Request for Bid
RFB No. 2019–050
WACO SUSPENSION BRIDGE REHABILITATION PROJECT

Issue Date: Tuesday, October 29, 2019
Closing Date & Time: Thursday, December 19, 2019 at 2:00 p.m. CDST
Opening Date & Time: Thursday, December 19, 2019, at 2:01 p.m. CDST

RFB Opening Location: Purchasing Services Office, 1415 N. 4th Street, Waco, Texas
For Information Contact: Mr. Tim Cubos, Purchasing Services, 254-750-6616
Pre-bid Meeting: City of Waco Operations Center Conference Room
(Mandatory) 1415 North 4th Street, Waco, Texas, 76707
On Wednesday, November 13, 2019 at 2:00 p.m. CDST

Purchasing Services
Post Office Box 2570
Waco, Texas 76702-2570
Telephone 254 / 750-6616
Fax 254 / 750-8063
www.waco-texas.com
You have received a copy of the above described Request document. If you would like to register your interest in this project so that you will receive any future notices or addenda concerning the project, please fill in the information requested below and fax this page to 254-750-8063. You may also scan this page and email to: ccubos@wacotx.gov.

Company/Firm: ____________________________________________________________

Name of Contact Person(s): ________________________________________________

Email(s): __________________________________________________________________

Telephone: ______________________ Fax: ________________________________

Mailing Address: __________________________________________________________

_________________________________________________________________________

It is your responsibility to complete and return this form to the City. Failure to do so will result in your not receiving notices and addenda related to this project from the City of Waco. Notices and addenda are posted on the City’s website and can be accessed at: http://www.waco-texas.com/purchasing-rules.asp.
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I. PRELIMINARY SCHEDULE FOR SOLICITATION

The proposed schedule of events is tentative and may be modified throughout the selection process at the discretion of the City of Waco.

Issuance of the RFB with Prequalification  
Tuesday, October 29, 2019

Mandatory Pre-Submittal Meeting at 2:00 PM CST  
Wednesday, November 13, 2019

*This is a mandatory meeting, attendance is required. Bids by contractors who do not attend will be rejected.*

*Subcontractor’s attendance not required but it is encouraged*

Prequalification Process

Prequalification Application Deadline is 2:00 PM CST  
Thursday, November 21, 2019

Evaluation Period for Applications  
Friday, November 22, 2019  
*to Wednesday, November 27, 2019*

Notification of Evaluation Results by 5:00 PM CST  
Wednesday, November 27, 2019

Review/Appeals Period  
Monday, December 02, 2019  
*to Thursday, December 05, 2019*

*A review of a Fail determination will only occur if Contractor files a written request as provided in this RFB.*

Deadline for bid questions is 5:00 PM CST  
Tuesday, December 10, 2019

Bids due by 2:00 PM CST  
Thursday, December 19, 2019

Bids will be opened at 2:01 PM CST  
Thursday, December 19, 2019

Evaluation of the submission & establish ranking  
Thursday, December 19, 2019

Tentatively, the final selection decision will be made and bidders will be notified of award by Friday, December 20, 2019, and presented to City Council Tuesday, January 07, 2020. This schedule is subject to change by the City.
II. CONTACT WITH CITY OF WACO

The contact person for this solicitation process is: Mr. Tim Cubos, Purchasing Agent.

Questions concerning the solicitation must be submitted to contact person in writing on or before date shown in the schedule above.

Email: ccubos@wacotx.gov  Fax:  (254) 750-8063

Questions concerning the solicitation must be submitted to contact person in writing on or before date shown in the schedule above.

<table>
<thead>
<tr>
<th>Via U.S. Mail:</th>
<th>Via Delivery Services/Personal Delivery:</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Waco Purchasing Services</td>
<td>City of Waco Purchasing Services</td>
</tr>
<tr>
<td>Attn: Mr. Tim Cubos Purchasing Agent</td>
<td>Attn: Mr. Tim Cubos Purchasing Agent</td>
</tr>
<tr>
<td>P.O. Box 2570</td>
<td>1415 North 4th Street</td>
</tr>
<tr>
<td>Waco, Texas 76702-2570</td>
<td>Waco, Texas 76707</td>
</tr>
</tbody>
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NOTE: US Mail does NOT deliver to street address

Contact with someone other than the Purchasing Agent listed above, or his/her designated representative, at the City of Waco concerning this solicitation may be grounds for removal from consideration.

Interpretation, modification, corrections, or changes to the solicitation documents will be made by addenda issued by the City of Waco. Addenda will be made available http://www.waco-texas.com/purchasing-rules.asp. Interested vendors are encouraged to return the Register Interest form on the previous page.

A complete copy of this RFB, including information for bidders, bid forms, contract forms, plans, specifications, bid bond forms, performance and payment bond forms and all other contract documents related to this project, may be obtained on at www.waco-texas.com/bids.asp.
III. DEFINITIONS

The following definitions apply to this document and the transaction between the City and the selected submitter unless otherwise designated in the context. Terms, which are singular, may include multiple, where applicable and when in the best interests of the City:

(1) “City” means and refers to the City of Waco, Texas, and/or its City Council.

(2) “Company” or “Firm” means and refers to any submitter, whether such submitter be a corporation, company, sole proprietor, partnership, company, or any other entity legally defined or recognized under the laws of the State of Texas.

(3) “Bid” or “Submission” refers to a response submitted to an RFB.

(4) “RFB” means and refers to a Request For Bid that will be awarded based on lowest responsible bid or best value to City of Waco.

(5) “Selected submission” means and refers to the submission sent to the City of Waco by the Selected Firm.

(6) “Selected Firm” means the firm who is selected by the City and to whom the City Council/City Manager awards a contract for the services or commodities requested in this solicitation.

(7) “Solicitation” means an RFB issued by the City Waco seeking products or services described in the document.

(8) “Submitter” or “Vendor” or “Bidder” or “Contractor” means a firm that submits a response to a solicitation.

(9) “Contract documents” includes the RFB and all of the Appendices attached to the RFB.

(10) “Day” means a calendar day unless otherwise specifically defined.
IV. REQUESTED SERVICES/PRODUCTS

A. Scope of Services / Specifications
   (1) The project consists of rehabilitative efforts to preserve the historic Waco Suspension Bridge, originally built in 1870 with a main span of 475 feet. It is listed on the National Registry of Historic Places and is a Registered Texas Historic Landmark. As such the proposed construction program has been carefully coordinated with numerous agencies. Base-bid items for the WACO SUSPENSION BRIDGE REHABILITATION PROJECT includes mid-river supports and bracing to allow replacement of the steel suspension cables, significantly upgrading the structural foundations and anchorages, full replacement of the bridge deck with a concrete deck system flanked by exotic hardwood planks, railing safety improvements, masonry and structural repairs of the towers and anchor houses, new flashings and coatings, site paving and drainage improvements, and careful removal and reinstallation of the existing bridge lighting. Detailed project-specific specifications are included in the plans and specification documents.
   (2) A digital version of this document can be obtained from the City of Waco website at http://www.waco-texas.com/bids.asp.
   (3) The “City of Waco Standard Specifications for Construction” dated January 2013 is incorporated herein by reference for all intents and purposes. If a standard specified in that document conflicts with a standard included within a bid specifications document, the standard in the bid specifications document controls. If the standard is still unclear, the Director of Engineering Services for the City of Waco will determine which standard controls and his determination shall be final. A copy of “City of Waco Standard Specifications for Construction” and the City of Waco Standard Details may be obtained by accessing the City of Waco website at www.waco-texas.com and going to Bid Opportunities – Engineering Services.

B. Terms, Conditions, and Requirements
   In addition to the specifications for the Project, the attached Appendices include the City’s Contract Requirements.

C. Duration of Service
   The City of Waco is seeking to have the work that is the subject of this RFB completed within 545 days from the date of the Notice to Proceed. In determining the number of days for completion of the work under this Contract, it is anticipated that work will not be performed on Saturdays, Sundays, or City holidays unless specifically approved by City. Since “day” is defined as a calendar day, Saturdays, Sundays, and City holidays shall be counted as days and included in calculating the Contract time. If a Contractor wants to perform work on Saturdays, Sundays, or City holidays, the Contractor shall seek approval by making a written request to City. Contractor shall be responsible for all City staff and third-party time, costs, expenses and overtime for work performed on Saturdays, Sundays, or City holidays, unless excused in writing by the City prior to the work.

D. Reservations by City: The City of Waco reserves the right to reject any and all submittals. This issuance of this solicitation does not obligate the City to contract for expressed or implied services.
The City of Waco will not reimburse vendors for any costs incurred during the preparation or submittal of responses to this solicitation.

(1) Furthermore, the City expressly reserves the right to:
   (a) Waive any defect, irregularity, or informality in any submittal or procedure;
   (b) Extend the solicitation closing time and date;
   (c) Reissue this solicitation in a different form or context;
   (d) Procure any item by other allowable means;
   (e) Waive minor deviations from specifications, conditions, terms, or provisions of the solicitation, if it is determined that waiver of the minor deviations improves or enhances the City’s business interests under the solicitation; and/or
   (f) Extend any contract when most advantageous to the City, as set forth in this solicitation.
   (g) Retain all bids submitted and to use any ideas in a bid regardless of whether or not that bid is selected.

V. PREQUALIFICATION PROCESS & REVIEW

A. Prequalification Application

(1) Any Contractor who wishes to bid on this Project is required to complete and submit the Prequalification Application (Special Appendix) regardless of whether the Bidder has previously performed or prequalified for other work for the City of Waco, Texas. Bids received from any Bidder who does not Pass the prequalification process will be rejected and returned unopened.

(2) Attendance at the Pre-Submittal Meeting is mandatory.

(3) One original and six (6) copies of the completed Prequalification Application along with one (1) electronic copy on a flash drive must be received by the City of Waco on or before the date and time set out in the Schedule for Solicitation. Submissions received after the deadline will be rejected.

(4) The Prequalification Application may contain some information that the submitter considers confidential or proprietary. As a public subdivision in the State of Texas, the City is subject to the Texas Public Information Act. Please review the Texas Public Information Act information sheet in Appendix C and follow the instructions it contains. The submitter will need to clearly label each page containing information the submitter considers confidential or proprietary. If a Public Information Request is received by the City for information the submitter labels as confidential or proprietary, the City will notify the submitter. There may be exemptions to the release of the information, but the submitter will need to present those reasons to the Texas Attorney General.

(5) The Prequalification Application should be submitted to the address shown in Section VI. C. below. The submission should be in a sealed envelope marked on the outside with:

   a. “RFB 2019-050 Waco Suspension Bridge”

   b. Prequalification Submission due:

      ii. 2:00 p.m. (Central Time) on November 21, 2019.

(6) The Prequalification Application must include the completed questionnaire plus other
documents or information stated in the questionnaire.

a) Among the required documents is proof that a bonding company will issue performance and payment bonds to the submitter if the contract is awarded. The bonding company must have complied with the laws and regulations of the U.S. Department of the Treasury including Title 31 U.S.C. 9304-9308 of the United States Code (“T-listing.”) and be included as an acceptable surety on federal bonds in the Department of Treasury’s Listing of Approved Sureties (Department Circular 570).

b) All of the forms listed in Appendix C must be submitted with the Prequalification Application.

c) Failure to complete the Application and submit all required documents and information, including the forms in Appendix C, will result in a rejection of the Application.

B. Evaluation of Prequalification Submission

(1) The Prequalification Application and related documents will be reviewed by the City and/or agents of the City.

(2) In determining whether a contractor is qualified to perform the work associated with this Project, the following criteria will be considered on a pass/fail basis:

   a) Experience by the contractor in similar projects;
   b) Work history on similar projects that establishes that contractor can successfully complete this type of project on time and within budget without excessive claims or litigation;
   c) Appropriate technical expertise available during the Project, including any subcontractors working on the pump can or doing electrical work as well as submitter’s full-time employees and personnel;
   d) Bonding capacity and financial resources to meet all obligations incidental to the Project;
   e) An acceptable safety record;
   f) Adequate resources/equipment to properly perform construction work for the Project; and
   g) A permanent place of business.

(3) To satisfy those criteria, Contractor will need to meet the following minimum requirements:

   a) The Contractor shall have satisfactorily completed five (5) or more major bridge construction or repair projects, with spans of at least 100 feet (each project having a total construction value of at least $1.5 million) within the last 10 years;

   b) The safety officer shall have at least five years of experience in projects of similar size and scope to this Project. At least two of the contractor’s four key personnel listed in the Prequalification Questionnaire shall each have at least ten years of experience in constructing pump stations of similar size and scope to this Project;

   c) The Project Superintendent shall (i) have at least ten years of experience on major bridge construction or repair projects, with spans of at least 100 feet, and (ii) have been the Project Superintendent on at least three (3) satisfactorily completed projects of similar size and scope to this Project,
that included temporary bridge support structures, within the past five years;

d) The Contractor and Project Superintendent shall demonstrate a satisfactory safety history; and

e) The Contractor submitting the Application (whether a sole proprietorship, corporation, partnership, etc.) shall have been doing business as the legal entity named in the Application for at least three years.

4. The City reserves the right to request additional information to complete its evaluation.

5. Each contractor submitting a Prequalification Application will be notified individually of its prequalification status (Pass or Fail) by the City of Waco after all Requests for Prequalification have been reviewed pursuant to the solicitation schedule.

a) A contractor receiving notice of passing may submit a bid as described in Section VI below.

6. A contractor receiving notice that it failed the prequalification evaluation may request review of that determination. If the contractor does not seek review as provided herein, the determination shall be considered final.

a) A written statement requesting review must be delivered to the Purchasing Agent identified as the contact on this Project at the address shown for the Purchasing Agent within three (3) business days of the notification that the contractor failed prequalification evaluation.

b) The written statement must clearly set out why the contractor believes the contractor passes the prequalification criteria for the Project and why the prior determination is incorrect.

c) The Purchasing Agent will present the written statement to the City staff and/or agents who reviewed the Prequalification Application. If the City staff and/or agents affirm their prior decision that the contractor did not pass the prequalification criteria, the request for review will be presented to a Review Officer designated by the City Manager.

d) The Review Officer shall review the Prequalification Application and all submitted documents. The Review Officer may request a meeting with the contractor, but is not required to have such a meeting. As soon as possible after receiving the matter for review, the Review Officer shall issue a written statement either (i) affirming the prior determination that the contractor did not pass the prequalification criteria or (ii) determining that the contractor may submit a bid for consideration as described in Section VI below.

e) If the Reviewing Officer determines that the contractor does not pass the prequalification criteria then that determination shall be considered a final determination.

7. That a contractor passes the prequalification criteria does not deprive the City of Waco of the right to reject a bid from said contractor if said bid is improper
or other circumstances, information or developments have, in the opinion of the City of Waco, changed the evaluation of the contractor’s qualifications.
VI. REQUEST FOR BIDS – SUBMISSION & AWARD PROCEDURES

A. Requirements
(1) Bids may only be submitted by prequalified bidders.
   (a) Prequalification must be requested by providing the Purchasing Agent with a completed copy of the Prequalification Application (see *Special Appendix) prior to the stated deadline. Applicants should submit one (1) original and 3 copies of the Prequalification Application and associated attachments.
(2) Prequalified vendors should submit one (1) original and 3 copies of the Pricing Forms for the services/products sought by this solicitation and complete all of the required forms by the stated deadline.
(3) Pricing Forms and Submission/Bid Security
   (a) Pricing Forms.
      1. Bids are to be submitted with a response on each item and the total extended. More than one (1) bid may be submitted on items that meet the specifications and the other RFB requirements.
      2. Pricing is to be submitted on units of quantity specified on the Pricing Form with extended totals. In the event of a discrepancy in any extension total, the unit prices shall govern and be binding for purposes of this RFB.
      3. All prices included are to be submitted less Federal Excise and State of Texas Sales Taxes. A tax exemption certificate will be executed upon request. The City’s federal tax identification number is 1-74-6002468-4.
   (b) Security – Bid Bond.
      1. Each submission must be accompanied by a certified check of the submitter, or a bid bond executed by the submitter as principal and having as surety thereon a surety company approved by the City in the amount of 5% of the submission. The Surety’s Power of Attorney must accompany the bid bond. The bid bond and surety’s Power of Attorney must both carry the date of the bid opening.
      2. Checks will be returned to all except the three lowest bidders within three days after the opening of bids. The remaining checks will be returned promptly after the City and the selected bidder have executed the contract.
      3. If no award has been made within ninety (90) days after the date of the opening of bids, a bidder may demand that the security submitted be returned so long as said bidder has not been notified of the acceptance of his bid.
      4. If the selected bidder refuses or fails to execute and deliver the contract and bonds (payment and/or performance) required within 10 days after receiving notice of the acceptance of his bid, the bid security shall forfeit to the City as liquidated damages for such failure or refusal.
      5. A Bid Bond form can be found in the Appendices.

B. Completeness of Submission
(1) Vendors are responsible for examining and being familiar with all specifications, drawings, standard provisions, instructions, and terms and conditions of the solicitation and their responses.

(2) The vendor must attach all required forms with each submission copy. Forms must be signed by a representative of the vendor authorized to bind the vendor contractually. The vendor must include a statement identifying any exceptions to this RFB or declare that there are no exceptions taken to the RFB.

C. Bid Response Date and Location

Bids must be received at the office of Purchasing Department by 2:00 PM (Central Standard Time) on Thursday, December 19, 2019.

Interested parties may submit their bids Via Delivery Services or Personal Delivery to:

City of Waco Purchasing Services  
Attn: Mr. Tim Cubos, Purchasing Agent  
1415 North 4th Street  
Waco, Texas 76707

Interested parties may also submit their bids through U.S. Mail delivered to:  
City of Waco Purchasing Services  
Attn: Mr. Tim Cubos, Purchasing Agent  
P.O. Box 2570  
Waco, Texas 76702-2570

If using U.S. Mail, note that U.S. Mail is initially received at Waco City Hall and then delivered to the office of Purchasing Services by a City courier. That delivery may occur a day or more after being received at Waco City Hall. Allow additional time in advance of the bid due date for U.S. Mail delivery. If the Purchasing Office has not received the bids by the stated deadline, the bid will be returned unopened.

All submittals shall be sent to the attention of the Purchasing Agent in a sealed envelope that is clearly marked on the outside as follows:

“RFB 2019-050, WACO SUSPENSION BRIDGE REHABILITATION PROJECT”

Bid Opening: 2:01 p.m. (Central Time) on Thursday, December 19, 2019.

Vendors accept all risk of late delivery bids regardless of instance or fault. A bid received after the submission deadline will not be considered and will be returned unopened to the submitter. Vendors accept all risks of delivery.

The City will NOT accept a response submitted by facsimile transmission (fax) or by electronic mail (email).

All submissions and accompanying documentation will become the property of the City.
D. Modification to or Withdrawal of Submission
Submissions cannot be altered or amended after the submission deadline passes. Submissions may be modified prior to the deadline by providing a written notice to the Purchasing contact person at the address previously stated. To modify a submission prior to the submission deadline:
(1) Submit a written notice of the modification WITHOUT revealing the bid price. The modification should provide the addition, subtraction, or other modifications so that the final prices or terms will not be revealed to the City until the sealed bid is opened.
(2) The written modification may be submitted by electronic transmission (fax or email to Purchasing Agent identified on page 3) or personal delivery. The written modification must be received by the City prior to the closing time.
(3) If the modification is submitted through an electronic transmission (fax or email), the City must receive an original of the modification document signed by the bidder and submitted to a delivery company (UPS, FedEx, etc.) prior to the bid closing time. If the original of the modification was not submitted to a delivery company prior to the closing time or is not received within two (2) days after the closing time of the bid, consideration will not be given to the modifications provided in the electronic transmission.

A submission may also be withdrawn by providing the notice in person by a representative of the vendor who can provide proof of his authority to act for the vendor. The representative will be required to execute a receipt reflecting the submission is being withdrawn. If a submission is withdrawn before the submission deadline stated herein, the vendor may submit a new sealed bid provided the new bid is received prior to the closing date and time deadline stated on page 1. This provision does not change the common law right of a submitter to withdraw a submission due to a material mistake in the submission.

E. Submission Validity Period
A submission responding to this RFB signifies the vendor’s agreement that the submission, and the content thereof, are valid for ninety (90) days following the submission deadline unless otherwise agreed to in writing by all parties. The submission may become part of the contract that is negotiated between the City and the successful vendor.

F. Vendor’s Cost to Develop Submission
Costs for developing and assembling submissions in response to this solicitation are entirely the responsibility and obligation of the vendor and shall not be reimbursed in any manner by the City.

G. References
The City reserves the right to request that a vendor provide references.

H. Method of Award and Evaluation of Factors
(1) For this solicitation, the City will award the contract to the:
   ☑ Lowest responsible bidder
   □ Bidder who provides goods or services at the best value for the City.
(2) **Lowest Responsible Bidder:**
   
   (a) The contract will be awarded to the lowest responsible bidder based on the base bid plus any selected alternatives provided the amount does not exceed the funds then estimated by the City as available to finance the contract.

   (b) If the contract is bid with alternatives, the City reserves the right to select any combination of alternatives and will compare all bids using the selected alternatives. If the amount of the bids exceeds the funds available to finance the contract, the City may (a) reject all bids or (b) may award the contract based on the base bid with such deductions as produces a net total which is available within the available funds.

(3) **Best Value:**
   
   (a) In determining best value for the City, the City may consider:
   1. the purchase price;
   2. the reputation of the bidder and of the bidder’s goods or services;
   3. the quality of the bidder’s goods or services;
   4. the extent to which the goods or services meet the municipality’s needs;
   5. the bidder’s past relationship with the municipality;
   6. the impact on the ability of the municipality to comply with laws and rules relating to contracting with historically underutilized businesses and non-profit organizations employing persons with disabilities;
   7. the total long-term cost to the municipality to acquire the bidder’s good or services; and

   (b) Compliance with all bid requirements, delivery and needs of the City are considerations in evaluating bids. The City of Waco reserves the right to contact any offeror, at any time, to clarify, verify or request information with regard to any bid.

(4) During the evaluation process, the City reserves the right, where it may serve the City’s best interest, to request additional information or clarifications from bidders.

I. **Contract Award and Execution**

   The final contract must be awarded and approved by the Waco City Council if the amount of the contract will exceed $50,000.00. If the contract is for less than that amount, depending on the amount, the contract may be executed by the City Manager, an Assistant City Manager, department head or director.
* Special Appendix *

Prequalification

(1) Prequalification Application
PREQUALIFICATION APPLICATION

Request is hereby made to prequalify to bid on the **RFB No. 2019-050**
**WACO SUSPENSION BRIDGE REHABILITATION PROJECT**

Company Name:

By: ____________________________________________

Title: ____________________________________________

Telephone (__) __________ e-Mail__________________________

Date: ____________________________________________

*This form shall be submitted to:*

CITY OF WACO
PURCHASING SERVICES
PO BOX 2570
WACO, TEXAS 76702

**WITH ADDITIONAL ATTACHMENTS, INCLUDING:**

A. Firm history
B. Individuals that visited site or assisted in preparation of prequalification package
C. Resumes and experience of key personnel
D. Organizational chart
E. Description of work to be completed by bidding organization
F. Major subcontractors
G. Construction projects currently under construction
H. Bidding Organization’s similar projects
   Project Manager similar projects
   Site Superintendent similar projects
I. Safety program
J. Lost day accident report
A. GENERAL

1. Organization Doing Business As:

____________________________________________________________

Business Address:

____________________________________________________________

____________________________________________________________

Telephone Number: (___) ______________________________

e-mail: ________________________________________________

Indicate as Applicable:  ☐ Corporation
☐ Partnership
☐ Sole Proprietorship

Principal Office Location:
Address:

____________________________________________________________

____________________________________________________________

Contact Person: __________________________________________
Telephone Number: (___) ______________________________

e-mail: ________________________________________________

2. If a CORPORATION:

Date of Incorporation: ______________________________________
State of Incorporation: ______________________________________
Chief Executive Officer’s Name: ________________________________
President’s Name: _________________________________________
Vice President’s Name(s): _________________________________
Secretary’s Name: _________________________________________
Treasurer’s Name: _________________________________________

3. If a PARTNERSHIP:

Date of organization: ______________________________________
State whether partnership is general or limited: ________________
Name and address of each partner: ____________________________
4. If a SOLE PROPRIETORSHIP:

Name and business address:


5. Provide a brief history of the organization and attach to this form. Label as “Attachment A”. This attachment should include, at a minimum:
   - Parent company name, if applicable
   - Other names Bidding Organization is currently using, or has used in the past (DBAs)
   - Years of experience in the industry

6. Name and title of key individuals from your organization who have visited the site of the work, reviewed the Prequalification package, assisted in preparation of the Prequalification package (other than typing). At a minimum, the following individuals shall be named: Authorized Signatory, Estimator, and Project Manager. If necessary, attached a separate sheet, labeled as “Attachment B”.


7. Is your organization legally qualified to do business in Texas?


8. How many persons are employed full-time by your company?


B. EXPERIENCE & EQUIPMENT

1. Key Personnel Experience: Provide qualifications of the project personnel who will perform key functions. Label as “Attachment C”. Minimum information to be contained on the resume* of each individual, if applicable, shall include: years with Bidding Organization, total years of related technical experience, managerial experience, education, position occupied on each assignment, description of duties on each assignment, professional registration and certification, professional societies and affiliations and number of years of related experience with the organization. The following positions on your project team shall be identified at this time and shall be binding throughout the duration of the project unless otherwise approved by the City of Waco.

   KEY PROJECT PERSONNEL – GENERAL CONTRACTOR
   Principal-in-Charge
   Dedicated Project Manager (committed to, and performing, the work)
   Project Superintendent (Site Superintendent)
   Safety Officer

(*Resumes shall include (1) where person was employed for the last ten years, (2) detailed projects and experience for the last three years, and (3) any information/experience noted in Section VI Request For Bids – Submission & Award Procedures of the Request for Bids)

2. Organizational Experience

   a) How many years has your organization been in business as a construction company under your present business name?

   b) List any other names your organization has, does or anticipates operating under, including the names of related companies presently doing business:
c) How many years of experience in the proposed type and size of construction work has your organization had? __________________________

1) As a General Contractor: __________________________

2) As a Joint Venture Partner: __________________________

3) As a Subcontractor: __________________________

d) Provide a brief description of the structure of your organization with a block schematic diagram (i.e., organizational chart). Include titles and names of key personnel. Label as “Attachment D”.

e) In the past ten years, has any officer or partner of your organization been an officer or partner of some other organization that failed to complete a construction contract? (Include the specific year(s) of the occurrence(s) in your answer.) __________________________

If so, state name of individual, current title, other organization and provide details:

____________________________________________________________________

____________________________________________________________________

f) In the past ten years, has any officer or partner of your organization failed to complete a construction contract for which he was Principal-in-Charge, Project Manager or Project Superintendent? (Include the specific year(s) of the occurrence(s) in your answer.) __________________________

If so, state name of individual, current title and provide details:

____________________________________________________________________

____________________________________________________________________

g) In the past ten years, has your organization failed to complete any work awarded to it? (Include the specific year(s) of the occurrence(s) in your answer.) __________________________

If so, provide details:

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________
h) In the past 10 years, has your organization been released from a bid? (Include the specific year(s) of the occurrence(s) in your answer.)

If so, list the name of the project, owner’s name, address, phone number and state the reasons for each occurrence:


i) Is your organization currently engaged in litigation with respect to any claim regarding contract performance? ________________________________

If so, provide details:


j) In the past ten years, has your organization been assessed liquidated damages? (Include the specific year(s) of the occurrence(s) in your answer.) ________________________________

If so, provide details, including the project name, contact name, phone number and owner’s name, address and phone number:


k) In the past ten years, has your organization had a contract terminated for cause? (Include the specific year(s) of the occurrence(s) in your answer.) ________________________________

If so, provide details:


l) In regards to questions e) through k); have any of these occurred with the City of Waco? If so, provide details about the project; circumstances in which this occurred; and the final outcome or resolution.
m) What percentage of this project do you, as the general contractor, anticipate self-performing?

n) Provide a description of the Work that will be completed by your organization’s own work force for this project. If additional space is needed, label “Attachment E”.

o) Provide a listing of the following major subcontractors that your company proposes to utilize for the requested project. Include their company name, contact information, brief description of proposed services, qualifications, key staff, years in business, and at least three projects with similar work and complexity and scope.
(If additional space is required, include as “Attachment F”. If self-performed, so state.)

- Specialty Engineering Firm(s) – Temporary Works
  *please note: 5 projects required per Plan Sheet G1.1
- Specialty Engineering Firm(s) – Suspension Cable Assemblies
  *please note: 5 projects required per Plan Sheet G1.1
- Steel Structures - Suspension Cable Assemblies - Material & Fab.
- Steel Structures - Suspension Cable Assemblies - Erection
- Driving Piling - Temporary Mid-River Supports
- Drilled Shaft Foundations
- Concrete Reinforcement
- Concrete bridge deck placing and finishing
- Cleaning and Painting Existing Steel Structures (Bridge)
- Concrete Structure Repair
p) What construction projects does your organization currently have under contract? Provide the name and location of each project, name of owner and their construction manager, description of project, the anticipated completion date, contract amount and list of current disputes and/or claims. (If additional space is required, include as “Attachment G”).


q) In what other business(es) does your organization actively participate?


r) Describe at least five (5) major bridge construction or repair projects, with spans of at least 100 feet (each project having a total construction value of at least $1.5 million) that your organization has completed during the last 10 years of the Request for Bids. Label as “Attachment H”. The information for each project shall contain at a minimum:

• Project name and location
• Name, contact, address, telephone number, and email of the owner
• Name of construction manager
• Project cost and description demonstrating similar size as this project.
• Bridge type, approximate age, scope of work, materials used
• Bid completion time; actual completion time; contract price; and general description of change orders and claims.

Fully describe each project. (Note: Listing contact names, addresses, phone numbers, etc., indicates your organization has no objection to these persons and/or organizations being contacted for verification and/or additional information.)

• Include at least three (3) projects that the Project Manager/Site Superintendent has completed within the past 5 years that included temporary bridge support structures.
• Include at least two projects completed within the past 5 years within the State of Texas that demonstrate adherence to TCEQ, USACE, THC, and TDLR rules and regulations.
3. **Equipment**

   a) List the major types of construction equipment your organization would propose to use on the proposed work:

   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________

   b) Which of these items of equipment does your organization own, and state whether or not this equipment will be available when needed for the proposed work?

   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________

   c) List the major items of equipment which your organization would typically lease:

   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________
C. CONTRACTOR’S FINANCIAL STATUS

Attach documentation showing that a bonding company will issue performance and payment bonds to the submitter if the contract is awarded. The bonding company must meet the following standards: complied with the laws and regulations of the U.S. Department of the Treasury under Title 31 U.S.C. 9304-9308 of the United States Code (“T-listing”), and be included as an acceptable surety on federal bonds in the Department of the Treasury’s Listing of Approved Sureties (Department Circular 570).

1. What is your organization’s approximate total bonding capacity?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Approximately what percentage is currently committed to other work?

________________________________________________________________________
________________________________________________________________________

2. What is the name, address, and telephone number of your organization’s primary bonding company?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3. Does your organization intend to use this company as Surety? ________
If not, who does your organization intend to use? Provide Surety’s name, address and telephone number.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
D.  SAFETY RECORD

1. Describe the permanent safety program maintained within your organization. (Provide your organization’s prepared safety statement, program or policy, if available, and label as “Attachment I”).

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. What is the approximate total dollar value of OSHA safety violation citations charged against your organization over the past five years?

________________________________________________________________________

3. Provide specific details for each OSHA citation received within the past five years.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

4. Include a lost day accident report over the last three years for the job site project manager listed in Section B. (If additional space is required, include as “Attachment J”).

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

E.  INSURANCE

Insurance and Indemnification requirements are listed in Appendix B for this Request for Bids. By checking the box below, you certify that you will meet the minimum insurance requirements listed in Appendix B and that, if awarded the contract for the Project, you will provide your Certificate of Insurance to the City of Waco and fulfill all other insurance requirements listed in Appendix B.

☐ I certify the above statement.

F.  AFFIDAVITS

At least one of the following three affidavits must be executed. Any affidavit that is not applicable to your organization should be left blank.
PREQUALIFICATION APPLICATION:
AFFIDAVIT FOR CORPORATION (1)

State of ____________________  §
County of____________________  §

_________________________________________________________________________, being duly sworn deposes and states:

That he/she is ___________________________ of the __________________________, the corporation submitting the foregoing statement of experience and financial condition; that he/she has read the same; and that the same is true and correct.

________________________________________
Signature

__________________________________________________________________________
Signed and sworn to before me this __________ day of, 20________________

________________________________________
Notary Public

My commission expires:_________

Note: Use full corporate name and attach corporate seal.
PREQUALIFICATION APPLICATION:
AFFIDAVIT FOR PARTNERSHIP (2)

State of ____________________ §
County of ____________________ §

________________________________________, being duly sworn deposes and states:

That he/she is __________________________ of the __________________________, the partnership submitting the foregoing statement of experience and financial condition; that he/she has read same; and that same is true and correct.

________________________________________
Signature

________________________________________
Signed and sworn to before me this ______ day of, 20__________

________________________________________
Notary Public
My commission expires:__________

Note: Use full corporate name and attach corporate seal.
PREQUALIFICATION APPLICATION:
AFFIDAVIT FOR SOLE PROPRIETORSHIP (3)

State of _________________ §
County of _________________ §

__________________________________________, being duly sworn and deposes and states:
That he/she the person submitting the forgoing statement of experience and financial
condition; that he/she has read same; and that same is true and correct.

______________________________
Signature

______________________________
Signed and sworn to before me this ______ day of, 20__________

______________________________
Notary Public

My commission expires:__________
APPENDIX A

Services/Products Bid Forms

(1) Pricing Form(s)
(2) Sample Bid Bond Form
NOTE: Depending on unit prices, requirements, and approved budgeted funds, quantities may be reduced or increased during the contract period.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>SUB-TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>BASE BID</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>GENERAL CONDITIONS</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>1</td>
<td>Mobilization</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Traffic Control/Safety Plan</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Traffic Control &amp; Safety Barrier Implementation</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control Plan</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Erosion Control Implementation</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Plan</td>
<td>1</td>
<td>LS</td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>Trench Safety Implementation</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Tree &amp; Sculpture Protection</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sculpture Handling &amp; Transport</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>SUBTOTAL GENERAL CONDITIONS:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>SPECIALTY SITE PREP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Pilings - Temporary Mid-River Supports</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Raising Existing Structures</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>SUBTOTAL SPECIALTY SITE PREP:</strong></td>
<td></td>
<td></td>
<td></td>
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</table>
NOTE: Depending on unit prices, requirements, and approved budgeted funds, quantities may be reduced or increased during the contract period.

### DEMOLITION / PREP RIGHT OF WAY

<table>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Remove Existing Sidewalks &amp; Pavers</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>13</td>
<td>Remove Specified Carpentry from Anchor Houses</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>14</td>
<td>Electrical - Remove all Unused Electrical Components from Anchor Houses</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>15</td>
<td>Remove &amp; Dispose of Bridge Deck</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>16</td>
<td>Remove &amp; Dispose of Bridge Cable</td>
<td>1</td>
<td>LS</td>
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**SUBTOTAL DEMOLITION / PREP RIGHT OF WAY:**

### NEW CONCRETE STRUCTURES & FOUNDATIONS

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>16</td>
<td>Drilled Shaft Foundation (36&quot;) - Main Span Anchorages</td>
<td>82</td>
<td>LF</td>
</tr>
<tr>
<td>17</td>
<td>Drilled Shaft Foundation (36&quot;) - Sway Cable Anchorages</td>
<td>45</td>
<td>LF</td>
</tr>
<tr>
<td>18</td>
<td>Drilled Shaft Foundation (60&quot;) - Main Span Anchorages</td>
<td>188</td>
<td>LF</td>
</tr>
<tr>
<td>19</td>
<td>Concrete Structures - Anchorage Blocks East Bank</td>
<td>2</td>
<td>EA</td>
</tr>
<tr>
<td>20</td>
<td>Concrete Structures - Anchorage Blocks West Bank</td>
<td>2</td>
<td>EA</td>
</tr>
<tr>
<td>21</td>
<td>Concrete Structures – Replace Existing Retaining Wall with Decorative Wall at W. Landing (18” x 40’ x 42” above grade)</td>
<td>300</td>
<td>SF</td>
</tr>
</tbody>
</table>

**SUBTOTAL NEW CONCRETE STRUCTURES & FOUNDATIONS:**

### STEEL STRUCTURES

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Tie Rods (2&quot;) at East Tower Base</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>23</td>
<td>Tie Rods (3/4&quot;) at Tower</td>
<td>32</td>
<td>EA</td>
</tr>
<tr>
<td>24</td>
<td>Tie Rods (5/8&quot;) at Anchor Houses</td>
<td>30</td>
<td>EA</td>
</tr>
<tr>
<td>25</td>
<td>Suspension Cable Assembly - Specialty Engineering</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>26</td>
<td>Suspension Cable Assembly - Material &amp; Fabrication</td>
<td>1</td>
<td>LS</td>
</tr>
</tbody>
</table>
NOTE: Depending on unit prices, requirements, and approved budgeted funds, quantities may be reduced or increased during the contract period.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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<tbody>
<tr>
<td>27</td>
<td>Anchor Rods</td>
<td>812</td>
<td>LF</td>
</tr>
<tr>
<td>28</td>
<td>Suspension Cable Assembly - Erection</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>29</td>
<td>Suspender Rods</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>30</td>
<td>Sway Cables w/ Stays</td>
<td>1,600</td>
<td>LF</td>
</tr>
<tr>
<td>31</td>
<td>Repair &amp; Straighten Ex. Railing</td>
<td>1</td>
<td>LS</td>
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<tr>
<td>32</td>
<td>New Wire Mesh Panels &amp; Kick Rails along Railing</td>
<td>138</td>
<td>EA</td>
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</table>

**SUBTOTAL STEEL STRUCTURES:**

**BRIDGE DECK**

<table>
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<tr>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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<tbody>
<tr>
<td>33</td>
<td>Reinforced Concrete on FRP Formdeck</td>
<td>10,500</td>
<td>SF</td>
</tr>
<tr>
<td>34</td>
<td>Tropical Hardwood Decking</td>
<td>9,700</td>
<td>SF</td>
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**SUBTOTAL BRIDGE DECK:**

**MILLWORK & CARPENTRY**

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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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<tbody>
<tr>
<td>35</td>
<td>Door &amp; Window Restoration</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>36</td>
<td>Roof Hold-Downs</td>
<td>1</td>
<td>LS</td>
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</tbody>
</table>

**SUBTOTAL MILLWORK & CARPENTRY:**

**CONCRETE & MASONRY REPAIR / RESTORATION**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>Concrete Structure Repair - Retaining Wall</td>
<td>100</td>
<td>SF</td>
</tr>
<tr>
<td>38</td>
<td>Concrete Structure Repair - Bearing Corbels</td>
<td>4</td>
<td>EA</td>
</tr>
<tr>
<td>39</td>
<td>Concrete Structure Repair - Tower Encasement</td>
<td>1,000</td>
<td>SF</td>
</tr>
<tr>
<td>40</td>
<td>Masonry Restoration - Grout Injection - Towers</td>
<td>225</td>
<td>LF</td>
</tr>
<tr>
<td>41</td>
<td>Masonry Restoration - Masonry Reconstruction - Towers</td>
<td>225</td>
<td>SF</td>
</tr>
</tbody>
</table>
NOTE: Depending on unit prices, requirements, and approved budgeted funds, quantities may be reduced or increased during the contract period.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Masonry Restoration - Repointing and Crack Repair - Towers</td>
<td>400</td>
<td>SF</td>
</tr>
<tr>
<td>43</td>
<td>Masonry Restoration - Repointing and Crack Repair - Anchor Houses</td>
<td>560</td>
<td>SF</td>
</tr>
<tr>
<td>44</td>
<td>Masonry Restoration - Interior Plaster - Anchor Houses</td>
<td>6,150</td>
<td>SF</td>
</tr>
<tr>
<td>45</td>
<td>Masonry Restoration - Masonry Reconstruction - Anchor Houses</td>
<td>700</td>
<td>SF</td>
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</table>

**SUBTOTAL CONCRETE & MASONRY REPAIR / RESTORATION:**

<table>
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<tr>
<th></th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>Bird Exclusion - Anchor Houses</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>47</td>
<td>Bird Exclusion - Towers</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>48</td>
<td>Standing Seam Roofing - Towers</td>
<td>1,500</td>
<td>SF</td>
</tr>
<tr>
<td>49</td>
<td>Cap at Bottom Chord</td>
<td>830</td>
<td>LF</td>
</tr>
<tr>
<td>50</td>
<td>Cap Between Gussets</td>
<td>230</td>
<td>LF</td>
</tr>
<tr>
<td>51</td>
<td>Cap at Top of Gussets</td>
<td>85</td>
<td>LF</td>
</tr>
<tr>
<td>52</td>
<td>Perforated Decking Toe Board</td>
<td>1,070</td>
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**SUBTOTAL FLASHING & SHEET METAL:**

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<th>Quantity</th>
<th>Unit</th>
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<tr>
<td>53</td>
<td>Bridge - Prep &amp; Paint Ex. Steel</td>
<td>1</td>
<td>LS</td>
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<tr>
<td>54</td>
<td>Towers - Exterior Coating</td>
<td>10,000</td>
<td>SF</td>
</tr>
<tr>
<td>55</td>
<td>Anchor Houses - Exterior Coating</td>
<td>12,000</td>
<td>SF</td>
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**SUBTOTAL PAINTING & COATINGS:**

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<th></th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
<td>Salvage &amp; Reinstall Ex. Bridge Lighting</td>
<td>1</td>
<td>LS</td>
</tr>
</tbody>
</table>
NOTE: Depending on unit prices, requirements, and approved budgeted funds, quantities may be reduced or increased during the contract period.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
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<tbody>
<tr>
<td>57</td>
<td>NEC Corrections</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>58</td>
<td>New Lighting &amp; Controls in 3 Anchor Houses</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>59</td>
<td>Relocate Load Centers - East Anchor Houses</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td></td>
<td><strong>SUBTOTAL ELECTRICAL:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Trench Drain (12&quot;)</td>
<td>70</td>
<td>LF</td>
</tr>
<tr>
<td>61</td>
<td>6&quot; Reinf. Concrete Curb – Monolithic (if needed)</td>
<td>1</td>
<td>LF</td>
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<tr>
<td>62</td>
<td>Standard 5&quot; Reinf. Concrete 4,000 psi Sidewalks</td>
<td>7,800</td>
<td>SF</td>
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<td>63</td>
<td>Scored 5&quot; Reinf. Concrete 4,000 psi Sidewalks</td>
<td>6,900</td>
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<tr>
<td>64</td>
<td>Site Grading</td>
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<td>LS</td>
</tr>
<tr>
<td>65</td>
<td>Revegetation - Sod</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td></td>
<td><strong>SUBTOTAL MISCELLANEOUS SITE CONSTRUCTION:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Cast Aluminum Project Acknowledgment Plaque (32&quot; x 20&quot;)</td>
<td>1</td>
<td>LS</td>
</tr>
<tr>
<td>67</td>
<td>Cast Aluminum Plaques “No Climbing”</td>
<td>44</td>
<td>EA</td>
</tr>
<tr>
<td>68</td>
<td>Project Commemoration Plaques (tbd)</td>
<td>50</td>
<td>Allowance</td>
</tr>
<tr>
<td></td>
<td><strong>SUBTOTAL PAINTING &amp; COATINGS:</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL BASE BID:**
NOTE: Depending on unit prices, requirements, and approved budgeted funds, quantities may be reduced or increased during the contract period.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>SUB-TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADD-ALTERNATE 1: SITE PAVING UPGRADE</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>MISCELLANEOUS SITE CONSTRUCTION</strong></td>
<td></td>
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</tr>
<tr>
<td>69</td>
<td>ADD: Rock-Salt Finish &amp; Integral Color to all scored concrete areas</td>
<td>6,900</td>
<td>SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUBTOTAL ADD ALTERNATE 1:</strong></td>
<td></td>
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<tr>
<td><strong>ADD-ALTERNATE 2: SITE PAVING UPGRADE</strong></td>
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<tr>
<td><strong>MISCELLANEOUS CONSTRUCTION</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>ADD: Inset Sawn Patio Flagstone curvilinear bands, 2&quot; thick, 1&quot; Mortar Setting Bed, 4&quot; reinf. concrete base</td>
<td>1,000</td>
<td>SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUBTOTAL ADD ALTERNATE 2:</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>ADD-ALTERNATE 3: RAILING PANEL UPGRADE</strong></td>
<td></td>
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<td></td>
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<tr>
<td><strong>STEEL STRUCTURES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>RAILING, WIRE MESH INFILL PANEL: Upgrade wire mesh to custom welded diamond mesh 1.5&quot; type 304 SS, 0.105&quot; dia.</td>
<td>138</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUBTOTAL ADD ALTERNATE 3:</strong></td>
<td></td>
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<tr>
<td><strong>ADD-ALTERNATE 4: SITE FURNISHINGS</strong></td>
<td></td>
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<tr>
<td><strong>SPECIALTY ITEMS</strong></td>
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</tr>
<tr>
<td>72</td>
<td>BENCHES: Purchase and install DuMor 58-60-SER steel benches to match existing benches at corner of Uparks &amp; Washington</td>
<td>7</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>RECEPTACLES: Purchase and install DuMor 84-40-DM steel waste receptacles to coordinate with selected benches</td>
<td>5</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUBTOTAL ADD ALTERNATE 4:</strong></td>
<td></td>
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</tbody>
</table>

Contractor acknowledges and agrees that the official TOTAL AMOUNT OF BID is determined by multiplying the unit bid prices by the respective estimated quantities shown in this bid proposal and then totaling all of the extended amounts.

Extended amounts **SHOULD NOT** be rounded up or down. All dollar amounts should be either written legibly or typed. Any mistakes should be rewritten and initialed by the Contractor.

CITY OF WACO
Purchasing Services  
**Pricing Form**

Page 7 of 7  BID NO: 2019-050

BIDDER:___________________________________  DATE:____________________

AUTHORIZED SIGNATURE:____________________________________________

**Price:** Includes all labor, materials, and equipment to complete project.

**Completion time:** 545 calendar days after notice to proceed.

In submitting this bid, I certify:

1. Items bid are in exact accordance with specifications/drawings and other bid documents, etc., unless noted in detail on bidder letterhead and attached to this bid.
2. Prices in this bid have been arrived at independently, without consultation or agreement with any competitor for the purpose of restricting competition.

**Payment Terms:** Net thirty (30) days after receipt of an original invoice unless a _____% early payment discount is offered in ten (10) days.

---

**I WILL USE THE FOLLOWING SUBCONTRACTORS FOR THIS WORK:**

<table>
<thead>
<tr>
<th>SUBCONTRACTOR</th>
<th>TYPE OF WORK</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

FRIM NAME: _______________________

BY: _______________________

TITLE: _______________________

ADDRESS: _______________________


BID BOND

THE STATE OF TEXAS

COUNTY OF__________________________§

KNOW ALL MEN BY THESE PRESENTS, THAT _______________________________________, (hereinafter called the Principal), as Principal, and _______________________________________ (hereinafter called the Surety), as Surety, are bound unto the City of Waco, Texas, a home rule municipal corporation of McLennan County, Texas (hereinafter called Obligee) in the amount ___________________________________________________________________, DOLLARS ($___), which is five percent (5%) of the bid, for the payment whereof said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a Bid to enter into a certain written Contract with Obligee for {enter description of contract below}

_______________________________________________________________________________,

which is scheduled to be opened on ____________________________, 20_____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully, enter into such written Contract, then this obligation shall be void; otherwise to remain in full force and effect.

IT IS EXPRESSLY UNDERSTOOD AND AGREED that if said Principal should withdraw its Bid any time after such Bid is opened and before official rejection of such Bid or, if successful in securing the award thereof, said Principal should fail to enter into the Contract and furnish, if required, satisfactory Performance Bond and Payment Bond, the Obligee, in either of such events, shall be entitled and is hereby given the right to collect the full amount of this Bid Bond as liquidated damages.

The Surety, for value received, hereby stipulates and agrees that the obligation of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Obligee may accept such Bid, and said Surety does hereby waive notice of any such extension.
Bid Bond – Page 2

PROVIDED, further that if any legal action be filed upon this Bond, venue shall lie in McLennan County, Texas.

IN WITNESS WHEREOF, the said Principal and Surety do sign and seal this instrument this __________ day of ________________________, 20______.

ATTEST/WITNESS:

__________________________________  __________________________________
Secretary (if corporation) / Witness Name of Principal - Contractor

(if corporation Corporate Seal)  __________________________________
BY: ______________________________ 
signature

Title: ______________________________

Address: __________________________

__________________________________
ATTEST:

__________________________________  __________________________________
Surety Secretary Name of Surety

(Surety Seal)  __________________________________
BY: ______________________________ 
Attorney-in-Fact signature

_______________________________
Witness to Surety

Address: __________________________

_______________________________

NOTE: Submit an original bid bond and a certified copy of the power of attorney along with full contact information for the Surety. Both the bid bond and the power of attorney should be dated for the same date which is no earlier than three (3) days prior to the scheduled bid opening. If the opening is delayed or rescheduled, Principal and/or Surety may be asked to provide proof that the bid bond executed is still valid.

COMPLETED FORM MUST BE RETURNED WITH BID/PROPOSAL
APPENDIX B
Contract Requirements

(1) City of Waco General Terms and Conditions
(2) General Conditions for Construction Work
(3) Insurance & Indemnification Requirements
(4) Wage Rates
(5) Sales Tax Information
(6) Worker’s Compensation
(7) HB1295 Information Sheet
(8) HB 89 Israel Form, information
(9) Protest Procedure
(10) Sample Contract Form
(11) Sample Payment and Performance Bond Requirements
APPENDIX B.(1)
General Waco Terms and Conditions

(a) **Applicable Law and Venue.** This solicitation and any resulting contract will be governed and construed according to the laws of the State of Texas. The terms and conditions of the contract awarded pursuant to the solicitation are fully performable in McLennan County, Texas and venue for any dispute regarding contract shall be in McLennan County, Texas.

(b) **Arbitration / Mediation.** The City of Waco will not agree to binding or mandatory arbitration or mediation.

(c) **Conflict of Interest.** Vendor agrees to comply with the conflict of interest provisions of the Waco City Charter, Waco Code of Ordinances, and/or state law. Vendor agrees to maintain current, updated disclosure of information on file with the Purchasing Services Division throughout the term of the contract.

(d) **Gratuities.** The City may, by written notice to the Vendor, cancel this contract without liability to the City, if it is determined by the City that gratuities have been offered to any officer or employee of the City with a view toward securing a contract, securing favorable treatment with respect to the awarding, amending, or the making of any determinations in respect to the performance of such a contract. In the event this contract is canceled by City as set forth in this paragraph, the City shall be entitled to recover from Vendor all additional costs incurred by City as a result of the cancellation.

(e) **Unfunded Liability.** City's obligation is payable only and solely from funds available for the purpose of this purchase. Lack of funds shall render this contract null and void to the extent funds are not available and any delivered but unpaid for goods will be returned to Vendor by City. The City will not incur a debt or obligation to pay selected bidder any amounts the City does not have the current funds available to pay, unless the contract includes a provision for the City to appropriate funding for the debt or obligation.

(f) **Advance Payments.** The City will not make advance payments to a selected firm or any third party pursuant to this solicitation or resulting contract.

(g) **Gift of Public Property.** The City will not agree to any terms or conditions that cause the City to lend its credit or grant public money or anything of value to the selected firm.

(h) **Procurement Laws.** The City will not agree to any terms or conditions that cause the City to violate any federal, Texas, or local procurement laws, including its own charter.

(i) **Limitation of Liability.** The City of Waco will not agree to an artificial limitation of liability (e.g. liability limited to contract price or liability capped at an amount actually paid in previous 3 months, etc.) or an artificial statute of limitations (e.g. any lawsuit must be commenced within one year of the event).

(j) **Waiver.** No claim or right arising out of a breach of the contract resulting from this solicitation can be discharged in whole or in part by a waiver or renunciation of the
claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party.

(k) **Right To Assurance.** Whenever one party to this contract in good faith has reason to question the other party's intent to perform, that party may request that the other party give written assurance of his intent to perform. In the event that a request is made and no assurance is given within five (5) days, the requesting party may treat this failure as an anticipatory repudiation of the contract.

(l) **Attorney’s fees; Legal Costs.** The City will not agree to pay the selected firm’s attorney’s fees or other legal costs under any circumstances.

(m) **Advertising.** Vendor shall not advertise or publish, without City's prior consent, the fact that City has entered into this contract, except to the extent necessary to comply with proper requests for information from an authorized representative of the federal, state or local government.

(n) **Arrears In Taxes.** Article VII. Taxation, Section 8, of the City of Waco Home Rule Charter states: The City shall be entitled to counterclaim and offset against any debt, claim, demand or account owed by the City to any person, firm or corporation who is in arrears to the City of Waco for taxes, in the amount of taxes so in arrears, and no assignment or transfer of such debt, claim, demand or account after the said taxes are due, shall affect the right of the City to offset the said taxes against the same.

(o) **Tax Certification; Offset of Other Debts Against City.** Selected bidder hereby certifies that it is not delinquent in the payment of taxes owed to the City and will pay any taxes owed to the City so that such taxes will not become delinquent. If this certification is subsequently determined to be false, such false certification shall constitute grounds for termination of the contract awarded under this SOLICITATION, at the option of City. Furthermore, Selected bidder agrees the City is entitled to counterclaim and offset against any debt, claim, demand, or account owed by the City to the selected bidder, pursuant to the awarded contract, for any debt, claim, demand, or account owed to the City, including other than the taxes mentioned above. The City may withhold from payment under the awarded contract an amount equal to the total amount of debts, claims, accounts, or demands including taxes owed to the City by the selected bidder. The City may apply the amount withheld to the debts and taxes owed to the City by the selected bidder until said debts are paid in full. No assignment or transfer of such debt, claim, demand or account after the said taxes or debts are due shall affect the right of the City to offset the taxes and the debt against the same.

(p) **Independent Contractor.** The selected bidder will be an independent contractor under the contract. Professional services provided by the selected bidder shall be by the employees or authorized subcontractors of the selected bidder and subject to supervision by the selected bidder, and not as officers, employees or agents of the City. Selected bidder will be required and agrees to comply with all state and federal employment laws as well as all other federal, state and local laws, rules and regulations affecting the performance of all obligations taken herein.
(q) **No Joint Enterprise/Joint Venture.** It is not the intent of this solicitation or the contract to be awarded to create a joint enterprise or joint venture.

(r) **Subcontracting Bid.** If subcontracting with another company or individual is proposed, that fact, along with providing the same information for the subcontractor that is required to be provided by the bidder under this solicitation, must be provided and clearly identified in the bid. Following the award of the contract, no additional subcontracting will be permitted without the express prior written consent of the City.

(s) **Assignment-Delegation.** No right or interest in the contract shall be assigned or delegation of any obligation made by Vendor without the written permission of the City. Any attempted assignment or delegation by Vendor shall be wholly void and totally ineffective for all purposes unless made in conformity with this paragraph.

(t) **Modifications:** This contract can be modified or rescinded only by a written instrument signed by both of the parties or their duly authorized agents.

(u) **Interpretation-Parol Evidence:** This writing is intended by the parties as a final expression of their agreement and is intended also as a complete agreement for dealings between the parties and no usage of the trade shall be relevant to supplement or explain any term used in this agreement. Acceptance or acquiescence in a course of performance rendered under this agreement shall not be relevant to determine the meaning of this agreement even though the accepting or acquiescing party has knowledge of the performance and opportunity for objection.

(v) **Equal Employment Opportunity:** Vendor agrees that during the performance of its contract it will:

1. Treat all applicants and employees without discrimination as to race, color, religion, sex, national origin, marital status, age, or handicap.
2. Identify itself as an "Equal Opportunity Employer" in all help wanted advertising or request. The Vendor shall be advised of any complaints filed with the City alleging that Vendor is not an Equal Opportunity Employer. The City reserves the right to consider its reports from its human relations administrator in response to such complaints in determining whether or not to terminate any portion of this contract for which purchase orders or authorities to deliver have not been included, however, the Vendor is specifically advised that no Equal Opportunity Employment complaint will be the basis for cancellation of this contract for which a purchase order has been issued or authority to deliver granted.

(w) **Israel:** Vendor acknowledges that effective September 1, 2017, the City is required to comply with Section 2270.001 of the Texas Government Code, enacted by House Bill 89 (85th (R) Texas Legislature), which requires that a governmental entity may not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that it does not boycott Israel and will not boycott Israel during the term of the contract. By executing this Agreement, Vendor verifies that it does not boycott Israel and will not boycott Israel during the term of this Agreement.
The “City of Waco Standard Specifications for Construction” (2013 Edition), hereinafter referred to as City Standard Specifications, is incorporated herein by reference for all intents and purposes. The General Provisions of the City Standard Specifications include provisions related to the administration of the contract. If a provision of the City Standard Specifications conflicts with a provision in this solicitation, the provision in this solicitation controls. If the applicable provision is still unclear, the City Manager for the City of Waco, or his designee, will determine which provisions, specification or standard controls and his determination shall be final.

The City Standard Specifications may be obtained by accessing the City of Waco website at www.waco-texas.com and going to Bid Opportunities – Engineering Services. It may also be obtained by contacting the City of Waco Public Works Department at 254-750-5440.

(a) **Permits and Fees:** All permitting fees from the City will be waived on construction projects. The contractor will still need to apply for all applicable permits. However, there will be no cost associated with issuance of City permits.

(b) **Time of Completion and Liquidated Damages:** Completing the work described in this solicitation in a timely manner is very important to the City of Waco. Submitter must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the City and to fully complete the project within the time stated in the contract documents. As it is impracticable and extremely difficult to fix the actual damages, if any, that may proximately result from a failure by Submitter to perform the service, should Submitter fail to complete the project within the calendar days specified in the contract, Submitter agrees to pay to City, or have withheld from monies due it, the amount stated in the contract documents as liquidated damages for each calendar day of delay or nonperformance. Any sums due and payable hereunder by the Submitter shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the City, estimated at the time of executing this Contract. Execution of a contract for this Project shall constitute agreement by the City and Submitter that said amount is the minimum value of the costs and actual damage caused by the failure of the Submitter to complete the Project within the allotted time. A sum due as liquidated damages may be deducted from payments due the Contractor if such delay occurs. Adjustments to the contract times can only be made as provided in the contract documents and any conditions or specifications referenced therein.
(c) **Conditions of Work:** While the City is issuing a solicitation including specifications, each Submitter is still responsible for examining all of the issued documents, attending any pre-bid conference, making a site visit, and taking whatever steps are necessary to inform itself of the conditions relating to the project and the employment of labor thereon. Each Submitter must inform itself of the conditions relating to the project and the employment of labor thereon. Failure to do so will not relieve the Submitter awarded this contract of its obligation to furnish all material and labor necessary to carry out the provisions of the contract. Insofar as possible, the Selected Firm, in carrying out the Project, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

(d) **Employment Conditions/Requirements:** Submitters shall pay particular attention to the required employment conditions that must be observed and the minimum wage rates to be paid. If federal or state funds are involved in paying for the work, there may be additional requirements that must be followed to comply with the terms of the federal or state funding.

(e) **Price Discrepancy.** In the case of a discrepancy between the unit price and the extended total for a bid item, the unit price will prevail. The unit prices of bids that have been opened may not be changed for the purpose of correcting an error in the bid price.

(f) **Security for Faithful Performance [Payment and Performance Bonds]:** Simultaneously with his delivery of the executed contract, the Selected Firm shall furnish the required surety bonds as security for faithful performance of this contract (Performance Bond) and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract (Payment Bond), as specified in the documents included herein. For public works contracts, state law requires a Performance Bond if the contract is for an amount in excess of $100,000.00 and a Payment Bond if the contract is for an amount in excess of $50,000.00. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the City. The surety who signs contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

(g) **Force Majeure:** In the event performance by the Selected Firm of its obligations under this Agreement shall be interrupted or delayed by or as a consequence of a fire, flood, severe weather, or other act of God, war, insurrection, civil disturbance, or act of state, the Selected Firm shall be excused from such performance for the period of time such occurrence shall have lasted or such period as is reasonably necessary to rebuild or take other action necessary to resume performance. The period of time reasonably necessary to rebuild or take other action necessary to resume performance shall be as determined by the agreement of the parties, which agreement shall be negotiated and arrived at in good faith. The Selected Firm shall notify the Contact Person or Contract Administrator of any matter covered above, the occurrence of which interferes or threatens to interfere with the performance of any of its
obligations under the bid. Upon such notice, the Selected Firm and the City shall consult and cooperate as to measures which may be taken to overcome the interference or as to alternative measures which may be undertaken by the parties with a view to the continued performance of the bid agreement.

(h) **Right to Assurance:** Whenever one party to this contract in good faith has reason to question the other party's intent to perform, the questioning party may demand the other party give written assurance of its intent to perform. In the event that a demand is made, and no assurance is given within five (5) days, the demanding party may treat this failure as an anticipatory repudiation of the contract.

(i) **Invoice Submittal Procedures:** If invoices are submitted or otherwise used pursuant to the bid awarded under this solicitation, the Selected Firm shall present invoices to the City in the following form and content:

1. Each invoice must reference the City of Waco contract, agreement or Purchase Order number;
2. Only one contract, agreement, or project shall be billed on a particular invoice;
3. Only one invoice per every thirty (30) days per contract, agreement, or project may be submitted; and
4. Each invoice must have a billing number, which reflects in sequence the number of invoices that have been submitted on the contract, agreement, or project.

The invoice requirements stated herein shall not be read to disallow or exclude other information that may be otherwise required or requested by the City. Such information required herein must be submitted only on an invoice and not in any other non-invoice form or document.

(j) **Termination of Contract:** Except as provided elsewhere in the contract documents:

1. The City may terminate the contract for cause for Selected Firm’s failure to perform work, non-adherence to established federal, state and/or local laws, or a violation of any of the contract provisions. Upon written termination, the City may exclude the Selected Firm from the Project site and pursue any remedies available to the City.
2. Upon ten (10) days written notice, City may terminate the contract for convenience, for any reason. In such case, the Selected Firm shall be paid, without duplication, for completed and acceptable work and expenses, including reasonable overhead and profit, and for other reasonable expenses directly attributable to the termination. In no case shall the Selected Firm be paid for anticipated profits or other consequential damages. Upon receipt of written notice, the Selected Firm shall have a duty to mitigate its termination costs and shall not incur additional costs unrelated to the costs directly related to either securing completed work or winding down the Project.
Israel: Vendor acknowledges that effective September 1, 2017, the City is required to comply with Section 2270.001 of the Texas Government Code, enacted by House Bill 89 (85th (R) Texas Legislature), which requires that a governmental entity may not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that it does not boycott Israel and will not boycott Israel during the term of the contract. By executing this Agreement, Vendor verifies that it does not boycott Israel and will not boycott Israel during the term of this Agreement.
Insurance Requirements:

A contractor’s financial integrity is of interest to the City. Therefore, subject to a contractor’s right to maintain reasonable deductibles, a contractor shall obtain and maintain in full force and effect for the duration of the contract, and any extension hereof, at contractor’s sole expense, insurance coverage written on an occurrence basis (with exception of professional liability which may be on a claims-made basis) by companies authorized to do business in the State of Texas that are rated A- or better by A.M. Best Company and/or otherwise acceptable to the City in the following types and amounts:

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Workers’ Compensation</td>
<td>Statutory</td>
</tr>
<tr>
<td>• Include USL&amp;H</td>
<td></td>
</tr>
<tr>
<td>Employer’s Liability</td>
<td>$1,000,000/$1,000,000/$1,000,000</td>
</tr>
<tr>
<td>Commercial General Liability</td>
<td>$1,000,000 per occurrence; $2,000,000</td>
</tr>
<tr>
<td>Including:</td>
<td>General Aggregate, or its equivalent in</td>
</tr>
<tr>
<td>• Premises/Operations</td>
<td>Umbrella or Excess Liability Coverage.</td>
</tr>
<tr>
<td>• Independent Contractors</td>
<td>Aggregate on a Per Project basis.</td>
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<tr>
<td>• Products Liability/Completed Operations</td>
<td></td>
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<tr>
<td>• Personal &amp; Advertising Injury</td>
<td></td>
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<tr>
<td>• Broad form property damage, to include</td>
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<tr>
<td>fire legal liability</td>
<td></td>
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<tr>
<td>• Contractual Liability</td>
<td></td>
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<tr>
<td>• Primary and Non-Contributing</td>
<td></td>
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<tr>
<td>• XCU</td>
<td></td>
</tr>
<tr>
<td>• Riggers Liability</td>
<td></td>
</tr>
<tr>
<td>• Pollution / Environmental Liability</td>
<td></td>
</tr>
<tr>
<td>Business Automobile Liability</td>
<td>$1,000,000 per occurrence or its equivalent</td>
</tr>
<tr>
<td>a. Owned/leased vehicles</td>
<td>on a combined single limit (CSL basis).</td>
</tr>
<tr>
<td>b. Non-owned vehicles</td>
<td></td>
</tr>
<tr>
<td>c. Hired vehicles</td>
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<tr>
<td>d. Primary and Non-Contributing</td>
<td></td>
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<tr>
<td>e. CA 9948 Pollution Liability – or equivalent</td>
<td></td>
</tr>
<tr>
<td>Umbrella Liability (follow forms)</td>
<td>$10,000,000 Each Occurrence / Aggregate</td>
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<tr>
<td>• General Liability</td>
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</tr>
<tr>
<td>• Automobile Liability</td>
<td></td>
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<tr>
<td>• Employers Liability</td>
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<tr>
<td>All Risk Builder’s Risk</td>
<td>Amount of the contact or replacement</td>
</tr>
<tr>
<td>• Including Flood and Earthquake</td>
<td>value of the facility.</td>
</tr>
<tr>
<td>• City as named insured or additional insured</td>
<td></td>
</tr>
<tr>
<td>• Replacement Cost</td>
<td></td>
</tr>
</tbody>
</table>
### Term of Policy:
With regard to any approved claims-made policy form, a contractor shall maintain and keep in force and effect said coverage during the term of this contract and for a period of seven (7) years following the expiration or completion of the contract with the City, either through an existing carrier or a carrier of comparable financial statute and reputation.

Unless otherwise agreed to in the contract documents, Builders Risk coverage can be terminated at the time that the City accepts the structure as substantially complete, unless the project is being completed in phases; then the coverage shall remain in effect until the City accepts the entire structure or structures as substantially complete.

### Modification of Insurance Requirement:
The City reserves the right to review these insurance requirements during the effective period of the contract and any extension or renewal hereof and to modify insurance coverages and their limits when deemed necessary and prudent by City’s Risk Manager or designee, based upon changes in statutory law, court decisions, or circumstances surrounding this contract.

### Proof of Insurance Required and When to Submit:

**Examination & Approval.** All insurance policies shall be subject to the examination and approval of the City for their adequacy as to form and content, form of protection, and financial status of insurance company.

**When to Submit.** Prior to the execution of the contract by the City of Waco and before commencement of any work under this contract, a contractor shall furnish original proof of insurance to the City’s Risk Manager which is clearly labeled with the contract name and City department. The proof will include completed/current Certificate(s) of Insurance, endorsements, exclusions, and/or relevant extracts from the insurance policy, or copies of policies. Thereafter, new certificates, policy endorsements, exclusions, and/or relevant extracts from insurance policies, or policies shall be provided prior to the expiration date of any prior certificate, endorsement, or policy. No officer or employee other than the City’s Risk Manager or designee shall have authority to waive this requirement.

**Additional Insured.** Except for Workers’ Compensation and Employers’ Liability, the City, its elected officials, officers, servants, agents, volunteers and employees shall be named as additional insureds. No officer or employee, other than the City Risk Manager or designee, shall have authority to waive this requirement.

**Other-Insurance Endorsement** -- All insurance policies are to contain or be endorsed to state that an “Other Insurance” clause shall not apply to the City where the City is an additional insured shown on the policy.

**Agent Information.** The certificate(s) or other proof of insurance must be completed by the broker of record and must be signed and include the agent information including the agent name, title and phone number. The proof of insurance shall be sent directly from the insurance agent to the City’s Risk Management Office by U.S. Postal Service to City of Waco, ATTN: Risk Manager, P.O. Box 2570, Waco, Texas 76702-2570 or by delivery service to 1415 North 4th Street, Waco, Texas 76707. To
Precondition to Performance & Basis for Termination. The City shall have no duty to pay or perform under the contract until such certificate(s), policy endorsements, exclusions, and/or relevant extracts from the insurance policy have been delivered to and approved by the City’s Risk Manager. The contractor understands that it is the contractor’s sole responsibility to provide this necessary information to the City and that failure to timely comply with these insurance requirements shall be a cause for termination of a contract. If the City determines that it will deny payment, not perform, or terminate the contract because of the failure to provide certain information or documents, the City shall give the contractor notice of that determination and allow contractor fifteen (15) days to correct the deficiency.

Waiver of Subrogation. All liability policies will provide a waiver of subrogation in favor of the City.

Notice of Cancellation, Non-renewal, Material Change. The Contractor shall provide written notification to the City of the cancellation, non-renewal, or material change of any insurance required herein. The Contractor shall provide such written notice within five (5) business days of the date the Contractor is first aware of the cancellation, non-renewal, or material change, or is first aware that the cancellation, non-renewal, or material change is threatened or otherwise may occur, whichever comes first. Contractor shall provide the City with a replacement certificate(s) of insurance, policy endorsements, exclusions, and/or relevant extracts from the insurance policy either before the cancellation, non-renewal, or material change is effective, if it knew in advance of such, or within ten (10) business days of first learning of the cancellation, non-renewal, or change if it did not learn of that such action in advance.

INDEMNIFICATION.

A CONTRACTOR EXECUTING A CONTRACT WITH THE CITY AGREES TO ASSUME FULL RESPONSIBILITY AND LIABILITY FOR THE SERVICES RENDERED PURSUANT TO THE CONTRACT AND AGREES TO INDEMNIFY, PROTECT, DEFEND, AND HOLD HARMLESS THE CITY, ITS EMPLOYEES, AGENTS, AND SERVANTS, OF AND FROM ALL CLAIMS, DEMANDS, AND CAUSES OF ACTIONS OF EVERY KIND AND CHARACTER, INCLUDING THE COST OF DEFENSE THEREOF, FOR ANY INJURY TO, INCLUDING DEATH OF, PERSONS AND ANY LOSSES FOR DAMAGES TO PROPERTY CAUSED BY OR ALLEGED TO BE CAUSED, ARISING OUT OF, OR ALLEGED TO ARISE OUT OF, EITHER DIRECTLY OR INDIRECTLY, OR IN CONNECTION WITH, THE SERVICES TO BE RENDERED HEREUNDER, WHETHER OR NOT SAID CLAIMS, DEMANDS, CAUSES OF ACTIONS ARE CAUSED BY CONCURRENT NEGLIGENCE OF THE CITY AND A PARTY TO THIS AGREEMENT, OR WHETHER IT WAS CAUSED BY CONCURRENT NEGLIGENCE OF THE CITY AND SOME OTHER THIRD PARTY.

Employee Litigation: In any and all claims against any party indemnified hereunder by any employee (or the survivor or personal representative of such employee) of the contractor, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the work, or anyone for whose acts any of them may be liable, the indemnification obligation herein shall not be limited in any way by any limitation on the amount or type of damages,
compensation, or benefits payable by or for contractor or any such subcontractor, supplier, or other individual or entity under workers’ compensation or other employee benefit acts.
Prevailing Wage Rates Information

Texas Government Code Chapter 2258 requires a worker employed by a contractor or subcontractor in the execution of a contract for the public work by or on behalf of political subdivision of the state to be paid a prevailing wage rate.

Definition of “public work.” A public work to which this provision applies includes but is not limited to construction of a building, highway, road, excavation, and repair work or other project development or improvement, paid for in whole or in part from public funds, without regard to whether the work is done under public supervision or direction. It does not apply to work done directly by a public utility company under an order of a public authority. Whether this Project is a public work shall be determined by the City, and such determination shall be provided in writing to the Contractor before the opening of bids.

Worker wage rate. Contractor agrees, covenants, and guarantees that it and its subcontractor(s) constructing this Project, if a public work, shall pay their workers, other than maintenance workers, employed on this Project:

1. not less than the general prevailing rate of per diem wages for work of a similar character performed within the geographical limits of the City; and
2. not less than the general prevailing rate of per diem wages for legal holiday and overtime work.

"Worker employed on a public work" defined. A worker is employed on a public work for the purposes of this provision if the worker, including a laborer or mechanic, is employed by a contractor or subcontractor in the execution of a contract for a public work with the City, or any officer of the City, or the City Council of the City of Waco.

Determination of prevailing wage rate. The City Council of the City of Waco shall determine the general prevailing rate of per diem wages to be paid for each craft or type of worker needed to construct the Project by:

1. conducting a survey of the wages received by classes of workers employed on public works of a character similar to the contract work in the geographical limits of the City in which this public work is to be performed; or
2. using the prevailing wage rate as determined by the United States Department of Labor in accordance with the Davis-Bacon Act (40 U.S.C. Section 276a et seq.) if the survey used to determine that rate was conducted within a three-year period preceding the date the City Council of the City of Waco issues invitations for bids for this public work.

Sum certain of prevailing wage rate. The City Council shall determine the general prevailing rate of per diem wages as a sum certain, expressed in dollars and cents.

Wage rates incorporated in agreement and in invitation to bid. The prevailing wage rate to be paid for each craft or type of worker needed to construct the public work shall be specified in the invitation to bid for this Project and is incorporated by reference herein.
**Determination final.** The City Council’s determination of the general prevailing rate of per diem wages is final.

**Penalty.** A contractor or subcontractor who violates this provision shall pay to the City sixty dollars ($60) for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the invitation to bid and this contract. The City Council shall use any money collected under this provision to offset the costs incurred in the administration of this provision. A contractor or subcontractor does not violate this provision if the City Council, in awarding the bid for this contract, does not determine the prevailing wage rates and specify the rates in the invitation to bid and in this contract.

**Maintenance of wage record.** Contractor agrees, covenants, and guarantees that it and its subcontractor(s) shall keep a record showing:

1. the name and occupation of each worker employed by the contractor(s) and subcontractor(s) in the construction of this public work; and
2. the actual per diem wages paid to each worker.

**Inspection of wage record.** The record shall be open at all reasonable hours to inspection by the officers and agents of the City.

**Payment greater than prevailing rate not prohibited.** This provision does not prohibit the payment to a worker employed on a public work an amount greater than the general prevailing rate of per diem wages.

**Reliance on certificate of subcontractor.** The contractor awarded this bid is entitled to rely on a certificate by a subcontractor regarding the payment of all sums due those working for the subcontractor until the contrary has been determined.

**Duty of City to hear complaints and withhold payment.** The City Council shall:

1. take cognizance of complaints of all violations of this provision committed in the execution of the construction of this public work; and
2. withhold money forfeited or required to be withheld under this provision from the payments to the contractor(s) under the bid contract, except that the City may not withhold money from other than the final payment without a determination by the City Council that there is good cause to believe that the contractor has violated this provision.

**Complaint; initial determination.** The City Council shall comply with Sections 2258.023 and 2258.056, Government Code, in the initial determination of a complaint presented pursuant to this provision.

For the purposes of this Project, the general prevailing rate of per diem wages are the wage the rates set forth on the following page(s).
General Decision Number: TX20190007 01/04/2019

Superseded General Decision Number: TX20180016

State: Texas

Construction Types: Heavy and Highway

Counties: Atascosa, Bandera, Bastrop, Bell, Bexar, Brazos, Burleson, Caldwell, Comal, Coryell, Guadalupe, Hays, Kendall, Lampasas, McLennan, Medina, Robertson, Travis, Williamson and Wilson Counties in Texas.

HEAVY (excluding tunnels and dams, not to be used for work on Sewage or Water Treatment Plants or Lift / Pump Stations in Bell, Coryell, McLennon and Williamson Counties) and HIGHWAY Construction Projects

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 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 calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least
the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number     Publication Date
0     01/04/2019

* SUTX2011-006 08/03/2011

Rates Fringes

CEMENT MASON/CONCRETE
FINISHER (Paving and Structures)......................$ 12.56

ELECTRICIAN......................$ 26.35

FORM BUILDER/FORM SETTER
Paving & Curb.................$ 12.94
Structures.................$ 12.87

LABORER
Asphalt Raker...............$ 12.12
Flagger.......................$ 9.45
Laborer, Common.............$ 10.50
Laborer, Utility............$ 12.27
Pipelayer.....................$ 12.79
Work Zone Barricade
Serivcer...................$ 11.85

PAINTER (Structures)..............$ 18.34

POWER EQUIPMENT OPERATOR:
Agricultural Tractor..............$ 12.69
Asphalt Distributor..............$ 15.55
Asphalt Paving Machine...........$ 14.36
Boom Truck......................$ 18.36
Broom or Sweeper................$ 11.04
Concrete Pavement
Finishing Machine...............$ 15.48
Crane, Hydraulic 80 tons
or less..........................$ 18.36
Crane, Lattice Boom 80
tons or less....................$ 15.87
Crane, Lattice Boom over
80 tons..........................$ 19.38
Crawler Tractor..................$ 15.67
Directional Drilling
Locator..........................$ 11.67
Directional Drilling
Operator.........................$ 17.24
Excavator 50,000 lbs or
Less..............................$ 12.88
Excavator over 50,000 lbs.....$ 17.71
Foundation Drill, Truck
Mounted.........................$ 16.93
Front End Loader, 3 CY or
Less..............................$ 13.04
Front End Loader, Over 3 CY...$ 13.21
Loader/Backhoe...................$ 14.12
Mechanic........................$ 17.10
Milling Machine..................$ 14.18
Motor Grader, Fine Grade......$ 18.51
Motor Grader, Rough...........$ 14.63
Pavement Marking Machine....$ 19.17
Reclaimer/Pulverizer........$ 12.88  
Roller, Asphalt...............$ 12.78  
Roller, Other...............$ 10.50  
Scraper......................$ 12.27  
Spreader Box................$ 14.04  
Trenching Machine, Heavy....$ 18.48  
Servicer......................$ 14.51  
Steel Worker  
  Reinforcing..................$ 14.00  
  Structural..................$ 19.29  
TRAFFIC SIGNAL INSTALLER  
  Traffic Signal/Light Pole  
  Worker ......................$ 16.00  
TRUCK DRIVER  
  Lowboy-Float................$ 15.66  
  Off Road Hauler...............$ 11.88  
  Single Axle..................$ 11.79  
  Single or Tandem Axle Dump  
  Truck ......................$ 11.68  
  Tandem Axle Tractor w/Semi  
  Trailer ......................$ 12.81  
WELDER  
  WELDERS - Receive rate prescribed for craft performing  
  operation to which welding is incidental.  
  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 www.dol.gov/whd/govcontracts.

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 Regional Office for the area in which the survey was conducted because those Regional Offices have 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.

================================================================
END OF GENERAL DECISION
"
TEXAS SALES TAX EXEMPTION INFORMATION

This information is being provided to assist contractors and is therefore general in nature. It is not a substitute for advice from the contractor’s attorney or accountant.

Under the Texas Tax Code Section 151.309, the City of Waco is exempt from the payment of sales tax. In addition, when the City contracts with a third party to make certain improvements to real property, purchases of materials/consumable items that are physically incorporated into that real property may also exempt from state and local sales tax. Items qualifying for this exemption must be used entirely on a job for the City of Waco.

To claim this exemption, a contractor who has a Texas Taxpayer Number (the number on their Texas Sales and Use Tax Permit number) can complete the Texas Sales and Use Tax Resale Certificate (front side of Form 01-339) and provide it to the vendor from whom the contractor is purchasing materials and supplies for use under a contract with the City of Waco. The form is available on the Texas Comptroller website at:

http://www.window.state.tx.us/taxinfo/taxforms/01-forms.html
or
http://www.window.state.tx.us/taxinfo/taxforms/01-339.pdf

A copy of a blank form has been attached for your convenience. In completing the exemption form (01-339 front) when purchasing materials and supplies, a contractor will:

1. List itself (the contractor) as the purchaser and complete required information;
2. Fill in the name and required information about the seller;
3. Describe the item being purchased or attached order or invoice – the only items included must be items that will be entirely consumed or used in the project for the City of Waco – might include statement that purchase is related to contract with City of Waco, Texas, for Project {description, e.g., New Street sewer lien project};
4. Describe the type of business activity generally engaged in by purchaser or type of items normally sold by the purchaser

Since the City of Waco is a governmental entity, the contract or purchase order with the City provides the necessary documentation that the materials are acquired for an exempt contract [See 34 TAC §3.291(c)(1)]. However, if requested, the City of Waco will provide to the contractor awarded the contract an executed exemption certification showing that the city is exempt from sales tax (Form 01-339 back).

The state statutes and rules related to sales tax can be accessed from the Texas Comptroller website:  http://www.window.state.tx.us/taxinfo/sales/
In addition, the Texas Comptroller’s office can be contacted at 1-800-252-555 for questions about Sales and Use Taxes.

State statutes regarding sales tax can be found in Texas Tax Code Chapter 151 at:
http://www.statutes.legis.state.tx.us/Docs/TX/htm/TX.151.htm

Rules related to sales tax in the Texas Administrative Code can be found at:
http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=5&ti=34&pt=1&ch=3&sch=0&rl=Y
Texas Sales and Use Tax Resale Certificate

<table>
<thead>
<tr>
<th>Name of purchaser, firm or agency as shown on permit</th>
<th>Phone (Area code and number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address (Street &amp; number, P.O. Box or Route number)</td>
<td></td>
</tr>
<tr>
<td>City, State, ZIP code</td>
<td></td>
</tr>
<tr>
<td>Texas Sales and Use Tax Permit Number (must contain 11 digits)</td>
<td></td>
</tr>
<tr>
<td>Out-of-state retailer's registration number or Federal Taxpayers Registry (RFC) number for retailers based in Mexico</td>
<td>(Retailers based in Mexico must also provide a copy of their Mexico registration form to the seller.)</td>
</tr>
</tbody>
</table>

I, the purchaser named above, claim the right to make a non-taxable purchase (for resale of the taxable items described below or on the attached order or invoice) from:

Seller: ____________________________________________

Street address: ______________________________________

City, State, ZIP code: ________________________________

Description of items to be purchased on the attached order or invoice:

_____________________________________________________________________________________________
_____________________________________________________________________________________________
_____________________________________________________________________________________________
_____________________________________________________________________________________________

Description of the type of business activity generally engaged in or type of items normally sold by the purchaser:

_____________________________________________________________________________________________
_____________________________________________________________________________________________

The taxable items described above, or on the attached order or invoice, will be resold, rented or leased by me within the geographical limits of the United States of America, its territories and possessions or within the geographical limits of the United Mexican States, in their present form or attached to other taxable items to be sold.

I understand that if I make any use of the items other than retention, demonstration or display while holding them for sale, lease or rental, I must pay sales tax on the items at the time of use based upon either the purchase price or the fair market rental value for the period of time used.

_I understand that it is a criminal offense to give a resale certificate to the seller for taxable items that I know, at the time of purchase, are purchased for use rather than for the purpose of resale, lease or rental, and depending on the amount of tax evaded, the offense may range from a Class C misdemeanor to a felony of the second degree._

<table>
<thead>
<tr>
<th>Purchaser</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>

This certificate should be furnished to the supplier.

_Do not send the completed certificate to the Comptroller of Public Accounts._
Texas Sales and Use Tax Exemption Certification

This certificate does not require a number to be valid.

<table>
<thead>
<tr>
<th>Name of purchaser, firm or agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address (Street &amp; number, P.O. Box or Route number)</td>
</tr>
<tr>
<td>City, State, ZIP code</td>
</tr>
</tbody>
</table>

I, the purchaser named above, claim an exemption from payment of sales and use taxes (for the purchase of taxable items described below or on the attached order or invoice) from:

Seller: ____________________________________________

Street address: __________________________ City, State, ZIP code: __________________________

Description of items to be purchased or on the attached order or invoice:

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

Purchaser claims this exemption for the following reason:

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

I understand that I will be liable for payment of all state and local sales or use taxes which may become due for failure to comply with the provisions of the Tax Code and/or all applicable law.

I understand that it is a criminal offense to give an exemption certificate to the seller for taxable items that I know, at the time of purchase, will be used in a manner other than that expressed in this certificate, and depending on the amount of tax evaded, the offense may range from a Class C misdemeanor to a felony of the second degree.

<table>
<thead>
<tr>
<th>Purchaser</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>

NOTE: This certificate cannot be issued for the purchase, lease, or rental of a motor vehicle. **THIS CERTIFICATE DOES NOT REQUIRE A NUMBER TO BE VALID.**

Sales and Use Tax "Exemption Numbers" or "Tax Exempt" Numbers do not exist.

This certificate should be furnished to the supplier. **Do not** send the completed certificate to the Comptroller of Public Accounts.
Workers’ Compensation Coverage Information

The City of Waco, a State of Texas Governmental Entity and Municipality, is required to comply with the Texas Labor Code. Specifically Texas Labor Code – Section 406.096 directs Contractors who enter into a building or construction Contract with a Municipality to certify in writing that (1) the contractor provides workers’ compensation insurance coverage for each employee of the contractor employed on public projects, and (2) the contractor receive a certificate from each subcontractor showing that every employee of the subcontractor is covered by workers’ compensation insurance. Texas Labor Code – Section 406.096 states:

Sec. 406.096. REQUIRED COVERAGE FOR CERTAIN BUILDING OR CONSTRUCTION CONTRACTORS.

(a) A governmental entity that enters into a building or construction contract shall require the contractor to certify in writing that the contractor provides workers’ compensation insurance coverage for each employee of the contractor employed on the public project.

(b) Each subcontractor on the public project shall provide such a certificate relating to coverage of the subcontractor’s employees to the general contractor, who shall provide the subcontractor’s certificate to the governmental entity.

(c) A contractor who has a contract that requires workers’ compensation insurance coverage may provide the coverage through a group plan or other method satisfactory to the governing body of the governmental entity.

(d) The employment of a maintenance employee by an employer who is not engaging in building or construction as the employer’s primary business does not constitute engaging in building or construction.

(e) In this section:

(1) "Building or construction" includes:

(A) erecting or preparing to erect a structure, including a building, bridge, roadway, public utility facility, or related appurtenance;

(B) remodeling, extending, repairing, or demolishing a structure; or

(C) otherwise improving real property or an appurtenance to real property through similar activities.

(2) "Governmental entity" means this state or a political subdivision of this state. The term includes a municipality.

Acts 1993, 73rd Leg., ch. 269, Sec. 1, eff. Sept. 1, 1993.

28 Texas Administrative Code Section 110.110(c)(7) follows:
Texas Administrative Code Title 28 Section 110.110(c)(7) requires the following language to be contained in building and construction bid specifications and contracts:

Workers' Compensation Insurance Coverage

A. Definitions:

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 (TWCC-81, TWCC-82, TWCC-83, or TWCC-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.

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.

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.

B. 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.

C. The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

D. 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.

E. 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.

F. The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

G. 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.
H. The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, 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.

I. 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 of 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.

J. 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.

K. 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.
NOTICE OF HB 1295 DISCLOSURE

Beginning January 1, 2016, business entities entering into a contract which is approved by the Waco City Council for goods or services to be used by the City of Waco are required to complete a Certificate of Interested Parties Form 1295 on the Texas Ethics Commission website.

Certificate of Interested Parties (Form 1295):

In 2015, the Texas Legislature adopted House Bill 1295, which added Section 2252.908 to the Texas Government Code. Beginning January 1, 2016, a business entity which:

1. enters into a contract which must be approved by the Waco City Council
2. for goods or services
3. to be used by the City of Waco

is required to complete a Certificate of Interested Parties Form 1295 on the Texas Ethics Commission website. The disclosure requirement applies to a contract (including an amendment, extension or renewal) entered into on or after January 1, 2016. Business entities required to comply include for-profit and non-profit entities.

The Texas Ethics Commission adopted rules to implement the law and adopted the Certificate of Interested Parties form (Form 1295). The Commission states that it does not have any additional authority to enforce or interpret House Bill 1295.

Form 1295 requires disclosure of interested parties (a) who have a controlling interest in a business entity with whom the government entity contracts or (b) who actively participate in facilitating a contract or negotiating the terms of a contract (such as a broker, advisor, or attorney for business entity) if the person receives compensation from the business entity (but is not an employee of the entity) and communicates directly with the governmental entity regarding the contract. A person has a controlling interest if the person: (1) has an ownership interest or participating interest in a business entity by virtue of units, percentage, shares, stock, or otherwise that exceeds 10 percent; (2) has membership on the board of directors or other governing body of a business entity of which the board or other governing body is composed of not more than 10 members; or (3) serves as an officer of a business entity that has four or fewer officers, or serves as one of the four officers most highly compensated by a business entity that has more than four officers.

Filing Process:

The Texas Ethics Commission has made the filing Form 1295 available on its website as an electronic form at: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

A business entity entering into a contract for goods or services with the City of Waco must use that website application to enter the required information on Form 1295 and then print a copy of the form. A certification of filing will be issued by the Commission containing a unique certification number established by the Commission. An authorized agent of the business entity must sign the printed copy of the Form and have the form notarized. The original executed and notarized Form 1295 (with certification of filing) must be filed with the City of Waco. The City is then required to notify the Commission using the Commission’s website that the Form 1295 has been received by the City. The information from the completed Form 1295 will then be posted on the Commission’s website. The City will retain the original of the notarized form.

2016/01/08 HB1295
## FORM 1295
### CERTIFICATE OF INTERESTED PARTIES

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

### OFFICE USE ONLY

**1** Name of business entity filing form, and the city, state and country of the business entity’s place of business.

**2** Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

**3** Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the goods or services to be provided under the contract.

### 4

<table>
<thead>
<tr>
<th>Name of Interested Party</th>
<th>City, State, Country (place of business)</th>
<th>Nature of Interest (check applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Controlling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermediary</td>
</tr>
</tbody>
</table>

**5** Check only if there is NO Interested Party.

**6** **AFFIDAVIT**

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

________________________
Signature of authorized agent of contracting business entity

**AFFIX NOTARY STAMP / SEAL ABOVE**

Sworn to and subscribed before me, by the said ____________________________, this the __________ day of __________, 20________, to certify which, witness my hand and seal of office.

________________________
Signature of officer administering oath

________________________
Printed name of officer administering oath

Title of officer administering oath

ADD ADDITIONAL PAGES AS NECESSARY
CERTIFICATION REQUIRED BY TEXAS GOVERNMENT CODE SECTION 2270.001

State law requires certification from a Company for contracts (which includes contracts formed through purchase orders) involving goods or services: (1) between a government entity and a Company with 10 or more full-time employees, and (2) has a value of $100,000 or more that is to be paid wholly or partly from public fund of the governmental entity.

By signing below, Company hereby certifies the following:

1. Company does not boycott Israel; and
2. Company will not boycott Israel during the term of the contract.

PRINT COMPANY NAME: __________________________________________

SIGNED BY: ______________________________________________________

Print Name & Title: ________________________________________________

Date Signed: ______________________________________________________

The following definitions apply to this state statute:

(1) "Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and

(2) "Company" means a for-profit organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company, or affiliate of those entities or business associations that exists to make a profit.

By signing below, Contractor hereby certifies that Section 2270.001 does not apply to this contract due to the following (check all that apply):

☐ Contractor is a sole proprietor; or
☐ Contractor has less than 10 full-time employees; or
☐ Contract value is for less than $100,000.00.

PRINT COMPANY NAME: __________________________________________

SIGNED BY: ______________________________________________________

Print Name & Title: ________________________________________________

Date Signed: ______________________________________________________
Procedure to Protest Award Recommendation

A. If a firm or person believes it is injured as a result of an RFB, a written protest may be filed.

B. The written protest may be delivered to the City’s Purchasing Services Department (“Purchasing”) in person to the department offices located at 1415 N. 4th St., Waco, Texas, 76707, or by certified mail, return receipt requested, to the following address:

Purchasing Services c/o City of Waco
Post Office Box 2570
Waco, Texas 76702-2570

C. The written protest must be filed no later than 5:00 p.m. on the fifth (5th) business day from the date of receipt of notification of the recommendation for the contract award.

D. The written protest must include the following information before it may be considered:
   1. Name, mailing address, and business phone number of the protesting party;
   2. Identification of the RFB being protested;
   3. A precise and concise statement of the reason(s) for the protest which should provide enough factual information to enable a determination of the basis of the protest; and
   4. Any documentation or other evidence supporting the protest.

E. In conjunction with the department that requested the RFB, Purchasing will attempt to resolve the protest, which may at Purchasing’s discretion include meeting with the protesting party. If the protest is successfully resolved by mutual agreement, written verification of the resolution of each ground addressed in the protest will be provided to the city manager or designee assistant city manager.

F. If the Purchasing is unable to resolve the protest, the protesting party may request the protest be reviewed and resolved by the city manager or designee assistant city manager.

G. A request for the city manager’s review must be in writing and received by the Purchasing within three (3) business days from the date the Purchasing informs the protesting party the protest cannot be resolved. The request for review must be delivered in person to the Purchasing at the address stated above or by certified mail, return receipt requested, to the mailing address stated above.

H. If a protesting party fails or refuses to request a review by the city manager within the three (3) days, the protest is deemed finalized and no further review by the city is required.

I. Applicable documentation and other information applying to the protest may be submitted by the protesting party to the Purchasing before review by the city manager. If the protesting party requests a review by the city manager, such documentation will be forwarded to the city manager or designee assistant city manager for consideration. The city manager or designee assistant city manager may likewise notify the protesting party or any city department to provide additional information. The decision reached by the city manager or designee assistant city manager will be final, but the protesting party may still appear before the City Council during the Hearing of the Visitors session of a City Council meeting.
CONTRACT

THIS CONTRACT ("the Contract"), made this ______day of ____________________, 2019, by and between CITY OF WACO, herein called "Owner" acting herein through its City Manager or Assistant City Manager, and ________________________________, of ________________, herein called "Contractor".

WITNESSETH: that for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction and repair work for the SUSPENSION BRIDGE REHABILITATION PROJECT, hereinafter called the Project, for the sum of _________________________________ XX/100ths ($________) and all extra work in connection therewith, and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said Project in accordance with the Contract Documents. The Contract Documents consist of the following:

1. This Contract;
2. The Project Scope As Defined by:
   a. RFB No. 2019-050
   b. Addenda to the RFB (if any);
   c. The Specifications/Plans published with RFB No. 2019-050, including:
      • Specifications & Construction Documents prepared by the City of Waco.
      • City of Waco, Texas Standard Specifications for Construction dated 2013, as revised by Special Provisions listed on the City of Waco website at http://www.waco-texas.com/engineering-specifications.asp ("Standard Specifications"); and
      • City of Waco, Texas – Manual of Standard Details revised April 15, 2015, (also referred to as “Standard Plans” in the Standard Specifications), the Special Project Provisions, and the Plans (as defined in the Standard Specifications); and
   d. Any permits or licenses from other agencies as may be required by law;
3. Contractor’s Bid Proposal, and documentation completed in response to RFB including:
   a. Insurance, Indemnity & Bonding
      • Proof of Insurance
      • Performance Bond
      • Payment Bond
b. Business Eligibility Documentation
   • Business Identification Form
   • W-9 Form
   • Conflict of Interest Questionnaire
   • Disclosure of Relations with City Official / Staff
   • Litigation Disclosure
   • Minority/Women Owned Business Certification
   • Debarment Certification
   • Non-Collision Affidavit
   • Texas Public Information Act
   • Resident Certification
   • Drug Free Workplace Certification
   • SB 252 Terror Non-Affiliation Verification
   • HB 89 Israel Neutrality Certification
   • HB 1295 Certification (registered by the Council Resolution No.)

4. All Modifications issued after the execution of the Agreement, such as:
   a. Subsequent Change Directives and Change Orders formally amending this contract through the course of the Project (as defined in the Standard Specifications);
   b. Any other drawings and printed or written explanatory matter.

The Contractor hereby agrees to commence work under this Contract on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the Project within **545 CALENDAR days** thereafter and perform the work in accordance with the Contract Documents. The Contractor further agrees to pay, as liquidated damages, the sum of **$800.00** for each CALENDAR day thereafter as provided in Section 7.8 of the General Provisions of the Standard Specifications.
The **OWNER** agrees to pay the **CONTRACTOR** in current funds for the performance of the contract, subject to additions and deductions, as provided in Section 4 of the City of the General Provisions of the Standard Specifications.

**IN WITNESS WHEREOF**, the parties to these presents have executed this contract, in the year and day first above mentioned.

**CITY OF WACO, TEXAS**

By: ____________________________  
Wiley Stem III, City Manager

APPROVED AS TO FORM & LEGALITY

_______________________________  
Jennifer Richie, City Attorney

_______________________________  
CONTRACTOR

ATTEST/WITNESS:  
By: ____________________________  
Title: ____________________________  
Address: ____________________________

Note: If Contractor is a corporation, corporate secretary should attest. For other types of entities, a witness should sign.
THE STATE OF TEXAS
COUNTY OF McLENNAN

KNOW ALL MEN BY THESE PRESENTS: That we (1)__________________________
(2)__________________________of (3)__________________________ hereinafter called
Principal and (4)__________________________ of ________________________________, State of _______ ________
which is duly authorized to do business in the State of Texas and is hereinafter called
Surety, are held and firmly bound unto THE CITY OF WACO of McLENNAN COUNTY, TEXAS, and unto all persons, firms, and corporations, who may furnish materials for, or perform labor upon
the building or improvements hereinafter referred to in the amount of _________________________________ Dollars
($____________________) in lawful money of the United States, to be paid in McLENNAN COUNTY, TEXAS, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a
certain contract with THE CITY OF WACO dated the (5) ______ day ________________, A.D., 20___, a copy of which is hereto attached and made a part hereof for ________________________________
______________________________ (herein called the “Work”).

NOW, THEREFORE, the condition of this obligation is such that, if the Principal shall
promptly make payment to all payment bond beneficiaries as defined in Chapter 2253 of the Texas Government Code, supplying labor and materials in the prosecution of the work provided for in said Contract, then this obligation shall be null and void; otherwise the obligation shall
remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that no change, extension of
time, alteration or addition to the terms of the Contract or to the Work to be performed under the
Contract, with or without notice to Surety, shall in any way affect its obligation on this Bond, and it
does hereby waive notice of any such change, extension of time, alteration or addition to the terms
of the Contract or to the Work to be performed under the Contract.

The Surety agrees to pay the City of Waco upon demand all loss and expense, including
attorney’s fees and court costs, incurred by the City of Waco by reason of or on account of any
breach of this obligation by the Surety.
This bond is made for and entered into solely for the protection of all payment bond beneficiaries supplying labor and materials in the prosecution of the work provided for in said contract, and all such payment bond beneficiaries shall have a direct right of action under the bond as provided in Chapter 2253 of the Texas Government Code.

**PROVIDED FURTHER,** that no final settlement between the City of Waco and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

Surety's telephone number is (_____) ___________________. Any notice of claim shall be sent to Surety at:
Mailing address: _____________________________________________________
Address of surety company: ____________________________________________

**IN WITNESS WHEREOF,** this instrument is executed, this the ______ day of ____________, A.D. 20____.

**NOTE:** Date of Bond must NOT be prior to date of Contract or date of Council action, whichever is later.

**ATTEST:**

________________________ (Principal) Secretary __________________________ Principal - Contractor*

(Corporate Seal) By: _____________________________ Title: _____________________________

________________________ Witness as to Principal Address: _____________________________

________________________ Address: _____________________________

**ATTEST:**

________________________ (Surety) Secretary __________________________ Surety

(Surety Seal) By: _____________________________ Attorney-in-Fact

________________________ Address: _____________________________

________________________

Witness to Surety

Address: _____________________________

________________________

*If Contractor is Partnership, all partners should execute bond. Use extra pages if necessary.

Form 09/22/2016
STATE OF TEXAS  
COUNTY OF McLENNAN

KNOW ALL ME BY THESE PRESENTS: That we (1) ___________________________  
______. (2) a ___________________________ of (3) ___________________________  
hereinafter called Principal and (4) ___________________________, State of ____________,  
which is duly authorized to do business in the State of Texas and is hereinafter called Surety, are  
held and firmly bound unto City of Waco of McLennan County, Texas in the amount of _____  
_________________________ Dollars ($ ___________________________) in lawful money of the United States, to be paid in McLennan  
County, Texas, for the payment of which sum well and truly to be made, we bind ourselves, our  
heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into  
a certain contract with City of Waco dated the (5) ______ day of ___________________________,  
A.D., 20____, a copy of which is hereto attached and make a part hereof for the construction of:

NOW THEREFORE, if the Principal shall well, truly and faithfully perform the work in  
accordance with the plans, specifications and contract documents during the original term thereof, and any extensions thereof which may be granted by the City of Waco, with or without notice to the Surety, and if Principal shall fully satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the City of Waco from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the City of Waco all outlay and expense which the City of Waco may incur in making good any default, then this obligation shall be void. Otherwise, this obligation remains in full force and effect.

For value received, Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work performed thereunder, or the plans, specifications, drawings, etc. accompanying same, with or without notice to Surety, shall in any way affect its obligation on this Bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder.
Surety’s telephone number is (____) _________________. Any notice of claim shall be sent to Surety at:
Mailing address: ________________________________________________________________

Address of surety company: ________________________________________________________

IN WITNESS WHEREOF, this instrument is executed, this the _____ day of ________, A.D. 20____.

NOTE: Date of Bond must NOT be prior to date of Contract or date of Council action, whichever is later.

ATTEST:
______________________________  ________________________________
(Principal) Secretary  Principal - Contractor*

(Corporate Seal)  BY: ________________________________

______________________________  ________________________________
Witness as to Principal  Title: ________________________________

Address: ________________________________  Address: ________________________________

ATTEST:
______________________________  ________________________________
(Surety) Secretary  Surety

(Surety Seal)  BY: ________________________________

______________________________  ________________________________
Witness to Surety  Attorney-in-Fact

Address: ________________________________  Address: ________________________________

*If Contractor is Partnership, all partners should execute bond. Use extra pages if necessary.

Form 09/22/2016
APPENDIX C
Forms to Complete and Return

(1) Submission of Bid/Proposal and Acknowledgment of Addenda
(2) Business Identification Form
(3) Conflict of Interest Questionnaire (CIQ form)
(4) Disclosure of Relationships with City Council/Officers (City Charter)
(5) Litigation Disclosure
(6) Minority/Women Owned Business
(7) Certification Regarding Debarment
(8) Non-collusion Affidavit
(9) Resident Certification
(10) Texas Public Information Act
(11) Drug-Free Work Place Certification
Submission of Bid/Proposal and Acknowledgment of Addenda

RFB/P No. 2019-050 issued by City of Waco, Texas

The entity identified below hereby submits its response to the above identified RFB/P. The entity affirms that it has examined and is familiar with all of the documents related to RFB/P.

DECLARATION OF INTENT

I attest that the bid submitted is: (check one box below)

☐ 1. to the exact Specifications and the Terms and Conditions of the bid documents.

☐ 2. to the exact specifications with modifications to the Specifications and/or the Terms and Conditions as noted in the attached documentation.

or

☐ 3. NOT to the exact Specifications and/or the Terms and Conditions and is therefore an alternate bid, submitted for the City’s consideration, with attached justification(s) and documentation defending the alternate bid as meeting or exceeding the intent of the specifications or scope of work.

Submitter further acknowledges receipt of the following addenda:

Addendum No ___ issued ___________________________________
Addendum No ___ issued ___________________________________
Addendum No ___ issued ___________________________________
Addendum No ___ issued ___________________________________
Addendum No ___ issued ___________________________________
Addendum No ___ issued ___________________________________
Addendum No ___ issued ___________________________________
Addendum No ___ issued ___________________________________
Addendum No ___ issued ___________________________________

Date: ____________________________

Proposal of (entity name) __________________________________________

Signature of Person Authorized to Sign Submission:
__________________________________________________________

Signor's Name and Title (print or type):
__________________________________________________________

PLEASE SIGN AND RETURN WITH BID
**Business Entity Identification**

To identify the appropriate person to execute documents, please fill in this form:

Full Legal Name of Business Entity: ________________________________

Doing Business As (assumed name): ________________________________

Main Contact Person: ____________________________________________

Registered Office Address: _______________________________________

Mailing Address: ________________________________________________

Business Phone #: ___________________ Fax #: _____________________

Email Address: _________________________________________________

DUNS Number: _________________________________________________

Check the appropriate box to designate the type of business entity & complete the information below:

Is entity: □ Sole Proprietorship □ Corporation □ Professional Corporation
□ General Partnership □ Limited Partnership □ Limited Liability Partnership
□ Limited Liability Company □ Professional Limited Liability Company
□ Other ______________________________________________________

Date Business Started: ___________________ State Where Started: ______

If the entity was formed in another state, registration with the Texas Secretary of State may be required before transacting business in Texas. See [http://www.sos.state.tx.us/corp/foreign_outofstate.shtml](http://www.sos.state.tx.us/corp/foreign_outofstate.shtml)

Publicly traded company □ No □ Yes – where traded: ________________

**Depending on the type of business entity, the business will have owners, corporate officers, corporate directors, partners, managers, members, etc. Complete the information below.**

To provide information on more than one person or entity for boxes 1 to 5, please use back of page, blank page, or another copy of this form.

<table>
<thead>
<tr>
<th></th>
<th>Name of Primary Officer, Partner, Owner, Manager, Member, Director</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Position or title with business entity</td>
</tr>
<tr>
<td>3</td>
<td>Address (if different from above)</td>
</tr>
<tr>
<td>4</td>
<td>Who is authorized to execute contracts and other documents?</td>
</tr>
<tr>
<td>5</td>
<td>What is the title or position of the person listed in #4?</td>
</tr>
<tr>
<td>6</td>
<td>Please provide a document (resolution, bylaw, agreement, etc.) that states the person identified in #4 has authority to execute contracts or execute affidavit.</td>
</tr>
</tbody>
</table>

In signing this form, I acknowledge that I have read the above and state that the information contained therein is true and correct.

Signature: ________________________________ Date: __________________

Print Name: ________________________________ Print Title: __________________

Form 03/21/2018

Business Entity Identification  Complete and Return with Bid/Proposal/Qualifications
ESTABLISHING AUTHORITY TO EXECUTE CONTRACT

When an instrument is signed on behalf of a business entity, documentation must be submitted that states the person signing on behalf of the business entity has the authority to do so. That documentation may be in the form of a resolution approved by a corporate board of directors, charter provisions, by-laws, partnership agreement, etc.

If a business entity has a document authorizing one or more individuals to enter into contracts or execute any instrument in the name of the business entity that it may deem necessary for carrying on the business of the entity, a certified copy of that document may be submitted.

If the business has a document stating who can execute documents for the business (such as a corporate resolution, charter provision, corporate bylaw, etc), the certification below may be signed and that document attached to this page.

CERTIFICATION REGARDING ATTACHED DOCUMENT

I, the undersigned person, as the {title} ________________________________ of

{business entity} ____________________________________________, certify that the attached document authorizes [name of person] ________________________________ to execute contracts and other documents on behalf of said business entity and said document has not been revoked, altered, or amended and is still in full force and effect.

SIGNED this ______ day of ____________________________, 20_____

_________________________________________
(Signature)

_________________________________________
Print Name

Attach document to this form
RESOLUTION FOR CORPORATION

BE IT RESOLVED by the Board of Directors of _____________________________

_____________________________________________________________ that

(Name of Corporation)

_________________________________________ is hereby authorized to execute a contract

(Name)

with the City of Waco to complete/construct_______________________________________

__________________________________________________________________________

(Name of Project, Project No.)

________________________________________, Secretary, is authorized to attest the

signature binding the corporation.


________________________________

Corporate Name

(Corporate Seal) By:  ____________________________________

Title: ___________________________________

ATTEST:

________________________________

Secretary of Corporation

CERTIFICATION

I, ___________________________________________, certify that the above resolution

(Secretary of Corporation)

was adopted by the Board of Directors of ____________________________________________

(Corporation)

at a meeting on the _______ day of _______________________, 20__.  


(Signature of Secretary)

(Print Name of Secretary)
If business entity has no document declaring who has authority to execute a contract on behalf of a business entity, this affidavit must be completed.

**AFFIDAVIT OF AUTHORITY TO SIGN FOR COMPANY, CORPORATION, OR PARTNERSHIP**

Name of Business Entity: ___________________________________________________

Which is  
☐ Corporation  ☐ Professional Corporation
☐ General Partnership  ☐ Limited Partnership  ☐ Limited Liability Partnership
☐ Limited Liability Company  ☐ Professional Limited Liability Company

On behalf of the above named business entity, I, the undersigned, certify and affirm that the following named person has authority to execute contracts and other documents on behalf of said business entity:

Name:  ____________________________________________________________

Title:   _____________________________________________________________

I declare under penalty of perjury that the above is true and correct.

__________________________________________________________________
Signature

__________________________________________________________________
Print Name

__________________________________________________________________
Print Title

STATE OF  _________________________________
COUNTY OF  _______________________________

SWORN TO AND SUBSCRIBED BEFORE ME this ____ day of _________________, A.D., 20____.

(seal)  
__________________________________________________________________
Notary Public

My Commission Expires:

__________________________________________________________________
INSTRUCTIONS FOR
CONFLICTS OF INTEREST QUESTIONNAIRE
[Form CIQ]

Chapter 176 of the Texas Local Government Code requires vendors who wish to conduct business or be considered for business with a city to file a “conflict of interest questionnaire.” The Texas Ethics Commission (TEC) created the conflict of interest questionnaire (Form CIQ).

Who must complete and file CIQ form?
Every vendor doing business with the City or seeking to do business with the City must complete Box 1 and sign and date in Box 7. Whether or not a conflict exists determines the other information to include on the form.

Who is a vendor?
The term “vendor” includes a partnership, corporation or other legal entities, including those performing professional services. Partnerships or corporations act through individuals, but it is the partnership or corporation that is doing business with or seeking to do business with the City. If the vendor seeking to do business with the City is a sole proprietorship, then just the name of the person who is the vendor is needed.

What triggers the requirement to file the Form CIQ?
When a vendor (or an agent of the vendor) begins (1) contract discussions or negotiations with the city or (2) submits an application, quote, response to request for proposals or bids, or anything else that could result in an agreement (contract or purchase order) with the City, Form CIQ must be completed. Whether the vendor initiates the discussion or the City initiates the discussions, Form CIQ must be completed. The monetary amount or value of the contract/purchase does not matter. The contract or purchase may involve the sale or purchase of property, goods, or services with the City of Waco.

When does a conflict requiring disclosure exist? What has to be revealed?
- A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with the City of Waco and the vendor:
  (1) has an employment or other business relationship with an officer of the City of Waco, or a family member of an officer, that results in taxable income exceeding $2,500 during the 12 month period preceding the date a contract/purchase is executed or a contract/purchase is being considered; or
  (2) has given an officer of the City of Waco, or a family member of an officer, one or more gifts with the aggregate value of more than $100 in the 12 month period preceding the date a contract/purchase is executed or a contract/purchase is being considered;
  (3) has a family relationship with an officer of the City of Waco.

What family relationships create a conflict?
A “family member” is a person related to another person within the first degree by consanguinity (blood) or affinity (marriage), as described by Subchapter B, Chapter 573, Texas Government Code. The ending of a marriage by divorce or the death of a spouse ends relationships by affinity created by that marriage unless a child of that marriage is living, in which case the marriage is considered to continue as long as a child of that marriage lives.
“Family relationship” means a relationship between a person and another person within the third degree by consanguinity or the second degree by affinity, as those terms are defined by Subchapter B, Chapter 573, Texas Government Code.
**Who are officers of the City of Waco?**
Officers are the members of the Waco City Council, the City Manager, and any agent or employee who exercises discretion in the planning, recommending, selecting, or contracting with a vendor. An agent may include engineers and architects, as well as others, who assist the City is making a decision on some contract or purchase.

**When must a vendor file the conflict of interest questionnaire?**
No later than seven days after the date the vendor: (a) begins contract discussions or negotiations with the city, or (b) submits an application or response to a request for proposals or bids, correspondence, or another writing related to a potential agreement with a city, or (c) becomes aware of an employment or other business relationship with an officer or family member of the officer that the vendor (i) has made one or more gifts of more than $100 or (ii) has a family relationship with.

**How do I go about filling out the Conflict of Interest Questionnaire form?**

**Section 1:** Fill in the full name of the **person or company** who is trying to do business with the City. If the “person” is a corporation, partnership, etc., then it is the name of that corporation, partnership, etc., that is required on Form CIQ. If a sole proprietorship, then just the name of the individual is needed. If the “person” is an individual acting as an agent for some other person or a company, then it is the agent’s name. **Any time an agent is involved, two FORM CIQs must be completed and submitted:** one for the agent, and one for the person or company that the agent acted for. The agent’s FORM CIQ must note the vendor that the agent acted for.

**Section 2:** Check box if the form is an update to a form previously completed. Updates are required by the 7th business day after an event that makes a statement in a previously filed questionnaire incomplete or inaccurate. Updates are also required by September 1 of each year in which the person submits a proposal, bid or response to the City of Waco or begins contract discussions or negotiations with the City.

**Section 3:** Insert the name of the City of Waco officer with whom there is an affiliation to or business relationship. If there is more than one City officer with whom there is an affiliation or business relationship, a separate form should be completed for each officer.

**Section 4:** Check the “Yes” or “No” box in Section 4 A or B.

4.A: State whether the officer named on the form receives or is likely to receive taxable income, other than investment income, from the vendor filing the questionnaire.

4.B: State whether the vendor receives or is likely to receive taxable income, other than investment income, from or at the direction of the officer named on the form AND the taxable income is not received from the City.

**Section 5:** Describe each employment or business relationship with the local government officer named on the form.

**Section 6:** Check box to acknowledge gifts made that require disclosure.

**Section 7:** Person completing form must date and sign the form. If the form is being completed for a corporation, partnerships, etc., the person signing should be someone who is authorized to act on behalf of the corporation, partnership, etc.

**A signature is required in box #4 regardless of any other entry on the form.**

**A copy of Chapter 176 of the Texas Local Government Code can be found at:**
http://www.statutes.legis.state.tx.us/SOTWDocs/LG/htm/LG.176.htm
CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.
This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who
has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the
vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later
than the 7th business day after the date the vendor becomes aware of facts that require the statement to be
filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An
offense under this section is a misdemeanor.

1. Name of vendor who has a business relationship with local governmental entity.
   Insert name of vendor seeking to do business with the City of Waco

2. Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated
   completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which
   you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3. Name of local government officer about whom the information is being disclosed.
   Insert name of officer with whom there is business, employment or family relationship. If no conflict, insert N/A.

4. Describe each employment or other business relationship with the local government officer, or a family member of the
   officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer.
   Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form
   CIQ as necessary.

   Complete A-B if a conflict exist

   A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income,
      other than investment income, from the vendor?

      Yes ☐ No ☐

   B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction
      of the local government officer or a family member of the officer AND the taxable income is not received from the
      local governmental entity?

      Yes ☐ No ☐

5. Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or
   other business entity with respect to which the local government officer serves as an officer or director, or holds an
   ownership interest of one percent or more.

   Identify and describe the relationship, if applicable

6. Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts
   as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7. Signature required -- so sign and date, even if no conflict

   Signature of vendor doing business with the governmental entity ________________ Date ____________

Form provided by Texas Ethics Commission www.ethics.state.tx.us Revised 11/30/2015
CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

**Local Government Code § 176.001(1-a):** “Business relationship” means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
(B) a transaction conducted at a price and subject to terms available to the public; or
(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

**Local Government Code § 176.003(a)(2)(A) and (B):**

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that
   (i) a contract between the local governmental entity and vendor has been executed; or
   (ii) the local governmental entity is considering entering into a contract with the vendor;
(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:
   (i) a contract between the local governmental entity and vendor has been executed; or
   (ii) the local governmental entity is considering entering into a contract with the vendor.

**Local Government Code § 176.006(a) and (a-1):**

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:
   (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
   (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or
(2) the date the vendor becomes aware:
   (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
   (B) that the vendor has given one or more gifts described by Subsection (a); or
   (C) of a family relationship with a local government officer.
CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.
This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

1. Name of vendor who has a business relationship with local governmental entity.

2. Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3. Name of local government officer about whom the information is being disclosed.

Name of Officer

4. Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

   [ ] Yes [ ] No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

   [ ] Yes [ ] No

5. Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

6. Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7. Signature of vendor doing business with the governmental entity

   Date
DISCLOSURE OF RELATIONS WITH CITY COUNCIL MEMBER, OFFICER, OR EMPLOYEE OF CITY OF WACO

Failure to fully and truthfully disclose the information required by this form may result in the termination of any business the City is now doing with the entity listed below and/or could impact future dealings.

1. Name of Entity/Business/Person doing business with City: ________________________________________
   Is the above entity: (Check one)
   [ ] A corporation   [ ] A partnership   [ ] A sole proprietorship or an individual
   Other (specify): ______________________________________________________________

   Check all applicable boxes.

2. Is any person involved as an owner, principal, or manager of name listed in #1 related to or financially dependent on Council member, officer, or employee of the City of Waco?
   [ ] NO -- there is no such relationship between Entity/Business/Person and the City of Waco.
   [ ] YES, a person who is a/an [ ] owner, [ ] principal, or [ ] manager of this entity/business/person is:
      (Check all applicable boxes below)
      [ ] related to by blood or marriage* and/or [ ] a member of the same household as
      and/or [ ] financially dependent upon** and/or [ ] financially supporting**
      to a City of Waco [ ] City Council member, [ ] officer or [ ] employee.

   * As used here, “related to” means a spouse, child or child’s spouse, and parent or parent’s spouse. It also includes a former spouse if a child of that marriage is living (the marriage is considered to continue as long as a child of that marriage lives).
   ** As used herein, “financially dependent upon” and “financially supporting” refers to situations in which monetary assistance—including for lodging, food, education, and debt payments—is provided by owner, principal or manager of #1 to Council member, officer or employee of City of Waco, or that Council member, officer or employee of City of Waco provides to owner, principal or manager of #1.

   If YES, provide (a) the name of owner, principal, or manager, and (b) the name of the City Council member, officer or employee (include the department the City officer or employee works for, if known), and (c) if a relationship by marriage or by blood/kinship exists. (Use back of sheet if more space is needed)

<table>
<thead>
<tr>
<th>(a) Name of owner, principal, or manager</th>
<th>(b) Name of Council member, officer or employee &amp; department</th>
<th>(c) What is relationship or household arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Is a current City Council member or City employee involved with the name listed in #1 as an owner, principal, manager, or employee, or employed as a contractor for name listed in #1?
   [ ] NO (no person involved/working for Entity/Business/Person is Council member, officer or employee of the City).
   [ ] YES, a person is (Check all applicable boxes)
      (a) a current City of Waco [ ] City Council member, [ ] officer or [ ] employee,
      (b) and is [ ] an owner, [ ] a principal, or [ ] a manager of the entity/business/person listed in #1,
          or [ ] an employee or [ ] an independent contractor of the entity/business/person listed in #1.

   If YES, provide the name of owner, principal, manager, employee or independent contractor who is a City Council member, officer or employee. Include the department the City officer or employee works for, if known.

   __________________________________________________________________________
   __________________________________________________________________________

Signature: ______________________________ Phone #:_____________________  Date: _______________
Print Name: _____________________________ Print Title: ______________________________________
LITIGATION DISCLOSURE

Failure to fully and truthfully disclose the information required by this Litigation Disclosure form may result in the disqualification of your bid/proposal/qualifications from consideration or termination of the contract, once awarded.

1. Have you or any member of your Firm or Team to be assigned to this engagement ever been indicted or convicted of a felony or misdemeanor greater than a Class C in the last five (5) years?
   □ Yes □ No

2. Have you or any member of your Firm or Team been terminated (for cause or otherwise) from any work being performed for the City of Waco or any other Federal, State or Local Government, or Private Entity?
   □ Yes □ No

3. Have you or any member of your Firm or Team been involved in any claim or litigation with the City of Waco or any other Federal, State or Local Government, or a Private Entity during the last ten (10) years?
   □ Yes □ No

If you have answered “Yes” to any of the above questions, please indicate the name(s) of the person(s), the nature, and the status and/or outcome of the information, indictment, conviction, termination, claim or litigation, as applicable. Any such information should be provided on a separate page, attached to this form and submitted with your bid/proposal/qualifications.
CITY OF WACO  
Purchasing Services  
Minority/Women Owned Business Certification

The City of Waco is committed to assuring that all businesses are given prompt, courteous, and equal opportunity to provide goods and services to the City. To achieve this goal, the City Council requests the minority women owned status of each vendor on the City vendor list.

**Definition:** A Disadvantaged Minority and Woman owned Business Enterprise means a business concern owned and controlled by socially and economically disadvantaged individuals. This means any business concern that (a) is at least 51% owned by one or more socially and economically disadvantaged individuals; or in the case of publicly owned businesses, at least 51% of the stock which is owned by one or more socially or economically disadvantaged individuals; and (b) whose management and daily operations are controlled by one or more other socially and economically disadvantaged individuals who own it. The groups included in this program are Black Americans, Hispanic Americans, Women, Asian Pacific Americans, Service Disabled Veterans, and Native Americans.

**Certification:** Bidder declares a minority and/or women owned business status:

_____ YES  _____ NO

If yes, check one of the blocks (indicate male or female):

Black M/F____;  Hispanic M/F____;  Woman____;  Asian M/F____;

Native American M/F____;  Service Disabled Veteran of 20% or more M/F____.

HUB certified _____ YES  _____ NO

COMPANY NAME: __________________________________________________________

AUTHORIZED SIGNATURE: __________________________________________________

TITLE:___________________________________________________________________

DATE: ___________________________________________________________________


INSTRUCTIONS FOR CERTIFICATION REGARDING
Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion

1. By signing and submitting this proposal and the certification form, the prospective lower tier participant (BIDDER/PROPOSER/SUBRECIPIENT) is providing the certification set out on the following form (or reverse side) in accordance with these instructions.

2. The certifications in this clause are a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant (BIDDER/PROPOSER/SUBRECIPIENT) knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant (BIDDER/PROPOSER/SUBRECIPIENT) shall provide immediate written notice to the person to whom this bid/proposal is submitted if at any time the prospective lower tier participant (BIDDER/PROPOSER/SUBRECIPIENT) learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant (BIDDER/PROPOSER/SUBRECIPIENT) agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant (BIDDER/PROPOSER/SUBRECIPIENT) further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction, "without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION

Project Name: ____________________________________________________________

Location: ________________________________________________________________

RFB/RFP #: ______________________________________________________________

This certification is required (or may be required) by the federal regulations implementing Executive Order 12549, Debarment and Suspension. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). For further assistance in obtaining a copy of the regulations, contact the City of Waco Purchasing Department.

READ INSTRUCTIONS BEFORE COMPLETING CERTIFICATION

(1) The prospective lower tier participant (BIDDER/PROPOSER/SUBRECIPIENT) certifies, by submission of this proposal that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal or State department or agency.

(2) Where the prospective lower tier participant (BIDDER/PROPOSER/SUBRECIPIENT) is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

________________________________________
Company

________________________________________
Name and Title of Authorized Representative

________________________________________
Signature  Date
NON-COLLUSION AFFIDAVIT

STATE OF TEXAS §

COUNTY OF______________ §

By the signature below, the signatory for the bidder certifies that neither he nor the firm, corporation, partnership or institution represented by the signatory or anyone acting for the firm bidding this project has violated the antitrust laws of this State, codified at Section 15.01, et seq., Texas Business and Commerce Code, or the Federal antitrust laws, nor communicated directly or indirectly the bid made to any competitor or any other person engaged in the same line of business, nor has the signatory or anyone acting for the firm, corporation or institution submitting a bid committed any other act of collusion related to the development and submission of this bid proposal.

Signature:

Printed Name:

Title:

Company:

Date:

THE STATE OF _______________

COUNTY OF __________________

Before me, the undersigned authority, on this day personally appeared ___________________________ ___________________ (the person who signed above), known to me to be the persons whose names are subscribed to the foregoing instruments, and acknowledged to me that they executed same for the purposes and considerations therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE on this _____ day of ____________ A.D., 20_____.

(Seal) Notary Public Signature
RESIDENT CERTIFICATION

Texas Government Code - Chapter 2252 “Contracts With Governmental Entity”
Subchapter A. Nonresident Proposers

In accordance with Chapter 2252 of the Texas Government Code, a governmental entity may not award a governmental contract to a nonresident bidder unless the nonresident bidder underbids the lowest bid submitted by a responsible resident bidder by an amount that is not less than the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in the state in which the nonresident’s principle place of business is located.

Section 2252.001 includes the following definitions:

(1) “Government contract” means a contract awarded by a governmental entity for general construction, an improvement, a service, or a public works project or for a purchase of supplies, materials, or equipment.

(2) “Governmental entity” means . . . .a municipality, county, public school district, or special-purpose district or authority;

(3) “Nonresident bidder” refers to a person who is not a resident.

(4) “Resident Bidder” refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

As used on this form, the term “bidder” includes a person or business entity responding to a request for bids or competitive sealed proposal or request for qualifications.

I certify that as defined in Texas Government Code, Chapter 2252 that:

COMPANY NAME: ____________________________________________________________

Yes, I am a Texas Resident Bidder _______ No, I am not a ________ Resident Bidder

PRINTED NAME: ______________________________________________________________

SIGNATURE: _________________________________________________________________

E-MAIL ADDRESS: ____________________________________________________________
All proposals, data, and information submitted to the City of Waco are subject to release under the Texas Public Information Act ("Act") unless exempt from release under the Act. You are not encouraged to submit data and/or information that you consider to be confidential or proprietary unless it is absolutely required to understand and evaluate your submission.

On each page where confidential or proprietary information appears, you must label the confidential or proprietary information. Do not label every page of your submission as confidential as there are pages (such as the certification forms and bid sheet with pricing) that are not confidential. It is recommended that each page that contains either confidential or proprietary information be printed on colored paper (such as yellow or pink paper). At a minimum the pages where the confidential information appears should be labeled and the information you consider confidential or proprietary clearly marked.

Failure to label the actual pages on which information considered confidential appears will be considered as a waiver of confidential or proprietary rights in the information.

In the event a request for public information is filed with the City which involves your submission, you will be notified by the City of the request so that you have an opportunity to present your reasons for claims of confidentiality to the Texas Attorney General.

In signing this form, I acknowledge that I have read the above and further state:

☑ The proposal/bid submitted to the City contains NO confidential information and may be released to the public if required under the Texas Public Information Act.

☑ The proposal/bid submitted contains confidential information which is labeled and which may be found on the following pages: __________________________________________

____________________________________________________________________

and any information contained on page numbers not listed above may be released to the public if required under the Texas Public Information Act.

Vendor/Proposer Submitting: __________________________________________

Signature: __________________________________________ Date: ________________

Print Name: ____________________________ Print Title: ____________________________
1. The contractor certifies that it will provide a drug-free work place by:
   (a) Publishing a statement notifying employees that unlawfully manufacturing, distributing, possessing or using a controlled substance in the contractor’s work place is prohibited and specifying the actions that will be taken against employees for violation of such prohibition.
   (b) Establishing a drug-free awareness program to inform employees about:
       (1) the dangers of drug abuse in the work place;
       (2) the contractor’s policy of maintaining a drug-free work place;
       (3) any drug counseling, rehabilitation, and employee assistance programs that are available; and
       (4) the penalties that may be imposed upon employees for drug abuse violations in the work place.
   (c) Making it a requirement that each employee to be engaged in the performance of the contract be given a copy of the statement required by paragraph (a).
   (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the contract the employee will:
       (1) Abide by the terms of the statement; and
       (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the work place no later than five (5) days after such a conviction.
   (e) Notifying the City of Waco within ten (10) days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction.
   (f) Taking one of the following actions within thirty (30) days of receiving notice under subparagraph (d)(2) with respect to any employee so convicted:
       (1) Taking appropriate personnel action against such an employee, up to and including termination; or
       (2) Requiring such an employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency.
   (g) Making a good faith effort to continue to maintain a drug free work place through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

2. The contractor’s headquarters is located at the following address. The addresses of all other work places maintained by the contractor are provided on the accompanying list.

   Name of Contractor: ____________________________

   Street Address: ____________________________

   City: ___________________ County: ___________________

   State: ___________________ Zip Code: ___________________

   SIGNED BY: ____________________________ Date Signed: __________

   Print Or Type Name And Title: ____________________________

   PLEASE SIGN AND RETURN WITH PROPOSAL
APPENDIX D
Technical Specifications/Drawings

(1) City of Waco Standard Specifications & Details
(2) City of Waco Parks Department Project Provisions
(3) Project Special Specifications
(4) Project Plans & Specifications (Separate attachment)
1. **City of Waco Standard Specifications & Details**


If a standard specification set out in the City Standard Specifications or Waco Manual conflicts with a provision, specification or standard stated in this RFB, provision, specification or standard stated in this RFB controls. If the applicable provision, specification or standard is still unclear, the Director of Public Works for the City of Waco will determine which provisions, specification or standard controls and his determination shall be final.

Both the “City of Waco Standard Specifications for Construction” and the City of Waco Manual of Standard Details may be obtained by accessing the City of Waco website at [www.waco-texas.com](http://www.waco-texas.com) and going to Bid Opportunities – Engineering Services. Both may also be obtained by contacting the City of Waco Public Works Department at 254-750-5440.
2. **City of Waco Parks & Recreation Dept. (PARD) Special Provisions**

**Part A – Submissions Prior to Project Preconstruction Meeting**

1. **Contractor Submittals:** Project submittals shall be provided electronically to the PARD Project Manager for review. When physical samples are required, Contractor shall provide two samples of each color or product proposed for review, in addition to the digital submittal.
   
   A. **Project Schedule:** Contractor is required to provide an approved construction schedule in Gantt, CPM, or PERT format suitable to depict the project work plan. This schedule is to be updated as needed, and must accompany each month’s pay application.

   B. **List of Subcontractors for Approval:** Provide a list of all subcontractors providing workers to the project at the pre-construction meeting and provide updated list as changes occur.

   C. **Material Submittals:** Submission, review, and approval of submittals must precede associated work on site. All construction material submittals shall be submitted at or before the pre-construction meeting (including, but not limited to: base materials, structural steel, concrete mix designs, expansion materials, joint sealant, finishes, etc). Vegetative materials shall be submitted for review as soon as possible in the project timeframe. Refer to technical specifications when applicable for submittal information.

   D. **Access Plan:** The Contractor shall provide the PARD Project Manager with an access plan submittal for each site. The PARD Project Manager shall identify any revisions needed to mitigate known conflicts, or identify if the proposed access requires the addition of further safeguards, such as tree protection, fencing, erosion control, and/or traffic control. If required, traffic control plans must be prepared in accordance with Section 3.6A of the City of Waco Standard Specification for Construction General Provisions.

   - **Please note:** Concrete trucks will not be allowed outside of parking areas and roadways. Concrete transport and placement within the park must be accomplished via, wheel barrow, buggy, or similar.

   E. **Schedule of Values:** shall be provided to the City at or before the pre-construction meeting.

   F. **Mock-up of First Pay-Application:** shall be provided to the City at or before the pre-construction meeting. Please note retainage requirements as identified in Section 9.3C of City of Waco Standard specification for Construction General Provisions.

**Part B – Project Management Special Provisions**

1. **Accessibility Compliance:** All work shall be completed in accordance with US Department of Justice ADA standards and Texas Accessibility Standards (TAS). Prior to final completion but after all paving and associated project elements affecting accessibility are installed, contractor shall notify the PARD Project Manager when the project is ready for inspection by the registered accessibility specialist (RAS) – or staff, when applicable (per TDLR 16 TAC 68.50). Revisions to the work required after inspection by the RAS shall be accomplished at no additional cost to the owner.

2. **Safety Apparel:** Contractor shall ensure that all appropriate safety apparel, including reflective vests and hard hats are worn by all personnel on site at all times.

3. **Contractor Personnel:** The contractor shall at all times provide a qualified site superintendent on-site for this project who shall coordinate all subcontractor activities and be the single point of contact for the City of Waco. Site superintendent shall maintain an up to date copy of the plans and specifications on site at all times. All communications regarding any work on the project, regardless of subcontract, shall be between the site superintendent
and the City of Waco project representative. Failure to provide a qualified site superintendent for the project or to keep a current copy of the plans and specifications on site shall be grounds for work to be stopped by the City of Waco with no extension of the allowed construction time.

4. **Contractor Communication:**
   A. Subcontractor communications: addressed through the General Contractor, only
   B. Site issues: coordinated between Contractor’s Site Superintendent and Park Development Inspector
   C. Submittals and Contract issues: to be coordinated with PARD Project Manager

5. **Permits:** Contractor is responsible for coordination with all applicable regulating entities for the permitting and inspection of all associated work. This includes permitting through numerous divisions within the City of Waco, including but not limited to Code Enforcement, Public Works, Utilities and Planning. In most cases City of Waco permitting fees will be waived for Parks projects. Failure to secure necessary permits will result in otherwise avoidable work stoppages.

6. **Project Meetings:** Contractor must schedule regular project meetings to discuss the project with the City of Waco staff, consultant designer and contractor personnel. Weekly meetings are recommended with the interval revised depending on the project schedule. These meetings shall include an agenda and notes prepared by the Contractor. Notes from the previous meeting shall be reviewed and approved or revised by all parties at the next meeting.

7. **Requests for Information:** Requests for information (RFI) about the plans and specifications shall be submitted in a digital written format on Contractor letterhead, via email sent to the project manager and the consultant designer. All official communication shall be conducted through email – large files (anything over 4mb) should be hosted through free/accessible file sharing services.

8. **Pay Applications:** Pay applications shall be submitted on a monthly basis (by the 5th of each month) for installed elements and materials. Payments shall be made within thirty days of submittal of a correct pay application with accompanying documentation or as detailed in the contract section of the bid document. Monthly pay applications must be accompanied by the following to be considered eligible for payment:
   A. Revised Schedule

9. **Change Requests:** Changes to the contractual scope of work may only be approved through formal amendment of the contract. To do so, the contractor may submit a formal change request to the City, or the City may request a formal change proposal from the contractor. The Contractor shall prepare an official change proposal on company letterhead that includes, scope, pricing, corresponding needs for additional time on the contract, authorized signature, date, and supporting documentation. This shall be submitted to the PARD Project Manager digitally for review and Legal coordination. Timely submission is critical to minimize project schedule impacts, as the full approval process takes several weeks.

10. **Project Time:** Project time has been assigned sufficient to complete all aspects of the Work. The Contractor shall maintain a workforce adequate to accomplish the work within the contract time. Contractor agrees to employ only orderly, competent, and knowledgeable workers, skillful in performance of the type of work required under this contract.
    - The project duration is in calendar-day format
    - Work is not allowed on weekends or City Holidays. Case by case exceptions may be considered by PARD Project manager, upon 48hrs prior notice.
    - The project duration has also been calculated in consideration of ten-year-average weather for the area, as reported at the Waco Regional Airport to include a sufficient
number of days lost due to weather. Requests for additional time due to weather must be provided in writing and document the total number of days lost due to weather on the project vs. the corresponding ten year average of total weather days for the same corresponding calendar period.

- In the event any claims arising from purported delays, the claim shall only be considered if the delay is adequately documented and shown to be caused by the owner or by site conditions not present at the time of bidding. Contractor shall provide written notice to the PARD Project Manager of a claim for delay within 14 days of the start of the delay. Delay claims shall not include time extensions granted by change order, weather impacts, nor accelerated project sequencing.

11. **Project Completion:**
   
   A. Upon completion of all Work or pay items, Contractor shall submit a written request for a punch list to the PARD Project Manager.
   
   B. The Park Development Inspector, along with other necessary Consultants or City Staff will coordinate a “walk of the project” and issue the punch list.
   
   C. Upon completion of all punch list items, Contractor shall submit a written request for final inspection to the PARD Project Manager.
   
   D. Successful final inspection shall be followed by a letter of Final Acceptance from the PARD Project Manager, documenting the start of the 12-month Warranty period and delineating the conditions for final payment:
      • Documentation of passed / closed permits
      • Notarized affidavit of all-bills-paid from Contractor
      • Notarized one-year guarantee from Contractor
      • All applicable manufacturer or product warranties beyond one-year
      • All applicable operational manuals
      • Digital and print set of as-built (conformed) project plans
      • Final Pay Application
   
   E. Upon receipt and review of these documents, project will be deemed final, and payment released.

12. **Post-Completion Warranty Review:** The Park Development Inspector will schedule a Warranty walk approximately 11 months after the project completion. If any issues arise during the warranty period, the Park Development Inspector will send written request to the Contractor.

**Part C – Project Site Special Provisions**

1. **Existing Conditions:** The Contractor shall examine the project site to completely familiarize Contractor’s personnel with the nature and extent of the work to be accomplished. No extra compensation or claims for delays will be allowed for any work made necessary by conditions or obstacles encountered during the progress of the work when the nature of said conditions or obstacles is apparent or ascertainable upon a visit to the site, or made apparent or ascertainable through a review of the plans and specifications. If there are any questions about or discrepancies between the plans and actual site conditions, Contractor shall submit those question in writing to the City of Waco Purchasing Services representative prior to the submission of bids.

2. **Excavation:** Note that all excavation is unclassified and no additional payment will be made for rock.

3. **Utilities:** Procurement, transportation and payment for water and electricity for construction purposes is the responsibility of the Contractor.

4. **Utilities:** Prior to beginning work, the contractor shall contact the utility companies for exact locations to prevent any damage or interference with the present facilities. The TEXAS ONE CALL system shall be notified, other franchise utilities and the City of Waco contacted; including a call to the Park Development Inspector. This action shall in no way be interpreted
as relieving the contractor of responsibilities under the terms of this contract and as set out in the plans and specifications. The Contractor shall repair any damage caused by Contractor’s operations and shall restore utilities to service in a timely manner.

5. **Utilities:** Location of the existing utilities on the plans was compiled from record information and no warranty is implied as to the actual location of existing facilities. Contractor shall field verify locations of existing utilities prior to the commencement of construction. Contractor shall contact the City of Waco representative and consultant designer if there are any conflicts with proposed construction and existing utilities. Contractor shall coordinate any required utility modifications or repairs with the utility provider.

6. **Markings & Record Drawings:** Sleeves, conduits, and lines installed or encountered through the course of Work, shall be included by the Contractor on as-builts provided at the end of the project. Sleeves found adjacent to or below proposed concrete areas must be extended beyond the perimeter of new paving. New concrete placed over sleeves, conduits and lines must be wet-stamped with an ‘S’, or appropriate letter, at each end of the line’s path below the new concrete.

7. **Public Safety:** Construction and access areas shall be secured by the Contractor and closed to the public during the construction & revegetation period. Fence and fence posts must be maintained around the work area during the entire period of construction. Payment for this item, and any modifications necessary throughout the project, is considered subsidiary to the work of this contract.

8. **Erosion Control:** It is the responsibility of the Contractor to keep roadways, drive approaches, and sidewalk clean of mud, sand, rock, and other debris, and ensure all sediment is contained on-site. Payment for this item, and any modifications necessary throughout the project, is considered subsidiary to the work of this contract. If the CONTRACTOR fails to promptly comply with these requirements, the OWNER may do so and pass along all related costs to the CONTRACTOR.

9. **Staging & Storage:** Contractor shall be responsible for protection of contractor’s materials and equipment stored on site. Installed materials and other elements of the construction shall be the responsibility of the Contractor until the project has been accepted by the City of Waco. City of Waco will not accept damaged or vandalized elements of the project.

10. **Staging & Storage:** If on site storage is desired, a location must be proposed by the Contractor for review and approval by the Park Development Inspector prior to installation. The holding area shall be secured with a locked six foot tall chain link fence and materials shall be stored neatly within the enclosure.

11. **Staging & Storage:** No stockpiling of construction debris or storage of equipment or materials beyond the limits of construction.

12. **Privately Owned Lots:** If the Contractor chooses to enter into agreement for use of a private lot for the purposes of staging or access, the Contractor shall provide to the PARD Project Manager documentation of written permission from the property owner(s). The project shall not be finalized until the Contractor provides a written letter from the property owner(s) confirming their satisfaction with the final condition of the affected lot.

13. **Materials Disposal:** Excess soil or unsuitable materials must be legally disposed of by Contractor. Demolition and removal of concrete on site must be removed same day. Any debris generated by demolition shall be placed directly into haul-off trucks for disposal.

14. **Site Maintenance:** Trash removal is the responsibility of the Contractor, and shall be secured daily and removed from the work area on a regular basis at a minimum once per week to protect work site and adjacent sites from windblown trash. Contractor must provide own trash bins and disposal. Existing trash bins and dumpsters on site or at neighboring sites may not be used by the Contractor. Concrete wash out tub must be provided for use of concrete trucks before existing construction site.

15. **Site Maintenance:** Grass, weeds and other vegetation on the project site within the construction area shall be maintained by the Contractor until final acceptance.

16. **Restrooms:** Contractor is responsible for providing sanitary facilities for use by construction
workers. Restrooms will not be available for use by construction workers.

17. **Site Restoration:** All areas (vegetated, gravel, paved, etc.) and existing built elements disturbed by the work of this contract must be restored to pre-project conditions, or better, in a timely manner and at no expense to the City. All existing grading and vegetated areas must be restored to pre-project conditions, or better, with topsoil and seed or sod, as appropriate. Contractor is responsible for all vegetative establishment, watering, and care until project acceptance. Payment for this work will be considered to be subsidiary to completion of the associated work item, unless otherwise provided.
SPECIAL SPECIFICATION 02050 – RAISING EXISTING STRUCTURES

PART 1 GENERAL

1.01 DESCRIPTION
   A. Design and execution for lifting existing structures during construction

1.02 SUBMITTALS
   B. Submit detailed drawings for raising the structure. A licensed professional engineer must sign and seal the submittal drawings.

   C. Clearly indicate the methods, materials, cribbing, lateral bracing, falsework or other supports, and equipment proposed. Indicate jack positions and capacities and temporary hardware attachments on the drawings.

   D. Approval of submittal is required before beginning raising work. Approval of the submittal does not relieve the Contractor from responsibility for the completion of the work nor from liability for repair or replacement of damaged portions of the structure due to the methods approved and employed.

1.03 PREPARATION OF PLANS
   A. Apply loads so that the load capacities in bearing, shear, and flexure are not exceeded for any material or member carrying the load.

   B. Design the temporary supports to carry the loads as shown on the Drawings.

PART 2 PRODUCTS

2.01 EQUIPMENT
   A. Provide suitable cribbing, falsework, or other supports until the span or unit is resting on its final supports to prevent the various spans or units from dropping due to jack failure or other causes during the lifting operation.

   B. Use a jack with a minimum capacity of 2 times the dead load. Prohibit traffic on the structure until the structure is supported by cribbing, falsework, or the final supports.

   C. Furnish materials as specified elsewhere or required on the Drawings.

PART 3 EXECUTION

3.01 EXECUTION
   A. Raising of Spans. Before jacking, verify that anchor bolts, closed joints, or other
A. Appurtenances do not restrict vertical movement. Jack spans from a bent cap or temporary falsework unless otherwise shown on the plans.

B. Loosen and remove all anchor bolt nuts to allow free vertical movement before raising. Replace all damaged or lost anchor bolt nuts.

C. Weld in conformance with Item O, Welding, of Section 7.3.A Part 3

D. Provide adequate guides or force to ensure vertical lifting and prevent lateral drifting of the structure during the jacking operation.

E. Provide pedestals as shown on the plans.

F. Simple spans with an expansion joint in the deck at every bent: Raise the span by jacking as shown on the plans. Raise all of the beams on one side of the bent simultaneously. Do not raise one end of a simple span more than 4 in. before raising the opposite end.

G. Simple beam spans with a continuous deck over the bent: Raise all beams on both sides of the bent simultaneously by jacking according to the plans. Do not raise one end of a span more than 2 in. before raising the opposite end of the span.

H. Continuous Beams: Raise the unit by jacking according to the approved plans. Raise all beams at a single bent simultaneously. The unit may be raised incrementally from bent to bent. Do not raise the unit more than 2 in. at any bent before raising it at the adjacent bents.

I. Repair or replace by an approved method any portions of the structure damaged by the raising operation.

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

This Item will be measured by the lump sum. Permanent supports will be measured as stated in the Drawings.

4.02 PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid at the price bid for “Raising Existing Structure.” This price is full compensation for shoring, falsework, jacking, pads or bearings, labor, tools, and equipment and for all materials except new permanent supports.

END OF SECTION
SPECIAL SPECIFICATION 02780 – FLAGSTONE PAVING

PART 1 - GENERAL

1.1 SUMMARY
Flagstone pavers set in mortar in recessed concrete paving

1.2 ACTION SUBMITTALS
A. Product Data: For each type of product to be used.
B. Samples:
   1. For each stone type indicated.
   2. For each color of mortar required.

1.3 MOCK-UPS
A. Prior to construction, provide mock-up at least 5’ x 5’ sufficient enough to represent the mix of stone and type of construction. The accepted mock-up can be included as part of the final product.
   1. Show:
      a) Flagstone color and texture range.
      b) Mortar joint size, color, and profile.
      c) Pattern.

1.4 PROJECT CONDITIONS
A. Protection of Stone Masonry: During construction, cover with waterproof sheeting at end of each day’s work.
B. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
   1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried.
PART 2 - PRODUCTS

2.1 FLAGSTONE MATERIALS - See Plans for locations
   A. Limestone Sawn Slabs for Flagstone Paving: Comply with ASTM C 568.
      1. Products: Plymouth Sawed Patio Limestone
         a. Supplier: Cooper Stone
            • Address: 3786 West FM 487 (PO Box 678) Jarrell, TX 76757
            • Phone: 512.746.2210
            • Email: info@cooperstone.com
         b. Stone Size: 2” – 2 ½” thickness; by 10” – 22” wide, by 10” – 44” long. Minimum size in any horizontal direction is 10”. A maximum of 20% of rock may be minimum size and a maximum of 30% of rock may be maximum size.
         c. Color mix: Plymouth Patio, as defined by Cooper Stone with grey, light and dark brown, and buff.
         d. Shape: Random flagstone of any horizontal shape with sawn faces
         e. Pattern: Random pattern, per drawings

2.2 MORTAR MATERIALS
   A. Portland Cement: ASTM C 150, Type I or II. Provide natural color or white cement as required to produce mortar color indicated.
      1. Low-Alkali Cement: Not more than 0.60 percent total alkali when tested according to ASTM C 114.
   B. Hydrated Lime: ASTM C 207, Type S.
   C. Masonry Cement: ASTM C 91.
   D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in stone masonry mortar.
      1. Color: Buff
      2. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
         a. Davis Colors; True Tone Mortar Colors.
         b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
         c. Solomon Color1; SGS Mortar Colors.
   E. Aggregate: ASTM C 144 and as follows:
      1. For pointing mortar, use aggregate graded with 100 percent passing No. 16 sieve.
      2. White Aggregates: Natural white sand or ground white stone.
      3. Colored Aggregates: Natural-colored sand or ground marble, granite, or other sound stone; of color necessary to produce required mortar color.
   F. Latex Additive: Manufacturer's standard water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed portland cement mortar bed, and not containing a retarder.
      1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2.3 MISCELLANEOUS ACCESSORIES
B. Sealer:
   1. **Type:** Water based silane product.
   2. Produce water repellent effect without altering color or texture of substrate.
   3. **Source:** “Dynasylan BH-N” by Huls America, Inc. or approved substitute.

2.4 MASONRY CLEANERS
A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar and grout stains, efflorescence, and other new construction stains from stone masonry surfaces without discoloring or damaging masonry surfaces; expressly approved for intended use by cleaner manufacturer and stone producer.
   1. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Diedrich Technologies, Inc.
      b. Dominion Restoration Products.
      c. EaCo Chem. Inc.
      d. Hydrochemical Techniques, Inc.
      e. Prosoco, Inc.

2.5 MORTAR MIXES
A. General: Do not use admixtures unless otherwise indicated.
   1. Do not use calcium chloride.
   2. Limit cementitious materials in mortar to portland cement and lime.
   3. **Mixing Pointing Mortar:** Thoroughly mix cementitious and aggregate materials together before adding water. Then mix again, adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for one to two hours. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.

1. Mortar for Setting Stone: Type N.
2. Mortar for Pointing Stone: Type N.

C. Latex-Modified Portland Cement Setting Mortar: Proportion and mix portland cement, aggregate, and latex additive to comply with latex-additive manufacturer's written instructions.

D. Cement-Paste Bond Coat: Mix either neat cement and water or cement, sand, and water to a consistency similar to that of thick cream.

1. For latex-modified portland cement setting-bed mortar, substitute latex admixture for part or all of water, according to latex-additive manufacturer's written instructions.

E. Pigmented Mortar: Use colored cement product.

1. Pigments shall not exceed 5 percent of portland cement by weight.

2.6 FABRICATION

A. Cut stone to produce pieces of thickness, size, and shape indicated, including details on Drawings. Dress joints (bed and vertical) straight and at right angle to face unless otherwise indicated.

B. Gage backs of stones for adhered veneer if more than 81 sq. in. in area.

C. Shape stone for type of masonry (pattern) as follows:

1. Sawed-bed, range ashlar with uniform course heights as indicated on Drawings and with random lengths.

D. Finish exposed faces and edges of stone to comply with requirements indicated for finish and to match approved samples and mockups.

1. Finish exposed ends of copings same as front and back faces.

PART 3 - EXECUTION

3.1 GENERAL

A. Perform necessary field cutting and trimming as stone is set.

B. Sort stone before it is placed to remove stone that does not comply with requirements relating to aesthetic effects, physical properties, or fabrication, or that is otherwise unsuitable for intended use.

C. Arrange stones in polygonal (mosaic) pattern with uniform joint widths.

D. Arrange stones with color and size variations uniformly dispersed for an evenly blended appearance.

E. Maintain uniform joint widths except for variations due to different stone sizes and where minor variations are required to maintain bond alignment if any. Lay with joints not less than 1/4 inch at narrowest points or more than 1 inch at widest points.

F. Provide joints of widths and at locations indicated.

G. Do not use bricks with chips, cracks, discoloration, or other visible defects.

H. Layout brick paving according to pattern indicated on drawings. Installation with Portland Cement Mortar:

I. Install brick in full bed joint. Remove excess mortar. Strike joints flush with top surface of brick and tool slightly concave. Cure mortar by maintaining damp condition for seven days.

J. Installation Tolerances: Finished surface true to plane within (1/8 inch in any 10 feet), non-
cumulative.

3.5 POINTING
A. Prepare stone-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 3/8 inch deep until a uniform depth is formed.
B. Point stone joints by placing and compacting pointing mortar in layers not more than 3/8 inch deep. Compact each layer thoroughly and allow to become thumbprint hard before applying next layer.
C. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce the following joint profile:
   1. Joint Profile: Concave.

3.2 ADJUSTING AND CLEANING
A. In-Progress Cleaning: Clean stone masonry as work progresses. Remove mortar fins and smears before tooling joints.
B. Final Cleaning: After mortar is thoroughly set and cured, clean stone masonry as follows:
   1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   2. Test cleaning methods on mockup; leave one-half of panel uncleaned for comparison purposes.
   3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
   4. Wet wall surfaces with water before applying cleaner; remove cleaner promptly by rinsing thoroughly with clear water.
   5. Clean stone masonry by bucket and brush hand-cleaning method described in BIA Technical Note No. 20 Revised II, using job-mixed detergent solution.
   6. Clean stone masonry with proprietary acidic cleaner applied according to manufacturer's written instructions.

3.3 EXCESS MATERIALS AND WASTE
A. Remove all masonry waste, including mortar and excess or soil- contaminated sand, completely from the project site and dispose of properly.
PART 4 - MEASUREMENT (all items listed are to be measured complete in place)

4.1 FLAGSTONE PAVING - This item will be measured by the **Square Foot.**

PART 5 - PAYMENT

5.1 PAYMENT - The work performed and the materials furnished in accordance with the items and measurements as provided under the "Measurement" section will be paid for at the unit price bid for the items listed in the "Measurement" section. This price is full compensation for furnishing all mentioned masonry materials (per details and specifications), structural footings, equipment, labor, tools, and incidentals.

END OF SECTION
PART 1 - GENERAL

1.01 SCOPE

A. Repair of existing concrete and cement stucco

1.03 REFERENCES

A. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement
B. ASTM A555 - Standard Specification for General Requirements for Stainless Steel Wire and Wire Rods
C. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
D. ASTM A641 - Standard Specification for Zinc–Coated (Galvanized) Carbon Steel Wire
E. ASTM A767 - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
F. ASTM A955 - Standard Specification for Deformed and Plain Stainless Steel Bars for Concrete Reinforcement
G. ASTM A1022 - Standard Specification for Deformed and Plain Stainless Steel Wire and Welded Wire for Concrete Reinforcement
H. ASTM C33 - Standard Specification for Concrete Aggregates
J. ASTM C882 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
O. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
P. AWS D1.4 - Structural Welding Code - Reinforcing Steel; American Welding Society
Q. ICRI Standard 310.2 Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair with CSP Chips.
1.04  SUBMITTALS

A. Product Data: Indicate product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.

B. Manufacturer’s Certificate: Certify that specified products meet or exceed specified requirements.

C. Project Record Documents: Accurately record actual locations of structural concrete repairs, type of repair.

1.05  QUALITY ASSURANCE

A. Perform welding work in accordance with AWS D1.4.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

C. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience.

1.06  MOCK-UP

A. Provide one mock-up for each type of repair demonstrating repair methods.

B. Locate where directed.

C. Accepted mock-ups may remain as part of the Work.

1.07  DELIVERY, STORAGE, AND PROTECTION

A. Comply with manufacturers’ instructions for storage, shelf life limitations, and handling.

PART 2 - PRODUCTS

2.01  MANUFACTURERS

Approved concrete repair materials manufacturers:

A. Sika Corporation: www.sika.com

B. BASF/Master Builders www.master-builders-solutions.basf.us

C. MAPEI www.mapei.com

D. Ruredil http://english.ruredil.it/

E. Or approved substitute

2.02  REPAIR MATERIALS
A. Cementitious Repair Mortars
   1. Pre-packaged, Portland cement based, polymer-modified, mortar. Use non-sag formulation for overhead applications.
   2. Bond Strength (ASTM C-882): 2,000 psi (min.)
   3. Modulus of Elasticity: 1 x10^5 psi to 4 x10^5 psi.
   4. For repairs more than 2" thick: extend the approved repair mortar with 80-lbs/cf of coarse crushed aggregate meeting the requirements of ASTM C33, maximum nominal size of 3/8 inch. Aggregate must be clean, well graded, and saturated surface dry.

B. Concrete for Re-cast Repairs (Repairs greater than 4" thick):
   1. Prepackaged, single component, flowable, shrinkage compensated, self-consolidating repair mortar
   2. Slump Flow: 25-in (ASTM C1611)
   3. Drying shrinkage: 350 μ-strain at 28 days (ASTM C 157)

C. Bonding agent or primer: As recommended by repair material manufacturer

D. Portland cement: ASTM C 150, Type I.

E. Sand: ASTM C 33, uniformly graded, clean.

F. Water: Clean and potable.

2.03 CONVENTIONAL REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615 Grade 40 billet-steel deformed bars, unfinished.

B. Stainless Steel Reinforcing: ASTM A955 Grade 60 deformed and plain stainless steel bars, or ASTM F593 Alloy Group 1 threaded rod.

C. Wire mesh: as noted on the Drawings

D. Tie Wire: 16 ga or 18 ga black annealed, galvanized annealed or Type 304 stainless steel wire, as noted on the Drawings.


2.04 FABRIC REINFORCED CEMENTITIOUS MATRIX (FRCM)

A. Ruredil X-Mesh Gold PBO composite reinforcing fabric and Ruredil X 750 Mortar

B. Simpson Strong Tie CSS-CM one-component, shrinkage-compensated, polypropylene-fiber reinforced cementitious matrix with CSS-BCG Bidirectional Carbon Grid
2.05 CURING COMPOUND

A. The use of curing compound is prohibited unless specifically allowed in writing.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work.
B. Beginning of installation means acceptance of substrate.

3.02 PREPARATION

A. Remove loose and deteriorated concrete by mechanically chipping to obtain a fractured aggregate surface. Remove concrete around visible reinforcing steel and embedments to allow full coverage by patching materials.
B. Saw or grind edges of patch to create a 90° angle to eliminate feather edging. Ensure that a minimum depth of ½-inch is maintained for all repair areas.
C. Remove rust and corrosion from exposed steel embedments and reinforcing to ensure adequate bond. Ensure a minimum clearance around reinforcing of 1-inch.
D. Install dowels using adhesive anchoring where required.
E. Clean all surfaces to remove dust, dirt, oil, or other contaminants that may inhibit patch bonding.

3.03 MIXING MATERIALS

A. Mix mortar and grout in accordance with manufacturer’s instructions for purpose intended.

3.04 APPLICATION – RE-CAST CONCRETE REPAIR

A. Pre-wet area to be patched so that the pores of the concrete are filled with water. Remove any ponding or glistening water on the surface of the surfaces to be patched to achieve a saturated, surface dry condition.
B. Form the faces of the repair area as required. Seal form to prevent leakage.
C. Vibrate repairs containing coarse aggregate. Do not over-vibrate.
D. Do not interrupt successive placement; do not permit cold joints to occur.
E. Moist cure all surfaces with wet burlap for a minimum of 72 hours. Form curing may be substituted for moist curing if approved in advance by the Engineer.
F. After filling patch area, consolidate and screen to provide a smooth finish.
3.05 APPLICATION - CEMENTITIOUS REPAIR MORTAR

A. Repair reinforcement by installing new reinforcement bars as noted on the drawings use sleeve splices or lap splices as appropriate.

B. Pre-wet area to be patched so that the pores of the concrete are filled with water. Remove any ponding or glistening water on the surface of the surfaces to be patched to achieve a saturated, surface dry condition.

C. Work a scrub-coat of bonding material into the prepared substrate to ensure intimate contact and establish bond. Ensure that all voids and pores are filled with patch material.

D. While scrub-coat is still wet, add additional patch material to area to be patched. Work from the edges toward the center of the patch area.

E. After filling patch area, consolidate and screen to provide a smooth finish.

F. Vibrate repairs containing coarse aggregate. Do not over-vibrate.

G. Patch material may be applied in multiple lifts when the depth of the patched area exceeds the maximum material thickness recommended by the manufacturer. For multiple lifts:
   1. Allow the lower lift to set approximately 30 minutes to achieve sufficient strength to support additional lifts.
   2. Roughen the face of the lower lift to create a bonding surface for the next lift.
   3. Apply a second scrub coat and work additional patch material into patch location. Once reaching desired surface levels, consolidate and screed to provide a smooth finish.

H. Moist cure all surfaces with wet burlap for a minimum of 72 hours. Form curing may be substituted for moist curing if approved in advance by the Engineer.

3.06 APPLICATION - FRCM

A. All concrete surfaces shall be dry and free of surface moisture and frost, and tested by Contractor to evaluate moisture transmission in accordance with ASTM D4263 "Indicating Moisture in Concrete by the Plastic Sheet Method."

B. All concrete surfaces shall be sound. Remove deteriorated concrete, dust, laitance, grease, paint, curing compounds, waxes, impregnations, foreign particles, and other bond inhibiting materials from the surface by blast cleaning or equivalent mechanical means.

C. All concrete surfaces shall be air blasted and vacuumed clean to a dust free condition.

D. Concrete surface irregularities shall be ground and smoothed and/or filled with an approved repair mortar. Any sharp edges (e.g. fins, form lines, etc.) must be ground smooth and flush.

E. The concrete surface should be prepared to a minimum concrete surface profile (CSP) 3 (light shot blast) as defined by the ICRI surface profile chips.

F. Apply FRCM System in accordance with Manufacturer’s recommendations.
G. Fabric shall be cut beforehand into required lengths. Fabric shall be lapped in the primary direction 6 inches minimum or as indicated on the Drawings.

H. The matrix is first applied uniformly to the prepared surface where the system is to be placed. Fabric is gently pressed into the matrix in a manner recommended by Manufacturer.

I. Successive layers of matrix and fabric are placed before the complete cure of the previous layer of matrix.

J. Curing: 10-days using protective sheeting or other barriers.

3.07 FIELD QUALITY CONTROL

A. Obtain Engineer’s review of each of the areas to be repaired, after the repair areas have been opened up but before application of repair mortar

3.08 FINISH

A. All existing and new exposed-to-view concrete surfaces shall receive a finish of adhesive cementitious grout of a minimum 1/16-inch thickness, composed of one part white cement, one part natural (grey) cement, two parts masonry sand, one part latex emulsion, and enough water to form a viscous slurry. Finish shall be applied with a roller or brush without running or sagging.

B. All cement stucco surfaces and FRM surfaces shall receive an approved acrylic coating.

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

When this Item is specified on the plans to be a pay item, this Item will be measured by the lump sum or by each structure, structure unit, or group of structures as shown on the plans.

4.02 PAYMENT

When this Item is specified as a pay item, the work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for by the square foot or by the each at the unit prices bid for “Concrete Repair”.

When the Item is not specified as a pay item, the work performed and materials furnished in accordance with this Item will not be measured or paid for directly but will be subsidiary to pertinent Items.

END OF SECTION
PART 1 - GENERAL

1.01 WORK INCLUDES

A. Repointing
   1. Where selective or miscellaneous repointing is identified, the scope shall include:
      a. Locations specifically identified on the Drawings;
      b. Where mortar is loose or deteriorated mortar that can be easily removed by hand with little effort;
      c. Where visible cracks in the mortar joints and masonry exist, unless otherwise noted;
      d. Mortar is missing from the joint so as to permit water infiltration

B. Repair of cracks
C. Reconstruction of brick masonry
D. Interior Lime plaster

1.02 QUALIFICATIONS

A. Five years documented experience of the lead mason in work of the type specified.

1.03 SUBMITTALS

A. Submit manufacturer’s data for all masonry materials.
B. Submit 1-gal. sample bags from each of the proposed sand sources, and of the cement to be used. Mark the bags with the source of the material and the mix design which it belongs to.
C. Submit brick unit sample to establish standard for masonry reconstruction work.

1.04 FIELD TESTING, SAMPLES AND MOCKUPS

A. Prepare field test demonstrating repair methods and materials. Prepare test batches of repair mortars with reproducibly measured quantities. The final color of the patching mix must be selected from a range of fully cured, dry samples prepared by the Contractor.

B. Prepare in-place mock-up of brick reconstruction. Locate where directed.

C. The field samples will be prepared according to these specifications and manufacturer’s recommendations.

D. Protect the field test areas from dirt and moisture for 72 hours. The Engineer will review the results of the test and may direct changes to the methods or materials as a result of the field tests.

1.05 COLD WEATHER

A. None of the work outlined in this section that requires the application of mortars, grouts or plasters shall be conducted when surface or air temperatures are below 45 degrees F. or when there is a chance that surface temperatures may fall below 40 degrees F. in the 24 hours following applications.
PART 2 - MATERIALS

2.01 MORTAR

A. Materials:

1. Portland Cement: White, ASTM C150 Type I
2. Lime: ASTM C207, Type S.
3. Sand: natural sand from a local source, clean, sound, and washed. Provide sands that will produce final mortar color matching the existing, and with aggregate grading and mineralogy similar to existing mortar.

B. Once mixes are established by field-testing, mix accordingly using accurate measurement of components. Provide designated measuring containers, clearly labeled for the purpose, and train personnel in proper measurement and mixing procedures.

C. Mix in a clean mechanical batcher for 3 to 5 minutes. Let mortar sit for 20 minutes prior to use to allow for initial shrinkage. Keep moist and do not allow to dry out.

D. Protect existing materials from damage, staining, and discoloring.

E. None of the work outlined in this section shall be conducted when surface or air temperatures are below 45 degrees F., or when there is a chance that surface temperatures may fall below 40 degrees F. in the 24 hours following applications.

2.02 LIME PLASTER

A. Materials:

1. Portland Cement: White, ASTM C150 Type I
2. Lime: ASTM C207, Type S.
5. Trial batch Proportions: 1:2:8 cement:lime:sand or as needed for workability

2.03 BRICK

A. Materials: Salvage brick masonry units from the existing structure may be used if available. Prepare and clean existing brick units

B. Replacement brick shall match the size, color, texture and hardness of the existing.

2.04 INJECTION GROUT

PART 3 - EXECUTION

3.01 REMOVAL OF EMBEDDED METAL

A. As necessary, drill out ferrous surface fasteners, anchors, or pins with a core drill bit size only slightly larger than the fastener to be removed. For larger elements, remove the brick as necessary. Fill holes with mortar and rebuild areas where brick has been removed.

3.02 BRICK REPOINTING AND CRACK REPAIR

A. Repointing

1. All mortar in the work area shall be cut back to a depth of at least 1", three times the joint width, or to sound mortar, whichever is greater. Care must be taken to avoid damage to the masonry units and to prevent widening of joints. Back of the joint shall be cut square.

2. Remove mortar with any of the following methods:
   a. Hand tools of appropriate type and size
   b. Power washing shall not be used for mortar removal. Only low pressure (<100psi) water as from a garden hose is permitted.
   c. Do not use electric or pneumatic chisels or saws to remove mortar.
   d. Do not spall or chip masonry units. More than 1/4 square inch of chip per square foot of masonry is unacceptable.
   e. Remove any sealants, tar or other non-mortar joint filler; remove all trace of sealant, tar, etc. to assure bond. All loose material shall be washed from the joints using a hose or low-pressure pump sprayer. Joints shall be wetted before the new mortar is applied.
   f. Mortar preparation and mixing.
      1) The lime, cement and sand should be carefully measured and well mixed together dry. Any pigment should be added in measured quantities and well dispersed into the other materials.
      2) Mortar shall be mixed in small batches so that it will be used within one hour after preparation.
   g. Joint filling.
      1) Mortar should be packed in thin layers, not exceeding ¼". Compact and allow each layer to become thumbprint hard before installation of new lift. Filled joints should be tooled to match the original joint profile. No mortar shall extend onto the face of the units.
   h. Clean-up excess mortar at all areas repointed or rebuilt. Excess mortar should be removed from the surface before it sets using a bristle brush or by rubbing the
surface with burlap or clean sand. Dried mortar shall not be removed with muriatic or other strong acid. 10% Distilled vinegar may be used.

B. Crack Repair

1. Small Cracks: Less than 1/8" wide - fill with neat lime paste
2. Large Cracks: Greater than 1/8" wide - fill with repointing mortar to a depth of 1"

3.03 BRICK RECONSTRUCTION

A. Missing brick: Rebuild where shown on the drawings using approved new or salvaged brick. Lay brick plumb, level, and true to a line, in bond and coursing to match the original. Align on exposed face. Lay brick in full bed of mortar with head joints and bed joints completely filled. Tool joint to match original.

B. Cracked and displaced brick: Where shown on the drawings, remove and replace cracked and displaced brick. Reset all areas where loose bricks are uncovered during repointing operations. Finish tool all rebuilt work to match original joint detail and to blend fully with adjoining areas.

3.04 GROUT INJECTION

A. Use a grout pump with agitating hopper capable of 30 psi pressure. (ChemGrout CG-050M manual grout pump www.chemgrout.com or similar) Pump must be equipped with pressure gauge to monitor injection pressure. Monitor the pump pressure. Maximum grouting pressure shall be less than 15-psi (1Bar). The grouting shall be stopped if the pumping pressure exceeds 20-psi.

B. The injection crew must be the same crew as used on the approved mock-up or demonstration. It is essential that the injection crew not be substituted.

C. Grout hose shall be equipped with quick disconnect fittings to eliminate pressure build up.

D. Inject grout in accordance with these specifications and the manufacturer's recommendations.

E. Drill holes only in mortar joints. Incline holes slightly downward, unless directed otherwise.

F. Seal the crack and ports using non-staining clay, sealant, or caulk.

G. Immediately before injection, moisten interior of the crack by flushing with water. If the crack is allowed to dry out before the grout is injected, this step must be repeated.

H. Inject grout into the lowest port and continue until it flows freely from this port and other ports at the same level. Seal ports and proceed in identical fashion until the crack is filled. Clean up overflow and drips immediately with clean water.

I. The grouting should be done by fully inserting the nozzle into the hole and pumping grout until refusal, then withdrawing the nozzle a little at a time as the hole is grouted.

J. Let the grout take an initial set (approximately 2 hours) before removing sealant. After removing the sealant, repair the crack surface, mortar joints, and injection holes with mortar as specified.
K. Compressive strength testing (Cube Testing) for each day’s grouting shall be conducted as specified by ASTM C942.

L. Where required by the engineer, holes shall be drilled after the injection work is complete. Holes shall be 3-inch diameter cores, centered on the crack the depth equal to the injection holes (12 inches). Fill the holes with grout after inspection and approval by the engineer. If the holes are to be drilled on an exposed face, first remove the top layer of brick. Replace the brick after the hole is drilled and the void is packed with mortar.

3.05 INTERIOR PLASTER

A. Apply plaster only after all removal of embedded metal, repointing, crack repair, and masonry reconstruction is complete.

B. Wash masonry with clean water to remove all dust and laitance.

C. Apply plaster in a minimum of two coats, allowing sufficient curing time before applying the next coat. Curing time is about 7 days normally, but will vary depending on the materials used and the ambient conditions.

D. No finish coat is required.

E. Scratch coat: apply the scratch coat to the entire surface to be plastered. Dampen the support surface beforehand.

F. Apply by casting-on (trowel, plastering trowel, or float) or by spraying with an appropriate spraying machine. Alternatively, apply the first coat as normal using a laying-on trowel, using even pressure to 'press' it on or into the wall. Lime mortars are extremely cohesive but require more effort than for cement plaster, requiring greater pressure to press the render onto the surface.

G. After the scratch coat has achieved an initial set, and is not at risk of coming off the wall, strike the surface with the edge of a steel trowel to open the surface and knock down the high spots.

H. Brown coat: after the scratch coat has cured, dampen the scratch coat and apply the brown coat in as many layers as required by the surface. DO NOT APPLY over 2-inches total thickness, or over ¾” per layer.

I. Wait until each layer has cured before proceeding to the next (48 hours approx). Dampen the previous layer before beginning the following one. Finish by striking off the surface with a float or trowel.

J. Application should be reasonably even and once applied should not be overworked or straightened too much.

3.06 CLEAN-UP

A. Keep finished surfaces free of excess mortar, grouts, adhesives, and dirt. Clean surfaces immediately after repairs are complete.

B. Do not use wire brushes or acid to clean masonry.

3.07 PROTECTION OF FINISHED WORK

A. Protect masonry and plaster from dirt, rain, or irrigation water until substantial completion or acceptance by the Engineer.

PART 4 – MEASUREMENT & PAYMENT
A. Removal of Embedded Metal: no separate measurement or payment will be made. This item is subsidiary to other parts of the work.

B. Brick Repointing and Crack Repair: measurement shall be by the square foot.

C. Brick Reconstruction measurement shall be by the square foot.

D. Grout Injection: measurement shall be by the linear foot.

E. Interior Plaster: measurement shall be by the square foot.

F. The work of this section shall be paid for at the contract unit price bid, which price shall be full compensation for preparing the substrate; furnishing and placing all materials, and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work.

END OF SECTION
PART I - GENERAL

1.01 WORK INCLUDED

A. Flashing and sheet metal as indicated on Drawings and in these specifications as required for a complete and proper installation. The following items are included:
   1. Cap flashings for the bottom chord and exposed gusset connections
   2. Standing seam roofing at the towers
   3. Bird exclusion at tower openings
   4. Deck toe board

1.03 SUBMITTALS

A. Describe material profile, jointing pattern, jointing details, fastening methods, and installation details.

1.04 MOCKUPS

A. Provide full sized mockups illustrating typical seam, edge cleat, external corner, internal corner, material, and finish, for each of: Bird exclusion panels, toe board, truss cap flashings, and standing seam roof caps at towers.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA and NRCA standard details and requirements.

1.06 QUALIFICATIONS

A. Company specializing in sheet metal flashing work with a minimum of 5-years documented experience.

1.07 STORAGE AND HANDLING

A. Stack pre-formed materials to prevent twisting, bending, or abrasion, and to provide ventilation.

B. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

C. Deliver materials to the job site in the manufacturer’s original, unopened packages and containers bearing manufacturer’s name and label.

1.08 TESTING AND INSPECTION

Fastener withdrawal tests are required for the cleat fasteners on the tower roofs. Install a minimum of three approved fasteners in the substrate, and obtain testing lab’s on-site pull-out test. Report the findings to the engineer and make any recommended adjustments in the size, spacing or type of fasteners.

1.08 WARRANTY
A. Provide pre-finished metal manufacturer’s twenty-year coating warranty.

PART 2 - PRODUCTS

2.01 SHEET METALS

A. Galvanized Steel: ASTM A 525, G90, gauge as specified.

B. Pre-finished Metal - (All metal visible from ground) minimum 70% Kynar. Prefinished metal may be either galvanized or galvalume.

C. Counterflashing: 24-gauge galvanized steel.

D. Gauge where not otherwise noted

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<thead>
<tr>
<th>Unsupported Height or Width</th>
<th>Minimum Gauge</th>
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<tr>
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<td>11 - 12 inches</td>
<td>20</td>
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<tr>
<td>Greater than 12 inches</td>
<td>As approved by the Engineer</td>
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E. Cover Plates, End Caps and Miscellaneous Sheet Metal: Same materials, gauge and profile as edge metal or expansion joint material.

F. Cleats: Minimum 2 gauges heavier than associated metal.

G. Bird exclusion panels and deck toe board: Perforated Metal, Galvanized, G90, Mill Finish, 16 Gauge (.0635” Thick) – Refer Drawings for Pattern

H. ASTM D6386 Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting

2.03 ACCESSORIES

A. Solder: ANSI/ASTM B 32 50/50 type.

B. Waterproofing Membrane: 40 mil-thick reinforced, self-adhering modified-bituminous membrane, Grace Bituthene 3000 or approved substitute.

2.04 SEALANT

A. Type I: Application exposures to sunlight, ASTM C-920-87, Federal Specification TT-S-00230-C one component gun-grade polyurethane sealant suitable for continuous immersion and resistant to asphalt products.

2.05 SCHEDULE OF FASTENERS

A. Exposed fasteners: Shall be stainless steel with stainless steel bonded neoprene washers, except as otherwise noted.
B. Fasteners shall be compatible with all materials to which they come in contact.

C. Cleat, Counterflushing, and Surface Fastened Components.
   1. Concrete & Masonry Substrate: As shown on the Drawings
   2. Wood Substrate: No. 10 stainless steel wood screws with stainless steel bonded neoprene washers of length necessary to penetrate wood substrate one inch.
   3. Metal Substrate: Minimum No. 10 hot dip galvanized sheet metal screws or as necessary to suit application, with stainless steel bonded neoprene washers where required.

2.06 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Fabricate continuous cleats and starter strips of same material as sheet, inter-lockable with sheet.

C. Form pieces in longest practical lengths.

D. Hem exposed edges of metal 1/2-inch; miter and seam corners.

E. Form materials with cover plate seam.

F. Fasten and seal metal joints.

G. Fabricate corners from one piece with minimum 18-inch and maximum 36-inch long legs; fasten for rigidity, seal with sealant.

H. Fabricate vertical faces with bottom edge formed outward 1/4-inch and hemmed to form drip.

I. Form scuppers, conductor heads, and downspouts of profiles and sizes as specified herein and as shown on Drawings.

J. Form sections square, true, and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints

K. Enlarge holes for fastening counter flashing, coping, and pressure bars as necessary to allow for thermal expansion and contraction. Cover exposed holes with appropriate washers.

L. All fabrication and installation of sheet metal shall be in accordance with the latest published SMACNA guidelines and recognized roofing and sheet metal industry standards.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify substrate is sound and ready to receive cleats and fasteners.

B. Beginning of installation means acceptance of existing conditions.

3.02 PREPARATION

A. Field measure site conditions prior to fabricating work.
B. Apply bituminous protective backing on surfaces in contact with dissimilar materials.

3.03 INSTALLATION - GENERAL

A. Provide flashings of materials indicated on Drawings at all junctures of the roof with perimeters, curbs, mechanical, electrical equipment, etc., such that a completely watertight installation is achieved.

B. Fabricate and install sheet metal work with lines, arises and angles sharp and true, and plane surfaces free from warps and buckles. Bead or return all exposed edges. Tin metal for full area of contact on soldered seams and joints. Do soldering slowly with well heated coppers, thoroughly heating seams and completely filling them with solder.

C. Apply waterproofing membrane on a substrate prepared in accordance with the membrane manufacturer’s requirements. The waterproofing membrane shall be applied to all areas covered by metal roofing.

D. Submit details not covered in Drawings for approval by Owner or Engineer.

E. Install starter and edge strips, and cleats before starting installation.

F. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Engineer.

G. Lock and seal all joints.

H. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

I. Fasten sheet metal with approved fasteners at a minimum of 12 inches on centers unless otherwise specified in these Specifications or the Drawings.

3.04 STANDING SEAM ROOFING/COPING

A. Fabricate and install according to the latest published SMACNA guidelines and in accordance with recognized roofing and sheet metal industry standards.

B. All horizontal lap joints shall have a standing seam as shown on the drawings.

C. Ridges and hips shall be locked seam (aka “double munch”).

3.05 COUNTERFLASHING

A. Secure counter flashing to substrate with appropriate stainless steel fasteners through neoprene washers on 8-inch centers.

B. Overlap adjacent counter flashing segments a minimum of four inches.

C. Apply a continuous bead of Sealant, Type I, to the top edge of flashings as shown on Drawings.

3.06 CLEATS

A. Install cleats for with appropriate fasteners as directed after pull-out testing.
3.11 CLEANING

A. Remove bituminous markings from all exposed surfaces.

PART 4 – MEASUREMENT & PAYMENT

A. Waterproofing Membrane, fasteners, cleats, clips, edging, counter flashings, and other accessories: no separate measurement or payment will be made. This work is subsidiary to other pay items.

B. Bird exclusion panels: measurement shall be by the square foot.

C. Deck toe board: measurement shall be by the linear foot.

D. Cap flashings for the bottom chord and exposed gusset connections: measurement shall be by the linear foot.

E. Standing seam roofing at the towers: measurement shall be by the linear foot.

F. The work of this section shall be paid for at the contract unit price bid, which price shall be full compensation for preparing the substrate; furnishing and placing all materials, and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work.

END OF SECTION
SPECIAL SPECIFICATION 09911 - CLEANING & PAINTING EXISTING STEEL STRUCTURES (BRIDGE)

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. **Base Bid:**
   Clean and paint all existing structural and miscellaneous steel, except galvanized steel that is to remain unpainted (e.g. suspension cables, anchor rods, and suspender rods). Structural steel includes all main members, bearing apparatus, diaphragms, floor beams, rivets, bolts, lateral bracing, etc., where applicable.

   “Cleaning and Painting Existing Steel Structures (Bridge)” includes painting of railing unless otherwise shown on the plans.

1.02 DEFINITIONS

A. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, fillers, and other applied materials whether used as prime, intermediate or finish coats.

1.03 REFERENCES

A. The Society for Protective Coatings (SSPC) Guidelines

B. TxDOT Departmental Material Specifications (DMS)

   1. DMS-8100, “Structural Steel Paints—Formula,”
   2. DMS-8101, “Structural Steel Paints—Performance.”
   3. DMS-8105, “Paint, One Coat Overcoat,”

1.04 QUALIFICATIONS

A. Contractors and subcontractors performing surface preparation or coatings applications in the field:

   1. SSPC QP 1 certification for work requiring the removal or application of coatings. Additionally, submit to the Engineer documentation verifying SSPC QP 2 certification when work requires removal of coatings containing hazardous materials. Maintain certifications throughout the project. No work may be performed without current and active certifications unless otherwise shown on the Drawings.

   2. The Engineer may waive certification requirements, when stated on the Drawings, for the purpose of qualification in the SSPC QP program if the SSPC has accepted the project as a qualification project as part of the process for obtaining SSPC QP1 or QP2 Category A certification.

   3. Do not perform work if certification has expired.

   4. Requests for time extension for any delay to the completion of the project due to an inactive certification will not be considered and liquidated damages applies.

   5. All painting shall be done by skilled workers. Application of modern specialized coatings requires painters knowledgeable about characteristics of the various coatings, solvents, and substrates. The painter must also be capable of adjusting equipment
and application techniques as dictated by the type of paint, weather conditions, environment, and size and shape of the surface being painted.

B. Disqualifications:

1. Engineer may withdraw qualification for questionable performance of the painter, blasting operator, or the equipment.

2. Disqualification may result from inadequate surface preparation, improper profile, runs, sags, overspray, thin film thickness, excessive film build-up, uneven coating, non-uniform color, improper curing, or any other defect in the coating system.

3. Any painter who, in the opinion of the engineer, does not adjust the equipment so that the coatings are applied in a uniform full wet coat free of runs, sags, holidays, and overspray shall not be considered a skilled and experienced painter.

4. Spray application of coatings shall be essentially 90 degrees to the surface and 10 to 18 inches from the surface in order to apply a full wet coat of paint free of overspray, runs, sags, and holidays. Any spray painter who does not consistently spray in this manner and/or extends the spraying stroke such that paint is being applied to the surface at an angle less than 80 degrees shall not be allowed to spray paint.

1.05 SUBMITTALS

A. Submit SSPC QP applications and proof of acceptance before beginning work. One copy each of all current "SSPC: The Society for Protective Coatings” specifications or qualification procedures which are applicable to the painting or paint removal to be performed. These documents shall become the permanent property of the Owner.

B. Painting contractor's qualifications and certification.

C. Containment plan that details the procedures and type and size of equipment proposed to keep public property, private property, and the environment from being adversely affected by the cleaning and painting operations. Approval of the plan is required before cleaning and painting operations begin.

D. Engineering analysis showing the loads, including wind loads, added to the existing structure by the containment system and waste materials. Have a licensed professional engineer sign, seal, and date the submittal.

E. "Materials Safety Data Sheet" for each material used and shall provide copies to the engineer.

F. Proposed methods and equipment to be used for any paint application.

G. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

H. Samples: Submit samples for Engineer's review of color and texture. Provide a listing of material and application for each coat of each finish sample.

I. Do not proceed with painting until materials and finishes are approved by Owner and Engineer.

1.06 DELIVERY AND STORAGE
A. Deliver materials to job site in original, new, and unopened packages and containers bearing manufacturer's name and label, and following information:

1. Name or title of material
2. Federal Specification number, if applicable
3. Manufacturer's name, stock number, and date of manufacture
4. Contents by volume, for major pigment and vehicle constituents
5. Thinning instructions
6. Application instructions
7. Color name and number

B. Do not begin finish painting in any area until sufficient materials are on site to complete the work in that area.

C. Store and handle materials to prevent damage to materials or work in place, and to eliminate unnecessary fire hazard. Store materials in well ventilated spaces. Promptly remove from site all paints and containers not meeting project requirements.

1.07 JOB CONDITIONS

A. Apply water base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F (10 degrees C) and 90 degrees F (32 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F (7 degrees C) and 95 degrees F (35 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85% or to damp or wet surfaces; unless otherwise permitted by paint manufacturer's printed instructions.

D. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers shall be limited to those identified in the TxDOT Materials Producers List for the specified paint system https://www.txdot.gov/business/resources/producer-list.html

2.02 PRODUCTS

A. Standard paint systems for painting existing steel include the following:

2. Urethane Appearance Coat.
   a. This appearance coat is a glossy, acrylic-cured aliphatic urethane-appearance coat recommended by the manufacturer for marine service.
   b. The manufacturer recommends the urethane appearance coat for use over any pre-approved primer or intermediate coating from the same manufacturer.

A. Ensure all coatings in the paint system, including shop-applied coats, are from the same manufacturer.

### 2.02 COLORS AND FINISHES

A. Color Selection: from Manufacturer’s standard colors.

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**PART 3 - EXECUTION**

### 3.01 CONTAINMENT

A. Provide a containment system capable of containing all refuse. Obtain approval of the containment system prior to beginning work. Unless otherwise shown on the Drawings, the containment system must meet the following minimum requirements:

1. Rigid or flexible supports
2. Ability to withstand winds up to 30 MPH
3. Enclosure of all sides of area being cleaned
4. Overlapping seams and entryways

B. In order to comply with Federal, State, and local laws and regulations it will be necessary for the contractor to contain all wastes generated from this project. These may include, but are not limited to, all or some of the following: Soil; Petroleum solvents or other solvents used to remove grease-like contaminants; rusted or loose materials; overspray resulting from penetrating sealer, epoxy primer, and acrylic aliphatic polyurethane appearance coat; rags, sponges, filters, protective clothing, or other materials used for these operations. The contractor will take appropriate measures to prevent, minimize, and control the spill or materials used or generated in the cleaning/painting. The contractor will provide contingency response plans to be executed in the event of a spill of wastes or other material during the course of the project.

C. Where there is potential paint to be sprayed on vehicles, buildings, or people, provide protective shields around the painting area.

D. Remove all refuse from the cleaned members before the Inspector enters the containment to inspect the cleaned surfaces. Remove all refuse from the containment before ending work for the day.

### 3.02 STORAGE AND DISPOSAL
A. Collect all waste generated by cleaning and painting operations as necessary to prevent release into the environment. At a minimum, collect all waste before leaving the jobsite each day. Handle and store the waste as if it was hazardous or Universal Waste until classification is made. Follow the requirements of 30 TAC 335 for on-site handling of the waste. Store waste collected in containers that comply with 49 CFR Part 178. Seal containers containing waste each day before leaving the jobsite.

B. Test a representative sample of waste using EPA Test Method 1311, “Toxicity Characteristic Leaching Procedure” (TCLP), to determine existing metal and organic content. Handle and dispose of non-hazardous waste as a “Special Waste” as defined in 30 TAC 330.2 or as directed. Provide documentation showing disposal of the waste was done in a suitable landfill holding permits to handle this type of material. Dispose of hazardous waste in compliance with applicable waste rules and regulations. Transport hazardous waste using a permitted transporter and dispose of in an authorized hazardous waste facility.

C. Provide copies of all test reports and transportation manifests to the Engineer before shipping waste. Provide signed original manifests to the Engineer verifying all steps of the handling and disposal process were correctly handled.

3.03 RIGGING AND SCAFFOLDING

A. The contractor is responsible for the safety and correctness of the equipment, rigging, scaffolds, etc.

B. Contractor shall make available safe and adequate access to all parts of the work for proper inspection.

C. Rigging, scaffolds, etc. shall not be placed or hung from previously painted surfaces until the previously applied coating has had a minimum of 48 hours curing time. Previously painted surfaces to which rigging, scaffolding, etc. will be placed on or hung from shall be protected with an approved padding to minimize damage to previously applied coating. All coating damage as a result of rigging and scaffolding shall be repaired as directed by the engineer.

3.04 INSPECTION

A. Do not apply paint until the Engineer approves the prepared surface.

B. Contractor must examine areas and conditions under which painting work is to be applied and notify Owner in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

C. Starting painting work will be construed as Contractor’s acceptance of surfaces and conditions within any particular area.

D. Do not paint over dirt, rust, scale, grease, moisture, or conditions otherwise detrimental to formation of durable paint film.

3.05 SURFACE PREPARATION

A. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
B. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

C. General Preparation.

1. Clean far enough into any shop-applied paint to ensure removal of all contaminants. Feather edges of sound paint around cleaned areas.

2. Ensure all surfaces to be painted are completely free of oil, grease, moisture, dirt, sand, overspray, welding contamination (slag or acid residue); loose or flaking mill scale, rust, or paint; weld spatter; and any other conditions that will prevent the paint from forming a continuous, uniform, tightly adhering film. Remove all hackles, splinters, weld spatter, sharp edges, fins, slag, or other irregularities which may interfere with proper paint adhesion to the steel. Remove all steel splinters (hackles) raised or evident during cleaning.

3. Before other cleaning operations, remove grease-like contaminants with clean petroleum solvents or other approved methods. Contain solvents and removed material as approved. Dispose of properly or reuse solvents as approved. This requirement applies to all coats.

4. Completely remove, as directed, the protective coating on machined surfaces and pins.

5. Do not damage adjacent materials such as concrete during surface preparation or painting.

6. Feather all sound, tightly adhered coating edges surrounding cleaned or repaired areas a minimum of 1 in. and ensure a smooth, blended transition.

D. Classes of Cleaning. The requirements of “General Preparation,” apply whether or not a class of cleaning is specified.

1. All paint systems require water blasting to remove contaminants before any other surface preparation, and tool cleaning for defective areas of disbonded coating or rust.

2. Tool Cleaning. Meet the requirements of SSPC-SP2 or SP3 unless otherwise shown on the plans. Probe the perimeter of peeled areas of paint with a putty knife to ensure remaining paint is tightly adhered.

3. Water Blasting. Meet the requirements of SSPC-SP WJ-4. Tight mill scale and tightly adhered rust and paint are permitted. Probe the perimeter of peeled areas of paint with a putty knife to ensure remaining paint is tightly adhered.

3.06 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Store materials not in use in tightly covered containers. Maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
3.07 **APPLICATION**

A. Immediately before painting, clean steel surfaces by blowing with clean compressed air, brushing, or both to remove traces of dust or other foreign particles. When surfaces become contaminated, wash the surfaces either with clean, fresh water or with mild detergent and water mixture followed by a complete and thorough rinse with clean, fresh water.

B. Do not paint any surface with discernable moisture.

C. Ensure that spray equipment:
   1. Has adequate capacity and sufficient gauges, filters, agitators, regulators, and moisture separators to ensure delivery of clean dry air at the proper pressure and volume
   2. Is adequate for the type of paint being used
   3. Has spray heads that provide a smooth, uniform coat of paint
   4. Separates moisture from air stream in contact with the paint
   5. Has no dried coatings, solvents, or other foreign matter on surfaces that paint is likely to contact

D. Maintain all equipment and accessories in good working order.

E. During painting operations, keep paint pots no more than 20 ft. above or below the level of spray application of paint. Do not allow fluid hoses to sag more than 10 ft. below the level of the bottom of the paint pot or actual spraying operations, whichever is the lowest point. Keep hoses serviceable with no cracks or deterioration. Equip paint pots (or other containers from which the paint is dispensed) with agitators that operate whenever paint is in the pot.

F. Airless Spray Equipment. Use regulator and air or fluid pressure gauges. Use fluid hoses with at least 1/4 in. I.D. and a maximum length of 75 ft.

G. Conventional Spray Equipment. Use independent fluid pressure and atomization pressure regulators and gauges. Use fluid and air hoses with at least 1/2 in. I.D. and a maximum length of 75 ft.

H. General Procedure
   1. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
   2. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
   3. Paint concealed surfaces of metal prior to installing in final position.
   4. Apply paint with spray nozzles at pressures recommended by the producer of the coating system.
5. Prime Coat:
   a. Maintain the dry-film thickness of the prime coat between 2.5 and 6.0 mils.
   b. Apply two or more coats without producing runs, bubbles, or sags if the required film thickness cannot be obtained by one coat.
   c. Scrape any coat that produces "mud-cracking" or adds more than 7.0 mils to a soundly bonded coating or bare steel. Re-coat the surface.
   d. Thoroughly clean areas having deficient primer thickness with power washing equipment to remove all dirt. Wire-brush, vacuum, and re-coat the area.

6. Intermediate Coat: Paint as described in the standard specifications to produce a uniform, even coating which bonds to the underlying surface. SSPC-PA 1.
   a. Use the coating type and minimum dry-film thickness specified.
   b. Produce a dry-film thickness of the intermediate coat greater than 4 mils.
   c. Finish coat: Keep the dry-film thickness greater than 2 mils.
   d. Use wet and dry-film thickness gauges for testing the coating thickness during and after application.

I. Scheduling Painting
   1. Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practical after preparation, before subsequent surface deterioration.
   2. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

3. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as recommended by coating manufacturer.

4. Repair all runs, sags, and other defects in each coat of paint before application of subsequent coats.

J. Completed Work
   1. Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

3.08 FIELD QUALITY CONTROL

A. Obtain the paint manufacturer’s field services for verification of adequate surface preparation, adhesion, and film thickness for the duration of the project.

B. Hold Points. No work may proceed beyond the listed hold point until the Engineer has reviewed and given provisional approval. Provide the following hold points at a minimum:
1. at containment completion,
2. following any surface preparation,
3. immediately before each coating application,
4. after coating application,
5. after each coat has cured, and
6. after preparation of areas for repair.

C. The right is reserved by Owner to invoke the following material testing procedure at any time, and any number of times during period of field painting:

1. Engage services of an independent testing laboratory to sample paint being used. Samples of materials delivered to project site will be taken, identified and sealed, and certified in presence of Contractor.

2. Testing Laboratory will perform appropriate test for any or all of following characteristics: Abrasion resistance, flexibility, absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance, and quantitative materials analysis.

D. If test results show that material being used does not comply with specified requirements, Contractor may be directed to stop painting work, and remove non-complying paint; pay for testing; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non-compatible.

3.09 PAINT IMPROPERLY APPLIED

A. To uncover evidence of improperly applied paint, the Engineer may at any time during construction explore underneath the surface of any paint coats already applied. Repair these areas of investigation at no additional expense to the Department. Whenever unsatisfactory conditions are found, the Engineer may require remedial measures.

B. Repair or completely remove and replace all paint that has been applied improperly, has been applied to improperly cleaned surfaces, fails to dry and harden properly, fails to adhere tightly to underlying metal or other paint film, or does not have a normal, workmanlike appearance in conformance with this Item. When the final field coat does not have a uniform color and appearance throughout the structure, correct it by the use of whatever additional coats or other corrective measures are required. Remove freshly applied paint that has not yet set with the use of suitable solvents. Remove dried paint films with blast cleaning, scraping, or flame torches, as approved.

3.10 CLEAN-UP AND PROTECTION OF FINISHED SURFACES

A. Clean-Up

1. During progress of work, remove from the site: discarded materials, rubbish, cans, and rags at end of each work day.

2. Upon completion of painting work, clean window glass, and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

B. Protection of finished surfaces
1. Do not use metal rollers, clamps, or other types of fastenings that mar or damage freshly coated surfaces.

2. Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing, or replacing and repainting, as acceptable to Engineer.

3. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.11 COMPLETION DATE

Stencil on the structure the completion date of the painting operation. Apply the stenciling at each end of the structure where painting is specified.

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

This Item will be measured by the lump sum or by each structure, structure unit, or group of structures as shown on the plans.

4.02 PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the price bid for “Cleaning and Painting Existing Structures,” for the system specified and, when paid by each, for the structure description by reference number.

“Cleaning and Painting Existing Steel Structures (Bridge)” includes painting of railing unless otherwise shown on the plans. This price is full compensation for paint; cleaning, spot painting, and painting; removal of vegetative obstructions; containment systems; traffic protection and scaffolding; disposal of waste; and materials, equipment, labor, tools, and incidentals.

When the Item is not specified as a pay item, the work performed and materials furnished in accordance with this Item will not be measured or paid for directly but will be subsidiary to pertinent Items.

END OF SECTION
SECTION 26 00 00 - ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Architectural Plans and Specifications, the General Conditions, Supplementary General Conditions and other requirements of Division 01, the Structural Plans and Specifications, the Mechanical Plans and Specifications, the Civil Plans and Specifications, and the Electrical Plans apply to the work specified in the Electrical Sections, and shall be complied with in every respect. The Contractor shall examine all of these documents, which make up the Contract Documents, and shall coordinate them with all electrical work on the Electrical plans and in the Electrical Sections of these Specifications.

B. Refer to architectural specifications and drawings for project alternate descriptions.

1.2 SUMMARY

A. The work covered by the electrical specifications shall include the furnishing of all materials, labor, transportation, tools, permits, fees, utilities (electrical, telephone and cable television services), and incidentals necessary for the complete installation of all electrical work required in the contract documents and specified herein. The intent of the contract documents is to provide an installation complete in every respect. In the event that additional details or special construction may be required for the work indicated or specified in this section or work specified in other sections, it shall be the responsibility of the Contractor to provide all material and labor which is usually furnished with such systems in order to make the installation complete and operative.

B. The Contractor shall be responsible for the coordination and proper relation of his work to the building structure and to the work of other trades. The Contractor shall visit the site and thoroughly familiarize himself with the existing conditions that affect the work and to verify all dimensions. The Contractor shall advise the Architect of any discrepancy prior to bidding. The submission of a bid shall be deemed evidence of the Contractors site visit, the coordination of all existing conditions, and the inclusion of all consideration for existing conditions.

C. Electrical services and connections to motors and appliances furnished by others including, but not limited to, heating ventilation and air conditioning equipment, plumbing equipment and associated controls, and equipment specified by other specification divisions included in the Construction Documents.

1.3 DRAWINGS AND SPECIFICATIONS

A. These Specifications are accompanied by Drawings of the building and details of the installations indicating the locations of equipment, piping, ductwork, outlets, light fixtures, switch controls, receptacles, etc. The Drawings and these Specifications are complementary to each other, and what is required by one shall be as binding as if required by both. Phase, neutral and switch leg indications are shown only where it is considered that clarification is required to indicate typical wiring methods required.

B. If any departures from the contract documents are deemed necessary by the Contractor, details of such departures and the reasons therefore shall be submitted in writing to the Architect for review. No departures shall be made without prior written approval of the Architect.

C. The interrelation of the Specifications, the Drawings, and the Schedules is as follows: The Specifications determine the nature and quality of the materials, the Drawings establish the quantities, approximate dimensions and details, and the Schedules give the performance characteristics. Should the Drawings disagree in themselves, or with the Specifications, the better quality or greater quantity of work or materials shall be estimated upon, and unless
otherwise directed by the Architect in writing, shall be performed or furnished. In case the Specifications should not fully agree with the Schedules, the latter shall govern. Figures indicated on Drawings govern scale measurements and large scale details govern small scale Drawings. In case of disagreement between Specifications and Drawings, see Division 1 of these Specifications for clarification.

D. Items specifically mentioned in the specifications but not shown on the contract drawings and/or items shown on the contract drawings but not specifically mentioned in the specifications shall be installed by the Contractor under the appropriate section of work as if they were both specified and shown.

1.4 REFERENCE CODES AND STANDARDS, REGULATORY REQUIREMENTS

A. Standards of the following organizations as well as those listed in Division 01, may be referenced in the specification. Unless noted otherwise, references are to standards or codes current at the time of bidding.

3. Occupational Safety and Health Act (OSHA).
7. NEMA - National Electrical Manufacturer's Association.
10. City of Waco Local Amendments Ordinances

B. Work, materials and equipment must comply with the latest rules and regulations of the following.

1. National Electrical Code (NEC) and the City of Waco Electrical Code
2. Electrical Safety in the Workplace (NESC)
3. Occupational Safety and Health Act (OSHA)
4. American with Disability Act (ADA) and Texas Accessibility Standards (TAS-TDLR)
5. American Society for Testing and Materials (ASTM)
6. Applicable local state and federal codes, ordinances and regulations

C. Discrepancies. The drawings and specifications are intended to comply with listed codes, ordinances, regulations and standards. Where discrepancies occur, immediately notify the Owner's representative in writing and ask for an interpretation. Should installed materials or workmanship fail to comply, the Contractor is responsible for correcting the improper installation. Additionally, where sizes, capacities, or other such features are required in excess of minimum code or standards requirements, provide those specified shown.
D. Contractor shall obtain permits and arrange inspections required by codes applicable to this Section and shall submit written evidence to the Owner and Engineer that the required permits, inspections and code requirements have been secured.

E. The Contractor shall resolve any code violation discovered in the contract documents with the Architect prior to award of the contract.

F. In any instance where these Specifications call for materials of a better quality or larger size than required by the codes, the provisions of these Specifications shall take precedence. The codes shall govern in case of direct conflict between the codes and the specifications.

1.5 REQUEST FOR INFORMATION

A. The Contractor may, after exercising due diligence to locate required information, request from the Consultant clarification or interpretation of the requirements of the Contract Documents. The consultant shall respond to such Contractor’s requests for clarification or interpretation. However, if the information requested by the Contractor is apparent from field observations, is contained in the Contract documents or is reasonably inferable from them, the Contractor shall be responsible to the Owner for all reasonable costs charged by the consultant to the Owner for the Additional Services required to provide such information.

1.6 CONTRACT CHANGES

A. When submitting proposed changes, both additive and deductive, the Contractor shall include and set forth in clear and precise detail, a breakdown of labor and materials along with estimated impact on the construction schedule. Contractor shall furnish spreadsheets that include quantities, unit costs and extensions. Any special equipment, i.e., fixtures, switchgear, special systems included in change proposal, shall be listed separately on vendor-supplied quote with detailed itemization and unit costs, with additions and deletions listed separately. The vendor supply quotes shall be notarized by a notary public licensed in the State of Texas.

1.7 ELECTRICAL UTILITIES

A. The contract documents reflect the general location, voltage, ampacity, size and manner of routing for all utilities known to be required on this project. It shall be the responsibility of the Contractor to visit the site, meet with the local Electrical, Telephone Company and cable television personnel in order to coordinate and confirm the exact requirements for all electrical and telephone utilities. The bid submitted by the Contractor shall include costs for all such coordination work as well as any and all utility, telephone and cable television company charges and/or fees.

1.8 TEMPORARY SERVICES

A. It shall be the responsibility of the Contractor to provide a complete system for temporary electrical power service and distribution. The Electrical Contractor shall provide the necessary wiring, connections, service switches, poles, wiring protective devices, lighting fixtures, lamps, outlet devices, disconnect switches, etc., as required for temporary lighting. In addition, a similar system shall be provided for the distribution of single and three phase power of voltage levels and adequate ampacity as required to facilitate the construction of the project. These services shall be installed in accordance with requirements of the National Electrical Code (NEC), the Occupational Safety and Health Administration (OSHA), and the National Electrical Safety Code (NESC).

B. The General Contractor shall pay the cost of all electrical energy consumed on the job site throughout the entire construction period.

C. Remove all temporary wiring upon completion of the work.

1.9 BUILDING CONSTRUCTION
A. It shall be the responsibility of the Contractor to consult the Architectural and Engineering Drawings and Details so as to thoroughly familiarize himself with the type and quality of construction to be provided on this project.

B. The electrical drawings are diagrammatic in character and cannot show every connection in detail or every line or conduit in its exact location. These details are subject to the requirements of local ordinances and also structural and Architectural conditions. The Contractor shall carefully investigate structural and finish conditions and shall coordinate with all other trades in order to avoid interference between the various phases of work.

C. The approximate location of electrical items is indicated on the electrical drawings. These drawings are not intended to give complete and exact details in regard to location of outlets, apparatus, etc. Exact locations are to be determined by actual measurements at the job site and will in all cases be subject to the approval of the Architect. The Architect reserves the right to make any reasonable changes in the location indicated without additional cost.

1.10 ELECTRICAL DEMOLITION

A. Unless noted otherwise, remove all electrical materials and equipment from areas designated for demolition. Refer to electrical and construction drawings for areas designated for demolition.

B. Where electrical equipment is indicated for removal, the Contractor shall remove all associated wiring back to the last active outlet or to the panelboard. If all electrical equipment on the circuit is scheduled for removal, the Contractor shall remove the associated conduit system where run exposed or accessible in ceilings or floor plenums. Where conduit is concealed in walls, floors or ceilings the exposed portion of the conduit shall be cut off flush with the building surface and the concealed portion shall be capped and abandoned in place. All voids left by the removal of electrical equipment shall be filled with grout and finished to match existing adjacent surfaces. Removal of any electrical equipment shall be performed in such a way not to interfere with ongoing daily building operations.

C. All salvage shall remain the property of the Owner and be delivered to a location, on site, as designated by the Owner. In the event the Owner does not desire to retain the salvage material, the material becomes the property of the Contractor and shall be disposed of by the Contractor.

D. Existing electrical services and controls to items being removed by others must be disconnected as a requirement of this section.

E. Wherever a new to existing electrical connection is required, the Contractor shall provide all materials (e.g., junction boxes, conduit, fittings, wiring and wiring connections) and labor required to make the connections.

F. The Contractor shall be responsible to maintain all branch circuits, in an operational condition, in all areas not included under this contract that may be affected during the demolition.

G. The Contractor shall field verify power connection points of devices not scheduled for removal, by means of circuit tracing, prior to any rewiring. Equipment and devices not scheduled for removal and their associated branch circuitry shall remain in their original operating condition. Any equipment and devices not scheduled for removal disconnected during demolition shall be reconnected. The contractor shall provide all electrical materials and components to reconnect equipment and devices.

H. The Contractor shall provide new wiring for all branch circuits and feeders. Splicing new wiring to old wiring is not acceptable. Existing conduit system may be reused and extended as required unless visible conduit damage is noted, in which case the existing conduit system shall be replaced with a new conduit system.
1.11 CONTRACTOR QUALIFICATIONS

A. An acceptable contractor for the work under this division shall be a specialist in this field and have the personal experience, training, skill and the organization to provide a practical working system. If required, he shall be able to furnish acceptable evidence of having contracted for and installed not less than three systems of comparable size and type to this one, that have served their owners satisfactorily for not less than three years.

B. The foreman or superintendent for this work shall have had experience in installing not less than three such systems and shall be approved by the Architect before the work is begun. Adequate and competent supervision shall be provided to ensure first class workmanship and installation.

C. Work shall be executed and all materials installed in accordance with the best practice of the trades in a thorough, substantial, workmanlike manner by competent workmen, presenting a neat appearance when completed.

D. The Contractor shall be responsible for all construction techniques required for all electrical systems specified and shown on the drawings.

1.12 OBSERVATION OF THE WORK

A. Architect's authorized representative and/or owner's observer shall have the right to observe the work at any time. The contractor shall have a representative present when his work is being observed, and he shall give assistance, as may be required, to the architect's representative. Recommendations made by observer shall be promptly carried out, and all unsatisfactory material and/or workmanship shall be replaced to the satisfaction of the Architect.

1.13 SHOP DRAWINGS AND PRODUCT DATA

A. Submit shop drawings and product data as specified herein - General Requirements. Submittal data shall indicate the manufacturer's name, published performance, ratings and/or capacity data, detailed equipment drawings for fabricated items, wiring diagrams, installation instructions and other pertinent data. All submittals shall bear the specification section number they are related to or the specific sheet where products are shown on the contract drawings which are not referenced by the specifications. Where literature is submitted covering a group or series of similar items, the applicable items must be clearly indicated. Submittals shall be clearly marked highlighting all proposed equipment and devices to be used in this project. Submittals that do not comply with all requirements will be returned without review. Shop drawings shall note all deviations from contract documents. THE CONTRACTOR CANNOT PROVIDE SUBMITTALS AND SHOP DRAWINGS BY COPYING SEALED ENGINEERING PLANS IN WHOLE OR IN PART. THE CONTRACTOR MUST PRODUCE THEIR OWN SHOP DRAWINGS, NO EXCEPTIONS.

B. Submittal review is only for general conformance with design concept of project and general compliance with the contract documents. The Contractor is responsible for conforming and correlating equipment dimensions at job site; for information which pertains to fabrication processes or construction techniques; and for coordination of work of all trades. Review of submittals shall not relieve the Contractor of responsibility for deviation from requirements of contract documents or errors of omissions in submittals.

C. Contractor's Check. Submittal of shop drawings, product data and samples will be accepted only when they are submitted by the Contractor. Each submittal shall indicate by signed stamp that the submittals have been checked and that they are in accordance with contract documents and that dimensions and relationship with work of other trades have been checked. Submittals that have not been checked and signed by the Contractor will be returned for checking before being reviewed.
D. Engineer’s review of submittals constitutes an acknowledgment only and in no way relieves the contractor of full responsibility for providing all systems in accordance with the intent of the contract documents. Any material provided by this contractor without approved shop drawings constitutes the contractor’s agreement to comply with the engineer’s intent whether specified, shown or implied.

E. Organize data in a 3-ring binder indexed by specification section. Submittal data not organized in a 3-inch ring binder indexed by specification sections and clearly highlighting the products the contractor proposes to use in the project will be rejected without preview. Show any revisions to equipment layouts required by use of selected equipment.

F. Submittals are required for, but not limited to, the following items:

1. Shop Drawings.
   (a) Submit 1/4 inch scale drawings for all electrical rooms for review prior to any rough-in.
   (b) Panelboards (branch circuit and distribution), and load centers.
   (c) Provide manufacturer’s prepared integrated shop drawings indicating the manufacturer’s recommended occupancy sensor type and recommended locations to all occupancy sensors for all areas with occupancy sensors.
   (d) Surge protection devices (SPD’s/TVSS).
   (e) Pull boxes.

2. Product Data.
   (a) Boxes (junction and pull boxes).
   (b) Manholes and splice pull boxes.
   (c) Surge protection devices (SPD’s/TVSS).
   (d) Enclosed safety switches (disconnect switches).
   (e) Fuses and circuit breakers.
   (f) Grounding materials and equipment.
   (g) Insulated conductors, conductors termination materials, and conductors pulling compound.
   (h) Lighting fixtures, including lamps and driver.
   (i) Light standards (area light fixtures).
   (j) Metal framing and supports.
   (k) Electrical labeling and identification products.
   (l) Raceways, raceway fittings and conduit bodies.
   (m) Time switches and photocells.
   (n) Wiring devices and wiring device cover plates.
   (o) Electrical conductors pulling compound.
Cold shrink cable end caps.
Link-seal sleeves.
Lugs.
Occupancy sensors.
Panelboards.
Conduit penetration seals (Link-Seal)
Cold shrink cable end caps

G. Each manufacturer is required to review the system design as related to the proper operation of his equipment, including electrical requirements, automatic controls, mechanical systems and equipment, locations and related items. Submit a letter with the submittals from the manufacturer stating that his equipment will operate satisfactorily under the design conditions, including air flows for all duct mounted smoke detectors. The manufacturer will also be required to review the final installation at the site and submit a second letter stating that the installation conforms to the design criteria and that the equipment will operate satisfactorily as installed, including air flows for all duct mounted smoke detectors. Furnish certification for the following systems:

1. Surge protection devices (SPD’s).
2. Occupancy sensors.

H. Provide the following with each submittal:

1. Catalog cuts with manufacturer’s name clearly indicated. Applicable portions shall be circled and non-applicable portions shall be crossed out.
2. Line-by-line specification review by equipment manufacturer and contractor with any exceptions explicitly defined. Submittals received without line-by-line specification review by equipment manufacturer and contractor will be rejected without review.

I. Equipment Layout Drawing: Provide 1/4-inch scale minimum drawings indicating electrical equipment locations prior to any rough-in. Dimensions for housekeeping pads should be indicated on these drawings. Indicate routing of conduit 2 inches and over on these drawings.

1.14 SUBSTITUTIONS AND PRODUCT OPTIONS

A. Within 30 days after contract date, submit to Architect a complete list of major products proposed to be used, with the name of the manufacturer and the installing subcontractor.

B. Contractor's Options.

1. For products specified only by reference standard, select any product meeting that standard.
2. For products specified by naming several products or manufacturers, select any one of the products or manufacturers named, which complies with the specifications.
3. For products specified by naming one or more products or manufacturers and "or equal," Contractor must submit a request for substitutions for any product or manufacturer not specifically named.
C. Manufacturers’ names and catalog numbers specified under sections of Division 26 are used to establish standards of design, performance, quality and serviceability and not to limit competition, nor to discriminate against an “approved equal” product of another manufacturer. Equipment of equal design to that specified, will be acceptable upon approval by the Engineer. The Architect/Engineer will consider written requests for substitution of specified products, if reviewed fourteen days prior to bid date. After bid date, request for substitution will be considered only in cases of product unavailability or other conditions beyond control of the contractor. It shall be the contractor’s responsibility to:

1. Personally investigate the proposed substitute product to determine that it has all the same accessories and is equal or superior in all respects to that specified.

2. Provide the same guarantee for the substitution that he would for that specified.

3. Coordinate the installation of the equipment which he proposes to substitute with all trades and includes the costs for any changes required for the work to be complete in all respects. The contractor will prepare shop drawings where required by the Architect/Engineer or where dimensions vary.

4. Provide itemized cost breakdown including material and labor for the proposed product substitutions. Submit complete design and performance data. Refer to Section 26 00 00, Paragraph 1.6.A for additional requirements.

1.15 PROJECT RECORD DOCUMENTS

A. Throughout progress of the work of this Contract, maintain an accurate record of all changes in the Contract Documents. Upon completion of the Work of this Contract, transfer the recorded changes to the AutoCad drawing files and specification word processing files. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff. Thoroughly coordinate all changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to properly show the change. Include all addenda items, request for information Architect’s Supplemental Instructions and any other document that causes a change in the Construction Documents. Accuracy of records shall be such that future search for items shown in the Contract Documents may reasonably rely on information obtained from the approved Record Documents.

B. The Contractor shall mark any deviations on a daily basis. The Architect will visit the site and will require to see the "As-Built" documentation periodically. If the Contractor does not keep an accurate set of as-built drawings, the pay request may be altered or delayed at the request of the Architect. Mark the drawings with a colored pencil. Record installed feeder conduits. Dimension the location and elevation of the conduit.

C. Record Documents shall consist of the following:

1. Job Set: Promptly following award of Contract, secure from the Architect, at no charge to the Architect, one complete set of all electrical documents comprising the Contract.

2. Final Record Documents: Obtain the AutoCad drawings files and the specification word processing files at the Contractor’s expense.

(a) The Contractor shall transfer all change data shown on the job set of to the corresponding electronic files, coordinating the changes as required, and clearly indicating at each affected detail and other drawing the full description of all changes made during construction and the actual location of items. Call attention to each entry by drawing a "cloud" around the area or areas affected.
3. Submit the completed total set of Record Documents to the Engineer as described above. Participate in review meeting or meetings as required by the Engineer, make all required changes in the Record Documents, and promptly deliver the final Record Documents to the Architect. Upon completion of Work, the Contractor shall certify the "Record Drawings" for correctness by signing the following certification:

CERTIFIED CORRECT (3/8" high letters)

(Name of the Contractor)

By

Date

(Name of the Sub-Contractor)

By

Date

D. Deliver record drawings to the Architect in the number and manner specified in Division 1 - General Requirements.

1.16 OPERATION AND MAINTENANCE INSTRUCTIONS

A. Prepare and submit sets of product data, shop drawings, wiring diagrams, instructions and parts lists for operating and maintaining the electrical equipment and systems installed. Include in the instructions a description of normal adjustments and a list of items to be lubricated. Specify the type and frequency of lubrication required. Provide special servicing tools as required for this equipment. Also include all approved submitted data, all warranties on equipment, contractor's warranty. Deliver manuals and tools to the Architect as a condition of final acceptance. Refer to Division 01 for other requirements. The Owner's manual shall include:

1. Manufacturer's installation instruction brochures.
2. Manufacturer's local representative and/or distributor's name and address.
3. Manufacturer's operating and maintenance brochures.
4. Manufacturer's internal wiring diagram.
5. Contractor's installation wiring diagram.
6. Control system installation drawings.
7. Replacement part number listings and/or descriptions.
8. Framed operating instructions when required.
9. Manufacturer's warranties and guarantees.

B. This manual shall include all of the listed data bound into a permanent hard-back, three ring binder(s) identified on the cover as "Operating and Maintenance Manual" with additional cover display of the names and location of Building, the Owner, the Architect, the Engineers, the General Contractor, and the Contractors installing equipment represented in the brochure.

C. Contents of the manual shall be grouped in sections according to the various sections of Division 26, and shall be listed in a Table of Contents. Sections shall be organized as follows:
1. Each "tab" in the brochure shall identify the grouping of all literature required for a single class of equipment; i.e., "transformers", "lighting fixtures", "switchgear", etc., for all types of equipment on the job.

2. Contents under each "tab" shall refer to a single class of equipment, and shall be arranged in the following sequence: First, the manufacturer's installation brochure; second, the manufacturer's operating and maintenance brochure; third, the manufacturer's installation wiring diagram; fourth, the Contractor's field wiring diagram; if different, and fifth, the manufacturer's brochure listing replacement part numbers and description.

3. Provide final tab "Warranties and Guarantees" behind which all such items will be located.

D. Upon completion of the work and at a time designated by the Architect, instruct the Owner’s operating personnel in operation and maintenance of electrical equipment and systems. Before proceeding with instruction, prepare a typed outline in triplicate listing the subjects that will be covered. Submit the outline for review by the Architect. At the conclusion of the instruction, obtain the signatures of the people instructed on each copy of the outline to signify that they have a proper understanding of the operation and maintenance of the system. Submit the signed outlines to the Architect as a condition of final acceptance. Provide a minimum of 8 hours of general instruction in addition to any time specified in other sections of Division 26.

E. Upon completion of the work, instruct the Owner’s operating personnel in operation and maintenance of electrical equipment and systems furnished and installed under Division 26. The specified training shall be given at a time and location designated and provided by the Owner for personnel selected by the Owner, in addition to any necessary on-site orientation and training. A training program shall be submitted with materials, instructor qualifications and a proposed schedule, a minimum of 45 days prior to the proposed training for each electrical system in the project. The Owner reserves the right of approval of each training course. A minimum of 12 (other quantity if appropriate) bound copies of training materials shall be provided at the time of training, with additional copies submitted at the time of Substantial Completion included with the O & M Manuals. At the conclusion of instruction, obtain the signatures of the people instructed on one copy of the program to signify that they have a proper understanding of the operation and maintenance of the system. Submit the signed program to the Architect/Engineer as a condition of final acceptance. Provide a minimum of 8 hours of general instruction in addition to any time specified in other sections of Division 26. All training sections shall be videotape recorded. Video recordings shall be provided to the Owner.

PART 2 - PRODUCTS

2.1 CONSTRUCTION MATERIALS

A. **PER SENATE BILL 1289 PASSED IN 2017, ALL STATE ENTITIES ARE REQUIRED TO PROVIDE ALL IRON AND STEEL PRODUCTS MANUFACTURED IN THE UNITED STATES.**

B. All materials shall be new and shall conform to the National Electrical Code and National Fire Protection Association requirements and shall be listed, inspected, and approved by the Underwriters Laboratories and shall bear the U.L. label where labeling service is available. The label or listing of the Underwriters Laboratories, Inc. will be accepted as evidence that the materials or equipment conform to the applicable standards of that agency. In lieu of this listing, the Contractor may submit a statement from a nationally recognized, adequately equipped independent testing agency, indicating that the items have been treated in accordance with required procedures, and that the materials and equipment comply with all contract requirements.

2.2 STANDARD PRODUCTS
A. All materials and equipment shall be standard catalog products of domestic manufacturers regularly engaged in the manufacture of products conforming to these specifications. Materials and equipment shall have been in satisfactory use at least two years prior to bid opening. Where custom or special items are required, these shall be fully described by drawings and/or material list which detail the item proposed for use on this project.

2.3 MANUFACTURERS' INSTRUCTIONS

A. The Contractor is fully responsible for furnishing the proper electrical equipment and/or material and for seeing that it is installed as intended by the manufacturer's written instructions. If needed for proper installation, operation, or start up, the Contractor shall request advice and supervisory assistance from the representative of the specific manufacturer. The manufacturers' published instructions shall be followed for preparing, assembling, erecting, and cleaning all materials and equipment. The Contractor shall promptly notify the Architect in writing of any conflict between the requirements of the contract documents and the manufacturer's directions and shall obtain the Architect's instructions before proceeding with the work. Should the Contractor perform any work that does not comply with the manufacturer's directions or instructions from the Architect, he shall bear all costs arising in connection with correcting the deficiencies.

2.4 RUST PREVENTION

A. All metallic materials shall be protected against corrosion. Exposed metallic parts of outdoor apparatus shall be given a rust inhibiting treatment and standard finish by the manufacturer. All parts such as boxes, bodies, fittings, guards, and miscellaneous parts shall be protected in accordance with the ASTM A123 or A153, except where other equivalent protective treatment is specifically approved in writing or specifically allowed for in other sections of this specification.

2.5 CAPACITIES AND SPACE LIMITATIONS

A. Capacities shall be not less than those indicated but shall be such that no component or system becomes inoperative or is damaged because of start-up or other overload conditions. Where approved equipment requires electrical power other than that indicated in the contract documents for the specified equipment, the Contractor shall be responsible to adjust protective devices, starter sizes, conductors, conduits, etc., to accommodate this approved device electrically.

B. The Contractor shall be responsible to verify that the equipment he proposes to provide will physically fit within the space indicated on the contract documents and that the required code clearances and maintenance access are maintained. Any space conflicts shall be noted in the submittals. Provide scale drawings to the Architect indicating proposed solutions to any space conflict for the Architects review and approval.

2.6 NAMEPLATES

A. Each piece of equipment shall have a nameplate from the manufacturer with the following information: name, address, catalog number, voltage, phase, full load amperes or horsepower, and/or other pertinent information on a plate securely attached to the equipment. All data on nameplates shall be legible at the time of final inspection.

PART 3 - EXECUTION

3.1 DELIVERY STORAGE AND HANDLING

A. The Contractor shall not receive any equipment at the job site until the equipment is ready to be installed or until there is suitable space provided to properly protect equipment from rust, weather, humidity, dust, and physical damage.
B. All equipment shall be protected in accordance with the manufacturer's recommendations and the requirements of NFPA 70B, Appendix I, titled "Equipment Storage and Maintenance During Construction". The Contractor shall replace all damaged or defective equipment with new equipment.

C. All equipment injured or damaged in transit from factory, during delivery to premises, while in storage on premises, while being erected and installed, and while being tested, until time of final acceptance, shall be replaced by this Contractor.

3.2 PROTECTION OF EQUIPMENT

A. During construction, protect switchgear, transformers, motors, control equipment, and other items from insulation moisture absorption and metallic component corrosion by appropriate use of strip heaters, lamps or other suitable means. Apply protection immediately on receiving the products and maintain continually.

B. Keep products clean by elevating above ground or floor and by using suitable coverings.

C. Take such precautions as are necessary to protect apparatus and materials from damage. Failure to protect materials is sufficient cause for rejection of the apparatus or material in question.

D. Protect factory finish from damage during construction operations and until acceptance of the project. Satisfactorily restore any finishes that become marred or damaged.

3.3 INSTALLATION

A. Cooperation with trades of adjacent, related or affected materials or operations, and of trades performing continuations of this work under subsequent contracts, is considered a part of this work. The Contractor is responsible to coordinate with other trades in order to effect timely and accurate placing of work and to bring together, in proper and correct sequence, the work of such trades. Provide coordination drawings showing exact size and location of sleeves, openings or inserts for electrical equipment in slabs, walls, partitions and chases.

B. Provide 4-inch thick concrete housekeeping pads for indoor floor-mounted equipment, except where direct floor mounting is required. Pour pads on roughened floor slabs, sized so that outer edges extend a minimum of 3-inches beyond equipment. Trowel pads smooth and chamfer edges to a 1-inch bevel. Secure equipment to pads as recommended by the manufacturer.

C. All equipment shall be installed plumb and level.

D. Permanently seal outdoor equipment at the base using concrete grout. Seal or screen openings into equipment to prevent entrance of animals, birds and insects. Use galvanized steel or copper mesh with openings not larger than 1/16-inch for screened openings. Seal small cracks and openings from the inside with silicon sealing compound.

E. Conceal electrical work in walls, floors, chases, under floors, underground and above ceilings except:

1. Where shown or specified to be exposed. Exposed is understood to mean open to view.

2. Where exposure is necessary to the proper function.

3. Where size of materials and equipment preclude concealment.

F. All equipment shall be installed in a manner to permit access to parts requiring service. All electrical equipment shall be installed in such a manner as to allow removal for service.
without disassembly of other equipment. All required National Electrical Code clearances must be complied with.

G. All electrical equipment shall have working clearances as required by the latest version of the National Electrical Code.

3.4 HOISTING, SCAFFOLDING, AND TRANSPORTATION

A. The Contractor shall provide all hoisting, scaffolding and ladders as required to set the equipment in place in the building.

B. The Contractor shall provide necessary transportation to facilitate the delivery of all materials, equipment, tools, and labor to project.

3.5 CLEANING

A. The Contractor shall, at all times, keep the premises free from accumulations of waste material or rubbish caused by him, his employees, or his work. This debris shall be removed, not only from the building, but also from the site and from any street or alley adjacent to the site.

B. At completion of the project, the Contractor shall remove all of his tools, scaffolding, and surplus materials.

3.6 CONDUIT SLEEVES AND PENETRATION SEALS

A. For conduits passing through outside walls, the conduit to wall penetration closures shall be "Link-Seal" as manufactured by Thunderline Corporation or Crouse Hinds. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the conduit and wall opening. Seals located underground shall be manufactured from stainless steel. Links shall be loosely assembled with bolts to form a continuous rubber belt around the conduit with a pressure plate under each bolt head and nut. After the seal assembly is positioned in the sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely water-tight seal between the conduit and wall opening. The seal shall be constructed so as to provide electrical insulation between the conduit and wall, thus reducing chances of cathodic reaction between these two members.

3.7 ACCESS DOORS

A. Furnish and install access doors in all inaccessible wall or ceiling locations as required for access to conduit bodies, junction and pull boxes, outlet boxes, and other electrical equipment requiring maintenance, adjustment or operation. Doors or panels required in acoustical ceilings are provided for under Division 08. However doors required in plaster, gypboard, masonry, or other solid wall or ceiling are included under this paragraph. Access doors are not indicated on the drawings. The contractor will be responsible for proper coordination in locating access doors for ease of operation and maintenance of concealed equipment.

B. Non-fire-rated access doors.

1. Furnish INRYCO/MILCOR approved equal with 16-gage frames, 14-gage panels, and 22-gage casing head. Provide continuous concealed hinges and flush screwdriver cam lock. Use Style K access doors for plastered surfaces, Style M for masonry or gypboard surfaces, and Style AP for acoustical plaster ceilings, with 18-gage panel and all galvanized construction.

C. Fire-rated access doors (1-1/2 hour label doors).
1. Furnish INRYCO/MILCOR or approved equal UL-listed 1-1/2 HR Label "B". Access doors with 16-gage steel frames, and 20-gage insulated sandwich type door panel. Provide door with an automatic closing and latching mechanism. Fire-rated access doors are required.

3.8 ELECTRICAL CONNECTIONS TO MOTORS, EQUIPMENT AND CONTROL SYSTEMS

A. Contractor shall coordinate with Division 23 and other divisions as required to verify all electrical requirements of those divisions. This is to include, but not be limited to, verification of power, voltage, phase and other characteristics as being compatible with that called for on the electrical drawings and Division 26 specifications, as well as that called for in Division 23 drawings and specifications or other divisions requiring electrical connections. This shall be done prior to placing orders for equipment or material, and prior to any rough-in, etc.

B. Motors are specified in Divisions 22 and 23. Electrical work includes the electrical connection of all motors, except those which are wired as a part of equipment. Connection of motors specified in Divisions 22 and 23 but not reflected on electrical drawings shall be included in Division 26 scope of work.

C. The contractor shall refer to and coordinate with Divisions 22 and 23 and other divisions included in the construction documents and provide all power connections for all equipment requiring power connections.

3.9 CUTTING AND PATCHING

A. Where it becomes necessary to cut through any wall, floor, or ceiling to install any work under this Section of the Contract, or to repair any defects that may appear up to the expiration of the guarantee period, such cutting shall be done under the supervision of the Architect by this Contractor. This Contractor shall not be permitted to cut or modify any structural members without the written permission of the Architect.

B. Patching of all openings cut by this Contractor, or repairing of any damage to the work of other trades caused by cutting or by the failure of any part of the work installed under this Contract, shall be performed by the appropriate trade but shall be paid for by this Contractor.

C. Any openings cut through exterior walls or roofs shall be provided with suitable covers, while they are left open, to protect the property or materials involved. Any openings cut through walls below grade shall be properly protected to prevent entrance of water or other damaging elements. All openings shall be waterproofed upon completion of the work as specified by the architect. Any openings through fire rated walls or floors shall be sealed to meet the minimum fire rating of wall or floor penetrated.

3.10 VIBRATION ISOLATION

A. The Contractor shall furnish and install vibration isolation means for all equipment and materials furnished under this contract to prevent the transmission of perceptible vibration, structure borne or air borne noise to occupied areas. Items requiring vibration isolation shall include:

1. All transformers shall be mounted on one inch (1") thick cork rib pads and/or rubber or steel spring isolator units properly sized, spaced, and loaded, which in turn shall rest on a 4" minimum concrete base.

2. Where transformers are to be suspended from the structure above, each hanger shall be equipped with double deflecting steel spring and rubber in shear anti-vibration hangers. The rubber in shear mounting for each hanger shall provide a static deflection at least equivalent to the static deflection for a 1/4" rubber pad. Anti-vibration mountings shall be equipped with adequate leveling mechanisms which do not interfere with proper hanger operation.
3. Electrical Conduit: Raceway systems shall be isolated from all dry type transformers and rotating or reciprocating machinery. Provide 12” of liquidtight flexible metal conduit per 1” of conduit diameter. The minimum length of flexible conduit used for isolation shall be 24”.

3.11 CORE DRILLING

A. All penetrations through concrete floors and walls shall be coordinated and approved by the Structural Engineer. The Contractor shall scan the area of the proposed penetration prior to performing any work to ensure that there are no existing conduit systems, concrete reinforcing steel etc., that could be damaged by core drilling the concrete slab. The scan shall be performed using ground penetrating radar technology.

3.12 EXISTING FACILITIES

A. The Contractor shall be responsible for loss or damage to the existing facilities as used by his workmen, and shall be responsible for repairing or replacing such loss or damage. The Contractor shall send proper notices and receive written permission from the Owner to enter existing areas. Before beginning work in existing areas, make the necessary arrangements and perform other services required for the care, protection, and in service maintenance of all electrical, communication, plumbing, heating, air conditioning, and ventilating services for existing facilities. The Contractor shall erect temporary barricades with necessary safety devices, as required to protect personnel from injury, removing all such temporary protection upon completion of the work.

B. The Contractor shall provide temporary or new services to all existing facilities as required to maintain their proper operation when normal services are disrupted as a result of the work being accomplished under this project.

C. Where existing construction is removed to provide working and extension access to existing utilities, the Contractor shall remove doors, piping, conduit, outlet boxes, wiring, light fixtures, air conditioning ductwork, and equipment, etc., to provide this access and shall reinstall same upon completion of work in the areas affected.

D. Where partitions, walls, floors, or ceilings of existing construction are indicated to be removed and equipment located in these areas is required to remain in operation, the Contractor shall remove and reinstall all equipment required for the operation of the remaining electrical systems. This is to include but is not limited to electrical switches, relays, fixtures, conduit, etc.

3.13 CONDITIONS OF EQUIPMENT AT FINAL ACCEPTANCE

A. At time of acceptance, the Contractor shall have inspected all installed systems to assure the following has been completed:

1. Fixtures are operating, lenses and reflectors are free of dust, debris, and fingerprints.

2. Panelboards have all conductors neatly formed, laced and made-up tight. Enclosures shall be vacuum cleaned, surfaces clean of stray paint, dust, grease and fingerprints. All circuit directories to be neatly typed and in place. Provide new type written circuit directories.

3. Wall plates and exposed switch and receptacle parts to be clean, free of paint, plaster, etc.

4. Safety and disconnect switches and motor starters to be vacuum cleaned of debris, dust and all surfaces free of stray paint, grease and fingerprints.

5. Switchgear, transformers and system devices shall be cleaned internally and externally and have all surfaces restored to initial surface conditions.
6. Touch-up all scratched surfaces using paint matching the existing equipment paint. Where paint cannot be matched, the entire surface shall be repainted in a color and manner approved by the Architect.

7. All electrical equipment shall bare proper labeling as specified under this section.

8. All wiring devices labeled with corresponding panelboard I.D. and circuit numbers.

9. All electrical switchgear and panelboards shall be provided with arc flash warning labels.

3.14 GUARANTEE

A. The Contractor shall guarantee all materials and workmanship for a period of twelve (12) months after the final acceptance of work.

END OF SECTION
SECTION 26 00 00.01 - ELECTRICAL DEMOLITION

PART 1 - GENERAL

1.1 WORK INCLUDED
A. Electrical demolition.

1.2 RELATED WORK
A. This Section shall be used in conjunction with the following other specifications and related Contract Documents to establish the total requirements for minor electrical demolition for remodeling.

1. Section 26 00 00 - Basic Electrical Requirements.

B. In the event of conflict regarding minor electrical demolition requirements between this Section and any other Section, the provisions of this Section shall govern.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT
A. Materials and equipment for patching and extending work: as specified in individual Sections.

B. Provide all materials necessary for work.

PART 3 - EXECUTION

3.1 EXAMINATION
A. All demolitions or modifications to existing systems shall be coordinated through Owner's Representative. Demolition drawings are based on casual field observation and existing record documentations. Therefore, the accuracy or exactness of the drawings is not guaranteed. The Contractor shall verify field measurements, circuiting arrangements and abandoned wiring and equipment serve only abandoned facilities. The Contractor shall be responsible for reporting discrepancies to Engineer before disturbing existing installation.

B. Beginning of demolition means Contractor has visited the site, fully understands, and accepts existing conditions.

3.2 PREPARATION
A. Disconnect electrical systems in walls, floors, and ceilings scheduled for removal. Provide temporary wiring and connections to maintain remaining systems in service during demolition and/or modification. Owner reserve the right up to 24 hours prior to any scheduled event to delay or suspend shutdowns or outages to more convenient times at no additional cost.

B. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. No work shall begin without proper permits and authorizations. Disable system only to make switchovers and connections. Obtain permission from Owner at least (2) weeks before partially or completely disabling system.
Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing electrical components indicated in the drawings.

B. Remove exposed abandoned conduit and wiring. Cut embedded or concealed conduit flush with walls and floors, and patch surfaces.

C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed.

D. Disconnect and remove abandoned panelboards and distribution equipment.

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

F. Disconnect and remove abandoned luminaries. Remove brackets, stems, hangers, and other accessories.

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

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

I. Extend existing installations using materials and methods compatible with existing electrical installation or as specified.

J. The level of completion shall be demonstrated to Owner’s Representative.

K. Where equipment is indicated to be demolished and returned to Owner, the Contractor shall include the delivery of this equipment to the Owner’s site storage area. Remove with care all equipment to be relocated. Repair or replace of newly damaged equipment is the responsibility of the Contractor.

3.4 CLEANING AND REPAIR

A. The Contractor shall follow Owner’s clean work policy and shall include the removal of trash and demolished material from the building or work area at the end of the each day and removal from the site once a week.

B. The Contractor shall be responsible for repairing adjacent construction and finishes damaged during demolition and/or modification. The Contractor shall be responsible for the removal of ceiling tiles required in the demolition work. The Contractor shall be responsible for the replacement of damaged tiles and reinstallation of the ceiling prior to final acceptance.

3.5 DISPOSITION OF MATERIAL AND EQUIPMENT

A. Review with the Owner materials that have been removed and are no longer required, to determine any which the Owner may desire to keep. Deliver those materials that the Owner desires to the Owner’s specified location.
B. For those materials not required by the Owner, dispose of them in accordance with applicable regulations.

END OF SECTION
SECTION 26 05 19 - CABLE, WIRE AND CONNECTORS, 600 VOLT

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Building wire.
   1. Power distribution circuitry.
   2. Lighting circuitry.
   3. Other systems circuitry as designated.

B. Cable.

C. Wiring connections and terminations.

1.2 REFERENCES

A. NEMA WC 3 - Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

B. NEMA WC 5 - Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

C. ANSI/UL 83 – Thermoplastic-Insulated Wire and Cables

D. NFPA 70 – National Electrical Code, latest edition


F. Where application of National Electrical Code, trade association standards or publications appears to be in conflict with the requirements of this Section, the Architect/Engineer shall be asked for an interpretation.

1.3 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01 for submittal requirement.

B. Submit manufacturer's literature and specification data sheets for each item of cable, wire connectors.

C. Qualification of cable and wire manufacturer: Company specializing in manufacturing products specified in this Section with minimum ten years experience.

1.4 DELIVERY, STORAGE AND HANDLING

A. Provide factory-wrapped waterproof flexible barrier material for covering wire and cable wood reels, where applicable; and weather resistant fiberboard containers for factory packaging of cable, wire and connectors, to protect against physical damage in transit. Damaged cable, wire or connectors shall be removed from project site.
B. Store cable, wire and connectors in a clean, dry indoor space in their factory-furnished coverings, which provides protection against the weather.

1.5 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with requirements, acceptable manufacturers shall be as follows:

1. Copper Insulated Conductors.
   a. Aetna Insulated Wire Company.
   b. Encore Wire Corporation.
   c. General Cable Co.
   d. American Insulated Wire Corp.
   e. Southwire Co.
   f. Senator Wire & Cable Co.
   g. The Okonite Co.

2. Wire Connectors.
   a. Burndy
   b. 3M Electrical Products Division.
   c. Ilsco.
   d. Ideal.
   e. Thomas & Betts.

3. Cable End Caps
   a. 3M Electrical Products Division.
   b. Thomas & Betts

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. All electrical conductors shall be purchased with factory applied color code insulation.

B. Generally, cable, wire and connectors shall be of manufacturer's standard materials, as indicated by published product information.

C. Provide factory-fabricated wire of the size, rating, material and type as indicated for each service. Where not indicated, provide proper selection as required to comply with installation requirements and with NEC standards. The minimum size wire to be used for power or lighting circuits shall be #12 copper with insulation as noted below. Minimum size for control shall be #14 copper.
D. The conductors of wires and cables shall be of copper (tinned where specified), and have conductivity in accordance with the standardization rules of the IEEE. The conductor and each strand shall be round and free of kinks and defects.

E. Grounding conductors, where insulated, shall be colored solid green or identified with green color as required by the NEC. Conductors intended as a neutral shall be colored solid white, or identified as required by the NEC. All motor or equipment power wiring shall be colored according to Section 26 05 53, Electrical Identification.

F. All cable specified for use in tray shall be multiconductor and shall have an outer jacket of flame-retardant, moisture and sunlight resistant polyvinyl chloride (PVC) and shall be UL and NEC approved type for tray installation. Cable installed in cable tray outdoors shall have a jacket that is UV resistant chlorinated polyethylene (CPE) or polyvinyl chloride (PVC), rated 90°C per UL Standard 1277.

G. All low voltage power and control cable installed in open cable tray above ceilings used for return air shall be plenum rated. Where tray cable is not available in size and type required, conductors shall be installed in conduit.

H. Use compression lugs for all wiring termination’s, except on breakers or terminal strips in panel boards.

### 2.2 BUILDING WIRE

A. Thermoplastic-insulated Building Wire: NEMA WC 5.


C. Feeders and Branch Circuits Larger Than 10 AWG: 98% conductivity copper, soft-drawn, stranded conductor, 600 volt insulation, THHN/THWN Use XHHW conductors where installed in conduit underground.

D. Feeders and Branch Circuits 10 AWG and Smaller: 98% conductivity copper, soft-drawn, stranded conductor, 600-volt insulation, THWTHHN/THWN.

### 2.3 REMOTE CONTROL AND SIGNAL CABLE

A. 600 Volt Insulation Control Cable for Class 1 Remote Control and Signal Circuits, Type TC:

1. Individual Conductors: 14 AWG, stranded copper, XHHW insulation. Rated 90 degrees C dry, 75 degrees C wet, color-coded per ICEA Method 1 plus one green equipment grounding conductor.

2. Assembly: Bundle wrapped with cable tape and covered with an overall PVC jacket. Cable shall pass IEEE-1202 vertical tray ribbon-burner flame test (210,000 BTU) VW-1.

3. Cables (wiring) inside walls in inaccessible ceilings and in mechanical equipment rooms shall be installed in raceways. Plenum rated cables shall be used above accessible ceilings.

B. Instrumentation Cable

1. 300 Volt Instrumentation Cable, Multiple Pairs, Overall Shield, Type PLTC:
a. Individual Conductors: 18 AWG, stranded, tinned copper, flame retardant polyethylene or PVC insulated, rated 105 degrees C, black and white numerically printed and coded pairs.

b. Assembly: Individual twisted pairs having a 100 percent coverage aluminum-polyester shield and 20 AWG stranded tinned copper drain wire. Conductor bundle shall be shielded with 100 percent coverage overall aluminum-polyester shield complete with 20 AWG drain wire. All group shields completely isolated from each other. Bundle wrapped with cable tape and covered with an overall flame retardant PVC jacket. Cable shall pass IEEE-383 vertical tray flame test (70,000 BTU) UL1581.

c. Cables (wiring) inside walls in inaccessible ceilings and in mechanical equipment rooms shall be installed in raceways. Plenum rated cables shall be used above accessible ceilings.

### 2.4 WIRING CONNECTIONS AND TERMINATIONS

A. Provide factory-fabricated, metal connectors of the size, rating, material, type and class as indicated for each service. Where not indicated, provide proper selection as required to comply with installation requirements and with NEC standards. Select from only following types, classes, kinds and styles.

1. Type:
   a. Solderless pressure connectors
   b. Crimp.
   c. Threaded.
   d. Insulated spring wire connectors with plastic caps for 10 AWG and smaller.

2. Class: Insulated.

3. Material: Copper (for CU to CU connection).

4. Style:
   a. Insulated terminals. Use ring-terminal for control wiring. Use flange (fork) spade compression terminal for termination of stranded conductors at wiring devices, including ground connection.
   b. Split bolt-parallel connector.
   c. Pigtail connector.
   d. Pre-insulated multi-tap connector.

### PART 3 - EXECUTION

#### 3.1 INSPECTION
A. Installer must examine the areas and conditions under which cable, wire and connectors are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Inspect wire and cable for physical damage. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.2 GENERAL WIRING METHODS

A. Install electrical cable, wire and connectors as indicated, in accordance with the manufacturer's written instructions, the applicable requirements of NEC and the National Electrical Contractors Association's "Standard of Installation", and as required to ensure that products serve the intended functions.

B. Coordinate cable and wire installation work with electrical raceway and equipment installation work, as necessary for proper interface. Do not install the conductors until raceway system is complete and properly cleaned.

C. Cables shall be selected on the basis of their purpose and UL listing. Generally, use Types THWN and THHN in building interiors and other dry locations. Outdoors and underground in raceways, use Type RHW. Conductors subject to abrasion, such as in lighting poles, shall be Type THWN or THHN.

D. No conductor smaller than No. 12 wire shall be used for lighting purposes. In the case of "home runs" over 50' in length (100' for 277 volt) no conductor smaller than a No. 10 wire shall be used. The sizing of all wire except remote control wire shall be accomplished in the case of both feeder and branch circuits by conforming to the following provisions. Separate neutral conductors shall be provided for each phase of the same size for 120V/277V single-phase application for heavy electrical loads, computer loads, loads fed from isolated transformers, lab equipment, clinic equipment, dedicated circuits, unless noted otherwise on drawings. Voltage drop on feeders and branch circuits shall not exceed NEC requirement.

E. Remote control wires shall be no smaller than No. 14 conductors. Control wires shall be run in separate conduits inside walls, in inaccessible ceilings and in mechanical equipment rooms. Shielded plenum rated conductors shall be used above accessible ceilings. Departures from the sizes so determined shall be made only in those cases in which the National Electrical Code requires the use of larger conductors. The sizes as determined from these tables shall be regarded as the acceptable minimum under all other circumstances. In no case, however, shall there be a voltage drop greater than that specified in any feeder or branch circuit. The Contractor may, if he deems it necessary or advisable, use larger sized conductors than those shown. Under no circumstances, however, shall the Contractor use any conductors sized in a manner which does not conform to the above mentioned tables without having first secured the written approval of the Owner's duly authorized representative.

F. Install exposed wire and cable, parallel and perpendicular to surface or exposed structural members and follow the surface contours, where possible.

G. Splice branch circuits only in accessible junction or outlet boxes. Control cable shall never be spliced except the final connection to field devices. Where terminations of cables that are installed under this Section are to be made by others, provide pigtail of adequate length for neat, trained and bundles connections, minimum 5 feet at each location, unless noted otherwise on drawings.

H. Wiring Within An Enclosure: Contractor shall bundle ac and dc wiring separately within an enclosure. The Contractor shall utilize panel wire-ways when they are provided.
Where wireways are not provided the Contractor shall neatly tag, bundle wires and secure to sub-panel at a minimum of every three inches with T&B Type TC5355 heavy duty mounting bases.

I. Do not band any conductor either permanently or temporarily during installation to radii less than four times the outer diameter of 600-volt insulated conductors.

3.3 WIRING INSTALLATION IN RACEWAYS

A. Wire and cable shall be pulled into clean dry conduit. Do not exceed manufacturer's recommended values for maximum pulling tension.

B. Pull conductors together where more than one is being installed in a raceway.

C. Use UL listed pulling compound or lubricant, when necessary; compound must not deteriorate conductor and insulation.

D. Do not use a pulling means, including fish tape, cable or rope, which can damage the raceway.

E. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.

F. Place an equal number of conductors for each phase of a circuit in same raceway.

G. Provide separate conduit or raceway for line and load conductors of motor starters, safety disconnect switches, and similar devices. Those devices shall not share the same raceway.

H. All conduits shall contain a green grounding conductor. Conduit, wireways, or boxes shall not be used as the equipment grounding conductor.

3.4 CABLE INSTALLATION

A. Provide protection for exposed cables where subject to damage during construction. Do not install cable before the completion of raceway system.

B. Cable above ceilings shall be in conduit or raceways. Cables, conduits and raceways shall not be laid on ceiling tiles or strapped to ceiling wire.

C. Use suitable cable fittings and connectors.

D. It shall be the Contractor's responsibility to accurately measure all cable runs before the cable is cut. The Contractor shall furnish all tools and equipment, have sufficient properly trained personnel and shall exercise necessary care to ensure that the cable is not damaged during installation. Cable found to be damaged before installation shall not be installed. Cable damage during installation shall be removed and replaced. Repairs to cables can only be done with written permission from the Owner's Representative and only under special circumstances.

E. Care shall be exercised with cables entering or leaving cable trays that all cable bend radii shall not be less than the recommended minimum and that cables are not left to rest unprotected on any sharp edge or corner.
F. PVC jacketed cable shall not be installed or worked in any way at temperatures below 32 degrees F, unless cable has been previously stored in a heated area 48 hours prior to being pulled and transported to a heated pulling area.

G. Each cable entering an enclosure shall have its conductors bundled together and identified with the cable number. All groups of conductors within an enclosure shall be shaped and formed to provide a neat appearance to facilitate future additions or rework. All control conductors shall be numbered and shall be labeled at each termination with this number, using markers designed for the application.

H. Multi-Conductor Cable Installation: Power and 120V control cable shall be installed in the same tray. When cables leave trays, they shall be protected between the trays and the cable terminal points by drawing them through conduits. Do not route 600V cables (power cable and 120V control cable) in the same conduit or cable tray as low voltage cables (less than 50V, communications, security systems, or control conductors). Do not route security systems, or control cables through communications rooms. Fire alarm cable shall be routed in a separate conduit only.

I. Instrument Cable: Instrument cable shall, when conduit installation is required be installed in rigid steel conduit. They shall not be spliced at any point. The shields and drain wires of shielded signal cables shall be grounded only at one point as indicated on the Drawings.

3.5 WIRING CONNECTIONS AND TERMINATIONS

A. Install splices, taps and terminations, which have equivalent-or-better mechanical strength and insulation as the conductor. Make splices, taps and terminations to carry full ampacity of conductors without perceptible temperature rise.

B. Keep conductor splices and taps accessible and to a minimum, and in junction boxes only. Control circuit conductors shall terminate at terminal blocks only. Splices below grade shall only be in handholes or manholes and shall be made watertight with epoxy resin type splicing kits similar to Scotchcast.

C. Use splice, tap and termination connectors, which are compatible with the conductor material.

D. Thoroughly clean wires before installing lugs and connectors.

E. Terminate spare conductors with electrical tape and label as spare.

F. Power and Lighting Circuits: Use solderless pressure connectors with insulating covers for copper wire splices and taps, 8 AWG and larger. For 10 AWG and smaller, use insulated spring wire connectors with plastic caps on lighting and receptacle circuits.

G. Use split bolt connectors for copper wire splices and taps, 6 AWG and larger. Tape uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of conductor.

H. Connections for all wire sizes in motor terminal boxes where the motor leads are furnished with crimped-on lugs shall be made by installing ring type compression terminals on the motor branch circuit ends and then bolting the proper pairs of lugs together. First one layer of No. 33 scotch tape reversed (sticky side out), then a layer of rubber tape, then two layers of No. 33 half-lapped.
I. Identify conductors per Section 26 05 53 - Electrical Identification.

3.6 FIELD QUALITY CONTROL

A. Torque test conductor connections and terminations to manufacturer's recommended values.

B. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

C. Conductors in vertical conduits or raceways shall be supported in the manner set forth in the appropriate section of the latest revision of the National Electrical Code. Lighting fixtures shall not be used for raceways for circuits other than parallel wiring of fixtures.

D. Conductors may be run in parallel on sizes 1/0 to 500 MCM inclusive provided all paralleled conductors are the same size, length, and type of insulation. Except as otherwise shown on drawings, no more than three conductors may be run in parallel, and they shall be so arranged and terminated as to insure equal division of the total current between all conductors involved. Where parallel connection is contemplated, approval of the Owner's representative must be obtained before installation is made.

3.7 TESTING AND ACCEPTANCE

A. Before final acceptance, the Contractor shall make voltage, insulation, and load tests, necessary to demonstrate to the Owner's representative the satisfactory installation and proper performance of all circuits.

B. Test feeder conductors clear of faults. Insulation-resistance test shall be conducted per NETA – Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems. Test results below 50 megohms shall be cause for rejection of the wiring installation. Replace and retest all such rejected conductor.

C. At the completion of this project, the Contractor shall provide for the Owner three (3) complete and finally corrected sets of working drawings. These sets of working drawings shall be new, unused and in good condition, and shall include the nature, destination, path, size and type of wire and all other characteristics for complete identification of each and every conduit and circuit.

END OF SECTION
SECTION 26 05 29 - SECURING AND SUPPORTING METHODS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Raceway, cable tray, and equipment supports
B. Fastening hardware
C. Coordinate location of concrete equipment pads

1.2 QUALITY ASSURANCE

A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry. Support systems shall be sized adequately to support an additional 25% for future loads.

1.3 COORDINATION

A. Coordinate with other trades where conduit and cable tray supports are in the same location as piping, ductwork, and work of other trades and where supports are furnished and installed under other Divisions. Supporting from the work or supports of other Contractors shall not be allowed except by express, written permission of the Owner.

1.4 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01 for submittal requirement.

PART 2 - PRODUCTS

2.1 MATERIAL

A. Support Channel:
   1. All non-corrosive locations: Hot-dip galvanized steel.
   2. Corrosive locations: Nonmetallic fiberglass.

B. Hardware:
   1. All non-corrosive locations: Hot-dip galvanized steel.
   2. Corrosive locations: Stainless steel threaded rod, attachments and fasteners shall be used with fiberglass supports.

C. Threaded Rod: used for rack support from structure above; 3/8-inch minimum diameter.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using precast insert system, expansion anchors, or beam clamps. Do not use spring
steel clips and clamps. Provide necessary calculations to select proper support materials for electrical equipment, raceway, and cable tray supports. Provide cable tray supports for cable tray filled to 125 percent capacity per NEC.

B. Install hangers, anchors, sleeves and seals as indicated, in accordance with manufacturer’s written instructions and with recognized industry practices to insure supporting devices comply with requirements. Comply with requirements of NEC for installation of supporting devices. Install supports with spacing in compliance with NEC requirements.

C. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster, or gypsum board partitions and walls; expansion anchors in solid masonry walls; or concrete surfaces; sheet metal screws in sheet metal studs; and wood screws in wood construction.

D. Do not fasten supports to piping, ductwork, mechanical equipment, or conduit.

E. Do not use powder actuated anchors without written permission from the Engineer.

F. Do not drill structural steel members without written permission from the Structural Engineer.

G. Fabricate supports from structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.

H. Bridge studs top and bottom with channels to support recessed mounted cabinets and panelboards in stud walls.

I. Install surface mounted cabinets and panelboards with a minimum of four anchors. Provide strut channel supports to stand cabinet 1-5/8 inches off wall. Utilize “Post Bases” where support channel is attached to structural floor.

J. Provide extra care in supporting PVC conduit to protect it from potential damage.

K. Use fiberglass for nonmetallic raceway systems supports in areas subject to corrosives.

L. All supports in contact with floor using stanchion type support shall be solidly bolted to the permanent structural floor.

M. Conduit supports shall have at a minimum, the bottom support member constructed of double strut. This horizontal member shall be double-nutted, and the supporting all-thread rod shall be trimmed to one inch below lowest nut.

N. Not Used

O. Coordinate with other electrical work, including raceway and wiring work, as necessary to interface installation of supporting devices with other work.

P. Install freestanding electrical equipment on 4-inch concrete pads. Pad shall be a minimum four inches larger than equipment. No crevices shall be left around the pads. Equipment includes but not limited to the following:

1. Motor Control Centers
2. Static Transfer Switches
3. Floor mounted VFDs
4. Floor mounted transformers
5. Switchboards, 1200A and larger

Q. Do not anchor supports to columns. Where panelboards, cables, or conduits are routed on the face of a column provide “column hugging” channel supports.

3.2 TOUCH-UP

A. Touch-up all scratches on securing and supporting system, and paint the ends of channel after cutting with an approved zinc chromate or 90 percent zinc paint.

END OF SECTION
SECTION 26 05 33 - RACEWAYS, CONDUITS AND BOXES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Raceways:
   1. Raceways, raceway fittings, straps and support systems, etc. shall be galvanized rigid steel. Boxes, junction boxes, box cover plates shall be galvanized steel.

B. Conduit:
   1. Galvanized rigid steel conduit. (GRC, RCM)
   2. Intermediate metal conduit and fittings. (IMC)
   3. Electrical metallic tubing and fittings. (EMT)
   4. Flexible metal conduit and fittings.
   5. Liquid-tight flexible metal conduit and fittings.
   6. Non-metallic conduit and fittings. (underground use only)
   7. PVC coated rigid steel conduit.

C. Boxes:
   1. Wall and ceiling outlet boxes.
   2. Pull and junction boxes.

1.2 REFERENCES

A. NFPA 70 – National Electrical Code, latest edition
B. ANSI C80.1 - Rigid Steel Conduit, Zinc-Coated
C. ANSI C80.3 - Electrical Metallic Tubing, Zinc-Coated
D. ANSI/NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies
E. EMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing
F. ANSI/NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers and Box Supports
G. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum)
H. ANSI/NEMA TC 2 – Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80)
I. ANSI/UL 1 – Flexible Metal Conduit
J. Not Used
K. ANSI/UL 360 – Liquid-tight Flexible Steel Conduit
L. ANSI/UL 467 – Electrical Grounding and Bonding Equipment
M. ANSI/UL 651 – Schedule 40 and 80 Rigid PVC Conduit (underground use only)
N. ANSI/UL 797 – Electrical Metal Tubing
O. ANSI/UL 870 – Wireways, Auxiliary Gutters and Fittings
P. NEMA RN 1 – Polyvinyl Chloride (PVC) Externally Coated galvanized Rigid Steel Conduit and Intermediate Metal Conduit
Q. NEMA VE 1 – Metallic Cable Tray Systems
R. ANSI C80.5/UL6A – Standard for electric rigid metal conduit – aluminum, red brass and stainless steel
S. ANSI/UL 498 – Attachment Plugs and Receptacles
T. ANSI/UL 943 – Ground Fault Circuit Interrupters

1.3 SUBMITTALS
A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements.
B. Shop drawings consisting of a complete list of equipment and materials, which will be used for the project, including manufacturer's descriptive and technical literature, catalog cuts and installation instructions for all raceways, conduits and boxes.
C. Sealing/fire stopping materials and details.

1.4 STORAGE AND HANDLING
A. Handle materials carefully to avoid damage, breaking, denting and scoring. Damaged equipment or materials shall not be installed.
B. Store materials in a clean dry space and protected from the weather.

1.5 ACCEPTABLE MANUFACTURERS
A. Subject to compliance with requirements, provide raceway of one of the following manufacturers:
   1. Galvanized, Rigid Metal Conduit, Intermediate Metal Conduit and Electrical Metallic Tubing:
      a. Allied Tube & Conduit.
      b. LTV Steel Tubular Products.
      c. Republic Conduit.
      d. Western Tube and Conduit Corporation.
      e. Wheatland Tube Co.
2. Flexible Metal Conduit, Liquidtight Flexible Metal Conduit:
   a. Alflex Corp.
   b. AFC Cable Systems.
   c. Electri-Flex Co.

3. (PVC) Rigid Nonmetallic Utilities Duct and Conduit:
   a. Carlon.
   b. Cantex Inc.
   c. Southern Pipe, Inc.

4. Conduit Fittings and Bodies and Boxes:
   a. Appleton.
   b. O.Z. Gedney.
   c. American Electric.
   d. Thomas & Betts Corporation.
   e. Cooper Crouse-Hinds.
   f. Hoffman.

**PART 2 - PRODUCTS**

2.1 NOT USED

2.2 NOT USED

2.3 WIREWAYS

   A. Wireways shall be of galvanized steel construction general purpose for indoor spaces and rain tight for outdoor applications with knockouts.

   B. Cover shall be hinged. Rain tight wireways shall be provided with full gasketing.

   C. Fittings shall be so constructed to continue the "lay-in" feature through the entire installation. Fittings shall be galvanized steel.

   D. Provide all sheet metal parts with a rust inhibiting phosphatizing primer coating and finished in gray enamel. All hardware shall be cadmium plated to prevent corrosion.

2.4 CONDUIT AND FITTINGS

   A. Conduit and fittings for all electrical systems on this project shall include the following:

      1. Electrical power and lighting feeders
2. Electrical power and lighting circuits

3. Other electrical systems

B. For each electrical wireway system indicated, provide a complete assembly of conduit, tubing or duct with fittings including, but not necessarily limited to, connectors, nipples, couplings, locknuts, bushings, expansion fittings, other components and accessories as needed to form a complete system of the same type indicated.

C. Conduit fittings shall be designed and approved for the specific use intended. Conduit fittings, including flexible, shall have insulated throats or bushings. Rigid conduits shall have insulated bushings, unless grounding bushings are required by N.E.C. Article 250. Grounding bushings shall have insulated throats.

D. Rigid and intermediate metal conduit shall be hot-dipped galvanized. Fittings shall be threaded type. Expansion fittings shall be OZ Type DX.

E. Electrical metallic tubing shall be galvanized. Fittings shall be all steel compression type. Expansion fittings shall be OZ Type TX.

F. Flexible metal conduit and fittings shall be zinc-coated steel.

G. Liquid-tight flexible conduit and fittings shall consist of single strip, continuous, flexible interlocked, double-wrapped steel, galvanized inside and outside, forming smooth internal wiring channel with liquid-tight covering of flexible polyvinyl chloride (PVC). It shall be furnished with a sealing O-ring where entering an enclosure subject to moisture. Where O-Rings are used, ground type bushings shall be used in the box or enclosure.

H. Nonmetallic conduit and fittings shall be suitable for temperature rating of conductor but not less than 90°C. Nonmetallic conduit and fittings shall be molded of high impact PVC compound having noncombustible, nonmagnetic, non-corrosive and chemical resistant properties and shall be of the same manufacturer. Where located outdoors and above ground, the conduit and fittings shall be UV resistant. Solvent cement shall be of the same manufacturer as the conduit and shall be of the brush-on type. Spray solvents are prohibited. PVC coated metallic fittings shall not be permitted for PVC conduit connections.

I. Crimp or set-screw type fittings are not acceptable.

J. Minimum conduit size shall be ¾-inch, ¾-inch flexible metallic conduit shall be used as fixture whips. Maximum lengths for fixture whips shall be 6’ – 0”.

K. PVC coated rigid steel conduit shall be externally coated with a 40 mil PVC coating and internal phenolic coating over a galvanized surface.

L. Rigid metallic conduits shall be wrapped with corrosion protective tape when installed below grade or in concrete.

2.5 WALL AND CEILING OUTLET BOXES

A. Galvanized steel interior outlet wiring boxes of the type, shape and size, including depth of box, to suit each respective location and installation; constructed with stamped knockouts in back and sides, and with threaded holes with screws for securing box covers or wiring devices.
1. Outlet box accessories as required for each installation, including mounting brackets, wallboard hangers, extension rings, fixture studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes, compatible with outlet boxes being used and meeting requirements of individual situations. Outlet boxes, box accessories and fittings shall be galvanized steel.

2. Provide multi-gang outlets of single box design. Sectional boxes are not acceptable. Provide outlet boxes of sufficient volume to accommodate the number of conductors entering the box in accordance with the requirements of NEC, and not less than 1 ½ inch deep unless shallower boxes are required by structural conditions and are approved by the A/E. Outlet boxes, box accessories and fittings shall be galvanized steel.

B. Provide deep type cast metal weatherproof exterior outlet wiring boxes of the type, shape and size, including depth of box, with threaded conduit ends, cast metal face plate with spring-hinged waterproof cap suitably configured for each application, including face plate gasket and fasteners. Provide PVC type outlet boxes only in corrosive areas rated as NEMA 13X.

C. Outlet boxes in poured concrete shall be plenum type without any holes and with reset knockouts. Where extension rings are used to offset conduit between wall reinforcing steel, joint between extension ring and box shall be sealed to prevent concrete from entering box during pour.

D. Provide 4-inch octagonal ceiling outlet boxes.

2.6 PULL AND JUNCTION BOXES

A. Boxes shall be galvanized sheet metal conforming to ANSI/NEMA OS 1 with screw-on cover and welded seams, stainless steel nuts, bolts, screws and washers.

B. Boxes larger than 12 inches in any dimension shall be panelboard code gauze galvanized steel with hinged cover.

C. Boxes shall be sized in accordance with NEC.

D. Provide cast-in-place, pre-cast concrete or die-molded fiberglass handholes/pull boxes as per design for underground installations. Cast-in-place and pre-cast boxes shall be provided with reinforcing bars with material compressive strength no less than 11,000 psi, and shall be approved by Owner/Structural Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION - CONDUIT

A. Installing and embedding any raceways in concrete slabs is prohibited under this contract.

B. Install products as indicated, in accordance with the applicable requirements of NEC, NEMA and the National Electrical Contractors Association's "Standard of Installation".

C. Cut conduit square using a saw or pipe cutter. De-burr cut ends. Joints in conduit must be painted with T&B Kopr shield and drawn up tight. Threads for rigid metal conduit and IMC shall be deep and clean. Running threads shall not be used. Wipe plastic conduit clean and dry before joining. Apply full, even coat of cement with brush to entire area that will be inserted into fitting. Let joint cure for 20 minutes minimum. Spray type of
cement is not acceptable. Install raceway and conduit system from point of origin in outlets shown, complete with support assemblies including all necessary hangers, beam clamps, hanger rods, turnbuckles, bracing, rolls, clips angles, through bolts, brackets, saddles, nuts, bolts, washers, offsets, pull boxes, junction boxes and fittings to ensure a complete functional raceway system. Where vertical drops of conduit are made to equipment in open space, the vertical conduit shall be rigidly supported from racks supported on the floor.

1. EMT
   a. In sizes up to and including 1-1/2 inch, may be used inside dry locations where not subject to mechanical damage. EMT may be used in air-conditioned spaces, such as accessible ceilings, dry wall partitions and exposed where 6 feet above the floor. EMT may not be used outside, in concrete, underground, in under floor spaces, in masonry walls, in locations likely to be damp, in electrical rooms subject to mechanical damage due to future installation, or exposed within 6 feet of the floor. EMT shall not be used for medium voltage circuits.
   
   b. Where used for feeder circuits receptacle branch circuits and motor branch circuits EMT shall also contain a NEC grounding conductor.
   
   c. All conduits shall be concealed in walls or ceilings unless otherwise noted.

2. Liquid-tight
   a. Install liquid-tight flexible metal conduit for connections to rotating, vibrating, moving or movable equipment, including dry-type transformers. Install external ground wire on flexible conduit with grounding bushings. Maximum length shall be 6 feet minimum of 2 feet.

3. Flexible Metal Conduit
   a. Install standard flexible metal conduit (not liquid-tight), which shall be only used for lighting fixture whips or motor vibrations, with internal ground wire. Install flexible conduit connection such that vibrations are not transmitted to adjoining conduit or building structure. Maximum length shall be 6 feet minimum of 3 feet; minimum size shall be 3/4; and minimum size shall be ½ inch for lay-in light fixture whips.

D. Install conduits parallel and supported on Unistrut, or equal, trapezes and anchored with split ring hangers, conduit straps or other devices specifically designed for the purpose. No raceways or boxes shall be supported using wire. Arrange conduit to maintain headroom and present a neat appearance. Conduit routes shall follow the contour of the surface it is routed on. Route exposed conduit and tray above accessible ceilings parallel and perpendicular to walls and adjacent piping. Maintain 12-inch clearance between conduit and heat sources, such as flues, steam pipes, and heating appliances. Wire ties or “wrap lock” are not permitted to support or secure conduit system. Fasten conduit with the following material:

1. Wood screws on wood
2. Toggle bolts on hollow masonry
3. Bolts and expansion anchors in concrete or brick
4. Machine screws, threaded rods and clamps on steel
5. Conduit clips on steel joists.

6. 4 inch x 4 inch penta-treated pine installed in pitch pans on roof, spaced at intervals not to exceed 5 feet.

E. Fittings shall be approved for grounding purposes or shall be jumpered with a copper grounding conductors of appropriate ampacity. Leave termination of such jumpers exposed.

F. Install expansion fittings in metal and PVC conduit as follows:

1. Conduit Crossing Building Expansion Joints:
   a. EMT all sizes
   b. IMC all sizes
   c. RMC all sizes
   d. PVC all sizes

2. Conduits entering environmental rooms and other locations subject to thermal expansion and as required by NEC.

3. Unless expansion fitting has an integral bonding braid, as in Crouse-Hinds Type XC, a green insulated grounding conductor shall be pulled in the conduit. Both ends of this green grounding conductors shall be accessible for inspection.

G. Install conduit concealed in walls, partitions and above ceilings. Install conduit exposed in ceiling area (at structure) of boiler rooms, mechanical rooms and in other similar rooms where ceilings are not called for. A written approval shall be obtained from Owner/Structural Engineer prior to construction. No raceways shall be installed concealed in slabs.

H. Avoid moisture traps where possible; where unavoidable, provide junction box with drain fitting at conduit low point.

I. Use suitable conduit caps to protect installed conduit against entrance of dirt and moisture if cable or wire are not installed immediate after conduit run. Tape covering conduit ends is not acceptable.

J. Provide 200 lb. nylon cord full length in empty conduit.

K. Where conduit penetrates fire-rated walls and floors, provide pipe sleeve two sizes larger than conduit; pack void around conduit with oakum and fill ends of sleeve with fire-resistive compound or provide mechanical fire-stop fittings with UL listed fire-rating or seal opening around conduit with UL listed foamed silicone elastomer compound equal to fire-rating of floor or wall.

L. Install no more than the equivalent of three 90-degree bends between boxes. Where four 90 degree bends are required, prior approval by the Engineer is required. Use conduit bodies to make sharp changes in direction, as around beams. Conduit bodies shall be readily accessible and sized for the cables installed. Running or rolling offsets are not approved. Use factory long radius elbows for bends in conduit larger than 2-inch size. All parallel bends shall be concentric.
M. Pull string shall be provided full length in conduit designated for future use.

3.2 INSTALLATION - WIREWAYS

A. Bolt wireways to steel channels fastened to the wall or in self-supporting structure. Install level.

B. Gasket each joint in oil-tight wireway.

C. Mount rain tight wireway for exterior installation in horizontal position only.

3.3 INSTALLATION - BOXES

A. Provide electrical boxes as required for splices, taps, wire pulling, equipment connections, and code compliance.

B. Provide outlet box accessories as required for each installation, including mounting brackets, wallboard hangers, extension rings, fixture studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes being used and meeting requirements of individual situations.

C. Electrical box locations shown on Contract Drawings are approximate unless dimensioned.

D. Locate and install boxes to allow access, minimum 12 inches above ceiling except where space dimensions do not allow.

E. Do not install boxes back-to-back in walls. Provide minimum 6-inch separation. Provide minimum 24-inch separation in acoustic-rated walls. If boxes are connected together, install flexible connection between the two and pack openings with fiberglass.

F. Secure boxes rigidly to the substrate upon which they are being mounted, or solidly imbed boxes in concrete or masonry. Do not support junction boxes from the raceway systems. Boxes shall not be permitted to move laterally. Boxes shall be secured between two studs. Boxes connected to one stud are not permitted.

G. Provide knockout plugs for unused openings.

H. Use multiple-gang boxes where more than one device is mounted together. Do not use sectional boxes. Provide barriers to separate wiring of different voltage systems.

I. Install boxes in walls without damaging wall insulation.

J. Outlet boxes in plaster partitions shall be “shallow-type” set flush in wall so there is at least 5/8 inch plaster covering back of box.

K. Outlet boxes for switch shall not be used as junction boxes.

L. Coordinate mounting heights and locations of outlets mounted above counters, benches and backsplashes.

M. In inaccessible ceiling areas, position outlets and junction boxes within 6 inches of recessed luminaire, to be accessible through luminaire ceiling opening.
N. Outlet boxes supporting fixtures shall be securely anchored in place in an approved manner. Support outlet boxes and fixtures in acoustic ceiling areas from building structures, not from acoustic ceilings. Lighting fixture outlets shall be coordinated with mechanical and architectural equipment and elements to eliminate conflicts and provide a workable neat installation.

O. Set floor boxes level and flush with finish flooring material.

3.4 WALL AND FLOOR PENETRATIONS:

A. Core drilling shall be approved in writing by the Structural Engineer prior to execution. Avoid anchor bolt on structural column by installing "column hugging" type of unistrut support for electrical installation. PVC shall not be used for wall and floor penetration.

B. Provide a 3 1/2 inch curb around block outs through concrete floors. Fire-stop per Architectural specification.

C. Route conduit through roof openings for piping and ductwork where possible; otherwise, route through roof jack with pitch pocket. Coordinate roof penetrations with the roofing contractor.

END OF SECTION
SECTION 26 05 33.01 - ELECTRICAL BOXES

PART 1 - GENERAL

1.1 SUMMARY

A. This section specifies the furnishing and installation of all outlet boxes, floor boxes, junction boxes and pull boxes.

1.2 REFERENCE STANDARDS

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

B. ANSI/UL 514 - Electrical Outlet Boxes and Fittings.

1.3 APPLICABLE PROVISIONS

A. Refer to Section 26 00 00 - Electrical General Provisions.

1.4 SUBMITTALS

A. Submit manufacturer's product data on electrical boxes.

1.5 DELIVERY STORAGE AND HANDLING

A. Deliver boxes properly packaged in accordance with Section 26 00 00.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the requirements, acceptable manufacturers shall be as follows:

1. Appleton.

2. Bowers.

3. Cooper Crouse-Hinds.


6. Midwest Electric Products, Inc.

7. O.Z. Gedney.

8. Raco Inc.

9. Thomas & Betts

2.2 OUTLET BOXES

A. Provide galvanized steel boxes of sufficient size to accommodate wiring devices to be installed at outlet. Provide an extension ring for the device to be installed. Square or
rectangular boxes may be supplied. Provide boxes with threaded screw holes, with corrosion-resistant cover and grounding screws for fastening surface and device type box covers, and for equipment type grounding. Unless otherwise noted, provide 1 - ½ 2-1/8-inch deep by 4-inch box.

B. Provide corrosion-resistant cast-metal FS or FD rain tight outlet wiring boxes with threaded hubs for surface mounting in areas having exposed rigid metal conduit systems and all outdoor locations.

C. Boxes for Lighting Fixtures. Provide galvanized steel octagonal boxes with fixture stud supports and attachments as required to properly support ceiling and bracket-type lighting fixtures. Unless otherwise noted, provide 1 - ½ 2-1/8-inch deep by 4-inch box.

D. Masonry Boxes. Provide galvanized steel, 3-1/2-inch deep, masonry boxes for all devices installed in masonry walls.

2.3 JUNCTION AND PULLBOXES

A. Junction and Pull Boxes: Provide galvanized code-gauge sheet steel junction and pull boxes, with screw-on covers; of types, shapes and sizes, to suit each respective location and installation; with welded seams and equipped with stainless steel nuts, bolts, screws and washers. Junction and pull boxes shall be 16 gauge for sizes up to 12’ x 12’ x 12’ and 10 gauges for all sizes 12” x 12” x 12” and larger.

B. Provide NEMA 1 boxes in interior dry locations.

C. Provide NEMA 3R boxes in all exterior locations and interior locations subject to moisture.

D. Provide NEMA 4 cast iron boxes with external recessed flanged cover when cast in concrete.

PART 3 - EXECUTION

3.1 COORDINATION

A. In order that all outlets may come in proper relation to paneling, decorated areas, etc., this Contractor shall familiarize himself with the details of these spaces and shall carefully lay out all outlets so that the equipment or piping of other trades passing under, over, across or in close proximity to same, will not cause the device or fixtures at or in these outlets to be inaccessible for use or maintenance. This Contractor must consult with the other Contractors on the project and procure all details of the various locations so as to make the outlet boxes come in proper relation to the work of all other trades. The Architect/Engineer reserves the right to relocate any outlet within reason from its original location shown on the plans prior to the application of the walls at no cost.

3.2 OUTLET BOXES

A. Unless otherwise indicated, mount all outlet boxes flush within 1/4-inch of the finished wall or ceiling line. Provide galvanized steel extension rings where required to extend the box forward in conformance to NEC requirements. Attach ring with at least two machine screws. Provide plaster covers for all boxes in plastered walls and ceilings.

B. Boxes for suspended lighting fixtures shall not be attached to or supported from suspended ceilings, unless specifically approved by ceiling installer/manufacturer. Do not support boxes from ceiling grids.
C. Do not connect outlet boxes back to back unless specific approval is obtained. Where such a connection is necessary to complete a particular installation, fill the voids around the wire between the boxes with sound insulating material.

D. Provide only the conduit openings necessary to accommodate the conduits at the individual location. Provide knockout closures to cap all unused openings.

E. Provide weatherproof outlets and outlets in areas subject to moisture with gaskets between the box and the cover plate.

F. All boxes shall be provided with covers.

G. Mounting Height. Mounting height of a wall-mounted outlet box means the height from finished floor to horizontal center line of the cover plate. Where outlets are indicated adjacent to each other, mount these outlets in a symmetrical pattern with all tops at the same elevation. Where outlets are indicated adjacent, but with different mounting heights, line up outlets to form a symmetrical vertical pattern on the wall. None of the mounting heights listed in this section are to be construed as waiving of the regulations of any authority having lawful jurisdiction. Verify all device mounting heights with the Architect prior to rough-in. Device mounting heights shall be as follows:

1. Receptacles and Telephone Outlets +18" AFF
2. Wall Switches +48" AFF
3. Manual Motor Starters +54" AFF
4. Disconnect Switches +54" AFF

3.3 JUNCTION AND PULL BOXES

A. Install boxes as required to facilitate cable installation in raceway systems. Junction and pull boxes shall be sized to accommodate conductor system splices and associated insulation. Generally provide boxes in conduit runs of more than 100-feet or as required in Section 26 05 33. Locate boxes strategically and make them of such shape to permit easy pulling of wire or cables. The use of extension rings to increase the junction boxes interior space capacity is not acceptable.

B. Provide boxes so that covers are readily accessible and easily removable after completion of the installation. Furnish and install suitable access doors for boxes located above inaccessible ceilings. Select a practical size for each box and cover. All boxes shall cover plates. Refer to architectural drawings for required access doors' fire ratings.

END OF SECTION
SECTION 26 05 53 - ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 WORK INCLUDED
   
   A. Nameplates and tape labels
   B. Wire and cable markers
   C. Conduit color coding and labeling

1.2 REFERENCES
   
   A. NFPA 70 – National Electrical Code (latest edition)

1.3 SUBMITTALS
   
   A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01 for submittal requirement.

   1. Furnish nameplate identification schedules listing equipment type and nameplate data with letter sizes and nameplate material.
   2. Verify electrical conductors color coding schemes with the Owner prior to fabrication and procurement of conductors.

PART 2 - PRODUCTS

2.1 MATERIALS
   
   A. Equipment Nameplates:

   1. For normal power electrical equipment, provide engraved three-layer laminated plastic nameplates, engraved white letters on a black background.
   2. For emergency equipment provide engraved three-layer laminated plastic nameplates with engraved white letters on a red background.
   3. For UPS powered equipment provide engraved three-layer laminated plastic nameplates with engraved white letters on an orange background.
   4. For fire alarm system provide engraved three-layer laminated plastic nameplates with white letters on a yellow background.
   5. For security and CCTV system panels, provide engraved three-layer laminated plastic nameplates with white letters on a blue background.

   B. Conductor Color Tape and Heat Shrink:

   1. Colored vinyl electrical tape shall be applied perpendicular to the long dimension of the cable or conductor.
   2. In applications utilizing tray cable, heat shrinkable tubing shall be used to obtain the proper color coding for the length of the conductor in the cabinet or enclosure.
Variations to the cable color coding due to standard types of wire or cables are not acceptable.

C. Warning labels: Provide warning labels with black lettering on red background with a minimum of 1/2" lettering.

D. Tape Labels: Embossed adhesive tape, with minimum 1/4-inch letters for labeling receptacles, switches, control device stations, junction and pull boxes and manual motor starter units, etc.

1. White letters on black background for normal power.
2. White letters on red background for emergency/standby power.
3. White letters on orange background for UPS power.

G. J-Box and Cover plate Voltage Labels: Black stenciled letters 1/4" high. Adhesive back tapes may be used if a clear tape is applied over the label for protection.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Degrease and clean surfaces to receive nameplates or tape labels.

B. Install nameplates parallel to equipment lines.

C. Secure plastic nameplates to equipment fronts using screws or rivets. Use of adhesives shall be per Owner's approval. Secure nameplate to outside face of flush mounted panelboard doors in finished locations.

3.2 WIRE IDENTIFICATION

A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits. Label control wire with number as indicated on schematic and interconnection diagrams or equipment manufacturer's shop drawings for control wiring.

B. Conductor for power circuits to be identified per the following schedule.

<table>
<thead>
<tr>
<th>Conductor</th>
<th>System Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase A</td>
<td>Black</td>
</tr>
<tr>
<td>Phase B</td>
<td>Red</td>
</tr>
<tr>
<td>Phase C</td>
<td>Blue</td>
</tr>
<tr>
<td>Neutral</td>
<td>White</td>
</tr>
<tr>
<td>Grounding</td>
<td>Green</td>
</tr>
<tr>
<td>Switch Leg</td>
<td>Pink or Orange marked with tape in same color as phase conductor where applicable</td>
</tr>
</tbody>
</table>
Note: All electrical conductors shall be purchased with factory applied code insulation. Refer to Section 26 05 19, Paragraph 2.1.A.

3.3 NAMEPLATE ENGRAVING SCHEDULE

A. Provide nameplates of minimum letter height as scheduled below. Nameplates shall be same as equipment names indicated on the Drawings.

B. Individual Circuit Breakers in Distribution Panelboards, Disconnect Switches, Motor Starters, and Contactors: 1/4-inch; identify source to device and the load it serves, including location.

C. Panelboards: 3/8-inch; identify equipment designation. 1/4-inch; identify source, voltage and bus rating.

3.4 ENCLOSURE COLOR CODING

A. The following systems shall have each junction and pull box cover completely painted per the following:

<table>
<thead>
<tr>
<th>System</th>
<th>Color of Box Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Blue</td>
</tr>
<tr>
<td>Telephone</td>
<td>Blue</td>
</tr>
<tr>
<td>Emergency Power</td>
<td>Red</td>
</tr>
<tr>
<td>Security**</td>
<td>White</td>
</tr>
<tr>
<td>Fire Alarm</td>
<td>Red</td>
</tr>
<tr>
<td>Clock</td>
<td>Fluorescent Red</td>
</tr>
<tr>
<td>U.P.S.</td>
<td>Fluorescent Pink</td>
</tr>
</tbody>
</table>

**Security shall include, but not be limited to, the following systems:

- Card Access
- Duress Alarms
- Perimeter Door Alarms
- CCTV
PART 1 - GENERAL

1.1 SUMMARY

A. This section specifies testing of the electrical systems.

B. All testing shall be performed by a recognized independent testing laboratory. The testing laboratory shall provide all material, equipment, labor and technical supervision to perform such tests and inspections.

C. It is the intent of these tests to assure that all electrical equipment is operational within industry and manufacturer's tolerances and is installed in accordance with design specifications and manufacturer's recommendations.

D. Set all adjustable trip settings on over current protective devices in accordance with Section 26 00 73.

E. The following test are included in this section. This does not preclude other system test and testing requirements in other specification sections and testing and demonstration required by the Authorities Having Jurisdiction.

1. Ground resistance test.
2. 600V cable insulation (Megger) test.
3. 15KV cable insulation test.
4. Medium voltage switchgear, switches, and instruments.
5. Panelboard, switchboards, switchboard instruments.
7. Dry type transformers.

1.2 APPLICABLE PROVISIONS

A. Section 26 00 00 - General Electrical Provisions.

1.3 SUBMITTALS

A. Records of all test reports.

1.4 QUALIFICATIONS OF TESTING AGENCY

A. The testing agency shall meet federal OSHA criteria for accreditation of testing laboratories, Title 29, Part 1907. Membership in the National Electrical Testing Association constitutes proof of meeting such criteria.

1.5 ACCEPTABLE TESTING AGENCIES

A. General Electric Service Department.

B. E.T.I.
1.6 TEST INSTRUMENT CALIBRATION
A. The testing laboratory shall have a calibration program which maintains all applicable test instrumentation within rated accuracy.
B. Instruments shall be calibrated in accordance with the following frequency schedule:
   1. Field instruments - 6 months maximum.
   2. Laboratory instruments - 12 month.
   3. Leased specialty equipment - 12 months.
   4. Dated calibration labels shall be visible on all test equipment.

1.7 SETTINGS OF OVER CURRENT DEVICES
A. The testing laboratory shall be responsible for implementing all settings and adjustments on protective devices in accordance with values shown in the coordination study.
B. Enter "address" codes for power monitoring devices or similar instrumentation where shown. Test monitoring instrumentation for accuracy in combination with associated PT's and CT's.

1.8 TEST REPORTS
A. The test reports shall include the following:
   1. Description of equipment tested.
   2. Description of test.
   3. List of test equipment used in calibration and calibration date.
   4. Test results.
   5. Conclusions and recommendations.
   6. Appendix, including appropriate test forms.
B. The test report shall be bound and its contents certified.
C. Submit five copies of the completed report to the Architect no later than fifteen working days after completion of test.

1.9 TEST FAILURE
A. Any system material or workmanship which is found defective on the basis of acceptance tests shall be reported directly to the Architect and the contractor shall replace the defective material or equipment and have test repeated until test proves satisfactory without additional cost to the Owner.

1.10 NOTIFICATION OF TESTING
A. Notify the engineer and the Owner two weeks (10) working days before any scheduled testing. The engineer and the Owner observe the testing at their option.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 SYSTEM VOLTAGE TESTS

A. Measure and record system voltages under maximum load conditions available during construction. Incoming service voltage, as well as transformer secondary voltages shall be checked and adjusted to be equal to the voltage rating, or not exceeding 2-1/2% above the voltage rating. Line-to-line voltages should be adjusted between 460 and 480 volts, or 208 and 213 volts. A record of each final test along with time of day, date, and conditions of loading should be recorded for each test location. Submit test results in the Operation and Maintenance Manuals.

B. With the system energized, make line-to-line voltage and line current measurements at all motors under full load conditions. Should measured values deviate +/- 5% from the nameplate ratings, the condition shall be corrected. Notify the Architect immediately should deviations occur. Submit test results in the Operation and Maintenance Manuals.

3.2 GROUND RESISTANCE TEST

A. Building ground electrode resistance testing shall be accomplished with a ground resistance direct-reading single test meter utilizing the Fall-of-Potential Method.

B. Test results shall be in writing, and shall show temperature, humidity, and condition of the soil at the time of the tests. In the case where the ground resistance exceeds 10 ohms, provide additional grounding electrodes to reduce the resistance to ground to 10 ohms.

C. Tests shall include measurement of ground resistance at the following equipment and structures:

1. Main Electrical Room Ground Bar.
2. Signal reference grids (ground rod grid and on-slab metallic plane).

3.3 600 VOLT CABLE INSULATION TEST

A. Measure and record insulation resistance of all feeders using a 1000 volt megger for one minute. Make tests with circuits isolated from source and load.

B. After the branch circuit conductors have been installed, but before they have been connected to the associated wiring devices, test all conductors for short circuits, open circuits. These tests shall be performed by reading resistance in ohms with a multi-meter. Records of these test are not required.

C. Test for load division between all conductors in parallel feeders. The difference in current carried between the individual feeders comprising the parallel feeder shall not exceed 10% of feeder current. Records shall indicate amperage, voltage, and feeder identification. Any feeder not in compliance shall be modified to correct the load division to within 10% and shall be retested. Submit test results in the Operation and Maintenance Manuals.

3.4 15KV CABLE INSULATION TEST
A. High potential proof tests shall be made on all medium voltage cables before final inspection and acceptance of work. Test to be witnessed by engineer (sufficient notice required). Each sheet of test report to be signed by Test Engineer, Contractor's Representative and Construction Inspector.

B. The contractor shall engage and pay for the services of a competent independent (other than the Installing Contractor) cable test engineering firm normally engaged in this type of business, and acceptable to the Owner's representative. Said testing firm shall have equipment capable of accurately making the specified tests and shall mail the original and one copy of all cable test reports at completion of each test to the Owner and Architect, certified true and correct. A preliminary report, consisting of a carbon copy of the field test, shall be received by the Owner and Architect within two working days after each test.

C. A non-destructive D.C. testing device as manufactured by “Megger” of “Mitchell Instruments” or approved equal, capable of generating approximately 100,000 V.D.C. under normal leakage conditions of acceptable cable shall be used for the tests.

D. All cables shall be tested in place with all splices and terminations made up but not connected to switchgear or any other load device.

E. In case of failure during the test, every effort shall be made to locate the faulty splice, termination or cable section, as the case may be. The Owner and Architect shall be notified before repairs are made.

F. Should the test reports indicate that the condition of the cable is unsatisfactory, the Contractor shall make all repairs and/or replacements necessary. Additional tests shall be made at the Contractor's expense, on all repaired sections. Cable installations will not be accepted until satisfactory certified proof test reports are obtained.

G. A continuity test shall be made prior to conducting the following megger and high potential tests. The continuity test will be to measure the resistance of the conductor and shield to insure a high conductivity (low resistance) in each cable prior to conducting the high voltage tests.

H. Positive means shall be taken to insure safety during the tests and all safety instructions of the test operation shall be carried out. Prior to each high potential test, each high voltage cable conductor shall be separately "megged" with a 2,500 volt megohm meter, or equal, from conductor to ground. Low megger readings of less than 25 megohms shall be cause for rejection of the cable.

I. Each cable shall be tested in accordance with IEEE-400 latest edition, Guide for Making High-Direct-Voltage Tests on Power Cable Systems in the Field, for a minimum of fifteen minutes or until the current reading levels off and remains steady for at least three minutes. The potential shall be raised at a slow uniform rate with current readings taken every fifteen seconds until full voltage is reached; thereafter, current reading shall be recorded in one minute intervals for 15 minutes. The removal of the voltage shall be done in an approved manner to prevent damaging the cable. Test data shall be recorded on a form acceptable to the Engineer.

J. Record temperature and relative humidity. Do not perform test unless weather is clear and relative humidity is below 70 percent.

K. Each conductor shall be individually tested with all other conductors grounded. All shields shall be grounded.

L. Current sensing circuits in test equipment shall measure only the leakage current associated with the cable under test, and shall not include leakage current of the test equipment.
M. Terminations shall be properly corona suppressed by guard ring, field reduction sphere, or other suitable methods.

N. A D.C. high potential shall be applied in at least eight equal increments until maximum test voltage is reached. D.C. leakage current shall be recorded at each step after a constant stabilization time consistent with system charging current decay.

O. A graphic plot shall be made of leakage current (x axis) versus voltage (Y axis) at each increment.

P. The test conductor shall be raised to a maximum test voltage and held for a total of ten minutes. Readings of leakage current (Y axis) versus time (X axis) shall be recorded and plotted on thirty second intervals for the first two minutes and every minute thereafter.

Q. The conductor test potential shall be reduced to zero and grounds applied for at least ten minutes.

R. The D.C. test voltage shall be as manufacturer specified for 15 KV cables manufactured for ungrounded neutral service, 65 KV normally.

3.5 PANELBOARDS AND SWITCHBOARDS

A. Test the torque of all bolted cable to bus connections and all bus to bus connections and paint red dot using Torque seal as manufactured by Organic Products (tel # 214-438-7321) on each bolt to confirm the torque test. Check for A-B-C phase rotation.

B. Perform a dielectric test all buses.

C. Perform the following test and observations of all molded case circuit breakers in distribution panels and distribution switchboard and all molded case circuit breakers 225 amps and above in branch circuit panels.
   1. Circuit breakers to be operated several times to ensure smooth operation.
   2. Inspect the circuit breaker molded case for cracks.
   3. Rated current to be passed through each phase and millivolt readings to be taken across contacts.
   4. Time-current characteristic tests to be performed by passing 300% rated current through each phase and monitoring trip time.
   5. Instantaneous pick-up current to be determined by finding the current level at which breaker trips out in less than 2 cycles.
   6. Insulation resistance tests to be performed at 1000 volts D.C.
   7. Contacts, shunts, etc. to be visually inspected for alignment.
   8. Inverse time, instantaneous pick-up and millivolt drop across contacts, including resistance values as well as deficiencies causing breaker to function outside published limits to be recorded. Times are compared with manufacturer's or NEMA published values.

D. Perform infrared thermal inspection of all bussing, bus connection and cable terminations.

3.6 MOTOR CONTROLLERS AND MOTOR CONTROL CENTER
A. Measure and record the insulation resistance of all motor windings to ground with a megohm meter before applying line voltage to the motors. If these values are less than 1 megohm, the Contractor furnishing the motor shall be notified and shall correct the deficiency.

B. Check operation of combination motor starters. Test shall include short circuit and overload protective devices as well as contactor operation and interlock. Primary injection shall be used to test the overload protection.

C. Torque test feeder terminations and paint red dot using torque seal on each lug to confirm the torque test. Check for A-B-C phase rotation.

D. Perform infrared thermal inspection of all bussing, bus connection and cable terminations.

3.7 DRY TYPE TRANSFORMERS

A. Clean all debris from transformer enclosure. Clean coils and termination points.

B. Verify the secondary voltage and adjust taps as required to bring the secondary voltage to within +/- 1% of nameplate voltage.

C. Confirm neutral and equipment ground. Measure and record impedance to ground.

D. Inspect enclosure for damage.

E. Confirm air clearance around transformer per manufacturer's listed requirement.

F. Torque test feeder terminations and paint a red dot using torque seal on each lug to confirm the torque test. Check for A-B-C phase rotation.

G. Test sound level of transformer to confirm it is within the manufacturer's rated level.

H. Perform infrared thermal inspection of all cable terminations.

3.8 SPECIAL SYSTEMS

A. Systems such as fire alarm, intercom, nurse call, public address, security and special access systems shall be tested by the system supplier. Following the test, provide an affidavit that the system has been tested by him, and that the system is complete and operational as specified.

3.9 MISCELLANEOUS SYSTEMS

A. The Contractor shall test all receptacles for power polarity and ground to assure that all receptacles are operating properly, correctly wired and suitably grounded. Provide an affidavit to the effect that this work has been accomplished.

B. Do not subject Ground Fault Interrupter (GFCI) type breakers or receptacles to megger tests.

3.10 INFRARED THERMAL INSPECTIONS

A. Provide an in depth thermal evaluation of all equipment and/or objects specified.

B. The infrared thermographer shall exercise reasonable care in the performance of work to prevent hazard to self or others, and/or prevent unscheduled interruption of utility services.

C. Quality Control:
1. The infrared thermographer shall have sufficient knowledge of the system, object or process being inspected to understand the observed patterns of radiation. All infrared thermographers shall be a certified Level 2 Thermographer: A Certified Level 2 Thermographer shall have successfully met and passed the experience, training, and testing requirements for a Level 2 Thermographer set forth by the American Society for Nondestructive Testing (ASNT) and pursuant SNT-TC-1A, 1992. Training and certification will be recognized only if administered by one of the following:

(a) An accredited third party independent training organization such as The Academy of Infrared Thermography, The Infraspection Institute, John Snell and Associates, etc.

(b) An ASNT Certified Level 3 Thermographer as prescribed in SNT-TC-1A, 1992.

D. The infrared thermographer will use radiometric thermal imaging equipment that incorporates the use of Focal Plane Array (FPA) technology having a temperature sensitivity of 0.15°C, obtain accurate thermal data to .2°C, and provide high resolution color thermal images that make the hot spots and affected component easily discernible to maintenance personnel without the need for other real time photographs or images. Thermal imaging equipment will be cooled by a closed loop electronic cooler and not require the use of liquid nitrogen. Thermal imaging equipment will have a minimum spatial resolution of 1.4 mrad. Thermal imaging equipment will have a minimum thermal sensitivity of 2°C. When providing quantitative infrared thermal data, the thermographer will assure that the infrared measuring equipment meets the manufacturer's standard equipment specifications for accuracy by performing a field test of the equipment. All temperature measuring equipment will be calibrated at intervals recommended by the manufacturer and at least every three years.

E. Submit two complete copies of the results in bound format. Provide digital files of all of the thermal images on a CD. The report shall include the following at a minimum:

1. The printed image of each item inspected. Each image shall be identified by the unit’s name as indicated on the Drawings or as marked in the field for existing equipment.

2. Date and time of inspection.

3. Name of person or persons performing the inspection.

4. A brief written statement about each image. If the image indicated that there may be a potential problem, provide recommendations on how to correct the problem.

3.11 DEMONSTRATION TESTING

A. Demonstration Test of Completed Systems. Demonstrate the features and operation of the following systems:

1. Special systems.

   (a) Fire alarm systems.

2. Electrical service entrance equipment:

   (a) Fuses, fuse holders and switches.

   (b) Meter sockets and meters.
(c) Switching.
(d) Operation of circuit breakers.
(e) Ground fault protection devices.

3. Electrical system and control and equipment:
   (a) Power distribution equipment.
   (b) Motor control devices.
   (c) Contactors.
   (d) Switchboards.
   (e) Panelboards.

4. Lighting systems:
   (a) Lighting controls.
   (b) Interior and exterior light fixtures.
   (c) Emergency lighting systems.
   (d) Light fixtures, with emergency power pack.

5. Emergency power systems:
   (a) Emergency generators.
   (b) Automatic transfer switches.

B. Each system shall be demonstrated once only, after completion of satisfactory testing and acceptance.

C. The demonstration shall be held upon completion and acceptance of all systems at a date to be agreed upon in writing by the Architect.

D. The demonstration shall be held by the appropriate Contractors in the presence of the Architect or his representative and the manufacturer's representative.

E. Demonstrate the functions and location (in the structure) of each system, and indicate its relationship to the riser diagrams and drawings.

F. Demonstrate by "start-stop operation" how to work the controls, how to reset protective devices, how to replace fuses, and what to do in case of emergency.

G. Check rotation of all equipment and correct if necessary.

END OF SECTION
SECTION 26 24 16 - PANELBOARDS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Branch circuit panelboards.

1.2 REFERENCES

A. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.

B. NAME KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum).

C. NEMA PB 1 - Panelboards.

D. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.


F. NEMA AB 3 – Molded Case Breakers and Their Application

G. ANSI/UL 67 – Electric Panelboards

H. ANSI/UL 50 – Cabinets and Boxes

I. ANSI/UL 508 – Industrial Control Equipment

1.3 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01 for submittal requirement.

B. Submit dimensioned drawings showing size, circuit breaker arrangement and equipment ratings including, but not limited to, voltage, main bus ampacity, integrated short circuit ampere rating, and temperature rating of circuit breaker terminations.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver distribution panelboards in factory-fabricated water-resistant wrapping.

B. Handle panelboards carefully to avoid damage to material component, enclosure and finish.

C. Store in a clean, dry space and protected from the weather.

1.5 QUALITY ASSURANCE

A. Commissioning of a system or systems specified in this section is part of the construction process. Documentation and testing of these systems, as well as training of the Owner's operation and maintenance personnel, is required in cooperation with the Owner's Representative and the Commissioning Agent. Project Closeout is dependent on
successful completion of all commissioning procedures, documentation, and issue closure.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Square D Company (Schneider Electric)

B. General Electric

2.2 PANELBOARD CONSTRUCTION

A. General: Provide flush or surface mounted, or surface mounted deadfront circuit breaker type distribution or branch circuit panelboards with electrical ratings and configurations, as indicated on the drawings and schedules. Load center type of panelboards are not acceptable. All panelboards shall be 225 amp mains.

B. Enclosure:

1. Enclosure shall be proper NEMA type as shown on the drawings.

2. NEMA 1
   a. Back box shall be galvanized steel for flush mounted branch circuit panelboards. Back box shall have gray enamel electro-deposited finish over cleaned phoshatized steel for all other type panelboards.
   b. Provide panelboard fronts with screw cover and hinged door with flush lock.
   c. Where power monitors or metering are specified on the Drawings, the manufacturer shall cut the doors for field mounting of the unit.

3. NEMA 3R, 3S and 12
   a. Enclosure and doors shall have gray enamel electro-deposited finish over cleaned phoshatized steel.
   b. Doors shall be gasketed and equipped with tumbler type vault lock and two trunk latches where required by UL standard. Interior trim shall consist of four pieces, each covering one gutter top, bottom and both sides.

4. Construct cabinet in accordance with UL 50. Use not less than 16-guage galvanized sheet steel, with all cut edge galvanized. Provide a minimum 4-inch gutter wiring space on each side. Provide large gutter where required to accommodate the size and quantity of conductors to be terminated in the panel, and where required by code.

5. Exterior and interior steel surfaces shall be cleaned and finished with gray enamel over rust inhibiting phosphatized coating.

6. Doors shall be equipped with flush-type combination catch and key lock. All locks shall be keyed alike.
7. Branch circuit panelboards shall be 5 ¾ inches deep.

8. A directory holder with heavy plastic plate, metal frame, and index card shall be mounted inside of each door.

9. Reinforce enclosure and securely support bus bars and overcurrent devices to prevent vibration and breakage in handling.

10. Rating: Minimum integrated short-circuit rating, voltage and current rating as shown on drawings.

11. Labeling: The Contractor shall furnish and install engraved, laminated plastic nameplates on the trim per Section 26 05 53, Electrical Identification

C. Bus:

1. Provide panelboards with rounded edge phase, neutral and ground buses, rated full capacity as scheduled on drawings. Buses shall be full-length copper and braced for the maximum available fault current as shown on drawings.

2. Phase bussing shall be stacked front-to-back, A-B-C.

3. The neutral and ground bus bars shall have termination locations for each of the individual feeders and the lugs sized appropriately. In addition, space shall be provided to terminate the neutrals and grounds in two feeders equal to the largest size circuit breaker that can be installed in the panelboard. The ground bus shall be mounted in the panelboard, opposite the incoming line and neutral lugs and shall be accessible to allow easy installation of bolts, nuts and lock washers used to attach ground lugs. The neutral and ground buses in branch circuit panelboards shall have spaces to terminate 84 neutral and 84 ground wires.

4. Where isolated ground buses are specified or indicated, provide copper grounding bus bars mounted in the panelboard on insulated standoffs to ensure isolation from equipment ground potential. Isolated ground buses shall be drilled and tapped as appropriate for connection of the individual isolated grounding conductors.

5. All lugs for phase, neutral, and ground buses shall be tin-plated copper.

6. Panelboard shall be rated SE where required for service Entrance duty.

2.3 SWITCHING AND OVERCURRENT PROTECTIVE DEVICES

A. Provide molded case circuit breakers with manufacturer’s standard construction, bolt on type, with integral inverse time delay thermal and instantaneous magnetic trip in each pole. Circuit breakers shall be constructed using glass reinforced polyester insulating material providing superior dielectric strength. Provide circuit breakers UL listed as Type HACR for air-conditioning equipment branch circuits.

B. Circuit breakers shall have an over center, trip-free, toggle operating mechanism that will provide a quick-make, quick-break contact action.
C. Provide handle padlock attachments on circuit breakers where indicated on drawings. Device shall be capable of accepting a single padlock. All circuit breakers shall be capable of being individually padlocked in the off position.

D. The circuit breakers shall be connected to the bus by means of solidly bolted connection. In multi-pole breakers, the phase connections on the bussing shall be made simultaneously without additional connectors or jumpers. Multi-pole breakers shall be two or three pole as specified. Handle ties are not permitted. The circuit breaker shall have common tripping for all poles.

E. All circuit breakers shall be provided with visible ON and OFF indications.

F. Provide GFI circuit breakers as indicated on drawing or per NEC requirement.

G. Breaker voltage and trip rating shall be per drawings. Breaker faceplate shall indicate UL certificate standards with applicable voltage systems and corresponding short current rating as per drawings.

H. Molded Case Circuit Breakers:
   1. Breakers 400 ampere frame and less shall be manufacturer's standard industrial construction, bolt-on type, integral inverse time delay thermal and instantaneous magnetic trip. Breakers 225 ampere through 400 ampere shall have continuously adjustable magnetic pick-ups of approximately five to ten times trip rating.
   2. Breakers 600 ampere frame and above shall be equipped with solid-state trip complete with built-in current transformers, solid-state trip unit and flux transfer shunt trip.

I. Current Limiting Molded Case Circuit Breakers:
   1. Breakers 100 ampere frame shall be inverse time delay thermal and instantaneous magnetic trip.
   2. Breakers 250 ampere and 400 ampere frame shall be solid-state trip with built-in current transformers, solid-state trip unit and flux transfer shunt trip.
   3. Current limiting breakers shall protect downstream molded case breakers. Submit manufacturer's test data proving the protection, from both peak currents and \( I^2T \) energy of downstream devices.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panelboards in accordance with manufacturer's written instructions and the applicable requirements of the NEC, NEMA, ANSI and the National Electrical Contractors Association's "Standard of Installation".

B. Anchor enclosed firmly to walls and structural surfaces, ensuring that they are permanently and mechanically secured. Direct attachment to dry wall is not permitted. Freestanding panelboards shall be installed on a concrete housekeeping pad with anchors per manufacturer's recommendation.
C. Mounting height:

1. Branch Circuit Panelboards: As per Drawings, but such that highest operating handle is no greater than 79 inches above finished floor.

2. Where panelboards occur in groups, the tops shall be aligned if it can be done without exceeding items 1 and 2 above.

D. Install panelboards plumb. Adjust trim to cover all openings. Seal all conduit openings and cap all used knockout holes.

E. Provide blank plates for unused open spaces in panelboards. Keep the front door closed after work to protect from damage, dirt, and debris at all times.

F. Install identification nameplates in accordance with Section 26 05 53, Electrical Identification.

G. Provide a minimum of two (2) 1-1/2” spare empty conduits from each branch circuit panelboard to above nearest accessible ceiling. Label pull wires “Spare Conduits”.

3.2 FIELD QUALITY CONTROL

A. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers and lugs.

B. Provide testing and start-up as indicated in Section 26 08 00 – Commissioning of Electrical Systems.

C. Contractors’ tests shall be scheduled and documented in accordance with the commissioning requirements.

D. System verification testing is part of the Commissioning Process. Verification testing shall be performed by the contractor and witnessed and documented by the Commissioning Agent.

3.3 PANELBOARD SCHEDULE

A. The Contractor shall provide engraved, laminated plastic nameplates for circuit identification as indicated on the Drawings for distribution panelboards. All panelboard schedules shall be computer generated.

B. The Contractor shall fill the index directory inside the front door of branch circuit panelboards identifying each circuit as shown on Panel Schedule drawings. Where changes are made, the schedule shall reflect the changes. At the end of the job, these schedules shall reflect as-built record conditions.

C. Provide electronic copies of all panelboard schedules as part of the close-out documents.

D. All panelboard schedules shall include the following information.

1. Panelboard ID No.

2. Room number where panelboard is located. Coordinate room number designations with final Owner-approved room number schedule.
3. Serve from: Transformer or distribution panel ID number serving panelboard or busway.

4. Date published.

5. Circuit number: each circuit number identified.

6. Description: room number(s) which the circuit feeds and equipment name, i.e., printer, VAV box, security camera, if applicable, or device type, i.e., receptacle, IG recept., floor box and furniture, TVSS, or spare if the circuit is not used.

END OF SECTION
SECTION 26 27 26 - WIRING DEVICES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Wiring Devices:
   1. Receptacles.
   2. Device plates and box covers.

B. Wiring for HVAC in Division 23 shall meet the requirement of this specification.

1.2 REFERENCES

A. Americans with Disabilities Act (ADA)
B. ANSI/NEMA OS 1- Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
C. ANSI/UL 498 – Attachment Plugs and Receptacles.
D. ANSI/UL 943 – Ground Fault Circuit Interrupters.
E. NEMA 250 – Enclosures for Electrical Equipment (1000 Volts maximum).
F. NEMA WD 1 – General-Purpose Wiring Devices.
G. NEMA WD 5 - Specific-Purpose Wiring Devices.
H. Texas Accessibility Standards. (TAS)

1.3 SUBMITTALS

A. Provide submittals in accordance with and in additional to Section 26 00 00, Basic Electrical Requirements, and Division 01 for submittal requirement.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver wiring devices individually wrapped in factory-fabricated containers.
B. Handle wiring devices carefully to avoid damage, breaking and scoring.
C. Store in a clean dry space and protected from the weather.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide factory fabricated wiring devices in the type and electrical rating for the service indicated. Where type and grade are not indicated, provide proper selection to correspond with branch circuit wiring and overcurrent protection. Attachment of wires to devices shall be by screw pressure under the head of binding screws. Arrangements depending on spring pressure or tension are not acceptable. All binding screws shall be brass or bronze.
B. Device color:

1. Switches, receptacles, and dimmers on normal power shall be white.
2. Switches, receptacles, and dimmers on emergency power shall be red.
3. Provide receptacles in surface mounted raceways in colors as shown on drawings. Coordinate color of devices and device plates in other areas with the architectural finish. Refer to architectural drawings and specifications.
4. For renovation or expansion of existing facilities, provide devices and plates to match existing.

2.2 RECEPTACLES

A. Acceptable manufacturers

1. Arrow-Hart
2. Hubbell
3. General Electric
4. Leviton
5. Other manufacturers equal in design and function will be considered upon A/E approval following substitution procedure in Section 26 00 00 and Division 01 for substitution requirement.

B. Material

1. Not Used.
2. Dedicated circuit and convenience duplex receptacles shall be rated 20 amperes, 125 volt AC.
3. GFCI receptacles shall be rated 20 amperes, 125 volt with integral ground fault current interrupter
4. Heat trace receptacles shall be Arrow-Hart #5262CRGRY with Crouse Hinds #WLRD-1 cover. Install round plug on cord supplied with heat trace to match weatherproof bushing on receptacle cover for watertight installation.
5. Specific-use receptacles shall have volts, amps, poles and NEMA configuration as noted on drawings.
6. Heavy-duty lock-blade receptacles shall be NEMA WD5 heavy-duty specification grade.
7. Emergency receptacles shall be red plastic face or with pre-wired neon glow lamp behind each pair of slots.
8. Weatherproof receptacles as specified shall be mounted in a cast steel box with gasketed, weatherproof device plate as specified. All receptacles in Greenhouse pods shall be weatherproof.
2.3 WALL PLATES

A. Acceptable manufacturers

1. Arrow-Hart
2. Hubbell
3. General Electric
4. Leviton
5. Other manufacturers equal in design and function will be considered upon A/E approval following substitution procedure in Section 26 00 00 and Division 01 for substitution requirement.

B. Material

1. Wall plates in mechanical and electrical rooms, loading dock, and other industrial areas shall be 316 or 302 stainless steel with cutouts as required for devices indicated on drawings, unless otherwise noted. Other wall plates shall be ivory smooth plastic, 0.1-inch thick. Where switches or outlets are shown adjacent to each other, they shall be ganged with partitions between different type services and covered by a single custom wall plate.

2. Exposed boxes:

   a. Dry interior spaces: Use cast metal plates with cast metal box. Use heavy cadmium-plated sheet steel plates with steel boxes and copper-free aluminum with aluminum boxes. All screws shall be stainless steel. Edges of plates must be flush with edges of boxes.

   b. Other locations: Use weatherproof devices plates. Provide cast metal plates with gasketed spring door

3. Jumbo plates are not permitted.

4. Weatherproof cover plate shall be gasketed cast aluminum or feraloy (by Crouse-Hinds) with hinged gasketed device covers.

2.4 TAPE LABELS

A. Provide tape labels in accordance with Section 26 05 53, Electrical Identification, on all receptacles and switches indicating panelboard and circuit number. White tape with 3/16 inch black letters/numbers.

PART 3 - EXECUTION

3.1 INSPECTION

A. Installer must examine the areas and conditions under which wiring devices and floor boxes are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Inspect devices for physical damage. Do not proceed with the work until unsatisfactory conditions have been corrected.
3.2 DEVICE COORDINATION

A. Where items of equipment are provided under other sections of this specification or by the Owner, provide a compatible receptacle and/or device plate for the cap or plug, and cord of the equipment.

3.3 INSTALLATION

A. General:

1. Install wiring devices in accordance with the applicable requirements of the latest release of NEC, NEMA, and ANSI.

2. The approximate location of switches, power outlets, floor boxes, etc., is indicated on the drawings. These drawings, however, may not give complete and accurate information in regard to locations of such items. Determine exact locations by reference to the general building drawings and by actual measurements during construction of the building before rough-in, subject to the approval of the Constructor Inspector.

3. Where more than one device occurs in one outlet box, causing 300 volts or more voltage difference between them, a barrier must be provided for isolation to meet NEC Article 380.

B. Receptacles:

1. Location:
   a. Install convenience outlets, telephone, data and TV outlets in suitable steel outlet boxes centered at the height of 18 inches above the finished floor, 6 inches above countertop or at the backsplash level, or as indicated on the drawings. Coordinate with equipment and architectural drawings prior to rough-in.
   b. The Owner’s representative reserves the right to make any reasonable changes in receptacle locations without change in the contract sum.
   c. Install specific-use receptacles at heights shown on architectural drawings.

2. Position:
   a. Install receptacles vertically with ground pole on bottom. Install receptacles horizontally, where field condition does not allow vertical installation, with ground pole on left.

3. All receptacles with 6 feet of a water source such as sinks shall be GFCI type. Arrange circuit wiring for last receptacle on circuit to be GFCI. Feed through to non-GFCI receptacles is not permitted.

C. Plates:

1. Where cover plates do not completely conceal the rough openings for the devices, it shall be the responsibility of the General Contractor to patch, paint, etc. around the opening to the satisfaction of the Owner’s representative.
2. All devices and cover plates shall be plumb and parallel to adjacent surfaces or trim. Devices must be flush with the finished trim cover plates and plates must be tight to surfaces over which they are installed.

3. Where switches controlling devices that are out of sight, or where three or more switches are gang mounted, plates shall be labeled to identify items being controlled, or areas being lighted. Labeling shall be 3/16-inch Condensed Gothic and shall be filled with black enamel.

END OF SECTION