Designer" for the purposes of Section 179D of the Code or that Contractor could otherwise profit financially from the monetization of the benefit (separately and

collectively, the "Rebate"), Contractor hereby agrees to allocate to the Owner a portion of the Rebate in an amount to be determined and contracted for on mutually agreeable terms when the value of the Rebate becomes ascertainable, net of associated costs realized by the Owner and Project Architect. At its sole discretion, the Owner shall determine whether to receive its portion of the Rebate in cash, discounted Contractor fees or both.

Owner reserves the right to retain a third-party consultant (the "Consultant") to manage and administer the process of obtaining and monetizing the Rebate derived from the Project(s).

Contractor agrees to cooperate in all reasonable respects with the Consultant's efforts to obtain and monetize any such Rebates derived from the Project(s) on behalf of the Owner. Certification of eligibility and negotiation of the Rebates should be facilitated by the Owner's 179D Consultant.

17.6 Force Majeure. Neither Owner nor Contractor will be liable or responsible to the other for any loss or damage or for any delays or failure to perform due to causes beyond its reasonable control including acts of God, strikes, epidemics, war, riots, flood, fire, sabotage, or any other circumstances of like character.

17.7 Confidentiality and Safeguarding of Owner Records; Press Releases; Public Information. Under the Contract, Contractor may (1) create, (2) receive from or on behalf of Owner, or (3) have access to, Owner records or record systems (collectively, "Owner Records"). Contractor represents, warrants, and agrees that it will: (1) hold all Owner Records in strict confidence and will not use or disclose Owner Records except as (a) permitted or required by the Contract, (b) required by Applicable Laws, or (c) otherwise authorized by Owner in writing; (2) safeguard Owner Records according to reasonable administrative, physical and technical standards that are no less rigorous than the standards by which Contractor protects its own confidential information; and (3) comply with the Owner's rules, policies, and procedures regarding access to and use of Owner's computer systems. At the request of Owner, Contractor agrees to provide a written summary of the procedures Contractor uses to safeguard and maintain the confidentiality of Owner Records.

17.7.1 Notice of Impermissible Use. If an impermissible use or disclosure of any Owner Records occurs, Contractor will provide written notice to Owner within one (1) business day after Contractor's discovery of that use or disclosure. Contractor will promptly provide Owner with all information requested by Owner regarding the impermissible use or disclosure.

17.7.2 Return of University Records. Contractor agrees that within thirty (30) days after the expiration or termination of the Contract, for any reason, all Owner Records created or received from or on behalf of Owner will be (1) returned to Owner, with no copies retained by Contractor; or (2) if return is not feasible, destroyed following twenty (20) days written notice to the Owner. Contractor will confirm in writing the destruction of any Owner Records.

17.7.3 Disclosure. If Contractor discloses any Owner Records to a subcontractor or agent, Contractor will require the subcontractor or agent to comply with the same restrictions and obligations as are imposed on Contractor by this Section.

17.7.4 Press Releases. Except as required by the Contract, Contractor will 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 publication, advertisement, or any other purpose without the prior written approval of Owner.

17.7.5 Public Information. Owner strictly adheres to all statutes, court decisions and the opinions of the Texas Attorney General with respect to disclosure of public information under the *Texas Public Information Act* ("TPIA"), Chapter 552, *Texas Government Code*. In accordance with Section 552.002 of TPIA and Section 2252.907, *Texas Government Code*, and at no additional charge to Owner, Contractor will make any information created or exchanged with Owner pursuant to this Contract that is not otherwise exempt from disclosure under TPIA available in

a format reasonably requested by Owner that is accessible by the public.

17.8 Domestic Iron and Steel Requirement. Pursuant to Sections 2252.201-2252.205 of the Government Code, Contractor shall require that any iron or steel product produced through a manufacturing process and used in the Project be produced in the United States. Contractor will require that the bid documents provided to all bidders and the contract include this same requirement.

End of U.T. System Uniform General Conditions

REVISIONS

DATE	REVISED	INITIALS
8-23-2013	2010 Uniform General and Supplementary Conditions merged into and Reissued as new document: 2013 Uniform General Conditions for UT System Building Construction Projects (UTUGCs); *Special Conditions* and *Supplementary General Conditions* deleted from Definitions; *Owner's Special Conditions* added to Definitions; Para. 3.3.11, *Indemnification*, moved to new Para. 3.4; Para 5.2.2.1.4 added Asbestos Transportation Insurance Coverage; Para. 5.2.2.1.7 added Umbrella Insurance Coverage; Para. 13.7, *Certification of No Asbestos Containing Material* moved to renamed Article 16 and revised; Article 15, *Dispute Resolution*, revised; Existing Article 16, *Miscellaneous*, re-numbered as Article 17.	ems
10-29-15	Added Section 17.5 regarding 179D Benefit Allocation	mgm
11-12-15	Art. 11.11, changed reference from 16.4 to 17.4	mgm
4-21-16	Misc. minor revisions in Art. 5.2 to reference Insurance Specifications and 6.1.4 to reference Owner's Special Conditions (OFPC Only)	mgm/mjc
06-14-18	Para. 1.25, *Owner*, definition changed; Para. 3.2.1.1, *Site Visits*, reference to D/B Contract added; Misc. typos and formatting errors corrected; New Para. 17.6, *Force Majeure* and Para. 17.7, *Confidentiality*, added.	ems
06-20-18	Para. 17.8, *Domestic Iron and Steel Requirement,* added	ems
05-24-22	Misc. grammar corrections; Rev. of Para. 11.8, *Changes*, to clarify allowable mark-up rates on change proposals.	ems
10-16-23	Para. 4.2.5 and 4.2.5.1, Revisions to HUB reporting requirements	ems
11-06-23	Deleted 'Insurance Specifications' and re-instated 'Special Conditions' in Paras 5.2.1 and 5.2.2.1.5.10.	ems

EXHIBIT H
PREVAILING WAGE RATES

"General Decision Number: TX20230171 01/06/2023

Superseded General Decision Number: TX20220171

State: Texas

Construction Type: Building

County: Nacogdoches County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2023

ASBE0021-002 08/01/2017

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR	$ 25.87	7.23

BOIL0587-003 01/01/2021

	Rates	Fringes
Boilermaker	$ 29.47	24.10

IRON0084-010 06/01/2022

	Rates	Fringes
IRONWORKER, REINFORCING	$ 26.76	7.88

LABO0154-022 05/01/2008

	Rates	Fringes

Laborers: (Mason Tender - Cement/Concrete).....$ 14.25 ** 2.90

SUTX2009-058 04/20/2009

	Rates	Fringes
BRICKLAYER	$ 20.00	0.00
CARPENTER, Includes Acoustical Ceiling Installation, and Hardwood Floor Installation	$ 17.50	0.53
CEMENT MASON/CONCRETE FINISHER	$ 13.29 **	0.00
ELECTRICIAN	$ 18.06	4.87
IRONWORKER, STRUCTURAL	$ 15.48 **	0.00
LABORER: Common or General	$ 9.85 **	0.28
LABORER: Landscape & Irrigation	$ 8.50 **	0.22
LABORER: Mason Tender - Brick	$ 12.02 **	0.00
LABORER: Mortar Mixer	$ 12.00 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe	$ 11.00 **	0.00
OPERATOR: Bulldozer	$ 13.00 **	0.31
OPERATOR: Crane	$ 21.33	0.00
OPERATOR: Forklift	$ 14.58 **	0.00
OPERATOR: Loader (Front End)	$ 10.54 **	0.00
PAINTER: Brush, Roller and Spray	$ 13.50 **	0.00
PLUMBER	$ 20.38	4.74
ROOFER	$ 13.64 **	1.80
SHEET METAL WORKER	$ 17.00	0.00
TILE SETTER	$ 15.00 **	0.00
TRUCK DRIVER	$ 10.13 **	0.38

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($16.20) or 13658 ($12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses

(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

STEPHEN F. AUSTIN STATE UNIVERSITY

Physical Plant Department
P.O. Box 13031, SFA Station • Nacogdoches, Texas 75962-3031
Phone (936) 468-3906 • Fax (936) 468-4446

Worker Wage Rate Form

This form shall be used by all construction managers, contractors, sub-contractors engaged in the execution of SFA construction contracts in accordance with the Prevailing Minimum Wage Rate guidelines and the Uniform General and Supplementary Conditions. This completed notice must be delivered to the Physical Plant and accepted by all workers involved in the project prior to substantial completion or with pay applications. The employer shall submit separate Worker Wage Rate Forms for workers engaged in multiple classifications.

Physical Plant Project No. _____ Project Name_____

SECTION 1

Print entire form.

Employee Name: _____

Employer Name: _____

Worker Classification is shown on Prevailing Wage Rate Schedule: Yes ☐ No ☐

Worker Classification: _____
(Refer to Minimum Prevailing Wage Rate schedule contained within the Agreement for the project.)

	Hourly Rate
SFA Minimum Prevailing Wage Rate:	$_____
Actual Wage Rate:	$_____
Actual Employer Fringe Benefit Rate:	$_____

(Contributions by a worker toward health, pension, vacation and the like are a part of the Actual Wage Rate contributions by the Employer shown below.)

As the Employee Named Above, I hereby acknowledge receipt of this notice and by my signature below indicate my agreement with both the Classification of work I have been assigned on this project and to the proposed wages to be paid to me for such work.

Employee Signature: _____ Date: _____/_____/_____

SECTION 2

To the "Actual Wage Rate" above, the Employer shall indicate the total of all labor burden costs, Federal and State Unemployment, Social Security, Medicare, Health Insurance and Retirement.
(Burden does not include per diem, travel expense, small tools or other items. For clarification of items not listed contact Physical Plant Department, Construction Services.)

Hourly Burden Cost

$_____

Total Hourly Rate

Total Hourly Rate for Contract: Actual Wage Rate + Hourly Burden Cost $_____

Employer Signature or Seal: _____ Date: _____/_____/_____

EXHIBIT I
LINK TO CAMPUS MAP

https://www.sfasu.edu/map

EXHIBIT J
SAMPLE AGREEMENT

STANDARD AGREEMENT
BETWEEN OWNER AND CONTRACTOR
for
University of Texas [*System or Institution Name*] Construction Projects

This Agreement is made as of _____, 20____ (the "Effective Date"), by and between

The **Owner**: The Board of Regents of The University of Texas System
c/o [*Name of U.T. Entity entering into the Agreement*]
[*Street Address*]
[*City, Texas Zip Code*]

and **Contractor**:

Texas Tax Account No.:

for the **Project**:

Project Number:

Contract Number:

UTUGC Version: 2013

Project Architect:

Owner Controlled Insurance Program (OCIP): Yes / No

Owner Provided Builder's Risk Insurance: Yes / No

The Owner and the Contractor agree as follows:

TABLE OF CONTENTS

ARTICLE

LIST OF EXHIBITS

The following Exhibits are incorporated into the Agreement as if set out verbatim.

ARTICLE 1 SCOPE OF WORK

The Contractor has overall responsibility for and shall provide and furnish all materials, equipment, tools and labor as necessary or reasonably inferable to complete the Work, or any phase of the Work, in accordance with the Owner's requirements and the terms of the Contract Documents.

ARTICLE 2 CONTRACT DOCUMENTS

2.1 The Contract Documents consist of:

a. This Agreement and all exhibits and attachments listed, contained or referenced in this Agreement;
b. The Uniform General Conditions for The University of Texas System Building Construction Contracts (UTUGC), applicable version identified, above;
c. Special Conditions and Owner's Specifications;
d. All Addenda issued before the Effective Date of this Agreement;
e. All Alternate Bid Proposals accepted by the Owner before the Effective Date of this Agreement;
f. All Change Orders issued after the Effective Date of this Agreement;
g. The Drawings, Specifications, details and other documents developed by Project Architect to describe the Project and accepted by Owner;
h. The Drawings and Specifications developed or prepared by Owner's other consultants, if any, and accepted by the Owner; and
i. The HUB Subcontracting Plan submitted by the Contractor in response to the Request for Proposal issued by the Owner for the Project.
j. Contractor's Proposal if incorporated into the Project. To the extent of any conflict between Contractor's Proposal and any other Contract Document, the Contract Document shall govern.

2.2 The Contract Documents form the entire and integrated Contract between Owner and Contractor and supersede all prior negotiations, representations or agreements, written or oral.

ARTICLE 3 THE CONTRACT SUM:

3.1 The Owner shall pay the Contractor for performance of the Contract, including the Base Proposal and Alternate Proposal(s), the sum of _____ **($_____),** and make payment on account as provided in the UTUGCs.

3.2 The following Alternate Proposals, fully described in the Specifications and Drawings, are included as a part of the contract sum: _____.

ARTICLE 4 TIME OF COMPLETION:

The Owner shall issue a Notice to Proceed identifying the date for commencement of the Work. The commencement date shall be 10 or more days after the date the notice is issued. The Contractor shall achieve substantial completion of the Work within _____ (____) calendar days after the commencement date, as such completion date may be extended by approved Change Orders. **THE TIME SET FORTH FOR COMPLETION OF THE WORK IS AN ESSENTIAL ELEMENT OF THE CONTRACT.**

ARTICLE 5 LIQUIDATED DAMAGES:

For each consecutive calendar day after the expiration of the substantial completion period set forth in Article 4 that any incomplete Work prevents or impairs the Owner's ability to operate and use the Project for its intended purposes, including the correction of deficiencies found during the final testing and inspection, the amount of _____ **($_____)** will be deducted from the money due or that becomes due the Contractor, not as a penalty but as liquidated damages representing the parties' estimate at the time of executing this Agreement of the damages that the Owner will sustain for late completion.

ARTICLE 6 HUB SUBCONTRACTING PLAN:

The Owner has adopted Exhibit H, Policy on Utilization of Historically Underutilized Business ("Policy"), which is incorporated herein by reference. Contractor, as a provision of the Agreement must comply with the requirements of the Policy and adhere to the HUB Subcontracting Plan submitted with Contractor's Proposal and attached as **Exhibit I**. No changes to the HUB Subcontracting Plan can be made by the Contractor without the prior written approval of the Owner in accordance with the Policy.

(OPTION – KEEP THIS ARTICLE 7 FOR OCIP/BR PROJECTS ONLY, DELETE IF NOT OCIP/BR)
ARTICLE 7 SAFETY

7.1 In accordance with the UTUGC and UTS Project Safety Requirements 01 35 23 (Exhibit E), Contractor is responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. The safety program shall comply with all applicable requirements of the Occupational Safety and Health Act of 1970, all other applicable federal, state and local laws and regulations, and the UTS Project Safety Requirements 01 35 23.

7.2 Contractor shall provide information to the Owner regarding the assignment of responsibilities for oversight of the safety program, Contractor shall verify that appropriate safety provisions are included in the Construction Documents and distributed to all subcontractors. The existence or creation of any Owner Controlled Insurance Program in connection with the Work shall not lessen or reduce the Contractor's overall safety responsibilities.

(OPTION – KEEP THIS ARTICLE 7 FOR NON-OCIP/BR PROJECTS ONLY, DELETE IF OCIP/BR)
ARTICLE 7 SAFETY

7.1 In accordance with the UTUGCs, Contractor is responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. The safety program shall comply with all applicable requirements of the Occupational Safety and Health Act of 1970 and all other applicable federal, state and local laws and regulations and with the requirements of Owner's project safety specification.

7.2 Contractor shall provide recommendations and information to Owner and Project Architect regarding the assignment of responsibilities for safety precautions and programs, temporary Project facilities, and equipment, materials, and services for common use of the Subcontractors. Contractor shall verify that appropriate safety provisions are included in the Construction Documents. The existence or creation of any Owner controlled insurance program in connection with the Work shall not lessen or reduce the Contractor's safety responsibilities.

ARTICLE 8 CERTIFICATION OF NO ASBESTOS CONTAINING MATERIALS OR WORK

8.1 The Contractor shall be responsible for ensuring that no asbestos containing materials or work is included within the scope of the Work. The Contractor shall take whatever measures it deems necessary to insure that all employees, suppliers, fabricators, material men, subcontractors, or their assigns, comply with this requirement.

8.2 The Contractor shall ensure that Texas Department of Health licensed individuals, consultants or companies are used for any required asbestos work including asbestos inspection, asbestos abatement plans/specifications, asbestos abatement, asbestos project management and third-party asbestos monitoring.

8.3 At Substantial Completion and Final Completion the Contractor shall provide a certification letter certifying that the Work does not contain asbestos as required by the UTUGCs.

ARTICLE 9 PRE-EXISTING CONDITIONS

The Contractor acknowledges that it has been provided unrestricted access to the existing improvements and conditions on the Project site and that it has thoroughly investigated those conditions. Contractor's investigation was instrumental in preparing its Proposal to perform the Work. Contractor shall not make or be entitled to any adjustment to the Contract Time or the Contract Sum arising from Project conditions that Contractor discovered or, in the exercise of reasonable care, should have discovered in Contractor's investigation.

(OPTION – KEEP THIS ARTICLE 7 FOR OCIP/BR PROJECTS ONLY, DELETE IF NOT OCIP/BR)

ARTICLE 10 BONDS AND INSURANCE

10.1 The Contractor shall provide performance and payment bonds on forms prescribed by Owner and in accordance with the requirements set forth in the UTUGCs. The penal sum of the payment and performance bonds shall be equal to the Contract Sum.

10.2 The Contractor shall not commence work under the Agreement until it has obtained all insurance coverage as required by the UTUGCs and 00 73 16 Project Insurance Requirements (Exhibit E) and until evidence of the required insurance has been reviewed and approved by the Owner. Owner's review of the insurance shall not relieve nor decrease the liability of the Contractor.

10.3 The Contractor shall refer to 00 73 16 Project Insurance Requirements (Exhibit E) for a complete listing of coverages provided by the OCIP and Builder's Risk. Any coverages required by the UTUGCs that is not provided through the OCIP or Owner Provided Builder's Risk shall be provided by the Contractor.

(OPTION – KEEP THIS ARTICLE 7 FOR NON-OCIP/BR PROJECTS ONLY, DELETE IF OCIP/BR)

ARTICLE 10 BONDS AND INSURANCE

10.1 The Contractor shall provide performance and payment bonds on forms prescribed by Owner and in accordance with the requirements set forth in the UTUGCs. The penal sum of the payment and performance bonds shall be equal to the Contract Sum.

10.2 The Contractor shall not commence work under the Agreement until it has obtained all insurance coverage as required by the UTUGCs and until evidence of the required insurance has been reviewed and approved by the Owner. Owner's review of the insurance shall not relieve nor decrease the liability of the Contractor.

(OPTIONAL SECTION FOR OCIP/BR PROJECTS ONLY or state NOT USED)

ARTICLE 11 OCIP INSURED PROJECT and OWNER PROVIDED BUILDER'S RISK

11.1 The Owner has elected to implement an Owner Controlled Insurance Program (OCIP) and Owner Provided Builder's Risk for this Project. Refer to 00 73 16 Project Insurance Requirements (Exhibit E) for a complete listing of coverages provided by the OCIP and Owner Provided Builder's Risk. All other coverages required to be provided by the UTUGCs shall be provided by the Contractor.

11.2 Contractor's construction cost shall exclude the cost of premiums for insurance coverage provided through the OCIP and Owner Provided Builder's Risk. The cost shall only include the cost of premiums of all other insurance required by the Contract Documents.

11.2.1 Contractor shall include required OCIP insurance information in trade packages and indicate on proposal forms the insurance that proposers are to include and exclude in their base proposals.

11.2.2 To ensure compliance with Texas Insurance Code Sections 151.003 - .009, all bids/proposals shall contain the following language on the signature page, "By signing this document, I acknowledge that this project will use an Owner Controlled Insurance Program (OCIP) and I will participate in the program."

11.2.3 During construction, Owner may audit the Contractor's and Subcontractors' labor hours and certified payroll reports to determine actual insurance costs (audit not for return of cost savings).

11.3 The Contractor shall not cause or allow any of its required insurance to be canceled nor permit any insurance to lapse during the term of the Agreement or as required in the Agreement. If the Contractor fails to obtain, maintain, or renew any insurance required by the Agreement, the Owner may obtain insurance coverage directly and recover the cost of that insurance from the Contractor.

11.4 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 coverages 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.

11.5 The Owner shall be entitled, upon request, and without expense, to receive complete copies of the policies with all endorsements and may make any reasonable requests for deletion, or revision or modification of policy terms, conditions, limitations, or exclusions, except where policy provisions are established by law or regulation binding upon the Parties or the underwriter of any of such polices. Damages caused by the Contractor and not covered by insurance shall be paid by the Contractor.

11.6 The cost of premiums for any additional insurance coverage, subcontractor default insurance programs or subcontractor payment and performance bonds, desired by the Contractor more than that required by this Agreement, the UTUGC, or the Contract Documents shall be borne solely by the Contractor out of its fees.

ARTICLE 12 CONTRACTOR'S SPECIAL WARRANTIES AND RESPONSIBILITIES

12.1 Contractor agrees and acknowledges that Owner is entering into this Agreement in reliance on Contractor's represented expertise and ability to provide construction services. Contractor agrees to use its best efforts, skill, judgment, and abilities to perform its obligations and to further the interests of Owner in accordance with Owner's requirements and procedures.

12.2 Contractor represents and agrees that it will perform its services in accordance with the usual and customary standards of Contractor's profession or business and in compliance with all applicable national, federal, state, and municipal, laws, regulations, codes, ordinances, orders and with those of any other body having jurisdiction over the Project. Contractor agrees to bear the full cost of correcting Contractor's negligent or improper work and services, those of its consultants, and any harm caused by the negligent or improper work or services.

12.3 Contractor's duties shall not be diminished by any approval by Owner nor shall the Contractor be released from any liability by any approval by Owner, it being understood that the Owner is ultimately relying upon the Contractor's skill and knowledge in performing the services required by this Agreement.

12.4 Contractor represents and agrees that all persons connected with the Contractor directly in charge of its services are duly registered and/or licensed under the laws, rules and regulations of any authority having jurisdiction over the Project if registration is required.

12.5 Contractor represents and agrees to advise Owner of anything of any nature in any drawings, specifications, plans, schedules, instructions, directions, requirements, procedures, and other data supplied to the Contractor (by the Owner or any other party) that is, in its opinion, unsuitable, improper, or inaccurate for the purposes for which the document or data is furnished.

12.6 The Contractor represents and agrees to perform its services under this Agreement in an expeditious and economical manner consistent with good business practices and the interests of Owner.

12.7 Contractor represents and agrees that there are no obligations, commitments, or impediments of any kind that will limit or prevent performance of its obligations under this Agreement.

12.8 Contractor represents and agrees that the individual executing this Agreement on behalf of Contractor has been duly authorized to act for and to bind Contractor to its terms.

12.9 Contractor shall designate a representative authorized to act on Contractor's behalf with respect to the Project.

12.10 Contractor shall establish and maintain a numbering and tracking system for all Project records including, but not limited to, changes, requests for information, submittals, and supplementary instructions and shall provide updated records to the Owner when requested.

12.11 Except for the obligation of Owner to pay Contractor certain fees, costs, and expenses pursuant to the terms of this Agreement, Owner shall have no liability to Contractor or to anyone claiming through or under Contractor by reason of the execution or performance of this Agreement. Notwithstanding any obligation or liability of Owner to Contractor, no present or future partner or affiliate of Owner or any agent, officer, director, employee, or regent of Owner, The University of Texas System, or of the components comprising The University of Texas System, or anyone claiming under Owner has or shall have any personal liability to

Contractor or to anyone claiming through or under Contractor by reason of the execution or performance of this Agreement.

ARTICLE 13 INDEMNITY

13.1 SEE ARTICLE 3 OF THE UNIFORM GENERAL CONDITIONS FOR UNIVERSITY OF TEXAS SYSTEM BUILDING CONSTRUCTIOIN CONTRACTS FOR CONTRACTOR'S GENERAL INDEMNIFICATION OBLIGATIONS.

ARTICLE 14 PARTY REPRESENTATIVES

14.1 The Owner's Designated Representative authorized to act in the Owner's behalf with respect to the Project is:

[*Name*]
[*Title*]
[*Address*]
[*Phone NumberI*]
[*Email Address*]

14.2 The Contractor's designated representative authorized to act on the Contractor's behalf and bind the Contractor with respect to the Project is:

[*Name*]
[*Title*]
[*Address*]
[*Phone NumberI*]
[*Email Address*]

14.3 The parties may make reasonable changes in their designated representatives upon advance written notice to the other party.

ARTICLE 15 NOTICES

Notices of claims or disputes or other legal notices required by this Agreement shall be sent to the following persons at the indicated locations.

If to Owner: [*Owner's Designated Representative*]
[*Address*]
[*Email Address*]

Fax No.

With Copies to: [*Owner's Head of Project Management or* Procurement]
[Address]

If to Contractor: [*Name*]
[*Company Name*]

[*Street Address*]
[*City, State, Zip*]
[*Fax No.*]

The parties may make reasonable changes in the person or place designated for receipt of notices upon advance written notice to the other party.

ARTICLE 16 MISCELLANEOUS PROVISIONS

16.1 Assignment. This Agreement is a personal service contract for the services of Contractor, and Contractor's interest in this Agreement, duties hereunder and/or fees due hereunder may not be assigned or delegated to a third party without the written consent of the Owner.

16.2 Records of expenses pertaining to Additional Services and services performed on the basis of a Worker Wage Rate or Monthly Salary Rate 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.

16.3 Family Code Child Support Certification. Pursuant to Section 231.006, Texas Family Code, Service Provider certifies that it is not ineligible to receive the award of or payments under this Agreement and acknowledges that this Agreement may be terminated and payment may be withheld if this certification is inaccurate.

16.4 Franchise Tax Certification. 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.

16.5 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.

16.6 Entire Agreement; Modifications. This Agreement supersedes all prior agreements, written or oral, between Contractor and Owner and shall constitute the entire Agreement and understanding between the parties with respect to the Project. 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 writing signed by Contractor and Owner.

16.7 Captions. The captions of paragraphs in this Agreement are for convenience only and shall not be considered or referred to in resolving questions of interpretation or construction.

16.8 Governing Law and Venue. This Agreement and all of the rights and obligations of the parties and all of the terms and conditions shall be construed, interpreted and applied in accordance with and governed by and enforced under the laws of the State of Texas without reference to its conflicts of law provisions. Travis County, Texas or the county where the Project is located shall be the sole places of venue for any legal action arising from or related to this Agreement or the Project in which the Owner is a party.

16.9 Waivers. No delay or omission by either party in exercising any right or power arising from non-compliance or failure of performance by the other party with any of the provisions of this Agreement shall impair or constitute a waiver of any such right or power. A waiver by either party of any covenant or condition of this Agreement shall not be construed as a waiver of any subsequent breach of that or of any other covenant or condition of the Agreement.

16.10 Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties and their respective permitted assigns and successors.

16.11 Appointment. Owner hereby expressly reserves the right from time to time to designate by notice to Contractor a representative(s) to act partially or wholly for Owner in connection with the performance of Owner's obligations. Contractor shall act only upon instructions from the designated representative(s) unless otherwise specifically notified to the contrary.

16.12 Records. Records of Contractor's costs, reimbursable expenses pertaining to the Project and payments shall be available to Owner or its authorized representative during business hours and shall be retained for four (4) years after final Payment or abandonment of the Project, unless Owner otherwise instructs Contractor in writing.

16.13 Notices. All notices, consents, approvals, demands, requests or other communications relied on by the parties shall be in writing. Written notice shall be deemed to have been given when delivered in person to the designated representative of the Contractor or Owner for whom it is intended; or sent by U. S. Mail to the last known business address of the designated representative; or transmitted by fax machine to the last know business fax number of the designated representative. Mail notices are deemed effective upon receipt or on the third business day after the date of mailing, whichever is sooner. Fax notices are deemed effective the next business day after faxing.

16.14 Severability. Should any term or provision of this Agreement be held invalid or unenforceable in any respect, the remaining terms and provisions shall not be affected and this Agreement shall be construed as if the invalid or unenforceable term or provision had never been included.

16.15 Illegal Dumping. The Contractor shall ensure that it and all of its Subcontractors and assigns prevent illegal dumping of litter in accordance with Title 5, *Texas Health and Safety Code*, Chapter 365.

16.16 By signature hereon, Contractor certifies that no member of the Board of Regents of The University of Texas System, or Executive Officers, including component institutions, has a financial interest, directly or indirectly, in the transaction that is the subject of this contract.

16.17 Ethics Matters; No Financial Interest. Contractor and its employees, agents, representatives and subcontractors have read and understand University's Conflicts of Interest Policy available at http://www.utsystem.edu/policy/policies/int160.html, University's Standards of Conduct Guide available at http://www.utsystem.edu/systemcompliance/, and applicable state ethics laws and rules available at www.utsystem.edu/ogc/ethics. Neither Contractor nor its employees, agents, representatives or subcontractors will assist or cause University employees to violate University's Conflicts of Interest Policy, provisions described by University's Standards of Conduct Guide, or applicable state ethics laws or rules. Contractor represents and warrants that no member of the Board has a direct or indirect financial interest in the transaction that is the subject of this Agreement.

16.18 Disclosure of Interested Parties. By signature hereon, Contractor certifies that, if the value of this agreement exceeds $1 Million, it has complied with Section 2252.908 of the Texas Government Code and Part 1 Texas Administrative Code Sections 46.1 through 46.3 as implemented by the Texas Ethics Commission (TEC), if applicable, and has provided the Owner with a fully executed TEC Form 1295, certified by the TEC and signed and notarized by the Contractor.

16.19 Contractor Certification regarding Boycotting Israel. To the extent required by Chapter 2271, *Texas Government Code*, Contractor certifies Contractor (1) does not currently boycott Israel; and (2) will not

boycott Israel during the Term of this Agreement. Contractor acknowledges this Agreement may be terminated and payment withheld if this certification is inaccurate.

16.20 Contractor Certification regarding Business with Certain Countries and Organizations. Pursuant to Subchapter F, Chapter 2252, *Texas Government Code*], Contractor certifies Contractor is not engaged in business with Iran, Sudan, or a foreign terrorist organization. Contractor acknowledges this Agreement may be terminated and payment withheld if this certification is inaccurate.

16.21 Domestic Iron and Steel Certification. Pursuant to Sections 2252.201-2252.205 of the Government Code, Service Provider certifies that it is in compliance with the requirement that any iron or steel product produced through a manufacturing process and used in the project is produced in the United States.

16.22 Contractor Verification Regarding Discrimination Against Firearm Entities or Trade Associations. Pursuant to Chapter 2274, Texas Government Code (enacted by SB 19, 87th Texas Legislature, Regular Session (2021)), Contractor verifies (1) it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and (2) it will not discriminate during the term of this Agreement against a firearm entity or firearm trade association. Contractor acknowledges this Agreement may be terminated and payment withheld if this verification is inaccurate. [Note: This provision does not apply to: (1) contracts below $100,000; (2) contracts with a sole-source provider; and (3) contracts with a non-profit entity, sole proprietorship, or a for-profit entity that has less than 10 full time employees. This provision should not be included in a contract if the University did not receive any bids from a company that is able to provide the written verification required above.

BY SIGNING BELOW, the Parties have executed and bound themselves to this Agreement as of the day and year first above written.

(Contractor)

By: _____

(original signature)

_____

(name and title typed)

Date: _____

CONTENT APPROVED:
[*Supervising Construction Purchasing Officer*]

By: _____
(original signature)

Name:
Title:

BOARD OF REGENTS
THE UNIVERSITY OF TEXAS SYSTEM
(Owner)

By: _____
(original signature)

Name: [*Officer with Delegated Authority to enter into Agreements*]
Title:

Date: _____

REVISIONS

Date	Paragraph Revised
08-23-2013	Original Issue Date
01/28/2016	16.18 Disclosure of Interested Parties added (ems)
05/24/2017	Removed Article 17 “Bonds and Insurance” from Table of Contents
08/29/2017	16.19 Contractor Certification regarding Boycotting Israel. added (ems) 16.20 Contractor Certification regarding Business with Certain Countries and Organizations. added (ems)
9/1/2017	16.21 Domestic Iron and Steel Certification. added (ems)
5/16/2019	16.19 Contractor Certification regarding Boycotting Israel. opening phrase edited (ems)
9/15/2021	16.22 Contractor Verification Regarding Discrimination Against Firearm Entities or Trade Associations added (ems)
2/4/2023	Added Owner Provided OCIP and BR insurance provisions.
8/18/2023	Removed attestation portion of signature page

RFP # ELECTRICAL RENOVATION Opening date 08/28/2024 time 8:45 A.M.

NAME/ADDRESS	HUB
Asian Contractor Association Website: www.acta-austin.com Phone: 512-926-5400 Fax: 512-926-5410	
Southwest Minority Supplier Development Council Website: www.smsdc.org Phone: 512-386-8766 Fax: 512-386-8988	
Dallas/Fort Worth Minority Supplier Development Council Website: http://affiliate.nmsdc.org/dfwmsdc Phone: 214-630-0747 Fax: 214-637-2241	
Houston Minority Supplier Development Council Website: www.hmsdc.org Contact: Angela Freeman Phone: 713-271-7805 Fax: 713-271-9770	
Tri-County Black Chamber of Commerce Website: http://www.tcbcc.org Phone: 832-875-3977 Fax: 713-839-7329	
Women's Business Council – Southwest Website: http://www.wbcsouthwest.org Contact: Anita Steele Phone: 817-299-0566	
Women's Business Enterprise Alliance Website: http://www.wbea-texas.org Phone: 713-681-9232	
Golden Triangle Minority Business Council Website: www.gtmbc.com PH: 409-962-8530 FX: 409-722-5402	

RFP # ELECTRICAL RENOVATION Opening date 08/28/2024 time 8:45 A.M.

NAME/ADDRESS	HUB
Hispanic Contractors Association de San Antonio Website: www.hcadesa.org PH: 210-444-1100 FX: 210-444-1101	
US Pan Asian American Chamber of Commerce Website: www.uspaacc-sw.org PH: 682-367-1393 FX: 817-469-9485	
El Paso Hispanic Chamber of Commerce Website: www.ephcc.org PH: 915-566-4066 FX: 915-566-9714	
Regional Hispanic Contractors Association (RHCA) Website: www.tamacc.org PH: 972-786-0909 FX: 972-786-0910	
Texas Association of Mexican American Chambers of Commerce (TAMACC) Website: www.tamacc.org Contact: Pauline Anton Phone: 512-444-5727	
START SELECTED VENDORS HERE	
White Electric, Inc 1106 SE Stallings Dr Nacogdoches, TX 75964 Email: Contact: Dennis White Phone: 936-564-5180 Fax: 936-569-1597	
Ludco Inc. 3210 SE Stallings Dr. Nacogdoches, TX 75964 Email: Contact:Jason Yeley & Landon Davis Phone:936-569-0816	
Southern Reliant Electric, Inc. PO Box 153336 Lufkin, TX 75915 Email: Contact: Michael Rudd Phone: 936-875-4008	HI/F

RFP # ELECTRICAL RENOVATION Opening date 08/28/2024 time 8:45 A.M.

NAME/ADDRESS	HUB
Thedford Construction Company, Inc 6505 Hwy 59 N. Lufkin, TX 75901 Email: Contact: Eric Thedford or Willie Burke Phone: 903.245.2640 or 936.634.3321	
JCL Electrical 5112 East State Highway 7 Nacogdoches, TX 75961 Contact:	
Cox Concrete Contractors, Inc PO Box 631447 Nacogdoches, TX 75963 Contact: Brenda Jones Email: Phone: 936.564.6500	WO/F
McCaffety Electrical Co. Inc PO Box 163 Hunstville, TX 77342 Contact: Pamela Barnes Email:	WO/F
Cotton's Electrical Contracting & Services, LLC 609 Aspen Street Pilot Point, TX 76258 Contact: Lamar Cotton Email:	BL/M
Drewery Construction 902 SE Stallings Dr Nacogdoches, TX 75964 Contact: Paul Kummer Email:	
Construction Managers of Southeast Texas, LLC 1600 South Chestnut Lufkin, TX 75901 Contact: Nick Moore Email:	HI/M
Stiles Electric 620 North Street Nacogdoches, TX 75961 Contact: Leroy Forbes Email:	
TDR Contractors 1203 SH 155 North Gilmer, TX 75644 Contact: John Dean Email:	