Contracting Branch  
Infrastructure Division  
4200 Smith School Road  
Austin, Texas 78744

INVITATION FOR BIDS  
AND  
CONTRACT DOCUMENTS  
FOR  

PROJECT NUMBER 128695  
VILLAGE CREEK STATE PARK  
LUMBERTON, HARDIN COUNTY, TEXAS  

FACILITY DAMAGE REPAIRS

P.O.C:  
Serena Holster, Contract Manager, CTCD, CTCM  
Email: serena.holster@tpwd.texas.gov  
Direct Line: 512-389-8761  

ISSUE DATE: April 3, 2019  
BIDS DUE NO LATER THAN  
2:00 PM (CST), May 7, 2019
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NOTICE TO BIDDERS

Sealed bids will be received by the Contracting Branch, Infrastructure Division, Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744, UNTIL 2:00 P.M (CST), MAY 7, 2019 for Project Number 128695, Village Creek State Park – Facility Damage Repairs, Lumberton, Hardin County, Texas. The bid opening will be conducted in A-100 Conference Room. The estimated range of construction cost is $275,000 to $305,000.

Project includes: Furnish all labor, tools, equipment, materials and incidentals but not limited to repairs to the cabin, pavilion, pedestrian bridge, and traffic bridge handrails. Repairs also include roofing, exterior siding, MEP components, carpentry, and structural components in accordance with the Bidding and Contract Documents.

Performance Period: All work shall be completed within three hundred (300) calendar days commencing on the date specified in the Notice to Proceed.

Minimum Experience Requirements: Bidder must meet minimum qualifications requirements as stipulated in Division 1 – General Requirements, Section 01000 – Special Conditions, paragraph 1.32 to be eligible for contract award.

HUB Subcontracting Plan (HSP): Each bidder must complete and return with the bid a HSP following the policy and utilizing the forms contained with the Invitation for Bids and Contract Documents included herein. FAILURE TO COMPLETE AND RETURN THESE FORMS WITH THE BID WILL BE CAUSE FOR REJECTION OF THE BID. THE CONTRACTOR RECEIVING AN AWARD MUST COMPLY WITH THE SPECIAL REQUIREMENTS SPECIFIED HEREIN.


Pre-Bid Conference: A Pre-Bid Conference will be held at Village Creek State Park, 8854 Park Road 74, Lumberton, Texas 77657 on April 17, 2019 at 10:30 AM. Although the pre-bid conference is not mandatory, Bidders are strongly encouraged to attend as important information regarding Bidding requirements and the Project will be discussed. Failure to give proper consideration to site conditions when preparing the bid will not constitute grounds for additional compensation. Prospective Bidders who cannot attend this pre-bid conference may request to visit at another date and time, however, this cannot be guaranteed. Requests to visit at an alternative date and time must be scheduled by contacting Gary Holmes, Construction Manager at 512/627-4296.
Contact Information: For technical information and information regarding administration of the contract, contact Contract Manager, Serena Holster, 512/389-8761 or serena.holster@tpwd.texas.gov.

To view and download full Bidding and Contract Documents, visit the TWPD web site using: http://tpwd.texas.gov/business/bidops/current_bid_opportunities/construction/

TEXAS PARKS AND WILDLIFE

INSTRUCTIONS TO BIDDERS

1. **BIDS:** Bids must be received in the Infrastructure Division of the Texas Parks and Wildlife Department (TPWD) Austin, Texas NO LATER THAN the date and time specified in the Notice to Bidders. Bids received after this time will not be considered and will be returned unopened. Bidders are advised that TPWD’s Headquarters Complex does not open until 8:00 A.M. Bidders should plan their delivery method accordingly. Each bid shall be submitted on the Contractor’s Bid form provided.

**FAXED AND/OR EMAILED BIDS WILL NOT BE ACCEPTED. BIDS MUST BE ENCLOSED IN A SEALED ENVELOPE, BOX, OR CONTAINER CLEARLY MARKED ON THE OUTSIDE AS AN “OFFICIAL BID” AND SHALL INCLUDE THE FOLLOWING INFORMATION: PROJECT NUMBER, PROJECT DESCRIPTION, PROJECT LOCATION, BID OPENING DATE AND TIME.**

Bids shall have all blanks fully and legibly completed including a price for all alternates and/or unit costs when listed under the base bids on which a bid is submitted. Failure to do so shall result in rejection of the bid. Corrections in the bidder’s bid shall be legible and initialed. The bid form shall show no alterations or qualifications of any kind. **Bids must be signed by an individual who has the authority to legally bind the firm.** TPWD reserves the right to require a bidder to furnish documentary evidence of Bidder’s signature authority.

Corrections, deletions, or additions to bids may be made by facsimile (FAX), provided such FAX are received in correct and comprehensive form prior to the opening time of bids and an original reflecting said corrections, deletion, or additions must be submitted to TPWD within two (2) business days of submitted FAX. No telephonic instructions will be accepted. **FAX corrections, deletions or additions to bids shall be sent to FAX number: 512/389-4790, attention: Serena Holster.** This is the only number that will be used for receipt of corrections, deletions, or additions. TPWD shall NOT be responsible for failure of electronic equipment or operator error.

TPWD reserves the right to reject any or all bids—and to waive any or all informalities in connection therewith. TPWD does not bind itself to accept the lowest bid or any part thereof, and reserves the right to ask for new bids for the whole or parts. The mere opening and reading aloud of a bid shall not constitute TPWD’s acceptance of the suitability of a bidder or a bid. The competency and responsibility of the bidders will be considered in making an award. TPWD reserves the right to award, partially award, or not award a contract if no responses are deemed acceptable; and may re-solicit as determined necessary and in the best of the State of Texas.

2. **BASIS OF AWARD:** Determination of the low bidder will be based on the lowest responsible base bid and/or a combination of the base bid and alternate bids. Alternates accepted will be considered in determining the low bidder, but TPWD does not obligate itself to accept an alternate or to accept alternates in any order listed unless otherwise stipulated elsewhere in the Invitation for Bids and Contract Documents.

3. **UNIT PRICE/ESTIMATED QUANTITY BIDS:** If the Bid furnished with this project requires a bid on a unit price/estimated quantity basis, the Bidder shall enter a unit price in the space provided therefor and a total item price based upon the estimated quantities shown on the bid form. Unit prices entered shall be the full price to TPWD including materials, labor, services, taxes, bonds, rentals, overhead, profit, etc., for the work described. Quantities shown reflect measurements taken from the Drawings and are assumed correct for bidding purposes. Final contract price will be based on actual quantities of work installed as determined by TPWD and Contractor upon completion of the work.

Award of contract shall be based upon the summation of the various unit price bids, but in case of error the unit prices shall govern and computations will be checked for accuracy before award is made.
Prices will also be reviewed for balance prior to award, and obvious imbalance in favor of work scheduled for early completion or subject to significant expansion after award may be grounds for rejection of the bid.

4. **BID SECURITY:** Unless otherwise stipulated in the Invitation for Bids and Contract Documents, only projects in which the total contract price exceeds $25,000.00, will require bid security. **Bids exceeding $25,000.00 must be accompanied by a bid bond, certified check or cashier's check drawn to the order of the Texas Parks and Wildlife Department for not less than five percent (5%) of the total amount of the bid (including total of all separate bids for one or more projects bid and multiple base bids and/or alternate bids and/or optional bids and/or allowances).** Therefore, to ensure adequate bid security, bidders should calculate bid security based on the highest possible monetary award. Certified checks and cashier checks must be originals. No other forms of bid security or checks will be accepted. **Bid will be rejected if the appropriate security is not furnished in the form specified above and by the time set for the bid opening.**

Bid security for the three (3) lowest bidders may be retained by TPWD until the successful bidder executes the contract, and if required, furnishes bonds and certificates of insurance. All other bid security will be returned as soon as practical after bid opening.

Bid security for the successful bidder will be returned following execution of the contract and submission of satisfactory bonds and insurance. If the successful bidder fails to return the signed contract (and bonds and certificate of insurance when required) within the time specified, the bid security may be forfeited not as a penalty but as liquidated damages.

5. **INSURANCE REQUIREMENTS:** The successful Contractor must certify the minimum insurance coverages as set forth by the contract, specifically, the Uniform General Conditions, Article 5, 5.2. and Division 1 – General Requirements, Section 01000 – Special Conditions. The required insurance information shall be submitted within ten (10) calendar days from receipt of Notice of Selection. Failure to timely meet this requirement may result in disqualification of the bid and forfeiture of the bid security, if any. In such circumstances, TPWD shall be authorized to proceed with award to the next highest ranking, responsive and responsible bidder.

6. **BONDING REQUIREMENTS:** If the total contract price exceeds $25,000.00, a Payment Bond must be furnished by the successful Contractor. If the total contract price exceeds $100,000.00 a Payment Bond and a Performance Bond must be furnished by the successful Contractor. All bonds submitted shall be the original form bearing original signatures and seal. (See also Article 5, Uniform General Conditions)

7. **DISCREPANCIES:** Should any Bidder find discrepancies between the Invitation for Bids and Contract Documents, or should Bidder be in doubt as to their exact meaning, Bidder should notify TPWD at once. TPWD may then, at its option, issue addenda clarifying same. TPWD will not be responsible for oral instructions or for misinterpretation of Invitation for Bids and Contract Documents.

8. **ADDENDA:** TPWD reserves the right to issue addenda at any time prior to the bid opening. (See also General Requirements – Special Conditions). All addenda shall be acknowledged as received on the Contractor’s Bid Form. Oral changes in the work made during the bidding period are not binding. **BIDDER'S FAILURE TO ACKNOWLEDGE RECEIPT OF ADDENDA MAY RESULT IN REJECTION OF BID.**
No oral explanation in regard to the meaning of the Invitation for Bids and Contract Documents will be made and no oral instructions will be given before the award of the contract. TPWD requests that all discrepancies, omissions or questions as to the meaning of Drawings and Specifications shall be communicated in writing to the Contract Manager for interpretation by April 24, 2019 to the attention of Serena Holster, Contract Manager at the address stated in these Invitation for Bids and Contract Documents or via email to serena.holster@tpwd.texas.gov or via fax at 512-389-4790.

9. **PROHIBITED COMMUNICATIONS:** Upon issuance of this solicitation, TPWD, its representative(s), or partners will not answer questions or otherwise discuss the contents of this Solicitation with any potential Bidder or their representatives(s), except for the written inquiries described in the foregoing paragraph. Attempts to ask questions by phone or in person will not be allowed or recognized as valid.

**Failure to observe this restriction may disqualify Bidder.** Bidder shall rely only on written statements issued through or by TPWD’s contracting staff. This restriction does not preclude discussions between affected parties for the purposes of conducting business unrelated to this solicitation.

10. **LABOR LAWS:** Contractors must comply with all labor laws established by State and Federal statutes. (See also Article 2, Uniform General Conditions).

11. **STATE SALES TAX:** TPWD qualifies for exemption from State and Local Sales and Use Taxes pursuant to the provisions of the Texas Tax Code (Title 2, Chapter 151, Subsection 151.309).

The Contractor shall comply with applicable provisions of Chapter 34, Rules 3.291 and 3.357 of the Texas Administrative Code, or other procedures as may be prescribed by the State Comptroller of Public Accounts. Refer to Uniform General Conditions, Article 2.

12. **CONTRACTOR QUALIFICATIONS:** A Contractor's Statement of Qualifications must be submitted with the bid. Failure to properly complete and provide a Contractor's Statement of Qualifications shall be cause for the Contractor's bid being rejected by TPWD. TPWD may make such investigations as necessary to determine the ability of the Contractor to perform the work, and reserves the right to reject any bid if the evidence submitted and/or obtained through investigation fails to satisfy TPWD that the Contractor is properly qualified to carry out the obligations of the Agreement.

13. **HISTORICALLY UNDERUTILIZED BUSINESS REPRESENTATIONS & CERTIFICATIONS:** BIDDERS ARE ADVISED THAT, in accordance with Texas Government Code, Sections 2161.181-182 and Title 34, Chapter 20, Subchapter B., 20.285 of the Texas Administrative Code (TAC), state agencies must make good faith effort to utilize Historically Underutilized Businesses (HUBs) in contracts for construction services, professional and consulting services and commodities contracts with an expected value of $100,000.00 or more. Each bidder must complete and return with the bid a HUB Subcontracting Plan (HSP) following the policy and utilizing the forms contained with the Invitation for Bids And Contract Documents included herein. FAILURE TO COMPLETE AND RETURN THESE FORMS WITH THE BID WILL BE CAUSE FOR REJECTION OF THE BID. THE CONTRACTOR RECEIVING AN AWARD MUST COMPLY WITH THE SPECIAL REQUIREMENTS SPECIFIED HEREIN. For questions, call HUB Staff, 512/389-4784. An instructional video, Microsoft Word® documents and PowerPoint® presentation can be located at:


14. **PROTEST PROCEDURES:** Any Actual or prospective Respondent who is aggrieved in connection with this solicitation, evaluation, or award of any contract resulting from this solicitation may formally protest as provided in TPWD's rules at TAC, Title 31, Part 2, Chapter 51, Subchapter L, Rule 51.350.
15. **CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION:** Bidder certifies that the responding entity and its principals are eligible to participate in this transaction and have not been subjected to suspension, debarment, or similar ineligibility determined by any federal, state or local governmental entity and the Bidder is in compliance with the State of Texas statutes and rules relating to procurement and that Bidder is not listed on the federal government's terrorism watch list as described in Executive Order 13224.

16. RESERVED

17. RESERVED

18. RESERVED
CONTRACTOR'S
BID
SUBMITTALS
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Having carefully examined the Invitation for Bids and Contract Documents. Project Number 128695, Village Creek State Park – Facility Damage Repairs, Lumberton, Harvin County, Texas for the Texas Parks and Wildlife Department, as well as the premises and conditions affecting this work, and all other contract documents, the undersigned proposes to furnish all labor, equipment and materials necessary to complete the work for the sum of:

<table>
<thead>
<tr>
<th>BASE BID ITEMS – FACILITY DAMAGE REPAIRS</th>
<th>LUMP SUM PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Furnish all labor, equipment, materials, and incidentals necessary, but not limited to Facility Damage Repairs at Village Creek State Park, in accordance with the Invitation for Bids and Contract Documents.</td>
<td>$</td>
</tr>
</tbody>
</table>

TOTAL LUMP SUM BASE BID $

(Total Lump Sum Base Bid Price written in words)

ALTERNATE BID ITEMS

<table>
<thead>
<tr>
<th>ALTERNATE BID ITEM NO. 1</th>
<th>LUMP SUM PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Furnish all labor, equipment, materials, and incidentals necessary, but not limited to provide wainscot substrate and chair rail in cabin, in accordance with the Bid and Contract Documents.</td>
<td>$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALTERNATE BID ITEM NO. 2</th>
<th>LUMP SUM PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Furnish all labor, equipment, materials, and incidentals necessary, but not limited to construct a metal roof system on cabin in lieu of asphalt shingle roof, in accordance with the Bid and Contract Documents.</td>
<td>$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALTERNATE BID ITEM NO. 3</th>
<th>LUMP SUM PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Furnish all labor, equipment, materials, and incidentals necessary, but not limited to provide new generator and platform, in accordance with the Bid and Contract Documents.</td>
<td>$</td>
</tr>
</tbody>
</table>
ALTERNATE BID ITEM NO. 4

| 4 | Furnish all labor, equipment, materials, and incidentals necessary, but not limited to textured and painted gypsum board at ceiling of cabin in lieu of painting exposed structure, in accordance with the Bid and Contract Documents. | LUMP SUM PRICE (COST DIFFERENCE +/-) | $ |

ALTERNATE BID ITEM NO. 5

| 5 | Furnish all labor, equipment, materials, and incidentals necessary, but not limited to removal of second layer of roofing, in accordance with the Bid and Contract Documents. | LUMP SUM PRICE | $ |

TOTAL LUMP SUM BASE BID AND ALTERNATE BID ITEMS

$ | Total Lump Sum Base Bid and Alternate Bid Items written in words

EACH BID ITEM INCLUDES ANY AND ALL APPURTEINANT WORK AND ITEMS NECESSARY FOR FULLY FUNCTIONAL AND OPERATIONAL SYSTEMS, COMPLETE AND IN PLACE, IN ACCORDANCE WITH THE INVITATION FOR BIDS AND CONTRACT DOCUMENTS.

The determination of the low bidder will be based on responsiveness and responsibility of the bidder and on the TOTAL LUMP SUM BASE BID AND ALTERNATES 1, 2, 3, 4, and 5. HOWEVER, THE OWNER RESERVES THE RIGHT TO AWARD TO THE LOW BIDDER ANY COMBINATION OF BID ITEMS OR TO REJECT ALL BIDS.

BIDDER UNDERSTANDS AND ACKNOWLEDGES THAT BIDDER MUST MEET THE MINIMUM QUALIFICATION AND/OR EXPERIENCE REQUIREMENTS SET FORTH IN PARAGRAPH 1.32 OF DIVISION 1, GENERAL REQUIREMENTS, SECTION 01000, SPECIAL CONDITIONS TO BE ELIGIBLE FOR AWARD OF THIS CONTRACT. BIDDER, BY SIGNING THIS BID, AFFIRMS THAT BIDDER MEETS SUCH MINIMUM REQUIREMENTS. FAILURE TO MEET ANY OF THE MINIMUM QUALIFICATIONS SHALL RESULT IN REJECTION OF THE BID.

The undersigned further agrees that, if awarded the Contract, the work will be completed within three hundred (300) calendar days commencing on the date specified in the Notice to Proceed.

The undersigned agrees that when written notice of bid acceptance is furnished by the Owner within sixty (60) calendar days after the bid opening date, the undersigned will, within the stipulated time, execute and deliver the contract and all required bonds, certificates of insurance, and PR-1 and PR-2 submittals to the Owner. Failure to timely provide the insurance certificate, bonds, and submittals shall be grounds for disqualification of bid and forfeiture of bid security. In such circumstances, TPWD shall be authorized to proceed with award to the next lowest, responsive and responsible bidder.
If the above bid amount exceeds $25,000.00, the undersigned shall include herewith security in the form of a bid bond, certified check, or cashier's check for an amount not less than five percent (5%) of the total amount of the bid to be awarded by Owner, unless otherwise stipulated under Special Conditions. To ensure adequate bid security, bidders should calculate bid security based on the total amount of all base bids plus all additive alternate bids (if any). The bid security will be returned to or forfeited by the undersigned in accordance with the Bid Security provision in the Instructions to Bidders. The undersigned further agrees that this bid security is the appropriate measure of liquidated damages which the Owner will sustain by the failure of the undersigned to execute and deliver said contract and required documents.

The undersigned agrees that this bid will not be withdrawn for a period of sixty (60) calendar days from the date set for the bid opening, and the undersigned further agrees that the bid security will be forfeited in the event this bid is withdrawn before expiration of said sixty (60) calendar days.

Additional information can be found at: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

By the signature hereon affixed, the bidder hereby certifies that neither the bidder, nor the firm, corporation, partnership, or institution represented by the bidder, or anyone acting for such firm, corporation, or institution has violated the antitrust laws of this State, codified in 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 such line of business.

Pursuant to Texas Government Code, Title 10, Subchapter A, §2155.004 (a), Bidder acknowledges that Bidder has not received compensation for participation in the preparation of the specifications for this project.

Pursuant to Texas Government Code, Title 10, Subchapter A, §2155.004 (b), §2155.006 (c), and Subchapter B, §2261.053 (c), Bidder certifies that the individual or business entity named in this bid is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate.

By signing this bid, Bidder certifies that if a Texas address is shown as the address of the Bidder, Bidder qualifies as a Texas Resident bidder as defined in Texas Administrative Code, Title 1, Part 5, Chapter 111, Subchapter A, §111.2 (10).

By signature hereon, the bidder hereby certifies that he/she is not currently delinquent in the payment of any franchise taxes owed the State of Texas under Chapter 171, Tax Code. Making a false statement as to corporate tax status is a material breach of contract.

Bidder certifies that the bidding entity and its principals are eligible to participate in this transaction and have not been subjected to suspension, debarment, or similar ineligibility determined by any federal, state or local governmental entity and that bidder is in compliance with the State of Texas Statutes and Rules relating to procurement and that bidder is not listed on the Federal Government’s Terrorism Watch List as described in Executive Order 13224. Entities ineligible for federal procurement are listed at http://www.sam.gov.

By signing this bid, a bidder affirms that he has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor or service to a public servant in connection with the submitted bid.

Bidder agrees that any payments due under this contract will be applied towards any debt, including but not limited to delinquent taxes and child support, which is owed to the State of Texas.

Bidder agrees to comply with Texas Government Code, Title 10, Subtitle D, §2155.4441, relating to use of services
contracts for products produced in the State of Texas.

Bidder certifies that if a Texas address is shown as the address of the Bidder on this bid, Bidder qualifies as a Texas Bidder as defined in Section 2155.444(c) of the Texas Government Code.

Pursuant to Texas Government Code, Title 10, Subchapter F, §§ 2270.001-2270.002, TPWD may not enter into a contract with a company (as defined by Texas Government Code, Title 8, Subchapter A, § 808.001) that boycotts Israel. By signing this bid, Bidder verifies that in accordance with Texas Government Code, Title 10, Subchapter F, §§ 2270.001-2270.002, Bidder:

1. Does not boycott Israel; and
2. Will not boycott Israel during the term of the contract.

Pursuant to Texas Government Code, Title 10, Subchapter F, §§ 2252.151-2252.154, TPWD may not enter into a contract with a company (as defined by Texas Government Code, Title 8, Subchapter A, § 806.051) that is identified on a list prepared and maintained by the Texas Comptroller of Public Accounts under Texas Government Code, §§ 806.001, 807.051 or 2252.153. By signing this bid, Bidder certifies that it is not a company identified on a list as prepared and maintained by the Texas Comptroller of Public Accounts pursuant to Texas Government Code, §§ 806.001, 807.051 or 2252.153.

By signature hereon, the bidder acknowledges that Texas Government Code, Title 10, Subchapter F, §§ 2252.201-2252.205 requires that all iron or steel products produced through a manufacturing process used in this project must be produced in the United States. By signing this bid, Bidder certifies that its bid price represents full compensation for compliance with the requirements of Texas Government Code, Title 10, Subchapter F, §§ 2252.201-2252.205.

By signing this bid, Bidder acknowledges and understands that the acceptance of funds by the Bidder or any other entity or person directly under this Contract, or indirectly through a subcontract under this Contract, shall constitute acceptance of the authority of the State Auditor’s Office, Comptroller or other agency of the State of Texas, TPWD or any successor agency, to conduct an audit or investigation in connection with those funds. The Bidder further agrees to cooperate fully with the above parties in the conduct of the audit or investigation, including providing access to any information the state auditor considers relevant to the investigation or audit. The Bidder shall ensure that this paragraph concerning the State’s authority to audit funds received indirectly by subcontractors through the Bidder and the requirement to cooperate is included in any subcontract it awards. Bidder represents and warrants that the provision of goods and services or other performance under the contract will not constitute an actual or potential conflict of interest or reasonably create an appearance of impropriety.

If applicable, pursuant to Texas Family Code, Title 5, Subtitle D, §231.006(d), regarding child support, the Bidder certifies that the individual or business entity named in this bid is not ineligible to receive the specified payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate. Furthermore, Bidder must provide, in the spaces(s) below, the name and Social Security number of an individual owner, a sole proprietor and all partners, shareholders, or owners with an ownership interest of at least 25% of the business entity prior to award of contract.

<table>
<thead>
<tr>
<th>Name</th>
<th>SSN</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>SSN</td>
<td>%</td>
</tr>
<tr>
<td>Name</td>
<td>SSN</td>
<td>%</td>
</tr>
</tbody>
</table>
Bidder certifies that they are in compliance with *Texas Government Code*, Title 6, §669.003, relating to contracting with executive head of a State agency. If §669.003 applies, Bidder will complete the following information in order for the bid to be evaluated:

Name of former executive: ____________________________

Name of State agency: ______________________________

Date of separation from State agency: __________________

Position with Bidder: ________________________________

Date of employment with Bidder: _______________________

THE REST OF THIS PAGE INTENTIONALLY LEFT BLANK
RECEIPT IS HEREBY ACKNOWLEDGED OF THE FOLLOWING ADDENDA TO THIS IFB (INITIAL IF APPLICABLE)

No. 01 ____ No. 02 ____ No. 03 ____ No. 04 ____ No. 05 ____ No. 06 ____ No. 07 ____

WARNING: BIDDER'S FAILURE TO ACKNOWLEDGE RECEIPT OF ADDENDA MAY RESULT IN REJECTION OF BID.

BIDDER'S AFFIRMATION: SIGNING THIS BID WITH A FALSE STATEMENT IS A MATERIAL BREACH OF CONTRACT AND SHALL VOID THE SUBMITTED BID OR ANY RESULTING CONTRACTS, AND THE BIDDER SHALL BE REMOVED FROM ALL BID LISTS.

Name of Contracting Firm

By

Authorized Signature

Date

Address

Printed Name

City State Zip

Title

(Area Code) Phone Number

(Area Code) Phone Number

Email address

(Area Code) FAX Number

Texas Identification Number

(Area Code) Cell Number
CONTRACTOR'S QUALIFICATION STATEMENT

COMPLETE ALL SECTIONS OF THIS FORM AND SUBMIT WITH BID

PROJECT NO. 128695  LOCATION: Village Creek State Park  BID DATE: May 7, 2019

FIRM
ADDRESS
PHONE
FAX
E-MAIL
Individual  Partnership  Corporation

If incorporated, under the laws of the State of                      with principal place of business in

PRINCIPALS IN FIRM AND YEARS EXPERIENCE IN CONSTRUCTION:

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>PHONE</th>
<th>NO. OF YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIRM HISTORY: List firm history below including any other business names used.

From            to            Firm Name
From            to            Firm Name
From            to            Firm Name
From            to            Firm Name

Has firm, under its current or former name(s) ever failed to complete a project, defaulted on a contract, or been engaged in litigation over a contract?  Yes  No.  If so, state particulars of most recent occurrence on separate sheet(s) and attach to this form.

CONSTRUCTION CAPABILITIES:

FIRM'S AVERAGE ANNUAL CONSTRUCTION VOLUME $                  Percentage of this volume by construction categories:

<table>
<thead>
<tr>
<th>Building</th>
<th>%</th>
<th>Mech.-HVAC</th>
<th>%</th>
<th>Hwy/Roads</th>
<th>%</th>
<th>Other</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical</td>
<td>%</td>
<td>Utility Lines</td>
<td>%</td>
<td>Earthwork</td>
<td>%</td>
<td>Other</td>
<td>%</td>
</tr>
<tr>
<td>Plumbing</td>
<td>%</td>
<td>Utility Plants</td>
<td>%</td>
<td>Site Work</td>
<td>%</td>
<td>Other</td>
<td>%</td>
</tr>
</tbody>
</table>
BONDING INFORMATION: Indicate agency/surety through which bonding will be obtained.

<table>
<thead>
<tr>
<th>AGENCY</th>
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<tbody>
<tr>
<td>City/State/Zip</td>
<td>E-Mail</td>
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<tr>
<td>Phone</td>
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</tr>
<tr>
<td>Agent’s Name</td>
<td>Agent’s Phone</td>
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<tr>
<td>Name of Power of Attorney from Bond Company</td>
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BONDING COMPANY

<table>
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<tr>
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<td>City/State/Zip</td>
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<tr>
<td>Phone</td>
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<tr>
<td>Name of Representative</td>
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</tbody>
</table>

EXPERIENCE RECORD

List minimum of three (3) projects (attach additional sheets if necessary) that are at least 50% completed (50% completed projects will be counted towards successful projects) or have been completed within the last (5) years that demonstrate similar size, scope, complexity, and environmental conditions to the referenced project area as judged by owner. Refer to Division One - General Requirements, Section 01000 - Special Conditions, Paragraph 1.32.

1.

<table>
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<tr>
<th>Project Description</th>
<th>Contract Amount</th>
<th>Beginning $</th>
<th>Ending: $</th>
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<td>Project Location</td>
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<td>Project Owner’s Rep familiar with project</td>
<td>Phone</td>
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<tr>
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<td>Contract Duration (Calendar Days)</td>
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<td>Project Description and why it is comparable to this contract.</td>
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<td>Project A/E Name</td>
<td>A/E Phone</td>
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EXPERIENCE RECORD: (CONTINUED)

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</table>
HUB AND TPWD CONTRACTING EXPERIENCE:

Please indicate if the firm is a Texas Certified Historically Underutilized Business (HUB): YES NO

If yes, please indicate gender and ethnicity: Gender: Male Female

Ethnicity (Asian Pacific Islander, Black American, Hispanic American, Native American)

Service Disabled Veteran: YES NO

Has firm ever done business with TPWD? YES NO

If yes, list the most recent project number(s):

I hereby certify that all information provided above and attached is true and correct. Furthermore, I hereby authorize you to contact the references listed above and authorize release of information from such references to Texas Parks and Wildlife Department. I hereby certify that my firm is not debarred or suspended from performing work for the U.S.A. or the State of Texas.

Name of Firm

Signature of Owner or Officer

Title of Person Signing

Date
HUB Subcontracting Plan (HSP) QUICK CHECKLIST

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

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

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

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

► If you will not be subcontracting any portion of the contract and will be fulfilling the entire contract with your own resources (i.e., employees, supplies, materials and/or equipment), complete:
  □ Section 1 - Respondent and Requisition Information
  □ Section 2 a. - No, I will not be subcontracting any portion of the contract, and I will be fulfilling the entire contract with my own resources.
  □ Section 3 - Self Performing Justification
  □ Section 4 - Affirmation

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

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

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

The HUB Program promotes equal business opportunities for economically disadvantaged persons to contract with the State of Texas in accordance with the goals specified in the 2009 State of Texas Disparity Study. The statewide HUB goals defined in 34 Texas Administrative Code (TAC) §20.284 are:

- 11.2 percent for heavy construction other than building contracts,
- 21.1 percent for all building construction, including general contractors and operative builders' contracts,
- 32.9 percent for all special trade construction contracts,
- 23.7 percent for professional services contracts,
- 28.0 percent for all other services contracts, and
- 21.1 percent for commodities contracts.

--- Agency Special Instructions/Additional Requirements ---

In accordance with 34 TAC §20.286(d)(1)(D)(iii), a respondent (prime contractor) may demonstrate good faith effort to utilize Texas certified HUBs for its subcontracting opportunities if the total value of the respondent's subcontracts with Texas certified HUBs meets or exceeds the statewide HUB goal or the agency specific HUB goal, whichever is higher. When a respondent uses this method to demonstrate good faith effort, the respondent must identify the HUBs with which it will subcontract. If using existing contracts with Texas certified HUBs to satisfy this requirement, only the aggregate percentage of the contracts expected to be subcontracted to HUBs with which the respondent does not have a continuous contract in place for more than five (5) years shall qualify for meeting the HUB goal. This limitation is designed to encourage vendor rotation as recommended by the 2009 Texas Disparity Study.

If you are completing Method B (Attachment B) of the HSP, please provide all supporting documentation pertaining to the notifications of a minimum of three (3) Texas-certified HUBs and two (2) minority, women, or service-disabled veteran trade organizations or development centers for each subcontracting opportunity listed in Section 2, Item b. Such supporting documentation would include all e-mails, faxes, delivery receipts, confirmation receipts/pages, attachments, etc.

For questions regarding the HSP, please contact TPWD HUB Administration at 512-389-4784 or hub@pwd.texas.gov.

SECTION 1: RESPONDENT AND REQUISITION INFORMATION

a. Respondent (Company) Name: ______________________ State of Texas VID #: ______________________
   Point of Contact: ______________________ Phone #: ______________________
   E-mail Address: ______________________ Fax #: ______________________

b. Is your company a State of Texas certified HUB? □ - Yes □ - No
   Bid Open Date: ______________________ (mm/dd/yyyy)

c. Requisition #: ______________________
SECTION 2: RESPONDENT'S SUBCONTRACTING INTENTIONS

After dividing the contract work into reasonable lots or portions to the extent consistent with prudent industry practices, and taking into consideration the scope of work to be performed under the proposed contract, including all potential subcontracting opportunities, the respondent must determine what portions of work, including contracted staffing, goods and services will be subcontracted. Note: In accordance with 34 TAC §20.282, a "Subcontractor" means a person who contracts with a prime contractor to work, to supply commodities, or to contribute toward completing work for a governmental entity.

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

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

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

<table>
<thead>
<tr>
<th>Item #</th>
<th>Subcontracting Opportunity Description</th>
<th>HUBs</th>
<th>Non-HUBs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percentage of the contract expected to be subcontracted to HUBs with which you do not have a continuous contract in place for more than five (5) years.</td>
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Aggregate percentages of the contract expected to be subcontracted:

(Note: If you have more than fifteen subcontracting opportunities, a continuation sheet is available online at https://www.comptroller.texas.gov/purchasing/vendor/hub/forms.php.)

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

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

d. Check the appropriate box (Yes or No) that indicates whether the aggregate expected percentage of the contract you will subcontract with Texas certified HUBs with which you do not have a continuous contract in place with for more than five (5) years, meets or exceeds the HUB goal the contracting agency identified on page 1 in the "Agency Special Instructions/Additional Requirements.

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

*Continuous Contract: Any existing written agreement (including any renewals that are exercised) between a prime contractor and a HUB vendor, where the HUB vendor provides the prime contractor with goods or service under the same contract for a specified period of time. The frequency the HUB vendor is utilized or paid during the term of the contract is not relevant to whether the contract is considered continuous. Two or more contracts that run concurrently or overlap one another for different periods of time are considered by CPA to be individual contracts rather than renewals or extensions to the original contract. In situations the prime contractor and HUB vendor are entering (have entered) into "new" contracts.*
**SECTION 2: RESPONDENT'S SUBCONTRACTING INTENTIONS (CONTINUATION SHEET)**

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

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Aggregate percentages of the contract expected to be subcontracted: % % %

*Continuous Contract: Any existing written agreement (including any renewals that are exercised) between a prime contractor and a HUB vendor, where the HUB vendor provides the prime contractor with goods or service under the same contract for a specified period of time. The frequency the HUB vendor is utilized or paid during the term of the contract is not relevant to whether the contract is considered continuous. Two or more contracts that run concurrently or overlap one another for different periods of time are considered by CPA to be individual contracts rather than renewals or extensions to the original contract. In such situations the prime contractor and HUB vendor are entering (have entered) into "new" contracts.
SECTION 3: SELF PERFORMING JUSTIFICATION (If you responded “No” to SECTION 2, Item a, you must complete this SECTION and continue to SECTION 4.) If you responded “No” to SECTION 2, Item a, in the space provided below explain how your company will perform the entire contract with its own employees, supplies, materials and/or equipment.

SECTION 4: AFFIRMATION

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

- The respondent will provide notice as soon as practical to all the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor for the awarded contract. The notice must specify the minimum contracting agency’s name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency’s point of contact for the contract no later than ten (10) working days after the contract is awarded.

- The respondent must submit monthly compliance reports (Prime Contractor Progress Assessment Report – PAR) to the contracting agency, verifying its compliance with the HSP, including the use of and expenditures made to its subcontractors (HUBs and Non-HUBs). (The PAR is available at https://www.comptroller.texas.gov/purchasing/docs/hub-forms/ProgressAssessmentReportForm.xls).

- The respondent must seek approval from the contracting agency prior to making any modifications to its HSP, including the hiring of additional or different subcontractors and the termination of a subcontractor in its HSP. If the HSP is modified without the contracting agency’s prior approval, respondent may be subject to any and all enforcement remedies available under the contract or otherwise available by law, up to and including debarment from all state contracting.

- The respondent must, upon request, allow the contracting agency to perform on-site reviews of the company’s headquarters and/or work-site where services are being performed and must provide documentation regarding staffing and other resources.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Printed Name</th>
<th>Title</th>
<th>Date (mm/dd/yyyy)</th>
</tr>
</thead>
</table>

Reminder:

► If you responded “Yes” to SECTION 2, Items c or d, you must complete an “HSP Good Faith Effort - Method A (Attachment A)” for each of the subcontracting opportunities you listed in SECTION 2, Item b.

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

Enter your company’s name here: ___________________________ Requisition #: ___________________________

**IMPORTANT:** If you responded "Yes" to SECTION 2, Items c or d of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method A (Attachment A)" for each of the subcontracting opportunities you listed in SECTION 2, Item b of the completed HSP form. You may photo-copy this page or download the form at [https://www.comptroller.texas.gov/purchasing/docs/hub-forms/hub-subcontract-plan-aachm-a.pdf](https://www.comptroller.texas.gov/purchasing/docs/hub-forms/hub-subcontract-plan-aachm-a.pdf)

**SECTION A-1: SUBCONTRACTING OPPORTUNITY**

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

Item Number: ___________ Description: _______________________________________________________________

**SECTION A-2: SUBCONTRACTOR SELECTION**

List the subcontractor(s) you selected to perform the subcontracting opportunity you listed above in SECTION A-1. Also identify whether they are a Texas certified HUB and their Texas Vendor Identification (VID) Number or federal Employer Identification Number (EIN), the approximate dollar value of the work to be subcontracted, and the expected percentage of work to be subcontracted. When searching for Texas certified HUBs and verifying their HUB status, ensure that you use the State of Texas’ Centralized Master Bidders List (CMBL) - Historically Underutilized Business (HUB) Directory Search located at [http://www.cpo.texas.gov/passcmbs/search/index.jsp](http://www.cpo.texas.gov/passcmbs/search/index.jsp). HUB status code "A" signifies that the company is a Texas certified HUB.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Texas certified HUB</th>
<th>Texas VID or federal EIN</th>
<th>Approximate Dollar Amount</th>
<th>Expected Percentage of Contract</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

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

Page 1 of 1
(Attachment A)
HSP Good Faith Effort - Method B (Attachment B)

Enter your company's name here: _____________________________ Requisition #: ____________________

IMPORTANT: If you responded “No” to SECTION 2, Items c and d of the completed HSP form and/or Method B (Attachment B) for each of the subcontracting opportunities you listed in SECTION 2, Item b of the completed HSP form, you may photocopy this page or download the form at https://www.comptroller.texas.gov/purchasing/docs/hub-forms/hub-sbcont-plan-gfe-achm-b.pdf.

SECTION B-1: SUBCONTRACTING OPPORTUNITY
Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

Item Number: _____ Description: ________________________________

SECTION B-2: MENTOR PROTÉGÉ PROGRAM
If respondent is participating as a Mentor in a State of Texas Mentor Protégé Program, submitting its Protégé (Protégé must be a State of Texas certified HUB) as a subcontractor to perform the subcontracting opportunity listed in SECTION B-1, constitutes a good faith effort to subcontract with a Texas certified HUB towards that specific portion of work.

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

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

SECTION B-3: NOTIFICATION OF SUBCONTRACTING OPPORTUNITY
When completing this section you MUST comply with items a, b, c, and d, thereby demonstrating your Good Faith Effort of having notified Texas certified HUBs and trade organizations or development centers about the subcontracting opportunity you listed in SECTION B-1. Your notice should include the scope of work, information regarding the location to review plans and specifications, bonding and insurance requirements, required qualifications, and identify a contact person. When sending your subcontracting opportunity, you are encouraged to use the attached HUB Subcontracting Opportunity Notice form, which is also available online at https://www.comptroller.texas.gov/purchasing/docs/hub-forms/HUBSubcontractingOpportunityNotificationForm.pdf.

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

a. Provide written notification of the subcontracting opportunity you listed in SECTION B-1, to three (3) or more Texas certified HUBs. Unless the contracting agency specified a different time period, you must allow the HUBs at least seven (7) working days to respond to the notice, prior to submitting your bid response to the contracting agency. When searching for Texas certified HUBs and verifying their HUB status, ensure that you use the State of Texas Centralized Master Bidders List (CMBL) - Historically Underutilized Business (HUB) Directory Search located at http://mytea.spg.state.tx.us/searchhubsearch/search.php. HUB status code “A” signifies that the company is a Texas certified HUB.

b. List the three (3) Texas certified HUBs you notified regarding the subcontracting opportunity you listed in SECTION B-1. Include the company’s Texas Vendor Identification (VID) Number, the date you sent notice to that company, and indicate whether it was responsive or non-responsive to your subcontracting opportunity notice.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Texas VID (or National Federal ID or Social Security Numbers)</th>
<th>Date Notice Sent (mm/dd/yyyy)</th>
<th>Did the HUB Respond?</th>
</tr>
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<tbody>
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c. Provide written notification of the subcontracting opportunity you listed in SECTION B-1 to two (2) or more trade organizations or development centers in Texas to assist in identifying potential HUBs by disseminating the subcontracting opportunity to their members/participants. Unless the contracting agency specified a different time period, you must provide your subcontracting opportunity notice to trade organizations or development centers at least seven (7) working days prior to submitting your bid response to the contracting agency. A list of trade organizations and development centers that have expressed an interest in receiving notices of subcontracting opportunities is available on the Statewide HUB Program’s webpage at https://www.comptroller.texas.gov/purchasing/vendor/hub/resources.php.

d. List two (2) trade organizations or development centers you notified regarding the subcontracting opportunity you listed in SECTION B-1. Include the date when you sent notice to it and indicate if it accepted or rejected your notice.

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<tr>
<th>Trade Organizations or Development Centers</th>
<th>Date Notice Sent (mm/dd/yyyy)</th>
<th>Was the Notice Accepted?</th>
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</table>
### SECTION B-4: SUBCONTRACTOR SELECTION

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

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

**Item Number:**

**Description:**

**b.** List the subcontractor(s) you selected to perform the subcontracting opportunity you listed in SECTION B-1. Also identify whether they are a Texas certified HUB and their Texas Vendor Identification (VID) Number or federal Employer Identification Number (EIN), the approximate dollar value of the work to be subcontracted, and the expected percentage of work to be subcontracted. When searching for Texas certified HUBs and verifying their HUB status, ensure that you use the State of Texas' Centralized Master Bidders List (CMBL) - Historically Underutilized Business (HUB) Directory Search located at http://mycpa.cpa.state.tx.us/passcmlsearch/index.jsp. HUB status code “A” signifies that the company is a Texas certified HUB.

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<tr>
<th>Company Name</th>
<th>Texas certified HUB</th>
<th>Texas VID or federal EIN</th>
<th>Approximate Dollar Amount</th>
<th>Expected Percentage of Contract</th>
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**c.** If any of the subcontractors you have selected to perform the subcontracting opportunity you listed in SECTION B-1 is **not** a Texas certified HUB, provide written justification for your selection process (attach additional page if necessary):

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

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

34 Texas Administrative Code, §20.285 requires all respondents (prime contractors) bidding on the contract to provide notice of each of their subcontracting opportunities to at least three (3) Texas certified HUBs (who work within the respective industry applicable to the subcontracting opportunity), and allow the HUBs at least seven (7) working days to respond to the notice prior to the respondent submitting its bid response to the contracting agency. In addition, at least seven (7) working days prior to submitting its bid response to the contracting agency, the respondent must provide notice of each of its subcontracting opportunities to two (2) or more trade organizations or development centers (in Texas) that serves members of groups (i.e., Asian Pacific American, Black American, Hispanic American, Native American, Woman, Service Disabled Veteran) identified in Texas Administrative Code §20.282(19)(C).

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

### SECTION A: PRIME CONTRACTOR'S INFORMATION

<table>
<thead>
<tr>
<th>Company Name:</th>
<th>State of Texas VID #:</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>Point-of-Contact:</td>
<td>Phone #:</td>
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<td></td>
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<tr>
<td>E-mail Address:</td>
<td>Fax #:</td>
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</tbody>
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### SECTION B: CONTRACTING STATE AGENCY AND REQUISITION INFORMATION

<table>
<thead>
<tr>
<th>Agency Name:</th>
<th>Phone #:</th>
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<tr>
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<tr>
<td>Point-of-Contact:</td>
<td></td>
</tr>
<tr>
<td>Requisition #:</td>
<td>Bid Open Date:</td>
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<td>(mm/dd/yyyy)</td>
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### SECTION C: SUBCONTRACTING OPPORTUNITY RESPONSE DUE DATE, DESCRIPTION, REQUIREMENTS AND RELATED INFORMATION

1. Potential Subcontractor's Bid Response Due Date:

   If you would like for our company to consider your company's bid for the subcontracting opportunity identified below in Item 2, we must receive your bid response no later than [Date] on [Central Time].

   In accordance with 34 TAC §20.285, each notice of subcontracting opportunity shall be provided to at least three (3) Texas certified HUBs, and allow the HUBs at least seven (7) working days to respond to the notice prior to submitting our bid response to the contracting agency. In addition, at least seven (7) working days prior to us submitting our bid response to the contracting agency, we must provide notice of each of our subcontracting opportunities to two (2) or more trade organizations or development centers (in Texas) that serves members of groups (i.e., Asian Pacific American, Black American, Hispanic American, Native American, Woman, Service Disabled Veteran) identified in Texas Administrative Code, §20.282(19)(C).

   (A working day is considered a normal business day of a state agency, not including weekends, federal or state holidays, or days the agency is declared closed by its executive officer. The initial day the subcontracting opportunity notice is sent to the HUBs and to the trade organizations or development centers is considered to be "day zero" and does not count as one of the seven (7) working days.)

2. Subcontracting Opportunity Scope of Work:

3. Required Qualifications:

   - [ ] Not Applicable

4. Bonding/Insurance Requirements:

   - [ ] Not Applicable

5. Location to review plans/specifications:

   - [ ] Not Applicable
Infrastructure HUB Subcontracting Opportunities

Date of HUB List: 3/21/2019  Project/Contract Number: 128695

Description: Village Creek State Park - Facility Repair Damages

In accordance with Texas Administrative Code, Title 34, Part 1, Chapter 20, Subchapter D, Division 1, state agencies shall make a good faith effort to utilize Historically Underutilized Businesses (HUBs) in contracts for Construction, Services (including Professional and Consulting Services), and Commodity procurements. The State of Texas Policy is to contract directly with HUBs or indirectly through subcontracting opportunities. Each Contractor/Vendor shall also make a good faith effort to utilize HUBs in subcontracting opportunities.

TPWD estimates the value of this contract to be $275,000 - 305,000 and further sets the HUB subcontracting goal at 11.2% of the contract’s value.

(Subcontractor - A person who contracts with a vendor to work, to supply commodities, or contribute toward completing work for a governmental entity as defined in Texas Government Code 2251.001.)

NOTE: The following list identifies potential subcontracting opportunities. You could have other opportunities or may self-perform some opportunities. You are not required to subcontract every potential subcontracting opportunity.

<table>
<thead>
<tr>
<th>Class &amp; Item Code: Trades/Disciplines/Major Supplies:</th>
<th>Class &amp; Item Code: Trades/Disciplines/Major Supplies:</th>
</tr>
</thead>
<tbody>
<tr>
<td>909-30  Building Construction (not otherwise spec)</td>
<td>914-88  Architectural Woodwork</td>
</tr>
<tr>
<td>909-45  Finishes, Flooring, Wall, and Ceiling Etc</td>
<td>912-44  Excavation Services, Construction</td>
</tr>
<tr>
<td>770-41  Flashing, Metal Roof</td>
<td>906-19  Concrete Architectural Design Services</td>
</tr>
<tr>
<td>570-54  Metal, Sheet (Fabricated)</td>
<td>910-51  Concrete Maintenance, Finishing, Repair Svc</td>
</tr>
<tr>
<td>910-66  Repair Services, Roofing</td>
<td>959-90  Pier &amp; Dock Maintenance and Repair Services</td>
</tr>
</tbody>
</table>

HUB LIST:
TPWD does not endorse, recommend or attest to the capabilities of any company or individual listed. The list is strictly provided as a convenience to respondents.

Respondents may also access a list of HUB subcontractors by referencing the above Class and Item codes in a Centralized Master Bidders List (CMBL) search at https://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp.


A few minority and women trade organizations and development centers are listed below. For a more complete list, please visit https://www.comptroller.texas.gov/purchasing/vendor/hub/resources.php.

<table>
<thead>
<tr>
<th>Women Contractors Association</th>
<th>Texas Association of African American Chambers of Commerce</th>
<th>Texas Association of Mexican American Chambers of Commerce</th>
</tr>
</thead>
<tbody>
<tr>
<td>6703 Chimney Rock Rd.</td>
<td>807 Brazos St., Ste. 710</td>
<td>606 Main St.</td>
</tr>
<tr>
<td>Bellaire, TX 77401</td>
<td>Austin, TX 78701</td>
<td>Buda, TX 78610</td>
</tr>
<tr>
<td>(703) 807-9977 phone</td>
<td>(512) 535-5610 phone</td>
<td>(512) 444-5727 phone</td>
</tr>
<tr>
<td><a href="mailto:director@womencontractors.org">director@womencontractors.org</a></td>
<td><a href="mailto:cro@taaacc.org">cro@taaacc.org</a> email</td>
<td><a href="mailto:president@tamacc.org">president@tamacc.org</a> email</td>
</tr>
<tr>
<td><a href="http://www.womencontractors.org">www.womencontractors.org</a></td>
<td><a href="http://www.taaacc.org">www.taaacc.org</a> website</td>
<td><a href="http://www.tamacc.org">www.tamacc.org</a> website</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>US Pan Asian American Chamber of Commerce SW</th>
<th>Dallas/Fort Worth Minority Supplier Development Council</th>
<th>US India Chamber of Commerce DFW</th>
</tr>
</thead>
<tbody>
<tr>
<td>711 E. Lamar Blvd., Mailbox 103A</td>
<td>Dallas, TX 75247</td>
<td>5930 LBJ Fwy, Ste. 310</td>
</tr>
<tr>
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For information on the TPWD HUB program, assistance with completing forms, or to obtain HUB lists if web access is not possible, please contact the TPWD HUB staff at (512) 389-4784 or hub@tpwd.texas.gov.

PWD 0991 – A0000 (3/19)
CONDITIONS
OF THE
CONTRACT
Uniform General Conditions for State of Texas Construction Contracts

Including Supplementary General Conditions for Projects Administered by the Texas Parks and Wildlife Department
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Article 1. Definitions

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

1.1 Addendum/Addenda means formally issued written or graphic modifications and/or interpretations of the Construction Documents that may add to, delete from, clarify or correct the description and/or scope of the Work. Addenda are issued during the bidding phase of the project.

1.2 Application for Payment means Contractor’s monthly partial invoice for payment that includes any portion of the Work that has been completed for which an invoice has not been submitted and performed in accordance with the requirements of the Contract Documents. The Application for Payment accurately reflects the progress of the Work, is itemized based on the Schedule of Values, bears the notarized signature of Contractor, and shall not include subcontracted items for which Contractor does not intend to pay.

1.3 Application for Final Payment means Contractor’s final invoice for payment that includes any portion of the Work that has been completed for which an invoice has not been submitted, amounts owing to adjustments to the final Contract Sum resulting from approved change orders, and release of remaining Contractor’s retainage.

1.4 Architect/Engineer (A/E) means a person registered as an architect pursuant to Tex. Occ. Code Ann., Ch. 1051, as a landscape architect pursuant to Tex. Occ. Code Ann., Ch. 1052, a person licensed as a professional engineer pursuant Tex. Occ. Code Ann., Ch. 1001, and/or a firm employed by Owner or Design-Build Contractor to provide professional architectural or engineering services and to exercise overall responsibility for the design of a Project or a significant portion thereof, and to perform the contract administration responsibilities set forth in the Contract.

1.5 As-Built Drawings and Specifications means the drawing set, specifications and other materials prepared by the Contractor, in the field, that documents the changes made by the contractor. Collectively, these are also called “red-lines” or “as-builds.”

1.6 Authority Having Jurisdiction means a federal, state, local, or other regional department, or an individual such as a fire marshal, building official, electrical inspector, utility provider or other individual having statutory authority.

1.7 Baseline Schedule means the initial time schedule prepared by Contractor for Owner’s information and acceptance that conveys Contractor’s and Subcontractors’ activities (including coordination and review activities required in the Contract Documents to be performed by A/E and ODR), durations, and sequence of work related to the entire Project to the extent required by the Contract Documents. The schedule clearly demonstrates the critical path of activities, durations and necessary predecessor conditions that drive the end date of the schedule. The Baseline Schedule shall not exceed the time limit current under the Contract Documents.
1.8 Certificate of Final Completion means the certificate issued by TPWD that includes certification by the A/E that documents, to the best of A/E’s knowledge and understanding, Contractor’s completion of all Contractor’s Punchlist items and pre-final Punchlist items, final cleanup and Contractor’s provision of Record As-Built Documents, operations and maintenance manuals, and all other closeout documents required by the Contract Documents. Additional documentation may be required by TPWD for consideration of the Contractor’s Application for Final Payment.

1.9 Certificate of Substantial Completion means the certificate executed by the A/E, ODR and Contractor that documents to the best of A/E’s and ODR’s knowledge and understanding, Contractor’s sufficient completion of the work in accordance with the Contract, so as to be operational and fit for the use intended.

1.10 Change Order means a written modification of the Contract between Owner and Contractor, signed by Owner, Contractor, and A/E.

1.11 Close-out Documents mean the product brochures, submittals, product/equipment maintenance and operations instructions, manuals, and other documents/warranties, record As-Built documents, affidavit of payment, release of lien and claim, and as may be further defined, identified, and required by the Contract Documents.

1.12 Contract means the entire agreement between Owner and Contractor, including all of the Contract Documents.

1.13 Contract Date is the date when the agreement between Owner and Contractor becomes effective.

1.14 Contract Documents mean those documents identified as a component of the agreement (Contract) between Owner and Contractor. These may include, but are not limited to, Drawings; Specifications; General, Supplementary General, and Special Conditions; and all pre-bid and/or pre-proposal addenda.

1.15 Contract Sum means the total compensation payable to Contractor for completion of the Work in accordance with the terms of the Contract.

1.16 Contract Time means the period between the start date identified in the Notice to Proceed with construction and the Substantial Completion date identified in the Notice to Proceed or as subsequently amended by a Change Order.

1.17 Contractor means the individual, corporation, limited liability company, partnership, firm, or other entity contracted to perform the Work, regardless of the type of construction contract used, so that the term as used herein includes a Construction Manager-at-Risk or a Design-Build firm as well as a general or prime Contractor. The Contract Documents refer to Contractor as if singular in number.

1.18 Construction Documents mean the Drawings, Specifications, and other documents issued to build the Project. Construction Documents become part of the Contract Documents when listed in the Contract or any Change Order.
1.19 *Construction Manager-at-Risk*, in accordance with Tex. Gov't Code, Ch. 2166, means a sole proprietorship, partnership, corporation, or other legal entity that assumes the risk for construction, rehabilitation, alteration, or repair of a facility at the contracted price as a general contractor and provides consultation to Owner regarding construction during and after the design of the facility.

1.20 *Date of Commencement* means the date designated in the Notice to Proceed for Contractor to commence the Work.

1.21 *Day* means a calendar day unless otherwise specifically stipulated.

1.22 *Design-Build* means a project delivery method in which the detailed design and subsequent construction is provided through a single contract with a Design-Build firm; a team, partnership, or legal entity that includes design professionals and a builder. The Design-Build Project delivery shall be implemented in accordance with Tex. Gov't Code § 2166.2531.

1.23 *Drawings* mean that product of A/E which graphically depicts the Work.

1.24 *Final Completion* means the date determined and certified by A/E and Owner on which the Work is fully and satisfactorily complete in accordance with the Contract.

1.25 *Final Payment* means the last and final monetary compensation made to Contractor for any portion of the Work that has been completed and accepted for which payment has not been made, amounts owing to adjustments to the final Contract Sum resulting from approved change orders, and release of Contractor's retainage.

1.26 *Historically Underutilized Business (HUB)* pursuant to Tex. Gov't Code, Ch. 2161, means a business that is at least 51% owned by an Asian Pacific American, a Black American, a Hispanic American, a Native American and/or an American Woman; is an entity with its principal place of business in Texas; and has an owner residing in Texas with proportionate interest that actively participates in the control, operations, and management of the entity’s affairs.

1.27 *Notice to Proceed (NTP)* means written document informing Contractor of the dates beginning Work and the dates anticipated for Substantial Completion.

1.28 *Open Item List* means a list of work activities, Punchlist items, changes or other issues that are not expected by Owner and Contractor to be complete prior to Substantial Completion.

1.29 *Owner* means the State of Texas, and any agency of the State of Texas, acting through the responsible entity of the State of Texas identified in the Contract as Owner. *Owner herein shall mean the Texas Parks and Wildlife Department.*

1.30 *Owner's Designated Representative (ODR)* means the individual assigned by Owner to act on its behalf and to undertake certain activities as specifically outlined in the Contract. *ODR is the only party authorized to direct changes to the scope, cost, or
time of the Contract.

1.31 *Project* means all activities necessary for realization of the Work. This includes design, contract award(s), execution of the Work itself, and fulfillment of all Contract and warranty obligations.

1.32 *Progress Assessment Report (PAR)* means the monthly compliance report to Owner verifying compliance with the HUB subcontracting plan (HSP).

1.33 *Proposed Change Order (PCO)* means a document that informs Contractor of a proposed change in the Work and appropriately describes or otherwise documents such change including Contractor's response of pricing for the proposed change.

1.34 *Punchlist* means a list of *minor* items of Work to be completed or corrected by Contractor after Substantial Completion. Punchlists indicate *minor* items to be finished, remaining Work to be performed, or Work that does not meet quality or quantity requirements as required in the Contract Documents.

1.35 *Record Documents* mean the drawing set, Specifications, and other materials maintained produced by the A/E of Record Contractor that documents all addenda, Architect's Supplemental Instructions, Change Orders, and postings and markings that record the as-constructed conditions of the Work and all changes made during construction. The *Record Documents are produced using the As-Built Drawings and Specifications as provided by the Contractor, and any As-Built documents produced by the A/E of Record during the course of the construction.*

1.36 *Request for Information (RFI)* means a written request by Contractor directed to A/E or ODR for a clarification of the information provided in the Contract Documents or for direction concerning information necessary to perform the Work that may be omitted from the Contract Documents.

1.37 *Samples* mean representative physical examples of materials, equipment, or workmanship used to confirm compliance with requirements and/or to establish standards for use in execution of the Work.

1.38 *Schedule of Values* means the detailed breakdown of the cost of the materials, labor, and equipment necessary to accomplish the Work as described in the Contract Documents, submitted by Contractor for approval by Owner and A/E.

1.39 *Shop Drawings* mean the drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data prepared by Contractor or its agents which detail a portion of the Work.

1.40 *Site* means the geographical area of the location of the Work.

1.41 *Special Conditions* mean the documents containing terms and conditions which may be unique to the Project. Special Conditions are a part of the Contract Documents and have precedence over the Uniform General Conditions and Supplementary General Conditions.
1.42 **Specifications** mean the written product of A/E that establishes the quality and/or performance of products utilized in the Work and processes to be used, including testing and verification for producing the Work.

1.43 **Subcontractor** means a business entity that enters into an agreement with Contractor to perform part of the Work or to provide services, materials, or equipment for use in the Work.

1.44 **Submittal Register** means a list provided by Contractor of all items to be furnished for review and approval by A/E and Owner and as identified in the Contract Documents including anticipated sequence and submittal dates.

1.45 **Substantial Completion** means the date determined and certified by Contractor, A/E, and Owner when the Work, or a designated portion thereof, is sufficiently complete, in accordance with the Contract, so as to be operational and fit for the use intended.

1.46 **Supplementary General Conditions** mean procedures and requirements that modify the Uniform General Conditions. Supplementary General Conditions, when used, have precedence over the Uniform General Conditions. *Texas Parks and Wildlife Department has adopted Uniform Supplementary General Conditions that apply to all TPWD construction projects. TPWD Uniform Supplementary General Conditions are indicated by the bold and italicized typeface shown here.*

1.47 **Unit Price Work** means the Work, or a portion of the Work, paid for based on incremental units of measurement.

1.48 **Unilateral Change Order (ULCO)** means a Change Order issued by Owner without the complete agreement of Contractor, as to cost and/or time.

1.49 **Work** means the administration, procurement, materials, equipment, construction and all services necessary for Contractor, and/or its agents, to fulfill Contractor's obligations under the Contract.

1.50 **Work Progress Schedule** means the continually updated time schedule prepared and monitored by Contractor that accurately indicates all necessary appropriate revisions as required by the conditions of the Work and the Project while maintaining a concise comparison to the Baseline Schedule.
Article 2. Wage Rates and Other Laws Governing Construction

2.1 **Environmental Regulations.** Contractor shall conduct activities in compliance with applicable laws and regulations and other requirements of the Contract relating to the environment and its protection at all times. Unless otherwise specifically determined, Owner is responsible for obtaining and maintaining permits related to stormwater run-off. Contractor shall conduct operations consistent with stormwater run-off permit conditions. Contractor is responsible for all items it brings to the Site, including hazardous materials, and all such items brought to the Site by its Subcontractors and suppliers, or by other entities subject to direction of Contractor. Contractor shall not incorporate hazardous materials into the Work without prior approval of Owner, and shall provide an affidavit attesting to such in association with request for Substantial Completion inspection.

2.2 **Wage Rates.** Contractor shall not pay less than the wage scale of the various classes of labor as shown on the prevailing wage schedule provided by Owner in the bid or proposal specifications. The specified wage rates are minimum rates only. Owner is not bound to pay any claims for additional compensation made by any Contractor because the Contractor pays wages in excess of the applicable minimum rate contained in the Contract. The prevailing wage schedule is not a representation that qualified labor adequate to perform the Work is available locally at the prevailing wage rates.

2.2.1 **Notification to Workers.** Contractor shall post the prevailing wage schedule in a place conspicuous to all workers on the Project Site. When requested by Owner, Contractor shall furnish evidence of compliance with the Texas Prevailing Wage Law and the addresses of all workers.

2.2.1.1 Pursuant to Tex. Gov't Code § 2258.024, Contractor shall keep, on site, true and accurate records showing the name and occupation of each worker employed by the Contractor or subcontractors and the actual per diem wages paid to each worker. The record shall be open to inspection by the ODR and their agents at all reasonable hours for the duration of the contract.

2.2.1.2 With each application for progress payment, Contractor shall make available upon request certified payroll records, including from subcontractors of any tier level, on Form WH-347 as promulgated by the U.S. Department of Labor, as may be revised from time to time and in unlocked and unprotected Excel format, along with copies of any and all Contract Documents between Contractor and any Subcontractors. Pursuant to Tex. Penal Code §§ 37.02 and 37.10, Employees of Contractor and subcontractors, including all tier levels, shall be subject to prosecution for submitting certified payroll records that contain materially false information.

2.2.1.3 The prevailing wage schedule is determined by Owner in compliance
with Tex. Gov't Code, Ch. 2258. Should Contractor at any time become aware that a particular skill or trade not reflected on Owner's prevailing wage schedule will be or is being employed in the Work, whether by Contractor or by Subcontractor, Contractor shall promptly inform ODR of the proposed wage to be paid for the skill along with a justification for same and ODR shall promptly concur with or reject the proposed wage and classification.

2.2.1.4 Contractor is responsible for determining the most appropriate wage for a particular skill in relation to similar skills or trades identified on the prevailing wage schedule. In no case, shall any worker be paid less than the wage indicated for laborers.

2.2.1.5 Pursuant to Tex. Labor Code § 214.008, Misclassification of Workers; Penalty. The Owner requires Contractor and all subcontractors properly classify individuals as Employees or Independent Contractors.

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

2.2.3 Complaints of Violations.

2.2.3.1 Owner's Determination of Good Cause. Upon receipt of information concerning a violation, Owner will conduct an investigation in accordance with Tex. Gov't Code, Ch. 2258 and make an initial determination as to whether good cause exists that a violation occurred. Upon making a good cause finding, Owner will retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the prevailing wage schedule and any supplements thereto, together with the applicable penalties in accordance with Tex. Gov't Code § 2258.023, such amounts being subtracted from successive progress payments pending a final decision on the violation.

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

2.2.3.3 Cooperation with Owner's Investigation. Contractor shall cooperate with Owner during any investigations hereunder. Such cooperation shall include, but not necessarily be limited to, timely providing the information and/or documentation requested by Owner, which may include certified payroll records on Form WH-347 as promulgated by the U.S. Department of Labor, as may be revised from time to time and in unlocked and unprotected Excel format; and copies of any and
all Contract Documents between Contractor and any Subcontractors.

2.2.3.4 **Notification to Owner.** In the event Contractor or Subcontractor elect to appeal an initial determination made pursuant to Paragraph 2.2.3.1, the Contractor and/or Subcontractor, as applicable, shall deliver notice thereof to Owner.

2.3 **Venue for Suits.** The venue for any suit arising from the Contract will be in a court of competent jurisdiction in Travis County, Texas, or as may otherwise be designated in the Supplementary General Conditions.

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

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

2.6 **State Sales and Use Taxes.** Owner qualifies for exemption from certain State and local sales and use taxes pursuant to the provisions of Tex. Tax Code, Ch. 151. Upon request from Contractor, Owner shall furnish evidence of tax exempt status. Contractor may claim exemption from payment of certain applicable State taxes by complying with such procedures as prescribed by the State Comptroller of Public Accounts. Owner acknowledges not all items qualify for exemption. Owner is not obligated to reimburse Contractor for taxes paid on items that qualify for tax exemption.
Article 3. General Responsibilities of Owner and Contractor

3.1 Owner’s General Responsibilities. Owner is the entity identified as such in the Contract and referred to throughout the Contract Documents as if singular in number.

3.1.1 Preconstruction Conference. Prior to, or concurrent with, the issuance of Notice to Proceed with construction, a conference will be convened for attendance by Owner, Contractor, A/E and appropriate Subcontractors. The purpose of the conference is to establish a working understanding among the parties as to the Work, the operational conditions at the Project Site, and general administration of the Project. Topics include communications, schedules, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, maintaining required records and all other matters of importance to the administration of the Project and effective communications between the Project team members.

3.1.2 Owner’s Designated Representative. Prior to the start of construction, Owner will identify Owner’s Designated Representative (ODR), who has the express authority to act and bind Owner to the extent and for the purposes described in the various Articles of the Contract, including responsibilities for general administration of the Contract.

3.1.2.1 Unless otherwise specifically defined elsewhere in the Contract Documents, ODR is the single point of contact between Owner and Contractor. Notice to ODR, unless otherwise noted, constitutes notice to Owner under the Contract.

3.1.2.2 All directives on behalf of Owner will be conveyed to Contractor and A/E by ODR in writing.

3.1.2.3 Owner will furnish or cause to be furnished, free of charge, the number of complete sets of the Drawings, Specifications, and addenda as provided in the Supplementary General Conditions or Special Conditions.

3.1.2.4 The ODR will establish the protocol for planning, scheduling and documenting progress meetings with provisions for absence of various project team members that have a key role in these duties.

3.1.3 Owner Supplied Materials and Information.

3.1.3.1 Owner will furnish to Contractor those surveys describing the physical characteristics, legal description, limitations of the Site, Site utility locations, and other information used in the preparation of the Contract Documents.

3.1.3.2 Owner will provide information, equipment, or services under
3.1.4 Availability of Lands. Owner will furnish, as indicated in the Contract, all required rights to use the lands upon which the Work occurs. This includes rights-of-way and easements for access and such other lands that are designated for use by Contractor. Contractor shall comply with all Owner identified encumbrances or restrictions specifically related to use of lands so furnished. Owner will obtain and pay for easements for permanent structures or permanent changes in existing facilities.

3.1.5 Limitation on Owner’s Duties.

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

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

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

3.2.1 Site Visits.

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

3.2.1.2 A/E has the authority to interpret Contract Documents and inspect the Work for compliance and conformance with the Contract. Except as referenced in Paragraph 3.1.5.2, Owner retains the sole authority to accept or reject Work and issue direction for correction,
3.2.2 Clarifications and Interpretations. It may be determined that clarifications or interpretations of the Contract Documents are necessary. Upon direction by ODR, such clarifications or interpretations will be provided by A/E consistent with the intent of the Contract Documents. A/E will issue these clarifications with reasonable promptness to Contractor as A/E's supplemental instruction (“ASI”) or similar instrument. If Contractor believes that such clarification or interpretation justifies an adjustment in the Contract Sum or the Contract Time, Contractor shall so notify Owner in accordance with the provisions of Article 11.

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

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

3.2.3.2 The failure of Contractor to comply with laws and regulations applicable to the furnishing or performing the Work;

3.2.3.3 Contractor's failure to perform or furnish the Work in accordance with the Contract Documents; or

3.2.3.4 Acts or omissions of Contractor, or of any other person or organization performing or furnishing any of the Work.

3.3 Contractor's General Responsibilities. Contractor is solely responsible for implementing the Work in full compliance with all applicable laws and the Contract Documents and shall supervise and direct the Work using the best skill and attention to assure that each element of the Work conforms to the Contract requirements. Contractor is solely responsible for all construction means, methods, techniques, safety, sequences, coordination, procedures and protection of the installed work as part of the contract until substantial completion of the project. Contractor remains responsible for the care and protection of materials and Work in the areas where punch list items are completed until Final Completion.

3.3.1 Project Administration. Contractor shall provide Project administration for all Subcontractors, vendors, suppliers, and others involved in implementing the Work and shall coordinate administration efforts with those of A/E and ODR in accordance with these general conditions and other provisions of the Contract, and as outlined in the preconstruction conference. Contractor's Project Administration includes periodic daily reporting on weather, work progress, labor, materials, equipment, obstructions to prosecution of the work, accidents and injuries in accordance with the Contract and transmitted no less frequently than on a weekly basis.

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

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

3.3.4 **Services, Materials, and Equipment.** Unless otherwise specified, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities, incidentals, and services necessary for the construction, performance, testing, start-up, inspection and completion of the Work.

3.3.5 **Contractor General Responsibility.** For Owner furnished equipment or material that will be in the care, custody, and control of Contractor, Contractor is responsible for damage or loss. Owner shall deliver to Contractor a complete list and respective values of such materials or equipment and make an equitable adjustment to the contract amount for any increase in cost of Builder’s Risk insurance.

3.3.6 **Non-Compliant Work.** Should A/E and/or ODR identify Work as non-compliant with the Contract Documents, A/E and/or ODR shall communicate the finding to Contractor, and Contractor shall correct such Work at no additional cost to the Owner. The approval of Work by either A/E or ODR does not relieve Contractor from the obligation to comply with all requirements of the Contract Documents.

3.3.7 **Subcontractors.** Contractor shall not employ any Subcontractor, supplier or other person or organization, whether initially or as a substitute, against whom Owner shall have reasonable objection. Owner will communicate such objections in writing within ten (10) days of receipt of Contractor’s intent to use such Subcontractor, supplier, or other person or organization. Contractor is not required to employ any Subcontractor, supplier or other person or organization to furnish any of the work to whom Contractor has reasonable objection. Contractor shall not substitute Subcontractors without the acceptance of Owner. Pursuant to Tex. Gov’t Code § 2269.256(b), if the Contractor reviews, evaluates and recommends that the Owner accept a bid or proposal from a Subcontractor but the Owner requires another bid or proposal to be accepted, Owner shall compensate the Contractor by a change in price, time or guaranteed maximum cost for any additional cost or risk the Contractor will incur because of Owner’s requirement to select another bid or proposal rather than the one recommended.
3.3.7.1 All Subcontracts and supply contracts shall be consistent with and bind the Subcontractors and suppliers to the terms and conditions of the Contract Documents including provisions of the Contract between Contractor and Owner.

3.3.7.2 Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor. Require all Subcontractors, suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with Owner only through Contractor. Contractor shall furnish to Owner a copy, at Owner’s request, of each first-tier subcontract promptly after its execution. Contractor agrees that Owner has no obligation to review or approve the content of such contracts and that providing Owner such copies in no way relieves Contractor of any of the terms and conditions of the Contract, including, without limitation, any provisions of the Contract which require the Subcontractor to be bound to Contractor in the same manner in which Contractor is bound to Owner.

3.3.8 Continuing the Work. Contractor shall carry on the Work and adhere to the progress schedule during all disputes, disagreements, or alternative resolution processes with Owner. Contractor shall not delay or postpone any Work because of pending unresolved disputes, disagreements or alternative resolution processes, except as Owner and Contractor may agree in writing.

3.3.9 Cleaning. Contractor shall at all times, keep the Site and the Work clean and free from accumulation of waste materials or rubbish caused by the construction activities under the Contract. Contractor shall ensure that the entire Project is thoroughly cleaned prior to requesting Substantial Completion inspection and, again, upon completion of the Project prior to the final inspection.

3.3.10 Acts and Omissions of Contractor, its Subcontractors, and Employees. Contractor shall be responsible for acts and omissions of his employees and all its Subcontractors, their agents and employees. Owner may, in writing, require Contractor to remove from the Project any of Contractor’s or its Subcontractor’s employees whom ODR finds to be careless, incompetent, unsafe, uncooperative, disruptive, or otherwise objectionable.

3.3.11 Acts or Omissions. Contractor shall indemnify and hold harmless the State of Texas and Customers, AND/OR THEIR OFFICERS, AGENTS, EMPLOYEES, REPRESENTATIVES, CONTRACTORS, ASSIGNEES, AND/OR DESIGNEES FROM ANY AND ALL LIABILITY, ACTIONS, CLAIMS, DEMANDS, OR SUITS, AND ALL RELATED COSTS, ATTORNEY FEES, AND EXPENSES arising out of, or resulting from any acts or omissions of Contractor or its agents, employees, subcontractors, Order
Fulfillers, or suppliers of subcontractors in the execution or performance of the Contract and any Purchase Orders issued under the Contract. THE DEFENSE SHALL BE COORDINATED BY CONTRACTOR WITH THE OFFICE OF THE ATTORNEY GENERAL WHEN TEXAS STATE AGENCIES ARE NAMED DEFENDANTS IN ANY LAWSUIT AND CONTRACTOR MAY NOT AGREE TO ANY SETTLEMENT WITHOUT FIRST OBTAINING THE CONCURRENCE FROM THE OFFICE OF THE ATTORNEY GENERAL. CONTRACTOR AND OWNER AGREE TO FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM.

3.3.12 Infringements.

3.3.12.1 Contractor shall indemnify and hold harmless the State of Texas and Customers, AND/OR THEIR EMPLOYEES, AGENTS, REPRESENTATIVES, CONTRACTORS, ASSIGNEES, AND/OR DESIGNEES from any and all third party claims involving infringement of United States patents, copyrights, trade and service marks, and any other intellectual or intangible property rights in connection with the PERFORMANCES OR ACTIONS OF CONTRACTOR PURSUANT TO THIS CONTRACT. CONTRACTOR AND THE CUSTOMER AGREE TO FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM. CONTRACTOR SHALL BE LIABLE TO PAY ALL COSTS OF DEFENSE INCLUDING ATTORNEYS’ FEES. THE DEFENSE SHALL BE COORDINATED BY CONTRACTOR WITH THE OFFICE OF THE ATTORNEY GENERAL WHEN TEXAS STATE AGENCIES ARE NAMED DEFENDANTS IN ANY LAWSUIT AND CONTRACTOR MAY NOT AGREE TO ANY SETTLEMENT WITHOUT FIRST OBTAINING THE CONCURRENCE FROM THE OFFICE OF THE ATTORNEY GENERAL.

3.3.12.2 Contractor shall have no liability under this section if the alleged infringement is caused in whole or in part by: (i) use of the product or service for a purpose or in a manner for which the product or service was not designed, (ii) any modification made to the product without Contractor’s written approval, (iii) any modifications made to the product by Contractor pursuant to Customer’s specific instructions, (iv) any intellectual property right owned by or licensed to Customer, or (v) any use of the product or service by Customer that is not in conformity with the terms of any applicable license agreement.

3.3.12.3 If Contractor becomes aware of an actual or potential claim, or Customer provides Contractor with notice of an actual or potential claim, Contractor may (or in the case of an injunction against Customer, shall), at Contractor’s sole option and expense; (i) procure for the Customer the right to continue to use the affected portion of the product or service, or (ii) modify or replace the affected portion of the product or service with functionally equivalent or superior product
3.3.12.4 Taxes/Workers’ Compensation/Unemployment Insurance—Including Indemnity.

3.3.12.4.1 CONTRACTOR AGREES AND ACKNOWLEDGES THAT DURING THE EXISTENCE OF THIS CONTRACT, CONTRACTOR SHALL BE ENTIRELY RESPONSIBLE FOR THE LIABILITY AND PAYMENT OF CONTRACTOR’S AND CONTRACTOR’S EMPLOYEES’ TAXES OF WHATEVER KIND, ARISING OUT OF THE PERFORMANCES IN THIS CONTRACT. CONTRACTOR AGREES TO COMPLY WITH ALL STATE AND FEDERAL LAWS APPLICABLE TO ANY SUCH PERSONS, INCLUDING LAWS REGARDING WAGES, TAXES, INSURANCE, AND WORKERS’ COMPENSATION. THE CUSTOMER AND/OR THE STATE SHALL NOT BE LIABLE TO CONTRACTOR, ITS EMPLOYEES, AGENTS, OR OTHERS FOR THE PAYMENT OF TAXES OR THE PROVISION OF UNEMPLOYMENT INSURANCE AND/OR WORKERS’ COMPENSATION OR ANY BENEFIT AVAILABLE TO A STATE EMPLOYEE OR EMPLOYEE OF ANOTHER GOVERNMENTAL ENTITY CUSTOMER.

3.3.12.4.1 CONTRACTOR AGREES TO INDEMNIFY AND HOLD HARMLESS OWNER, THE STATE OF TEXAS AND/OR THEIR EMPLOYEES, AGENTS, REPRESENTATIVES, CONTRACTORS, AND/OR ASSIGNEES FROM ANY AND ALL LIABILITY, ACTIONS, CLAIMS, DEMANDS, OR SUITS, AND ALL RELATED COSTS, ATTORNEYS’ FEES, AND EXPENSES, RELATING TO TAX LIABILITY, UNEMPLOYMENT INSURANCE AND/OR WORKERS’ COMPENSATION IN ITS PERFORMANCE UNDER THIS CONTRACT. CONTRACTOR SHALL BE LIABLE TO PAY ALL COSTS OF DEFENSE INCLUDING ATTORNEYS’ FEES. THE DEFENSE SHALL BE COORDINATED BY CONTRACTOR WITH THE OFFICE OF THE ATTORNEY GENERAL WHEN TEXAS STATE AGENCIES ARE NAMED DEFENDANTS IN ANY LAWSUIT
AND VENDOR MAY NOT AGREE TO ANY SETTLEMENT WITHOUT FIRST OBTAINING THE CONCURRENCE FROM THE OFFICE OF THE ATTORNEY GENERAL. CONTRACTOR AND OWNER AGREE TO FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM.

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

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

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

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

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

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

3.3.13.4 Owner may restrict Contractor's entry to the Site to specifically assigned entrances and routes.

3.3.14 Separate Contracts. Owner reserves the right to award other contracts in connection with other portions of the Project under these same or substantially similar contract conditions, including those portions related to insurance and waiver of subrogation. Owner reserves the right to perform operations related to the Project with Owner's own forces.

3.3.15 Under a system of separate contracts, the conditions described herein continue to apply except as may be amended by change order.
3.3.16 Contractor shall cooperate with other contractors or forces employed on the Project by Owner, including providing access to Site and Project information as requested.

3.3.17 Owner shall be reimbursed by Contractor for costs incurred by Owner which are payable to a separate contractor because of delays, improperly timed activities, or defective construction by Contractor. Owner will equitably adjust the Contract by Change Order for costs incurred by Contractor because of delays, improperly timed activities, damage to the Work or defective construction by a separate contractor.
Article 4. Historically Underutilized Business (HUB) Subcontracting Plan

4.1 General Description. The purpose of the Historically Underutilized Business (HUB) program is to promote equal business opportunities for economically disadvantaged persons (as defined by Tex. Gov't Code, Ch. 2161) to contract with the State of Texas in accordance with the goals specified in the State of Texas Disparity Study. The HUB program annual procurement utilization goals are defined in 34 T.A.C. § 20.13(b).

4.1.1 State agencies are required by statute to make a good faith effort to assist HUBs in participating in contract awards issued by the State. 34 T.A.C. § 20.13(b) outlines the State's policy to encourage the utilization of HUBs in State contracting opportunities through race, ethnic and gender neutral means.

4.1.2 A Contractor who contracts with the State in an amount of $100,000 or greater is required to make a good faith effort to award subcontracts to HUBs in accordance with 34 T.A.C. § 20.14(a)(2)(A) by submitting a HUB subcontracting plan within twenty-four (24) hours after the bid or response is due and complying with the HUB subcontracting plan after it is accepted by Owner and during the term of the Contract. Unless stated otherwise in the contract documents, the HUB subcontracting plan shall be submitted with the bid or response on or before the specified due date and time for the bid or response.

4.2 Compliance with Approved HUB Subcontracting Plan. Contractor, having been awarded this Contract in part by complying with the HUB program statute and rules, hereby covenants to continue to comply with the HUB program as follows:

4.2.1 Prior to adding or substituting a Subcontractor, promptly notify Owner in the event a change is required for any reason to the accepted HUB subcontracting plan.

4.2.2 Conduct the good-faith effort activities required and provide Owner with necessary documentation to justify approval of a change to the approved HUB subcontracting plan.

4.2.3 Cooperate in the execution of a Change Order or such other approval of the change in the HUB subcontracting plans as Contractor and Owner may agree to.

4.2.4 Maintain and make available to Owner upon request business records documenting compliance with the accepted HUB subcontracting plan.

4.2.5 Upon receipt of payment for performance of Work, submit to Owner a compliance report, in the format required by Owner that demonstrates Contractor's performance of the HUB subcontracting plan. TPWD requires submission of a copy of the compliance report with the Application for Payment for work performed.
4.2.5.1 Progress Assessment Report (PAR): monthly compliance reports to Owner (contracting agency), verifying their compliance with the HUB subcontracting plan, including the use/expenditures they have made to Subcontractors. The PAR is available at in the Index Forms Library on the Facilities Design & Construction page of the Texas Facilities Commission website (http://www.window.state.tx.us/procurement/prog/hub/hub-forms/progressassessmentrpt.xls). **Contractor shall submit a PAR to TPWD HUB Administration no later than the 5th day of the month. Contractor shall submit a copy of the current month’s PAR with the Application for Payment.**

4.2.6 Promptly and accurately explain and provide supplemental information to Owner to assist in Owner’s investigation of Contractor’s good-faith effort to fulfill the HUB subcontracting plan and the requirements under 34 T.A.C. § 20.14(a)(1).

4.3 **Failure to Demonstrate Good-Faith Effort.** Upon a determination by Owner that Contractor has failed to demonstrate a good-faith effort to fulfill the HUB subcontracting plan or any Contract covenant detailed above, Owner may, in addition to all other remedies available to it, report the failure to perform to the Comptroller of Public Accounts, Texas Procurement and Support Services Division, Historically Underutilized Business Program and may bar Contractor from future contracting opportunities with Owner.
Article 5. Bonds and Insurance

5.1 Construction Bonds. Contractor is required to tender to Owner, prior to commencing the Work, performance and payment bonds, as required by Tex. Gov’t Code, Ch. 2253. On Construction Manager-at-Risk and Design-Build Projects the Owner shall require a security bond, as described in Subsection 5.1.2 below.

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

5.1.1.1 A Performance bond is required if the Contract Sum is in excess of $100,000. The performance bond is solely for the protection of Owner. The performance bond is to be for the Contract Sum to guarantee the faithful performance of the Work in accordance with the Contract Documents. The form of the bond shall be approved by the Office of the Attorney General of Texas. The performance bond shall be effective through Contractor’s warranty period.

5.1.1.2 A Payment bond is required if the Contract price is in excess of $25,000. The payment bond is to be for the Contract Sum and is payable to Owner solely for the protection and use of payment bond beneficiaries. The form of the bond shall be approved by the Office of the Attorney General of Texas.

5.1.2 Security Bond. The security bond provides protection to Owner if Contractor presents an acceptable guaranteed maximum price (“GMP”) to Owner and 1) fails to execute the GMP; or 2) fails to deliver the required payment and performance bonds within the time period stated below.

5.1.3 When Bonds Are Due.

5.1.3.1 Security bonds are due within ten (10) days of signing a Construction Manager-at-Risk or Design-Build Contract, unless stated otherwise in the contract documents.

5.1.3.2 Payment and performance bonds are due within ten (10) days of Contractor’s receipt of a fully executed GMP on a Construction Manager-at-Risk project or the Contract Sum for a Design-Build project, or within ten (10) days of Contractor’s receipt of a fully executed Contract on competitively bid or competitive sealed
5.1.4 **Power of Attorney.** Each bond shall be accompanied by a valid power of attorney (issued by the surety company and attached, signed and sealed with the corporate embossed seal, to the bond) authorizing the attorney-in-fact who signs the bond to commit the company to the terms of the bond, and stating any limit in the amount for which the attorney can issue a single bond.

5.1.5 **Bond Indemnification.** The process of requiring and accepting bonds and making claims thereunder shall be conducted in compliance with Tex. Gov't Code, Ch. 2253. IF FOR ANY REASON A STATUTORY PAYMENT OR PERFORMANCE BOND IS NOT HONORED BY THE SURETY, CONTRACTOR SHALL FULLY INDEMNIFY AND HOLD OWNER HARMLESS OF AND FROM ANY COSTS, LOSSES, OBLIGATIONS OR LIABILITIES IT INCURS AS A RESULT.

5.1.6 **Furnishing Bond Information.** Owner shall furnish certified copies of the payment bond and the related Contract to any qualified person seeking copies who complies with Tex. Gov't Code § 2253.026.

5.1.7 **Claims on Payment Bonds.** Claims on payment bonds must be sent directly to Contractor and his surety in accordance with Tex. Gov't Code § 2253.041. All payment bond claimants are cautioned that no lien exists on the funds unpaid to Contractor on such Contract, and that reliance on notices sent to Owner may result in loss of their rights against Contractor and/or his surety. Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by any agent or employee.

5.1.8 **Payment Claims when Payment Bond not Required.** The rights of Subcontractors regarding payment are governed by Tex. Prop. Code §§ 53.231 – 53.239 when the value of the Contract between Owner and Contractor is less than $25,000.00. These provisions set out the requirements for filing a valid lien on funds unpaid to Contractor as of the time of filing the claim, actions necessary to release the lien and satisfaction of such claim.

5.1.9 **Sureties.** A surety shall be listed on the US Department of the Treasury’s Listing of Approved Sureties maintained by the Bureau of Financial Management Service (FMS), www.fins.treas.gov/c570, stating companies holding Certificates of Authority as acceptable sureties on Federal bonds and acceptable reinsuring companies (FMS Circular 570).

5.2 **Insurance Requirements.** Contractor shall carry insurance in the types and amounts indicated in this Article for the duration of the Contract. The insurance shall be evidenced by delivery to Owner of certificates of insurance executed by the insurer or its authorized agent stating coverages, limits, expiration dates and compliance with all applicable required provisions. Upon request, Owner, and/or its agents, shall be entitled to receive without expense, copies of the policies and all endorsements. Contractor shall update all expired policies prior to submission for monthly payment.
Failure to update policies shall be reason for withholding of payment until renewal is provided to Owner.

5.2.1 Contractor shall provide and maintain all insurance coverage with the minimum amounts described below until the end of the warranty period unless otherwise stated in Supplementary General Conditions or Special Conditions. Failure to maintain insurance coverage, as required, is grounds for suspension of Work for cause pursuant to Article 14.

5.2.2 Contractor shall deliver to Owner true and complete copies of certificates and corresponding policy endorsements prior to the issuance of any Notice to Proceed.

5.2.3 Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

5.2.4 The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner in the Contract Documents.

5.2.5 The insurance coverage and limits established herein shall not be interpreted as any representation or warranty that the insurance coverage and limits necessarily will be adequate to protect Contractor.

5.2.6 Coverage shall be written on an occurrence basis by companies authorized and admitted to do business in the State of Texas and rated A or better by A.M. Best Company or similar rating company or otherwise acceptable to Owner.

5.2.2.1 Insurance Coverage Required.

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

$1,000,000 each accident;

$1,000,000 disease each employee; and

$1,000,000 disease policy limit.

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

$1,000,000 per occurrence;

$2,000,000 general aggregate;

$5,000 Medical Expense each person;

$1,000,000 Personal Injury and Advertising Liability;

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

$50,000 Damage to Premises Rented to You; and

Coverage shall be on an "occurrence" basis.

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

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

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

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

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

Employer’s liability limits for asbestos abatement will be:
$500,000 each accident;

$500,000 disease each employee; and

$500,000 disease policy limit.

If this Contract is for asbestos abatement only, the Special Form builder’s risk or Special Form installation floater (e) is not required.

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

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

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

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

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

5.2.2.1.5.3 Loss, if any, shall be adjusted with and made payable to Owner as trustee for the insureds as their interests may appear. Owner shall be named as loss payee.
5.2.2.1.5.4 For renovation projects or projects that involve portions of Work contained within an existing structure, refer to Supplementary General and Special Conditions for possible additional builder's risk insurance requirements.

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

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

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

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

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

5.2.3 Policies must include the following clauses, as applicable:

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

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

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

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

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

5.2.5 Workers’ compensation insurance coverage must be provided for all workers
at all tier levels and meet the statutory requirements of Tex. Lab. Code §
401.011(44) and specific to construction projects for public entities as required
Article 6. Construction Documents, Coordination Documents, and Record Documents

6.1 Drawings and Specifications.

6.1.1 Copies Furnished. Contractor will be furnished, free of charge, the number of complete sets of the Drawings, Specifications, and Addenda as provided in the Supplementary General Conditions or Special Conditions. Additional complete sets of Drawings and Specifications, if requested, will be furnished at reproduction cost to the entity requesting such additional sets. Electronic copies of such documents will be provided to Contractor without charge. Unless otherwise called for in the Special Conditions, four (4) sets of drawings and specifications will be furnished to the Contractor free of charge upon justification of need.

6.1.2 Ownership of Drawings and Specifications. All Drawings, Specifications and copies thereof furnished by A/E are to remain A/E's property unless the Owner and A/E agree otherwise. These documents are not to be used on any other project, and with the exception of the Contract record set and electronic versions needed for warranty operations, are to be returned to the A/E, upon request, following completion of the Work.

6.1.3 Interrelation of Documents. The Contract Documents as referenced in the Contract between Owner and Contractor are complimentary, and what is required by one shall be as binding as if required by all.

6.1.4 Resolution of Conflicts in Documents. Where conflicts may exist within the Contract Documents, the documents shall govern in the following order: (a) Change Orders, addenda, and written amendments to the Contract; (b) the Contract; (c) Drawings; (d) Specifications (but Specifications shall control over Drawings as to quality of materials and workmanship); and (e) other Contract Documents. Among categories of documents having the same order of precedence, the term or provision that includes the latest date shall control and more specific requirements shall govern over general requirements. Contractor shall notify A/E and ODR for resolution of the issue prior to executing the Work in question.

6.1.5 Contractor's Duty to Review Contract Documents. In order to facilitate its responsibilities for completion of the Work in accordance with and as reasonably inferable from the Contract Documents, prior to commencing the Work, Contractor shall examine and compare the Contract Documents, information furnished by Owner, relevant field measurements made by Contractor and any visible or reasonably anticipated conditions at the Site affecting the Work. This duty extends throughout the construction phase prior to commencing each particular work activity and/or system installation.
6.1.6  **Discrepancies and Omissions in Drawings and Specifications.**

6.1.6.1 Promptly report to ODR and to A/E the discovery of any apparent error, omission or inconsistency in the Contract Documents prior to execution of the Work.  *The Owner does not warrant or make any representations as to the accuracy or completeness of the information furnished to the Contractor by the Owner*

6.1.6.2 It is recognized that Contractor is not acting in the capacity of a licensed design professional, unless it is performing as a Design-Build firm.

6.1.6.3 It is further recognized that Contractor’s examination of Contract Documents is to facilitate construction and does not create an affirmative responsibility to detect errors, omissions or inconsistencies or to ascertain compliance with applicable laws, building codes or regulations, unless it is performing as a Design-Build firm or a Construction Manager-at-Risk.

6.1.6.4 When performing as a Design-Build firm, Contractor has sole responsibility for discrepancies, errors, and omissions in the Drawings and Specifications.

6.1.6.5 When performing as a Construction Manager-at-Risk, Contractor has a shared responsibility with A/E for discovery and resolution of discrepancies, errors, and omissions in the Contract Documents. In such case, Contractor’s responsibility pertains to review, coordination, and recommendation of resolution strategies within budget constraints.

6.1.6.6 Contractor has no liability for errors, omissions, or inconsistencies unless Contractor knowingly failed to report a recognized problem to Owner or the Work is executed under a Design-Build or Construction Manager-at-Risk Contract as outlined above. Should Contractor fail to perform the examination and reporting obligations of these provisions, Contractor is responsible for avoidable costs and direct and/or consequential damages.

6.2  **Requirements for Record Documents.**  Contractor shall:

6.2.1 Maintain at the Site one copy of all Drawings, Specifications, addenda, approved submittals, Contract modifications, and all Project correspondence. Keep current and maintain Drawings and Specifications in good order with postings and markings to record actual conditions of Work and show and reference all changes made during construction. Provide Owner and A/E access to these documents.
6.2.2 Maintain the Record Documents As-Builts including Drawings, Specifications and other materials which reflect the actual field conditions and representations of the Work performed, whether it be directed by addendum, Change Order or otherwise. Make available all records prescribed herein for reference and examination by Owner and its representatives and agents.

6.2.3 Update the Record Documents As-Builts at least monthly prior to submission of periodic partial pay estimates. Failure to maintain current Record Documents constitutes cause for denial of a progress payment otherwise due.

6.2.4 Prior to requesting Substantial Completion inspection Contractor shall furnish a copy of its marked-up Record Documents As-Builts and a preliminary copy of each instructional manual, maintenance and operating manual, parts catalog, wiring diagrams, spare parts, specified written warranties and like publications, or parts for all installed equipment, systems, and like items and as described in the Contract Documents. (Unexecuted samples of the aforementioned documentation may be reviewed by ODR when the absence of substantial completion transactions preclude execution; however, Contractor remains obligated to provide fully executed copies of such materials prior to final payment.)

6.2.5 Once determined acceptable by ODR with input from A/E, provide one (1) reproducible copy and one (1) electronic media copy of all Record Documents As-Built documents unless otherwise required by the Supplementary General Conditions or Special Conditions.

6.2.6 Contractor shall be responsible for updating the Record As-Built Documents for all Contractor initiated documents and changes to the Contract Documents due to coordination and actual field conditions, including RFIs.

6.2.7 A/E shall be responsible for updating the Record As-Built Documents for with any addenda, Change Orders, A/E supplemental instructions and any other alterations to the Contract Documents generated by A/E or Owner. A/E shall be responsible for compiling all As-Built documentation (as produced both by the Contractor and by the A/E) into the Record Documents.
Article 7. Construction Safety

7.1 General. It is the duty and responsibility of Contractor and all of its Subcontractors to be familiar with, enforce and comply with all requirements of Public Law No. 91-596, 29 U.S.C. § 651 et. seq., the Occupational Safety and Health Act of 1970, (OSHA) and all amendments thereto. Contractor shall prepare a safety plan specific to the Project and submit it to ODR and A/E prior to commencing Work. In addition, Contractor and all of its Subcontractors shall comply with all applicable laws and regulations of any public body having jurisdiction for safety of persons or property to protect them from damage, injury or loss and erect and maintain all necessary safeguards for such safety and protection.

7.2 Notices. Contractor shall provide notices as follows:

7.2.1 Notify owners of adjacent property including those that own or operate utility services and/or underground facilities, and utility owners, when prosecution of the Work may affect them or their facilities, and cooperate with them in the protection, removal, relocation and replacement, and access to their facilities and/or utilities.

7.2.2 Coordinate the exchange of material safety data sheets (MSDSs) or other hazard communication information required to be made available to or exchanged between or among employers at the site in connection with laws and regulations. Maintain a complete file of MSDSs for all materials in use on site throughout the construction phase and make such file available to Owner and its agents as requested.

7.3 Emergencies. In any emergency affecting the safety of persons or property, Contractor shall act to minimize, mitigate, and prevent threatened damage, injury or loss.

7.3.1 Have authorized agents of Contractor respond immediately upon call at any time of day or night when circumstances warrant the presence of Contractor to protect the Work or adjacent property from damage or to take such action pertaining to the Work as may be necessary to provide for the safety of the public.

7.3.2 Give ODR and A/E prompt notice of all such events.

7.3.3 If Contractor believes that any changes in the Work or variations from Contract Documents have been caused by its emergency response, promptly notify Owner within seventy-two (72) hours of the emergency response event.

7.3.4 Should Contractor fail to respond, Owner is authorized to direct other forces to take action as necessary and Owner may deduct any cost of remedial action from funds otherwise due Contractor.
7.4 Injuries. In the event of an incident or accident involving outside medical care for an individual on or near the Work, Contractor shall notify ODR and other parties as may be directed promptly, but no later than twenty-four (24) hours after Contractor learns that an event required medical care.

7.4.1 Record the location of the event and the circumstances surrounding it, by using photography or other means, and gather witness statements and other documentation which describes the event.

7.4.2 Supply ODR and A/E with an incident report no later than thirty-six (36) hours after the occurrence of the event. In the event of a catastrophic incident (one (1) fatality or three (3) workers hospitalized), barricade and leave intact the scene of the incident until all investigations are complete. A full set of incident investigation documents, including facts, finding of cause, and remedial plans shall be provided within one (1) week after occurrence, unless otherwise directed by legal counsel. Contractor shall provide ODR with written notification within one week of such catastrophic event if legal counsel delays submission of full report.

7.5 Environmental Safety. Upon encountering any previously unknown potentially hazardous material, or other materials potentially contaminated by hazardous material, Contractor shall immediately stop work activities impacted by the discovery, secure the affected area, and notify ODR immediately.

7.5.1 Bind all Subcontractors to the same duty.

7.5.2 Upon receiving such notice, ODR will promptly engage qualified experts to make such investigations and conduct such tests as may be reasonably necessary to determine the existence or extent of any environmental hazard. Upon completion of this investigation, ODR will issue a written report to Contractor identifying the material(s) found and indicate any necessary steps to be taken to treat, handle, transport or dispose of the material.

7.5.3 Owner may hire third-party Contractors to perform any or all such steps.

7.5.4 Should compliance with ODR’s instructions result in an increase in Contractor’s cost of performance, or delay the Work, Owner will make an equitable adjustment to the Contract Sum and/or the time of completion, and modify the Contract in writing accordingly.

7.6 Trenching Plan. When the project requires excavation which either exceeds a depth of four (4) feet, or results in any worker’s upper body being positioned below grade level, Contractor is required to submit a trenching plan to ODR prior to commencing trenching operations unless an engineered plan is part of the Contract Documents. The plan is required to be prepared and sealed by a professional engineer registered in the State of Texas, and hired or employed by Contractor or Subcontractor to perform the work. Said engineer cannot be anyone who is otherwise either directly or indirectly engaged on this project.
Article 8. Quality Control

8.1 Materials & Workmanship. Contractor shall execute Work in a good and workmanlike matter in accordance with the Contract Documents. Contractor shall develop and provide a quality control plan specific to this Project and acceptable to Owner. Where Contract Documents do not specify quality standards, complete and construct all Work in compliance with generally accepted construction industry standards. Unless otherwise specified, incorporate all new materials and equipment into the Work under the Contract.

8.2 Testing.

8.2.1 Owner is responsible for coordinating and paying for routine and special tests required to confirm compliance with quality and performance requirements, except as stated below or otherwise required by the Contract Documents. Contractor shall provide the following testing:

8.2.1.1 Any test of basic material or fabricated equipment included as part of a submittal for a required item in order to establish compliance with the Contract Documents.

8.2.1.2 Any test of basic material or fabricated equipment offered as a substitute for a specified item on which a test may be required in order to establish compliance with the Contract Documents.

8.2.1.3 Preliminary, start-up, pre-functional and operational testing of building equipment and systems as necessary to confirm operational compliance with requirements of the Contract Documents.

8.2.1.4 All subsequent tests on original or replaced materials conducted as a result of prior testing failure.

8.2.2 All testing shall be performed in accordance with standard test procedures by an accredited laboratory, or special consultant as appropriate, acceptable to Owner. Results of all tests shall be provided promptly to ODR, A/E, and Contractor.

8.2.3 Non-Compliance (Test Results). Should any of the tests indicate that a material and/or system does not comply with the Contract requirements, the burden of proof remains with Contractor, subject to:

8.2.3.1 Contractor selection and submission of the laboratory for Owner acceptance.

8.2.3.2 Acceptance by Owner of the quality and nature of tests.

8.2.3.3 All tests taken in the presence of A/E and/or ODR, or their representatives.
8.2.3.4 If tests confirm that the material/systems comply with Contract Documents, Owner will pay the cost of the test.

8.2.3.5 If tests reveal noncompliance, Contractor will pay those laboratory fees and costs of that particular test and all future tests, of that failing Work, necessary to eventually confirm compliance with Contract Documents.

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

8.2.4 Notice of Testing. Contractor shall give ODR and A/E timely notice of its readiness and the date arranged so ODR and A/E may observe such inspection, testing, or approval. Contractor shall give Owner a minimum of five (5) working days advance notice prior to testing.

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

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

8.3 Submittals.

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

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

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

8.3.1.3 Contractor shall coordinate the Submittal Register with the Work Progress Schedule. Do not schedule Work requiring a submittal to begin prior to scheduling review and approval of the related submittal. Revise and/or update both schedules monthly to ensure consistency and current project data. Provide to ODR the updated Submittal Register and schedule with each application for progress payment. Refer to requirements for the Work Progress Schedule for inclusion of procurement activities therein. Regardless, the Submittal Register shall identify dates submitted and returned and shall be used to confirm status and disposition of particular items submitted, including approval or other action taken and other information not conveniently tracked through the Work Progress Schedule.

8.3.1.4 By submitting Shop Drawings, Samples or other required information, Contractor represents that it has determined and verified all applicable field measurements, field construction criteria, materials, catalog numbers and similar data to the extent possible from existing conditions and design information provided by A/E prior to fabrication; and has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and the Contract Documents.

8.3.2 Review of Submittals. A/E and ODR review is only for conformance with the design concept and the information provided in the Contract Documents. Responses to submittals will be in writing. The approval of a separate item does not indicate approval of an assembly in which the item functions. The approval of a submittal does not relieve Contractor of responsibility for any deviation from the requirements of the Contract unless Contractor informs A/E and ODR of such deviation in a clear, conspicuous, and written manner on the submittal transmittal and at the time of submission, and obtains Owner’s
written specificapproval of the particular deviation.

8.3.3 **Correction and Resubmission.** Contractor shall make any corrections required to a submittal and resubmit the required number of corrected copies promptly so as to avoid delay, until submittal approval. Direct attention in writing to A/E and ODR, when applicable, to any new revisions other than the corrections requested on previous submissions.

8.3.4 **Limits on Shop Drawing Review.** Contractor shall not commence any Work requiring a submittal until review of the submittal is fully executed under Subsection 8.3.2. Construct all such work in accordance with reviewed submittals. Comments incorporated as part of the review in Subsection 8.3.2 of Shop Drawings and Samples is not authorization to Contractor to perform extra work or changed work unless authorized through a Change Order. A/E’s and ODR’s review, if any, does not relieve Contractor from responsibility for defects in the Work resulting from errors or omissions of any kind on the submittal, regardless of any approval action. A/E or ODR shall not make formal changes to the Contract Documents via the submittal process. Changes to the Construction Documents shall be accomplished via Section 3.2.2 and Article 11 Changes.

8.3.5 **No Substitutions Without Approval.** ODR and A/E may receive and consider Contractor’s request for substitution when Contractor agrees to reimburse Owner for review costs and satisfies the requirements of this section. If Contractor does not satisfy these conditions, ODR and A/E will return the request without action except to record noncompliance with these requirements. Owner will not consider the request if Contractor cannot provide the product or method because of failure to pursue the Work promptly or coordinate activities properly. Contractor’s request for a substitution may be considered by ODR and A/E when:

8.3.5.1 The Contract Documents do not require extensive revisions; and

8.3.5.2 Proposed changes are in keeping with the general intent of the Contract Documents and the design intent of A/E and do not result in an increase in cost to Owner; and

8.3.5.3 The request is timely, fully documented, properly submitted and one or more of the following apply:

8.3.5.3.1 Contractor cannot provide the specified product, assembly or method of construction within the Contract Time;

8.3.5.3.2 The request directly relates to an “or-equal” clause or similar language in the Contract Documents;

8.3.5.3.3 The request directly relates to a “product design standard” or “performance standard” clause in the Contract
Documents;

8.3.5.3.4 The requested substitution offers Owner a substantial advantage in cost, time, energy conservation or other considerations, after deducting additional responsibilities Owner must assume;

8.3.5.3.5 The specified product or method of construction cannot receive necessary approval by an authority having jurisdiction, and ODR can approve the requested substitution;

8.3.5.3.6 Contractor cannot provide the specified product, assembly or method of construction in a manner that is compatible with other materials and where Contractor certifies that the substitution will overcome the incompatibility;

8.3.5.3.7 Contractor cannot coordinate the specified product, assembly or method of construction with other materials and where Contractor certifies they can coordinate the proposed substitution; or

8.3.5.3.8 The specified product, assembly or method of construction cannot provide a warranty required by the Contract Documents and where Contractor certifies that the proposed substitution provides the required warranty.

8.3.5.3.9 The manufacturer of the specified product has been removed from production due to cancellation or obsolescence.

8.3.6 Unauthorized Substitutions at Contractor’s Risk. Contractor is financially responsible for any additional costs or delays resulting from unauthorized substitution of materials, equipment or fixtures other than those specified. Contractor shall reimburse Owner for any increased design or contract administration costs resulting from such unauthorized substitutions.

8.4 Field Mock-up.

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

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

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

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

8.5 Inspection During Construction.

8.5.1 Contractor shall provide sufficient, safe, and proper facilities, including equipment as necessary for safe access, at all reasonable times for observation and/or inspection of the Work by Owner and its agents. “Reasonable times” of inspection allow for sufficient monitoring of the quality of materials and installation without substantially impeding the progress of the Work.

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

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

8.5.2.2 Contractor shall provide notification of at least five (5) working days or otherwise as mutually agreed, to ODR of the anticipated need for a cover-up inspection. Should ODR fail to make the necessary inspection within the agreed period, Contractor may proceed with cover-up Work after making every reasonable effort to contact the ODR and after documenting the Work, but is not relieved of responsibility for Work to comply with requirements of the Contract Documents.
Article 9. Construction Schedules

9.1 **Contract Time.** TIME IS AN ESSENTIAL ELEMENT OF THE CONTRACT. The Contract Time is the time between the dates indicated in the Notice to Proceed for commencement of the Work and for achieving Substantial Completion. The Contract Time can be modified only by Change Order. Failure to achieve Substantial Completion within the Contract Time as otherwise agreed to in writing will cause damage to Owner and may subject Contractor to liquidated damages as provided in the Contract Documents. If Contractor fails to achieve Final Completion within thirty (30) calendar days after Substantial Completion or a mutually agreed upon longer period of time between Contractor and Owner, Contractor shall be responsible for Owner’s additional inspection, project management, and maintenance cost to the extent caused by Contractor’s failure to achieve Final Completion.

9.2 **Notice to Proceed.** Owner will issue a Notice to Proceed which shall state the dates for beginning Work and for achieving Substantial Completion of the Work.

9.3 **Work Progress Schedule.** Refer to Supplementary General Conditions or Special Conditions for additional schedule requirements. Unless indicated otherwise in those documents, Contractor shall submit their initial Work Progress Schedule for the Work in relation to the entire Project not later than twenty-one (21) days after the effective date of the Notice to Proceed to ODR and A/E. Unless otherwise indicated in the Contract Documents, the Work Progress Schedule shall be computerized Critical Path Method (CPM) with fully editable logic. This initial schedule shall indicate the dates for starting and completing the various aspects required to complete the Work, including mobilization, procurement, installation, testing, inspection, delivery of Close-out Documents, and acceptance of all the Work of the Contract. When acceptable to Owner, the initially accepted schedule shall be the Baseline Schedule for comparison to actual conditions throughout the Contract duration.

9.3.1 **Schedule Requirements.** Contractor shall submit electronic and paper copy of the initial Work Progress Schedule reflecting accurate and reliable representations of the planned progress of the Work, the Work to date if any, and of Contractor’s actual plans for its completion. Contractor shall organize and provide adequate detail so the schedule is capable of measuring and forecasting the effect of delaying events on completed and uncompleted activities.

9.3.1.1 Contractor shall resubmit initial schedule as required to address review comments from A/E and ODR until such schedule is accepted as the Baseline Schedule.

9.3.1.2 Submittal of a schedule, schedule revision or schedule update constitutes Contractor’s representation to Owner of the accurate depiction of all progress to date and that Contractor will follow the schedule as submitted in performing the Work.
9.3.2 Schedule Updates. Contractor shall update the Work Progress Schedule and the Submittal Register monthly, as a minimum, to reflect progress to date and current plans for completing the Work, while maintaining original schedule as Baseline Schedule and submit paper and electronic copies of the update to A/E and ODR as directed, but as a minimum with each request for payment. Owner has no duty to make progress payments unless accompanied by the updated Work Progress Schedule. Show the anticipated date of completion reflecting all extensions of time granted through Change Order as of the date of the update. Contractor may revise the Work Progress Schedule when in Contractor’s judgment it becomes necessary for the management of the Work. Contractor shall identify all proposed changes to schedule logic to Owner and to A/E via an executive summary accompanying the updated schedule for review prior to final implementation of revisions into a revised Baseline Schedule. Schedule changes that materially impact Owner’s operations shall be communicated promptly to ODR and shall not be incorporated into the revised Baseline Schedule without ODR’s consent.

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

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

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

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

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

9.5 Completion of Work. Contractor is accountable for completing the Work within the Contract Time stated in the Contract, or as otherwise amended by Change Order.
9.5.1 If, in the judgment of Owner, the work is behind schedule and the rate of placement of work is inadequate to regain scheduled progress to insure timely completion of the entire work or a separable portion thereof, Contractor, when so informed by Owner, shall immediately take action to increase the rate of work placement by:

9.5.1.1 An increase in working forces.

9.5.1.2 An increase in equipment or tools.

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

9.5.1.4 Expedite delivery of materials.

9.5.1.5 Other action proposed if acceptable to Owner.

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

9.6 Modification of the Contract Time.

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

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

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

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

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

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

9.6.2.2.3 Failure of Owner to have secured property, right-of-way or easements necessary for Work to begin or progress.

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

9.6.2.2.5 Suspension of Work for unexpected natural events, Force Majeure (sometimes called “acts of God”), civil unrest, strikes or other events which are not within the reasonable control of Contractor.

9.6.2.2.6 Suspension of Work for convenience of ODR, which prevents Contractor from completing the Work within the Contract Time.

9.6.2.2.7 Administrative delays caused by activities or approval requirements related to an Authority Having Jurisdiction.

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

9.7 **No Damages for Delay.** Contractor has no claim for monetary damages for delay or hindrances to the work from any cause, including without limitation any act or omission of Owner.
9.8 Concurrent Delay. When the completion of the Work is simultaneously delayed by an excusable delay and a delay arising from a cause not designated as excusable, Contractor may not be entitled to a time extension for the period of concurrent delay.

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

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

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

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

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

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

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

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

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

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

9.10 Failure to Complete Work Within the Contract Time. **TIME IS AN ESSENTIAL ELEMENT OF THE CONTRACT.** Contractor's failure to substantially complete the Work within the Contract Time or to achieve Substantial Completion as required will cause damage to Owner. These damages shall be liquidated by agreement of Contractor and Owner, in the amount per day as set forth in the Contract Documents.

9.11 Liquidated Damages. Owner may collect liquidated damages due from Contractor directly or indirectly by reducing the Contract Sum in the amount of liquidated damages stated in the Supplementary General Conditions or Special Conditions.
Article 10. Payments

10.1 Schedule of Values. Contractor shall submit to ODR and A/E for acceptance a Schedule of Values accurately itemizing material and labor for the various classifications of the Work based on the organization of the specification sections and of sufficient detail acceptable to ODR. The accepted Schedule of Values will be the basis for the progress payments under the Contract.

10.1.1 No progress payments will be made prior to receipt and acceptance of the Schedule of Values, provided in such detail as required by ODR, and submitted not less than twenty-one (21) days prior to the first request for payment. The Schedule of Values shall follow the order of trade divisions of the Specifications and include itemized costs for general conditions, costs for preparing close out documents, staff training, if required, fees, contingencies, and Owner cash allowances, if applicable, so that the sum of the items will equal the Contract price. As appropriate, assign each item labor and/or material values, the subtotal thereof equaling the value of the work in place when complete.

10.1.1.1 Owner requires that the Work items be inclusive of the cost of the Work items only. Any contract markups for overhead and profit, general conditions, etc., shall be contained within separate line items for those specific purposes which shall be divided into at least two (2) lines, one (1) for labor and one (1) for materials.

10.1.2 Contractor shall retain a copy of all worksheets used in preparation of its bid or proposal, supported by a notarized statement that the worksheets are true and complete copies of the documents used to prepare the bid or proposal. Make the worksheets available to ODR at the time of Contract execution. Thereafter Contractor shall grant Owner during normal business hours access to said copy of worksheets at any time during the period commencing upon execution of the Contract and ending one year after final payment.

10.2. Progress Payments. Contractor will receive periodic progress payments for Work performed, materials in place, suitably stored on Site, or as otherwise agreed to by Owner and Contractor. Payment is not due until receipt by ODR or his designee of a correct and complete Pay Application in electronic and/or hard copy format as set forth in Supplementary General Conditions, Special Conditions, and certified by A/E. Progress payments are made provisionally and do not constitute acceptance of work not in accordance with the Contract Documents. Owner will not process progress payment applications for Change Order Work until all parties execute the Change Order.

10.2.1 Preliminary Pay Worksheet. Once each month that a progress payment is to be requested, the Contractor shall submit to A/E and ODR a complete, clean copy of a preliminary pay worksheet or preliminary pay application, to include the following:
10.2.1.1 Contractor’s estimate of the amount of Work performed, labor furnished and materials incorporated into the Work, using the established Schedule of Values;

10.2.1.2 An updated Work Progress Schedule including the executive summary and all required schedule reports;

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

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

10.2.1.5 Construction payment affidavit. The referenced affidavit is the Contractor’s Progress Payment Affidavit

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

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

10.3 Owner’s Duty to Pay. Owner has no duty to pay the Contractor except on receipt by ODR of: 1) a complete Application for Payment certified by A/E; 2) Contractor’s updated Work Progress Schedule; and 3) confirmation that Contractor’s record documentation at the Site is kept current.
10.3.1 Payment for stored materials and/or equipment confirmed by Owner and A/E to be on-site or otherwise properly stored is limited to eighty-five (85) percent of the invoice price or eighty-five (85) percent of the scheduled value for the materials or equipment, whichever is less.

10.3.2 Retainage. Owner will withhold from each progress payment, as retainage, five (5) percent of the total earned amount, the amount authorized by law, or as otherwise set forth in the Supplementary General Conditions or Special Conditions. Retainage is managed in conformance with Tex. Gov't Code, Ch. 2252, Subch. B. The Owner shall withhold as retainage ten percent (10%) of the amount of each progress payment on all contracts estimated at time of execution to cost less than $400,000 and five percent (5%) of the amount of each progress payment on all contracts estimated at the time of execution to cost $400,000 or more.

10.3.2.1 Contractor shall provide written consent of its surety for any request for reduction or release of retainage.

10.3.2.2 At least sixty-five (65) percent of the Contract, or such other discrete Work phase as set forth in Subsection 12.1.6 or Work package delineated in the Contract Documents, must be completed before Owner can consider a retainage reduction or release.

10.3.2.3 Contractor shall not withhold retainage from their Subcontractors and suppliers in amounts that are any percentage greater than that withheld in its Contract with Owner under this subsection, unless otherwise acceptable to Owner.

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

10.3.3.1 Defective or incomplete Work not remedied;

10.3.3.2 Damage to Work of a separate Contractor;

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

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

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

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

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

10.3.3.8 Failure to maintain or allow Owner’s inspection of payroll records.

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

10.3.4.1 Transfer of title to Owner does not relieve Contractor and its Subcontractors of the sole responsibility for the care and protection of materials and Work upon which payments have been made until substantial completion, responsibility for the care and protection of materials and Work in areas where punch list items are completed until final completion or the restoration of any damaged Work, or waive the right of Owner to require the fulfillment of all the terms of the Contract.

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

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

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

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

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

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

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

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

10.5.3 Inspection by Owner’s representative is allowed at any time. Owner’s inspectors must be satisfied with the security, control, maintenance, and preservation measures.
10.5.4 Materials for this Project are physically separated and marked for the Project in a sectioned-off area. Only materials which have been approved through the submittal process are to be considered for payment.

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

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

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

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

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

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

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

11.1 **Change Orders.** A Change Order issued after execution of the Contract is a written order to Contractor, signed by ODR, Contractor, and A/E, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time can only be changed by Change Order. A Change Order signed by Contractor indicates his agreement therewith, including the adjustment in the Contract Sum and/or the Contract Time. ODR may issue a written authorization for Contractor to proceed with Work of a Change Order in advance of final execution by all parties in accordance with Section 11.9.

11.1.1 Owner, without invalidating the Contract, **and without approval of the Contractor’s Surety,** may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, and the Contract Sum and the Contract Time will be adjusted accordingly. All such changes in the Work shall be authorized by Change Order or ULCO, and shall be performed under the applicable conditions of the Contract Documents. If such changes cause an increase or decrease in Contractor’s cost of, or time required for, performance of the Contract, an equitable adjustment shall be made and confirmed in writing in a Change Order or a ULCO.

11.1.2 It is recognized by the parties hereto and agreed by them that the Specifications and Drawings may not be complete or free from errors, omissions and imperfections or that they may require changes or additions in order for the Work to be completed to the satisfaction of Owner and that, accordingly, it is the express intention of the parties, notwithstanding any other provisions in this Contract, that any errors, omissions or imperfections in such Specifications and Drawings, or any changes in or additions to same or to the Work ordered by Owner and any resulting delays in the Work or increases in Contractor’s costs and expenses arising out of such errors, shall not constitute or give rise to any claim, demand or cause of action of any nature whatsoever in favor of Contractor, whether for breach of Contract, or otherwise; provided, however, that Owner shall be liable to Contractor for the sum stated to be due Contractor in any Change Order approved and signed by both parties, it being agreed hereby that such sum, together with any extension of time contained in said Change Order, shall constitute full compensation to Contractor for all costs, expenses and damages to Contractor, as permitted under Tex. Gov’t Code, Ch. 2260.

11.1.3 Procedures for administration of Change Orders shall be established by Owner and stated in Supplementary General Conditions, Special Conditions, or elsewhere in the Contract Documents. **Procedures for administration of Change Orders will be provided at the Pre-Construction Conference.**

11.1.4 No verbal order, verbal statement, or verbal direction of Owner or his duly appointed representative shall be treated as a change under this article or entitle Contractor to an adjustment.
11.1.5 Contractor agrees that Owner or any of its duly authorized representatives shall have access and the right to examine any directly pertinent books, documents, papers, and records of Contractor. Further, Contractor agrees to include in all its subcontracts a provision to the effect that Subcontractor agrees that Owner or any of its duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers and records of such Subcontractor relating to any claim arising from the Contract, whether or not the Subcontractor is a party to the claim. The period of access and examination described herein which relates to appeals under the Disputes article of the Contract, litigation, or the settlement of claims arising out of the performance of the Contract shall continue until final disposition of such claims, appeals or litigation.

11.2 Unit Prices. If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed in a Proposed Change Order that application of the agreed unit prices to the quantities of work proposed will cause substantial inequity to Owner or Contractor, the applicable unit prices shall be equitably adjusted as provided in the Supplementary General Conditions or Special Conditions or as agreed to by the parties and incorporated into a Change Order.

11.3 Claims for Additional Costs.

11.3.1 If Contractor wishes to make a claim for an increase in the Contract Sum not related to a requested change, they shall give Owner and A/E written notice thereof within twenty-one (21) days after the occurrence of the event giving rise to such claim, but, in any case before proceeding to execute the Work considered to be additional cost or time, except in an emergency endangering life or property in which case Contractor shall act in accordance with Subsection 7.2.1. No such claim shall be valid unless so made. If Owner and Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined as set forth under Article 15. Any change in the Contract Sum resulting from such claim shall be authorized by a Change Order or a ULCO.

11.3.2 If Contractor claims that additional cost is involved because of, but not limited to, 1) any written interpretation of the Contract Documents, 2) any order by Owner to stop the Work pursuant to Article 14 where Contractor was not at fault, or 3) any written order for a minor change in the Work issued pursuant to Section 11.4, Contractor shall make such claim as provided in Subsection 11.3.1.

11.3.3 Should Contractor or his Subcontractors fail to call attention of A/E to discrepancies or omissions in the Contract Documents, but claim additional costs for corrective Work after Contract award, Owner may assume intent to circumvent competitive bidding for necessary corrective Work. In such case, Owner may choose to let a separate Contract for the corrective Work, or issue a ULCO to require performance by Contractor. Claims for time extensions or
for extra cost resulting from delayed notice of patent Contract Document discrepancies or omissions will not be considered by Owner.

11.4 **Minor Changes.** A/E, with concurrence of ODR, will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time. Such changes shall be effected by written order which Contractor shall carry out promptly and record on As-Built record documents.

11.5 **Concealed Site Conditions.** Contractor is responsible for visiting the Site and being familiar with local conditions such as the location, accessibility, and general character of the Site and/or building. If, in the performance of the Contract, subsurface, latent, or concealed conditions at the Site are found to be materially different from the information included in the Contract Documents, or if unknown conditions of an unusual nature are disclosed differing materially from the conditions usually inherent in Work of the character shown and specified, ODR and A/E shall be notified in writing of such conditions before they are further disturbed or subsequent related work proceeds. Upon such notice, or upon its own observation of such conditions, A/E, with the approval of ODR, will promptly make such changes in the Drawings and Specifications as they deem necessary to conform to the different conditions, and any increase or decrease in the cost of the Work, or in the time within which the Work is to be completed, resulting from such changes will be adjusted by Change Order, subject to the prior approval of ODR.

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

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

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

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

11.7.3 Any unexpected circumstance which necessitates an immediate change in order to avoid a delay in progress of the Work may be expedited by verbal communication and authorization between Contractor and Owner, with written confirmation following within twenty-four (24) hours. A limited scope not-to-exceed estimate of cost and time will be requested prior to authorizing Work to proceed. Should the estimate be impractical for any reason, ODR may authorize the use of detailed cost records of such work to establish and confirm the actual costs and time for documentation in a formal Change Order.

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

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

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

11.8.1 For Work performed by its forces, Contractor will be allowed their actual costs for materials, the total amount of wages (including benefits) paid for labor, plus the total cost of State and Federal payroll taxes and of worker's compensation and comprehensive general liability insurance, plus additional bond and builders risk insurance cost if the change results in an increase in the premium paid by Contractor. To the total of the above costs, Contractor will be allowed to add a percentage as noted below to cover overhead and profit combined. Allowable percentages for overhead and profit on any specific change shall not exceed fifteen (15) percent for the first $10,000 of value for self-performed work or portion thereof, ten (10) percent for the second $10,000 of value for self-performed work or portion thereof and seven and a half (7.5) percent for any value of the self-performed work that exceeds $20,000.

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

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

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

11.8.5 *If the parties cannot agree on an equitable adjustment for labor hours attributable to a change, they shall use the Means Facility Cost Data as a guide for labor hours as a basis of negotiation.*

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

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

11.10 **Final Resolution of Changes.** Upon execution of a Change Order and/or a ULCO by Owner, Contractor and A/E, all costs and time issues regarding that change are final and not subject to additive adjustments.
Article 12. Project Completion and Acceptance

12.1 Closing Inspections.

12.1.1 Substantial Completion Inspection. When Contractor considers the entire Work or part thereof Substantially Complete, it shall notify ODR in writing fifteen (15) working days prior to the Substantial Completion inspection that the Work will be ready for Substantial Completion inspection on a specific date. Contractor shall include with this notice Contractor’s Punchlist to indicate that it has previously inspected all the Work associated with the request for inspection, noting items it has corrected and included all remaining work items with date scheduled for completion or correction prior to final inspection. The failure to include any items on this list does not alter the responsibility of Contractor to complete all Work in accordance with the Contract Documents. If any of the items on this list prevents the Project from being used as intended, Contractor shall not request a Substantial Completion Inspection. Owner and its representatives will review the list of items and schedule the requested inspection, or inform Contractor in writing that such an inspection is premature because the Work is not sufficiently advanced or conditions are not as represented on Contractor’s list.

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

12.1.1.2 On the date requested by Contractor, or as mutually agreed upon pending the status of the Open Items List, A/E, ODR, Contractor, and other Owner representatives as determined by Owner will jointly attend the Substantial Completion inspection, which shall be conducted by ODR or their delegate. If ODR determines that the Work is Substantially Complete, ODR will issue a Certificate of Substantial Completion to be signed by A/E, Owner, and Contractor establishing the date of Substantial Completion and identifying responsibilities for security, maintenance, insurance and utilities. A/E will provide with this certificate a consolidated list of Punchlist items (the pre-final Punchlist including all items noted by the various inspecting parties) for completion prior to final inspection. This list may include items in addition to those on Contractor’s Punchlist, which the inspection team deems necessary to correct or complete prior to final inspection. The failure to include any items on this list does not alter the responsibility of Contractor to complete all Work in accordance with the Contract Documents. If Owner
occupies the Project upon determination of Substantial Completion, Contractor shall complete all corrective Work at the convenience of Owner, without disruption to Owner’s use of the Project for its intended purposes.

12.1.2 Final Inspection. Contractor shall complete the list of items identified on the pre-final Punchlist prior to requesting a final inspection. Unless otherwise specified, or otherwise agreed in writing by the parties as documented on the Certificate of Substantial Completion, Contractor shall complete and/or correct all Work within thirty (30) days of the Substantial Completion date. Upon completion of the pre-final Punchlist work, Contractor shall give written notice to ODR and A/E that the Work will be ready for final inspection on a specific date. Contractor shall accompany this notice with a copy of the updated pre-final Punchlist indicating resolution of all items. On the date specified or as soon thereafter as is practicable, ODR, A/E and Contractor will inspect the Work. A/E will submit to Contractor a final Punchlist of open items that the inspection team requires corrected or completed before final acceptance of the Work.

12.1.2.1 Correct or complete all items on the final Punchlist before requesting Final Payment. Unless otherwise agreed to in writing by the parties, complete this work within seven (7) days of receiving the final Punchlist. Upon completion of the final Punchlist, notify A/E and ODR in writing stating the disposition of each final Punchlist item. A/E, Owner, and Contractor shall promptly inspect the completed items. When the final Punchlist is complete, and the Contract is fully satisfied according to the Contract Documents ODR will issue a certificate establishing the date of Final Completion. Completion of all Work is a condition precedent to Contractor’s right to receive Final Payment.

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

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

12.1.5 Additional Inspections.

12.1.5.1 If Owner’s inspection team determines that the Work is not substantially complete at the Substantial Completion inspection, ODR or A/E will give Contractor written notice listing cause(s) of
the rejection. Contractor will set a time for completion of incomplete or defective work acceptable to ODR. Contractor shall complete or correct all work so designated prior to requesting a second Substantial Completion inspection.

12.1.5.2 If Owner’s inspection team determines that the Work is not complete at the final inspection, ODR or A/E will give Contractor written notice listing the cause(s) of the rejection. Contractor will set a time for completion of incomplete or defective work acceptable to ODR. Contractor shall complete or correct all Work so designated prior to again requesting a final inspection.

12.1.5.3 The Contract contemplates three (3) comprehensive inspections: the Substantial Completion inspection, the Final Completion inspection, and the inspection of completed final Punchlist items. The cost to Owner of additional inspections resulting from the Work not being ready for one or more of these inspections is the responsibility of Contractor. Owner may issue a ULCO deducting these costs from Final Payment. Upon Contractor’s written request, Owner will furnish documentation of any costs so deducted. Work added to the Contract by Change Order after Substantial Completion inspection is not corrective Work for purposes of determining timely completion, or assessing the cost of additional inspections.

12.1.6 Phased Completion. The Contract may provide, or Project conditions may warrant, as determined by ODR, that designated elements or parts of the Work be completed in phases. Where phased completion is required or specifically agreed to by the parties, the provisions of the Contract related to closing inspections, occupancy, and acceptance apply independently to each designated element or part of the Work. For all other purposes, unless otherwise agreed by the parties in writing, Substantial Completion of the Work as a whole is the date on which the last element or part of the Work completed receives a Substantial Completion certificate. Final Completion of the Work as a whole is the date on which the last element or part of the Work completed receives a Final Completion certificate.

12.2 Owner’s Right of Occupancy. Owner may occupy or use all or any portion of the Work following Substantial Completion, or at any earlier stage of completion. Should Owner wish to use or occupy the Work, or part thereof, prior to Substantial Completion, ODR will notify Contractor in writing and identify responsibilities for security, maintenance, insurance and utilities. Work performed on the premises by third parties on Owner’s behalf does not constitute occupation or use of the Work by Owner for purposes of this Article. All Work performed by Contractor after occupancy, whether in part or in whole, shall be at the convenience of Owner so as to not disrupt Owner’s use of, or access to occupied areas of the Project.

12.3 Acceptance and Payment
12.3.1 Request for Final Payment. Following the certified completion of all work, including all final Punchlist items, cleanup, and the delivery of record As-Built documents, Contractor shall submit a certified Application for Final Payment and include all sums held as retainage and forward to A/E and ODR for review and approval.

12.3.2 Final Payment Documentation. Contractor shall submit, prior to or with the Application for Final Payment, final copies of all close out documents, maintenance and operating instructions, guarantees and warranties, certificates, Record As-Built Documents and all other items required by the Contract. Contractor shall submit evidence of return of access keys and cards, evidence of delivery to Owner of attic stock, spare parts, and other specified materials. Contractor shall submit consent of surety to Final Payment form and an affidavit that all payrolls, bills for materials and equipment, subcontracted work and other indebtedness connected with the Work, except as specifically noted, are paid, will be paid, after payment from Owner or otherwise satisfied within the period of time required by Tex. Gov’t Code, Ch. 2251. Contractor shall furnish documentation establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of claims and liens arising out of the Contract. Contractor may not subsequently submit a claim on behalf of Subcontractor or vendor unless Contractor’s affidavit notes that claim as an exception. The Affidavit referred to above is the Contractor’s Final Payment Affidavit.

12.3.3 Architect/Engineer Approval. A/E will review a submitted Application for Final Payment promptly but in no event later than ten (10) days after its receipt. Prior to the expiration of this deadline, A/E will either: 1) return the Application for Final Payment to Contractor with corrections for action and resubmission; or 2) accept it, note their approval, and send to Owner.

12.3.4 Offsets and Deductions. Owner may deduct from the Final Payment all sums due from Contractor. If the Certificate of Final Completion notes any Work remaining, incomplete, or defects not remedied, Owner may deduct the cost of remedying such deficiencies from the Final Payment. On such deductions, Owner will identify each deduction, the amount, and the explanation of the deduction on or by the twenty-first (21st) day after Owner’s receipt of an approved Application for Final Payment. Such offsets and deductions shall be incorporated via a final Change Order, including a ULCO as may be applicable.

12.3.5 Final Payment Due. Final Payment is due and payable by Owner, subject to all allowable offsets and deductions, on the thirtieth (30th) day following Owner’s approval of the Application for Payment. If Contractor disputes any amount deducted by Owner, Contractor shall give notice of the dispute on or before the thirtieth (30th) day following receipt of Final Payment. Failure to do so will bar any subsequent claim for payment of amounts deducted.

12.3.6 Effect of Final Payment. Final Payment constitutes a waiver of all claims by Owner, relating to the condition of the Work except those arising from:

12.3.6.1 Faulty or defective Work appearing after Substantial Completion
12.3.6.2 Failure of the Work to comply with the requirements of the Contract Documents;

12.3.6.3 Terms of any warranties required by the Contract, or implied by law;
or

12.3.6.4 Claims arising from personal injury or property damage to third parties.

12.3.7 **Waiver of Claims.** Final payment constitutes a waiver of all claims and liens by Contractor except those specifically identified in writing and submitted to ODR prior to the application for Final Payment.

12.3.8 **Effect on Warranty.** Regardless of approval and issuance of Final Payment, the Contract is not deemed fully performed by Contractor and closed until the expiration of all warranty periods. Issuance of Final Payment does not alter Contractor’s contractual obligations during the warranty period.
Article 13. Warranty and Guarantee

13.1 Contractor’s General Warranty and Guarantee. Contractor warrants to Owner that all Work is executed in accordance with the Contract, complete in all parts and in accordance with approved practices and customs, and of the required finish and workmanship. Contractor further warrants that unless otherwise specified, all materials and equipment incorporated in the Work under the Contract are new. Owner may, at its option, agree in writing to waive any failure of the Work to conform to the Contract, and to accept a reduction in the Contract price for the cost of repair or diminution in value of the Work by reason of such defect. Absent such a written agreement, Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents is absolute and is not waived by any inspection or observation by Owner, A/E or others, by making any progress payment or final payment, by the use or occupancy of the Work or any portion thereof by Owner, at any time, or by any repair or correction of such defect made by Owner.

13.2 Warranty Period. Except as may be otherwise specified or agreed, Contractor shall repair all defects in materials, equipment, or workmanship appearing within one year from the date of Substantial Completion of the Work or at Final Completion if no Substantial Completion inspection is held. If Substantial Completion occurs by phase, then the warranty period for that particular Work begins on the date of such occurrence, or as otherwise stipulated on the Certificate of Substantial Completion for the particular Work.

13.3 Limits on Warranty. Contractor’s warranty and guarantee hereunder excludes defects or damage caused by:

13.3.1 Modification or improper maintenance or operation by persons other than Contractor, Subcontractors, or any other individual or entity for whom Contractor is not responsible, unless Owner is compelled to undertake maintenance or operation due to the neglect of Contractor.

13.3.2 Normal wear and tear under normal usage after acceptance of the Work by Owner.

13.4 Events Not Affecting Warranty. Contractor’s obligation to perform and complete the Work in a good and workmanlike manner in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of defective Work that is not in accordance with the Contract Documents or a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents:

13.4.1 Observations by Owner and/or A/E;

13.4.2 Recommendation to pay any progress or final payment by A/E;

13.4.3 The issuance of a certificate of Substantial Completion or any payment by Owner to Contractor under the Contract Documents;
13.4.4 Use or occupancy of the Work or any part thereof by Owner;

13.4.5 Any acceptance by Owner or any failure to do so;

13.4.6 Any review of a Shop Drawing or sample submittal; or

13.4.7 Any inspection, test or approval by others.

13.5 **Separate Warranties.** If a particular piece of equipment or component of the Work for which the Contract requires a separate warranty is placed in continuous service before Substantial Completion, the warranty period for that equipment or component will not begin until Substantial Completion, regardless of any warranty agreements in place between suppliers and/or Subcontractors and Contractor. ODR will certify the date of service commencement in the Substantial Completion certificate.

13.5.1 In addition to Contractor’s warranty and duty to repair, Contractor expressly assumes all warranty obligations required under the Contract for specific building components, systems and equipment.

13.5.2 Contractor may satisfy any such obligation by obtaining and assigning to Owner a complying warranty from a manufacturer, supplier, or Subcontractor. Where an assigned warranty is tendered and accepted by Owner which does not fully comply with the requirements of the Contract, Contractor remains liable to Owner on all elements of the required warranty not provided by the assigned warranty.

13.6 **Correction of Defects.** Upon receipt of written notice from Owner, or any agent of Owner designated as responsible for management of the warranty period, of the discovery of a defect, Contractor shall promptly remedy the defect(s), and provide written notice to Owner and designated agent indicating action taken. In case of emergency where delay would cause serious risk of loss or damage to Owner, or if Contractor fails to remedy within thirty (30) days, or within another period agreed to in writing, Owner may correct the defect and be reimbursed the cost of remedying the defect from Contractor or its surety.

13.7 **Certification of No Asbestos Containing Materials or Work.** Contractor shall ensure compliance with the Asbestos Hazard Emergency Response Act (AHERA—40 C.F.R § 763-99(7)) from all Subcontractors and materials suppliers, and shall provide a notarized certification to Owner that all equipment and materials used in fulfillment of their Contract responsibilities are non-Asbestos Containing Building Materials (ACEM). This certification must be provided no later than Contractor’s application for Final Payment.
Article 14. Suspension and Termination

14.1 Suspension of Work for Cause. Owner may, at any time without prior notice, suspend all or any part of the Work, if after reasonable observation and/or investigation, Owner determines it is necessary to do so to prevent or correct any condition of the Work, which constitutes an immediate safety hazard, or which may reasonably be expected to impair the integrity, usefulness or longevity of the Work when completed.

14.1.1 Owner will give Contractor a written notice of suspension for cause, setting forth the reason for the suspension and identifying the Work suspended. Upon receipt of such notice, Contractor shall immediately stop the Work so identified. As soon as practicable following the issuance of such a notice, Owner will initiate and complete a further investigation of the circumstances giving rise to the suspension, and issue a written determination of the findings.

14.1.2 If it is confirmed that the cause was within the control of Contractor, Contractor will not be entitled to an extension of time or any compensation for delay resulting from the suspension. If the cause is determined not to have been within the control of Contractor, and the suspension has prevented Contractor from completing the Work within the Contract Time, the suspension is an excusable delay and a time extension will be granted through a Change Order.

14.1.3 Suspension of Work under this provision will be no longer than is reasonably necessary to remedy the conditions giving rise to the suspension.

14.2 Suspension of Work for Owner’s Convenience. Upon seven (7) days written notice to Contractor, Owner may at any time without breach of the Contract suspend all or any portion of the Work for a period of up to thirty (30) days for its own convenience. Owner will give Contractor a written notice of suspension for convenience, which sets forth the number of suspension days for which the Work, or any portion of it, and the date on which the suspension of Work will cease. When such a suspension prevents Contractor from completing the Work within the Contract Time, it is an excusable delay. A notice of suspension for convenience may be modified by Owner at any time on seven (7) days written notice to Contractor. If Owner suspends the Work for its convenience for more than sixty (60) consecutive days, Contractor may elect to terminate the Contract pursuant to the provisions of the Contract.

14.3 Termination by Owner for Cause.

14.3.1 Upon written notice to Contractor and its surety, Owner may, without prejudice to any right or remedy, terminate the Contract and take possession of the Site and of all materials, equipment, tools, construction equipment, and machinery thereon owned by Contractor under any of the following circumstances:
14.3.1 Persistent or repeated failure or refusal, except during complete or partial suspensions of work authorized under the Contract, to supply enough properly skilled workmen or proper materials;

14.3.1.2 Persistent disregard of laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, including ODR;

14.3.1.3 Persistent failure to prosecute the Work in accordance with the Contract, and to ensure its completion within the time, or any approved extension thereof, specified in the Contract;

14.3.1.4 Failure to remedy defective work condemned by ODR;

14.3.1.5 Failure to pay Subcontractors, laborers, and material suppliers pursuant to Tex. Gov't Code, Ch. 2251;

14.3.1.6 Persistent endangerment to the safety of labor or of the Work;

14.3.1.7 Failure to supply or maintain statutory bonds or to maintain required insurance, pursuant to the Contract;

14.3.1.8 Any material breach of the Contract; or

14.3.1.9 Contractor's insolvency, bankruptcy, or demonstrated financial inability to perform the Work.

14.3.2 Failure by Owner to exercise the right to terminate in any instance is not a waiver of the right to do so in any other instance.

14.3.3 Should Owner decide to terminate the Contract under the provisions of Section 14.3, it will provide to Contractor and its surety thirty (30) days prior written notice.

14.3.4 Should Contractor or its surety, after having received notice of termination, demonstrate to the satisfaction of Owner that Contractor or its surety are proceeding to correct such default with diligence and promptness, upon which the notice of termination was based, the notice of termination may be rescinded in writing by Owner. If so rescinded, the Work may continue without an extension of time.

14.3.5 If Contractor or its surety fails, after written notice from Owner to commence and continue correction of such default with diligence and promptness to the satisfaction of Owner within thirty (30) days following receipt of notice, Owner may arrange for completion of the Work and deduct the cost of completion from the unpaid Contract Sum.

14.3.5.1 This amount includes the cost of additional Owner costs such as A/E services, other consultants, and contract administration.
14.3.5.2 Owner will make no further payment to Contractor or its surety unless the costs to complete the Work are less than the Contract balance, then the difference shall be paid to Contractor or its surety. If such costs exceed the unpaid balance, Contractor or its surety will pay the difference to Owner.

14.3.5.3 This obligation for payment survives the termination of the Contract.

14.3.5.4 Owner reserves the right in termination for cause to take assignment of all the Contracts between Contractor and its Subcontractors, vendors, and suppliers. ODR will promptly notify Contractor of the contracts Owner elects to assume. Upon receipt of such notice, Contractor shall promptly take all steps necessary to effect such assignment.

14.4 Conversion to Termination for Convenience. In the event that any termination of Contractor for cause under Section 14.3 is later determined to have been improper, the termination shall automatically convert to a termination for convenience under Section 14.5 and Contractor's recovery for termination shall be strictly limited to the payments allowable under Section 14.5.

14.5 Termination for Convenience of Owner. Owner reserves the right, without breach, to terminate the Contract prior to, or during the performance of the Work, for any reason. Upon such an occurrence, the following shall apply:

14.5.1 Owner will immediately notify Contractor and A/E in writing, specifying the reason for and the effective date of the Contract termination. Such notice may also contain instructions necessary for the protection, storage or decommissioning of incomplete work or systems, and for safety.

14.5.2 Upon receipt of the notice of termination, Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due at that point in the Contract:

14.5.2.1 Stop all work.

14.5.2.2 Place no further subcontracts or orders for materials or services.

14.5.2.3 Terminate all subcontracts for convenience.

14.5.2.4 Cancel all materials and equipment orders as applicable.

14.5.2.5 Take action that is necessary to protect and preserve all property related to the Contract which is in the possession of Contractor.

14.5.3 When the Contract is terminated for Owner's convenience, Contractor may recover from Owner payment for all Work executed. Contractor may not claim lost profits on other work or lost business opportunities.
14.6 **Termination By Contractor.** If the Work is stopped for a period of ninety (90) days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of Contractor or Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with Contractor, then Contractor may, upon thirty (30) additional days written notice to ODR, terminate the Contract and recover from Owner payment for all Work executed, but not lost profits on other work or lost business opportunities. If the cause of the Work stoppage is removed prior to the end of the thirty (30) day notice period, Contractor may not terminate the Contract.

14.7 **Settlement on Termination.** When the Contract is terminated for any reason, at any time prior to one hundred eighty (180) days after the effective date of termination, Contractor shall submit a final termination settlement proposal to Owner based upon recoverable costs as provided under the Contract. If Contractor fails to submit the proposal within the time allowed, Owner may determine the amount due to Contractor because of the termination and pay the determined amount to Contractor.
Article 15. Dispute Resolution

15.1 Unresolved Contractor Disputes. The dispute resolution process provided for in Tex. Gov't Code, Ch. 2260, and the procedures provided in Title 31, Part 2, Chapter 51, Subchapter J of the Texas Administrative or Tex. Civ. Prac. & Rem. Code, Ch. 114, shall be used by Contractor to attempt to resolve any claim for breach of Contract made by Contractor that is not resolved under procedures described throughout the Uniform General Conditions, Supplementary Conditions, or Special Conditions of the Contract.


15.3 Nothing herein shall hinder, prevent, or be construed as a waiver of Owner's right to seek redress on any disputed matter in a court of competent jurisdiction.

15.4 Nothing herein shall waive or be construed as a waiver of the State's sovereign immunity.
Article 16. Miscellaneous

16.1 Supplementary General and Special Conditions. When the Work contemplated by Owner is of such a character that the foregoing Uniform General Conditions of the Contract cannot adequately cover necessary and additional contractual relationships, the Contract may include Supplementary General and Special Conditions as described below:

16.1.1 Supplementary General Conditions may describe the standard procedures and requirements of contract administration followed by a contracting agency of the State. Supplementary General Conditions may expand upon matters covered by the Uniform General Conditions, where necessary, provided the expansion does not weaken the character or intent of the Uniform General Conditions. Supplementary General Conditions are of such a character that it is to be anticipated that a contracting agency of the State will normally use the same, or similar, conditions to supplement each of its several projects.

16.1.2 Special Conditions shall relate to a particular Project and be unique to that Project but shall not weaken the character or intent of the Uniform General Conditions.

16.2 Federally Funded Projects. On Federally funded projects, Owner may waive, suspend or modify any Article in these Uniform General Conditions which conflicts with any Federal statute, rule, regulation or procedure, where such waiver, suspension or modification is essential to receipt by Owner of such Federal funds for the Project. In the case of any Project wholly financed by Federal funds, any standards required by the enabling Federal statute, or any Federal rules, regulations or procedures adopted pursuant thereto, shall be controlling.

16.3 Internet-based Project Management Systems. At its option, Owner may administer its design and construction management through an Internet-based management system. In such cases, Contractor shall conduct communication through this media and perform all Project related functions utilizing this database system. This includes correspondence, submittals, Requests for Information, vouchers or payment requests and processing, amendment, Change Orders and other administrative activities.

16.3.1 Accessibility and Administration.

16.3.1.1 When used, Owner will make the software accessible via the Internet to all Project team members.

16.3.1.2 Owner shall administer the software.

16.3.2 Training. When used, Owner shall provide training to the Project team members.

16.4 Administrative Inspections and Audits. Contractor agrees that all relevant records related to this Contract or any work product under this Contract, including practices of
its Subcontractors, shall be subject, at any reasonable time, to inspection, examination, review, audit, and copying at any office or location of Contractor where such records may be found, with or without notice by the Texas State Auditor's Office ("SAO"), the contracting agency or its contracted examiners, or the Office of the Texas Attorney General, and with regard to any federal funding, the relevant federal agency, the Comptroller General, the General Accounting Office, the Office of the Inspector General, or any of their authorized representatives. All Subcontracts shall reflect the requirements of this section. In addition, pursuant to Tex. Gov't Code§ 2262.003 the SAO may conduct an audit or investigation of any entity receiving funds under this Contract, including direct payments to Contractor and indirect payments under a Subcontract to this Contract; acceptance of such monies acts as acceptance of SAO authority, under legislative audit committee direction, to audit and investigate related to those funds and the entity subject to the audit or investigation must provide SAO with access to any information SAO considers relevant to the scope of the audit or investigation.

End of Uniform General Conditions
2018 SUPPLEMENTARY GENERAL CONDITIONS
TO THE STATE OF TEXAS 2015 EDITION OF THE UNIFORM
GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS

The following Supplementary General Conditions amend and/or supplement the 2015 edition of the Uniform General Conditions for Construction Contracts.

Article 5. Bonds and Insurance

5.2 Insurance Requirements.

Subsection 5.2.4 is supplemented to add the following new paragraphs:

5.2.4.1 Contractor shall deliver to Owner true and complete copies of the General Contractor’s certificates prior to the issuance of any Notice to Proceed.

5.2.4.2 Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor’s obligation to maintain such insurance.

5.2.4.3 The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner in the Contract Documents.

5.2.4.4 The insurance coverage and limits established in the Uniform General Conditions, Supplementary General Conditions, or Special Conditions shall not be interpreted as any representation or warranty that the insurance coverage and limits necessarily will be adequate to protect Contractor.

Article 2. Wage Rates and Other Laws Governing Construction

Add Section 2.7 as follows:

2.7 Buy America Requirements for Iron and Steel Used in Construction. In accordance with Texas Government Code 2252, Section 2252.202, all iron or steel products (i.e., rolled structural shapes including wide flange beams and columns, angles, bars, plates, sheets, hollow structural sections, pipe, etc.) shall be produced, manufactured and fabricated in the United States.

End of Supplementary General Conditions
TEXAS PARKS AND WILDLIFE

PREVAILING WAGE RATE DETERMINATION INFORMATION

Chapter 2258, Texas Government Code, Title 10 requires that state agencies, (including universities), cities, counties, independent school districts, and all other political subdivisions that engage in public works construction projects produce and include prevailing wage rate determinations in the project bidding and contract documents.

Chapter 2258 requires that the contractor who is awarded a contract by a public body and a contractor's subcontractor shall pay not less than the rates determined by such state agencies to workers employed for the execution of such work. Pursuant to Chapter 2258, Texas Parks and Wildlife has ascertained the following wages to be paid for the various classifications of workers, in the locality of this project. In determining these wages, TPWD has utilized the Prevailing Wage Rates as determined by the U.S. DOL in accordance with the Davis-Bacon Act.

General Decision Number: TX190252 03/15/2019  TX252

Superseded General Decision Number: TX20180302

State: Texas

Construction Type: Building

County: Hardin County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

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
1  03/15/2019

* ASBE0022-009 12/01/2018
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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.

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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
General Decision Number: TX190038 01/04/2019  TX38

Superseded General Decision Number: TX20180056

State: Texas

Construction Type: Highway

Counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, San Jacinto and Waller Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

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

* SUTX2011-013 08/10/2011

<table>
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<tr>
<th>Rates</th>
<th>Fringes</th>
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</thead>
<tbody>
<tr>
<td>CEMENT MASON/CONCRETE FINISHER (Paving and Structures) ..................$ 12.98</td>
<td></td>
</tr>
<tr>
<td>ELECTRICIAN ..................$ 27.11</td>
<td></td>
</tr>
<tr>
<td>FORM BUILDER/FORM SETTER  Paving &amp; Curb ..................$ 12.34</td>
<td></td>
</tr>
</tbody>
</table>
Structures .................. $ 12.23

LABORER
Asphalt Raker ............... $ 12.36
Flagger ...................... $ 10.33
Laborer, Common ........... $ 11.02
Laborer, Utility ........... $ 11.73
Pipelayer ................... $ 12.12
Work Zone Barricade
Servicer ..................... $ 11.67

PAINTER (Structures) ....... $ 18.62

POWER EQUIPMENT OPERATOR:
Asphalt Distributor ....... $ 14.06
Asphalt Paving Machine.. $ 14.32
Broom or Sweeper ........ $ 12.68
Concrete Pavement
Finishing Machine ........ $ 13.07
Concrete Paving, Curing,
Float, Texturing Machine.. $ 11.71
Concrete Saw ............... $ 13.99
Crane, Hydraulic 80 Tons
or less ..................... $ 13.86
Crane, Lattice boom 80
tons or less ............... $ 14.97
Crane, Lattice boom over
80 Tons .................... $ 15.80
Crawler Tractor ........... $ 13.68
Excavator, 50,000 pounds
or less ..................... $ 12.71
Excavator, Over 50,000
pounds ..................... $ 14.53
Foundation Drill, Crawler
Mounted .................... $ 17.43
Foundation Drill, Truck
Mounted .................... $ 15.89
Front End Loader 3 CY or
Less ........................ $ 13.32
Front End Loader, Over 3 CY,$ 13.17
Loader/Backhoe ............. $ 14.29
Mechanic .................... $ 16.96
Milling Machine ............ $ 13.53
Motor Grader, Fine Grade.. $ 15.69
Motor Grader, Rough ....... $ 14.23
Off Road Hauler ............ $ 14.60
Pavement Marking Machine.. $ 11.18
Piledriver ................... $ 14.95
Roller, Asphalt ............. $ 11.95
Roller, Other ............... $ 11.57
Scrapper ..................... $ 13.47
Spreader Box ............... $ 13.58

Servicer ..................... $ 13.97

Steel Worker
Reinforcing Steel ........... $ 15.15
Structural Steel Welder.. $ 12.85
Structural Steel ........... $ 14.39

TRUCK DRIVER
Low Boy Float ............... $ 16.03
Single Axle ................. $ 11.46
Single or Tandem Axle Dump.. $ 11.48
Tandem Axle Tractor w/Semi Trailer..........................$ 12.27

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

Classifications 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
AGREEMENT BETWEEN OWNER AND CONTRACTOR

STATE OF TEXAS

COUNTY OF TRAVIS

THIS AGREEMENT, made this ___ day of __________, 20___ by and between the STATE OF TEXAS, acting through the TEXAS PARKS AND WILDLIFE DEPARTMENT, hereinafter called the OWNER, and INSERT CONTRACTOR COMPANY NAME, hereinafter called the CONTRACTOR.

WITNESSETH: That for and in consideration of the payments and agreements hereinafter described, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete certain public works described as: Project Number 128695 Village Creek State Park – Facility Damage Repairs, Lumberton, Hardin County, Texas 77657, for the use and benefit of the OWNER as described in the Invitation for Bids and Contract Documents and Contract Documents prepared by TEXAS PARKS AND WILDLIFE DEPARTMENT. Contract Documents include all parts of this Invitation for Bids, including but not limited to, Specifications, Scope of Work, Uniform General and Supplementary General Conditions, and Special Conditions for Project Number 128695. The Contract Documents are hereby incorporated by reference into this Contract Number ________.

In the event that there is a conflict, this contract and its attachments take priority over all other documents. Following the contract in order of priority are the Special Conditions; Supplementary General Conditions, Uniform General Conditions; Invitation for Bids and Contract Documents, and Contractor’s Bid.

The consideration to be paid by the OWNER to the CONTRACTOR for furnishing all the materials, supplies, machinery, equipment, tools, labor, superintendence, insurance, and other accessories and services necessary to complete the said Project in accordance with the Contract Documents is the not to exceed amount of INSERT AMOUNT Dollars and No Cents ($xxxx,xxx.xx).

The CONTRACTOR hereby agrees to complete all work within three hundred (300) calendar days, commencing on the date specified in OWNER’S written "Notice to Proceed." Time is of the essence with this contract.

The CONTRACTOR further agrees to comply with applicable statutes governing construction contracts including the provisions of V.T.C.A., Texas Government Code, Title 10, Subtitle F, Chapter 2253 requiring Payment Bonds and Performance Bonds; and to comply with all of the Terms and Conditions of this contract.

Payments by OWNER shall be warrants issued by the Comptroller of Public Accounts out of monies appropriated to the Texas Parks and Wildlife Department for such purpose and shall be made upon OWNER’S acceptance of all portions of work as prescribed in the Specifications.

The dispute resolution process provided for in Tex. Gov’t Code, Chapter 2260, and the procedures provided in Title 31, Part 2, Chapter 51, Subchapter J of the Texas Administrative Code shall be used by the Owner and the Contractor to attempt to resolve any claim for breach of contract in an amount less than $250,000.00 made by the Contractor, that is not resolved under procedures described throughout the Terms and Conditions of the Contract. Contract disputes for a claim of $250,000.00 or more shall be governed by Civil Practice and Remedies Code, Chapter 114.

The venue of any suit brought for any breach of this Contract is hereby fixed in any court of competent jurisdiction in Travis County, Texas. All payments under this Contract shall be due and payable in Travis County, Texas.
The Contractor hereby assigns to Owner any and all claims for overcharges associated with this Contract which arise under the antitrust laws of the United States 15 U.S.C.A. SEC. 1 et. seq. (1973).

This Agreement is subject to cancellation, without penalty, either in whole or in part, if funds are not appropriated by the Texas Legislature or otherwise made available to the Texas Parks and Wildlife Department for the specified services under this Agreement.

The said parties for themselves, their heirs, successors, executors, administrators, and assigns, do hereby agree to full performance of the covenants herein contained.

IN WITNESS WHEREOF, the parties to these presents have executed this Contract in two (2) counterparts, each of which shall be deemed an original, in the day and year first above written.

Contractor:

By: ________________________________ Date ________________________________
Title: ______________________________

Owner: Texas Parks and Wildlife Department

By: ________________________________ Date ________________________________
Title: ______________________________
STATE OF TEXAS

COUNTY OF TRAVIS

KNOOW ALL MEN BY THESE PRESENTS:

That we, _______________________________________, as PRINCIPAL,
and _______________________________________, as SURETY(IES),

are hereby held and firmly bound unto the State of Texas in the penal sum of:

_________________________________ Dollars ($__________) for the payment, whereof, the said PRINCIPAL and SURETY(IES) bind themselves, their heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

The conditions of this obligation are such that whereas the PRINCIPAL entered into a certain contract dated ______, 20___, hereto attached, and made a part hereof, with the State of Texas, acting by and through the Texas Parks and Wildlife Department, to commence and complete certain public works described as: Project Number 128695 Village Creek State Park – Facility Damage Repairs, Lumberton, Hardin County, Texas.

NOW THEREFORE, the conditions of this obligation are such that, if the PRINCIPAL shall faithfully perform the contract in accordance with the plans, specifications, and contract documents, and as provided in TITLE 10, TEXAS GOVERNMENT CODE, CHAPTER 2253 shall fully indemnify and save harmless the State of Texas from all cost and damage which the State of Texas may suffer by reason of the PRINCIPAL’S default or failure to do so and shall fully reimburse and repay the State of Texas all outlay and expense which the State of Texas may incur in making good any such default, then obligation shall be null and void, otherwise it shall remain in full force and effect.

Provided further, that if any legal action be filed upon this bond, venue shall lie in Travis County, Texas and that the said surety(ies) 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 thereunder, or the Specifications accompanying the same, shall in anywise 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 or to the Specifications.

In the event PRINCIPAL is in default under the contract as defined herein, SURETY(IES) will within fifteen (15) days of determination of such default take over and assume completion of said contract and become entitled to the payment of the balance of the contract price.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their several seals this ______ day of ______________________, 20___, the name and corporation seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

PRINCIPAL

BY ______________________________________

SURETY

BY ______________________________________
TEXAS PARKS AND WILDLIFE

PAYMENT BOND

STATE OF TEXAS

COUNTY OF TRAVIS

Project Number 128695
Contract Number ________

KNOW ALL MEN BY THESE PRESENTS:

That we, ________________________, as PRINCIPAL,

and ________________________, as SURETY(IES),

are hereby held and firmly bound unto the State of Texas in the penal sum of:

$__________

Dollars ($__________)

for the payment, whereof, the said PRINCIPAL and SURETY(IES) bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation are such that whereas the PRINCIPAL entered into a certain contract dated ______________, 20__, hereto attached, and made a part hereof, with the State of Texas, acting by and through the Texas Parks and Wildlife Department, to commence and complete certain public works described as:

PROJECT NUMBER 128695 VILLAGE CREEK STATE PARK – FACILITY DAMAGE REPAIRS, HARDIN COUNTY, TEXAS

NOW THEREFORE, the conditions of this obligation are such that, if the PRINCIPAL shall promptly make payment to all claimants as defined in TITLE 10, TEXAS GOVERNMENT CODE, CHAPTER 2253, as amended, supplying labor and materials in the prosecution of the work provided for in said contract and any and all duly authorized changes to said contract that may hereafter be made, notice of such changes to the SURETY(IES) being hereby waived, then, this obligation shall be null and void, otherwise it shall remain in full force and effect.

This bond is made and entered into solely for the protection of all claimants supplying labor and materials in the prosecution of the work provided for in said contract, and all such claimants shall have a direct right to action under the bond as provided in TITLE 10, TEXAS GOVERNMENT CODE, CHAPTER 2253, as amended.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their several seals this ______ day of ________________, 20__, the name and corporation seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

PRINCIPAL

BY______________________

SURETY

BY______________________
TEXAS PARKS AND WILDLIFE

CONTRACTOR'S PROGRESS PAYMENT AFFIDAVIT

STATE OF TEXAS

COUNTY OF TRAVIS

PROJECT NUMBER 128695

CONTRACT NUMBER

BEFORE ME THE UNDERSIGNED AUTHORITY, on this day personally appeared

________________________ who being
duly sworn, on oath, says that he/she is a duly authorized representative of

________________________, CONTRACTOR, and all

terms of the Contract for the completion of certain public works described as

Project Number 128695 Village Creek State Park – Facility Damage Repairs, Hardin County, Texas

have been satisfactorily completed to the extent indicated on the attached voucher and that ALL sums of money due for payrolls, bills for material and equipment, and other indebtedness connected with the Work for which OWNER or its property might in any way be responsible, to the best of his/her knowledge and belief have been paid or will be paid or otherwise satisfied within ten days after receipt of the requested payment from the OWNER, or within the period of time required by Title 10, Texas Government Code, Section 2251.022.

Affiant agrees to indemnify and hold Owner harmless from any liens, debts or obligations which arise as a result of labor or materials provided by or through Affiant to the project. Affiant further agrees to indemnify and hold harmless all real property on which the improvements were constructed and all interests in such property, including leasehold interests, from any liens, debts, or obligations arising from any labor or materials provided by or through Affiant to the project.

Payments to subcontractors for labor and/or materials which are pending or disputed as of the date hereof are:

<table>
<thead>
<tr>
<th>Individual or Company Name</th>
<th>Mailing Address</th>
<th>Amount Owed</th>
</tr>
</thead>
<tbody>
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<td>_________________________</td>
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</table>

Instructions: Affidavit must be signed by an individual owner, a partner in a partnership, or by a person authorized by bylaws or Board of Directors to sign for a corporation. If Contractor is a joint venture or partnership of individuals, either may sign, but if a joint venture in which a corporation is a party, separate affidavits must be executed by each corporation and by each individual owner or partnership.

________________________
Signature

________________________
Title

________________________
Notary Public in and for
County, Texas

Sworn to and subscribed before me this ______ day of _________ 20__.

(SEAL)
TEXAS PARKS AND WILDLIFE

CONTRACTOR'S FINAL PAYMENT AFFIDAVIT

STATE OF TEXAS
COUNTY OF TRAVIS
PROJECT NUMBER 128695
CONTRACT NUMBER

BEFORE ME THE UNDERSIGNED AUTHORITY, on this day personally appeared

who being duly sworn, on oath, says that he/she is a duly authorized representative of

_________________________________________,

CONTRACTOR,
and that all terms of the Contract for the completion of certain public works described as

Project Number 128695 Village Creek State Park – Facility Damage Repairs, Hardin County, Texas

have been satisfactorily completed and that ALL sums of money for payrolls, bills for material and equipment, and other indebtedness connected with the Work for which Owner or its property might in any way be responsible, to the best of his/her knowledge and belief, have been paid or will be paid or otherwise satisfied within ten days after receipt of final payment from the Owner, or within the period of time required by Title 10, Texas Government Code, Section 2251.022. Payments not made in full at the date of this affidavit are listed below.

Affiant hereby waives all claims against the Owner. (List any exceptions):

Affiant agrees to indemnify and hold Owner harmless from any liens, debts or obligations which arise as a result of labor or materials provided by or through Affiant to the project. Affiant further agrees to indemnify and hold harmless all real property on which the improvements were constructed and all interests in such property, including leasehold interests, from any liens, debts, or obligations arising from any labor or materials provided by or through Affiant to the project.

Final payments to subcontractors for labor and/or materials which are pending or disputed as of the date hereof are:

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<thead>
<tr>
<th>Individual or Company Name</th>
<th>Mailing Address</th>
<th>Amount Owed</th>
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INSTRUCTIONS: Affidavit must be signed by an individual owner, or partner in a partnership, or by a person authorized by bylaws or Board of Directors to sign for a corporation. If Contractor is a joint venture or partnership of individuals, either may sign, but if a joint venture in which a corporation is a party, separate affidavits must be executed by each corporation and by each individual owner or partnership. In the event subcontractors, laborers, or materialmen have not been paid in full, Contractor shall list hereon the amount owed and the name and address of each subcontractor, laborer, or materialman to whom such payment is owed. Add additional pages if required.

__________________________
Signature

__________________________
Title

__________________________
Notary Public in and for
__________________________ County, Texas

Sworn to and subscribed before me this ______ day of ________ 20___.

(SEAL)
CONSENT OF SURETY COMPANY TO FINAL PAYMENT

PROJECT NO. 128695 CONTRACT NO. 

TITLE OF PROJECT FACILITY DAMAGE REPAIRS 
PROJECT LOCATION VILLAGE CREEK STATE PARK 

OWNER: Texas Parks and Wildlife Department 
4200 Smith School Road 
Austin, Texas 78744

CONTRACTOR: 
(Name) 
(Address) 
(City, State, Zip Code)

SURETY COMPANY: 
(Name) 
(Address) 
(City, State, Zip Code)

on bond of ____________________________, Contractor, hereby approves of the final payment by Owner to Contractor on the above Contract, and agrees that final payment to the Contractor shall not relieve Surety Company of any of its obligations to Owner as set forth in said Surety Company's bond.

IN WITNESS WHEREOF, Surety Company has hereunto set its hand this _____ day of ____________, 20__.

SURETY COMPANY:

By: _____________________________ 
(Signature) 

______________________________ 
(Printed Name) 

______________________________ 
(Title)
NON-USE OF ASBESTOS CONTAINING MATERIALS AFFIDAVIT - CONTRACTOR

STATE OF TEXAS §
COUNTY OF TRAVIS §

Project Name: VILLAGE CREEK STATE PARK - FACILITY DAMAGE REPAIRS
Project Number: 128695

By the signature below, the signatory for the Contractor certifies that neither he nor the firm, corporation, partnership or institution represented by the signatory or anyone acting for the firm providing Construction Services for this project, including Subcontractors, have utilized materials, procedures or processes that knowingly or intentionally contain asbestos materials.

Signature: ____________________________
Printed Name: ____________________________
Title: ____________________________
Company: ____________________________
Date: ____________________________

State of Texas
County of ____________

Sworn to and subscribed before me on the ______ day of __________, 20___ by ______________ (name/signature of signer) the undersigned authority on behalf of said Contractor.

(Notary Public's Seal)

Notary Public's Signature
My commission expires: ________

Revised August 2007
CONSTRUCTION DOCUMENTS
DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01000 – SPECIAL CONDITIONS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of Contract, including Uniform General and Supplementary General Conditions and other Division 1 specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK:

Furnish all labor, materials, tools, equipment and incidentals necessary for performance of all work associated with PROJECT NUMBER 128695 VILLAGE CREEK STATE PARK, FACILITY DAMAGE REPAIRS, LUMBERTON, HARDIN COUNTY, TEXAS, such work being as more particularly described in these Special Conditions, the drawings, and elsewhere in these Invitation for Bids and Contract Documents.

1.03 INQUIRIES:

All inquiries regarding the Invitation for Bids and Contract Documents, including any apparent discrepancies thereto and administration of the contract, shall be directed to the Texas Parks and Wildlife Department, Infrastructure Division, 4200 Smith School Road, Austin, Texas 78744, Serena Holster, Contract Manager, 512/389-8761.

1.04 EXAMINATION OF SITE:

Bidders should visit the site and be thoroughly familiar with job conditions such as the location, accessibility, and general character of the site and/or building prior to submitting a bid. Visits shall be scheduled with Gary Holmes, Construction Manager, 512/627-4296. Failure to give proper consideration to site conditions when preparing bids will not constitute grounds for additional compensation. (See UGC, Article 3).

1.05 INTENT OF THE CONTRACT DOCUMENTS: (See also UGC, Article 6)

A. The intent of the Contract Documents is to include all of the work for the contract price and within the contract time. Contract Documents are to be considered as cooperative. All work not specified and/or not shown on the drawings but which is necessary for the completion and/or functioning and operation of the project, shall be understood and implied as part of the contract to be performed by the Contractor for the contract price. Such work shall be executed by the Contractor in the same manner and with the same character of material as other portions of the contract without extra compensation.

B. It is the intention of the Contract Documents to call for finished work, tested, and ready for operation.

1. Any apparatus, material or work described in the Contract Documents and any incidental accessories necessary to make the work complete in all respects and ready for operation (even though not particularly specified) shall be furnished, delivered, and installed by the Contractor without additional expense to the Owner.
2. Minor details not usually shown or specified but necessary for proper installation and
   operation are included in the work just as if herein specified or shown.

C. All work shall be performed and furnished by the Contractor in accordance with accepted
   construction industry practices.

D. A duplication of work is not intended by the Contract Documents and any duplication shall not
   become a basis for extra cost to the Owner.

E. Explanatory notes on the drawings shall take precedence over conflicting drawn-out indications.
   Figured dimensions on drawings shall take precedence over scale measurements. Where figures
   are lacking, scale measurements may be followed, but in all cases the measurements are to be
   checked from the work in place and those measured dimensions taken at the site shall take
   precedence over scale dimensions in drawings.

F. Upon discovery by Contractor of errors, omissions or inconsistencies in the Contract Documents,
   Contractor shall promptly report them to the Owner and shall wait for instruction from Owner
   prior to proceeding with the work.

G. In the event of conflict between the Special Conditions, the Supplementary Conditions, and the
   Uniform General Conditions, the following priority order shall apply in resolving such conflicts:
   Special Conditions, Supplementary Conditions, and then Uniform General Conditions.

H. The drawings consist of all project drawings and any drawings issued by addenda.

1.06 ADDENDA:

Any addenda issued in writing by the Owner during the period of bidding shall be included in the bid and
Bidder's receipt of addenda shall be acknowledged in the bid form. Such addenda shall become a part of
the contract and shall modify the Contract Documents accordingly. Oral changes in the work made during
the period of bidding will not be binding. **BIDDER'S FAILURE TO ACKNOWLEDGE RECEIPT
OF ADDENDA MAY RESULT IN REJECTION OF BID.**

1.07 PERMITS AND LAWS (See also UGC Article 3):

Contractor shall comply with all laws, ordinances, statutes, rules and regulations applicable to the project,
including but not limited to those pertaining to the collection, transportation and disposal of trash and
refuse and shall obtain such permits, licenses or other authorizations as may be required.

If applicable governmental laws, rules, regulations or ordinances conflict with the Contract Documents,
then such laws, rules, regulations, or ordinances shall govern instead of the Contract Documents, except
in such cases where the Contract Documents exceed them in quality of materials or labor, then the
Contract Documents shall be followed.

1.08 PRECONSTRUCTION CONFERENCE AND PROGRESS MEETINGS: (See also UGC Article 3)

After issuance of the Notice to Proceed letter, approval of Pre-Construction (PR) submittals and prior to
start of work, a conference between the Owner and the Contractor will be held to discuss provisions of
the Contract Documents and to coordinate the work effort. Attendance by Contractor and Contractor's
superintendent(s) is required, along with major trades if requested by Owner. Construction progress
meetings may be called at any time by the Owner’s Project Manager, On-Site ODR, or the Contractor to
review job progress or problems.
1.09 SUBMITTALS:

A. GENERAL (See also UGC Article 8):

1. A TPWD standard Submittal Cover Sheet must accompany each numbered submittal set. One Submittal per Submittal Cover Sheet.

2. The number of copies of submittals required for each item shall be not less than one (1) electronic copy, unless specified otherwise, for Owner's use, plus the number of additional copies that the Contractor desires for his own use.

3. The Contractor must double-check and sign all submittals before forwarding them to the Owner for review and action.

4. The Architect/Engineer and the Owner will review the submittal data. If there are no exceptions taken to the submittal, the original and three copies will be retained by the Owner. All remaining copies will be returned to the Contractor. The Contractor must keep one copy at the jobsite at all times.

5. If further action is required by the Contractor, Owner will retain three copies of the submittal data for the Owner’s use and return all remaining copies to the Contractor.

6. Any and all costs, direct or indirect, incurred by Owner in reviewing submittals in excess of two (2) times will be charged to the Contractor and deducted from the total price for the work.

7. Owner’s approval of shop drawings and/or any aspects of the work shall not act to transfer Contractor’s responsibility for, nor relieve Contractor from the performance of any of Contractor’s duties set forth in the contract documents.

B. PRE-CONSTRUCTION SUBMITTALS: The following PR Submittals shall be submitted by the Contractor for the Owner’s review and approval. Contractor’s failure to obtain approval of PR submittals will not constitute grounds for additional time. Owner will provide more specific clarification regarding the requirements for each PR Submittal.

1. Submittal PR-1 – To be submitted by the Contractor for the Owner’s review and approval within twenty-one (21) calendar days from receipt of Notice of Selection. Owner's Approval of PR 1 submittals is a prerequisite to the scheduling of the pre-construction meeting and start of construction activities. Contractor’s failure to obtain approval of PR submittals will not constitute grounds for additional time (See also UGC Article 3)

   a. Contractor’s Superintendent: List of name and qualifications of the person designated as project superintendent.

   b. Subcontractors/Materials Suppliers: List of all subcontractors and major material/equipment suppliers that Contractor and Contractor’s major subcontractors propose to use. This list shall include correct names, mailing addresses and phone numbers.

   c. Contractor’s Authorized Representatives: List of names and titles of Contractor’s representatives authorized to sign contractual documents and construction vouchers.

   d. Licensed Craftspersons: List of names, qualifications and licenses of all licensed crafts required by the contract documents.
2. Submittal PR-2 – To be submitted by the Contractor for the Owner’s review and approval within twenty-one (21) calendar days from receipt of Notice of Selection. Owner’s Approval of PR 2 submittals is required prior to requesting payment. Contractor’s failure to obtain approval of PR submittals will not constitute grounds for additional time (See also UGC Article 3)

   a. Schedule of Values, itemizing material and labor for each classification of work. (See also UGC, Article 10)
      1. Owner will provide forms entitled “Schedule of Values” for the Contractor’s use in preparing the breakdown. After contract award, the Owner will also provide further clarification including an example.

   2. Itemization of material and labor costs is required so the Owner may make progress payments on materials delivered. For each bid item or classification of work to be listed in the “Type of Work” column on the Schedule of Values, the Contractor shall multiply the unit bid price by the estimated quantity for each bid item to arrive at the “Contract Cost” for each such bid item. Contractor shall separately itemize material and labor costs for each such bid item in the “Type of Work” column.

   b. Work Progress Schedule (in duplicate) of Contractor’s Proposed Construction Schedule for work tasks in relation to the entire project. (See also UGC, Article 9) Owner will provide a schedule bar chart form to aid the Contractor in preparing a schedule. The Contractor shall follow this format and must indicate all work tasks as well as differentiate critical path work tasks from non-critical path tasks showing the beginning and ending dates for each critical and non-critical path work task.

   c. Submittal Register: Submittal Register shall be organized by specification section, listing all items to be furnished for review and approval by the A/E and the Owner, including anticipated sequence and submittal dates. (Refer to Article 8, specifically 8.3.1.3, of the Uniform General Conditions.)

C. MATERIAL SUBMITTALS: To be submitted to Owner prior to the installation of any materials. It is the Contractor’s responsibility to incorporate lead time required for review, resubmittal, ordering, manufacturing, fabrication and delivery. Contractor is responsible if a delay in lead time planning affects the critical path.

   1. Contractor shall submit manufacturer’s information on all materials and equipment, regardless of whether substitutions are being requested.

   2. Substitution requests must be submitted early enough to allow time for evaluation by the Owner and for re-submittal, if required. Contractor’s substitution requests shall address the following factors which will be considered in evaluating the proposed substitution:

      a. Whether the evaluation and acceptance of the proposed substitution will prejudice the Contractor’s achievement of Substantial Completion on time;

      b. Whether acceptance of the substitution for use in the work will require a change in any of the Contract Documents to adapt the design to the proposed substitution.

      c. Whether incorporation or use of the substitution in connection with the work is subject to payment of any license fee or royalty.
d. Whether all variations of the proposed substitution from the items originally specified are identified.

e. Whether available maintenance, repair, and replacement service are indicated. The manufacturer shall have a local service agency (within 50 miles of the site) which maintains properly trained personnel and adequate spare parts and is able to respond and complete repairs within 24 hours.

f. Whether an itemized estimate is included of all costs that will result directly or indirectly from acceptance of such substitution, including cost of redesign and claims of other contractors affected by the resulting change.

g. Whether the proposed substitute item meets or exceeds the experience and/or equivalency requirements listed in the appropriate technical specifications.

3. No materials shall be ordered or installed until submittals for such materials have been received and acted upon by the Owner.

1.10 QUALITY ASSURANCE (See also UGC Article 8):

A. The Owner’s On-Site ODR will periodically inspect and observe the construction progress, procedures, and materials of the Contractor. The Contractor shall coordinate all efforts with the On-Site ODR, offer full cooperation to facilitate such observations, and shall be responsive to questions from such On-Site ODR regarding methods, equipment, materials, and intentions in pursuing the work or any particular thereof. Such observation by the Owner shall not be construed as construction supervision nor indication of approval of the manner or location in which the work is being performed as being a safe practice or place.

B. The On-Site ODR’s responsibilities include but are not limited to:

1. Providing quality assurance for the Owner.
2. Submitting written reports concerning the current status of the work.
3. Reviewing, and verifying to the Owner the amounts shown on the Contractor’s monthly Construction Voucher.
4. Requesting and receiving payroll and materials invoice amounts from the Contractor.
5. Witnessing testing and confirming in writing to the Owner the results of all tests.

C. Inspections, Notification, and Scheduling:

1. The Contractor shall notify the On-Site ODR when work is ready for inspection or testing. The Contractor shall give such notifications sufficiently in advance of other work to prevent delays. A minimum of five (5) working days advance notice is required, and Contractor shall include in his work schedule such notice periods for inspections and/or testing.
2. Tests cannot be conducted and work cannot be covered-up until the On-Site ODR observes and authorizes continuation of work. The Contractor shall bear all costs for re-tests and for removal and replacement of construction resulting from unauthorized continuation.
3. Should ODR fail to make the necessary inspection within the agreed period, Contractor may proceed with cover-up Work after making every reasonable effort to contact the ODR and after documenting the Work, but is not relieved of responsibility for Work to comply with requirements of the Contract Documents.
D. All permanent utilities shall be connected before final tests are conducted for equipment and systems. Final operational tests shall be conducted prior to project acceptance by the Owner. The Contractor shall provide the materials, energy, equipment and personnel to conduct the tests required in the contract.

E. Contractor's failure to provide notification to Owner of inspection or testing requirements shall void any certifications of testing and shall require the Contractor to re-test at the Owner's request. All expenses for re-testing shall be paid by the Contractor.

F. The Owner (including Owner's On-Site ODR) may reject work not conforming to the contract documents. If the Owner rejects work and/or materials incorporated into the project, Contractor shall bear all expenses associated with testing to prove compliance with the Contract Documents, including but not limited to engineering/architectural expenses associated with such testing. Any and all such expenses that are paid directly by Owner shall be deducted or withheld from subsequent payment(s) to the Contractor.

1.11 INVOICES/PAY REQUESTS AND CHANGE ORDERS:

A. All work items for which Contractor requests payment shall reflect the project number with which those work items are associated. Change Order pricing for items that are already priced in the contractor's bid shall be limited to such price(s) set forth in such bid and shall not be entitled to additional mark-up for overhead and profit.

B. Contractor is required to submit an original Progress Assessment Report (PAR) to TPWD HUB Administration no later than the 5th day of the month. Contractor shall submit a copy of the current month's PAR to the Owner with the application for payment (construction voucher). The PAR is the monthly compliance report verifying Contractor's compliance with the HUB Subcontracting Plan (HSP) including the expenditures the Contractor has made to Subcontractors during the prior month.

1.12 CONTRACT COMPLETION: (See also UGC, Article 9)

A. Contract Period: This contract must be completed within the specified number of days commencing on the date cited in the Notice to Proceed letter.

1. Unless specifically stated as "working day," the term "day" or "calendar day" shall mean every day of the calendar year. Along with the Work Progress Schedule, the Contractor shall submit his schedule for normal working days.

2. Claims for extension of time shall be made in accordance with the provisions of Article 9 of the Uniform General Conditions.

B. Liquidated Damages: The Owner has determined that the completion of the work in this contract is critical to the proper operation of the facility, and the Contractor's failure to complete the work within such time will cause damage to the Owner. Since exact damages are difficult to determine or forecast, the sum of $339.22 per calendar day is hereby established by the parties as a reasonable estimate of just compensation to the Owner for the failure of the Contractor to complete the work by the time set forth in the contract or authorized extension thereto. Said sum will be deducted from the money due or to become due to the Contractor, not as a penalty but as liquidated damages from added expense, including administrative and inspection costs, for each and every calendar day the work or any portion thereof remains incomplete after the expiration of the time limit set in the contract or authorized extension.
C. Charges for liquidated damages will begin accumulating on the first calendar day following the final contract completion date and continue until the date of final acceptance as established by the Owner. Final acceptance will not be issued until all punch list items have been completed.

1.13 CONTRACT CLOSE-OUT: (See also UGC Article 12)

A. Notification: The Contractor shall provide Owner 15-days' written notice requesting final inspection.

B. Final Submittals: At the time of the Contractor’s request for final inspection, Contractor shall provide to Owner the following material (in addition to final payment documents also required by UGC Article 12 and set forth below in subsection D) which the Contractor shall have accumulated and retained during the course of the project:

1. Two (2) hard copy and two (2) electronic set of all project submittals and all equipment and material warranties/guarantees as provided by all appropriate suppliers or manufacturers.
2. One (1) hard copy and one (1) electronic set of “as-built documents” showing all revisions to the original Contract Documents. Drawings shall also show routing of underground outside utilities and conduits with actual dimensions from buildings or other known landmarks.
3. Any and all other documents, keys, manuals, etc. required by the Contract Documents.

C. Clean-up: At completion of the job, the Contractor shall remove all waste products, dust, dirt, debris, packaging, trash, fingerprints, grease containers, and other deleterious materials and marks from the site. Refer to individual specification sections for special cleaning required by that section. Contractor is expected to leave the project in spotless, “like new” condition.

D. Final Payment: Submit final construction voucher, Consent of Surety Company to Final Payment, and the Contractor’s Final Payment Affidavit.

1.14 CONTRACTOR’S RESPONSIBILITY DURING THE WARRANTY PERIOD (See also UGC, Article 13):

A. Warranties: The Contractor shall guarantee all work against defects in materials, equipment, or workmanship for a period of one year from the date of final acceptance. The Contractor shall also provide any additional warranties and guarantees of work items and components as hereinafter specified.

B. Service: All necessary service to each electrical and mechanical system and other work requiring specialized training shall be furnished by the Contractor at no cost to the Owner for a period running concurrently with the one year warranty period specified above. Such service shall not include repair of damage due to storm, vandalism or other factors entirely beyond the control of the Contractor.

C. The Contractor will receive no additional compensation for work performed during the one-year warranty period.

1.15 REFERENCES AND STANDARDS:

All contractors, including sub-contractors shall ensure all personnel follow the adopted Standardized Building Codes in all design and construction work.
1.16 NON-APPROPRIATION OF FUNDS:

Any contract resulting from this solicitation is subject to termination or cancellation, without penalty to TPWD, either in whole or in part, subject to the availability of state funds. TPWD is a state agency whose authority and appropriations are subject to actions of the Texas Legislature. If TPWD becomes subject to a legislative change, revocation of statutory authority, or lack of appropriated funds which would render TPWD’s or contractor’s delivery or performance under the contract impossible or unnecessary, the contract will be terminated or cancelled and be deemed null and void. In the event of a termination or cancellation under this Section, TPWD will not be liable to contractor for any damages, which are caused or associated with such termination, or cancellation and TPWD will not be required to give prior notice.

1.17 ANTIQUITIES:

Contractor shall take precaution to avoid disturbing primitive records and antiquities of archaeological, paleontological or historical significance. No objects of this nature shall be disturbed without written permission of Owner and the Texas Historical Commission. When such objects are uncovered unexpectedly, the Contractor shall stop all Work in close proximity and notify the ODR and the Texas Historical Commission of their presence and shall not disturb them until written permission and permit to do so is granted. All primitive rights and antiquities, as defined in Chapter 191, Texas Natural Resource Code, discovered on the Owner’s property shall remain property of State of Texas, the Texas Historical Commission. It is determined by Owner, in consultation with the Texas Historical Commission that exploration or excavation of primitive records or antiquities on Project Site is necessary to avoid loss, Contractor shall cooperate in salvage work attendant to preservation.

1.18 PROPRIETARY OR CONFIDENTIAL INFORMATION; TEXAS PUBLIC INFORMATION ACT:

A. Any proprietary, trade secret or otherwise confidential information Bidder includes in its Bid must be clearly labeled as proprietary or confidential information, and Bidder must identify the specific exception to disclosure in the Public Information Act (PIA). Merely making a blanket claim the entire Bid is protected from disclosure because it contains some proprietary information is not acceptable and shall make the entire Bid subject to release under the PIA. In order for the Owner to initial the process of seeking an Attorney General opinion on the release of proprietary or confidential information, the specific provisions of the Bid that are considered by the Bidder to be proprietary or confidential must be clearly labeled as described herein. Any information which is not clearly identified as proprietary or confidential shall be deemed to be subject to disclosure pursuant to the PIA.

B. Information the Bidder provides to the Owner in response to this solicitation will be considered public and subject to disclosure under the Texas Public Information Act.

C. Contractor is required to make any information created or exchanged with the state pursuant to this contract, and not otherwise excepted from disclosure under the Texas Public Information Act, available in a format that is accessible by the public at no charge to the state. Contractor will make sure information not excepted from disclosure available in an electronic format that is accessible to the public unless Contractor receives written approval from Owner to provide information in a different format, and such approval becomes a part of this Contract.
1.19 RIGHT TO AUDIT/RECUEDS RETENTION:

Contractor understands that acceptance of funds under this contract acts as acceptance of the authority of the State Auditor’s Office, TPWD or any successor agency, to conduct an audit or investigation in connection with those funds. Contractor further agrees to cooperate fully with the above parties in the conduct of the audit or investigation, including providing all records requested. Contractor shall ensure that this paragraph concerning the State’s authority to audit funds received indirectly by subcontractors through Contractor and the requirement to cooperate is included in any subcontract it awards. Contractor shall maintain and retain supporting fiscal and any other documents relevant to showing that any payments under this Contract funds were expended in accordance with the laws and regulations of the State of Texas, including but not limited to, requirements of the Comptroller of the State of Texas and the State Auditor. Contractor shall maintain all such documents and other records relating to this Contract and the State’s property for a period of seven (7) years after the date of submission of the final invoices or until a resolution of all billing questions, whichever is later. Contractor shall make available at reasonable times and upon reasonable notice, and for reasonable periods, all documents and other information related to the work of this Contract. Contractor and the subcontractors shall provide the State Auditor with any information that the State Auditor deems relevant to any investigation or audit. Contractor must retain all work and other supporting documents pertaining to this Contract, for purposes of inspecting, monitoring, auditing, or evaluating by TPWD and any authorized agency of the State of Texas, including an investigation or audit by the State Auditor. Contractor shall cooperate with any authorized agents of the State of Texas and shall provide them with prompt access to all of such State’s work as requested. Contractor’s failure to comply with this Section shall constitute a material breach of this Contract and shall authorize TPWD and the State of Texas to immediately assess appropriate damages for such failure.

1.20 IMMIGRATION REFORM:

The Contractor represents and warrants that it shall comply with the requirements of the Immigration Reform and Control Act of 1986 and 1990 regarding employment verification and retention of verification forms for any individuals hired on or after November 6, 1986, who will perform any labor or services under the Contract and the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA) enacted on September 30, 1996.

1.21 CIVIL RIGHTS:

The Contractor agrees that no person shall, on the ground of race, color, religion, sex, national origin, age, disability, political affiliation, or religious belief, be excluded from the participation in, be denied the benefits of, be subjected to discrimination under, or be denied employment in the administration of, or in connection with, any program or activity funded in whole or in part with funds available under this Contract. The Contract shall comply with Executive Order 11246, “Equal Employment Opportunity,” as amended by Executive Order 11375, “Amending Executive Order 11246 relating to Equal Employment Opportunity,” and as supplemented by regulations at 41 C.F.R. Part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity Department of Labor.”

1.22 FEDERAL, STATE AND LOCAL REQUIREMENTS:

Contractor shall demonstrate on-site compliance with the Federal Tax Reform Act of 1986, Section 1706, amending Section 530 of the Revenue Act of 1978, dealing with issuance of Form W-2’s to common law employees. Contractor is responsible for both federal and State unemployment insurance coverage and standard Worker’s Compensation insurance coverage. Contractor shall comply with all federal and State tax laws and withholding requirements. The State of Texas shall not be liable to Contractor or its employees for any Unemployment or Worker’s Compensation coverage or federal or State withholding.
requirements. Contractor shall indemnify the State of Texas and shall pay all costs, penalties or losses resulting from Contractor’s omission or breach of this Section.

1.23 SEVERABILITY CLAUSE:

If any provision of this Contract is construed to be illegal or invalid, such construction will not affect the legality or validity of any of its other provisions. The illegal or invalid provision will be deemed severable and stricken from the contract as if it had never been incorporated herein, but all other provisions will remain in full force and effect.

1.24 NO WAIVER:

Nothing in this Contract shall be construed as a waiver of the state’s sovereign immunity. This Contract shall not constitute or be construed as a waiver of any of the privileges, rights, defenses, remedies or immunities available to the State of Texas. The failure to enforce or any delay in the enforcement of any privileges, rights, defenses, remedies or immunities available to the State of Texas under this Contract or under applicable law shall not constitute a waiver of such privileges, rights, defenses, remedies or immunities or be considered as a basis for estoppel. The Owner does not waive any privileges, rights, defenses or immunities available to the Owner by entering into this Contract or by its conduct prior to or subsequent to entering into this Contract.

1.25 DECEPTIVE TRADE PRACTICES; UNFAIR BUSINESS PRACTICES:

Contractor represents and warrants that it has not been the subject of allegations of Deceptive Trade Practices violations under Tex. Bus. & Com Code, Chapter 17 or allegations of any unfair business practice in any administrative hearing or court suit and that Contractor has not been found to be liable for such practices in such proceedings. Contractor certifies that it has no officers who have served as officers of other entities who have been the subject allegations of Deceptive Trade Practices violations or allegations of any unfair business practices in an administrative hearing or court suit, and that such officers have not been found to be liable for such practices in such proceedings.

1.26 FELONY CRIMINAL CONVICTIONS:

Contractor represents and warrants that Contractor has not and Contractor’s employees have not been convicted of a felony criminal offense or that if such a conviction has occurred, Contractor has fully advised the Owner as to the facts and circumstances surrounding the conviction.

1.27 ASSIGNMENTS:

The Contractor shall not assign its rights under the Contract or delegate the performance of its duties under the Contract without prior written approval from the Owner.

1.28 INDEPENDENT CONTRACTOR:

The Contractor shall not render the Contractor to an employee, officer or agent of the Owner for any purpose. The Contractor is and shall remain an independent contractor in relationship to the Owner. The Owner shall not be responsible for withholding taxes from payments made under the Contract. The Contractor shall have no claim against the Owner for vacation pay, sick leave, retirement benefits, social security, worker’s compensation, health or disability benefits, unemployment insurance benefits, or employee benefits of any kind.
1.29 PATENTS, TRADEMARKS OR COPYRIGHTS:

Contract agrees to defend and indemnify the Owner and State from claims involving infringement or violation of patents, trademarks, copyrights, trade secrets, or other proprietary rights, arising out of the Owner’s or the State’s use of any good or service provided by the Contractor as a result of this solicitation.

1.30 FORCE MAJEURE:

The Owner may grant relief from performance of contract if the Contractor is prevented from performance by an act of war, order of legal authority, act of God, or other unavoidable cause not attributable to the fault or negligence of Contractor. The burden of proof for the need of such relief shall rest upon the Contractor. To obtain release based on force majeure, the Contractor shall file a written request with the Owner.

1.31 U.S. DEPARTMENT OF HOMELAND SECURITY’S E-VERIFY SYSTEM:

By entering into this Contract, the Contractor certifies and ensures that it utilizes and will continue to utilize, for the term of this Contract, the U.S. Department of Homeland Security’s E-Verify system to determine the eligibility of:

A. All persons employed to perform duties within Texas, during the term of the Contract; and
B. All persons (including subcontractors) assigned by the Respondent to perform work pursuant to the Contract, within the United States of America.

The Contractor shall provide, upon request of Texas Parks and Wildlife Department, an electronic or hardcopy screenshot of the confirmation or tentative non-confirmation screen containing the E-Verify case verification number for attachment to the Form I-9 for the three most recent hires that match the criteria above, by the Contractor, and Contractor’s subcontractors, as proof that this provision is being followed.

If this certification is falsely made, the Contract may be immediately terminated, at the discretion of the state and at no fault to the state, with no prior notification. The Contractor shall also be responsible for the costs of any re-solicitation that the state must undertake to replace the terminated Contract.

1.32 MINIMUM EXPERIENCE REQUIREMENTS:

CONTRACTOR MUST SHOW EVIDENCE OF THREE (3) SUCCESSFUL CONSTRUCTION PROJECTS SIMILAR TO THIS PROJECT (AS JUDGED BY OWNER) TO BE ELIGIBLE FOR AWARD OF THIS CONTRACT. THIS EXPERIENCE MUST HAVE OCCURRED WITHIN THE PAST (5) YEARS, MEASURED BACKWARDS FROM THE ISSUE DATE OF THIS SOLICITATION. PROJECTS SHOULD DEMONSTRATE SIMILAR SIZE, SCOPE, COMPLEXITY, AND ENVIRONMENTAL CONDITIONS TO THE REFERENCED PROJECT AREA AS JUDGED BY THE OWNER.

1.33 RESERVED

1.34 RESERVED

1.35 RESERVED
1.36 RESERVED

PART 2 – PRODUCTS

2.01 CONSTRUCTION MATERIALS:

A. Materials:
   1. All materials shall be new and of the quality specified. Materials shall be free from defects. Where manufacturer’s names are mentioned in the specifications, it has been done in order to establish a standard of quality and construction, not to preclude the use of equal or superior materials or products of other manufacturers. However, substitutions must have Owner’s prior approval.
   2. Unless otherwise indicated in the specifications or drawings, equipment and material shall be installed in accordance with the manufacturer’s recommendations and shall include such tests as manufacturer recommends.

B. Storage and Protection of Materials:
   1. All materials shall be suitably stored to be protected from damage. Water-tight storage facilities of suitable size with floors raised above the ground shall be provided for all materials subject to damage from exposure to the weather. Other materials shall be stored on blocks off the ground. Materials shall be stored to permit easy access for inspection and identification. Any material which has deteriorated, become damaged or otherwise unfit for use shall not be used in the work (as judged by Owner). Upon completion of all work, or when directed, the Contractor shall remove storage facilities from the site.
   2. During construction, open ends of all drains, piping and conduit, and all openings in equipment, shall be closed before leaving the work at any time so as to prevent the entrance of all foreign matter.

PART 3 – EXECUTION

3.01 CONSTRUCTION SITE AND JOB CONDITIONS:

A. The Contractor’s Superintendent shall be on site at all times that work is in progress.

B. The Contractor will be provided with designated space in the immediate vicinity of the job site for his use during construction. Unauthorized damage to any existing utilities, building facilities, structures, or plant life shall be repaired by the Contractor at no expense to the Owner. The Contractor shall not allow any unsafe or unsanitary conditions to develop as a result of Contractor’s operations.

C. The Contractor shall not allow trash or debris to accumulate on the site. At the end of the contract Contractor shall clean the entire area of any litter resulting from Contractor’s operations. The Contractor shall maintain the premises as clean and presentable as good construction practices will allow at all times.

D. Utilities: Water and electrical power are available and will be furnished by the Owner at no charge to the Contractor. However, any temporary connections, appurtenances or extensions shall be provided by the Contractor at no cost to the Owner and removed from the premises at the conclusion of the contract. Contractor shall provide cellular telephone service at all times and shall keep Owner informed of telephone number.
E. Field Office: The Owner will provide the Contractor with a site on which the Contractor may place a small, temporary office structure.

F. Temporary Toilets: The Contractor shall provide and maintain in neat, sanitary condition toilets and other necessary accommodations for employees' use to comply with the regulations of the State Department of Health or other jurisdictions.

G. Project Identification: There shall be no project signs of any size or type allowed on the project site or surrounding Texas Parks and Wildlife Department property at any time.

H. Fire Protection: The Contractor shall take stringent precautions against fire. Open fires are not allowed unless approved in writing by Owner.

3.02 OCCUPATIONAL SAFETY AND HEALTH STANDARDS (See also UGC Article 7):

Prior to trenching below a depth of four (4) feet (if applicable), a Contractor must submit separate pay items for: (i) trench safety to be determined by the linear feet of trench excavated, and (ii) special shoring requirements, if any, to be determined by the square feet of shoring used, pursuant to Texas Government Code, Title 10, Chapter 2166, Section 2166.303. Such pay item(s), following calculation as required above, shall be quoted on the basis of a total lump sum price.

3.03 LAYOUT OF WORK AND SURVEYS:

The Contractor, at Contractor’s expense, shall be responsible for establishing base lines, and bench marks if applicable, for the limits of the project. The Contractor shall also be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the specifications or on the drawings, subject to such modifications as the Owner may require to meet changed conditions or as a result of necessary modifications to the work.

Contractor shall engage the services of a Registered Public Surveyor, at Contractor’s expense, to provide such stakes, templates, platforms, equipment, tools and materials, and all labor as may be required in laying out any part of the work. It is Contractor’s responsibility to maintain and preserve all stakes and other marks until authorized by Owner to remove them, and if such marks are destroyed by Contractor through Contractor’s negligence prior to their authorized removal, Contractor may be required by Owner to replace the same at Contractor’s expense. Owner may require that work be suspended at any time when location and limit marks established by Contractor are not reasonably adequate to permit checking of the work.

3.04 SITE OPERATIONS:

During construction of this project the site will remain open to public visitation. It is the responsibility of the Contractor to maintain convenient access and egress to park facilities in a manner to be approved by the Owner. The Contractor shall also be responsible for public safety at the construction site. All temporary fencing, barricades, warning lights, signs, and flagmen shall be provided and maintained by Contractor as needed. The Contractor shall maintain security of construction sites.

3.05 CUTTING AND PATCHING:

A. Where indicated in the Contract Documents, this project requires cutting into existing construction for the performance of the work and requires subsequent fitting and patching to restore the existing work to original condition.
B. Utilities:

1. Contractor shall not cut or patch utilities until all necessary approvals and coordination requirements are accomplished.
2. Before cutting services that are to remain permanently or temporarily in service, Contractor shall provide by-pass system as necessary to maintain service.
3. After by-pass and cutting, Contractor shall cap, valve or plug and tightly seal remaining portion of service piping or conduit to prevent entrance of moisture and foreign matter.

C. Structural Work: Contractor shall not cut or patch structural work in a manner that would result in a reduction of load-carrying capacity or of load-deflection ratio.

D. Inspection:

1. Before cutting, Contractor shall examine items to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, Contractor shall take corrective action before proceeding with the work.
2. Contractor shall meet at the work site with all trades involved in cutting and patching. Contractor shall review areas of potential interference and conflict between the various trades and shall coordinate layout of the work and resolve potential conflicts before proceeding with the work.

3.06. AS-BUILT DOCUMENTS (See also UGC Article 6):

The Contractor shall maintain on a separate set of the Contract Documents a record of all changes made during construction (As-Built Documents). The Contractor shall be responsible for keeping these records and neatly noting with colored pencil or ink all changes. Progress payments will not be made to the Contractor unless such records are maintained. Verification by the On-Site ODR of such records is solely for assurance that the records are being maintained. Such inspections shall not constitute review or approval of the as-built documents for accuracy or completeness.

END OF SECTION
SPECIFICATIONS
100% TECHNICAL SPECIFICATIONS

VILLAGE CREEK STATE PARK
FACILITY DAMAGE REPAIRS

for

TPWD Project No. 128695

by

WJE
ENGINEERS
ARCHITECTS
MATERIALS SCIENTISTS

Wiss, Janney, Elstner Associates, Inc.

WJE Project No. 2018.1365.0

March 6, 2019
TITLE AND CERTIFICATION PAGE
FOR
PROJECT MANUAL

OWNER: Texas Parks and Wildlife Department
Austin, Texas

PROJECT: Facility Damage Repairs
Village Creek State Park
8854 Park Road 74
Lumberton, Texas 77657

TPWD PROJECT NUMBER: 128695
WJE PROJECT NUMBER: 2018.1365.0

TPWD PROJECT MANAGER: Ms. Thea Luong
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744
Telephone: (512) 389-8299
Email: thea.luong@tpwd.texas.gov

STRUCTURAL ENGINEER: Wiss, Janney, Elstner Associates, Inc. (WJE)
WJE Certificate of Authorization F-0093
9511 North Lake Creek Parkway
Austin, Texas 78717
512-257-4800 - Telephone
512-219-9883 - Fax

ARCHITECT: Wiss, Janney, Elstner Associates, Inc. (WJE)
9511 North Lake Creek Parkway
Austin, Texas 78717
512-257-4800 - Telephone
512-219-9883 - Fax

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9606 N. MoPac Expressway, Ste. 350
Austin, Texas 78759
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# SECTION 00 01 10

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END OF SECTION

[Signature]

3/6/2019
Structural Specifications
SECTION 02 01 11
SHORING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:
   1. Installation of shoring until affected structural elements are repaired.

B. Related Sections:
   1. Section 03 30 00 – Cast-in-Place Concrete
   2. Section 05 12 00 – Structural Steel
   3. Section 06 10 63 – Exterior Rough Carpentry
   4. Section 31 62 19 – Timber Piers

1.2 REFERENCES

A. ASTM International
   1. ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method
   2. ASTM D2167 – Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
   4. ASTM D2937 – Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method

1.3 COORDINATION

A. Coordinate with Owner’s Representative and with other trades to ensure that shoring does not interfere with Owner’s use of Site or work of other trades.

1.4 SUBMITTALS

A. Product Data: Manufacturer’s literature and technical data indicating type of shoring proposed for use and safe load-carrying capacity of shoring for heights and lengths of shoring components to be used.

B. Shop Drawings: Shop drawings showing locations, distribution, and quantity of shoring. Include connection and bearing details.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store shoring materials in approved storage area at Site, such that materials do not interfere with Owner’s continued use of facility.

B. Limit stored materials on structure to safe loading capacity of structure at time materials are stored, and to avoid permanent deflection.
1.6 PROJECT CONDITIONS

A. Comply with Owner’s limitations and restrictions for Site use and accessibility.

PART 2 PRODUCTS

2.1 MANUFACTURED ASSEMBLIES

A. Design Criteria:
   1. Design for self-weight of structure, superimposed dead loads, and 25 psf live load using a
      minimum safety factor of 2.0.
   2. Consider removal of loads from member and transfer of loads into soil below, without
      overloading structural members.
   3. Detail shoring to avoid interference with Owner operations.
   4. Consider shoring stiffness relative to stiffness of members being shored.

B. Shoring: Steel posts, steel frames, or other steel assemblies with sufficient capacity to support
   calculated shoring loads at spacing and positioning shown on shop drawings.
   1. Adjustable through positive means, such as screw jacks, to achieve tight fit to structure
      above and below and to compensate for elastic shortening of shores during loading and
      service.
   2. Use undamaged components, including bracing, supplied by shoring manufacturer.

2.2 ACCESSORIES

A. Spreaders:
   1. At bottom of shores: 4x4 timber cribbing, 2x wood bearing pads, or other material; with
      sufficient bearing area and length to distribute shoring reactions into supporting soils
      below.
   2. At top of shores: Timber or steel spreader beams or wood bearing pads; to fully support
      member being shored without damage to member surface.

B. Shims: Wood or steel; at bearing points above shores to ensure tight contact with shored
   member.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements and other conditions
   affecting installation or performance of shoring Work.
   1. Ensure that work done by other trades is complete and ready for shoring Work.
   2. Notify Owner and Engineer in writing of conditions which may adversely affect
      installation or performance of shoring Work and recommend corrections.
   3. Do not proceed with shoring Work until adverse conditions have been corrected and
      reviewed by Engineer.
   4. Commencing shoring Work constitutes acceptance of Work surfaces and conditions.
3.2 INSTALLATION

A. Install shoring for supporting of structural element to perform the designated repairs.

B. Install shoring at locations designated by Engineer, before repair work begins.
   1. Notify Owner and Engineer of locations where suspect existing construction indicates that
      shoring may be necessary.

C. Install shoring in accordance with manufacturer’s recommendations and approved shop
   drawings. Installed assembly shall be of such quality that assembly will support imposed loads
   without excessive settlement or deflection.
   1. Position to limit interference with Owner operations.
   2. Install snug, plumb, and square. Install cross-bracing recommended by shoring
      manufacturer and shoring designer to prevent buckling failure of individual members and
      overall shoring stability failure. Extend shoring above and below level of repair work as
      required by shoring design.
   3. Install spreader beams or bearing pads and shims as necessary, and adjust shores to ensure
      tight, uniform fit against structural element to be supported. Minimize differential loading
      of vertical shoring members.
   4. Install timber cribbing wood or wood bearing pads as necessary to distribute loads into
      supporting elements. If more than 1 layer of cribbing is required, install each successive
      layer perpendicular to preceding layer.
   5. If shoring is to be placed on coated or finished surface, protect surface from damage with
      plywood, plastic sheets, or other means.

D. Do not lift existing structure more than 3/8 inch. Provide minimum lift required to effect repairs.
   Minimize damage to existing structure.

E. Protect shores from damage from construction activities, Owner use of facility, and other causes.

F. Check shores daily and adjust as necessary to maintain snug condition, plumbness, and full
   effectiveness.

G. Modify and adjust shoring as required to meet conditions of work and to ensure Project safety.

3.3 REMOVAL OF SHORES

A. Remove shores when repairs are complete.

B. Store shoring materials in approved storage area at Site, such that materials do not interfere with
   Owner’s continued use of facility. Promptly remove shoring materials from Site when no longer
   needed for work.

END OF SECTION
SECTION 02 41 19
SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Demolition and removal of existing construction, including reuse of materials.

B. If cultural artifact evidence is discovered during construction, stop work and contact Construction Manager immediately.

C. Related Sections:
   1. Section 02 01 11 - Shoring
   2. Section 03 30 00 - Concrete
   3. Section 06 10 63 - Exterior Rough Carpentry

1.2 REFERENCES

A. Definitions:
   1. Existing to remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed or removed and reinstalled.
   2. Remove: Detach items from existing construction and legally dispose of off-site, unless indicated to be removed and reinstalled.
   3. Remove and reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

1.3 COORDINATION

A. Coordinate with Owner’s Representative and with other trades to ensure that adjacent areas are not adversely affected.

1.4 CHANGES IN WORK

A. During work, existing conditions may be encountered which are not known or are at variance with Contract Documents. Such conditions may interfere with Work and may consist of damage or deterioration of substrate or surrounding materials.
   1. Notify Owner and Engineer of conditions that may interfere with proper execution of Work prior to proceeding with Work.
PART 2 PRODUCTS [Not Used]

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions with Installer or Applicator, where applicable, for compliance with requirements, installation tolerances, and other conditions affecting selective demolition Work.
   1. Ensure that work done by other trades is complete and ready for selective demolition Work.
   2. Verify that areas and conditions under which selective demolition Work is to be performed permit proper and timely completion of Work.
   3. Notify Owner and Engineer in writing of conditions which may adversely affect selective demolition Work and recommend corrections.
   4. Do not proceed with selective demolition Work until adverse conditions have been corrected and reviewed by Engineer.
   5. Commencing selective demolition Work constitutes acceptance of Work surfaces and conditions.

B. Survey existing conditions and correlate with requirements to determine extent of selective demolition Work required.
   1. Record observations.
   2. Document with photographs or videotape, or both, existing conditions of adjoining construction.
   3. Survey existing concrete to determine extent of removal and replacement warranted.

3.2 PROTECTION

A. Take precautions to ensure safety of people, including building users, passers-by, and workmen, and animals; and protection of property, including adjacent building elements, landscaping, and motor vehicles.

B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

C. Protect paving and sidewalk to remain, and adjacent structure areas from mechanical damage due to excavation and other equipment.

D. Limit access to Work areas.

E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.

3.3 SELECTIVE DEMOLITION

A. Utility Services and Mechanical and Electrical Systems:
   1. Disconnect and seal or cap off indicated utility services and mechanical and electrical systems in Work areas.
2. Where existing utility services or mechanical or electrical systems are required to be removed, relocated, or abandoned, bypass such services/systems before beginning Work to prevent interruption to occupied areas.

B. General: Demolish and remove existing construction and installations only as necessary and required for proper installation of work indicated in Contract Documents.
   1. Conduct removals carefully to avoid damaging existing construction and installations that will remain.
      a. Neatly cut openings and holes plumb, square, and true to dimensions required.
      b. Cut or drill from exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
      c. Use cutting methods least likely to damage construction to remain.
      d. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces.
      e. Temporarily cover openings to remain.
   2. Protect construction that will remain against damage and soiling.
   3. Provide and maintain shoring, bracing, and structural supports, as required to preserve stability and prevent movement, settlement, or collapse of construction or finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished. Reference Section 02 01 11.
   4. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
   5. Remedy damage to existing construction and installations caused by Contractor operations.

C. Survey existing conditions as Work progresses to identify hazards resulting from construction.

D. When unanticipated structural, electrical, or mechanical elements that conflict with intended function or design are encountered, investigate and measure nature and extent of conflict. Promptly submit written report to Engineer.

E. Provide access to Work areas and perform localized demolition as necessary for inspection of concealed underlying conditions by Engineer.

F. Items to be Reinstalled:
   1. Carefully remove, clean, and mark with identifying code.
   2. Store in secure area and protect from damage.
   3. Replace damaged items to be reinstalled with new items to match undamaged originals.
   4. Reinstall in original locations after selective demolition operations are complete.

3.4 DISPOSAL OF DEMOLITION MATERIALS

A. Unless noted otherwise, promptly remove demolition debris from Site and dispose of legally. Do not burn.

3.5 CLEANING

A. Clean adjacent surfaces and structures of dust, dirt, and debris. Return to condition existing before Work began.

END OF SECTION

Village Creek State Park 02 41 19 - 3 Selective Demolition
Facility Damage Repairs March 6, 2019
TPWD No. 128695 100% Construction Documents
SECTION 03 21 00
CONCRETE REINFORCING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: New reinforcing steel, anchor bolts and nuts as shown on the Drawings or as required for completion of concrete construction.

B. Related Sections:
   1. Section 03 30 00 - Cast-in-Place Concrete

1.2 REFERENCES

   1. American Concrete Institute (ACI)
   2. ASTM International
      a. ASTM A615 - Standard Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
   3. Concrete Reinforcing Steel Institute (CRSI)
   4. Society for Protective Coatings (SSPC)
      a. SSPC SP 6/NACE No. 3 Commercial Blast Cleaning
      b. Painting Manual
   5. American Welding Society (AWS):
      a. D1.4 - Structural Welding Code-Reinforcing Steel

1.3 SUBMITTALS

A. Certifications: From suppliers that materials provided meet the requirements of this Specification:
   1. Reinforcing bars.
   2. Stainless steel bolts.

1.4 QUALITY ASSURANCE

A. Perform Work of this Section in accordance with the referenced standards except as noted otherwise. In the case of a conflict with the reference standards, perform the Work in accordance with the more stringent requirements.
1.5 DELIVERY, STORAGE AND HANDLING

A. Handle and store reinforcement and anchor bolts and nuts in accordance with CRSI recommendations.

PART 2 PRODUCTS

2.1 REINFORCING STEEL

A. Reinforcing Bars: ASTM A615, Grade 60, deformed, cut true to length with ends square and free of burrs.

B. Threaded Anchor Rods and Nuts: ASTM F1557, Type 36 or 55.
   1. Hilti HAS-E anchor bolt.
   2. Approved equal.

2.2 ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI Manual of Standard Practice from steel wire or plastic:
   1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.
   2. For field-coated reinforcement, use plastic bar supports.

B. Stainless steel tie wire: 16 gauge minimum, use plastic coated wire when used to secure epoxy-coated, field-coated, or stainless steel dowels.

2.3 FABRICATION

A. Fabricate reinforcing steel to size, shape and dimensions shown on the plans. Bends and hooks shall conform to bend dimensions specified in the CRSI Manual of Standard Practice.

B. Reinforcing steel shall not be bent or straightened in a manner that will damage the steel.

PART 3 EXECUTION

3.1 SUPPLEMENTAL OR REPLACEMENT REINFORCEMENT

A. Provide reinforcing steel as indicated on Drawings and as directed by the Engineer. Securely tie or anchor the reinforcing steel.

B. Place reinforcing steel in accordance with recommendations of CRSI Manual of Standard Practice. Conform to tolerances specified in ACI 117.

C. Proper and adequate chairs or anchors shall be provided to position reinforcing steel at locations as detailed on the Drawings. Provide chairs at a spacing no greater than 3 on-center. Wire together and securely fasten in place to prevent displacement during placing of concrete.

D. If field conditions do not allow reinforcement to be placed as detailed, contact the Engineer for resolution.
E. New reinforcing steel shall be free of oil, loose mill scale, rust, and other foreign matter.

F. Provide minimum concrete cover per the table below, unless noted otherwise on the Drawings or directed by the Engineer.

<table>
<thead>
<tr>
<th>Description</th>
<th>Minimum Concrete Cover</th>
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<tr>
<td>Concrete Cast against and permanently exposed to earth</td>
<td>3 inches</td>
</tr>
<tr>
<td>Concrete Exposed to earth or weather</td>
<td></td>
</tr>
<tr>
<td>No. 6 to No. 18 bars</td>
<td>2 inches</td>
</tr>
<tr>
<td>No. 5 bar, W31 or D31 wire, and smaller</td>
<td>1 1/2 inches</td>
</tr>
<tr>
<td>Concrete not exposed to weather or in contact with ground</td>
<td></td>
</tr>
<tr>
<td>Slabs, walls, joists</td>
<td></td>
</tr>
<tr>
<td>No. 14 and No. 18 bars</td>
<td>1 1/2 inches</td>
</tr>
<tr>
<td>No. 11 bar and smaller</td>
<td>3/4 inches</td>
</tr>
<tr>
<td>Beams, columns</td>
<td></td>
</tr>
<tr>
<td>Primary reinforcement, ties, stirrups, spirals</td>
<td>1 1/2 inches</td>
</tr>
</tbody>
</table>

G. Provide reinforcing steel lap lengths as shown on the Drawings.

END OF SECTION
SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Supply and placement of cast-in-place concrete, including formwork, concrete materials, mix design, batching procedures, placement procedures, finishes, and curing.

B. Related Sections:
   1. Section 03 21 00 - Concrete Reinforcing Steel.

1.2 REFERENCES

   1. American Concrete Institute (ACI):
      a. ACI 117 - Specification for Tolerances for Concrete Construction and Materials and Commentary.
      b. ACI 301 - Specifications for Structural Concrete.
      c. ACI 305R - Guide to Hot Weather Concreteing.
      e. ACI 347 - Guide to Formwork for Concrete.
   2. ASTM International:
      a. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
      b. ASTM C33 - Standard Specification for Concrete Aggregates.
      d. ASTM C42 - Standard Test Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
      j. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
      k. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
      m. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
      o. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
      p. ASTM C856 - Standard Practice for Petrographic Examination of Hardened Concrete.
r. ASTM C1152 - Standard Test Method for Acid-Soluble Chloride in Mortar and Concrete.
s. ASTM C1202 - Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration
w. ASTM C1583 - Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength of Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)

1.3 **ADMINISTRATIVE REQUIREMENTS**

A. Coordinate Work to ensure that adjacent areas are not adversely affected. Coordinate:
   1. With Owner's Representative.
   2. With other trades:
      a. To ensure that work done by other trades is complete and ready to for concrete Work.
      b. To avoid or minimize work on, or in immediate vicinity of, concrete Work in progress.
      c. To ensure that subsequent work will not adversely affect installed concrete.

B. Pre-placement Meeting:
   1. Conduct meeting at Site.
   2. Review requirements for concrete Work, including:
      a. Construction schedule
      b. Availability of materials, personnel, equipment, and facilities needed to make progress and avoid delays.
      c. Site use, access, staging, and set-up location limitations.
      d. Forecast weather conditions.
      e. Surface preparation and substrate condition.
      f. Placement procedures.
      g. Special details.
      h. Minimum cure period.
      i. Testing and inspection requirements.
      j. Temporary protection and repair of damaged concrete.
      k. Government regulations.
   3. Contractor's Site superintendent, Owner's Representative, and Engineer shall attend.

1.4 **SUBMITTALS**

A. Product Data: Manufacturer's literature and technical data, including VOC contents, for admixtures, curing compounds, and other products.
   1. Include Material Safety Data Sheets for information only.

B. Design Mixes: For each concrete mixture, include:
   1. Proportions of materials.
3. Sieve analysis for fine and coarse aggregate.
4. Test results for deleterious substances in aggregates and potential aggregate reactivity in accordance with ASTM C1260.
5. Rapid chloride penetrability testing results in accordance with ASTM C1202.
6. Slump during laboratory tests.
7. Air content during laboratory tests.
8. 3-, 7-, and 28-day laboratory compression test results. Minimum 2 cylinders at each test age.
9. Indicate:
   a. Maximum amount of water that may be added at site. Mix must still satisfy specified water-cementitious content after addition. No water addition will be permitted if not indicated on batch ticket.
   b. Range of high-range, water-reducing admixture dosage that may be added at Site without adversely affecting hardened concrete.

C. Proprietary products as required in this Section including but not limited to curing compounds and concrete coating.

D. Field Quality Control: Batch tickets for ready-mix concrete.

E. Certification for Ready-Mixed Concrete Production Facilities and Delivery Vehicles: National Ready Mixed Concrete Association certification or equivalent.

F. Contractor Qualifications: Evidence that Contractor’s existing company has minimum 5 years of continuous experience in similar concrete work; list of at least 5 representative, successfully-completed projects of similar scope and size, including:
   1. Project name.
   2. Owner’s name.
   3. Owner’s Representative name, address, and telephone number.
   4. Description of work.
   5. Types of concrete work.
   6. Project supervisor.
   7. Total cost of concrete work and total cost of project.
   8. Completion date.

1.5 QUALITY ASSURANCE

A. Contractor Qualifications: Experienced firm that has successfully completed concrete work similar in material, design, and extent to that indicated for Project. Must have successful construction with specified materials in local area in use for minimum of 5 years.
   1. Employ foreman with minimum 5 years of experience as foreman on similar projects, who is able to effectively communicate with job superintendent and staff on site to ensure jobsite safety, to be on Site at all times during Work. Do not change foremen during course of Project except for reasons beyond control of Contractor; inform Owner and Engineer in advance of any changes.
   2. Provide at least one individual who is certified by ACI as Finisher/Technician for type of work being performed, during concrete pours.

B. Ready-Mix Supplier Qualifications: ASTM C94; Certification of Production Facilities and Delivery Vehicles by National Ready Mixed Concrete Association.
C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer’s plant, each aggregate from one source, and all admixtures from the same manufacturer.

1.6 OWNER/CONTRACTOR RESPONSIBILITIES

A. Owner will retain a qualified testing agency to provide Field Quality Control Testing. Testing agency to submit field quality control test reports within 3 days of results.

B. Contractor is responsible for properly scheduling the testing agency retained by the Owner, for obtaining and distributing test reports in a timely manner, and for coordinating as required.

1.7 PROJECT CONDITIONS

A. Comply with Owner’s limitations and restrictions for Site use and accessibility.

B. Handle materials in strict accordance with safety requirements required by material manufacturers, Material Safety Data Sheets, and local, state, and federal rules and regulations. Maintain Material Safety Data Sheets with materials in storage area and available for ready reference on Site.

1.8 WARRANTY

A. Contractor Warranty:
   1. Written warranty signed by Contractor, including
      a. Repair or replace concrete that shows evidence of material degradation (except for minor weathering), cracking (other than isolated hairline drying shrinkage cracks), delamination, spalling or corrosion (other than continuing corrosion beyond the limits of the repair).
      b. Upon notification of such defects, make necessary repairs or replacement, including necessary repairs at no cost to Owner and at convenience of the Owner. Repair work shall be in accordance with the requirements of these Contract Documents.
      c. Repair or replacement work shall include necessary repairs to affected concrete coatings.
   2. Warranty Period: 2 years after Substantial Completion date.

1.9 SCHEDULING

A. Notify Engineer and Owner at least 48 hours prior to placement of concrete, unless otherwise directed by TPWD Construction Manager.

PART 2 PRODUCTS

2.1 FORM MATERIALS

A. Forms: Plywood, lumber, metal, plastic, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
   1. Use panels that will provide continuous, true, and smooth concrete surfaces.
   2. Furnish panels in largest practicable sizes to minimize number of joints.
   3. Do not use rust-stained steel form-facing material.
4. For Smooth-Form Finish: Use form-facing material capable of producing smooth, uniform
texture on concrete. Do not use form-facing materials with raised grain, torn surfaces, worn
edges, dents, or other defects that will impair texture of concrete surface.

B. Accessories:
   2. Form Ties: Factory-fabricated; removable or snap-off metal or glass-fiber-reinforced
      plastic form ties; designed to resist lateral pressure of fresh concrete on forms and to
      prevent spalling of concrete on removal.
         a. Furnish units that will leave no corrodeable metal closer than 1 inch to plane of exposed
            concrete surface.
         b. Furnish ties that, when removed, will leave holes not larger than 1 inch in diameter in
            concrete surface.
         c. Furnish ties with integral water-barrier plates for walls indicated to receive
damproofing or waterproofing.
   3. Form-Release Agent: Commercially formulated form-release agent that will not bond with,
stain, or adversely affect concrete surface and will not impair subsequent treatments of
   concrete surface.

2.2 CONCRETE MATERIALS

A. Source Limitations: Obtain each type or class of cementitious material of same brand from same
   manufacturer’s plant, each aggregate from one source, and admixtures through one source from
   single manufacturer.

B. Portland Cement: ASTM C150, Type I/II. Use only one brand and type of cement for Project.

C. Fly Ash: ASTM C618, Class F or C.

D. Silica Fume: ASTM C1240.

E. Aggregates: ASTM C33 or ASTM C330; from single source with documented record of at least
   10 years of satisfactory service using similar aggregates and cementitious materials in similar
   applications and service conditions.
   2. Alkali Reactivity: Coarse and fine aggregates shall have expansion indicative of innocuous
      behavior; that is, less than 0.10 percent expansion after 16 days; with tested according to
      ASTM C1260, or mitigating measures shall be included in concrete mix.
      a. Provide ASTM C1260 test results for aggregates proposed for use, performed within
         last year.
      b. If reported expansion is 0.10% or more at 16 days after casting, use mitigation
         measures shown to render innocuous results when tested according to ASTM C1260
         or provide coarse and fine aggregates from remote source, with expansion indicative
         of innocuous behavior with tested according to ASTM C1260. ASTM C1293
         procedure may be substituted for ASTM C1260.

F. Water: Potable.
2.3 ADMIXTURES:

A. General: Admixtures certified by manufacturer to contain no more than 0.1 percent chloride ions and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
   2. Water-Reducing Admixture: ASTM C494, Type A.
   3. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
   4. Water-Reducing and Accelerating Admixture: ASTM C494, Type E.
   5. Water-Reducing and Retarding Admixture: ASTM C494, Type D.

2.4 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C171, white burlap-polyethylene sheet.

B. Water: Potable.

C. Membrane-Forming Curing Compound: ASTM C309, Type I VOCs less than 350 g/L and legal limits. Silicate materials shall not be used.
   1. Verify compatibility with concrete paint manufacturer prior to application.

2.5 CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mixes or field-test data, according to ACI 301.
   1. Use qualified independent testing agency for preparing and reporting proposed mix designs for laboratory trial mix basis.

B. Proportion normal-weight concrete mix as follows:
   1. 28-day Compressive Strength: 4,000 pounds per square inch.
   2. Maximum Water-Cementitious Materials Ratio, by weight: 0.45.
   3. Slump: 3 to 5 inches maximum.
      a. With High-Range, Water-Reducing Admixture:
         1) 7 to 9 inches maximum slump.
   4. Admixtures: Use admixtures according to manufacturer's written instructions.
      a. Use water-reducing admixture. Alternately use high-range, water-reducing admixture (superplasticizer), as required, for placement and workability.
      b. Use retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
   5. No chlorides shall be intentionally introduced into concrete mix.
      a. In hardened concrete, limit acid-soluble chloride ion content to 0.10 percent by weight of cement when tested according to ASTM C1152, or water-soluble chloride ion content to 0.08 percent by weight of cement when tested according to ASTM C1218.
      b. If hardened concrete exceeds chloride ion limits above, limit water-extractable chloride ion content to 0.08 percent by weight of cement when tested according to ASTM C1524.
      c. Provide test results necessary to demonstrate concrete or aggregates do not exceed chloride ion limits, unless waived by Engineer.
PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of concrete Work.
   1. Ensure that work done by other trades is complete and ready for concrete Work.
   2. Verify that areas and conditions under which concrete Work is to be performed permit proper and timely completion of Work.
   3. Notify Owner and Engineer in writing of conditions which may adversely affect installation or performance of concrete Work and recommend corrections.
   4. Do not proceed with concrete Work until adverse conditions have been corrected and reviewed by Engineer.
   5. Commencing concrete Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

A. Take precautions to ensure safety of people, including building users, passers-by, and workmen, and animals, and protection of property, including adjacent building elements, landscaping, and motor vehicles.

B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

C. Protect paving and sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.

D. Limit access to Work areas.

E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.

F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 FORMWORK

A. Design, erect, shore, brace, and maintain formwork according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
   1. Arrange forms in orderly and symmetrical manner with minimum of seams.
   2. Limit abrupt or gradual concrete surface irregularities to ACI 347 Class C, 1/2 inch.
   3. Camber forms as indicated.
   4. Form openings, chases, offsets, keyways, reglets, blocking, screeds, and bulkheads required in Work. Determine sizes and locations from trades providing such items.
   5. Chamfer exterior corners and edges of permanently exposed concrete.
   6. Construct forms tight enough to prevent loss of concrete mortar.
   7. After compacting soil to level and compaction shown on the Drawings, install vapor retarding barrier where concrete will be cast against earth.
C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, and recesses, for easy removal.

D. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required concrete thickness and slopes.

E. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

F. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

G. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris immediately before placing concrete.

H. Retighten forms and bracing before placing concrete to prevent mortar leaks and maintain proper alignment.

3.4 REMOVING AND REUSING FORMS

A. General: Formwork, for sides of beams, walls, columns, and similar parts of Work, that does not support weight of concrete, may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is hard enough not to be damaged by form-removal operations and provided curing and protection operations are maintained.

B. Clean and repair surfaces of forms to be reused in Work. Do not use split, frayed, delaminated, or otherwise damaged form-facing material, or patched forms, for exposed surfaces.

3.5 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94, and furnish batch ticket information.

1. Deliver concrete to Site and discharge within 90 minutes after introduction of mix water. When air temperature is between 85 and 90 degrees F, reduce mixing and delivery time to 75 minutes; when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes. Due to nature of Work, trucks with short loads may be required. Concrete that exceeds specified time limit may be rejected at Testing Agency, Engineer, or Owner’s Representative’s discretion.

2. Do not add water-reducing or high-range, water-reducing admixture indiscriminately to increase slump.

3. Introduce high-range, water-reducing admixture at Site with additional mixing per manufacturer’s recommendations.

4. Reject concrete that arrives at Site with slump exceeding maximum specified slump.

B. Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94.

1. Develop batching and mixing operations so that quality control is assured.
2. Designate 1 or 2 individuals to batch and mix concrete. Fully instruct these individuals on batching and mixing procedures. No other persons shall batch or mix concrete without prior notification to Owner and Engineer.

3. Maintain accurate mix proportions. Batch materials by weight on basis of whole bags of cement. Maintain calibrated scale at Site during concrete placement operations. Batching by volume is permitted if weight-volume relationship for each material is verified on daily basis.

4. Incorporate admixtures into mix in manner recommended by manufacturer and approved by Engineer. Measure with accuracy of +/-3 percent. Add each admixture separately.

5. Combine and mix ingredients to uniform consistency.

6. Mix concrete materials in appropriate drum-type batch machine mixer.
   a. For mixer capacity of 1 cubic yard or smaller, mix at least 1 1/2 minutes, but not more than 5 minutes after ingredients are in mixer.
   b. For mixer capacity larger than 1 cubic yard, increase mixing time by 15 seconds for each additional 1 cubic yard.
   c. Provide sufficient number of mixers, including reserve mixers, so that concrete placement operations will proceed uninterrupted and each patch is completely cast before patch concrete achieves initial set.

3.6 CONCRETE PLACEMENT

A. Remove laitance and other surface contaminants from concrete surfaces by sandblast or wire-brush cleaning.

B. Allow Engineer at least 24 hours to observe forms, screed rails or guides, concrete surfaces, reinforcement, and dowels prior to concrete placement.

C. Before placing concrete, verify following:
   1. Installation of formwork, reinforcement, and embedded items is complete.
   2. Surfaces and forms are clean of frost, ice, mud, debris, and water.
   3. Forms are thoroughly wetted or oiled.
   4. Reinforcement is securely tied in place and thoroughly cleaned of ice and other coatings that may reduce or destroy bond with concrete.
   5. Required inspections have been performed.
   6. Equipment for mixing and transporting concrete is clean.
   7. Vibrators are operational.

D. Before sampling for testing and placing concrete, water may be added at Site, up to amount allowed in design mix and identified per Item 1.4B.

E. Convey concrete from mixer to place of deposit in manner such that no segregation or loss of materials occurs.

F. Deposit concrete:
   1. Place concrete as near as possible to its final position to avoid segregation due to re-handling or flowing.
   2. Do not allow concrete to fall vertical distance greater than 4 feet from point of discharge to point of deposit.
   3. Do not allow concrete to disturb or displace reinforcing bars, floor drains, or other embedments.
4. Place concrete at rate so that concrete is plastic and flows readily into corners of forms and into spaces around reinforcing bars.
5. Place concrete continuously until member or section is completed, with no cold joints.
6. Dispose of concrete that has partially set prior to placement or that has been contaminated by foreign material.

G. Consolidate concrete with mechanical vibrating equipment, so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
   1. Use internal vibrators with minimum speed of 7,000 vibrations per minute and that are sufficiently narrow to fit into spaces between reinforcing bars, formwork, and existing concrete. Have extra vibrators at Site in case vibrator does not work.
   2. Do not use vibrators to transport concrete.
   3. Insert and withdraw vibrators vertically at uniformly spaced locations no farther apart than visible effectiveness of vibrator, to rapidly penetrate place layer and at least 6 inches into preceding layer. Do not insert vibrators into lower concrete layers that have begun to lose plasticity.
   4. At each insertion, limit duration of vibration to time necessary to consolidate concrete without causing mix constituents to segregate.

H. Cold-Weather Placement: Protect concrete from physical damage or reduced strength due to frost, freezing, or low temperatures. Comply with ACI 306R and as follows.
   1. When air temperature has fallen or is expected to fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain concrete mixture temperature as specified in ACI 306R-16 Table 5.1. Mix water and aggregates together before adding cement.
   2. Do not use frozen materials or materials containing ice or snow.
   3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix design.

I. Hot-Weather Placement: Protect concrete Work from physical damage or reduced strength due to rapid evaporation or overheating of concrete. Refer to Fig. 2.1.5 in ACI 305R for hot-weather conditions that may adversely affect concrete placement, finishing, and curing. Do not allow temperature of concrete at time of placement to exceed 90 degrees F. When hot-weather conditions exist, use one or more of following procedures:
   1. Place concrete at night or early in morning.
   2. Cool ingredients before mixing to maintain concrete temperature below 90 degrees F at time of placement. Chilled mixing water or chopped ice may be used to control temperature; include water equivalent of ice in mixing water quantity. Use liquid nitrogen to cool concrete at Contractor's option.
   3. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
   4. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.
   5. Provide windbreaks or sunshades, or both.

3.7 FINISHING FORMED SURFACES

A. Smooth-Formed Finish: For concrete surfaces exposed to public view or to be covered with coating or covering material applied directly to concrete, such as waterproofing, dampproofing, stucco, or painting.
   1. Repair and patch tie holes and defective areas.
   2. Remove fins and other projections exceeding 1/8 inch in height.
3. Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces where indicated and rub with carborundum brick or another abrasive to produce uniform color and texture. Do not apply cement grout other than that created by rubbing process.

B. At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.8 CONCRETE CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Maintain concrete above 55 degrees F and in moist condition for at least 7 days after placing.

B. Unformed Top Surfaces: Begin curing immediately after finishing concrete. Use moisture-retaining cover.
   1. Place cover in widest practicable width, with sides and ends lapped at least 12 inches.
   2. Seal sides and ends of cover by holding down with soil, concrete pieces, or some other weight, or by using waterproof tape or adhesive.
   3. Immediately repair holes or tears in cover during curing period using cover material and waterproof tape.
   4. Re-wet concrete surface at least twice daily as necessary.

C. Unformed Vertical and Overhead Surfaces: Apply curing compound uniformly in continuous operation by power spray or roller according to manufacturer's written instructions and recommended coverage rate. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

D. Protect concrete from falling below 55 degrees F with insulating blankets or heated enclosures.

3.9 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair or remove and replace defective areas designated by Engineer. Remove and replace concrete that cannot be repaired to Engineer's satisfaction.

B. Surface defects on exposed surfaces include:
   1. Voids, such as spalls, air bubbles, honeycomb, rock pockets, and form-tie holes, more than 1/2 inch in any dimension in solid concrete but not less than 1 inch deep.
   2. Crazing and cracks in excess of 0.01 inch wide, or that penetrate to reinforcement or completely through section.
   3. Fins and other projections exceeding 1/2 inch.
   4. High or low spots that create areas of standing water that are at least 1/2 inch deep and at least 9 square feet in area.
   5. Color and texture irregularities, and stains and other discolorations that cannot be removed by cleaning.

C. Repair defects on concealed surfaces that affect concrete's durability and structural performance as determined by Engineer.

D. As soon as possible, cut out spalls, air bubbles, honeycombs, rock pockets, and voids.
E. After concrete has gained sufficient strength to be unaffected by grinding, grind off fins, other projections, and high areas.

F. Repair materials and installation not specified above may be used if approved by Engineer.

3.10 TESTING AGENCY

A. Testing Agency: Owner will engage qualified independent testing and inspecting agency to sample materials and perform tests during concrete placement.

3.11 FIELD QUALITY CONTROL

A. Submit batch tickets for ready-mix concrete.

B. Provide:
   2. Materials for sampling.
   3. Site facilities for sampling, testing, and storage of materials.
   4. Incidental labor.

C. Testing Services: Sampling and testing of composite samples of fresh concrete shall be performed according to following requirements:
   1. Testing Frequency: Obtain 1 composite sample of each concrete mix for each day's pour, plus 1 composite sample for each additional 20 cubic yards.
   2. Take samples from transport vehicle or mixer during discharge according to ASTM C172. Take samples at other locations if directed by Engineer.
   3. Slump: ASTM C143; 1 test for each composite sample, but not less than 1 test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change. If high-range, water-reducing admixture is added on Site, perform 1 test prior to adding admixture.
   4. Air Content: ASTM C231; 1 test for each composite sample, but not less than 1 test for each day's pour of each concrete mix.
   5. Concrete Temperature: ASTM C1064; 1 test for each composite sample; and 1 test hourly when air temperature is 40 degrees F and below or 80 degrees F and above.
      a. Cast 4 standard 6-inch by 12-inch cylinder specimens for each composite sample, immediately after sample is taken. Store specimens at Site for at least 16 hours at temperature of 60 to 80 degrees F. Provide temperature-controlled box or other enclosure if necessary. After at least 16 hours, but not more than 30 hours, transport specimens to laboratory and air cure at 73 degrees F, 50 percent relative humidity in accordance with ASTM C31.
      b. If requested by Engineer, take 4 additional cylinder specimens and field cure in vicinity of area that they represent and in same manner as that portion of structure.
      a. Test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
      b. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
      c. Compressive-strength test shall be average compressive strength from set of two specimens obtained from same composite sample and tested at age indicated.
8. Test results shall be reported in writing to Owner’s Representative, Engineer, concrete supplier, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain:
   a. Name of concrete testing and inspecting agency.
   b. Project identification name.
   c. Date of concrete placement.
   d. Specific location of concrete batch in Work.
   e. Concrete mix number, design compressive strength at 28 days, design slump range, and design air content range.
   f. Specimen number, cylinder size, dates of compression tests, compressive breaking strengths and types of break for 7- and 28-day tests, and measured slump, air content, and air and concrete temperatures.
   g. Statement that indicates whether test results are in conformance with Specifications.

9. Concrete strength is satisfactory if average of every 3 consecutive 28-day compressive-strength tests equals or exceeds specified 28-day compressive strength and no test value is more than 500 pounds per square inch less than specified 28-day strength.

10. If any 7-day compressive-strength test result is less than 75 percent of specified 28-day compressive strength, submit revised mix design data for concrete that will conform to Specifications.

11. When compressive-strength test of field-cured specimens is less than 85 percent of companion laboratory-cured cylinders, evaluate operations and provide corrective procedures for protecting and curing in-place concrete. Pay cost of sampling and testing non-conforming field-cured specimens. Owner will pay cost of sampling and testing conforming field-cured specimens.

12. Non-Conforming Concrete:
   a. If tests indicate that concrete is not in conformance with Specification, remove and replace per applicable section, or perform additional testing, acceptable to Engineer, to verify conformance with Specification, at no cost to Owner.
   b. Procure core samples in accordance with ASTM C42.
   c. If tests indicate that slump, air entrainment, or other requirements have not been met, examine core samples petrographically, according to ASTM C856, to evaluate hardened concrete characteristics.
   d. If compressive-strength tests do not meet acceptance requirements, procure 3 core samples from each portion of structure represented by unsatisfactory tests, and test in compression. Strength of concrete in area represented by core tests is satisfactory if average of 3 compressive strength tests equals or exceeds 85 percent of specified 28-day compressive strength and no compressive-strength test value is less than 75 percent of specified 28-day compressive strength. If strength acceptance criteria are not met, remove and replace non-conforming concrete areas at no cost to Owner.
   e. Perform additional inspection and testing and inspecting, at no cost to Owner, to determine compliance of replaced or additional work with specified requirements.

3.12 CLEANING

A. After completing concrete Work:
   1. Clean soiling from adjacent surfaces. Exercise care to avoid scratching or damage to surfaces.
   2. Repair surfaces stained, marred, or otherwise damaged during concrete Work.
   3. Clean up debris and surplus materials and remove from Site.
END OF SECTION
SECTION 05 12 00
STRUCTURAL STEEL

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Provisions for installation of galvanized steel gusset plates at timber caissons and new galvanized anchor bolts.

B. Related Sections:
   1. Section 03 21 00 - Concrete Reinforcing
   2. Section 05 12 00 - Exterior Rough Carpentry
   3. Section 31 62 19 - Timber Piers

1.2 REFERENCES

   1. American Institute of Steel Construction (AISC):
      b. AISC 360 Specification for Structural Steel Buildings.
   2. American Welding Society (AWS):
   3. ASTM International:
      c. ASTM A325 - Standard Specification for Structural Bolts.
      e. ASTM A992 - Standard Specification for Structural Steel Shapes.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show fabrication of structural-steel components.
   1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.

C. Mill Test Reports: Signed by manufacturers certifying that the following products comply with requirements of this Section:
   1. Structural steel including chemical and physical properties.
D. Field quality control reports and special inspection reports.

1.4 QUALITY ASSURANCE

A. Comply with applicable provisions of the referenced specifications.

B. Testing Agency: As required by the applicable building code or the Contract Documents, Owner will engage an approved agency to inspect field welds and bolting.
   1. Bolted Connections: Bolt inspection shall be in accordance with IBC and RCSC.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from erosion and deterioration.
   1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

A. Plates: ASTM A36, hot dip galvanized.

2.2 ACCESSORIES

A. Steel Bolts:

B. Nuts and Washers: ASTM A563, Grade C, heavy-hex carbon-steel nuts; and ASTM F436 Type 1, hardened carbon-steel washers; all with hot dip galvanized finish. Oversized washers with minimum 2-inch outside diameter.

C. Threaded Rod: ASTM A615, Grade 75, deformed, hot dip galvanized.
   1. Dywidag Threadbar.
   2. Approved Equal.

2.3 GALVANIZING REPAIR PAINT

A. Galvanizing Repair Paint: MPI#18, MPI#19, SSPC-Paint 20, or equivalent product in accordance with ASTM A780 and approved by Engineer.

2.4 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel assemblies according to ASTM A123.
   1. Fill vent holes and grind smooth after galvanizing.
PART 3 EXECUTION

3.1 EXAMINATION
   A. Verify locations of gusset plates and thru bolts for compliance with requirements.
   B. Proceed with installation only after unsatisfactory conditions have been corrected.
   C. Notify Owner and Engineer at least 48 hours prior to first instance of installation for each steel assembly and connection type.

3.2 FIELD CONNECTIONS
   A. Bolted Connections:
      1. Install snug tightened.
   B. Anchored threaded rods:
      1. Install threaded rods prior to concrete footing placement.

3.3 RECOATING WITH GALVANIZING REPAIR PAINT
   A. Recoat galvanizing coatings on damaged galvanized items and field welded connections with galvanized repair paint according to ASTM A780 and manufacturer’s written instructions.
   B. Coating with galvanizing repair paints:
      1. Surfaces to be reconditioned with paint shall be clean, dry, and free of oil, grease, and corrosion products.
      2. Perform surface preparation in accordance with paint manufacturer’s written instructions.
      3. Apply paint to all exposed surfaces of steel plates in accordance with manufacturer’s written instructions.
      4. Apply two coats of galvanizing coating over all welds and areas where the hot-dipped galvanized coating was removed for installation, as well as existing uncoated steel embed plates.
      5. Apply one coat of galvanizing coating to all other damaged areas.

3.4 FIELD QUALITY CONTROL
   A. Testing agency: Owner may elect to engage a qualified testing agency to perform special inspections and testing consistent with IBC requirements including:

END OF SECTION
SECTION 06 10 63
EXTerior ROuGH CarPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Remove and replace existing wood members for pedestrian guardrail on Vehicle Bridge.
   2. Remove and reinstall/replace wingwalls for pedestrian bridge.
   3. Remove and reinstall wood base floor for releveling of Cabin.

R. Related Sections:
   1. Section 02 01 11 - Shoring
   2. Section 31 62 19 - Timber Piers

1.2 REFERENCES

A. Reference Standards: All standards listed below form a part of this specification to extent referenced.
   1. American Wood-Preservers Association (AWPA)
      a. M4-08: Standard for the Care of Preservative-Treated Wood Products

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.
   1. For preservative-treated wood products. Include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
   2. Evaluation Reports: For preservative-treated wood products, from ICC-ES.
   3. Certificates of Inspection: Issued by lumber grading agency for exposed wood products not marked with grade stamp.

B. Shop Drawings: Show fabrication and installation details for beams and columns.

C. Shop Drawings: For shoring.
   1. Show detailing, fabrication, assembly, and support of shores.
   2. Locate and provide adequate shoring to support construction and existing loads without excessive stress or deflection.

D. Design Calculations: For shoring.
   1. Locate and provide adequate shoring to support construction and existing loads without excessive stress or deflection.

E. Certificates: shall submit a signed certificate stating that preservative treatment of timber beams delivered to site complies with requirements. Certificate shall contain name and address of contractor, project locations, quantity of piles and date or dates of shipments, name of preservative used and retention in pounds per cubic foot of wood treated.
1.4 QUALITY ASSURANCE

A. All dimension lumber and engineered wood products shall bear a legible grade stamp of a certified lumber grading agency.

B. Each piece or bundle of treated wood products shall bear a legible third-party quality mark or tag indicating the name of the treater, date of treatment or lot number, and the American Wood Preservers’ Association (AWPA) Specification symbol to which the treatment conforms.

C. Unless noted otherwise, all rough carpentry work shall conform to the conventional framing rules of the applicable building code.

D. Comply with applicable provisions of the referenced specifications.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect members from erosion, cuts, breaks, abrasion, and deterioration.
   1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 PRODUCTS

2.1 TREATED DIMENSION LUMBER

A. Dimension lumber (2 inches to 4 inches thick, 2 inches and wider): No. 1 Grade Southern Pine, visually graded according to the published grading rules of the Southern Pine Inspection Bureau. Unless otherwise noted, dimension lumber shall be kiln dried to 19 percent moisture content, surfaced S4S.

B. Timbers (5 inches by 5 inches and larger): No. 1 Grade Southern Pine, visually graded according to the published grading rules of the Southern Pine Inspection Bureau, dimensions as shown on plans or to match existing. End grain of all timbers shall be coated with paraffin wax or approved sealer at the mill or immediately after treatments, prior to shipping.

2.2 ACCESSORIES

A. Fasteners: All fasteners in exterior or treated wood shall be stainless steel, or shall have an approved corrosion resistant coating.

B. Bolts, nuts, and washers: ASTM A307, hot dipped galvanized unless otherwise noted. Use hex nuts and flat washers on both sides of connection.
   1. Approved manufacturer:
      a. Portland Bolt Manufacturing, Inc. (Portland, OR)

C. Connectors: Type 316 Stainless Steel, unless otherwise noted. Use the following or approved equal. Fasten per manufacturer’s instructions, unless otherwise noted on Drawings.

D. Re-use existing galvanized steel angles and plates at pedestrian guardrail on Vehicle Bridge.

2.3 PRESERVATIVE TREATMENT

A. Treat all rough carpentry unless otherwise indicated.

B. Preservative Treatment Requirements: AWPA U1 and T1.
   1. User Category: UC4B
   2. Commodity Specification:
      a. Dimension lumber: A.
      b. Plywood and OSB panels: F.
   3. Preservative Treatment: Water-borne or Oxine Copper (Cu8); acceptable to authorities having jurisdiction.
      a. For exposed wood indicated to receive stained or natural finish, use preservative that does not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

C. Kiln-dry material after treatment to maximum moisture content of 19 percent for lumber and 15 percent for plywood and OSB. Do not use material that is warped or does not comply with requirements for untreated material.

D. Mark each treated item with treatment mark of inspection agency approved by ALSC Board of Review or APA.
   a. For exposed lumber or panels indicated to receive stained or natural finish, mark treatment stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.

2.4 FIELD-APPLIED WOOD PRESERVATIVE

A. Field- Applied Wood Preservative: Treat field cuts, holes, and other penetrations according to AWPA M4; Copper-Napthenate (CuN), two percent minimum solids solution.

PART 3 EXECUTION

3.1 EXAMINATION

A. Survey existing conditions and correlate with requirements to determine extent replacement Work required.

B. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of rough carpentry Work.
   1. Ensure that work done by other trades is complete and ready for rough carpentry Work.
   2. Verify that areas and conditions under which rough carpentry Work is to be performed permit proper and timely completion of Work.
   3. Notify Owner and Engineer in writing of conditions which may adversely affect installation or performance of rough carpentry Work and recommend corrections.
   4. Do not proceed with rough carpentry Work until adverse conditions have been corrected and reviewed by Engineer.
3.2 PROTECTION

A. Take precautions to ensure safety of people, including building users, passers-by, and workmen, and animals; and protection of property, including adjacent building elements, landscaping, and motor vehicles.

B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

C. Protect paving and sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.

D. Limit access to Work areas.

E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.

F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 INSTALLATION

A. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Discard units of material with defects, which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

B. Accurately measure or scribe members before cutting. Make all cuts clean and true to mating surfaces. All lumber and timber shall be accurately cut and framed to a close fit so that the joints will have even bearing over the entire contact surface.

C. Apply copper naphthenate field treatment to comply with AWPA M4, to cut and drilled surfaces of preservative-treated lumber.

D. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit.

E. Do not splice structural members between supports unless otherwise indicated.

F. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Comply with AF&PA WCD1 unless otherwise indicated.

G. Install fasteners by pre-drilling to avoid splitting wood; do not countersink nail heads unless otherwise indicated.

H. Install metal framing anchors to comply with manufacturer's written instructions.

3.4 CLEANING AND PROTECTION

A. Clean adjacent surfaces and structures of dust, dirt, and debris. Return to condition existing before Work began.
END OF SECTION
SECTION 31 23 00
EXCAVATION AND FILL

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes all excavation and fill required to perform the Work described in the Contract Documents.
   1. The scope generally includes excavating and backfilling to allow below-grade repair of timber piers, and installation of concrete footing beneath pedestrian bridge.

B. Related Sections:
   1. Section 02 41 19 - Selective Demolition
   2. Section 03 30 00 - Cast-in-Place Concrete
   3. Section 31 23 23 - Flowable Fill (Controlled Low Strength Material)
   4. Section 31 62 19 - Timber Piers
   5. Section 32 11 33 - Portland Cement-Stabilized Fill

1.2 REFERENCES

A. ASTM International
   1. ASTM C117 - Standard Test Method for Materials Finer than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing
   2. ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils
   3. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
   4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
   5. ASTM D2216 - Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
   6. ASTM D4944 - Standard Test Method for Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Tester
   7. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

B. General notes in this Section are a summary of specifications listed above. All specifications noted in this Section are meant to meet or exceed the above listed References.

1.3 COORDINATION

A. Prior to excavation, all potential underground utilities shall be identified. Locating and marking will be performed by Owner.

B. The Contractor shall coordinate work between all trades.

C. Conflicts shall be brought to the Engineer’s attention prior to the work being initiated. Failure to do so will make the Contractor responsible for the cost of any necessary correction to completed work.
1.4 SUBMITTALS

A. The following items shall be submitted for review. Work associated with these items shall not commence until the submittals have been reviewed and approved. The Contractor shall submit the following:
   1. Proposed excavation and utility shoring plan for review and approval by Owner and Engineer.
   2. Manufacturer’s product data for each material to be used, including but not limited to: aggregate, adhesives, protection board, and accessories.
   3. Contractor shall provide a work plan, schedule, and progress before and throughout extent of construction on a daily basis.
   4. Contractor shall prepare a set of record drawings showing field modifications.

1.5 QUALITY ASSURANCE

A. Earthwork Firm Qualifications: An experienced firm that has specialized in earthwork similar in material and extent to that indicated for this Project.

B. Pre-excavation Meeting: Prior to excavation of any elements, schedule a meeting at the site with Engineer to verify areas of demolition.

C. When any structure excavation is completed, the Contractor shall notify the Engineer who will make an inspection of the excavation. No further work shall be performed until the excavation has been approved by the Engineer.

1.6 PROJECT CONDITIONS

A. Conduct Earthwork so that Owner’s operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner to the extent practical.

C. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with Earthwork.

D. Hazardous Materials: If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Owner will remove hazardous materials under a separate contract.

E. Utility Service: Maintain existing utilities to remain in service and protect them against damage during Earthwork operations.

1.7 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during Earthwork by methods and with materials so as not to void existing warranties.
PART 2 - PRODUCTS [Not Used]

PART 3 - EXECUTION

3.1 EXAMINATION

A. Review existing conditions with Engineer and Owner and correlate with requirements indicated to determine extent of Earthwork required.

B. Verify all below grade utilities have been located and extents marked.

C. Survey existing concrete element conditions for embedded items, including conduits and embedded anchors, bearing plates, etc.

D. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged, where applicable. Provide copy of record to Engineer and Owner.

E. When unanticipated mechanical, electrical, or structural elements that conflict with intended functions or designs are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

F. Perform surveys as the Work progresses to detect hazards resulting from Earthwork activities. Promptly notify Engineer if hazards are encountered.

3.2 PROTECTION

A. Protect existing elements from damage including, but not limited to, railings, concrete, and steel members.
   1. Provide temporary controls and barriers.
   2. Protect existing surfaces and features that are to remain from damage that could result from Earthwork.
   3. Damage to existing surfaces and features that are a result of Earthwork shall be repaired to the satisfaction of Owner at no cost to Owner.

3.3 PREPARATION

A. Conduct Earthwork and debris-removal operations to ensure minimum interference with roads, streets, walkways, existing utility services, and surrounding site and water.

3.4 EXCAVATION

A. Perform excavation only to the extent required by the Work and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows.

B. Excavation shall be performed to the lines, grades, and elevations indicated in the Contract Documents. Excavated materials, unsuitable for backfill, as determined by testing shall be disposed of at spoil areas designated by Owner. Unsuitable material is that material which does not conform to the material requirements for the native soil backfill, as specified below.

C. All excavation grades shall be to + 0.1 foot tolerance specified for the sections, and elevations shown on the engineering drawings, and where required, shall extend a sufficient distance to allow for installation of products and inspection.
D. Work during construction excavation and backfilling should be performed in a manner and sequence that will prevent runoff surface water from entering into trenches and other excavations. Any water accumulating therein shall be removed. All mud and unsuitable material shall be removed. Bedding material shall be reconditioned, if needed, as directed by the Engineer.

E. The Owner and Engineer shall be contacted if any evidence of buried systems is encountered.

F. Excavations shall be performed in accordance with OSHA Standards.

3.5 STRUCTURE BACKFILL

A. Any soil material brought to site must be approved by site manager and construction manager.

B. Backfill materials may be suitable material from excavations or material obtained from approved borrow areas on-site. Designation and approval of a borrow area does not mean that all materials within that area are suitable for backfill. Only suitable material from approved borrow sources shall be placed in the backfill. Material containing brush, roots, peat, sod, or other organic, perishable or deleterious matter, snow, ice or frozen soil, shall not be placed in the backfill. If unsuitable material is placed in any part of the backfill, all such material shall be removed and replaced with suitable material.

C. Materials suitable for structural backfill may be separately stockpiled for later use. If stockpiling is done prior to backfilling, only those materials meeting the specified site requirements shall be used as backfill. All work and material is subject to approval by the Owner and Engineer.

D. Extreme caution should be exercised in placing and compacting backfill in the proximity of all structures. Heavy construction equipment shall not pass over any permanent plant structure or pipe until such structures and/or pipes are covered by the applicable minimum depth of fill.

E. The compaction of backfill adjacent to concrete structures or walls (except electrical ductbank) within a distance of 4 feet shall be done using hand-operated vibratory compactors and/or power tampers.

F. Backfill shall be placed against concrete structures designed to retain earth loads as follows:
   1. Soil backfill shall consist of native material.
   2. Shall be moistened to native soil optimum moisture content as per testing (ASTM D1557) during compaction.
   3. Shall be compacted at least to 95% of maximum density at optimum moisture content per ASTM D1557.
   4. Shall be placed in layers not more than 8 inches in depth before compaction, when compacted by pneumatic or mechanical tamping devices, and 4 inches when hand operated tampers are used.

G. The backfill shall be placed and compacted to the elevations and limits to match existing, unless otherwise directed by Engineer.

H. Prior to the placement of structural backfill, the Contractor shall remove all loose, unstable materials from the sides of the structure excavation that may constitute a safety concern or impact proposed backfill operations. The Contractor shall then compact the bottom of the remaining open structure to a uniform density of not less that 95 percent maximum dry density.
After proper testing and with the approval of the compaction of the bottom of the open structure excavation by the Engineer, the Contractor may start the placement of the structure backfill.

I. Any section of backfill containing material which is too wet or too dry shall not be compacted until the moisture content is brought as close to optimum as practicable to achieve the specified density, or the material shall be removed and replaced with material having a moisture content as close to optimum as practicable. This may include adding water or dry material as deemed necessary.

3.6 FIELD QUALITY CONTROL

A. Proctor compaction test (ASTM D1557) shall be performed for native soil. Optimum moisture content obtained from test shall be determined for native soil. All native soil to be used as backfill is to meet optimum moisture content requirement for compaction.

B. Should, in the opinion of the site Engineer, any portion of the surface of the backfill become so dry or glazed during construction that bond with the succeeding layer to be placed thereon cannot be obtained, such surfaces shall be scarified to a minimum depth of 6 inches, re-leveled, moisture conditioned, and re-compacted to the specified density prior to placing the succeeding layer.

C. A qualified independent testing agency hired by the Owner shall perform all material testing. The testing agency shall perform all tests on the backfill materials to assure compliance with project specifications.
   1. Representative samples from areas of backfill are to be collected. The samples are to be collected and tested as required to determine if the quality and degree of compaction are acceptable.
   2. Representative samples are to be tested in the laboratory using ASTM D1557 standards.
   3. Moisture content of backfill is to be determined using ASTM D2216 for laboratory determination as ASTM D4944 for field determination.
   4. During backfill operations, field compaction may be monitored in accordance with ASTM D1556 or ASTM D6938. Backfill quality to be determined by graduation test in accordance with ASTM D422 or ASTM C117.
   5. Minimum frequency of testing shall be per 01 45 00 unless Owner or Engineer identifies areas for additional testing.
   6. The finished grade shall be completed to conform to requirements set by construction documents.

3.7 CLEAN UP

A. Regulated clean up procedures are to be followed if any of the site is affected. Contact Engineer immediately if the site is disturbed by Work.

B. Clean adjacent sites and buildings of dust, dirt, and debris caused by Earthwork operations. Return adjacent areas to condition existing before Earthwork operations began.

C. Inspect site after completion of earthwork operations with Engineer and Owner. Replace or repair elements damaged by Work.

END OF SECTION
SECTION 31 23 23

FLOWABLE FILL (CONTROLLED LOW STRENGTH MATERIAL)

PART 1 GENERAL

1.1 SUMMARY

A. Furnish all labor, materials, tools, and equipment and perform all Work necessary for and incidental to providing earthwork, as shown on the Drawings and specified herein; in accordance with the provisions of the Contract.

B. The Work includes, but is not limited to:
   1. Backfill at locations indicated in the Drawings, including cabin and group pavilion.

1.2 RELATED SECTIONS

A. Section 02 30 00 - Earthwork

B. Section 31 62 19 - Timber Piles

1.3 REFERENCES

A. Definitions:
   1. Cementitious Materials: Portland cement alone or in combination with one or more of fly ash, silica fume, and other pozzolans, or slag cement.
   2. Flowable Fill: Ready-mix Controlled Low Strength Material or cementitious slurry consisting of a mixture of fine aggregate or filler, water, and cementitious material(s), which is used as a fill or backfill in lieu of compacted earth. Capable of filling all voids in irregular excavations and hard to reach places (such as under undercuts of existing slabs), is self-leveling, and hardens in a matter of a few hours without the need for compaction in layers.

B. Reference standards: Latest edition of all standards as of the date of the Specification.
   1. ASTM International
      a. ASTM C33 - Standard Specification for Concrete Aggregates
      b. ASTM C150 - Standard Specification for Portland Cement
      c. ASTM C403 - Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance
      d. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete
      e. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
      f. ASTM C940 - Standard Specification for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced – Aggregate Concrete in the Laboratory
      g. ASTM D448 - Standard Classification for Sizes of Aggregate for Road and Bridge Construction
      h. ASTM D4832 - Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders
      i. ASTM D6023 - Test Method for Density (Unit Weight), Yield, Cement Content, and Air Content (Gravimetric) of Controlled Low Strength Material (CLSM)
j. ASTM D6024 - Test Method for Ball Drop on Controlled Low Strength Material (CLSM) to Determine Suitability for Load Application
k. ASTM D6938 - Test Method for Flow Consistency of Controlled Low Strength Material (CLSM)

2. American Concrete Institute: ACI 229 - Controlled Low Strength Materials

1.4 SUBMITTALS

A. Product Data: Manufacturer's literature and technical data, including VOC contents, for admixtures, curing compounds, and other products
   1. Include Globally Harmonized System (GHS) Safety Data Sheets or, if not yet available, Material Safety Data Sheet for information only

B. Controlled Low Strength Material (CLSM) Design Mixes:
   1. Design Mixes: For cementitious flowable fill mixture, include:
      a. Proportions of materials.
      b. Mill test certificates for cement and fly ash.
      c. Sieve analysis for fine and coarse aggregate.
      d. Test results for deleterious substances in aggregates and potential aggregate reactivity.
      e. Air content during laboratory tests.
      f. 7- and 28-day laboratory compression test results. Minimum 3 cylinders at each test age.
      g. Indicate
         1) Amount of mix water to be withheld for later addition at Site
         2) Range of high-rang, water-reducing admixture dosage that may be added at Site without adversely affecting hardened CLSM
      h. Results of Ball Drop and Penetrometer tests.

C. Shop Drawings: Shop drawings showing locations, distribution, and quantity of shoring. Include connection and bearing details. Shop drawings shall be prepared by or under supervision of qualified, licensed professional engineer and shall be sealed by the engineer.

D. Formwork Drawings: Shop drawings detailing fabrication, assembly, and support of formwork. Shop drawings shall be prepared by or under supervision of qualified, licensed professional engineer and shall be sealed by the engineer.

1.5 PROTECTION

A. If cultural artifact evidence is discovered during construction, stop work and contact Construction Manager immediately.

B. Protect excavations by shoring, bracing, or casing to prevent cave-in of loose soils.

C. Protect excavations during inclement weather.

D. Notify Engineer of unexpected sub-surface conditions and discontinue work in affected area until notification to resume.

E. Protect utilities from damage by excavation.
F. Provide supplemental shoring, designed by an Engineer licensed in The State of Texas, when excavating adjacent to isolated footings supporting structural elements. Notify engineer if support condition is unclear.

G. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1.6 QUALITY ASSURANCE

A. Contractor Firm Qualifications: An experienced firm that has successfully completed CLSM installation work similar in material, design, and extent to that indicated for Project.

B. Manufacturer: CLSM shall be manufactured by a ready-mix concrete producer with experience in the production of similar products.

C. Materials: For each type of material required for the work of this Section, provide primary materials that are the products of one manufacturer.

1.7 PROJECT CONDITIONS

A. Comply with Owner’s limitations and restrictions for Site use and accessibility.

B. Handle materials in strict accordance with safety requirements required by material manufacturers, Material Safety Data Sheets, and local, state, and federal rules and regulations. Maintain Material Safety Data Sheets with materials in storage area and available for ready reference on Site.

C. Do not store materials on structure, and limit obstruction of roadway during performance of the work.

PART 2 PRODUCTS

2.1 CONTROLLED LOW STRENGTH MATERIAL (CLSM)

A. Source Limitations: Obtain each type or class of cementitious material of same brand from same manufacturer’s plant, each aggregate from 1 source, and admixtures through 1 source from single manufacturer.

B. Portland Cement: ASTM C150, Type I

C. Fly Ash: ASTM C618, Class C or F


E. Silica Fume: ASTM C1240.

F. Fine Aggregates: shall conform to ASTM C33 and shall consist of natural or manufactured sand with a Plasticity Index less than 15 and 0-10% passing the No. 200 sieve
G. Mixing water shall be potable, clean and free of injurious quantities of substances known to be harmful to portland cement.

H. CLSM shall be limited to a maximum 28-day compressive strength of 300 psi to enable future excavation.

I. Slump of CLSM shall be 8 inches to 11 inches at the time the concrete is discharged at the job site.

2.2 ADMIXTURES

A. General: Admixtures certified by manufacturer to contain no more than 0.1 percent chloride ions and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
   2. Water-Reducing Admixture: ASTM C494, Type A.
   3. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
   4. Water-Reducing and Accelerating Admixture: ASTM C494, Type E.
   5. Water-Reducing and Retarding Admixture: ASTM C494, Type D.

2.3 CURING MATERIALS

A. Water: Potable.

B. Membrane-Forming Curing Compound: ASTM C309, Type 1, 1-D, or 2; Solvent-borne; VOCs less than 350 g/L and legal limits. Do not use wax-based or silicate materials.

2.4 MIXES

A. Prepare design mixes for each type and strength of CLSM determined by either laboratory trial mixes or field-test data.
   1. Use qualified independent testing agency for preparing and reporting proposed mix designs for laboratory trial mix basis.

B. Mix design shall produce a consistency that will result in a flowable product at the time of placement which does not require manual means to move it into place.

C. Proportion cementitious fill mix as follows:
   1. 28-day Compressive Strength:
      a. 125 pounds per square inch, minimum.
      b. 300 pounds per square inch, maximum.
   2. Air Content: Maximum air content of 18 percent. Do not exceed manufacturer's recommended air-entraining admixture (AEA) dosage.
   3. Admixtures: Use admixtures according to manufacturer's written instructions.
      a. Use water-reducing admixture. Alternately use high-range, water-reducing admixture (superplasticizer), as required, for placement and workability.
      b. Use retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
   4. No chlorides shall be intentionally introduced into mix.
      a. In hardened material, limit acid-soluble chloride ion content to 0.10 percent by weight of cement when tested according to ASTM C1152, or water-soluble
chloride ion content to 0.08 percent by weight of cement when tested according to ASTM C1218.

b. If hardened CLSM exceeds chloride ion limits above, limit water-extractable chloride ion content to 0.08 percent by weight of cement when tested according to ASTM C1524.

c. Provide test results necessary to demonstrate CLSM or aggregates do not exceed chloride ion limits, unless waived by Principal Inspector.

5. CLSM shall have minimal subsidence and bleed water shrinkage. Evaporation of bleed water shall not result in shrinkage of more than 10.4 mm per meter (1/8 inch per foot) of CLSM depth (for mixes containing high fly ash content). Measurement of a Final Bleeding shall be as measured in Section 10 of ASTM C940 “Standard Test Method for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced-Aggregate Concrete in the Laboratory.

D. Mix Design Options. Limit the total cementitious material content to no more than 300 lb. per cubic yard, unless otherwise approved. When supplementary cementing materials are used, “cementitious” is defined as “cement plus supplementary cementing material”.

1. Replace up to 35% of the cement with Class F fly ash or replace up to 50% of the cement with ground granulated blast furnace slag (GGBFS).

2. May use Type IP or Type IS cement. (Up to 10% of a Type IP or Type IS cement may be replaced with Class F fly ash, GGBFS, or silica fume.)

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of CLSM Work.

3.2 PREPARATION

A. Clearing: Clear existing concrete and landscaping where indicated. Work may include removal of trees, shrubs, paving, incidental structures, debris, trash, and other obstructions.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

3.3 EXCAVATION

A. If cultural artifact evidence is discovered during construction, stop work and contact Construction Manager immediately.

B. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for removal of existing drainage piping to be removed, for installing services and other construction, and for inspections.

C. Excavation Drainage: Operate pumping equipment, and/or provide other materials, means, and equipment, as required, to keep excavation free of water and sub-grade dry, firm, and...
undisturbed until the approval of permanent Work has been received from the Engineer. Approval of the Engineer is also required before placement of the permanent Work on all sub-grades.

3.4 PLACEMENT OF CLSM

A. General: Do not fill or backfill until all debris, unsatisfactory soil materials, obstructions, and deleterious materials have been removed from excavation.

B. Discharge fill as close to point of final consolidation as practical.
   1. Where CLSM cannot be directed to point of final consolidation, place with chutes, tremies, or pumps. Maximum height of free fall placement shall not exceed 4-feet.
   2. Maximum lift thickness - 4 feet.
   3. Control speed of placement such that surface bleed water dissipates properly.
   4. Vibrator shall not be allowed since material is self-compacting.

C. Screed CLSM at cutoff elevation level and apply scoured, rough finish.

D. Protect CLSM placement work from frost, freezing, water flow, or low temperatures that could cause physical damage or reduced strength.
   1. Do not use calcium chloride, salt, or other mineral-containing antifreeze agents or chemical accelerators.

E. If hot-weather conditions exist that would seriously impair quality and consolidation of material, place to maintain delivered temperature of fill at no more than 90 degrees F.

3.5 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

3.6 FIELD QUALITY CONTROL

A. Allow testing agency to inspect and test subgrades and backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

B. Testing agency retained by Contractor will test compaction of soils in place according to ASTM D6103, ASTM D4832, ASTM D6023, and ASTM D6024, as applicable. Tests will be performed at the following locations and frequencies:
   1. At least one test for every truck

3.7 PROTECTION

A. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

B. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

C. The CLSM shall not be subjected to traffic or other loads until the Ball Drop test or Penetrometer test shows acceptable results or until the CLSM have been in place a minimum of 24 hours.

3.8 CLEAN UP

A. Discharge excess concrete and concrete wash water at location designated on the Drawings. Remove and legally dispose of discharged excess concrete in a timely manner offsite.

B. After completing CLSM installation Work:
   1. Clean soiling from adjacent surfaces. Exercise care to avoid scratching or damage to surfaces.
   2. Repair surfaces stained, marred, or otherwise damaged during Work.
   3. Clean up debris and surplus materials and remove from Site.

END OF SECTION
SECTION 31 62 19

TIMBER PIERS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Temporary shoring dislodged and settled piers, treatment of existing timber piers. No new piers will be installed at the Cabin, Group Pavilion, or Pedestrian Bridge.

B. Related Sections:
1. Section 02 01 11 - Shoring
2. Section 02 41 19 - Selective Demolition
3. Section 31 23 00 - Excavation and Fill

1.2 REFERENCES

A. Reference Standards: All standards listed below form a part of this specification to extent referenced.
1. ASTM International
   a. ASTM D25 - Standard Specification for Round Timber Piles
2. American Wood-Preservers Association (AWPA)
   a. U1-17 - User Specification for Treated Wood
   b. M4-08 - Standard for the Care of Preservative-Treated Wood Products

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show fabrication and installation details for piers.

C. Shop Drawings: For shoring.
   1. Show detailing, fabrication, assembly, and support of shores.
   2. Locate and provide adequate shoring to support construction and existing loads without excessive stress or deflection.

D. Certificates: Shall submit a signed certificate stating that preservative treatment of timber piers delivered to site complies with requirements. Certificate shall contain name and address of contractor, project locations, quantity of piers and date or dates of shipments, name of preservative used and retention in pounds per cubic foot of wood treated.

1.4 QUALITY ASSURANCE

A. Contractor should install piling with a maximum variation of 3 inches of center of any pier from location shown. Piers should not be out of plumb more than 2 percent. Where piers are installed exceeding specified tolerances for plumb or location, notify Owner and Engineer immediately. The foundation design will be analyzed by Engineer and if necessary redesigned by Engineer. Costs for analysis and redesign shall be responsibility of Contractor.

B. Comply with applicable provisions of the referenced specifications.
1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect members from erosion, cuts, breaks, abrasion, and deterioration.
   1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 PRODUCTS

2.1 TIMBER PIERS

A. Round Timber Piers: No. 1 Southern Yellow Pine. Pressure treated according to AWPA U1.

2.2 ACCESSORIES

A. Steel Bolts: A307, hot dip galvanized.

2.3 FIELD APPLIED WOOD PRESERVATIVE

A. Field-Applied Wood Preservative: Treat field cuts, holes, and other penetrations according to AWPA M4.

PART 3 EXECUTION

3.1 EXAMINATION

A. Survey existing conditions and correlate with requirements to determine extent replacement Work required.

B. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of timber pier Work.
   1. Ensure that work done by other trades is complete and ready for timber piers Work.
   2. Verify that areas and conditions under which timber pier Work is to be performed permit proper and timely completion of Work.
   3. Notify Owner and Engineer in writing of conditions which may adversely affect installation or performance of timber pier Work and recommend corrections.
   4. Do not proceed with timber pier Work until adverse conditions have been corrected and reviewed by Engineer.

C. It shall be Contractor's responsibility to furnish a specified type of pier necessary to install a satisfactory pier foundation. Conversion from one type of pier to another, or from lighter to heavier casing gauges shall be at no additional cost to the Owner.

3.2 PROTECTION

A. Take precautions to ensure safety of people, including building users, passers-by, and workmen, and animals; and protection of property, including adjacent building elements, landscaping, and motor vehicles.
B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

C. Protect paving and sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.

D. Limit access to Work areas.

E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.

F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 PIER REINSTALLATION

A. Excavation and reinstallation of existing pier shall not proceed until the overlying floor framing is shored as specified.

B. Field verify extent of pier displacement shown in Drawings. Notify Owner and Engineer if extent of decay exceeds reuse of pier.

C. Do not use timber piers with defects that interfere with function. Timber piers shall be carefully handled to avoid bruising or injuring their surfaces. They shall not be handled by tongs, cant hooks, or pike poles.

D. Rerade and recompact existing soil at dislocated piers to elevation required.

E. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit. Validate floor levelness and submit survey results to the Engineer for levelness acceptance.

F. Apply copper naphthenate field treatment to comply with AWPA M4, to cut and drilled surfaces of preservative-treated lumber.

3.4 REMOVAL AND DISPOSAL OF EXISTING TIMBER PIERS

A. Remove and dispose of existing timber piers that show severe degradation.

3.5 CLEANING

A. Clean adjacent surfaces and structures of dust, dirt, and debris. Return to condition existing before Work began.

END OF SECTION
SECTION 32 11 33.13
PORTLAND CEMENT-STABILIZED FILL

PART 1 GENERAL

1.1 SUMMARY

A. Furnish all labor, materials, tools, and equipment and perform all Work necessary for and incidental to providing earthwork, as shown on the Drawings and specified herein; in accordance with the provisions of the Contract.

B. The Work includes, but is not limited to:
   1. Backfill at locations indicated in the Drawings, including pedestrian bridge.

C. Related sections
   1. Section 31 23 00 - Excavation and Fill
   2. Section 31 62 19 - Timber Piles

1.2 REFERENCES

A. Definitions:
   2. Portland-Cement Stabilized Fill: cementitious slurry consisting of a mixture of aggregate or filler, water, and cementitious material, which is used as a fill or backfill in lieu of compacted earth.

B. Reference standards: Latest edition of all standards as of the date of the Specification.
   1. American Association of State Highway and Transportation Officials (AASHTO)
      b. AASHTO T 134 - Stand Method for Test for Moisture-Density Relations of Soil-Cement Mixtures
      c. AASTHO T 135 - Standard Method of Test for Wetting-and-Drying Test of Compacted Soil-Cement Mixtures
   2. ASTM International
      a. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Course Aggregate
      b. ASTM C150 - Standard Specification for Portland Cement
      c. ASTM C595 - Standard Specification for Blended Hydraulic Cements
      d. ASTM D558 - Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures
      e. ASTM D1241 - Materials for Soil-Aggregate Subbase, Base, and Surface Courses
      f. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
      g. ASTM D1632 - Standard Practice for Making and Curing Soil-Cement Compression and Flexure Test Specimens in the Laboratory
      h. ASTM D1633 - Standard Test Methods for compressive Strength of Molded Soil-Cement Cylinders
i. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

3. Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges by The Texas Department of Transportation
   a. Item 275 - Cement Treatment (Road-Mixed)
   b. Item 276 - Cement Treatment (Plant-Mixed)

1.3 SUBMITTALS

A. Product Data: Manufacturer’s literature and technical data, including VOC contents
   1. Include Globally Harmonized System (GHS) Safety Data Sheets or, if not yet available, Material Safety Data Sheet for information only

B. Portland Cement-Stabilized Fill Mixes:
   1. Design Mixes: For cementitious mixture, include:
      a. Proportions of materials.
      b. Mill test certificates for cement.
      c. Sieve analysis for fine and coarse aggregate.
      d. Test results for deleterious substances in aggregates and potential aggregate reactivity.

1.4 PROTECTION

A. If cultural artifact evidence is discovered during construction, stop work and contact Construction Manager immediately.

B. Protect excavations by shoring, bracing, or casing to prevent cave-in of loose soils.

C. Protect excavations during inclement weather.

D. Notify Engineer of unexpected sub-surface conditions and discontinue work in affected area until notification to resume.

E. Protect utilities from damage by excavation.

F. Provide supplemental shoring, designed by an Engineer licensed in The State of Texas, when excavating adjacent to isolated footings supporting structural elements. Notify engineer if support condition is unclear.

G. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1.5 QUALITY ASSURANCE

A. Contractor Firm Qualifications: An experienced firm that has successfully completed Cement-Stabilized Fill installation work similar in material, design, and extent to that indicated for Project.

B. Manufacturer: Cement-Stabilized Fill shall be manufactured by a producer with experience in the production of similar products.
C. Materials: For each type of material required for the work of this Section, provide primary materials that are the products of one manufacturer.

1.6 PROJECT CONDITIONS

A. Comply with Owner’s limitations and restrictions for Site use and accessibility.

B. Handle materials in strict accordance with safety requirements required by material manufacturers, Material Safety Data Sheets, and local, state, and federal rules and regulations. Maintain Material Safety Data Sheets with materials in storage area and available for ready reference on Site.

C. Do not store materials on structure, and limit obstruction of roadway during performance of the work.

D. Do not apply cement when the atmospheric temperature is less than 40 degrees F or to soils that are frozen or contain frost, or when the underlying material is frozen. If the temperature falls below 35 degrees F, protect completed cement-treated areas against detrimental effects of freezing.

PART 2 PRODUCTS

2.1 PORTLAND CEMENT-STABILIZED FILL MATERIAL

A. Source Limitations: Obtain each type or class of cementitious material of same brand from same manufacturer’s plant, each aggregate from 1 source.

B. Portland Cement: ASTM C150, Type I

C. Fine Aggregates: shall conform to ASTM C33 and shall consist of natural or manufactured sand with a Plasticity Index less than 15 and 0-10% passing the No. 200 sieve

D. Mixing water shall be potable, clean and free of injurious quantities of substances known to be harmful to portland cement.

E. Portland cement-stabilized fill shall be limited to a maximum 28-day compressive strength of 300 psi to enable future excavation.

2.2 CURING MATERIALS

A. Water: Potable.

B. Moisture-Retaining Cover: ASTM C171, white burlap-polyethylene sheet.

2.3 MIXES

A. Prepare design mixes for each type and strength of cement-stabilized fill determined by either laboratory trial mixes or field-test data.
   1. Use qualified independent testing agency for preparing and reporting proposed mix designs for laboratory trial mix basis.
B. Proportion cementitious fill mix as follows:
   1. 28-day Compressive Strength:
      a. 125 pounds per square inch, minimum.
      b. 300 pounds per square inch, maximum.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of Work.

3.2 PREPARATION

A. Clearing: Clear existing concrete and landscaping where indicated. Work may include removal of trees, shrubs, paving, incidental structures, debris, trash, and other obstructions.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

3.3 EXCAVATION

A. If cultural artifact evidence is discovered during construction, stop work and contact Construction Manager immediately.

B. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for removal of existing drainage piping to be removed, for installing services and other construction, and for inspections.

C. Excavation Drainage: Operate pumping equipment, and/or provide other materials, means, and equipment, as required, to keep excavation free of water and sub-grade dry, firm, and undisturbed until the approval of permanent Work has been received from the Engineer. Approval of the Engineer is also required before placement of the permanent Work on all subgrades.

3.4 PLACEMENT OF CEMENT-STABILIZED FILL

A. General: Do not fill or backfill until all debris, unsatisfactory soil materials, obstructions, and deleterious materials have been removed from excavation.

B. Plant Mixing:
   1. Thoroughly mix materials at optimum moisture content in proportions designated on mix design.
   2. Deliver to Site and discharge within 60 minutes after introduction of mix water.
   3. Temperature must be at least 40 degrees F.
   4. Place cement-stabilized fill on area where compacting and finishing can be completed during same work day.
   5. Spread and shape in a uniform layer with approved spreader.

C. Site Mixing:
1. Scarify existing subgrade and moisten native soil to optimum moisture content as per testing (ASTM D1557).
2. Uniformly apply cement to area where mixing, compacting, and finishing can be completed in the same day.
3. Temperature must be at least 40 degrees F.
4. Mix required quantity of cement with water, agitate slurry continuously, and apply within two hours of adding water.
5. Distribute slurry uniformly by making successive passes over measured section until specified cement content is reached.
6. Thoroughly mix material and cement until a homogenous mixture is obtained. Spread and shape the completed mixture in uniform layers.
7. Begin compaction immediately.

D. Backfill shall be placed against concrete structures designed to retain earth loads as follows:
1. Soil backfill shall consist of native material.
2. Shall be moistened to native soil optimum moisture content as per testing (ASTM D1557) during compaction.
3. Shall be compacted at least to 95% of maximum density at optimum moisture content per ASTM D1557 immediately after placing each layer.
4. Shall be placed in layers not more than 8 inches in depth before compaction, when compacted by pneumatic or mechanical tamping devices, and 4 inches when hand operated tampers are used.
5. Begin compaction at the sides and proceed toward the center, overlapping successive trips by at least one-half the width of the compaction unit.

E. The backfill shall be placed and compacted to the elevations and limits to match existing, unless otherwise directed by Engineer.

3.5 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

3.6 FINISHING

A. The surface shall be moistened, if necessary, and shaped to the required lines, grades, and cross section. Lightly scarify the surface, if necessary, to eliminate any imprints made by the compacting or shaping equipment.

3.7 CURING

A. Unformed Top Surfaces: Begin curing immediately after finishing concrete. Use moisture-retaining cover.
1. Place cover in widest practicable width, with sides and ends lapped at least 12 inches.
2. Seal sides and ends of cover by holding down with soil, concrete pieces, or some other weight, or by using waterproof tape or adhesive.
3. Immediately repair holes or tears in cover during curing period using cover material and waterproof tape.

3.8 FIELD QUALITY CONTROL

A. Allow testing agency to inspect and test subgrades and backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

B. Testing agency retained by Contractor will test compaction of soils in place according to ASTM D6103, ASTM D4832, ASTM D6023, and ASTM D6024, as applicable. Tests will be performed at the following locations and frequencies:
   1. At least one test for every truck

3.9 PROTECTION

A. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

B. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.10 CLEAN UP

A. Discharge excess concrete and concrete wash water at location designated on the Drawings. Remove and legally dispose of discharged excess concrete in a timely manner offsite.

B. After completing installation Work:
   1. Clean soiling from adjacent surfaces. Exercise care to avoid scratching or damage to surfaces.
   2. Repair surfaces stained, marred, or otherwise damaged during Work.
   3. Clean up debris and surplus materials and remove from Site.

END OF SECTION
Architectural Specifications
SECTION 06 41 00
ARCHITECTURAL CASEWORK

PART 1 GENERAL

1.1 SUMMARY

A. All labor, materials, equipment, and incidentals required for the proper installation of:
   1. Specially fabricated cabinet units and countertops

B. Related Sections
   1. Section 06 10 63 – Exterior Rough Carpentry
   2. Section 12 36 00 – Countertops

1.2 REFERENCES

A. General
   1. All standards current edition as of the date of this Specification.

B. ASTM International
   1. ANSI A135.4 - American National Standard for Basic Hardboard; 2012
   2. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
   3. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated;
      Architectural Woodwork Institute and Architectural Woodwork Manufacturers
   4. BHMA A156.9 - American National Standard for Cabinet Hardware; Builders Hardware
      Manufacturers Association; 2010 (ANSI/BHMA A156.9).

1.3 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details,
   and accessories.
   1. Minimum Scale of Detail Drawings: 1-1/2 inch to 1 foot.
   2. Provide the information required by AWI/AWMAC/WI (AWS).

C. Samples of Materials:
   1. Submit actual samples of architectural cabinet construction, minimum 12 inches square,
      illustrating proposed cabinet, countertop, and shelf unit substrate and finish.
   2. Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets,
      demonstrating hardware design, quality, and finish.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this
   section with minimum five years of documented experience.
   1. Company with at least one project in the past 5 years with value of woodwork within 20
      percent of cost of woodwork for this Project.
2. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.

B. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

B. Do not deliver wood materials to project site until building is fully enclosed and interior temperature and humidity are in accordance with recommendations of AWI/AWMAC/WI (AWS).

1.6 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.1 CABINETS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI (AWS) for Custom Grade.

2.2 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Provide sustainably harvested wood, certified or labeled as specified in Section 01 6000 Product Requirements.

2.3 LUMBER MATERIALS

A. Face Frames: 3/4" thick solid wood frames with 1-1/2" wide stiles and rails.

B. Cabinet Door and Removable Panel at Sink: Vertical 1x4 knotty pine, z-braced, v-joint, center match

2.4 PANEL PRODUCTS

A. Cabinet (unless noted otherwise): Hardwood Faced Plywood, HPVA HP-1; graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, core of particleboard, medium density fiberboard, strawboard, or engineered combination; type of glue recommended for specific application; thickness as required; face veneer as follows:
   2. Wood Edge Banding:
      a. Match veneer.
      b. Width to match component thickness.
      c. Use at all exposed edges.
2.5 ACCESSORIES
A. Adhesive: Multi-purpose Construction Adhesive with a maximum VOC content of 70g/l in compliance with Section 01 6116 Volatile Organic Compound (VOC) Content Restrictions.
B. Wood Edge Banding: Extruded PVC, convex shaped; smooth finish; self-locking serrated tongue; of width to match component thickness, color as selected from manufacturer's standards.
   1. Use at all exposed shelf edges.
C. Fasteners: Size and type to suit application.
D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
E. Concealed Joint Fasteners: Threaded steel.

2.6 HARDWARE
A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
B. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated self-rests, polished chrome finish, for nominal 1 inch spacing adjustments.
C. Drawer and Door Pulls: "U" shaped wire pull, steel with chrome finish, 4 inch centers.
D. Catches: Magnetic.
E. Drawer Slides:
   1. Type: Standard extension.
   2. Static Load Capacity: Commercial grade.
   4. Stops: Integral type.
   5. Features: Provide self-closing/stay closed type.
F. Hinges: European style concealed self-closing type, steel with polished finish.
   1. Manufacturers:
      d. Substitutions: See Section 01 6000 - Product Requirements.

2.7 FABRICATION
A. Fabricate to Custom Quality Standards.
B. Cabinet style: Partial overlay.
C. Drawer Construction Technique: As recommended by fabricator.
D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

E. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

F. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

2.8 FACTORY FINISHING

A. Sand work smooth and set exposed nails and screws.
   1. For transparent finishes, use wax or burn-in filler which blends with surrounding color and sheen, after stain and before final top coat.

B. Finish work in accordance with AWI/AWMAC/NI (AWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. Stain: TBD
      b. AWS System 5: Varnish, Conversion
      c. Sheen: Satin

C. Finish work in the factory in accordance with Section 1500.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.2 INSTALLATION

A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units.

D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.

E. Secure cabinets to floor using appropriate angles and anchorages.

3.3 ADJUSTING

A. Adjust installed work.

B. Adjust moving or operating parts to function smoothly and correctly.
3.4 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

3.5 PROTECTION OF FINISHED WORK

A. Provide protection and maintain conditions that ensure cabinetry is without damage and deterioration at time of substantial completion.

END OF SECTION
SECTION 07 21 00
MINERAL WOOL INSULATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each product, for tests performed by a qualified testing agency.
B. Evaluation Reports: For foam-plastic insulation, from ICC-ES.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

PART 2 PRODUCTS

2.1 MINERAL-WOOL BLANKETS

A. Mineral-Wool Blanket, Unfaced: ASTM C665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E84; passing ASTM E136 for combustion characteristics.
PART 3 EXECUTION

3.1 PREPARATION

A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.

2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.

4. For wood-framed construction, install blankets according to ASTM C1320 and as follows:

3.4 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION
SECTION 09 20 00
GYPSUM BOARD

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Interior gypsum board.
   2. Tile backing panels.
   3. Texture finishes.

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

1.2 SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For the following products:
   1. Textured Finishes: 12 inches x 12 inches for each textured finish indicated and on same backing indicated for Work.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, moisture damaged, and mold damaged.
   1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 PRODUCTS

2.1 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.
2.2 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard and Ceiling Board:
   1. ASTM C1396
   2. Manufacturers:
      f. Or approved equal
   3. Thickness: 1/2 inch (12.7 mm).
   4. Long Edges: Tapered

B. Backing Board For Tiled Wall Areas:
   1. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
   2. Manufacturers and Products:
      a. Custom Building Products; Wonderboard.
      b. National Gypsum Company; PermaBase Brand Cement Board.
      c. National Gypsum Company; PermaBase Flex Brand Cement Board.
      d. USG Corporation; Durock Brand Cement Board.
      e. Or approved equal.
   3. Thickness: 1/2 inch.
   4. Edges: Manufacturer’s standard edges.
   5. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

2.3 TRIM ACCESSORIES

A. Interior Trim: ASTM C1047.
   1. Material: Galvanized
   2. Shapes:
      a. Cornerbead.
      b. Bullnose bead.
      c. LC-Bead: J-shaped; exposed long flange receives joint compound.
      d. L-Bead: L-shaped; exposed long flange receives joint compound.
      e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
      f. Expansion (control) joint.
      g. Curved-Edge Cornerbead: With notched or flexible flanges.

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C475.

B. Joint Tape:
   1. Interior Gypsum Board: Paper.
   2. Tile Backing Panels: As recommended by panel manufacturer.
C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
   1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
   2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
      a. Use setting-type compound for installing paper-faced metal trim accessories.
   3. Fill Coat: For second coat, use drying-type, all-purpose compound.
   4. Finish Coat: For third coat, use drying-type, all-purpose compound.
   5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

D. Joint Compound for Tile Backing Panels:
   1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.5 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Steel Drill Screws: ASTM C1002 unless otherwise indicated.

C. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

E. Thermal Insulation: As specified on Drawings.

F. Weather Barrier: As specified on Drawings.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840, GA-216, ANSI A108.11, and manufacturer's instructions.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
   1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
   2. Fit gypsum panels around ducts, pipes, and conduits.
   3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

G. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

H. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
   1. Not more than 30 feet apart on walls and ceilings over 50 feet long.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.4 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:
   1. Level 5: Walls and ceilings.
a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

2. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.5 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

3.6 APPLYING TEXTURE FINISHES

A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.

B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture matching approved sample and free of starved spots or other evidence of thin application or of application patterns.

C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written instructions.

3.7 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION
SECTION 09 64 00
WOOD FLOORING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Field-finished wood flooring.

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

1.2 REFERENCES

A. Reference Standards: All standards listed below form a part of this specification to extent referenced.
   1. National Wood Flooring Association (NWFA)

1.3 SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For each type of floor assembly and accessory. Include plans, sections, and attachment details. Include expansion provisions and trim details.

C. Sample: For each exposed product and for each color and texture specified, approximately 12 inches long and of same thickness and material indicated for the Work and showing the full range of normal color and texture variations expected.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver wood flooring materials in unopened cartons or bundles.

B. Protect wood flooring from exposure to moisture. Do not deliver wood flooring until after concrete, masonry, plaster, ceramic tile, and similar wet-work is complete and dry.

C. Store wood flooring materials in a dry, warm, ventilated, weathertight location.

1.5 FIELD CONDITIONS

A. Conditioning period begins not less than seven days before wood flooring installation, is continuous through installation, and continues not less than seven days after wood flooring installation.
   1. Environmental Conditioning: Maintain ambient temperature between 65 and 75 deg F and relative humidity planned for building occupants in spaces to receive wood flooring during the conditioning period.
   2. Wood Flooring Conditioning: Move wood flooring into spaces where it will be installed, no later than the beginning of the conditioning period.
3. Do not install flooring until it adjusts to relative humidity of, and is at same temperature as, space where it is to be installed.
4. Open sealed packages to allow wood flooring to acclimatize immediately on moving flooring into spaces in which it will be installed.

B. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.
C. Install wood flooring after other finishing operations, including painting, have been completed.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Softwood Flooring: Comply with WCLIB No. 17 grading rules for species, grade, and cut.

2.2 FIELD-FINISHED WOOD FLOORING

A. Solid-Wood Flooring: Kiln dried to 6 to 9 percent maximum moisture content; tongue and groove and center matched; with backs channeled.
   1. Grade and Species: C & Better, 80-100% Heart - Southern Yellow Pine
   2. Cut: Vertical grain
   3. Thickness: 3/4 inch
   4. Face Width: 5 3/8 inch
   5. Lengths: 8 foot to 12 foot-length strips complying with applicable grading rules

B. Finish System: Complete oil-modified system of compatible components that is recommended by finish manufacturer for application indicated. Use the following or approved equal.
   1. Bona Craft OI 2k, Satin finish, Neutral color, manufactured by Bona
   2. Stain: None.
   3. Sealer: None.

C. Wood Filler: Compatible with finish system components and recommended by filler and finish manufacturers for use indicated. If required to match approved Samples, provide pigmented filler.

2.3 ACCESSORY MATERIALS

A. Wood Subfloor: Repair existing subfloor as required to accept new flooring system as specified in Section 061063 “Exterior Rough Carpentry”

B. Continuous Weather Barrier: Tyvek CommercialWrap

C. Fasteners: As recommended by manufacturer, but not less than that recommended in NWFA's "Installation Guidelines."

D. Thresholds and Saddles: To match wood flooring. Tapered on each side.

E. Reducer Strips: To match wood flooring. 2 inches wide, tapered, and in thickness required to match height of flooring.

F. Cork Expansion Strip: Composition cork strip.
PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of wood flooring.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with flooring manufacturer's written installation instructions, but not less than applicable recommendations in NWFA's "Installation Guidelines."

B. Provide expansion space at walls and other obstructions and terminations of flooring 3/4 inch

C. Vapor Retarder: Comply with the following for vapor retarder installation:

   1. Wood Flooring Nailed to Wood Subfloor: Install flooring over a layer of Tyvek CommercialWrap, according to flooring manufacturer’s written instructions.

D. Solid-Wood Flooring: Blind nail or staple flooring to substrate.

3.3 FIELD FINISHING

A. Machine-sand flooring to remove offsets, ridges, cups, and sanding-machine marks that are noticeable after finishing. Vacuum and tack with a clean cloth immediately before applying finish.

   1. Comply with applicable recommendations in NWFA's "Installation Guidelines."

B. Fill and repair wood flooring defects.

C. Apply floor-finish materials in number of coats recommended by finish manufacturer for application indicated.

D. Cover wood flooring before finishing.

E. Do not cover wood flooring after finishing until finish reaches full cure, and not before seven days after applying last finish coat.

3.4 PROTECTION

A. Protect installed wood flooring during remainder of construction period with covering of heavy kraft paper or other suitable material. Do not use plastic sheet or film that might cause condensation.

   1. Do not move heavy and sharp objects directly over kraft-paper-covered wood flooring. Protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.
END OF SECTION
Roofing Specifications
SECTION 02 41 20

ROOF TEAR-OFF AND DECK PREPARATION

PART 1 GENERAL

1.1 SUMMARY

A. Applicable Deck and Substrate Type - The Work covered under this Specification Section applies to all roof decks encountered within the scope of Work of this project.
   1. Protection of work to remain
   2. Removal of certain building components
   3. Preparation of substrate or deck for roof application

1.2 REFERENCES

A. Perform all Work in accordance with the building code of the governing body having jurisdiction, the governing State Industrial Safety Orders, and the requirements of the Occupational Safety and Health Administration.

B. U.S. Product Standard
   1. USPS - PS 1

C. American Plywood Association (APA)
   1. APA PRP-108 Performance Standards

1.3 PROJECT/SITE CONDITIONS

A. Be responsible for stability and safety of all existing structures on the site or on adjoining properties until demolition work is completed. Promptly repair or replace existing property damaged during the course of this Work to the original state at no extra cost to the Owner.

1.4 SCHEDULING

A. Provide a construction progress schedule to the Architect/Engineer in advance of starting construction work. Verify that owners of building are notified at least twenty-four (24) hours prior to commencing work on the building.

B. Confer with the Owner through Architect/Engineer regarding the sequencing and phasing of the performance of various parts of the Work. Cooperate fully and as long as necessary so that certain facilities and services will be maintained in operation until immediately before their removal is required to permit installation of new work.

C. Submit proposed methods and operations of partial roof demolition to Architect/Engineer for review prior to start of Work. Do not begin tear-off on any roof section prior to completion of the following work associated with the roofing section:
   1. Masonry and mortar work

D. Ensure through protection and good rooftop management practices that traffic and loads imposed on the roof are such that the deck will not be crushed, broken, pulverized, or otherwise damaged in such a manner as to render it unsuitable to receive the roofing system. Any such
damage performed by the Contractor, his employees, or subcontractors, shall be repaired in a manner acceptable to the Architect/Engineer.

PART 2 PRODUCTS

2.1 WOOD DECK REPAIR MATERIALS

A. Plywood - Each construction and industrial panel shall be identified with the appropriate trademark of the American Plywood Association (APA), and shall meet the requirements of the latest edition of U.S. Product Standard PS 1 or APA PRP-108 Performance Standards. Roof sheathing shall bear the following designation "APA C-C PLUGGED, EXPOSURE DURABILITY CLASSIFICATION: Exterior." Note that this is not "CDX." Match the thickness of the existing panel.

B. Installation - Install with the long dimension or strength axis of the panel across supports, except where noted, and with panel continuous over two or more spans. Suitable edge support shall be provided where indicated on the Drawings or in recommendations of the American Plywood Association by use of panel clips, tongue-and-groove edges, or lumber blocking between joists. Panel end joints shall occur over framing. Allow 1/8-inch spacing at panel ends and edges, unless otherwise recommended by the panel manufacturer. Nail 6 inches on-center along supported panel edges and 12 inches on-center at intermediate supports, except that when supports are spaced 48 inches on-center or more, space nails at 6 inches on-center at all supports. Use 6d common nails for panels 1/2-inch and less and 8d nails for greater thickness, except that when panels are 1-1/8 inches, use 8d ringshank or 10d common nails.

PART 3 EXECUTION

3.1 FIELD CONDITIONS

A. Verify drawing dimensions with actual field conditions. Inspect related work and adjacent surfaces. Report to the Architect/Engineer all conditions that prevent proper execution of this Work.

B. Prior to performing Work, inspect all objects designated for removal and protect the limits of demolition. Verify with the Architect/Engineer.

C. Locate all active utility lines and provide for their protection. Leave them in operating condition.

3.2 PROTECTION

A. Lowering material - Provide hoists and enclosed chutes as required to lower removed material. Throwing, dropping, or permitting the free fall of material and debris from heights that would cause damage to Work, or to plantings, or cause undue noise or nuisance, or excessive dust, is expressly prohibited.

B. Work to remain - Provide protection as may be necessary to prevent damage to existing equipment.

C. Existing roofing - Protect the existing roof whether scheduled for removal and replacement or not with plywood runways over all equipment or foot traffic areas.
D. Existing decking - During the tear-off and demolition operation, the existing deck is to be protected from storage, abuse, impact, or excessive traffic which might tend to damage the decking. Any decking damaged in any of the foregoing ways shall be replaced with matching decking in accordance with the manufacturer’s original installation specifications.

3.3 TEAR-OFF AND DEMOLITION WORK

A. Workmanship - Have indicated items removed by skilled and properly equipped workers. Have materials and equipment to be salvaged removed under the direction of or by the crafts persons who would normally install these items.

B. Limited Daily Tearoff - The Contractor shall tear off only as much roofing daily as can be replaced securely and completed the same day, or before the onset of inclement weather. All work shall be fully completed daily except for flashing and trim work. However, all work shall be completely weather tight to be free from leaks or water infiltration at the end of each workday.

C. Operation - Upon tearing roof off, remove all tear-off debris from the roof into containers and dumpsters immediately. Do not store on the roof. Do not concentrate tear-off debris in any area that may overload the structure. Use no equipment or machinery that imposes excessive loads, deflections on the deck, or damages to the surface of the deck. Dispose of all debris in a legally licensed landfill.

D. Wet Decks - Notify Architect/Engineer if deck is found to be wet. Mechanically dry all wet decks prior to application of new roofing materials.

3.4 DECK PREPARATION FOR ROOFING

A. Clean Deck - Clean the deck thoroughly and remove any nails or fasteners which protrude. Do not bend over or hammer down protruding screws or fasteners. Chip off rough spots that may impede adhesion of the roof insulation, or wood nailer installation.

B. Dead or Unused Penetrations - Close all equipment or pipe penetration holes as shown in the Drawings or as otherwise directed by the Architect/Engineer. Ensure that the holes are closed in such a manner as to preclude leakage of primer or hot bitumen through the hole.

C. Wood Decks - Repair holes larger than 12 inches in diameter in the plywood deck using deck materials to match the existing.
   1. New deck repair material must span three joists. Holes smaller than 12 inches are to be repaired with 20-gauge galvanized iron flat sheet.

END OF SECTION
SECTION 04 20 00
UNIT MASONRY

PART 1 GENERAL

1.1 SUMMARY

A. All labor, materials, equipment, and incidentals required for the proper repair of:
   1. Brick at chimney
      a. Any masonry work that may be needed in association with the addition of a saw cut
         reglet for the new roofing system.
   2. Restoration of mortar joints for installation of new roofing system.

B. Related Sections
   1. Section 06 10 63 – Exterior Rough Carpentry
   2. Section 07 62 00 – Sheet Metal Flashing

1.2 REFERENCES

A. General
   1. All standards current edition as of the date of this Specification.

B. ASTM International
   1. ASTM A123 - Zinc Coatings on Iron and Steel Products
   2. ASTM C90 - Concrete Masonry Units
   3. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar
   5. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes

C. BIA
   1. BIA Technical Note No. 20 Revised

1.3 SUBMITTALS

A. Product Data - Submit manufacturer's product data for each type of masonry unit, mortar,
accessory, and other manufactured products; include certification that each type complies with
specified requirements.

B. Samples of Materials - One sample of Brick Masonry Units proposed for use at chimney.

C. Submit to Architect/Engineer, prior to installation, manufacturer's data of steel reinforcement
for masonry joints, metal anchors, and tees. Additional samples for visual examination and for
testing shall be furnished as directed.

D. Submit to Architect/Engineer, prior to installation, manufacturer's data on asphalt coated
copper flashing, primer, adhesives, and mastics.
1.4 QUALITY ASSURANCE

A. Installer shall be a Company specializing in performing the Work of this Section with a minimum of five (5) years documented experience performing projects of similar type, size and cost.

1.5 MOCK-UPS

A. Erect in-place, a sample wall section 3 feet long by 3 brick courses high. Prepare sample using existing face brick materials complete with new through-wall and receiver installed. Sample shall show the proposed color range at the mortar joint and workmanship of masonry materials and new flashings.

B. Additional mock-up sample wall sections may be required by the Architect/Engineer if necessary to properly demonstrate acceptable workmanship.

C. No brick masonry work shall be done until the Architect/Engineer has approved the sample section of the work involved. The approved section shall become the minimum standards for the Work. Rejected mock-up section shall be removed from the site. Approved mock-up may remain as part of the Work.

D. During the sample mock-up installation, should it become apparent the existing chimney brick is not suitable for reinstallation, submit brick of same type, color, and texture for consideration by the Architect/Engineer.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Maintain materials and surrounding air temperature to a minimum 50 degrees F (10 degrees C) prior to delivery and forty-eight (48) hours after completion of masonry work.

1.7 SEQUENCING AND SCHEDULING

A. Coordinate masonry work with installation of flashing and structural support installations.

B. Maintain building in a watertight condition at all times.

PART 2 PRODUCTS

2.1 MASONRY ACCESSORIES - (MORTAR, REINFORCING, ANCHORAGE, FLASHING, AND ACCESSORIES)

A. Mortar and Grout Materials (Masonry cement shall not be used)
   1. Portland Cement - ASTM C150, Type I or II.
   2. Hydrated Lime - ASTM C207, Type S.
   3. Aggregate for Mortar - ASTM C144; except for joints less than 1/4 inch, use aggregate graded with 100 percent passing No. 16 sieve.

B. Anchors and Ties - Provide straps, bars, bolts, and rods fabricated from not less than 16-gauge sheet metal or 3/8-inch diameter rod stock, unless otherwise indicated. Fabricate devices from steel with minimum ASTM E30, Class 3 galvanized coating.
C. Furnish and install ties, anchors, and accessories of or equal to Dur-O-Wall #D/A702 Triangular Ties, #D/A7 12 Structural Triangle, Veneer Anchors #D/A207, Single Wythe Ladder Type No. 9 and Double Ladder Type No. 9.

D. See Section 07 62 00 – Sheet Metal Flashing, for sheet metal receivers.

2.2 WATER

A. Clean and potable, free of deleterious acids, alkalis or organic matter.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field conditions are acceptable and ready to receive Work including, but not limited to:
   1. Other trades are on site prepared to complete their work.
   2. Sheet metal flashings are fabricated and ready for installation.
   3. Structural steel supports and framing are ready for reinstallation.

B. Beginning of installation means installer accepts existing conditions.

C. All sheet metal flashings, structural supports, and membrane water proofing shall be approved, in place, by Architect/Engineer before being concealed.

3.2 PREPARATION

A. Provide protection for existing roof surface.

B. Direct and coordinate placement of metal anchors supplied in other Sections.

C. Provide temporary bracing during installation of masonry work.

3.3 INSTALLATION

A. Coursing
   1. Establish lines, levels, and coursing indicated. Protect from displacement. Maintain masonry courses and joints to match existing. Form vertical and horizontal joints of uniform thickness.
   2. Close all cracks and crevices.

B. Placing and Bonding
   1. Lay solid masonry units in full bed of mortar with full head joints uniformly jointed with other work. Buttering corners of joints or excessive furrowing of mortar joints is not permitted. Remove excess mortar as work progresses.
   2. Interlock intersections and external corners.
   3. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
   4. Cut masonry units with motor driven saw designed to cut masonry with clean, sharp, unchipped edges. Cut units as required to provide patterns shown and to fit adjoining work neatly. Use full units without cutting wherever possible.
C. Weeps and Vents - Install weep holes in veneer at 24 inches on-center horizontally above through-wall flashing, above shelf angles, and at bottom of walls. Form weep holes by omission of all mortar in the head (butt) joints.

D. Reinforcement and Anchorages
1. Tie exterior wythe to backup with wire loop ties spaced not more than 16 inches on-center vertically and 16 inches on-center horizontally.
2. Reinforce joint corners and intersections with strap anchors 16 inches on center vertically.
3. Masonry Flashing - Extend asphalt coated copper flashing 1/4 inch out past the sheet metal receiver under veneer, turn up 8 inches onto back-up wall, and secure as noted on the Drawings. Lap end joints a minimum of 6 inches and seal watertight. Use flashing manufacturer's recommended adhesive and primer.

E. Built-In Work - As work progresses, build in items furnished by other Sections. Build in items plumb and level.

3.4 REPAIRING AND REPOINTING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Tool joints, remove loose mortar to a depth of 1 inch. Clean masonry and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat uniform appearance.

3.5 PRECAUTIONS

A. Protect face brick material from staining and keep tops of walls covered with non-staining waterproof coverings when work is not in progress. When work is resumed, top surface of work shall be cleaned of all loose mortar and in drying weather, thoroughly wetted.

B. Brick having absorption rates more than 0.025 ounces per square inch per minute shall be wetted sufficiently so that the rate of absorption when laid down does not exceed this amount. All units shall be free from water adhering to their surfaces when they are laid in the wall.

C. Before closing up any pipe, duct, or similar inaccessible spaces or shafts with masonry, remove all rubbish and sweep out the area to be enclosed.

D. The open space at expansion joints shall be kept free of mortar by using a continuous wood or metal strip temporarily set on the wall.

E. Where fresh masonry joins masonry that is partially set or totally set, clean the exposed surface of the set masonry and wet it lightly so as to obtain the best possible bond with the new work. Remove all loose brick and mortar.

F. Cutting and Fitting - Cut and fit work of other Sections. Coordinate with other sections of work to provide correct size, shape, and location. Obtain Architect/Engineer's approval prior to cutting or fitting masonry work not indicated, or where appearance or strength of masonry work may be impaired.
3.6 CLEANING

A. Clean work as work progresses by dry brushing to remove mortar fines and smears.

B. Final Cleaning
   1. Remove large mortar particles by hand with wooden paddles and non-metallic scrape hoes.
   2. Test cleaning methods on sample of wall panel; leave one-half of panel uncleaned for comparison purposes.
   3. Protect adjacent granite, plaster, 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 prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
   5. Clean all parapet wall brick by bucket and brush hand-cleaning method described in BIA Technical Note No. 20 Revised, using the following masonry cleaner:
      a. Job mixed detergent solution.

3.7 PROTECTION OF FINISHED WORK

A. Provide protection and maintain conditions that ensure masonry is without damage and deterioration at time of substantial completion.

END OF SECTION
SECTION 06 10 00

ROOF-RELATED ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. This Section covers all wood blocking, curbs, nailers, and edges carpentry work as may be required for roofing work to comply with the Drawings and industry standards.

B. Section Includes:
1. Replacement of damaged or rotten wood nailers, or blocking.
2. Nailers, blocking, and equipment curbs to raise flashing heights to industry standards, or to meet FM Global requirements for compliance with ANSI/SPRI ES-1 and the Drawings. Where project is located in a high wind area as defined by the Texas Windstorm Act or FM Global, fastening requirements shall comply with the most stringent standard applicable to the geographical area.
3. Addition of new nailers, blocking, or equipment curbs to accommodate increased heights corresponding with added roof insulation thickness above that existing prior to work under these documents.
4. Lumber and plywood shall not be treated and shall be kiln dried.

C. Related Sections
1. 07 22 00 Roof Insulation
2. 07 50 00 Roofing Special Requirements

1.2 REFERENCES

A. General
1. All standards current edition as of the date of this Specification.

B. American Plywood Association (APA)
1. APA PRP-108 Performance Standards

C. American Soft Wood and Lumber
1. Standard PS 20

D. FM Global
1. FM Global Bulletin 1-49

E. National Roofing Contractors Association (NRCA)

F. U.S. Products
1. U.S. Products Standards PS 1

1.3 QUALITY ASSURANCE

A. For each use, comply with the American Soft Wood and Lumber Standard PS 20 by the United States Department of Commerce. Nominal sizes are shown or specified; provide actual sizes
complying with the minimum size requirements of PS 20 for the moisture content specified for each use.

B. Grading rules and trademarks
1. Southern Pine Inspection Bureau - SPIB
2. Western Wood Products Association - WWPA
3. American Plywood Association - APA
4. American Wood Preservers Institute - AWPI
5. American Lumber Standards Committee
6. United States Products Standards (PS 1)

C. Local Building Codes - All applicable provisions. This includes, but is not limited to, compliance with the ‘Texas Catastrophic Windstorm Act,’ the International Building Code, the applicable Codes for the municipal jurisdiction, Underwriters Laboratory U.L.-90 and FM Global wind uplift requirement listed in the General Notes on the Drawings, ANSI/SPRI ES-1 - whichever is more stringent. Whenever a particular attachment methodology is to be employed for fastening wood blocking or nailers to structural elements of the building, the standards, methodology, gauges, thickness, and frequency of attachment shall be as specified in FM Global Bulletin 1-49, or its successor document.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated, include material descriptions, and dimensions of individual components and profiles.

1.5 MARKINGS AND LABELS

A. All wood products shall be clean and free of all surface deposits.

B. Each piece shall be indelibly ink stamped with the Quality Mark of an approved independent third party inspection agency having a follow-up testing and inspection service at the plant over the quality of the product, and whose service is certified by an approved overview agency such as SPIB or TPI.

C. Quality Mark Stamp shall include the following in a legible format:
   1. Logo of the overview agency
   2. Logo of the inspection agency, the quality standard
   3. The initials KD (Kiln Dried)

D. All lumber products specified for structural uses shall bear an indelible ink stamp, signifying that the lumber has been marked by, or under the supervision of, an inspection agency certified by the ALSC and conforms to the requirements of the applicable grading rules.

E. All plywood products specified shall bear an indelible ink stamp indicating conformance to a plywood grade description contained in the current issue of U.S. Products Standards PS 1.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Wood products that are to be painted or required to be kiln dried shall be stored off the ground and under cover at the job site and protected from the weather until used.
1.7 COORDINATION

A. All wood products shall be kiln dried (KD) to a maximum moisture content of 19 percent for lumber and 18 percent for plywood.

B. The Engineer has designated all structural uses for treated wood products based on the applicable species and grade in accordance with the National Design Specification for Wood Construction of NFPA, and the Plywood Design specification of APA. Use only the species and grade specified for each use application.

PART 2 PRODUCTS

2.1 PLYWOOD - ALL PLYWOOD SHALL MEET THE FOLLOWING REQUIREMENTS:

A. Each construction and industrial panel shall be identified with the appropriate trademark of the APA, and shall meet the requirements of the latest edition of U.S. Product Standard PS 1 or APA PRP-108 Performance Standards.

B. All panels which have any edge or surface permanently exposed to the weather shall be classed "Exterior."

C. Panel thickness, grade, and Group Number of Span Rating shall be at least equal to that shown on the Drawings. Application shall be in accordance with the recommendations of the APA.

D. Plywood used on the roof shall bear the following designation "APA C-C PLUGGED, EXPOSURE DURABILITY CLASSIFICATION: Exterior." Note that this is not "CDX."

E. Plywood permanently exposed to weather shall be classed "Exterior." Install with the long dimension or strength axis of the panel across supports, except where noted, and with panel continuous over two or more spans. Suitable edge support shall be provided where indicated on the Drawings or in recommendations of the APA by use of panel clips, tongue-and-groove edges, or lumber blocking between joists. Panel end joints shall occur over framing. Allow 1/8-inch spacing at panel ends and edges, unless otherwise recommended by the panel manufacturer. Nail 6 inches on-center along supported panel edges and 12 inches on-center at intermediate supports, except that when supports are spaced 48 inches on-center or more, space nails at 6 inches on-center at all supports. Use 6d common nails for panels 1/2 inch and less and 8d nails for greater thickness, except that when panels are 1-1/8 inches, use 8d ringshank or 10d common nails.

2.2 FASTENERS

A. For Attachment of Cants, Lumber, or Plywood to Wood Members - Use flat-head, hot-dipped galvanized or stainless steel screws of sufficient length and gauge to penetrate a minimum of 1-1/2 inches into the receiving member.

B. For Attachment of Lumber or Plywood to Concrete and Masonry - Use flat-head, hot-dipped galvanized or polymer acrylic coated double threaded masonry screws as manufactured by Buildex, OMG, or equal.
PART 3 EXECUTION

3.1 FABRICATION AND INSTALLATION

A. All wood members are to be fastened using screws as specified or as indicated in details.

B. Where necessary, pre-drill holes to ensure no splitting of wooden members occurs. The use of self-drilling brass double concentric thread screws is permitted in lieu of pre-drilling.

C. Screw guns and drills shall be calibrated and adjusted in such a way as to prevent over-drilling or stripping of holes or threads. Insert fasteners flush with surface or slightly recessed (not to exceed 1/8 inch). Do not over tighten metal-to-metal components such that fasteners strip, or on metal-to-wood such that the visible metal 'puckers' more than 1/64 inch.

D. All details and wood nailers are to be installed in accordance with the details shown in the Factory Manual Loss Control Bulletin 1-49, ANSI/SPRI ES-1 or the National Roofing Contractors Association Roofing and Waterproofing Manual, whichever is most stringent.

E. All nailers are to be installed straight and shimmed when necessary to ensure tight fit and finish. Contractor shall rip lumber or otherwise add blocking so that blocking is 1/4 inch below height of insulation. "Step-ups" from insulation to nailers are not acceptable.

F. When installing pieces in multiple components, end joints shall be staggered a minimum of 24 inches. All joints are to be staggered in such a way that a joint does not ever fall over a joint.

G. All fastener requirements including size, frequency, pattern, and gauge shall meet the federal, state, or local codes or ANSI/SPRI ES-1, whichever is more stringent. This requirement includes compliance with the Texas Catastrophic Windstorm Act.

END OF SECTION
SECTION 07 22 00
ROOF INSULATION
ISOCYANURATE WITH COVER BOARD

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:
   1. Isocyanurate board type roof insulation
   2. Preformed isocyanurate tapered insulation cricketes, saddles, and kick-backs
   3. Impact resistant cover board

B. Related Sections
   1. Section 06 10 00 - Roof Related Rough Carpentry
   2. Section 07 41 10 - Metal Roof Panels
   3. Section 07 50 00 - Roofing Special Requirements

1.2 REFERENCES

A. General
   1. All standards current edition as of the date of this Specification.

B. ASTM International
   1. ASTM C209 - Standard Test Methods for Cellulosic Fiber Insulating Board
   2. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate
      Thermal Insulation Board

C. Federal Specifications

D. National Roofing Contractors Association (NRCA)
   1. 1987 MRCA/NRCA Joint Bulletin
   2. Handbook of Roofing Knowledge

E. RIC/TIMA
   1. RIC/TIMA Thermal Conditioning Procedure
   2. RIC/TIMA Technical Bulletin No. 281-1

1.3 SUBMITTALS

A. Provide submittals in advance of the Pre-Roofting Conference. Any materials ordered prior to
   receiving written approval of submittals shall be at the Contractor's risk.

B. Product Data
   1. Product Data: Submit Product Data sheets for all items proposed to be furnished and
      installed under this Section including manufacturer's specifications, recommended
      installation procedures, and data demonstrating compliance with the specified
      requirements.
2. Fastening Patterns: Submit roofing manufacturer’s recommended fastening patterns for field, perimeter, and corner conditions, certified for the appropriate substrate to meet the FM Global wind uplift requirement listed on the Drawings.

C. Quality Assurance/Control Submittals
   1. Manufacturer’s Certification of Materials: Refer to Section 07 50 00, Paragraph 1.6.A.

1.4 QUALITY ASSURANCE

A. Qualifications
   1. Contractor shall select isocyanurate insulation suitable for a multi-layer system.
   2. Insulation values calculated to conform to these Specifications shall be based on the 6-month conditioned thermal values as determined by the RIC/TIMA Thermal Conditioning Procedure. The guidelines shall comply with those published by RIC/TIMA Technical Bulletin No. 281-1 and as endorsed by the National Roofing Contractors Association (NRCA) and Federal Specification HH-l-1972.

B. Regulatory Requirements
   1. The materials shall comply with requirements for UL Class A Fire Rating, FM Global Class I requirements, or local codes, whichever is the most stringent.

C. In-Place Mock-up
   1. Demonstrating offset in both directions
   2. Provide Field Observer 48-hours advanced notification for observation of mock-ups.
   3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect/Engineer specifically approves such deviations in writing.
   4. Approved mockups shall become part of the completed Work if undisturbed at time of Substantial Completion.

D. No roofing Work shall begin prior to the Pre-Roofing Conference.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection: All materials covered under this Section are to be stored and protected as specified in Section 07 50 00, Paragraph 1.13, Delivery, Storage and Handling.

B. Materials damaged or rendered unusable for any cause resulting from the Contractor’s acts or omissions shall be removed from the jobsite at the Contractor’s expense.

C. Insulation and Cover Board shall not be stocked or stored on the roof overnight for any reason. All insulation is to be stored in a covered storage trailer. No material may be stocked on the ground or on the roof.

D. An allotment of insulation and cover board for daily production shall be loaded to the roof and used the same day, or removed from the roof and stored as stipulated elsewhere.

1.6 SEQUENCING

A. Limit the quantity of insulation installed per day to that which can be covered with roofing membrane in the same day
1.7 WARRANTY

A. Special Warranty:
1. The materials of this Section shall be included in the Manufacturer’s Certification of Materials letter
2. The manufacturer shall execute the Owner’s warranty included in Section 07 50 00.

PART 2 PRODUCTS

2.1 INSULATION BOARD

A. Polyisocyanurate Insulation Board - Rigid, closed-cell, isocyanurate insulation board having an "in-service" R-value equal to 5.6 per inch thickness excluding the facer sheet. The factory-applied facer sheet shall be fully adhered to both sides of the insulation board and shall be adhesive compatible; coated polymer-bonded glass fiber mat facers complying with ASTM C1289, Type II, Class 2, Grade 2 (25 pounds per square inch). The following additional criteria shall apply:
1. Board density shall be 2.0 pounds per cubic foot when measured in accordance with ASTM D1622.
2. Compressive strength shall be 25 pounds per square inch minimum when measured in accordance with ASTM C209 or ASTM D1621.
3. Board insulation shall comply with water absorption requirements when measured in accordance with ASTM C209.
4. Acceptable manufacturers shall be the following:
   a. Atlas Insulation Co., North Scituate, Rhode Island
      1) ACFoam-III
      2) ACFoam-IV
      3) ACFoam Nail Base
   b. Hunter Panel, Portland, Maine
      1) H-Shield CG
      2) H-Shield NB
   c. R-Max Corporation, Dallas, Texas
      1) Ultra-Max
      2) Nailable Base - 3
5. No isocyanurate insulation board stock thicker than 2.5 inches shall be laid in a single layer. Where the “R” value or other details require an iso thickness greater than 2.5 inches, such thickness shall be achieved by multiple layers of isocyanurate insulation.

B. Thermal Value: The combined "R" value over conditioned space shall be equal to or greater than 25.00. That value shall be achieved as follows:
1. One layer of 2.5-inch isocyanurate insulation board not exceeding 48 inches by 48 inches.
2. One additional layer consisting of 1-inch isocyanurate insulation board bonded to a Nailable plywood as specified, in sheets not to exceed 48 inches by 96 inches.

2.2 NAILABLE ROOF INSULATION

A. Cover Board - 1-inch isocyanurate insulation board bonded with 7/16” APA rated OSB or 19/32” CDX plywood on the top face shall be compatible and suitable for low slope metal roofs.
1. Acceptable products and manufacturers listed below are intended to be equivalent in performance:
   a. Atlas Insulation Co., North Scituate, Rhode Island
      1) AC Foam Nail Base
   b. Hunter Panel, Portland, Maine
      1) H-Shield NB
   c. R-Max Corporation, Dallas, Texas
      1) Nailable Base - 3

2.3 INSULATION ADHESIVE MATERIALS

A. Foam Adhesives - The following foam adhesive products are approved for such applications provided they meet FM Global wind uplift requirement listed in the General Notes on the Drawings:
   1. Insta-Stik Quik Set Commercial Roofing Adhesive as manufactured by The Dow Chemical Company, Midland, MI.
   2. OlyBond Adhesive Fastener as manufactured by OMG, Agawam, Massachusetts.
   3. 3M CR-20 Insulation Adhesive as manufactured by 3M, St. Paul, MN.
   4. Parafast Insulation Adhesive as manufactured by Siplast, Irving, TX.
   5. Adhesive recommended by roof system manufacturer for their rated assembly.

2.4 FASTENERS

A. Deck Fasteners - Fasteners equal to OMG FM Global approved #12 with a CR-10 fluorocarbon coating with a .172 diameter shank and .220 diameter thread to be used with OMG round pressure plates. Fastener must penetrate the deck a minimum of 1/2 inch. Pressure plates may be of galvanized steel or polypropylene.
   1. Roofgrip #12 as manufactured by Buildex, A Division of ITW, Itasca, Illinois.
   2. #12 Standard Roofing Fastener as manufactured by OMG, Inc., Agawam, Massachusetts.

PART 3 EXECUTION

3.1 INSPECTION AND PREPARATION OF DECK

A. Examine the metal panels to see that all requirements for deck preparation specified elsewhere have been met and that the deck meets the following requirements for application of the roof materials:
   1. The deck must be smooth, free of voids and holes, and all damaged areas replaced or repaired.
   2. The deck must be dry, hard, and able to withstand the minimum pullout resistance necessary to meet the wind uplift requirements of the Specifications.

3.2 INSTALLATION OF INSULATION - GENERAL

A. Insulation, having been protected as stipulated elsewhere in these Specifications, shall be installed in the following manner in accordance with the manufacturer's printed instructions:
   1. Edges - At edge details, or where edge nailers are present at the perimeter, butt the outside edge of the insulation terminating piece against the roofside edge of the nailer. Do not extend the insulation out onto the nailer.
   2. Where wind uplift requirements or standards require wood nailers be installed at the perimeter, such nailers shall be attached by using suitable fasteners with pre-drilled holes.
holes. Attachment with nail guns is not permitted. Joints shall be staggered and subsequent layers attached with screws, not nails. The combined thickness or height of nailers shall be equivalent to the combined layers of all insulation and cover boards.

3. Perimeter and corner fastening of insulation shall be in conformance with assemblies tested according to FM Global requirements. The Contractor shall submit the fastening pattern and testing report with other submittals. When an approved fastening pattern has not been submitted or approved in advance, the default fastening pattern for perimeters shall be 150 percent of the field pattern and quantity, and the corners shall be 200 percent of the field pattern. The perimeter is defined as 10 feet in from edge, and the corner is defined as a 10-foot by 10-foot area, or as otherwise defined by ASCE 7.

4. Where field observation determines fasteners to be installed at a greater spacing than specified, one additional fastener shall be installed between each existing fastener as a remedial measure. Failure to install fasteners at the required spacing interval will be considered a serious act of defective workmanship and may cause replacement of the entire roof assembly.

5. Wood Blocking Insulation Stops - Where the slope of the roof is 1 inch per foot or more, install wood insulation stops. The wood blocking shall be installed in multiple layers with the joints staggered. The thickness shall equal the thickness of the roof insulation, and shall be secured attached to the deck at 12 inches on-center. Insulation stops shall be installed at a maximum spacing of 8-foot inside dimension (to accommodate staggering end laps of cap sheet rolls cut in half) unless otherwise approve differently in advance. Additional insulation stops shall installed at the ridge and eave of the roof.

6. Joints of all layers of insulation shall be tight, square, and not exceeding 1/4 inch. Joints shall be staggered half the length of the board in both directions. If alignment gets out of square, do not continue. Stop the installation, lay a chalk line, cut the insulation smoothly using a power cutter or other device, and square up the installation. After obtaining a straight and square installation resume laying the insulation in a pattern to accommodate the revised and squared up alignment. All corner pieces should be carefully mitered to produce a snug fit without excessive voids at penetrations, projections, curbs, or terminations.

B. Isocyanurate insulation shall be used in multiple layers with no layer exceeding 2.5 inches in thickness. The second and subsequent layers of insulation and cover board shall be installed with two-part foam adhesive 4 inches on-center, regardless of location on the roof. Stagger the joints in the second and subsequent layers of insulation and cover board at least 12 inches in each direction from the underlying layer. At no location shall a joint of the top layer fall over a joint in the bottom layer except when crossing at 90 degrees.

1. Adhesive dispensing equipment shall advance ahead of insulation installation operation at a pace that allows insulations to be set into the adhesive at the optimal time. Adhesive shall not be allowed to “skin over” prior to full embedment and “walking-in” of insulation boards. Walk-in all pieces to ensure full adhesion. Boards must be “rolled” in place with a weighted roller if installed with foam adhesive. Fill all voids in joints greater than 1/4 inch with insulation pieces to reduce thermal energy loss. Lack of adhesion of insulation shall be considered defective workmanship and will be rejected.

a. The time required for adhesive foam to rise before setting the insulation varies by manufacturer and with weather conditions. Confirm adhesive installation requirements with the manufacturer prior to installation.

2. Cover All Insulation - Under no circumstances shall applied insulation be left overnight without a roof covering in place. Any roof insulation installed, but not covered by roofing material before quitting time, shall be torn off and replaced the following day.
3.3 NAILABLE ROOF INSULATION

A. Upon completion of the first, or multiple underlying layers, lay the nailable roof insulation board in foam adhesive with the joints staggered in both directions. At no location shall a joint of the nailable roof insulation board fall over a joint in the isocyanurate layer below except when crossing at 90 degrees. The joints on the nailable roof insulation board must be staggered at least 12 inches in both directions from the joints in the underlying layer.

B. Walk-in all pieces to ensure full adhesion. Fill all voids greater than 1/4-inch with insulation pieces to avoid thermal energy loss. Remove all scraps and extra pieces from the roof to avoid blowing and trash over the job site. Lack of adhesion of the cover board shall be considered defective workmanship and will be rejected.

END OF SECTION
SECTION 07 31 10
ASPHALT SHINGLE ROOFING

PART 1 GENERAL

1.1 SUMMARY

A. This Section covers asphalt shingle roofing on all mansards with associated moisture shedding underlayment, eave, valley, and rake protection, and associated protective flashings.

1.2 REFERENCES

A. General
   1. All standards current edition as of the date of this Specification.

B. ASTM International
   1. ASTM D225 - Standard Specification for Asphalt Shingles (Organic Felt) Surfaced with Mineral Granules
   2. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
   3. ASTM D822 - Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings
   4. ASTM D3018 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules

C. Federal Specifications
   1. Federal Specification SS-C-153

1.3 PRE-ROOFING CONFERENCE

A. Timing and Purpose of Conference - After an award of the Contract and prior to commencement of the Work, a pre-roofing conference shall be held at the jobsite or a place otherwise designated by the Owner. The purpose of the pre-roofing conference shall be the following:

   1. Answer the Contractor’s questions regarding ambiguities, if any, in the Drawings and Specifications.
   2. Agree upon the schedule and sequence of Work to be done.
   3. Verify understanding by all parties of all requirements of the job.
   4. Resolve remaining differences, if any, in submittals, application procedures, or warranty and safety requirements.
   5. Participants at the meeting shall include, but not be limited to, the following:
      a. Roofing Contractor’s authorized representative
      b. Roofing Contractor’s superintendent
      c. Owner’s representative
      d. Roof Architect/Engineer
PART 2 PRODUCTS

2.1 ACCEPTABLE ASPHALT SHINGLE MANUFACTURERS

B. Elk Prestique II, Elk Corp., Dallas, Texas.
C. GAF Timberline, 25 Year, GAF Roofing Products Corp., Wayne, New Jersey.
D. GS Firehalt, GS Roofing Products, Irving, Texas.
E. Tamko Heritage II, Tamko Asphalt Corp., Joplin, Missouri.

2.2 ROOFING MATERIALS

A. Asphalt Shingles - Shingles shall be covered by a minimum of a roof material manufacturer’s twenty-five (25) year warranty, a copy of which shall be delivered to the Owner at the completion of the job. Materials shall consist of two plies of asphalt with interior fiberglass laminated mat. Shingles shall be classified as a medium-weight, self-sealing material with a dimensional cut. The shingles shall have an approximate nominal weight of 225 pounds per square, and shall meet the standards for a UL Class A Fire Rating with a ceramic coating granular surface. The color shall be selected by the Owner from among the manufacturer’s standard colors.

B. Asphalt Felts - Asphalt saturated, non-perforated, #15 felt as recommended for use as underlayment for shingle roofing. Materials shall meet the requirements for ASTM D226.

C. Nails - Standard round wire shingle-type nails of hot-dipped, zinc-coated steel; minimum 13/64-inch head and 0.080 inch shank diameter, 1-1/4 inches long, or of sufficient length to penetrate through wood sheathing, whichever is longer.

D. Plastic Cement - Cutback asphaltic type with mineral fiber components, as recommended for sealing and coating flashings in buildings; free from toxic solvents or asbestos; capable of setting within twenty-four (24) hours at temperatures of approximately 75 degrees F and 50 percent relative humidity. Materials shall comply with ASTM D4586, Type I, ASTM D3409, and Federal Specification SS-C-153, Type I. Materials shall be cartridge grade, and formulated for application on steep roofs within sagging or running.
   1. Acceptable manufacturers are:
      a. Monsey Roof-Guard (asbestos-free), All-weather Roof Cement, manufactured by Monsey Products Co., Kimberton, Pennsylvania.
      b. Approved equal submitted in advance.

PART 3 EXECUTION

3.1 ENVIRONMENTAL REQUIREMENTS

A. Precipitation - Roofing shall not be applied during precipitation and shall not be started in the event there is a probability of precipitation during application.

B. Wind Chill - At ambient temperatures of 40 degrees F and falling, including wind chill, tear-off, redocking, and installation of asphalt felt underlayment may be performed, but shingles may not be installed.
3.2 INSTALLATION OF ROOFING

A. Roof Deck - Install roof decking in accordance with Section 06 10 00, Plywood Decking.

B. Underlayment - Starting at the bottom of the roof, or eave, lay one ply of 330 asphalt saturated, non-perforated felt. Lap each ply 3-inch shingle fashion over the ply down the slope. Lap end felts at least 6 inches. Use enough nails or staples and tincaps to hold felt in place and prevent blowing or slippage. All nails or staples must be driven through tincaps. Repair or replace all sections damaged by wind or foot traffic so as to maintain the watertight integrity of the felts.

C. Daily Plywood Deck Protection - All plywood decking must be covered with felt daily to protect the decking from weathering and to prevent interior leakage.

D. Metal Flashings - Install the metal edging on the plywood under the felt underlayment on the bottom, or eave. After installing the underlayment, install the metal flashings at the rake (side) prior to commencement of shingle installation. Install nails staggered at 6 inches on-center and keep nails at least 2 inches away from the eaves or edge of plywood sheets.

E. Shingle Installation - Install the shingles in accordance with the following directions or in accordance with the manufacturers' printed instructions, whichever is more stringent:
   1. Starter Strips - For the starter course use self-sealing shingles with the tabs trimmed off and applied with the adhesive strip positioned at the eave edge. With at least 3 inches trimmed from the end of the shingle, start at the rake edge overhanging the eave 1/4 inch to 3/8 inch. Fasten 2 inches from the lower edge and 1 inch from each side.
   2. First Course - Start at the rake and continue the course with full shingles laid flush with the starter course. Refer to the manufacturer’s drawings for clarification if contradictions arise.
   3. Second Course - Start at the rake with shingle having 5-5/8 inches trimmed off and continue across the roof with full shingles.
   4. Third Course - Start at the rake with the shingle having 11-1/4 inches trimmed off and continue across the roof with full shingles.
   5. Fourth Course - Start at the rake, and continue with full shingles across the roof.
   6. Fifth and Succeeding Courses - Repeat application as shown for second, third, and fourth course. All courses are to maintain a 5-5/8-inch exposure. Do not remove tape on the back of shingles.
   7. Valley Construction - Install valleys in accordance with manufacturers printed instructions or as follows:
      a. Install layer of 30# asphalt saturated, non-perforated felt in valley longitudinally prior to installation of ordinary #15 underlayment. Valley felt is to extend full height to bottom in valley and the full 36-inch width with 18 inches on either side of valley. Lap sides of regular underlayment at least 12 inches over sides of valley felt. Do not put nails within 6 inches of centerline of valley.
      b. Install valley shingles in woven fashion, extending end shingle at least 12 inches beyond valley centerline. Install one extra nail in the end of each shingle at woven valley.
      c. Apply plastic cement at valley beneath each shingle where shingles overlap in valley. Plastic cement should not be visible from the surface. Shingles are to be trimmed back 2 inches from valley centerline on largest roof. Largest roof shall drain over cut shingle fashion onto smaller roof.
   8. Fastener and Adhesive Installation - Install shingles using nails only on mansard roofs. Staples are not acceptable.
a. If nail guns are to be used, test, calibrate, and adjust guns daily at least. Test to be sure nail guns do not overdrive or underdrive nails. Spot evidence of improper fastener penetration will be considered cause for rejecting the entire day's work, or area shown to be defectively fastened.

b. Use nails 1-1/4 inches long as specified. Drive six nails into the double-thick, or laminated portion of the shingle. Nails shall be placed along the fastener line. Nails are to be flush with the shingle surface, not cocked or canted, and in contact with the shingle surface, but not penetrating the shingle surface.

c. Nailing on the fastener line is intended to give double attachment through both layers of the lamination, and through contacting the shingle below.

d. When shingles are installed on mansards or sidewalls, each three-tap shingle shall have six spots of quick-setting asphalt cement installed on the sealing strip as the shingles are installed, and the shingles pressed into the cement.

e. Improper fastening shall be considered grounds for rejection. Examples of improper fastening are the following:
   1) Underdriven or overdriven nails
   2) Cocked nails
   3) Nails driven above or below the fastener line
   4) Nails not penetrating both laminated layers of shingles and the shingle below
   5) Absence of six spots of quick-setting asphalt cement beneath each shingle
   6) Shingles not set in quick-setting asphalt cement

END OF SECTION
SECTION 07 41 10
METAL ROOF PANEL
(ADD ALTERNATE #2)

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Double-lock, Standing-Seam Metal Roof System.

B. Related Sections:
   1. Section 07 50 00 - Roofing Special Requirements
   2. Section 07 62 00 - Sheet Metal Work
      a. Fasciae, copings, flashings, and other sheet metal Work not part of metal roof panel
         assemblies.
   3. Section 07 92 00 - Joint Sealants
      a. Field-applied sealants not otherwise specified in this Section.

1.2 REFERENCES

A. General
   1. All standards current edition as of the date of this Specification.

B. ASTM International
   1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
   2. ASTM A755 - Standard Specification for Steel Sheet, Metallic Coated by the Hot Dip Process and Pre-painted by the Cold Coating Process for Exterior Exposed Building Products
   3. ASTM A792 - Standard Specification for Steel Sheet, 55% Aluminum Zinc Alloy Coated by the Hot Dip Process
   4. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members
   5. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
   7. ASTM D1621 - Standard Test Method for Passing Ability of Self Consolidating Concrete by J Ring
   9. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
   12. ASTM E1251 - Standard Test method for Analysis of Aluminum and Aluminum Alloys by Atomic Emission Spectrometry

Village Creek State Park 07 41 10 - 1 Metal Roof Panels
Facility Damage Repairs March 6, 2019
TPWD No. 128695 100% Construction Documents
13. ASTM E1592 - Structural Performance of Sheet Metal Roofing and Siding Systems by Uniform Static Air Pressure Difference
15. ASTM E1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems
16. ASTM E2140 - Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head

C. National Association of Architectural Metal Manufacturers (NAAMM)
   1. Metal Finishes Manual for Architectural and Metal Products

D. National Roofing Contractors Association (NRCA)
   1. 1987 MRCA/NRCA Joint Bulletin

E. Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA)

F. The Society for Protective Coatings (SSPC)
   1. SSPC-Paint 12

1.3 SYSTEM DESCRIPTION

A. Metal Roof Panel Assembly: Metal roof panels, attachment system components, 15-pound building felt slip-sheet, self-adhered secondary waterproofing membrane, and accessories necessary for a complete weather-tight roofing system.

B. Performance Requirements
   1. General Performance - Metal roof panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.
   2. Air Infiltration - Air leakage through assembly of not more than 0.06 cubic feet per minute per square foot of roof area when tested according to ASTM E1680 at the following test-pressure difference:
      a. Test-Pressure Difference - Positive and negative 1.57 foot-pounds per square foot
   3. Water Penetration - No water penetration when tested according to ASTM E1646 at the following test-pressure difference:
      a. Test-Pressure Difference - 2.86 foot-pounds per square foot
   4. Hydrostatic-Head Resistance - No water penetration when tested according to ASTM E2140.
   5. Wind-Uplift Resistance - Provide metal roof panel assemblies that comply with UL 580, Class 90 for uplift-resistance.

1.4 SUBMITTALS

A. Provide submittals in advance of the Pre-Roofing Conference. Any materials ordered prior to receiving written approval of submittals shall be at the Contractor's risk.

B. Product Data
1. For each type of product indicated, include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of roof panel and accessory.
2. Confirm requirements with manufacturer and, if a slip sheet is required between self-adhering underlayment and metal roof panels, submit product data and documentation of manufacturer's recommendations for review.

C. Shop Drawings
1. If Contractor proposes changes to flashing assemblies detailed in the Drawings, submit detailed Shop Drawings as necessary to illustrate the changes, and obtain Architect/Engineer's written acceptance prior to fabrication. Shop drawings shall show fabrication and installation layouts of metal roof panels; details of edge conditions, side-seam and end-lap joints, panel profiles, corners, anchorages, trim, flashings, closures, and accessories; and special details. Distinguish between factory- and field-assembled Work.
   a. Show calculations for minimum and maximum widths of tapered metal panels.
2. Accessories - Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches:
   a. Flashing and trim
   b. Gutters
   c. Downspouts
   d. Roof curbs
3. Coordination Drawings - Roof Plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installers of the items involved:
   a. Roof panels and attachments.
   b. Purlins and rafters.
   c. Roof-mounted items including roof hatches, equipment supports, pipe supports and penetrations, lighting fixtures, and items mounted on roof curbs.

D. Samples
1. Samples for Initial Selection - For each type of metal roof panel indicated with factory-applied color finishes.
   a. Include similar samples of trim and accessories involving color selection.
2. Samples for Verification - For each type of exposed finish required, prepared on samples of size indicated below:
   a. Metal Roof Panels - 12 inches long by actual panel width. Include fasteners, clips, closures, and other metal roof panel accessories.
   b. Trim and Closures - 12 inches long. Include fasteners and other exposed accessories.
   c. Accessories - 12-inch-long samples for each type of accessory.

E. Quality Assurance Submittals
1. Manufacturer’s Certification of Materials - Refer to Section 07 50 00, Paragraph 1.6 A
2. Installer Qualifications: Manufacturer’s approval and training of installers.
3. Manufacturers’ Printed Instructions
4. Manufacturers’ Field Reports: provide copies of reports as they are issued.
5. Product Test Reports: Document compliance based on evaluation of comprehensive tests performed by a qualified testing agency, for each product.

F. Close-out Submittals

Village Creek State Park 07 41 10 - 3 Metal Roof Panels
Facility Damage Repairs March 6, 2019
TPWD No. 128695 100% Construction Documents
1. Single Source Twenty 20 Year Metal Roof Total System Warranty included in Section 07 50 00.
2. Twenty (20) year manufacturer’s sheet metal finish warranty.

1.5 QUALITY ASSURANCE

A. Qualifications
1. Source Limitations - Obtain each type of metal roof panels from single source from single manufacturer.
2. Installer Qualifications - An employer of workers trained and approved by manufacturer.
3. Testing Agency Qualifications - Qualified according to ASTM E329 for testing indicated.

B. Mockups - Build in-place mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
1. Build mockup of typical roof eave, including fascia, and downspout as shown on the Drawings, including insulation, attachments, and accessories.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect/Engineer specifically approves such deviations in writing.
3. Approved mockups shall become part of the completed Work if undisturbed at time of Substantial Completion.
4. Provide Field Observer 48-hours advanced notification for observation of mock-ups.

C. Pre-installation Conference -
1. No roofing Work shall begin prior to the Pre-Roofing Conference.
2. Conduct conference at Project site.
3. Meet with Owner, Architect, Owner’s insurer if applicable, testing and inspecting agency representative, metal roof panel Installer, metal roof panel manufacturer’s representative, and installers whose work interfaces with or affects metal roof panels including installers of roof accessories and roof-mounted equipment.
4. Review and finalize construction schedule and verify availability of materials, Installer’s personnel, equipment, and facilities needed to make progress and avoid delays.
5. Review methods and procedures related to metal roof panel installation, including manufacturer’s written instructions.
6. Examine deck substrate and purlin and rafter conditions for compliance with requirements, including flatness and attachment to structural members.
7. Review structural loading limitations of deck purlins and rafters during and after roofing.
8. Review flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect metal roof panels.
9. Review governing regulations and requirements for insurance, certificates, and testing and inspecting if applicable.
10. Review temporary protection requirements for metal roof panel assembly during and after installation.
11. Review roof observation and repair procedures after metal roof panel installation.
12. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

D. Refer to Section 07 50 00 for general quality assurance requirements.
1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, sheets, metal roof panels, and other manufactured items so as not to be damaged or deformed. Package metal roof panels for protection during transportation and handling.

B. Unload, store, and erect metal roof panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof panels to ensure dryness. Do not store metal roof panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Protect strippable protective covering on metal roof panels from exposure to sunlight and high humidity, except to extent necessary for period of metal roof panel installation. Retain strippable protective covering on metal wall panel for period of metal wall panel installation.

E. Protect insulation as follows:
   1. Store materials in enclosed storage containers.
   2. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
   3. Protect against ignition at all times. Do not deliver foam-plastic insulation materials to Project site before installation time.
   4. Complete installation and concealment of insulation materials as rapidly as possible in each area of construction.

F. Refer to other requirements stated in Section 07 50 00.

1.7 PROJECT CONDITIONS

A. Weather Limitations - Proceed with installation only when existing and forecasted weather conditions permit metal roof panel Work to be performed according to manufacturer’s written instructions and warranty requirements.

B. Field Measurements - Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

1.8 COORDINATION

A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

B. Coordinate metal roof panels with rain drainage work, flashing, trim, and existing rafters, chimneys, walls, and other adjoining work to provide a leak-proof, secure, and non-corrosive installation.

1.9 SEQUENCING

A. Limit the quantity existing roof removal per day to that which can be covered with solid underlayment and secondary waterproofing membrane in the same day
1.10 WARRANTY

A. Special Warranty (Standing Seam Metal Roof Panels) - Warranty form shall be the Single Source Twenty (20) Year Metal Roof Total System Warranty included in Section 07 50 00 in which manufacturer agrees to repair or replace metal roof panel assemblies that fail in materials or workmanship or fail to remain weather-tight, including leaks, within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures including rupturing, cracking, or puncturing.
      b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
   2. Warranty Period - Twenty (20) years from date of Substantial Completion.

B. Special Warranty on Panel Finishes (Standing Seam Metal Roof Panels) - Warranty form shall be the Single Source Twenty (20) Year Metal Roof Total System Warranty included in Section 07 50 00 in which manufacturer agrees to repair finish or replace metal roof panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Exposed Panel Finish - Deterioration includes, but is not limited to, the following:
      a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
      b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
      c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
   2. Finish Warranty Period - Twenty (20) years from date of Substantial Completion.

C. Other Warranties as specified in Section 07 50 00.

PART 2 PRODUCTS

2.1 METAL PANEL MATERIALS

A. Metallic-Coated Steel Sheet - Restricted flatness steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A755.
   1. Aluminum-Zinc Alloy-Coated Steel Sheet - ASTM A792, Class AZ50 coating designation, Grade 40; structural quality.
   2. Surface - Smooth, flat finish.
   3. Exposed Coil-Coated Finish
      a. Finish on roof and all related components shall be 70 percent Kynar 500 Premium Fluorocarbon.
      b. The color shall be selected from manufacturer’s standard colors and all significant surfaces of metal shall match in gloss and fall within the color range of the Architect/Engineer’s approved color samples.
   4. Concealed Finish - Apply pretreatment and manufacturer’s standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

B. Metal Panel Sealants
   1. Sealant Tape - Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2-inch wide and 1/8-inch thick.
   2. Joint Sealant - ASTM C920; elastomeric polyurethane, polysulfide, or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal roof panels.
and remain weathertight; and as recommended in writing by metal roof panel manufacturer.

2.2 DOUBLE-LOCKED STANDING-SEAM METAL ROOF PANELS

A. General - Provide factory-formed or field-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with double-lock joint and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.
   1. Steel Panel Systems - Unless more stringent requirements are indicated, comply with ASTM E1514.

B. Vertical-Rib, Double-locked, Seamed-Joint, Standing-Seam Metal Roof Panels - Formed with vertical ribs at panel edges and intermediate striations between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels and engaging opposite edge of adjacent panels, and mechanically seaming panels together.
   1. Manufacturers - Subject to compliance with requirements, provide products by one of the following:
      a. AEP-Span
      b. Berridge Manufacturing Company
      c. MBCI; a division of NCI Building Systems, L. P.
      d. Petersen Aluminum Corp.
   2. Material - Aluminum-zinc alloy-coated steel sheet, 24-gauge
   3. Clips - Floating to accommodate thermal movement
      a. Material - 0.064-inch nominal thickness, aluminum-zinc alloy-coated steel sheet
   4. Joint Type - Double folded
   5. Panel Coverage - 16 inches
   6. Panel Height - 2.0 inches, minimum

2.3 ACCESSORIES

A. Roof Panel Accessories - Provide components approved by roof panel manufacturer and as required for a complete metal roof panel assembly including trim, copings, fasciae, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated.
   1. Closures - Provide closures at eaves and ridges, fabricated of same metal as metal roof panels.
   2. Closure Strips - Closed-cell, expanded, cellular, rubber, or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

B. Flashing and Trim - Formed from same material as roof panels, pre-finished with coil coating, minimum 0.018 inch thick. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal roof panels.
2.4 SELF-ADHERED UNDERLAYMENT (SECONDARY WATERPROOFING MEMBRANE)

A. Self-Adhering, High-Temperature Sheet - 30 to 40 mils thick minimum, consisting of slip-resistant, polyethylene-film top surface laminated to layer of butyl or Styrene Butadiene Styrene (SBS)-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
   2. Low-Temperature Flexibility - Passes after testing at minus 20 degrees F; ASTM D1970.
   3. Products - Subject to compliance with requirements, provide one of the following:
      a. CCW WIP 300HT, Carlisle Coatings & Waterproofing Inc., Division of Carlisle Companies Inc., Wylie, Texas
      b. GAF Premium Stormguard Film Surfaced Leak Barrier, GAF Materials Corp., Wayne, New Jersey.
      d. Titanium PSU 30, InterWrap Inc., Vancouver, British Columbia, Canada.
      e. Blueskin PE200 HT, Henry Company
      f. MetShield, Metal-Fab Manufacturing, LLC, Jessup, Maryland.
      g. WeatherLock Metal High Temperature Underlayment, Owens Corning, Toledo, Ohio.

B. Slip Sheet - Metal Roof Manufacturer’s Slip Sheet or #15 asphalt saturated roofing felt.

2.5 MISCELLANEOUS MATERIALS

A. Provide bearing plates if recommended by manufacturer.

B. Panel Fasteners - Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide exposed fasteners with heads matching color of metal roof panels by means of plastic caps or factory-applied coating. Provide EPDM, PVC, or neoprene sealing washers.

C. Bituminous Coating - Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.6 FABRICATION

A. Fabricate and finish metal roof panels and accessories at the factory to greatest extent possible, by manufacturer’s standard procedures and processes and as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs for full length of panel.

C. Sheet Metal Accessories - Fabricate flashing and trim to comply with recommendations in SMACNA’s “Architectural Sheet Metal Manual” that apply to the design, dimensions, metal, and other characteristics of item indicated.
   1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. End Seams - End seams are not allowed.
3. Sealed Joints - Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
5. Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA’s “Architectural Sheet Metal Manual” or by metal roof panel manufacturer for application, but not less than thickness of metal being secured.

2.7 FINISHES

A. Comply with NAAMM’s “Metal Finishes Manual for Architectural and Metal Products” for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work - Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal roof panel supports, and other conditions affecting performance of the Work.

B. Examine primary and secondary roof framing to verify that rafters, purlins, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.

C. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacturer.

D. Examine roughing-in for components and systems penetrating metal roof panels to verify actual locations of penetrations relative to seam locations of metal roof panels before metal roof panel installation.

E. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work and submit to the Owner and Architect/Engineer.

F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment.
3.3 UNDERLAYMENT INSTALLATION (SECONDARY WATERPROOFING MEMBRANE)

A. Self-Adhering Sheet Underlayment - Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply over substrate boards to cover entire roof surface, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches.

B. The roofing application must be coordinated with the self-adhering sheet underlayment to avoid prolonged exposure of the underlayment to the weather. Do not leave underlayment exposed to the weather longer than thirty (30) days unless otherwise allowed by the underlayment manufacturer.

C. If recommended by the metal roof panel manufacturer, install a slip sheet over the underlayment as a separator sheet to prevent sticking of the metal roof to the underlayment.

3.4 METAL ROOF PANEL INSTALLATION, GENERAL

A. Provide metal roof panels of full length from eave to ridge.

B. Thermal Movement - Rigidly fasten metal roof panels to structure at one and only one location for each panel. Allow remainder of panel to move freely for thermal expansion and contraction. Predrill panels for fasteners.
   1. Point of Fixity - Fasten each panel along a single line of fixing located at top of panel length.
   2. Avoid attaching accessories through roof panels in a manner that will inhibit thermal movement.

C. Install metal roof panels as follows:
   1. Commence metal roof panel installation and install one section in presence of factory-authorized representative.
   2. Field cutting of metal panels by torch is not permitted.
   3. Locate and space fastenings in uniform vertical and horizontal alignment.
   4. Provide metal closures at rake walls and each side of ridge caps.
   5. Flash and seal metal roof panels with weather closures at eaves, rakes, and perimeter of all openings.
   6. Install ridge caps as metal roof panel work proceeds.
   7. End Splices - panel end splices are not allowed.
   8. Install metal flashing to allow moisture to run over and off metal roof panels.

D. Fasteners
   1. Steel Roof Panels - Use stainless-steel fasteners for surfaces exposed to the exterior and galvanized-steel fasteners for surfaces exposed to the interior.

E. Anchor Clips - Anchor metal roof panels and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturer's written instructions.

F. Metal Protection - Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer.
1. Coat back side of roof panels with bituminous coating where roof panels will contact wood, ferrous metal, or cementitious construction.

G. Joint Sealers - Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal roof panel assemblies. Provide types of gaskets, fillers, and sealants indicated or, if not indicated, types recommended by metal roof panel manufacturer.
   1. Seal side joints where recommended by metal roof panel manufacturer.
   2. Prepare joints and apply sealants to comply with requirements in Section 07 92 00, Joint Sealants.

3.5 METAL ROOF PANEL INSTALLATION

A. Double-Lock Standing-Seam Metal Roof Panels - Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended by manufacturer.
   1. Install clips to supports with self-tapping fasteners.
   2. Install pressure plates at locations indicated in manufacturer’s written installation instructions.
   3. Seamed Joint - Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.

3.6 ACCESSORY INSTALLATION

A. General - Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
   1. Install components required for a complete metal roof panel assembly including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.

B. Flashing and Trim - Comply with performance requirements, manufacturer’s written installation instructions, and SMACNA’s “Architectural Sheet Metal Manual.” Provide concealed fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weather resistant.
   1. Install exposed flashing and trim that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
   2. Expansion Provisions - Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 18 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

3.7 ERECTION TOLERANCES

A. Installation Tolerances - Shim and align metal roof panel units within installed tolerance of 1/4-inch in 20 feet on slope and location lines as indicated, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
3.8 FIELD QUALITY CONTROL

A. Manufacturer’s Field Service - Engage a factory-authorized service representative to inspect metal roof panel installation, including accessories. Report results in writing and submit to Owner and Architect/Engineer.

B. Remove and replace applications of metal roof panels where inspections indicate that they do not comply with specified requirements.

C. Additional inspections, at Contractor’s expense, will be performed to determine compliance of replaced or additional Work with specified requirements.

3.9 CLEANING

A. Remove temporary protective coverings and strippable films, if any, as metal roof panels and trim are installed but in no circumstances more than seven days after installation unless otherwise indicated in manufacturer’s written installation instructions. On completion of metal roof panel installation, clean finished surfaces as recommended by metal roof panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal roof panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION
SECTION 07 50 00

ROOFING SPECIAL REQUIREMENTS

PART 1 GENERAL

1.1 INSPECTION OF SITE

A. Inspection of Site - The Proposer shall carefully inspect the Project site, and that from the Proposer's own investigation, the Proposer shall satisfy itself as to the nature and location of the Work and the character, quality, quantities, materials, and difficulties to be encountered; the kind and extent of equipment and other facilities needed for the performance of the Work; the general and local conditions and other items which may in any way affect the Work or its performance; and the Proposer has correlated the Proposer's site observations with the requirements of the Contract Documents. The Proposer shall make such tests of its own to satisfy itself of hidden conditions insofar as is reasonably practicable. The Proposer shall certify by submitting a Proposal that the Proposer understands and accepts the difficulties and costs associated with the Work and the Project site and the potential delays, disruptions in Work, and costs associated therewith, and has included such considerations in its construction schedule and the Proposal amount.

B. Coordination with Other Trades - The Contractor shall coordinate all Work with other Trades and employers to integrate properly all Work into the intent of the Specifications in compliance with industry authorities including, but not limited to the National Roofing Contractors Association.

1.2 VERIFICATION OF DRAWINGS AND SPECIFICATIONS

A. Notification of Conflicts in Drawings and Specifications - In the event the Contractor determines that such field conditions exist which may prevent or interfere with the execution of the Work required hereunder, the Contractor shall notify the Engineer in writing of such field conditions or any deficiencies in the Drawings and Specifications which may require changes at least four (4) days prior to the opening of proposals. Failure to notify the Owner of conflicting field conditions or contradictions in advance of commencement of Work shall indicate that the Contractor determines no conditions exist which will hinder satisfactory performance of the Work as specified and for the price proposal.

B. Notification of Conflicts with Warranty Requirements - The Contractor shall make such investigations and inspections as required to verify that no conditions exist which may conflict with requirements for obtaining warranties by roofing material manufacturers, and should such conditions be found to exist, the Contractor shall notify the Engineer in writing in time for adjustments to be made to accommodate such conditions or manufacturers' requirements. If contradictions were found to exist between these Specifications and manufacturer's requirements, the most stringent requirements shall govern except where such more stringent requirements would interfere with the issuance of a warranty by the manufacturer in which case the manufacturer's requirements shall govern.

C. All Dimensions Approximate - All Specifications and Details are intended to reflect the intent of compliance with accepted industry authorities and to that end all dimensions are intended to be approximations. Prior to commencement of Work, the Contractor shall verify all
dimensions, and if field conditions require deviations from such dimensions, the Contractor shall submit an alternative detail for each such specific condition for approval in advance of commencing Work involving such variance.

1.3 COMMUNICATIONS

A. Roofing Contractor shall be able to communicate with the Engineer by e-mail including the capability to send and receive attachments.

B. Proper Communication Path
   1. All communications shall be from the Roofing Contractor to the Contractor to the Architect/Engineer unless otherwise stipulated differently elsewhere.
   2. Owner personnel always retain the right to inspect the Work along with and in addition to, that done by the Architect/Engineer Roof Consultant.

1.4 ENGINEER’S AUTHORITY

A. The Contractor is advised that the Architect/Engineer Roof Consultant’s Field Observer has the following limitations on his authority.
   1. He has no authority to change the Contract, Construction Documents, or design.
   2. He has no authority to approve any item involving an increase in cost to the Owner.
   3. He has no authority to approve any reduction in scope without an appropriate credit to the Owner.
   4. He has no authority to “trade” one requirement for another.
   5. The Contractor shall not proceed with any proposed change without written approval of the Architect/Engineer and Owner.
   6. The Contractor proceeds with any verbal authorization of any change, no matter how minor, at his own risk in the absence of a signed written approval by an authorized person.

1.5 ENGINEER FEES CHARGEABLE TO CONTRACTOR.

A. Overtime, Weekends, And Holidays for Contractor’s Convenience - If Engineer Roof Consultant or field observation Work is requested by the Owner for the Owner’s convenience to be performed on overtime, weekends, or holidays, the Owner shall be responsible for payment for such fees and expenses to the Engineer Roof Consultant. However, if the Contractor requests to work on overtime, weekends, or holidays to catch up or make up time due to the Contractor’s failure to maintain the schedule in this agreement, or otherwise for his convenience, the Contractor shall be responsible for Engineer Roof Consultant and field observation fees and expenses incurred by the Engineer Roof Consultant.

1.6 WARRANTIES

A. Manufacturer’s Certification of Materials (letter) - The Contractor shall provide a letter from the roofing material manufacturer in the format included in these documents as part of his submittals certifying that the manufacturer approves all component and ancillary materials as part of the composite roofing system on which the warranty is to be issued.

B. Contractor’s Guarantee - Upon completion of the job, the Roofing Contractor shall issue a guarantee on the form enclosed in these documents. Unless otherwise stipulated differently elsewhere in these documents, the default term of the Contractor’s Guarantee is two (2) years.
C. Manufacturer’s No Dollar Limit (NDL) Warranty - The roofing material manufacturer shall issue an NDL warranty upon satisfactory completion of the job on the form required by these documents for the term stipulated elsewhere. Warranty shall not contain exclusions for wind speeds below the design wind speed for the location of the project as stipulated by the applicable International Building Code edition.

D. Manufacturer’s Single-Source Twenty (20) Year Metal Roof Total System Warranty - The roofing material manufacturer shall issue a total system warranty upon satisfactory completion of the job on the form required by these documents. Warranty shall not contain exclusions for wind speeds below the design wind speed for the location of the project as stipulated by the applicable International Building Code edition.

E. Sheet Metal Finish Warranty - A twenty (20) year warranty from the manufacturer of the sheet metal against chipping, flaking, peeling, fading, or corrosion of the manufacturer’s finish.

F. Other Trades - Unless otherwise stipulated elsewhere, all other related Trades shall provide a contractor’s one (1) year limited warranty against defects in workmanship and materials.

1.7 WRITTEN SCHEDULE SUBMITTAL

A. As a part of the Contractor’s submittals, a written production schedule shall be provided. The schedule shall meet the following requirements:
   1. The schedule shall be in the form of a PERT or GANTT chart prepared using Microsoft Project (project management software) or an approved equivalent.
   2. The schedule shall parallel as closely as possible the Schedule of Values, which is also a part of the submittal.
   3. The Project schedule shall be broken down, roof-section-by-roof-section, showing the estimated start date, and duration of Work for each section of roof.
   4. The Work shall be coordinated with the school’s schedule.

1.8 SUBMITTALS

A. Timely Submittal and Risk of Rejection - Immediately upon execution of the Contract, the Contractor shall submit brochures, specifications, samples, and installation methodology for all materials. Such information shall be submitted prior to purchasing or ordering of materials. The risk of rejection shall be borne by the Contractor for any materials purchased, ordered, fabricated, or received prior to receiving written approval of Submittals. The Contractor shall allow ample time for submittal review, rejection, and resubmittal, prior to the scheduled need to hold a pre-roofing conference and commencement of Work. The Contractor assumes all responsibility for obtaining timely approvals allowing for manufacturing or ordering lead-time, and coordination with the Project schedule.

B. Shop Drawings - Shop Drawings are not required for sheet metal unless a change to a detail is proposed, or a field condition is encountered for which there is no detail in the Construction Documents.

C. Submittal Format - The submittals for roofing and roofing related components shall comply with the format listed below. Submittals not following the required format will be returned disapproved. The Contractor assumes all responsibilities for job delays due to late or improperly presented submittals.
1. SUBMITTALS SHALL BE MADE IN ELECTRONIC FORMAT accessible by readily available software: MS Word (.doc), MS Excel (.xls), Adobe Acrobat (.pdf), image files (.jpg, .tif) or other formats accessible with Microsoft Windows 7.
2. Cover Sheet - The Contractor shall have the Submittal Cover Sheet with the detail material listing and Engineer Roof Consultant’s approval stamp as the top or front page in each set of submittals. Use as many of this page as necessary to cover all the materials.
3. Manufacturer’s Literature - Use a manufacturer’s “cut sheet” for each product. Highlight the specific materials, sizes, and options proposed with a color highlighter.

D. Materials - The following materials and components shall be submitted for approval, where applicable to this Project.
   1. Manufacturer’s Certification of Materials
   2. Deck repair materials
   3. Fasteners
   4. Hot-dipped galvanized capped, ring-shank nails
   5. Hot-dipped galvanized roofing nails
   6. Sheet metal screws
   7. Sheet metal stainless steel pop rivets
   8. Masonry anchors
   9. Base ply fasteners
  10. Self-drilling screws
  11. Diagram of fastening pattern for all fasteners
  12. Flashing membrane sheet
  13. Wood or lumber, Usually KD
  14. Self-adhered membrane
  15. Sheet metal
  16. Prefinished metal color chart

1.9 ROOF MEETINGS

A. Pre-Roofing Conference - Upon approval of all roof-related submittals including items requested for resubmittal, but prior to delivery of any roofing materials to the jobsite, the Contractor shall arrange a Pre-roofing Conference at the jobsite a minimum of two (2) weeks prior to delivery of materials and commencement of roofing Work, and shall arrange for the following firms or individuals to be represented:
   1. Owner’s Representative
   2. Architect/Engineer
   3. Roof Consultant
   4. Roofing Contractor
   5. Roofing Material Manufacturer
   6. Waterproofing/Air Barrier Contractor
   7. General Contractor’s Representative

B. Agenda - The pre-roofing conference will be scheduled upon completion, receipt, and complete approval of all roof related submittals. No pre-roofing conference will be scheduled until such conditions are met in full. The purpose and agenda of the pre-roofing conference shall be to cover the following points, and all parties shall be informed of this agenda and be prepared to discuss such items:
   1. Drawings and Specifications
   2. Preparatory Work such as decking, carpentry, and mechanical curbs
   3. Roof protection from damage by other Trades
4. Roofing materials
5. Sheet metal materials and details
6. Material delivery and storage
7. Field supervision
8. Owner convenience matters
9. Equipment set-up and protection
10. Parking
11. Job-site safety
12. Personal protective clothing
13. Leak prevention during Work
14. Cutting, patching, and tie-in with other roofing
15. Building entry and exit requirements
16. Daily cleanup and housekeeping
17. Project sequence and scheduling
18. Project quality control/required mock-ups
19. Inspection and testing requirements
20. Fire protection and prevention procedures
21. Punch list completion
22. Warranty documentation

1.10 PERFORMANCE STANDARDS

A. Brand Names - Specific brand names are intended to impute a quality and performance standard, and are not intended to discriminate against products not specifically listed.

B. UL and FM Global Approved Products - All materials, products, systems, and components shall comply with UL and FM Global standards for fire rating and wind blow-off resistance.

C. Wind Resistant Construction - Where the geographical location of the Project is in coastal or other high wind areas as defined by the International Building Code, the local code authority, or FM Global, all attachments of roof and related components shall comply with the most stringent applicable method. All edge details shall comply with FM Global Bulletin 1-49 at a minimum.

D. RoofingManufacturer Components - In addition, all roofing system components shall be manufactured, labeled, or specifically approved in writing by the membrane manufacturer issuing the roofing system warranty. In such cases where conflicting requirements exist between FM Global, Underwriters Lab, and the manufacturer's requirements, the most stringent requirements shall govern.

1.11 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following Record Documents; record actual revisions to the Work:
   1. Drawings
   2. Specifications
   3. Addenda
   4. Change Orders and other modifications to the Contract
   5. Submittals
   6. Reviewed Shop Drawings, Product Data, and Samples
1.12 PROJECT SIGNAGE

A. Safety Warning Signs
   1. Safety Warning Signs - Signs to warn the general public of safety hazards involving the Project shall be posted as described herein.
   2. Such signs shall be made of exterior grade plywood and at least 4-foot by 4-foot in size.
   3. Warning signs shall be painted professionally in letters large enough to be read clearly and legibly from a distance of 75 feet by a person with normal eyesight. The signs shall be firmly attached at an elevation high enough not to be obscured by parked cars or vans.
   4. Safety Warning Signs shall be painted "safety yellow" with letters of black or red.
   5. The signs shall be posted in the following locations:
      a. Near the trash dumpster, and debris removal chute.
      b. Over entrances or exits in the vicinity of Work.
      c. In parking areas where cars may be exposed to damage from falling or windblown debris or trash.
   6. Signs shall be in sufficient number and located in such a manner as to warn members of the general public approaching from different directions of the hazards or danger.
   7. All signs shall be permanently mounted on posts in the ground, or firmly fixed in place on the roof. Supporting signs with roof equipment, materials, or other temporary devices is not acceptable. Such supports shall be capable of withstanding a minimum of 60 mile per hour winds.
   8. Signs shall be designed as shown below:

   **WARNING**

   **ROOF WORK IN PROGRESS**

   **FALLING OBJECTS AND DEBRIS**

   **STAY CLEAR OF DANGER**

   **AND**

   **PARK AT YOUR OWN RISK**

B. Warranty Notification Signs
   1. Warranty Notification Signs - Upon completion of the job, Warranty Notification Signs shall be located at or near all roof entry points as described herein. There shall be a minimum of one Warranty Notification Sign for each building or discreet, separate roof area, roof level, or roof section separated by expansion joints.
   2. Appearance - The sign shall be constructed of 24-gauge metal, at least 18 inches by 24 inches in size and shall be painted professionally by a person or firm experienced in the trade. Painting procedures shall be in accordance with the industry practice for priming, number of coats, and type of paint normally used for Work of this type.
   3. Attachment - Such signs shall be firmly affixed in accordance with standard roofing practice as defined by NRCA details and in such a manner as not to jeopardize the waterproof integrity of the roofing, flashing, or waterproofing system.
   4. The signs shall present the information shown herein.
1.13 DELIVERY, STORAGE, AND HANDLING

A. Transportation of Materials
   1. Protection in Transportation - The Contractor shall order all materials with a written
      purchase order directing the manufacturer and distributor in the correct method of
      protecting materials in transit. All materials excluding asphalt or coal tar pitch shall be
      transported in a covered trailer or protected with a tied down breathable tarp.
   2. Accompanying Manufacturer’s Documentation - Proper documentation shall accompany
      each delivery or shipment to the jobsite. At the very minimum, each shipment shall be
      accompanied by a bill of lading showing the point of origin, date of shipment, name of
      manufacturer, name of shipper, and quantity and description of items shipped.
   3. Integrity of Containers - Deliver and store all materials on pallets, with original
      containers, including, but not limited to pails, boxes, and cartons, with wrappers, labels,
      and seals intact.
   4. Sufficient Quantity - Deliver and keep on-site materials of sufficient quantity for
      continuous and uninterrupted Work.

B. Material Delivery
   1. Twenty-four (24) Hour Advance Notification of Deliveries - The Contractor shall
      provide twenty-four (24) hour advance notification of all deliveries to provide time to
      schedule inspections of all materials upon delivery prior to unloading.
   2. Inspection for Transportation Damage - Roof insulation and bitumen shall be shipped
      direct from the point of manufacture to the jobsite. Rolled goods, fasteners, and
      accessories may be shipped from distribution centers to the jobsite. Before any materials
      are unloaded, all items shall be inspected for damage, water stains, discoloration, or other
      evidence of moisture acquired at the point of manufacture or in transit or temporary
      storage.
   3. Vehicular Traffic - Vehicular traffic to and from the Work area shall follow the routes
      designated by the Owner’s Representative, and worker or crew vehicles shall be parked
      in the area designated by the Owner’s Representative.

C. Materials Ground Storage
   1. General Storage Precautions - All materials are to be protected from mechanical or
      weather damage or infiltration of moisture except as designated below. With the
      exception of asphalt or other bitumen, all materials shall be stored inside a substantial
      weatherproof enclosure such as indoor storage area or an enclosed trailer. Any products
found to be damaged or to have become contaminated with moisture are to be removed from the jobsite immediately and permanently at the Contractor's expense. All storage methodologies shall provide proper temperature, humidity, and ventilation characteristics within ranges meeting the manufacturer's published specifications.

2. All materials stored on the site shall be placed in such a manner as not to create a hazard to the public. The site shall be policed at the end of each working day and every attempt shall be made to avoid leaving any unfinished Work in a condition that could create a hazard to inquisitive persons.

D. Rooftop Material Storage

1. No Concentrated Loads - Materials stored temporarily on the roof during the regular working day shall be stored on pallets resting on plywood. No materials, tools, or equipment, including, but not limited to, buckets, pails, sheet metal, lumber, or mechanical parts shall be stored on the new roof membrane at any time. All items stored on the roof shall be located over primary structural members. The Contractor shall at all times avoid storing anything in such amounts, weights, or locations as to cause a concentrated or point loading sufficient to endanger the structural integrity of the building or to deflect the deck or other structural members beyond the design loading of the particular structure.

2. Overnight Storage - No lumber, rolled goods, fasteners, or insulation can be stored on the roof overnight for any reason, whether protected or not.

3. Roll Goods - All roll goods on the roof during the regular production working day are to be stored on end. Materials laid on the side even temporarily shall be considered rejected and removed from the roof. Roll goods shall not be used as equipment counterweights or wind ballast.

E. Maintenance of Storage

1. Arrange For Inspections - All materials are to be stored and arranged in a manner to provide access for maintenance of stored items, repair and resecurement of weatherproof coverings, and for inspection.

F. Payment For Stored Materials - At the Owner’s option, payment may be made for stored materials as provided in the General Conditions. Payment for stored materials either in an approved offsite storage facility or on the jobsite will be approved by the Engineer only when all the following conditions are met.

1. Materials delivered to a jobsite shall be in covered storage trailers.

2. All materials regardless of location shall be properly protected from the elements, set aside in a designated area, and labeled for the subject job.

3. The subject materials shall be available for inspection by an authorized representative of the Owner and Engineer.

4. A duplicate of the original material invoice on the vendor or supplier's original invoice form shall be transmitted directly from the vendor or supplier to the Engineer by hard copy without passing through the Contractor.

5. The original wet-ink notarized Supplier Stored Material Certification letter shall be attached to the duplicate invoice certifying that the prices and quantities shown on the duplicate invoice are the true, accurate, and correct prices and quantities invoiced to the Contractor for the materials. The notarized letter shall be transmitted directly to the Architect/Engineer without passing through the Contractor.

6. The quantities shown on the duplicate invoices shall correspond with the quantities shipped to the jobsite or stored.

7. Facsimiles will not be accepted.
8. Payment will be approved only for materials whose physical presence can be verified by the Engineer.

1.14 PROTECTION OF ROOFING DURING CONSTRUCTION

A. Existing Warranties On Contiguous Roofs - It is the Contractor's responsibility to request information and investigate the existence of roof warranties either by contractors or manufacturers on contiguous roofs. Where modifications of any type are contemplated including minor penetrations, curbs, or connection by expansion joint, the Contractor shall obtain a letter from the holder of the guarantees or warranties stating the following:
1. The guarantor is aware of the Work and pending modifications to the roof.
2. The guarantor has inspected the roof, and prior to commencement of any Work, the guarantor certifies that the full terms and conditions of the existing guarantee and/or warranty are presently in full force and effect.
3. The guarantor has reviewed the Construction Documents and understands the modifications contemplated.
4. The guarantor approves the details, drawings, and specification for the modifications.
5. The guarantor approves the use of the named roofing contractor and certifies that the named roofing contractor is an approved applicator of its products.
6. The guarantor certifies that provided the named approved applicator contractor is used, the materials approved by the guarantor are used in such modifications, penetrations, or flashings, and upon final inspection the guarantor finds the workmanship to meet the manufacturer's original specification standards for such Work, it shall issue a letter stipulating that the original guarantee or warranty remains in full force and effect for its natural duration.
7. The Contractor is responsible for any charges, fees, or costs by the manufacturer for providing such inspections, letters, and certifications.
8. Failure to follow these procedures to ensure continuity of the existing roof warranties or guarantees shall render the Contractor liable for making the Owner whole for the duration of the warranty or guarantee in force prior to the Contractor's commencement of Work.

B. Sequencing and Scheduling - Do not begin roofing work on any roof section prior to completion of the following work associated with the roofing section:
1. Masonry and mortar work

C. Protection Of Contiguous And On-Going Roofs - Contiguous and primary roofs are not to be used for storage, Work areas, or damaged in any manner, no matter how minor, during the course of construction. Roofs of contiguous areas are off-limits to all construction or roofing personnel. Where mechanical penetrations are contemplated for other roof areas, the following procedures shall be followed:
1. Roof penetrations and flashings, including all related roof repairs, shall be performed only by the approved Applicator Roofing Contractor covered within or under this agreement.
2. Roofs are not to be used as Work areas for pipe-cutting tripods, sawhorses for lumber, carpentry, or any other type of activity.
3. Where any type of masonry, EIFS, stucco, fireproofing, or other dusty or spray contaminant may impinge on the roof, the Contractor shall provide an impervious covering over the roof area followed by 1/2 inch minimum thickness plywood laid with the short side against the wall.
4. The Contractor shall be responsible for completely cleaning and repairing the existing contiguous or other new roof membrane from any damage done during construction.
D. Roof Loading - Utilize rooftop material handling equipment in such a manner as to prevent excessive construction loading. Prior to the Work of each roof section, become completely familiar with the layout of both primary and secondary structural support members and coordinate material handling, including the transport of removed gravel, so that loading occurs only over those members. Construct temporary runways if necessary. Contractor is to be careful of overloading of roof. Contractor shall note locations of columns for his own information and distribute all materials such as pallets of rolled goods, insulation, cover board, and particularly gravel and ballast.

E. Monitor Traffic - Protect completed membrane at all times. Plan and coordinate membrane application activities so that all equipment movement and roof traffic occurs only on runways or the up-hill side of completed membranes.

F. No Motorized Rolling Equipment - Application equipment such as mechanical felt layers may be used on this job, but heavy motorized equipment shall not be used.

G. Protection of Transport Routes - All areas of construction traffic over completed membranes, such as material loading charge points, staging areas, and transport routes shall be protected throughout the Work with at least 1/2-inch plywood sheets butted end-to-end and not overlapped.

H. Temporary Roofing - Unless specifically requested by the Engineer Roof Consultant, temporary roofing for the purpose of maintaining the dry integrity of the building and contents shall be for the convenience of the Contractor. If for any reason, the Contractor is unable to complete the full assembly of all roof insulation and roof plies at the end of the workday, such Work shall be considered a temporary roof, and shall be removed the following day at the Contractor’s expense. No credit is given for partial plies. For example, if on a four-ply system, the Contractor is unable to install all four plies, a full new four-ply roof assembly shall be installed thereafter with no credit given for the original plies.

1.15 ENVIRONMENTAL PROTECTION

A. Landscaping
   1. Landscaping and Grounds Protection - Provide protective coverings as necessary to prevent damage to buildings, grounds, and parking lots. Protect all plants from chemical or mechanical damage.
   2. Trash Dumpster Protection - If commercial trash receptacles are dropped at the site, provide wooden skids as necessary to prevent damage to paved areas and cover receptacles daily to prevent debris from blowing around the site.
   3. Return Landscaping to Original Condition - Parking lots, landscaping, yards, beds, or grassy areas shall be repaired in a manner to return the area to the original condition immediately following completion of the Work.
   4. Only Approved Dirt or Replacement Soil - Contractor shall submit samples of proposed soil to be used to repair landscaping in advance with the name and location of the proposed source quarry. The Owner shall have the opportunity to inspect the soil source quarry prior to delivery of any soil to the jobsite, and the Contractor shall not proceed with bringing any such materials on the site until the Owner has provided written approval.

B. Chemical Storage Protection
1. Chemical Storage - No chemicals, or any materials classified as such, shall be brought on site until all MSDS sheets have been provided to the Owner and both the materials and the storage and maintenance methodology approved in writing by the Owner.

2. Double Containers - All chemicals shall be stored in double containers for leak protection. The Contractor shall provide a written plan for such protection with his submittals.

3. Storage Maintenance - Maintain storage in such a manner as to prevent leaking of chemicals, liquids, or other materials, whether hazardous, toxic, or not, and to prevent mixing of chemicals of any sort. Leaking containers shall be immediately removed from the site and all leak residue cleaned up in accordance with all federal, state, and local laws or ordinances.

C. Noise Protection
   1. Noise Control - The Contractor shall take maximum precautions to avoid excessive noise which may disrupt the Owner’s normal operations. Instruct all workmen in noise control procedures. Such conditions shall be the Owner’s determination.

1.16 JOBSITE SET-UP

A. Construction Facilities And Temporary Controls
   1. Site Arrangements - All set-up, parking, and general location of equipment shall be at locations directed by the Engineer or Owner. Such locations shall be coordinated with the Owner to avoid or minimize interference with or inconvenience to occupants of the buildings.

B. Temporary Electricity
   1. The Owner shall furnish to the Contractor from existing facilities and without cost to the Contractor, electricity necessary for the performance of Work under this Contract. The Owner will in no case furnish or install any additional electrical facility or accessory for the purpose of this Contract. It is the responsibility of the Contractor to determine the extent to which existing the Owner’s electrical facilities are adequate for the needs of this Contract.

   2. All taps, connections, and necessary equipment required in making the electrical power available shall be accomplished by and at the expense of the Contractor. All work in connection therewith shall be coordinated, scheduled, and performed as directed and approved by the Owner. The Contractor shall maintain said taps, connections, and accessory equipment in a workmanlike manner in accordance with the rules and regulations of the particular locale or other applicable jurisdictions. Upon completion of the Contract the removal of all taps, connections, and accessories shall be accomplished by and at the expense of the Contractor so as to leave the electrical power source and facility in its original condition. Such removal shall also be subject to the approval of the Owner.

C. Temporary Ventilation
   1. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

   2. Utilize existing ventilation equipment. Extend and supplement equipment with temporary fan units as required to maintain clean air for construction operations.

D. Telephone Service
1. Provide, maintain, and pay for cell phone service to the Contractor Superintendent. Owner shall be provided with a twenty-four (24) hour emergency phone number to contact the Superintendent or Contractor.

2. Under no circumstances are the Contractor’s personnel to enter the building to use the Owner’s phones.

E. Temporary Water Service
1. Owner shall furnish to the Contractor from existing facilities and without cost to the Contractor, a supply of water necessary for the performance of Work under this Contract. Owner will in no case furnish or install any required supply connections and piping for the purpose of implementing the availability of the water supply. It is the responsibility of the Contractor to determine the extent to which existing Owner’s water supply source is adequate for the needs of this Contract.

2. All taps, connections, and accessory equipment required in making the water supply source available shall be accomplished by and at the expense of the Contractor. All work in connection therewith shall be coordinated, scheduled, and performed as directed and approved by Owner. The Contractor shall maintain said taps, connections, and accessory equipment in a workmanlike manner in accordance with the rules and regulations of the particular locale or other applicable jurisdictions. Upon completion of the Contract, the removal of all taps, connections, and accessories shall be accomplished by and at the expense of the Contractor so as to leave the water supply source and facility in its original condition. Such removal shall also be subject to the approval of Owner.

F. Temporary Sanitary Facilities
1. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide at time of project mobilization. Facility must be maintained and cleaned at maximum intervals of once each week, and otherwise at more frequent intervals as required for proper sanitation. Where buildings over five stories are a part of the project, the sanitary facility shall be maintained on the roof itself.

G. Barriers
1. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner’s use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

2. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

3. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

H. Fencing
1. Provide commercial grade chain link fence 6 feet high around construction site, or designated area; equip vehicular and pedestrian gates with locks.

I. Protection of Buildings
1. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

2. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

3. Where the Contractor uses interior building stairways for roof access, upon completion of the job, all such stairway doors, rails, walls, steps, and landings shall be completely cleaned of all stains, residue, and construction debris. If such cannot be adequately cleaned to the Owner’s satisfaction, the Contractor shall be responsible for repainting or
otherwise restoring the area to its original condition prior to commencement of construction.

1.17 CONSTRUCTION EQUIPMENT

A. Non-Leaking - All construction equipment used on site must be in good working condition and not leaking any types of fluids or contaminants. Poorly maintained or leaking equipment shall be removed from the site, and any residual chemical leaks completely cleaned up in accordance with all local, state, and federal regulations.

B. When site space is not adequate, provide additional off-site parking.

C. All vehicles shall be removed from the site daily. No overnight parking shall be allowed.

1.18 WEATHER CONTINGENCIES

A. Risk - Means, method, and scheduling are the responsibility of the Contractor within any constraints stipulated elsewhere in the Construction Documents. All weather risks are the responsibility of the Contractor, and protection of materials, building, and contents is the sole responsibility of the Contractor.

B. Protection Against Sudden Weather Changes - Protection of the building, tenants, and contents shall be a primary concern at all times during construction. At no time shall the Contractor remove more roofing or equipment or expose more of the building or contents to the weather than can be protected immediately in the case of sudden weather changes. If the Contractor must apply temporary measures to protect the building or its contents during sudden weather changes, such temporary protection or measures shall be removed and replaced prior to commencement of further Work.

C. Precipitation - Roofing shall not be applied during precipitation and shall not be started in the event there is a probability of precipitation during application greater than normal industry practice.

D. Wind Chill - Hot asphalt roofing shall not be installed when the wind chill temperatures are 40 degrees F or below, and falling. When the wind chill temperature is 40 degrees F and rising, hot roofing may be installed but precautions must be taken to ensure that asphalt maintains the minimum acceptable temperature (EVT) at the point of roofing application as recommended by the roofing manufacturer. In addition, rolled goods must be above 55 degrees F when delivered to the roof and shall not be installed if chilled.

1.19 GOVERNING AUTHORITIES

A. With respect to industry details, methodology, performance standards, or resolution of conflicts, the most stringent standards of those authorities listed below shall govern for the specific geographical location of the project. Where such governing authorities and standards are listed, it is understood that the latest and most current version of such standards are required, and it is the Contractor's duty to know and understand such standards which are in effect at the time this Project is proposed.

1. FM Global Engineering (FM)
2. Underwriters Laboratory (UL)
3. National Roofing Contractors Association (NRCA)
4. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
5. ASTM International (ASTM)
8. International Mechanical Code (IMC), Current Edition
10. Approved Roofing Material Manufacturer

1.20 FIELD SUPERVISION

A. Supervisor Designation - The Roofing Contractor shall designate a Field Supervisor who shall be the Contractor's on-site representative and agent at all times. The Field Supervisor shall be experienced in running Work of this size, type, and complexity. *The Field Supervisor shall be non-working and on-site full-time during the course of the job, except for rain days.* On rain days, the Field Supervisor shall show up, confer with the Owner regarding leaks or emergencies, if any, and have available emergency personnel to deal with such eventualities. With the Owner's approval, the Architect/Engineer has the authority to have the Contractor remove a Field Supervisor for being unqualified, or otherwise failing to comply fully with the Construction Documents' requirements, and have a new Field Supervisor assigned acceptable to the Owner and Architect/Engineer.

B. The Field Supervisor shall be able to effectively communicate with job superintendent and staff on site to ensure jobsite safety, and be on Site at all times during Work and by virtue of experience, education, and training be fully qualified to organize, plan, supervise, and manage all phases of the Work.

C. Scope of Field Supervisor Responsibilities - The Field Supervisor shall be responsible for all on-site activities beginning with the delivery of the materials and job set-up, and shall be available and accessible to the Owner or Roofing Architect/Engineer at all times whether Work is in progress on a particular day or not. A Working Foreman is not a Field Supervisor, and the Field Supervisor shall be in addition to a Working Foreman.

D. Safety Enforcement - Safety is the responsibility of the Contractor. The Field Supervisor shall enforce all provisions of the job safety requirements at all times, and shall dismiss from the jobsite any employee failing to comply. Safety of the general public shall be a paramount concern and focus of the Project, and any person failing to comply with OSHA safety requirements may be dismissed from the jobsite.

E. On-Call Emergency Service - The Contractor shall provide an emergency phone number for weekends and nights and home phone numbers for the Company President and the Field Supervisor. Such emergency access is to be used in the event of severe leakage during progress of the job in a heavy rain at night or on weekends.

1.21 PLANNING AND PREPARATION

A. Read the Specifications - The Field Supervisor shall become thoroughly familiar with requirements for the job including, but not limited to, reading and understanding the Drawings and Specifications. The Field Supervisor shall determine the proper sequence and schedule for all Work, and shall determine the proper tools, equipment, means, methods, and techniques to perform the Work in accordance with all Contract Documents and shall ensure timely delivery of all equipment, tools, personnel, materials, and components required for the timely completion of all Work in accordance with the established schedule.
B. Mechanical and Electrical Equipment Verification - The Contractor shall verify performance and operation of all mechanical and electrical equipment prior to commencement of Work. The Contractor shall be responsible for ensuring that each piece of mechanical equipment is restored to its former operating condition upon completion of all Work.

C. Inspection for Prior Damage - Prior to commencement of Work, the Contractor shall inspect the interior of the building and all exposed surfaces for damage, scratches, abrasions, leaks, and bitumen drippage, and report such findings to the Owner in writing or supported with photographs as necessary. The Owner reserves the right to hold the Contractor responsible and liable for building damage not reported and confirmed in advance of the commencement of Work.

D. Location of Fixtures Below Roof Deck - The Contractor shall inspect the underside of all decks and become aware of the locations of all conduit, fixtures, suspended ceiling supports, or other mechanical and electrical equipment supported by or attached to the underside of the deck. The Contractor shall be responsible for reconnecting, replacing, or repairing, any damage to or dislocation of items, fixtures, or supports connected to the deck required by the circumstances of the Project or accidentally caused by Work performed under this Contract.

1.22 DAMAGE TO BUILDING INTERIOR

A. Protection From Damage - The Contractor shall take all necessary precautions to prevent damage to the interior of the building or its contents. Dirt, dust, or other contamination of interior surfaces shall be cleaned up by the Contractor or at the Contractor's expense.

B. Coordination with Occupants - The Contractor's Field Supervisor shall communicate daily with occupants if power, heating, ventilation, or air conditioning units are to be shut-off, and, subject to the scheduling requirements of the job, the Contractor shall perform Work in a sequence to minimize inconvenience to occupants. Nothing in this paragraph, however, shall constitute interference with or a change to the Contractor's status as an independent Contractor and the Contractor's right to control means and methods and schedule Work in the most efficient manner to comply with the performance requirements of all Work hereunder.

1.23 TESTING

A. Requirements
1. The Owner reserves the right to employ and pay (except as specified otherwise) for the services of an Independent Testing Laboratory approved by Architect/Engineer to perform specified testing. The Contractor shall pay the cost of re-testing required due to failure.
2. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
3. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.

B. Contractor's Responsibilities
1. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
2. Provide to the laboratory the preliminary requirements proposed to be used for correct roofing practice, and other materials mixes that require control by the testing laboratory. Costs of all roofing samples shall be the Contractor's responsibility.
3. Furnish incidental labor and facilities:
   a. To provide access to Work to be tested.
   b. To obtain and handle samples at the Project site or at the source of the product to be tested.
   c. To facilitate inspections and tests.
   d. For storage and curing of test samples.

4. Notify laboratory sufficiently in advance of operations to allow for pick-up, laboratory assignment of personnel, and scheduling of tests. When tests or inspections cannot be performed after such notice, reimburse Owner for laboratory personnel and travel expenses incurred due to Contractor's negligence.

5. Make arrangements with laboratory and pay for additional samples and tests required for Contractor's convenience.

6. Cut or prepare all samples to be tested in the presence of either the Owner's Representative, the Architect/Engineer, a registered Deputy Building Inspector, or the Engineer from the testing laboratory, and secure the witness' initials on each sample prepared.

7. Any tests, inspections, or sampling required by the Building Inspector for the performance of special Trades not included in this Section shall be paid for as a part of the Work of the Trades being tested.

1.24 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, and materials, prior to Substantial Completion/Final Application for Payment inspection.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing and permanent facilities used during construction to original condition.

1.25 CLEANUP

A. Daily Cleanup - Daily cleanup is a part of the job. A clean workplace is a safe workplace. The jobsite is to be kept clean and safe from fire or tripping hazards daily.

B. Trash Containers - Provide trash bags or containers for all trash, debris, and material residue. Trash subject to being blown by the wind shall be stored in a secure container. Trash includes material containers, wrappers, and covers in addition to food containers, drinking cups, paper bags, and all other trash of any kind resulting from on-going roofing operations. Trash is to be removed from the jobsite daily.

C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned. Clean all bituminous materials from all masonry surfaces, equipment, pipes, conduits, paved areas, and grounds.

D. Clean debris from roofs, gutters, downspouts, and drainage systems as applicable.

E. Clean site; sweep paved areas, rake clean landscaped surfaces.

F. Remove waste and surplus materials, rubbish, and construction facilities from the site. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
G. Broom and vacuum clean interior areas prior to the start of surface finishing, and continue cleaning to eliminate dust.

1.26 DEFINITION OF ROOFING SUBSTANTIAL COMPLETION

A. Substantial Completion of the roof is defined on this Project as that stage in the progress of the job where all integral components covered under the Contract are in place without material defect and performing their intended function. Substantial Completion requires the following specific performance:
   1. All roofing and sheet metal must be installed except for minor field painting or touch up of metal.
   2. All construction equipment must be disassembled and/or removed from the jobsite.
   3. All leftover or excess materials must be removed from the jobsite.
   4. The grounds must be cleaned and repaired in substantial accordance with the Contract Documents.
   5. Minor punch list items may still be pending.

1.27 WARRANTIES, GUARANTEES, AND CLOSEOUT DOCUMENTATION

A. Submit documents to Architect/Engineer with the final Application for Payment. Please check all documents for accuracy and completeness paying particular attention to the following items:
   1. Be sure the Owner's Project Number, if any, appears on all Applications for Payment and warranties.
   2. Check all arithmetic to be sure that columns and rows tabulate and cross-tabulate, i.e. they add up in both directions.
   3. Required Documents - Submit an original and two copies of the documents listed below for closeout.
      a. Pending Change Orders - All pending or disputed change orders must be resolved, dismissed, or approved, and a written change order signed by all parties prior to the final application for payment. Such change orders must be noted in the Change Order Summary AIA G702, all having previously been approved.
      b. Reconciliation of Unit Priced Allowances - Using the form required, submit a detailed breakdown of quantities consumed from the Unit Price Allowances. This form should be submitted immediately upon completion of tear-off in the case of reroofing, since by that time all such units should be known.
      c. Certificate of Substantial Completion - Execute a Certificate of Substantial Completion.
      d. Certificate of Asbestos-Free Construction - Execute and have notarized the Certificate of Asbestos-free construction.
      e. Certificate of Guarantee - The Contractor's two (2) year Certificate of Guarantee must be signed on the form provided in the Specifications, a clean copy of which will be sent with a hard copy of this document. Separate guarantees are to be provided for each campus even where multiple campuses are included on the same Contract. Where multiple buildings within a campus are covered, an attached Supplement A listing the specific buildings must be attached to the Guarantee. The effective date shall be the date of substantial completion as certified by the Architect/Engineer.
      f. Manufacturer's NDL Warranty - Provide the manufacturer's NDL warranty on the form provided in the Specifications, a clean copy of which will be provided to Contractor. Separate warranties are to be provided for each campus even where multiple campuses are included on the same Contract. Where multiple buildings
within a campus are covered, an attached Supplement A listing the specific buildings must be attached to the Warranty. The date shall be the same as the Contractor’s Certificate of Guarantee.

g. Manufacturer’s Total System Warranty - Provide the manufacturer’s total system warranty on the form provided in the Specifications, a clean copy of which will be provided to Contractor. Separate warranties are to be provided for each campus even where multiple campuses are included on the same Contract. Where multiple buildings within a campus are covered, an attached Supplement A listing the specific buildings must be attached to the Warranty. The date shall be the same as the Contractor’s Certificate of Guarantee.

h. Consent of Surety - Enclose, or have bonding company send to Architect/Engineer directly, the Consent of Surety form authorizing final payment to be made to the Contractor.

i. Affidavit of Bills Paid From Mechanic’s and Materialmen - The form enclosed in the Contract Documents must be signed and notarized as requested. This form must also be provided from each and every subcontractor hired and used on the job.

j. Final Application for Payment - The final application for payment should include all pending change orders and show credit for the unused portion of the contingency allowance. The contingency allowance will be credited on the final change order, if any. Otherwise a credit change order will be issued at the end of the job for the credit due the Owner and signed by all parties as a regular change order.

k. Confirmation from the appropriate jurisdiction that permits associated with this project have been closed.

PART 2 PRODUCTS [Not Used]

PART 3 EXECUTION [Not Used]

END OF SECTION
SECTION 07 50 00

ROOF PROJECT FORMS SUPPLEMENT

The forms contained in this Supplement to the Roofing Section of the Construction Documents are a part of the Documents. They are to be used where required. Submittals, guarantees, and warranties in other formats will be rejected.
## SECTION _________ ROOFING SUBMITTAL COVER SHEET

Submit this detailed material listing with each set of product and material submittals. Use as many pages as necessary to provide a full and complete submittal.

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Submitted By:

______________________________
Contractor’s signature

Page _____ of _____

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**Wiss, Janney, Elstner Associates, Inc.**
ENGINEERS, ARCHITECTS, MATERIAL SCIENTISTS
9511 Lake Creek Parkway, Austin, Texas 78717
512-257-4800 Fax 512-219-9883

This review is only for general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. Corrections or comments made on the Shop Drawings during this review do not relieve Contractor from compliance with the requirements of the Drawings and Specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work of all trades; and for performing all Work in a safe and satisfactory manner.

By: ___________________________ Date: ______________

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**Village Creek State Park**
**Facility Damage Repairs**
**TPWD No. 128695**

**07 50 00 - 20**

**Roof Special Requirements**
March 6, 2019
100% Construction Documents
CONTRACTOR'S CERTIFICATE OF GUARANTEE

TO: Thea Luong

PROJECT: Mrs. Thea Luong
Texas Parks and Wildlife Infrastructure Department
4200 Smith School Road
Austin, Texas 78744

OWNER: Texas Parks and Wildlife

EFFECTIVE DATE:

We, the undersigned, hereby GUARANTEE all of the Work performed and materials either placed and/or supplied by the undersigned under this Contract against defective workmanship and/or materials for a period of two (2) years following the Date of Substantial Completion and the Owner's acceptance of the Work performed in accordance with the General Conditions of the Specifications, and the Contract for this Project.

Upon notice by the Owner, the undersigned Contractor will replace faulty workmanship and/or materials furnished or installed by the undersigned Contractor which may be evidenced during the guarantee period without cost or charge to the Owner, whether or not such faulty workmanship results in moisture leaks. Faulty workmanship and materials shall include but not be limited to the following:

- Leaks in the roofing system or components installed as part of this job
- Blisters, buckles, and fish-mouths in the membrane or flashings
- Faulty or separated laps in the membrane or flashings
- Loose, unbonded, or delaminated flashings
- Delamination of the insulation facer
- Buckling, cupping, or other dimensional instability of the insulation
- Slippage of insulation, plies, or bitumen
- Faulty attachment or leaks resulting from metal roofing, sheet metal, or any other components furnished under this Contract

We agree to inspect the roof with the Owner or Owner's Representative within sixty (60) days prior to the expiration of this warranty. If defects as noted above are not corrected by the expiration date of this guarantee, this guarantee shall be extended until such time as all defects present at the time of the inspection noted above have been corrected to the Owner's satisfaction. In case the undersigned Contractor fails to remedy such defects within a reasonable period of time following notice, the Owner may furnish such materials or labor as may be necessary to bring or restore the Work to the standards originally specified and the undersigned Contractor agrees to reimburse the Owner fully and promptly for all costs incurred in obtaining such compliance. Correction of defects in workmanship and materials shall not, however, relieve the Owner of responsibility for normal and routine maintenance and cleaning of the roof, and the Contractor shall not be held responsible for routine maintenance.

Certified this __________ day of ______________________, 20___.

CONTRACTOR: __________________________________________________________

BY: _________________________________________________________________

TITLE: _______________________________________________________________

DATE: _______________________________________________________________
SINGLE-SOURCE TWENTY (20)-YEAR METAL ROOF TOTAL SYSTEM WARRANTY

Building Owner: Texas Parks and Wildlife
Owner Address: 4200 Smith School Rd
Owner City, State, & Zip: Austin, Texas 78744
Project Name: Village Creek State Park
Project Address: 8854 Park Road 74
Project City, State & Zip: Lumberton, Texas 76577
Manufacturer:
Manufacturer’s Address:
Manufacturer’s City, State, & Zip:
Type of Roof Covering:
Roof Area:
Roof Slope:
Building End Use:
Manufacturer’s Warranty No.:
Date of Completion:

1. **PERIOD OF TIME COVERED** - For a period of twenty (20) years from the Date of Substantial Completion, the Manufacturer, ("Manufacturer") WARRANTS to the Building Owner ("Owner") the Total Roof System Assembly against intrusion of water from the exterior of the Total Roof System Assembly into the building envelope and failure of attachment of any component when exposed to weather conditions and ordinary wear and usage historically typical and reasonably expected for the type and geographical location of the installation.

2. **EFFECTIVE COMMENCEMENT DATE** - The Date of Substantial Completion is the date that is certified by the Architect/Engineer, Owner or Owner’s Representative when the Total Roof System Assembly is completed and accepted by or on behalf of the Owner.

3. **COMPLIANCE WITH MANUFACTURER’S REQUIREMENTS** - The Manufacturer warrants and certifies as condition of the issuance of this warranty that it has performed the following steps:

   3.1. Reviewed the Construction Documents and requirements of this installation.
   3.2. Provided an advance written approval to Owner of all components represented by Contractor to Manufacturer to be used in this installation, and that all such components identified in paragraph 4, have been pre-approved in writing by Manufacturer.
   3.3. Represents that the Roofing System was installed by an approved or certified installer of Manufacturer’s products.
   3.4. Represents that it has inspected the Total Roof System Assembly at the above referenced Project at relevant stages in construction.
   3.5. Represents that based upon the inspections thereof and except as otherwise noted herein, the metal roof installation appears to be in accordance with Manufacturer’s requirements for the issuance of this warranty.

4. **DEFINITION OF TOTAL ROOF SYSTEM ASSEMBLY COVERED UNDER SCOPE OF WEATHERTIGHTNESS WARRANTY** - For purposes of this warranty, the Total Roof System Assembly is defined as the following components which comprise the complete Total Roof System Assembly:

   4.1. Metal roof panels
   4.2. Water conveyance sheet metal such as gutters, scuppers, valleys, and downspouts
   4.3. Water shedding flashings such as ridge and hip caps, batten or other snap-on or seam covering caps, crickets, counterflashings, and copings
   4.4. Imbedded sheet metal such as roof curbs of any type, VTRs, and other components in the plane of the finished roof

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Facility Damage Repairs March 6, 2019
TPWD No. 128695 100% Construction Documents
4.5. Attachment components such as clips, fasteners, screws, pop rivets,
4.6. Secondary moisture barriers, such as self-adhering membranes, mastics, roof cement, and sealants of all
types as they relate to moisture or water penetration
4.7. Insulation beneath the roofing system as it relates to moisture or water penetration

5. **METAL FINISH WARRANTY** - This warranty does not cover paint, coating, or metal finish. A separate metal
finish warranty shall accompany this warranty document.

6. **RESPONSIBILITY FOR WARRANTY COMPLIANCE** - The Manufacturer shall have the sole and exclusive
obligation for all warranty work commencing on the Date of Substantial Completion and terminating twenty
(20) years from that date. During the period in which Manufacturer has the warranty obligation Manufacturer
shall take appropriate actions necessary to cause the non-performing portions of the Total Roof System
Assembly to perform their intended functions. The Manufacturer has the right through its applicator agreements
with contractors to hold the Contractor liable for the first two (2) years, but such right does not relieve the
Manufacturer of its obligation to the Owner for the full term of the warranty. The Manufacturer has the right to
select an approved and/or certified applicator of Manufacturer’s products to investigate claims by the Owner or
to perform warranty work, but Owner has the right to veto or reject the use of any specific contractor or
applicator for reasonable cause. The Contractor shall be mutually acceptable to the Owner and the
Manufacturer.

7. **EXCLUSIONS FROM WARRANTY COVERAGE** - The Manufacturer shall not be liable for leaks or
deterioration caused by any of the following conditions:

7.1. Deterioration caused by marine (salt-water) atmosphere or constant spray from either salt or fresh water.
7.2. Corrosion caused by heavy fallout or exposure to corrosive airborne chemicals.
7.3. Deterioration caused by condensation. Any corrosive substance or any condensate of any harmful
substance contained, generated, or released inside the building.
7.4. Damage caused by worker(s), other than Manufacturer or roofing Contractors’ workers on the roof.
7.5. Alterations or additions such as, but not limited to, structures, fixtures or utilities being placed upon or
attached to the roof without prior written authorization from the Manufacturer.
7.6. Deficiencies in or water infiltration from other building materials adjacent to or in contact with the Total
Roof System Assembly.
   Natural disasters such as hurricanes, earthquakes, extraordinary winds, winds which detach from the
   facility any part of the building substrate to which the Total Roof System Assembly is attached, lightning,
   hail, fire, radiation, or other acts of God which are normally covered by hazard insurance.
7.7. Excessive structural defects or movement beyond that normally anticipated for a structure of the type to
which the Total Roof System Assembly is attached.
7.8. Leaks directly through mechanical equipment or skylight assemblies, and not through the contiguous roof
flashings.
7.9. Leaks in metal gutters, scuppers and downspouts.

8. **PAYMENT** - Manufacturer certifies and represents by issuance of this warranty that it has been paid in full for
all materials or services provided in connection with this Project and waives any claim that the warranty is not
in full force and effect as a result of unpaid invoices or claims of any type against the Contractor or Owner for
unpaid amounts of money due Manufacturer, or any other related party.

9. **SITE ACCESS** - During the term of this warranty access to the Total Roof System Assembly shall not be
unreasonably withheld from Manufacturer provided Manufacturer complies with the access, safety, and security
standards and policies of the Owner.

10. **WIND RESISTANT STANDARDS** - Manufacturer certifies and represents that to the best of its knowledge,
the Total Roof System Assembly has been tested and installed in accordance with the specified wind resistant
construction standards required by the Construction Documents for this installation.

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11. LIMITATIONS - There is no dollar limit to the liability of the Manufacturer for ensuring performance of the Total Roof System Assembly for the term of the warranty.

12. CONSEQUENTIAL DAMAGES - Manufacturer shall not be liable for consequential damages to the building or its contents as a result of failure of any part of the Total Roof System Assembly.

13. NOTIFICATION BY OWNER - Owner shall provide Manufacturer with written notice within thirty (30) days of the discovery of any leak(s) in the Total Roof System Assembly. If upon Manufacturer’s investigation, Manufacturer believes that the leaks in the Total Roof System Assembly are not covered in this warranty, the party requesting Manufacturer’s investigation shall be liable for all direct investigation expenses incurred by Manufacturer if the party could have reasonably known leaks were not caused by the Total Roofing System Assembly by its own investigation. If the parties disagree as to the cause or responsibility, an outside independent third party expert acceptable to both parties shall be employed to render an opinion, and both the Owner and Manufacturer agree to be bound by the opinion of the independent expert. The responsible party shall pay the independent expert’s fee for such investigation.

14. TRANSFERABILITY - This warranty is issued to the Owner of Record shown on the document. Such warranty may be transferred to a new or different Owner upon sale of the building under the following conditions. The Manufacturer shall have the right to inspect the roof and make recommendations with respect to maintenance, repairs, or any other Work not covered under the warranty. Provided the Owner complies with the recommendations of the Manufacturer at its own expense and pays to the Manufacturer its standard fee for performing such inspection and making such recommendations, not to exceed $1,000, Manufacturer shall issue a new transfer warranty document at the Owner’s request to a new Owner. Such transfer does not extend the term of the warranty and such transfer shall only cover the duration of the original warranty.

15. BY ISSUANCE OF THIS CERTIFICATE, MANUFACTURER DOES NOT MAKE ANY WARRANTY, EXPRESSED OR IMPLIED, EXCEPT AS SPECIFICALLY STATED HEREIN. ALL EXPRESS AND/OR IMPLIED WARRANTIES OF MERCHANTABILITY OR IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED. IN NO EVENT SHALL MANUFACTURER HAVE ANY LIABILITY FOR ANY COMMERCIAL LOSS, CLAIMS FOR LABOR, CONSEQUENTIAL OR LIQUIDATED DAMAGES OF ANY TYPE, WHETHER SUCH CLAIM BE BASED IN CONTRACT, TORT, WARRANTY, STRICT LIABILITY, OR OTHERWISE.

16. The laws of the State of Texas shall govern the rights and duties of the parties under this agreement and jurisdiction, and venue is fixed in Hardin County, Texas.

Roofing Contractor (Approved Installer)  Manufacturer

Signed by  Signed by

Typed Name  Typed Name

Title  Title

Date Signed  Date Signed

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SECTION 07 62 00

SHEET METAL FLASHING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Supply, fabrication, and installation of flashings at exposed beam ends.

B. Related Sections:
   1. Section 06 10 63 - Exterior Rough Carpentry
   2. Section 07 62 00 - Joint Sealants

1.2 REFERENCES

   1. American Architectural Manufacturers Association (AAMA):
      a. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
   2. ASTM International:
   3. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA).

1.3 SUBMITTALS

A. Shop Drawings - If Contractor proposes changes to flashing assemblies detailed in the Drawings, submit detailed Shop Drawings as necessary to illustrate the changes, and obtain Engineer's written acceptance prior to fabrication.

B. Submit Samples - Prior to mass fabrication, submit to the Engineer physical samples of each of the following:
   1. Fasteners to anchor metal Work
   2. Color sample for prefinished metal

1.4 QUALITY ASSURANCE

A. Skilled Workmen - All sheet metal Work shall be fabricated and installed by fully trained, qualified sheet metal mechanics properly skilled to perform the Work in accordance with the standards set forth in these Specifications. Substandard Work will be rejected.

B. Mock-ups - Build in-place mock-ups to verify selections made under sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
   1. Build in-place mockups to demonstrate aesthetic effects and set quality standards for fabrication and installation.
2. Build mockup of each unique flashing condition and other unique detail. The approved mock-ups shall become the minimum standards for the Work. Rejected mock-ups shall be removed from the site. Approved mock-ups may remain as part of the Work.

3. Additional mock-ups may be required to properly demonstrate acceptable workmanship.

4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Engineer specifically approves such deviations in writing.

5. Provide Field Observer 48-hours advanced notification for observation of mock-ups.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Sheet-Metal Members: Deliver, store, and handle materials in such a manner as to prevent damage to materials or structure.

B. Sealants, Coatings, and Miscellaneous Materials:
   1. Deliver materials to Site in original containers and packaging with seals unbroken, labeled with manufacturer’s name, product brand name and type, date of manufacture, lot number, and directions for storing.
   2. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, and installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
   3. Store materials in original, undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight. Manufacturer’s standard packaging and covering is not considered adequate weather protection.
   4. Handle materials to avoid damage.
   5. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
   6. Remove and replace materials that cannot be applied within stated shelf life.

C. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.

1.6 PROJECT CONDITIONS

A. Verify existing dimensions and details prior to start of sheet-metal Work. Notify Owner and Engineer of conditions found to be different than those indicated in the Contract Documents. Owner and Engineer will review situation and inform Contractor and Installer of changes.

B. Comply with Owner’s limitations and restrictions for Site use and accessibility.

C. Environmental Limitations: Install sheet-metal members when existing and forecast weather conditions permit sealants, coatings, and miscellaneous materials to be installed according to sealant, coating, or miscellaneous material manufacturer’s written instructions and warranty requirements.

D. Handle and install materials in strict accordance with safety requirements required by sheet-metal manufacturer; GHS or Material Safety Data Sheets; and local, state, and federal rules and regulations. Maintain GHS or Material Safety Data Sheets with materials in storage area and available for ready reference on Site.
1.7 CHANGES IN WORK

A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.
   1. Notify Owner and Engineer of conditions that may interfere with the proper execution of the Work or jeopardize the performance of the Work prior to proceeding with the Work.

1.8 WARRANTY

A. Contractor’s Warranty:
   1. Written warranty, signed by Contractor, including:
      a. Replace sheet-metal Work that does not comply with requirements; that has corroded surface, coating that fails cohesively or adhesively, or other surface defects or imperfections; or that deteriorates in a manner not clearly specified by material supplier’s data as an inherent quality of the material for the application indicated.
      b. Remove and replace sealant that has failed cohesively or adhesively; or that deteriorates in a manner not clearly specified by sealant manufacturer’s data as an inherent quality of the material for the application indicated.
      c. Repair or replacement, to satisfaction of Owner, of other work or items which may have been displaced or damaged as consequence of defective Work.
      d. Warranty does not include deterioration or damage from changes in sheet-metal environment from that reasonably anticipated at Substantial Completion, or physical damage from adjacent activities.
   2. Warranty Period: Two years after Substantial Completion date.

B. Manufacturer’s Warranty:
   1. Written warranty, signed by sheet-metal manufacturer, including:
      a. Replace sheet-metal Work that does not comply with requirements; that has corroded surface, coating that fails cohesively or adhesively, or other surface defects or imperfections; or that deteriorates in a manner not clearly specified by material supplier’s data as an inherent quality of the material for the application indicated.
      b. Warranty does not include deterioration or damage from changes in sheet-metal environment from that reasonably anticipated at Substantial Completion, or physical damage from adjacent activities.
   2. Written warranty, signed by manufacturer against defects to the metal panels including color, fade, chalking, and film integrity.
   3. Warranty Period: 20 years after Substantial Completion date.

PART 2 PRODUCTS

2.1 SHEET METAL

A. For beam end flashing:
   1. Aluminum Sheet: ASTM B209, Alloy 3003, 3004, 3105, or 5005; temper suitable for forming and structural performance required, but not less than H14; 0.040-inches thick; finished as follows:
      a. Al clad Finish: Metallurgically bonded surfacing to both sides.
2.2 RELATED MATERIALS - FASTENERS

A. Pop Rivets - Pop rivets shall be No. 44 stainless steel with stainless steel shafts. Pop rivets shall be prefinished using coating to match the color and finish of the sheet metal to which it is attached.

B. Sheet Metal Screws - All exposed screws used in sheet metal applications shall be stainless steel and be prefinished using coating to match the color and finish of the sheet metal to which it is attached.

2.3 RELATED MATERIALS - BITUMINOUS

A. Secondary Waterproofing Membrane - Self-Adhering, High-Temperature Sheet, 30 to 40 mils thick minimum, consisting of slip-resisting, polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
   2. Low-Temperature Flexibility - Passes after testing at minus 20 deg F; ASTM D 1970.
   3. Products - Subject to compliance with requirements, provide one of the following:
      a. CCW WIP 300HT: Carlisle Coatings & Waterproofing Inc., Div. of Carlisle Companies Inc.
      b. GAF Premium Stormguard Film Surfaced Leak Barrier: GAF Materials Corporation.
      d. Titanium PSU 30: InterWrap Inc.
      e. MetShield: Metal-Fab Manufacturing, LLC.
      f. WeatherLock Metal High Temperature Underlayment: Owens Corning.

2.4 RELATED MATERIALS - NON BITUMINOUS

A. Elastomeric Sealant - one part polyurethane Sonolastic NP-1, as manufactured by BASF, for use between lap joints in all metal flashings.

B. Elastomeric Sealant Primer - Prime all surfaces to receive elastomeric sealant using compatible material approved by the manufacturer of the sealant such as BASF Primer No. 733, or approved equal.

C. Sealant Tape - polyisobutylene butyl elastic tape, such as Tremco 440 tape, minimum thickness of 1/8-inch with a 3/4-inch minimum width, unless otherwise instructed for use lap joints in metal flashings.

2.5 FABRICATION

A. Custom fabricate to comply with recommendations in SMACNA's Architectural Sheet Metal Manual, that apply to design, dimensions, metal, and other characteristics of item indicated. Conform to dimensions and profiles shown in SMACNA's Architectural Sheet Metal Manual, unless requirements that are more stringent are indicated.
   1. Obtain field measurements for accurate fit before fabrication.
   2. Shop fabricate items where practicable.

B. Fabricate without excessive oil canning, buckling, or tool marks that are visually objectionable in opinion of Engineer, and true to line and levels indicated, with exposed edges folded back to form hems.

Village Creek State Park 07 62 00 - 4 Sheet Metal Flashing
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1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant. Rivet joints for additional strength.

C. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant and in compliance with recommendations in SMACNA’s Architectural Sheet Metal Manual.

D. Conceal fasteners and expansion provisions, where possible, on exposed-to-view sheet-metal flashing and trim, unless otherwise indicated.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, non-corrosive metal, and in thickness not less than that of metal being secured.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions with Installer for compliance with requirements and other conditions affecting performance of sheet-metal flashings and trim.
   1. Ensure that work done by other trades is complete and ready for sheet-metal Work.
   2. Verify that areas and conditions under which sheet-metal Work is to be performed permit proper and timely completion of Work.
   3. Notify Owner and Engineer in writing of conditions which may adversely affect installation or performance of sheet-metal Work and recommend corrections.
   4. Do not proceed with installation of sheet-metal flashings and trim until adverse conditions have been corrected and reviewed by Engineer.
   5. Commencing sheet-metal Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

A. Take precautions to ensure safety of people, including building users, passers-by, and workmen, and animals, and protection of property, including adjacent building elements, landscaping, and motor vehicles.

B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

C. Protect paving and sidewalks, and adjacent building areas from mechanical damage due to scaffolding and other equipment.

D. Limit access to Work areas.

E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.

F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 INSTALLATION

A. General: Install sheet-metal flashings and trim according to recommendations in SMACNA’s Architectural Sheet Metal Manual and as indicated.
B. Install sheet-metal flashing and trim to fit substrates and to result in watertight performance.
   1. Install true to line and levels indicated.
   2. Where exposed, install without excessive oil canning, buckling, or tool marks.
   3. Provide uniform, neat seams with minimum exposure of solder, welds, or sealant.
   4. Do not torch cut sheet metal.

C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

D. Anchor sheet-metal flashing and trim and other components of Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required.
   1. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners

E. Seal joints with elastomeric sealant as required for watertight construction.

3.4 CLEANING

A. At the end of each workday, clean Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.

B. After completing sheet-metal Work:
   1. Clean spillage and soiling from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected surface. Exercise care to avoid scratching or damage to surfaces.
   2. Repair surfaces stained, marred, or otherwise damaged during roofing Work.
   3. Clean up debris and surplus materials and remove from Site.

3.5 PROTECTION

A. Protect sheet-metal flashings and trim from damage and wear during remainder of construction period.

END OF SECTION
SECTION 07 92 00
ROOF RELATED JOINT SEALANTS

PART 1 GENERAL

1.1 SUMMARY

A. Extent of each form and type of joint sealer is indicated on the Drawings.

1.2 SYSTEM DESCRIPTION

A. Design Requirements and Performance Requirements
   1. Provide joints sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.

1.3 QUALITY ASSURANCE

A. Installer Qualifications - Engage an Installer who has successfully completed within the last 3 years at least 3 joint sealer applications similar in type and size to that of this Project and who will assign mechanics from these earlier applications to this Project, of which one will serve as lead mechanic.

B. Single Source Responsibility for Joint Sealer materials - Obtain joint sealer materials from a single manufacturer for each different product required.

C. Stain Testing: Conduct stain tests according to ASTM C1248 or actual in situ testing, on actual substrate materials with orientation and exposure that replicates finished joint conditions, to verify that sealants will not stain joint substrates.

D. Mockups: Build in-place mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Build mockup measuring at least 10 inches for each unique sealant condition or type.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect/Engineer specifically approves such deviations in writing.
   3. Approved mockups shall become part of the completed Work if undisturbed at time of Substantial Completion.

E. Refer to Section 07 50 00 for general quality assurance requirements.

1.4 SUBMITTALS

A. Submit sealant manufacturer's recommended procedures, specifications, product data, and color charts.

B. Sealant manufacturer's written approval or endorsement of the sealant's use for all conditions specified, including recommendations for primers if required.

C. Installer's written procedures for the protection of building components to remain.
D. Samples:
   1. One (1) foot section of sealant tape with material description.
   2. One (1) package of sealant with material description.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Deliver materials to Project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time and mixing instructions for multi-component materials.

B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature change, contaminants, or other causes, as recommended by the product manufacture.

1.6 PROJECT/SITE CONDITIONS
A. Do not proceed with installation of joint sealers under the following conditions:
   1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturers.
   2. When joint substrates are wet due to rain, frost, condensation or other causes.

B. Joint Width Conditions - Do not proceed with installation of joint sealers when joint widths are less than allowed by joint sealer manufacturer for application indicated.

PART 2 PRODUCTS
2.1 MATERIALS, GENERAL
A. Compatibility - Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by testing and field experience.

B. Colors - Provide color of exposed joint sealer indicated or, if not otherwise indicated, as selected by Architect/Engineer from manufacturer's standard colors.

2.2 ELASTOMERIC JOINT SEALANTS
A. Elastomeric Sealant Standard - Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C920 requirements, including those for Type, Grade, Class and Uses.

B. One-Part Non-sag Urethane Sealant to be used at metal to roof connections - Type S, Grade NS, Class 25, and complying with the following requirements for uses:
   1. Uses NT, M, G, A, and, as applicable to joint substrates indicated, 0.
   2. Uses NT, M, A, and, as applicable to joint substrates indicated, 0.
   3. Approved product is Sonolastic NP-1, one part, non-sag, gun-grade urethane sealant manufactured by BASF.
2.3 JOINT SEALANT BACKING

A. General - Provide sealant backings of material and type which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

2.4 MISCELLANEOUS MATERIALS

A. Primer - Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer-substrate and field tests.

B. Cleaners for Nonporous Surfaces - Provide non-staining, chemical cleaner of type acceptable to manufacturer of sealant and sealant backing materials which are not harmful to substrates and adjacent nonporous materials.

C. Masking Tape - Provide non-staining, non-absorbent type compatible with joint sealants and to surfaces adjacent to joints.

PART 3 EXECUTION

3.1 INSPECTION

A. Require installer to inspect joints indicated to receive joint sealers for compliance with requirements for joint configurations, installation tolerances and other conditions affecting joint sealer performance. Obtain installer's written report listing any conditions detrimental to performance of joint sealer Work. Do not allow joint sealer to proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints - Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:
   1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; oil; grease; waterproofing; water repellents; water; surface dirt and frost.
   2. Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, acid washing or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil free compressed air.
   3. Remove latence and form release agents from concrete.
   4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile and other nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

B. Joint Priming - Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply
primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape - Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALERS

A. General - Comply with joint sealer manufacturer’s printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

B. Elastomeric Sealant Installation Standard - Comply with recommendations of ASTM C962 for use of joint sealants as applicable to materials, applications and conditions indicated.

C. Installation of Sealant Backings - Install sealant backings to comply with the following requirements:
   1. Install Joint-fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability as recommended in manufacturer's published literature.
   2. Do not leave gaps between ends of joint-fillers. Do not stretch, twist, puncture or tear joint fillers.
   3. Remove absorbent joint-fillers that have become wet prior to sealant application and replace with dry material.
   4. Install bond breaker tape between sealants and joint-fillers, compression seals or back of joints where required to prevent third side adhesion of sealant to back of joint.
   5. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

D. Installation of Sealants - Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

E. Tooling of Non-Sag Sealants - Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

F. Concave joint configuration per Figure 6A in ASTM C962, unless otherwise indicated.

3.4 FIELD QUALIFICATION TESTS

A. Perform sealant adhesion tests, in accordance with the manufacturer’s written testing procedures, at a minimum of one location for each substrate type for every 1000 lineal feet of installed sealant.
B. As sealant installation progresses and after an appropriate cure period, a field adhesion test may be performed by Architect/Engineer. The adhesion test shall be performed in accordance with the following:
   1. Make a knife cut horizontally from one side of the joint to the other.
   2. Make two vertical cuts approximately 2 inches long at the sides of the joint meeting the horizontal cut at the top of the 2-inch cuts.
   3. Grasp the 2-inch piece of sealant and pull down at a 90 degree angle or more.
   4. If adhesion is proper, the sealant should be stretched to its elongation capability and then tear cohesively (within itself) before releasing from the substrate.
   5. Areas experiencing failures shall be reviewed by the Sealant Manufacturer, the Curtainwall Contractor, and the Architect/Engineer. Additional testing should be done to verify the extent of failed sealant.
   6. Repair the sealant in the test areas by cleaning, priming, and applying a new bead of sealant to assure that bond between the new and old sealant has been obtained. Verify with sealant manufacturer for proper techniques for repair areas.

C. The length of cut will vary each location and at randomly selected locations.

D. The Architect/Engineer and Owner reserve the right to perform additional adhesion tests as required. The Contractor will be required to repair all of the quality control test locations at no cost to the Owner.

3.5 PROTECTION AND CLEANING

A. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of substantial completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original Work.

B. Clean off excess sealants or sealant smears adjacent to joints as Work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

END OF SECTION
SECTION 26 31 13.13

STANDBY POWER GENERATOR SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. This section specifies the furnishing and installation of a packaged electric generating plant for standby service.

1.2 REFERENCE STANDARDS

A. ANSI C50.10 - General Requirements for Synchronous Machines.
B. NEMA MG 1 - Motors and Generators.

1.3 APPLICABLE PROVISIONS

A. Refer to Section E7.01 - Electrical Specifications.

1.4 SUBMITTALS

A. Submit manufacturer’s data on generator, muffler, battery, battery charger, control panel, remote alarm annunciator panel and any accessory equipment showing ratings, construction features, and performance characteristics. Indicate fuel consumption at full load, 3/4 full load and ½ full load.

B. Submit shop drawings of packaged unit and any separately mounted accessory equipment such as batteries and charger and remote alarm annunciator panel. Include weight of the packaged unit.

C. Submit schematic and wiring diagrams of the electrical system showing all factory wiring and clearly indicating all wiring and connections to be made in the field. Include internal wiring diagrams of any packaged controllers. Indicate wattage and voltage of any electrical strip heaters. Also submit fully detailed interconnection drawings indicating each individual connection to any remote equipment, including a separate connection drawing to show point-to-point electrical wiring connections.

D. Submit factory and field test report on the actual packaged electric generating plant provided, indicating results for all tests described herein.

1.5 OPERATION AND MAINTENANCE DATA

A. Provide operation and maintenance data in accordance with Section 26 00 00. Include the following information at a minimum.
1. Project record drawings clearly indicating operating features and including as-built shop drawings, outline drawings, and schematic and wiring diagrams.

2. Instructions for erection, alinement including tolerances, and preparation for use.

3. Complete description of safety equipment, safety procedures, and safety precautions.

4. Starting, normal running, emergency, and shutdown procedures.

5. Normal maintenance, inspection and lubrication procedures.

6. Recommended spare parts list.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the requirements, provide generator sets of one of the following manufacturers:

1. Generac

2. Kohler.

3. Cummins.

4. Stewart and Stevenson

2.2 DESCRIPTION

A. Provide a complete, packaged, diesel engine-electric generating plant which is pre-wired, pre-piped, assembled and aligned on a single skid-type base. Make the packaged system of new, unused equipment of the manufacturer's latest design. Include all necessary instruments, devices, switches, and other appurtenances for proper operation of the unit. Supply steel safety guards around all external rotating parts. Provide a unit on which adjustments, repairs and normal maintenance are possible without the use of special tools. Provide an overall, weatherproof housing as further described in this section. The supplier will be responsible for the proper performance of the complete unit and support systems. Transition time from the instant of failure of the normal power source to the generator source shall not exceed 10 seconds.

2.3 ENGINE

A. Provide a stationary, liquid-cooled, full diesel, compression ignition engine, either naturally aspirated or turbocharged. Supply a unit suitable for operation on No. 2 diesel fuel oil.

B. Provide an engine with brake horsepower not less than 4 percent greater than required by the full load rating of the generator, including losses, and with all accessories attached.
C. Engine speed shall be suitable for direct connection to the generator without exceeding engine manufacturer's published curves. Speed shall not exceed 1800 rpm. Provide governor of the full hydraulic type, Woodward PSG or equivalent, to maintain frequency stability of any constant load, including no load, within plus or minus 1/4 percent, and to maintain frequency regulation between no load steady-state and full load steady-state within 3 percent.

D. Provide all accessories, devices and appurtenances necessary for proper operation, including but not limited to the following:

1. Lubrication System.
   (a) Positive displacement mechanical lube oil pump.
   (b) Full flow replaceable element oil filter.


3. Starting System.
   (a) Heavy-duty, battery-driven electric starter motor.
   (b) Fully charged, lead-calcium, impact-resistant, plastic-cased storage battery or batteries mounted on the unit or in a separate corrosion-proof rack near the unit. Make battery capacity sufficient for four cranking cycles at firing speed of 30 seconds duration each with 15-second rest periods. Provide all battery cables, connections, electrolyte, water and a hydrometer.
   (c) Static, solid-state type battery charger unit which automatically controls the charge rate and which has an adjustable charging rate. Include a charging rate ammeter, a voltmeter, and a manual reset, thermal overload circuit breaker to protect the rectifier assembly and transformer. Select a charger suitable for operation at 120 volts, single phase, 60 hertz. Make charging time be 24 hours maximum. Mount charger on unit, using adequate vibration devices.
   (d) Engine-driven alternator with full-wave rectifier and transistorized voltage regulator for charging battery when engine is running.

4. Coolant System. Closed liquid coolant system complete with radiator, fan, coolant manifold, coolant expansion chamber (overflow tank), temperature control valve, and engine-driven coolant circulating pump. Provide a thermostatically controlled, corrosion-resistant, 120-volt a-c, engine jacket coolant heater with leads brought out to a screw terminal block and suitably identified. Fill the system with engine coolant which is a solution of at least 50 percent ethylene in water.

5. Exhaust System. High degree, critical-rated muffler with maximum silencing capacity mounted horizontally on top of unit. Include 18-inch length of flexible
stainless steel exhaust tubing for mounting on outlet side of muffler. Provide exhaust condensation trap and a rain cap on exhaust end of tubing.


(a) Engine-driven, self-priming fuel injection pump suitable for injecting fuel from the day tank to the engine.

(b) Day tank with float switch mounted in skid base of unit and having a minimum capacity for operating unit at full load for 12 hours.

(c) Full flow replaceable element fuel filter.

(d) Flexible fuel connection lines between day tank and engine.

2.4 GENERATOR

A. Furnish a direct-coupled, synchronous, brushless-type generator with amortisseur windings, revolving field, exciter, and built-in static rectifier and statically regulated excitation system.

B. Ratings.

1. Voltage. 240/120, single phase, three wire, grounded neutral.

2. Frequency. 60 hertz.

3. Power Factor. 0.8.

4. Kilowatts. As sized on drawings.


C. Insulation System. Class A, 60/85 C rise over a 40 C ambient. Class H, 125/150 C rise over a 40 C ambient.

D. Transient Voltage Regulation. The maximum transient voltage deviation shall be less than 15 percent when full rated load is applied to the generator set, at 1.0 power factor, in one step. Presentation of data shall be in accordance with NEMA MG 1-16.48-5.3

E. Steady State Voltage Regulation. Maintain within plus or minus ½ percent of rated voltage at any constant load from no load to full load.

F. Enclosure. Open drip-proof.

G. Coupling. From engine, drive rotor through a semi-flexible coupling to ensure permanent alinement.

2.5 CONTROL PANEL
A. Provide a control panel mounted on unit which includes, but is not limited to, the following instruments and protective devices.

1. A-C ammeter having a 5-ampere movement with scale not smaller than 120 percent nor larger than 175 percent of full load current.

2. Four-position ammeter switch with positions A, B, C and OFF.

3. Three current transformers; 5-ampere secondary, primary to match ammeter full scale.

4. A-C voltmeter with scale 0-600 volts.

5. Seven position voltmeter switch with positions A-B, B-C, C-A, A-N, B-N, C-N, and OFF.

6. Automatic solid-state voltage regulator.

7. Exciter field rheostat for adjusting voltage plus or minus 5 percent of rated voltage.

8. Frequency meter with a scale indicating from 90 to 110 percent of rated hertz.

9. Governor control.

10. Fine speed adjustment knob.

11. Non-resettable elapsed time meter with a 99,999.9-hour maximum indication.

12. Coolant temperature gauge.

13. Battery charge rate ammeter.

14. Oil pressure gauge.

15. Output circuit breaker as specified on the drawings.

16. Combination alarm-shutdown system with manual reset and indicating lights for high engine temperature, low engine temperature, low oil pressure, engine over speed and engine failed to start. Include an additional set of contacts for remote alarms.

17. HAND-OFF-AUTOMATIC selector switch for control of engine.

18. START and STOP push buttons for control of generator when selector switch is in HAND position.


20. Vibration isolators for control panel.
2.6 ENGINE START-STOP CONTROLS

A. Provide controls in the control panel for starting and stopping the engine, including the following:

1. Three-Position Selector Switch. Mount on front of the control panel with the following positions labeled:

   (a) HAND. To permit starting and stopping the engine from the panel-mounted START-STOP push buttons for test purposes, without load transfer.

   (b) OFF. To stop engine and disconnect control for prevention of start during maintenance and to reset automatic controls. Provide extra contact for remote alarm.

   (c) AUTOMATIC. To set up circuits for automatic start and stop on demand of remote mounted transfer switch.

2. Automatic Cranking.

   (a) Crank control and time delay relays to provide a minimum of four intermittent crank periods. Use a crank limiter to limit total crank time plus rest time to 45 seconds maximum. Use adequate rest periods for battery provided.

   (b) Make cranking cycle terminate immediately on engine start-up by a fuel pressure switch or some other acceptable means.

   (c) Cool-down Period. An adjustable from 5 to 30 minute time delay for unloaded running of the engine generator after retransfer of the load to the normal source. Set at 15 minutes.

   (d) Exerciser. An adjustable exerciser to automatically run the unit unloaded from 10 to 60 minutes every 7 days. Design exerciser so that no interruption of normal power to the load will occur. Set the exerciser as required by the Owner.

2.7 REMOTE ALARM ANNUNCIATOR PANEL.

A. Provide a remote audio-visual alarm annunciator panel with a lamp test push button and an audible silence push button on the front of the panel. The annunciator shall indicate the following conditions.

1. Plant running (green).

2. Plant failed to start (red).

3. Low oil pressure (red).
4. High coolant temperature (red).
5. Over speed (red).
6. Low fuel supply (red).
7. Low battery voltage (red).
8. HAND-OFF-AUTOMATIC selector switch in OFF position (flashing red).

B. Each condition annunciated at the panel shall be labeled.

2.8 BASE

A. Mount the assembled packaged unit on a skid base of welded structural steel, box-type construction. Use vibration isolators of either steel spring or neoprene construction. Prime all exposed metal parts with a rust inhibitor and finish in durable machinery enamel.

2.9 DAY TANK

A. Provide a skid mounted day tank. The tank shall be sized to contain a minimum of a 12 hour fuel supply at full load of the generator. Provide all required fuel transfer pumps and alarm accessories. The day tank shall be U.L. listed and labeled. The day tank shall be dual wall sub-base type listed to UL 142 under label 58-24-2, Secondary Containment Generator Base Tank.

B. The tank shall be provided with a leak detection system with local audible and visual alarm. The leak detection system go into alarm should the primary containment tank rupture.


D. Day tanks shall be U. L. (Underwriters Laboratories) 142 listed and shall be approved by the City of Austin for this application. Comply with the requirements and recommendations of the National Fire Protection Association (NFPA) and the International Building Code (IBC).

E. Day tanks shall be vented to the outside, through piping. Vent termination shall be located a minimum of 24-inches above the roof line.

F. Piping shall be ASTM A53, Schedule 40 steel pipe with malleable iron fittings. Screwed joints shall be made up with Buckege No. 838 joint seal, Permatex Form-a-Gasket No. 2 or approved equal.
G. Provide U.L. (Underwriters Laboratories) listed flexible connectors at each connection to the Generator.

H. Test all installed components to meet the requirements of UL, NFPA, IBC, and the local AHJ.

I. Be fully responsible for providing and installing all items required for a complete, working and approved system.

2.10 WEATHERPROOF HOUSING

A. Provide an overall weather-protective housing with removable side panels and a hinged, padlockable meter panel door to make the engine generating plant suitable for outdoor installation under all weather conditions.

B. Prime all exposed metal parts with a suitable rust inhibitor applied to the clean, bare metal followed by two coats of an epoxy paint for exterior weather exposure.

C. Cover all openings in the housing with 1/4-inch galvanized hardware cloth to keep out birds and small animals.

PART 3 - EXECUTION

3.1 STRUCTURAL FOUNDATION

A. Install packaged electric generating plant on the existing structural concrete pad in accordance with Section 26 00 00.

3.2 INSTALLATION

A. Follow manufacturer's installation procedures. Have installation supervised and approved by a qualified representative of the unit manufacturer.

3.3 ENGINE EXHAUST

A. Install an 18-inch length of the specified exhaust tubing between engine exhaust outlet and muffler inlet. Turn muffler exhaust up and terminate with rain cap.

3.4 FIELD TESTS

A. Perform field tests at the site after installation is complete and in the presence of the Architect.

B. Manufacturer's Representative. Have the engine generator manufacturer furnish a representative to operate the unit during the field tests, to check all details of the installation, and to instruct the operators. Include, at no additional cost to the owner, the services of the representative.
C. Preparation for Testing. Have the engine generator system completed and ready for operation at the time field tests are to be run. Fill fuel tanks, provide all necessary lube oil and coolant, and install new, unused oil and air filter elements.

D. Instruments. Provide all instruments necessary to conduct the tests.

E. Actual Plant Load Tests.

1. Perform on-site tests using actual available plant loads to demonstrate satisfactory performance of the complete engine generator system.

2. As a final test, after all other tests have been successfully completed, operate the engine generator system under actual available plant loads for 4 hours of successful operation.

3. After final testing, refill fuel tanks.

END OF SECTION
SECTION 26 36 23

AUTOMATIC TRANSFER SWITCHES

PART 1 - GENERAL

1.1 SUMMARY

A. This section specifies the furnishing and installation of automatic transfer switches.

1.2 REFERENCE STANDARDS

A. IEEE 446 - Recommended Practice for Emergency and Standby Power Systems.
B. NEMA ICS 10 - AC Transfer Switch Equipment.
C. NFPA 70 - National Electrical Code.
D. NFPA 99 - Health Care Facilities.
F. UL 991 - Tests for Safety Related Controls Employing Solid-State Devices.
G. UL 1008 - Transfer Switch Equipment.

1.3 APPLICABLE PROVISIONS

A. Refer to Section 26 00 00 - Electrical General Provisions.

1.4 SUBMITTALS

A. Submit product data and shop drawings on automatic transfer switches. The submittals shall include, but not be limited to the following.

1. Assembly ratings including withstand and closing ratings, voltage, continuous current rating, short time rating and short circuit rating with listed overcurrent devices.

2. Enclosure type and physical dimensions. Conduit entry locations within the assembly.

3. Description of all accessories.

4. Schematic wiring diagrams that clearly indicate all internal and external wiring connections and all connections to remote devices which are to be made in the field. Cable terminal sizes.

1.5 OPERATION AND MAINTENANCE DATA
A. Provide operation and maintenance data in accordance with Section 26 00 00. The data shall include instruction publications, product data and warranty.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURES

A. Subject to compliance with the requirements, acceptable manufacturers shall be as follows:
   2. Emerson Network Power - ASCO.
   3. Eaton.
   4. Russelectric.

2.2 RATINGS

A. The automatic transfer switch continuous current and voltage ratings shall be as indicated on the drawings. The switch shall be a three pole switch with all three poles mounted on a common shaft.

B. The complete switch assembly shall be UL listed under UL 1008.

C. The short circuit rating shall be 22k amperes at 240 volt with listed thermal magnetic circuit breaker or a listed fuse.
   1. 3 Cycle - 40,000 Amperes RMS/SYM.

D. The withstand and close-in ratings as listed by UL 1008 shall be as follows:
   1. With thermal magnetic circuit breakers protecting the switch - 50,000 Amperes RMS/SYM.
   2. With current limiting Class RK1 fuses protecting the switch - 200,000 Amperes RMS/SYM.

2.3 OPERATION

A. The transfer switch shall be automatic, double throw, momentarily energized by a single operator. The transfer mechanism shall be connected to the actuator by an over-center linkage. The switch shall be capable of being manually operated. Manual operation of the switch shall maintain the same contact to contact transition time as the electrical operator. The total transfer time shall not exceed thirty cycles (½ second).

B. The transfer switch shall be capable of operating in either direction with a minimum of seventy percent rated voltage applied at the terminals.
2.4 CONSTRUCTION

A. The switch shall be provided in a NEMA 3R front accessible, non-ventilated enclosure with a hinged, padlockable front door with three point catch. The enclosure shall be finished ANSI 61 light gray.

B. The main contacts shall be silver tungsten to limit temperature rise and provide reliable operation.

C. The main contacts shall be surrounded by parallel steel plates enclosed in a ceramic insulator to provide adequate arc quenching and increase contact life.

D. The main contacts shall be mechanically locked in the normal and emergency positions without the use of hooks latches or springs. The normal and emergency contacts shall be interlocked mechanically and electrically to prevent simultaneous closing.

2.5 MICROPROCESSOR CONTROLS

A. The controller shall be protected against potential damage from transient electrical events and surges. Operation of the transfer switch and monitoring of the sources shall be managed by the controller.

B. The controller shall comply with the following standards in addition to the switch standards.

1. IEC 61000-4-2 - EMC Testing and Measurement Techniques - Electrostatic Discharge Immunity Test.

2. IEC 61000-4-3 - EMC Testing and Measurement Techniques - Radio-frequency, Electromagnetic Field Immunity Test

3. IEC 61000-4-4 - EMC Testing and Measurement Techniques - Electrical Fast Transient/Burst Immunity Test.


5. IEC 61000-4-6 - EMC Testing and Measurement Techniques - Immunity to Conducted Disturbances, Induced by Radio-frequency Fields.


8. FCC Part 15, Subpart B, Class B.

C. The microprocessor-based controller display shall be UV resistant and include a 2-line, 16 character, backlit LCD display. The controller shall be capable of displaying transfer switch...
status, parameters, and diagnostic data. All set point parameters shall be password protected and programmable using the controller keypad or remotely using serial port access.

D. The controller shall include a mimic bus display consisting of four (4) individual 3mm LED's for indication of the following.

1. Availability status of the normal source.
2. Availability status of the emergency source.
3. Connection status of the normal source.
4. Connection status of the emergency source.

E. The controller shall have a voltage range of 0 - 790 volts (50/60 Hz) and an accuracy of +/- 1% of nominal input voltage and a frequency range of 40 - 70 Hz and an accuracy of +/- .3 Hz.

F. Voltage and frequency dropout and pickup parameters shall be adjustable as a percentage of the nominal voltage.

1. Undervoltage source 1 and 2 dropout 78 - 97%, pickup 2% greater than dropout - 99%.
2. Over voltage source 1 and 2 dropout 105% - 110%, pickup 103% - 2% less than dropout voltage.
3. Under frequency source 1 and 2 dropout 90 - 97%, pickup 1 hz greater that dropout - 99%.
4. Over frequency source 1 and 2 103 - 105%, pickup 101% - 1% less than dropout.
5. Voltage unbalance source 1 and 2 dropout 5 - 20%, 2% less that unbalanced dropout - 3%.

G. Provide phase reversal protection of the normal and emergency sources.

H. Time delay settings shall be adjustable as follows.

1. A time delay shall be provided on transfer to EMERGENCY source, adjustable from 0 to 1800 seconds.
2. A time delay shall be provided to override a momentary power outage or voltage fluctuation, adjustable from 0 to 120 seconds.
3. A time delay shall be provided on retransfer from EMERGENCY source to NORMAL source, adjustable from 0 to 1800 seconds.
4. A time delay shall be provided after retransfer that allows the generator to run unloaded prior to shutdown, adjustable form 0 to 1800 seconds.

5. A time delay shall be provided for engine failure to start, fixed setting of 6 seconds.

6. A pre-transfer time delay output adjustable from 0-120 seconds. The contact shall be a form-c contact rated for 10-Amp at 250-Vac and 10-Amp at 30-Vdc.

7. All settings shall be field adjustable from the microprocessor-based controller without the use of special tools.

I. The controller shall incorporate the following functions.

1. One Form A contact for closure of the Generator start circuit. The contacts shall be of silver alloy with gold flashing. The contacts shall be rated for 5-Amp at 250-Vac and 5-Amp at 30-Vdc.

2. Programmable Engine Exerciser, selectable as disabled, 7, 14, or 28 day interval, adjustable 0-600 minutes, load or no load with Failsafe.

3. Provide a keypad pushbutton to initiate a system test.

4. Provide a keypad pushbutton to bypass the time delay on transfer to emergency and the time delay on retransfer to normal.

5. Provide a terminal input to accept a remote contact which closes to initiate a transfer to source 2. This feature shall be failsafe and an automatic retransfer shall occur in the event that source 2 power is lost.

6. The controller shall include a terminal input to accept a remote contact which opens to inhibit transfer to source 2.

7. One Form C auxiliary contact to indicate Source 1 position and one Form C contact to indicate source 2 position. The contacts shall be rated for 10-Amp, 1/3-Horsepower at 250-Vac and 10-Amp at 30-Vdc.

8. One Form C contact for NORMAL Source Available. The contacts shall be rated for 10-Amp, 1/3-Horsepower at 250-Vac and 10-Amp at 30-Vdc.

9. One Form C contact for EMERGENCY Source Available. The contacts shall be rated for 10-Amp, 1/3-Horsepower at 250-Vac and 10-Amp at 30-Vdc.

10. Historical Data Storage to include: Engine Run Time, NORMAL source Available time, EMERGENCY source Available time, NORMAL source Connected time, EMERGENCY source Connected time, LOAD Energized Time, Number of Transfers, Date, Time and Reason for Last Sixteen (16) transfers, Monitor Mode Event, Fail Safe Event and Aborted Test.

2.6 OPTIONAL ACCESSORIES (Note to Specifier - Select options below per project requirements)
A. Non-Automatic Control: Provide a 2-Position Selector Switch, maintained contact, marked: “Automatic” and “Non-Automatic”. The transfer switch shall be transferred by actuating a two position maintained selector switch labeled “Source 1” and “Source 2”. A 30mm pilot light shall be provided labeled “Not in Automatic”.

B. Communications Interface to be Modbus 485.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install the transfer switch(es) in accordance with the manufacturer's installation instructions. Coordinate the normal, emergency and load conduit entry points into the enclosure with the approved shop drawings. The interior of the automatic transfer switch shall not be used as a wireway.

B. The manufacturer's authorized service representative shall be consulted as required to verify that all settings and tests have been accomplished in accordance with the manufacturer's recommendations.

3.2 WIRING

A. All control conductors shall be identified using adhesive wire markers at all terminations. All terminations shall be made with compression ring type connectors.

3.3 ADJUSTMENTS

A. All field adjustable settings shall be set in accordance with the specification and the directions of the Engineer.

3.4 TESTING

A. Test the switch with the packaged electric generator set in operating condition and under load. Demonstrate that the automatic transfer switch performs all the functions as specified.

B. Record all of the adjustable settings on a type written form and include this information in the operation and maintenance manuals.

3.5 TRAINING

A. Provide a minimum of two hours of training for the Owner's designated personnel. Demonstrate the operation of the transfer switch and all accessories. All training shall be accomplished by the contractor and the factory authorized service representative.

3.6 WARRANTY

A. The manufacturer shall provide a complete (parts and labor) warranty for a period of two years from the date of substantial completion.