PERFORMING ARTS CENTER RE-ROOF

TEXAS A&M CORPUS CHRISTI

Construction Documents
September 7, 2018

PREPARED BY:

fresch
FREEMAN SCHROEDER architects

REGISTERED ARCHITECT
STATE OF TEXAS
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REQUEST FOR PROPOSAL - NOTICE TO BIDDERS

Project Name & Number:

TAMUCC - Performing Arts Center (PAC) Re-Roof
SSC PROJECT # 1518045

Contract Manager: SSC Services
Owner: Texas A&M University - Corpus Christi
Publication Date: Wednesday, September 12, 2018

Pre-Bid Meeting and Site Tour (Mandatory):

Texas A&M University - Corpus Christi (TAMUCC)
Performing Arts Center Lobby
Thursday, September 20, 2018 at 2:00 PM CST

Notice to Bidders,

All sealed RFP’s will be received by SSC Services, TAMUCC Campus Physical Plant, Corpus Christi, Texas, ONLY at the office of:

SSC SERVICES
Physical Plant Building
Planning and Construction
Office 121
6300 Ocean Drive, Unit 5870
Corpus Christi, TX 78412-5870

Sealed RFP’s will be received by SSC Services until the hour of 2:30 PM CST on Tuesday, the 2nd day of October, 2018;
At which time bids duly delivered and submitted will be considered for supplying the following:

REQUEST FOR COMPETITIVE SEALED PROPOSAL (RFP)
FOR PERFORMING ARTS CENTER RE-ROOF
TEXAS A&M UNIVERSITY - CORPUS CHRISTI

Any RFP received after the stated closing time will be returned unopened. If RFP’s are sent by mail, the submitter shall be responsible for actual delivery of the RFP to SSC before the advertised date and hour for opening of the RFP. If mail is delayed by postal service, courier service or internal mail system of SSC Services beyond the date and hour set for the RFP opening, request for proposal thus delayed will not be considered and will be returned unopened.

All RFPs must be hardcopies and received by SSC Services in a sealed envelope, with the project name plainly marked on the envelope, no electronic format submittals of the RFP will be accepted.

A public opening and reading of the Bids will take place at the SSC Meeting Room at the TAMUCC Campus Physical Plant, Corpus Christi, Texas on the following day of the due date: Thursday, the 3rd day of October at 10 AM CST.

All request for information (RFI) inquiries concerning the project must be submitted by email to the Architect of record by 11 AM CST, Thursday, September 27, 2018. All inquiries will be addressed by Addendum and will be publically
posted on the Texas Smart Buy project listing and on the TAMUCC University Website. It is the responsibility of the submitter to ensure that the any and all Addendums to the RFP are accounted for in their bid. (Please note the terms bid/RFP/CSP are interchangeable throughout this document).

Until final award by SSC Services, said entity reserves the right to reject any and/or all bids, to waive technicalities, to re-advertise, or to proceed otherwise when the best interests of the owner will be realized hereby.

Sincerely,

GKA, 9/11/18

________________________________________
Greg Afuso            Date
SSC Services
Project Manager
Texas A&M Corpus Christi Campus

________________________________________
Ira Freeman, AIA        Date
Architect, Fresch Architects

________________________________________
Jim Eckhart            Date
SSC Services
Sr. Project Manager
Texas A&M Corpus Christi Campus

________________________________________
Kevin Brown            Date
SSC Services
Director of Facilities Management
Texas A&M Corpus Christi Campus
REQUEST FOR COMPETITIVE SEALED PROPOSALS (RFP)

SSC SERVICES FOR EDUCATION

INSTRUCTIONS FOR REQUEST FOR COMPETITIVE SEALED PROPOSALS

SECTION 00 2100

1.0 GENERAL:

1.1 SSC Services for Education (SSC) as Owner Designated Representative (ODR) for Texas A&M University Corpus Christi is requesting competitive sealed proposals (RFP) from roofing or general contractors.

1.2 All data submitted with a Proposal, except as noted herein, is deemed to be part of the Contract.

1.3 Purchases made for State of Texas use are exempt from the State Sales tax and Federal Excise tax. Do not include tax in bid. Excise Tax Exemption Certificates are available upon request.

1.4 Payment for work performed will be in accordance with the SSC Uniform General and Supplementary Conditions ("UGSC"), subject to changes as provided for in the Construction Contract.

2.0 RECEIPT OF PROPOSALS:

2.1 The review and approval of the RFP process is a multi-step process which requires variable amounts of time. Responders are advised that these projected dates may change as required.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Pre-Bid Proposal Meeting</td>
<td>2:00 PM, 9/20/18</td>
</tr>
<tr>
<td>Deadline for Questions</td>
<td>11:00 AM, 9/27/18</td>
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<tr>
<td><strong>Deadline for Receipt of Proposals</strong></td>
<td><strong>2:30 PM, 10/3/18</strong></td>
</tr>
<tr>
<td>Public Reading of Submitted RFPs</td>
<td>10:00 AM, 10/4/18</td>
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<tr>
<td>Award of Contract</td>
<td>TBD</td>
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</tbody>
</table>

2.2 Location: Proposals are to be received at the office of the Owners Designated Representative:

**SSC SERVICES**  
Planning and Construction  
Office 121  
6300 Ocean Drive, Unit 5870  
Corpus Christi, TX 78412-5870

3.0 INFORMATION INQUIRIES:
3.1 All inquiries regarding the project are to be directed by email or fax to:

Architect of Record:
Ira Freeman, AIA
Fresch Architects
ira@frescharch.com

4.0 DISCREPANCIES AND INTERPRETATIONS:

4.1 Notify the A/E, in writing, by the date noted above, if discrepancies, ambiguities or omissions are found in the Proposal/Construction documents, or if further information or interpretation is desired.

4.2 Answers will be provided in addenda format. All provisions and requirements of such addenda will supersede or modify affected portions of the Proposal documents. All addenda will be incorporated in and bound with the Contract Document. No other explanation or interpretation will be considered binding.

4.3 Submitters to RFP will acknowledge on Proposal & Pricing Schedule receipt of any and all Addendums to the project.

5.0 SUBMITTAL CONTENT FORMS & PROCEDURE:

5.1 Submittal Content Forms (Fill Out and Submit All Parts)

Part 1 – Section 00 42 13
Proposal Form & Pricing Schedule

Part 2 - Section 00 45 16
Technical Proposal

Part 3 – Section 00 45 17
Safety, Risk Assessment, Accident Prevention & Quality Control

Part 4 – Section 00 45 18
Added Value (Part 4 is a document created by the respondent)

Part 5 – Section 00 45 19
HUB Participation Plan

5.2 Procedure

5.2.1 Submit Parts 1-5 as (1) hard copy in a sealed envelope clearly labeled:
RFP Submission for:
TAMUCC – PERFORMING Arts Center (PAC) Re-Roof
SSC Project #1518045

5.2.2 Respondent’s Company Name must be clearly identified on the outside of sealed envelope.

5.3 If the Proposal and all parts are submitted by mail, the address is:

SSC SERVICES
Planning and Construction
Office 121
6300 Ocean Drive, Unit 5870
Corpus Christi, TX 78412-5870

“RE: TAMUCC PAC RE-ROOF - PROPOSAL ENCLOSED”

5.4 Delivery of all Proposal parts prior to the advertised deadline(s) is the sole responsibility of the respondent.

6.0 PREPARATION OF COMPETITIVE SEALED PROPOSAL:

6.1 The Proposal must be based on conditions at the project site, the bidding documents and any addenda issued.

6.2 The Proposal, Part 1 must be authoritatively executed in ink and submitted on the Proposal Form.

6.3 A Proposal showing omissions, alterations, conditions, or carrying riders or qualifications which modify the Proposal Form will be rejected as irregular.

6.4 Only one Part 1 Proposal shall be submitted. If two or more Part 1 Proposals are submitted, either in one envelope or in separate envelopes, such multiple Proposals may be subject to rejection.

6.5 Proposal amounts may not be amended or modified in any manner after the time set for the bid opening. After all Proposals are publicly opened, but before they are read aloud, they will be examined by the presiding official to determine if they are in proper form and properly signed. If an error or omission is discovered and classified by the presiding official as a technicality which the ODR has reserved the right to waive, the respondent’s representative may be permitted to make the appropriate correction. Any such correction will be announced and explained to the others present at the Proposal opening. A Proposal which is not and cannot be made legible for consideration under this procedure will not be read, nor will the Proposal prices be revealed.
6.6 A respondent will receive no compensation or reimbursement of expenses incurred in the preparation of a Request For Competitive Sealed Proposal submission.

6.7 All respondents are strongly urged to attend Pre-Proposal Conferences.

6.8 Proposals received after the advertised time for the bid opening will be ineligible and will be returned unopened.

6.9 The ODR reserves the right to reject any or all Proposals at any time prior to award.

7.0 PUBLIC INFORMATION AND NOTICE OF CONFIDENTIALITY:

7.1 The ODR considers all Proposal information, documentation and supporting materials submitted in response to these instructions to be non-confidential and/or non-proprietary in nature, and therefore, shall be subject to the public disclosure under the Texas Public Information Act (Texas Government Code, Sec. 552.001 et seq.) after the award of the contract. Portions of the respondent’s Technical Proposal which contains trade secrets or other proprietary data which must remain confidential shall be identified as below:

7.2

7.2.1 Mark the cover sheet of the Technical Proposal with the following phrase: “This Proposal includes data that shall not be disclosed outside of ODR and the A/E design team and shall not be duplicated, used or disclosed in whole or in part for any purpose other than to evaluate this Proposal.”

7.2.2 Mark each sheet and specific data on that sheet that the respondent wishes to restrict with the following phrase: “Use or disclosure of this specifically marked data is subject to the restrictions regarding confidentiality cited on the cover sheet of this Proposal.”

8.0 RESPONDENT REQUIREMENTS:

8.1 The ODR may make such investigations as necessary to determine the ability of the respondent to perform the Work, and the respondent shall furnish any requested information data including an audited financial statement within five (5) days of the Proposal Opening. The ODR reserves the right to reject any Proposal if the evidence submitted by, or investigation of, such respondent fails to satisfy the ODR that this respondent is properly qualified to complete the Work.

8.2 Each respondent submitting a Proposal must be prepared to furnish the firm’s State Comptroller Vendor Identification Number, or the date on which an application was submitted. Contract payments to the successful respondent are contingent on submittal of this identification number and on having a current Form W-9 on file with SSC.
8.3 Respondents must be in a “Taxpayer is not on Vendor Hold” status with the Texas State Comptroller’s Office in order to be awarded the contract. Respondent certifies this with the submittal of a properly executed proposal. Ref: Texas Comptroller of Public Accounts Taxpayer and Vendor Information. http://ecpa.cpa.state.tx.us/vendor/tpsearch1.html.

8.4 As required by Chapter 231 Texas Family Code, a Proposal for a contract to be paid from state funds must include the name and social security number of the sole proprietor, each partner, shareholder or owner with an ownership interest of at least 25 percent of the business entity submitting the Proposal.

8.5 The Texas Family Code requires each Proposal to include the following statement: “Under Section, 231.006, Family Code, the vendor or applicant certifies that the individual or business entity named in this contract Proposal or application, is not ineligible to receive the specified grant, loan or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.” Respondent agrees with this certification statement upon submittal of a properly executed Proposal.

9.0 OWNERSHIP OF REQUEST FOR COMPETITIVE SEALED PROPOSAL (RFP):

9.1 Submitted Proposals, documentation and supporting materials shall become the property of the ODR.

10.0 SITE INVESTIGATION:

10.1 It is the responsibility of each respondent to examine the project site, existing improvements and adjacent property and be familiar with existing conditions before submission of a Proposal.

10.2 After investigating the project site and comparing the Drawing and Specifications with the existing conditions, the respondent should immediately notify the Architect of Record, in accordance with paragraph 4.0 of these Instructions for Request For Competitive Sealed Proposals, of any conditions for which requirements are not clear, or about which there is any question regarding the extent of the Work involved.

10.3 Should the successful respondent fail to make the required investigation and should a question arise later as to the extent of the Work involved in any particular case, after receiving recommendations from the A/E, the ODR will make the proper interpretation of the Contract Documents.

11.0 EVALUATION AND CONTRACT AWARD PROCESS:

11.1 Proposals will be opened publicly. A proposal-tabulation will be issued once a contractor has been selected. Other contents of the Proposals will be afforded
security sufficient to preclude disclosure of the contents prior to award or rejection action.

11.2 Proposals will be evaluated by the ODR and A/E & others as determined by SSC. The criteria for evaluation and selection of the successful respondent for this award will be based upon the factors listed below:

**Part 1 - Proposal Form & Pricing Schedule**  
30%  
- Base Proposal Amount & Accepted Alternates  
- Cost Reduction Considerations (alt. A)

**Part 2 - Technical Proposal**  
45%  
- Experience & Qualifications  
- Current Project Workload  
- Ability & Qualifications of Professional Personnel  
- Methodology and Cost Control  
- List of Subcontractors  
- Proposed Project Schedule

**Part 3 – Safety, Risk Assessment & Quality Control**  
10%  
- Safety History  
- Risk Assessment and Accident Prevention  
- Quality Control

**Part 4 - Added Value**  
5%  
- Potential Value Engineering Opportunities  
- Constructability Analysis  
- Use of Construction Management Software (Primavera, E-Builder, etc.)

**Part 5 – HUB Participation Plan (Prime or Subs)**  
10%

11.3 After opening the Proposals, the ODR/Owner will evaluate and rank each Proposal with respect to the published selection criteria described under Section 11.2. After opening and ranking, an award may be made on the basis of the initially submitted Proposal, without discussion, clarification or modification, or the ODR may discuss with the selected respondent, offers for cost adjustment and other elements of the Proposal. Other than the data read at the Proposal opening, the ODR shall not disclose any information derived from the Proposals submitted by competing firms in conducting such discussions.

11.4 If the ODR/Owner determines that it is unable to reach a satisfactory agreement with the first ranked respondent, the ODR will terminate discussions with that respondent. The ODR will then proceed with negotiations with each successive respondent as they appear in the order of ranking until an agreement is reached, or
until the ODR has rejected all Proposals. After termination of discussions with any respondent, ODR will not resume discussions with that respondent.

11.5 Following the ODR/Owner approval of the order of ranking of respondent and the ODR contract award or Proposal rejection action, the list will be publically posted.

11.6 The ODR/Owner reserves the right to accept or reject any / or all RFPs and re-bid project in its entirety.

11.7 The award or rejection action regarding the Proposal is at the sole discretion of the ODR/Owner and the ODR makes no warranty regarding this Proposal that a contract will be awarded to any respondent.

11.8 The ODR agrees that if the Contract is awarded, it will be awarded to the respondent offering the best value to the Owner. The ODR/Owner is not bound to accept the lowest priced Proposal if that Proposal is judged not to be the best value for the Owner, as determined by the ODR/Owner.

NOTE: SSC will not make significant changes to its standard Agreement. Minor changes may be considered, SSC will not guarantee acceptance of such changes.

END OF SECTION
SSC SERVICES FOR EDUCATION
COMPETITIVE SEALED PROPOSAL
PART 1
PROPOSAL FORM & PRICING SCHEDULE
SECTION 00 4213

SSC Services for Education
Texas A&M University – Corpus Christi
Project No.: 1518045
Project Title: Performing Arts Center (PAC) Re-Roof

hereby proposes to furnish and install all work required by the Contract Documents that includes, SSC Uniform General and Supplementary Conditions ("UGSC"), SSC Special Conditions, the Drawings, the Project Manual/Specifications and any Addenda issued prior to the Proposal.

The "Total Contract Cost" shall include the cost of delivery, insurance, bonds, taxes, labor, materials, supervision, overhead, profit, incidentals and the use of all equipment and tools required to complete the work. The proposed Contract Cost, indicated in the Pricing Schedule included shall constitute full compensation for work required by the Contract Documents and the Addenda.

1. The RESPONDENT certifies that this proposal is made in good faith, without collusion or connection with any other person or persons offering a proposal for the same work, and that it is made in pursuance of and subject to all the terms and conditions of the Construction Documents for the work to be accomplished, all of which have been examined by the RESPONDENT.

2. All work required by the Contract Documents and enumerated in the Pricing Schedule included, whether specifically mentioned, included by implication or appurtenant thereto, shall be performed by the RESPONDENT, irrespective of whether it is named in the Pricing Schedule.

3. The Proposal will remain subject to acceptance for 90 calendar days after submittal, or for such longer time as the RESPONDENT may agree to in writing upon request by the Owners Designated Representative (ODR).

4. The RESPONDENT will submit a construction schedule and execute the contract within 10 business days after notification of contract award.
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division 01 - General Requirements</td>
<td></td>
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<tr>
<td>Division 02 - Existing Conditions</td>
<td></td>
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<tr>
<td>Division 03 - Concrete</td>
<td></td>
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<td>Division 04 - Masonry</td>
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<td>Division 05 - Metals</td>
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<td>Division 06 - Wood, Plastics and Composites</td>
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<tr>
<td>Division 07 - Thermal and Moisture Protection</td>
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<td>Division 08 - Openings</td>
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<td>Division 09 - Finishes</td>
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<td>Division 10 - Specialties</td>
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<td>Division 11 - Equipment</td>
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<td>Division 12 - Furnishings</td>
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<td>Division 13 - Special Construction</td>
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<td>Division 14 - Conveying Equipment</td>
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<td>Division 21 - Fire Suppression</td>
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<td>Division 22 - Plumbing</td>
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<tr>
<td>Division 23 - Heating, Ventilating, and Air Conditioning (HVAC)</td>
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<td>Division 25- Integrated Automation</td>
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<td>Division 26 - Electrical</td>
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<td>Division 27 - Communications</td>
<td></td>
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<tr>
<td>Division 28 - Electronic Safety and Security</td>
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<td>Division 31 - Earthwork</td>
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<td>Division 32 - Exterior Improvements</td>
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<td>Division 33 - Utilities</td>
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<td>Division 34 - Transportation</td>
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<td>Division 44 - Pollution Control Equipment</td>
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<tr>
<td>Division 45 - Industry-Specific Manufacturing Equipment</td>
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**BASE PROPOSAL AMOUNT**
ITEM NO. 1 - BASE PROPOSAL AMOUNT
The amount for the complete construction of the PAC Re-Roof, including all general, plumbing, mechanical, and electrical work indicated on the drawings by Freeman Schroeder Architects dated 9-7-2018:

_________________________Dollars $_________________________

ITEM NO. 2 – UNIT PRICE AMOUNT
The unit price amount for each instance of roof drain replacement flashing insert all associated general, plumbing, mechanical, and electrical work indicated on the drawings by Freeman Schroeder Architects dated 9-7-2018:

_________________________Dollars $_________________________

ITEM NO. 3 – ADDITIVE ALTERNATE No. 1
Provide continuous building perimeter debris barrier for duration of project. Contractor to propose, provide, and install netting or similar debris barrier solution to be no less than 4’-0” high around the full building perimeter. Solution must include strategy for working around the netting and supports at perimeter conditions and removal of barrier and associated supports upon completion of the project including touch-up and repair of any affected areas:

_________________________Dollars $_________________________

ITEM NO. 4 – ADDITIVE ALTERNATE No. 2
Replace existing aluminum fascia paneling in plane with missing paneling (refer to keynote 07-001, Sheet A1.01) around the entire building perimeter with 316l/No.3 finish stainless steel panel per detail 6/A3.01 and as indicated on the drawings by Freeman Schroeder Architects dated 8-24-2018:

_________________________Dollars $_________________________

ITEM NO. 5 – ADDITIVE ALTERNATE No. 3
Replace existing aluminum upper fascia/soffit trim panel around the entire building perimeter with 316l/No.3 finish stainless steel panel per detail 6/a3.01 and as indicated on the drawings by Freeman Schroeder Architects dated 8-24-2018:

_________________________Dollars $_________________________

ADDENDA
Respondent has received the following Addenda to the Request for Proposals, but agrees and understands that it will be responsible for performing the Work in accordance with all terms and conditions in all Addenda issued in connection with the Request for Proposals, and that its Proposal will be construed to include all requirements of all such Addenda, whether or not identified below:

Addenda No.(s) _______________________________________________
SUBSTANTIAL COMPLETION DATE

After Commitment Approval or Notice to Proceed issued by SSC Services for Education all of the work must be substantially completed no later than {TBD} calendar days. Final Completion shall be achieved within {TBD} consecutive calendar days after the date of Substantial Completion as determined by the ODR.

The undersigned Respondent has carefully examined and considered the Project Site and relevant conditions and circumstances for the Work, information and requirements set out in the Request or Instructions for Proposals, the Drawings and Project Manual/Specifications, and the requirements of the proposed Contract Documents, including the ODR’s Agreement, the Uniform General and Supplemental Conditions, Special Conditions, and Tex. Gov. Code pertaining to Prevailing Wages Rates, in making this Proposal. Capitalized terms used but not otherwise defined in this Proposal Form shall have the same meanings as designated in the Request for Proposals.

The undersigned Proposer further agrees to the following conditions:
1. An incomplete Proposal or one having additional information or other modifications or qualifications inscribed thereon, may be cause for rejection of the entire Proposal.
2. That, if accepted by the Owner ODR, this Proposal becomes a part to the Contract Documents upon the signing of the Contract Agreement, and failing to comply with any part of this Bid will be taken as failure of the Proposer to comply with the Contract Documents, and will be just cause for rejection of the Work.
3. That the Owner reserves the right to reject any or all Proposals and waive any or all informalities and irregularities or to accept any Proposal considered advantageous to him.

RESPONDENT:

________________________________________  __________________________________________
Company                                               Employer Identification Number (EIN)

By:

________________________________________  __________________________________________
Signature                                               Texas HUB Certificate/VID

________________________________________  __________________________________________
Title                                                   Company Phone Number

________________________________________  __________________________________________
Date                                                   Company Email or Fax Number

________________________________________
Company Contact and Address for Invoice

________________________________________

END OF SECTION

PROPOSAL FORM & PRICING SCHEDULE  00 4213 - 4
# SSC SERVICES FOR EDUCATION
## COMPETITIVE SEALED PROPOSAL
### PART 2
#### TECHNICAL PROPOSAL
**SECTION 00 4516**

**SSC Services for Education**  
**Texas A&M University – Corpus Christi**  
**Project No.: 1518045**  
**Project Title: Performing Arts Center (PAC) Re-Roof**

General Contractor's Name:  

Address:  

City, State, Zip:  

Telephone No.: E-Mail:  

State Comptroller Vendor Identification Number:  

## 1.0 GENERAL
1.1 Qualification information submitted shall be applicable only to the Contractor’s office that will perform this Work.

## 2.0 COMPANY INFORMATION & HISTORY
2.1  
- Corporation  
- Partnership  
- Sole Proprietorship  
- Joint Venture  
- Limited Liability Company  

State of Organization:  

2.2 How many years has organization been in business as a contractor?  

2.3 How many years has your organization been in business under its present business name?  

2.4 Under what other or former names has your organization operated?  

2.5 List other fully staffed offices or fully staffed branch offices of your organization:  

<table>
<thead>
<tr>
<th>Name/Location</th>
<th>Branch Manager</th>
<th>Telephone Number</th>
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2.6 Corporate Officers, Partners or Owners of Organization:  

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Construction Experience</th>
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2.7 If your organization is a corporation, answer the following:  
- Date of incorporation:  
- State of incorporation:  

[TECHNICAL PROPOSAL] 00 4516 - 1
Texas A&M University Corpus Christi
PAC Re-Roof

- President’s name:____________________________________________________
- Vice-president’s name(s):____________________________________________
- Secretary’s name:___________________________________________________
- Treasurer’s name:___________________________________________________

2.8 If your organization is a partnership, answer the following:
- Date of organization:_________________________________________________
- Type of partnership, if applicable:_____________________________________
- Name(s) of general partner(s):________________________________________

2.9 If your organization is individually owned, answer the following:
- Date of organization:_________________________________________________
- Name of owner:_____________________________________________________

2.10 If the form of your organization is other than those listed above, describe it and name
principals:____________________________________________________________

2.11 List jurisdictions and trade categories in which your organization is legally qualified to
do business, and indicate registration or license numbers, if applicable.

2.12 List jurisdictions in which your organization’s partnership or trade name is filed.

3.0 CLAIMS & SUITS

3.1 Has your organization ever failed to complete any work awarded to it?

3.2 Are there any judgements, claims, arbitration proceedings or suits pending or outstanding
against your organization or its officers?

3.3 Has your organization filed any law suits or requested arbitration with regard to
construction contracts within the last five years?

3.4 Within the last five years, has any officer or principal of your organization ever been an
officer or principal of another organization when it failed to complete a construction
contract?

4.0 EXPERIENCE & QUALIFICATIONS

4.1 List categories of work that your organization normally performs with its own forces.
4.2 Propose to perform ______% of the work for this project with own forces.
(List Trades) ___________________________________________________________
______________________________________________________________

4.3 List major construction projects your organization has in-progress and has completed within the past 5 years using a similar format to that shown below:
(Include as attachment at end of this document titled as “Current & Past Projects”)

FOR EXAMPLE ONLY

PROJECT PHOTO HERE

Name and Location of Project: ______________________________________
______________________________________________________________
______________________________________________________________

Contract Amount: ___________________
Percent Complete: ___________________
Projected Completion Date: ___________

Owner Reference Contact:
Name ___________________________ Telephone _______________________
Address __________________________________________________________________

A/E Reference Contact:
Name ___________________________ Telephone _______________________
Address __________________________________________________________________


4.4 Total number and dollar amount of contracts currently in progress:
Number ______________________ $ __________________________

4.5 Largest single contract amount currently in-progress: $ _________________
Project Name: __________________________
Projected Completion Date: __________________________

4.6 Volume of work completed over last 5 years: (Through 12/31)
2016 $ __________________________
2015 $ __________________________
2014 $ __________________________
2013 $ __________________________
2012 $ __________________________

4.7 List pending claims and/or litigation at time of submitting Proposal. (Show project name, owner and summary explanation.): __________________________

5.0 REFERENCES
5.1 Trade References: __________________________

5.2 Bank References: __________________________

5.3 Surety
• Name of bonding company: __________________________
• Name and address of agent: __________________________

6.0 ABILITY & QUALIFICATIONS OF PROFESSIONAL PERSONNEL
6.1 Project Organization Chart (Please attach at the end of this document)

6.2 Detailed resumes of individuals assigned to this project including project manager, superintendent, project scheduler/expediter, and quality control supervisors as applicable. (Please attach at end of this document)

6.2.1 Resumes of your key personnel shall include professional affiliations such as membership in the American Institute of Constructors and if the individual is a Level I or Level II Certified Professional Constructor.

6.2.2 In addition, a listing of other construction personnel within your organization that are members of the American Institute of Constructors shall be included and their respective level of certification.

6.3 Approximate amount of time each project team member is expected to spend on the project:
7.0 METHODOLOGY & COST CONTROL
7.1 Please insert your methodology & cost control measures in a written form in this area. (If additional space is needed please insert additional sheets at the end of this document):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

8.0 LIST OF SUBCONTRACTORS
8.1 Please list all subcontractors proposing to use on this project. (If additional space is needed please insert additional sheets at the end of this document):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

9.0 PROPOSED PROJECT SCHEDULE
9.1 List procedures outlining how the contractor will update the Architect & ODR on progress of the project work schedule:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

9.2 Please attach proposed project schedule in Gantt Chart format, (Critical Path Method).

END OF SECTION
1.0 SAFETY PROGRAM

1.1 Specify Type of Contractor: Check all that apply.

- a. General Construction
- b. Electrical
- c. Hazardous Abatement
- d. HVAC
- e. Plumbing
- f. Roofing
- (g) Other, Specify: ____________________________

1.2 List your organization’s Workers Compensation Experience Modification Rate (EMR) for the last five years, as obtained from your insurance agent.

<table>
<thead>
<tr>
<th>Year</th>
<th>EMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
</tr>
</tbody>
</table>

2. List the number of injuries and illnesses, lost time accidents, recordable cases, fatalities, and employee direct hire fixed hours worked for the five past years, as obtained from OSHA No. 200 Log:

<table>
<thead>
<tr>
<th>Year</th>
<th>Injuries and Illnesses</th>
<th>Lost Time Accidents</th>
<th>Recordable Cases</th>
<th>Fatalities</th>
<th>Employee Direct Hire Fixed Hours Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>2015</td>
<td></td>
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<tr>
<td>2014</td>
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<tr>
<td>2013</td>
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<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Are regular project safety meetings held for Field Supervisor(s)? (a) Yes (b) No
   If yes, frequency: (a) Weekly (b) Bi-monthly (c) Monthly (d) As Needed

1.4 Are regular project safety meetings held for Field Supervisor(s)?
   - Yes
   - No
   If yes, frequency:
     - Weekly
     - Bi-monthly
     - Monthly
     - As Needed

1.5 Are project safety inspections conducted? (a) Yes (b) No
   If yes, who performs inspection? ____________________________
   How often? ____________________________
   Who is required to attend? ____________________________

1.6 Does the organization have a written safety program? (a) Yes (b) No
   If yes, provide a copy. It will become a compliance document upon contract award.

1.7 Does your organization have a safety orientation program?
   - For new employees? (a) Yes (b) No
   - For employees promoted to Field Supervisor? (a) Yes (b) No
If yes, does your Supervisor Safety Program include instructions on the following:

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety work practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tool box safety meetings</td>
<td></td>
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<tr>
<td>First aid procedures</td>
<td></td>
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<td></td>
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<tr>
<td>New worker’s orientation</td>
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<td></td>
</tr>
</tbody>
</table>

2.0 RISK ASSESSMENT AND ACCIDENT PREVENTION PROGRAMS

2.1 Submit a complete Risk and Accident Assessment Program at the end of this section.

3.0 QUALITY CONTROL PROGRAM

3.1 Submit a complete quality control program which will become a compliance document upon contract award.

3.2 This plan should address all aspects of quality control including responsibility for surveillance work, acceptance, rejection, documentation and resolution of deficiencies, trend analysis and corrective action and interface with Owner’s inspectors.

3.3 Contractor to maintain documentation log of project progress including photos from beginning to end of project.

END OF SECTION
SSC Services for Education
Texas A&M University – Corpus Christi
Project No.: 1518045
Project Title: Performing Arts Center (PAC) Re-Roof

Part 4 is a document created by the Respondent and shall address:

1. Value Engineering Opportunities
2. Constructability Analysis
3. Current use of Construction Management Programs

END OF SECTION
Part 5

HUB Participation Plan

Texas A&M University – Corpus Christi

The procedures for the HSP requirements of this Request for Proposal are a **two-step process** as follows; 1) Initial HSP to be submitted with this RFP, and 2) Complete HSP to be submitted within thirty (30) days of award. These two steps are defined below.

1) The following items must be submitted with your RFP response in order to meet the HUB Subcontracting Plan requirements.

   a. **State of Texas Historically Underutilized Business Subcontracting Plan**: Complete the HSP form by submitting Sections 1, Section 2-a. & b. and Section 4 ONLY. The State of Texas HUB Subcontracting Plan forms for Texas A&M University shall be accessed on the following website:

      [http://hub.tamu.edu/forms/](http://hub.tamu.edu/forms/)

      The State of Texas HSP forms shall be completed for the sections noted above and according to the instructions within the form.

   b. **Participation Plan** explaining how the Respondent intends to make a good faith effort for each subcontracting opportunities they identify in Section 2 of the State of Texas HSP Form. This plan shall include the following:

      - The Respondent shall state whether it is a Texas certified HUB.
      - The Respondent shall state that it intends to meet or exceed the stated A&M System HUB goal.
      - Provide a sample solicitation notice letter that will be sent to HUB vendors for the subcontracting opportunities. The notice shall, in all instances, include the scope of work, information regarding location to review plans and specifications, information about bonding and insurance requirements, and identify a contact person.
      - Provide a sample solicitation letter that will be sent to trade organizations or development centers for the subcontracting opportunities. The notice shall, in all instances, include the scope of work, information regarding location to review plans and specifications, information about bonding and insurance requirements, and identify a contact person.
      - Provide a list of the trade organizations or development centers that you intend to work with in your outreach efforts.
      - Provide documentation that describes how you intend to locate the HUB vendors for solicitation – Will you use the CMBL listings? Will you advertise in trade organization newsletters or newspapers? Etc.

2) A complete HSP must be submitted within thirty (30) calendar days from the date of contract award. The following items must be submitted with this revised HSP in order to meet the full HUB Subcontracting Plan requirements.
a. Complete Section 1, page 1 of the HSP form.

b. Complete Section 2a through d. Any changes to 2b shall be noted accordingly. Note that Method B is required so “No” should be checked on both 2c and d.

c. Complete Section 4

d. Complete Method B attachment for each opportunity listed in Section 2b. Reminder that all supporting documentation listed in Section B-3 shall be provided as part of this attachment. The following are additional items of note as part of the good faith effort required:

- The respondent shall provide potential HUB subcontractors reasonable time to respond to the respondent’s notice. “Reasonable time to respond” in this context is no less than seven (7) working days from receipt of notice, unless circumstances require a different time period, which is determined by the agency and documented in the contract file.

- The respondent shall use the State of Texas Centralized Master Bidders List (CMBL), HUB Directory, internet resources, and/or other directories as identified by the State of Texas or the TAMU HUB Program Office when searching for HUB subcontractors.

**NOTE:** A complete list of all certified HUBs may be electronically accessed through the Internet at [https://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp](https://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp)

- The respondent shall provide the notice described in this section to three (3) or more HUBs for each subcontracting opportunity as stated in Section B3a. Texas A&M encourages respondents to seek and find a “Diverse Group” of Historically Underutilized Businesses in each category in which a subcontract of services is solicited.

- The respondent shall provide notice to trade organizations or development centers that assist in identifying HUBs by disseminating opportunities to their membership/participants.

- The respondent shall negotiate in good faith with qualified HUBs, not rejecting qualified HUBs who were also the best value responsive bidder.

- Provide written justification of the selection process if a non-HUB subcontractor is selected in Section B-4c.
# SSC UNIFORM GENERAL AND SUPPLEMENTARY CONDITIONS

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<td>55</td>
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</table>
These General and Supplementary Conditions shall be used for contracts in support of the agreement between The Texas A&M University System ("TAMUS") ("Owner") and Southeast Service Corporations d/b/a SSC Services for Education ("SSC") ("ODR"). All users are advised to read and understand this entire document.

Article 1. Definitions

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

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

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

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

1.4 Baseline Schedule means the initial time schedule prepared by Contractor for ODR’s information and acceptance that conveys Contractor’s and Subcontractors’ activities (including coordination and review activities required in the Contract Documents to be performed by A/E and ODR), durations, and sequence of work related to the entire Project to the extent required by the Contract Documents. The schedule clearly demonstrates the critical path of activities, durations and necessary predecessor conditions that drive the end date of the schedule. The Baseline Schedule shall not exceed the time limit current under the Contract Documents.

1.5 Certificate of Final Completion means the certificate issued by A/E that documents, to the best of A/E’s knowledge and understanding, Contractor’s completion of all Contractor’s Punch List items and pre-final Punch List items, final cleanup and
Contractor's provision of Record Documents, operations and maintenance manuals, and all other closeout documents required by the Contract Documents.

1.6 **Change Order** means a written modification of the Contract between **ODR** and Contractor, signed by **ODR**, Contractor and A/E.

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

1.8 **Competitive Sealed Proposals**, in accordance with Tex. Gov't Code, Chapter 2166, a delivery procedure for construction projects by which a governmental entity (or its representative) requests proposals, ranks the offerors, negotiates as prescribed, and then contracts with a general contractor for the construction, rehabilitation, alteration, or repair of a facility.

1.9 **Contract** means the entire agreement between **ODR** and Contractor, including all of the Contract Documents.

1.10 **Contract Date** is the date when the agreement between **ODR** and Contractor becomes effective.

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

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

1.13 **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.

1.14 **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.

1.15 **Construction Documents** mean the Drawings, Project Manual/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.

1.16 **Construction Manager at Risk**, In accordance with Tex. Gov’t Code Chapter 2269, means a sole proprietor, partnership, corporation, or other legal entity that assumes the risk for
construction, rehabilitation, alteration, or repair of a facility at the contract price as a general contractor and provides consultation to ODR regarding construction during and after the design of the facility

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

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

1.19 **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 § 2269.301.

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

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

1.22 **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.

1.23 **Historically Underutilized Business (HUB)** pursuant to Tex. Gov't Code, Chapter 2161, means a business that is at least 51% owned by an Asian Pacific American, a Black American, a Hispanic American, a Native American, a Disabled Veteran, 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.

1.24 **Manufacturing Process** means the application of a process to alter the form or function of materials or elements of a product in a manner that adds value and transforms the materials or elements into a new finished product that is functionally different from a finished product produced merely from assembling the materials or elements into a product.

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

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

1.27 **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.
1.27 **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.

1.28 **Produced in the United States** means, with respect to iron and steel products, a product for which all manufacturing processes, from initial melting through application of coatings, occur in the United States, other than metallurgical processes to refine steel additives.

1.29 **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.

1.30 **Project Manual** means a bound document that contains the contract documents, with the exception of the drawings, specifically organized into bid requirements, contract information, addenda, general conditions for construction, and technical specifications.

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

1.32 **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.

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

1.34 **Record Documents** mean the drawing set, Specifications, and other materials maintained by Contractor that documents all addenda, Architect’s Supplemental Instructions, Change Orders and postings and markings that record the as-constructed conditions of the Work and all changes made during construction.

1.35 **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.

1.36 **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.

1.37 **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 ODR and A/E.
1.38 **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.

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

1.40 **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.

1.41 **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.

1.42 **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.

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

1.44 **Substantial Completion** means the date determined and certified by Contractor, A/E, and **ODR** 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.

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

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

1.47 **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.

1.48 **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,
Contractor is responsible for obtaining and maintaining permits related to storm water run-off. Contractor shall conduct operations consistent with storm water 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 indicated by county and “Building Type” at the following link: https://www.wdol.gov/wdol/scafiles/davisbacon/tx.html. 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 and shall notify each worker, in writing, of the following as they commence work on the Contract: the worker’s job classification, the established minimum wage rate requirement for that classification, as well as the worker’s actual wage. The notice must be delivered to and signed in acknowledgement of receipt by the worker and must list both the wages and fringe benefits to be paid or furnished for each classification in which the worker is assigned duties. When requested by Owner, Contractor shall furnish evidence of compliance with the Texas Prevailing Wage Law and the addresses of all workers.

2.2.1.1 Contractor shall submit a copy of each worker’s wage-rate notification to ODR with the application for progress payment for the period during which the worker was engaged in activities on behalf of the Project when requested by Owner.

2.2.1.2 The prevailing wage schedule is determined by Owner in compliance with Tex. Gov’t Code, Chapter 2258. Should Contractor at any time become aware that a particular skill or trade not reflected on Owner’s Prevailing Wage Schedule will be or is being employed in the Work, whether by Contractor or by Subcontractor, Contractor shall promptly inform ODR of the proposed wage to be paid for the skill along with a justification for same and ODR shall promptly concur with or reject the proposed wage and classification. Contractor is responsible for determining the most appropriate wage for a particular skill in relation to similar skills or trades identified on the prevailing wage schedule. In no case, shall any worker be paid less than the wage indicated for laborers.

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

2.2.3 Complaints of Violations.

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

2.2.3.2 If the Contractor and claimant worker reach an agreement concerning the claim, the Contractor shall promptly notify the ODR in a written document countersigned by the worker.

2.2.3.3 Arbitration Required. If the violation is not resolved within 14 days following initial determination by the ODR, the Contractor and the claimant worker must participate in binding arbitration in accordance with the Texas General Arbitration Act, Tex. Civ. Prac. & Rem. Code, Chapter 171. If the Contractor and the claimant worker do not agree on an arbitrator within 10 days, after the date arbitration is required, a district court may be petitioned by any of the parties to the arbitration to appoint an arbitrator whose decision will be binding on all parties. (See Tex. Gov’t Code, § 2258.053)

2.2.3.4 Arbitration Award. If an arbitrator assesses an award against the Contractor, the Contractor shall promptly furnish a copy of said award to the ODR. The ODR may use any amounts retained under Article 2.2.3.1 to pay the worker the amount as designated in the arbitration award. If the retained funds are insufficient to pay the worker in accordance with the arbitration award, the worker has a right of action against the Contractor, and/or the surety to receive the amount owed, plus attorneys’ fees and court costs. The ODR has no duty to release any funds to either the claimant or the Contractor until it has received the notices of agreement or the arbitration award.

2.2.3.5 No Extension of Time. If ODR’s determination proves valid that good cause existed to believe a violation had occurred, Contractor is not entitled to an extension of time for any delay arising directly or indirectly from the arbitration procedures.
2.3 **Venue for Suits.** The venue for any suit arising from the Contract will be in a court of competent jurisdiction in the county of the site location.

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 or ODR.

2.4.1 **Partial list of licenses required.** Listed by Texas Statue:

- **Electrical**—Title 8, Occupations Code, Chapter 1305, Administered by the Texas Department of Licensing and Regulation.
- **Elevators, Escalators, and related Equipment**—Chapter 754, Health and Safety Codes, Subchapter B. Inspection, Certification, and Registration.
- **Fire Detection and Alarms**—Insurance Code, Article 5.43-2.
- **Fire Protection**—Insurance Code, Article 5.43-1 and 5.43-3.
- **Plumbing**—Plumbing License Law, Occupations Code, Title 8. Regulation of Environmental and Industrial Trades, Chapter 1301. Plumbers.
- **Mechanical**—Air Conditioning and Refrigeration Contractor License Law, Occupations Code, Title 8. Regulation of Environmental and Industrial Trades, Chapter 1302, Administered by the Texas Department of Licensing and Regulation.

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 and ODR 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 ODR or A/E. However, if Contractor has reason to believe that the required design, process, or product is an infringement of a copyright or a patent, Contractor shall be responsible for such loss unless such information is promptly furnished to A/E.

2.6 **State Sales and Use Taxes.** Owner qualifies for exemption from certain State and Local Sales and use taxes pursuant to the provisions of Tex. Tax Code, Chapter 151. Upon request from Contractor, Owner/ODR 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/ODR acknowledges not all items qualify for exemption. Owner/ODR is not obligated to reimburse Contractor for taxes paid on items that qualify for tax exemption.

2.7 **Iron and Steel Products.** In accordance with Tex. Gov’t. Code, Chapter 2252, Subchapter F all iron and steel products produced through a manufacturing process and used in the project shall be produced in the United States.

2.7.1 Exemption. Electrical components, equipment, systems, and appurtenances, including supports, covers, shielding, and other appurtenances related to an electrical system, necessary for operation or concealment are not considered to be iron or steel products and are exempt from this requirement.

2.7.2 Other exemptions, only if agreed to in writing by the Owner are:

2.7.2.1 Iron or steel products produced in the United States are not: (A) produced in sufficient quantities; (B) reasonably available; or (C) of a satisfactory quality; or if

2.7.2.2 Use of iron or steel products produced in the United States will increase the total cost of the project by more than 20 percent.

2.8 **Prohibition on contracts with Companies boycotting Israel.** In accordance with Tex. Gov’t Code, Chapter 2270 SSC will not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that it (1) does not boycott Israel; and

(2) will not boycott Israel during the term of the contract.

**Article 3. General Responsibilities of Owner and Contractor**

3.1 **ODR’s General Responsibilities.** ODR 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.

3.1.3 Owner Supplied Materials and Information.

3.1.3.1 Owner or ODR 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 or ODR will provide information, equipment, or services under Owner’s control to Contractor with reasonable promptness. The Owner or ODR makes no representation as to the accuracy or completeness of the site information furnished to the Contractor by the Owner, and is not responsible for any interpretations or conclusions reached by the Contractor with respect to the information.

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

3.1.5 Limitation on ODR’s Duties.

3.1.5.1 The ODR 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. The ODR is not responsible for any failure of Contractor to comply with laws and regulations applicable to the Work. The ODR 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, the ODR 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 ODR 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. (if applicable) 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. The A/E has no authority to change material specifications, contract cost or contract time unless approved by the ODR.

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 ODR.

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, The ODR retains the sole authority to accept or reject Work and issue direction for correction, removal, or replacement of Work.

3.2.2 Clarifications and Interpretations. It may be determined that clarifications or interpretations of the Contract Documents are necessary. Upon direction by ODR, such clarifications or interpretations will be provided by A/E consistent with the intent of the Contract Documents. A/E will issue these clarifications with reasonable promptness to Contractor as A/E’s Supplemental Instruction (“ASI”) or similar instrument. If Contractor believes that such clarification or interpretation justifies an adjustment in the Contract Sum or the Contract Time, Contractor shall so notify ODR 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, codes, regulations and the Contract Documents and shall supervise and direct the Work using the best skill and attention to assure that each element of the Work conforms to the Contract requirements. Contractor is solely responsible for all construction means, methods, techniques, safety, sequences, coordination and procedures. The Contractor is responsible for having visited the Site and having ascertained all pertinent local conditions such as existing subsurface concealed conditions, location, accessibility and general character of the Site or building, the character and extent of existing work, the character and extent of existing work within adjacent sites, and any other work being performed thereon at the time Contractor’s bid or proposal is submitted.

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 if applicable and ODR in accordance with these SSC Uniform General and Supplementary Conditions, Division 1 Specifications, and other provisions of the Contract, and as outlined in the pre-construction conference.

3.3.2 Contractor’s Management Personnel. Contractor shall employ a competent person or persons who will be present at the Project Site during the progress of the Work to supervise or oversee the work. The competent persons are subject to the approval of ODR. 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 SSC Uniform General and Supplementary 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.

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 or ODR shall have reasonable objection. ODR will communicate such objections in writing within ten (10) days of receipt of Contractor’s intent to use such Subcontractor, supplier, or other person or organization. Contractor is not required to employ any Subcontractor, supplier or other person or organization to furnish any of the work to whom Contractor has reasonable objection. Contractor shall not substitute Subcontractors without the acceptance of Owner.

3.3.7.1 All Subcontracts and supply contracts shall be consistent with and bind the Subcontractors and suppliers to the terms and conditions of the Contract Documents including provisions of the Contract between Contractor and ODR.

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 and ODR only through Contractor. Contractor shall furnish to Owner and ODR a copy, at Owner’s or ODR’s request, of each first-tier subcontract promptly after its execution. Contractor agrees that Owner and ODR have no obligation to review or approve the content of such contracts and that providing Owner and ODR with 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 ODR. Contractor shall not delay or postpone any Work because of pending unresolved disputes, disagreements or alternative resolution processes, except as ODR 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 or ODR 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 Indemnification of Owner. Contractor covenants and agrees to FULLY INDEMNIFY and HOLD HARMLESS, Owner and the elected and appointed officials, employees, officers, directors, volunteers, and representatives of Owner, individually or collectively, from and against any and all costs, claims, liens, damages, losses, expenses, fees, fines, penalties, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including but not limited to, personal or bodily injury, death or property damage, made upon Owner directly or indirectly arising out of, resulting from or related to Contractor’s activities under this Contract, including any acts or omissions of Contractor, or any agent, officer, director, representative, employee, consultant or the Subcontractor of Contractor, and their respective officers, agents, employees, directors and representatives while in the exercise of performance of the rights or duties under this Contract. The indemnity provided for in this paragraph does not apply to any liability resulting from the negligence of the Owner, its officers or employees, separate contractors or assigned contractors, in instances where such negligence causes personal injury, death or property damage.

IN THE EVENT CONTRACTOR AND OWNER ARE FOUND JOINTLY LIABLE BY A COURT OF COMPETENT JURISDICTION, LIABILITY WILL BE APPORTIONED COMPARATIVELY IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, WITHOUT WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE STATE UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW.

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

3.3.11.2 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.

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

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

3.3.12.2 With prior written approval of the Owner and ODR, 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.

3.3.12.3 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 thereto at the expense of Contractor.

3.3.12.4 ODR may restrict Contractor’s entry to the Site to specifically assigned entrances and routes.

3.3.13 Separate Contracts. ODR 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. ODR reserves the right to perform operations related to the Project with ODR’s own forces.

3.3.14 Under a system of separate contracts, the conditions described herein continue to apply except as may be amended by change order.

3.3.15 Contractor shall cooperate with other contractors or forces employed on the Project by Owner, including providing access to Site and Project information as requested.

3.3.16 ODR shall be reimbursed by Contractor for costs incurred by ODR which are payable to a separate contractor because of delays, improperly timed activities, or defective construction by Contractor. ODR 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 HUB Program is to promote full and equal business opportunities for all businesses in State contracting.

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

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

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

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

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

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

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

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

4.2.5 Upon receipt of payment for performance of Work, submit to Owner a compliance report, in the format required by Owner that demonstrates Contractor’s performance of the HUB subcontracting plan.

4.2.5.1 Progress Assessment Report (PAR): monthly compliance reports to Owner (contracting agency), verifying their compliance with the HUB subcontracting plan, including the use/expenditures they have made to Subcontractors. (The PAR is available at http://www.window.state.tx.us/procurement/prog/hub/hub-forms/progressassessmentrpt.xls).

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 ODR, prior to commencing the Work, performance and payment bonds, as required by Tex. Gov’t Code, Chapter2253. 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 the ODR, on the ODR’s form, and in compliance with the relevant provisions of the Texas Insurance Code. 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 the ODR.

Contractor agrees to promptly remove or discharge such lien or claim. If the Contractor shall fail to so remove or discharge the same within ten (10) days after receipt of written notice from ODR, ODR shall have the right to remove or discharge the same by bonding, payment or otherwise. The amount of any payment, costs and/or expenses made or incurred by ODR in connection with the removal or discharge of any such lien or claim may be deducted by ODR from any payment or amounts then due or thereafter to become due to the Contractor. The premium of such bond is to be paid by the Contractor. ODR, at its option, may terminate and cancel this contract without cost to ODR upon Contractor’s failure to deliver such properly executed bonds to ODR and Contractor agrees to indemnify and hold harmless ODR from any and all damages suffered by ODR as a result of Contractor’s failure to provide such a bond.

5.1.1.1 Performance Bond. A Performance Bond is required if the Contract Sum is in excess of $100,000. The Performance Bond is solely for the protection of the Owner and ODR. 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.
5.1.2 **Payment Bond.** 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 the ODR solely for the protection and use of payment bond beneficiaries who have a direct contractual relationship with the Contractor or its subcontractor. 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 ODR if Contractor presents an acceptable guaranteed maximum price (“GMP”) to ODR 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.

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 proposal projects.

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

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

5.1.6 **Furnishing Bond Information.** ODR 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 ODR may result in loss of their rights against Contractor and/or his surety. The ODR 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 ODR 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.** Sureties shall be listed on the US Department of the Treasury’s Listing of Approved Sureties maintained by the Bureau of Financial Management Service (FMS), www.fms.treas.gov/c570, stating companies holding Certificates of Authority as acceptable sureties on Federal Bonds and acceptable reinsuring companies (FMS Circular 570) and have a rating of A- or better with A.M. Best Company.

5.2 **Insurance Requirements.** See attached Sample Contract or Master Agreement for insurance requirements.

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

6.1 **Drawings and Specifications.**

6.1.1 **Copies Furnished.** *The Contractor will be furnished one (1) digital copy of Drawings and Specifications free of charge.*

6.1.2 **Ownership of Drawings and Specifications.** If applicable, all Drawings, Specifications and copies thereof furnished by A/E are to remain A/E’s property. These documents are not to be used on any other project, and 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) Specifications; (d) Drawings; and (e) other Contract Documents. Among other categories of documents having the same order of precedence, the term or provision that includes the latest date shall control. Where conflicts may exist between and/or within the Contract Documents, the higher quality, greater quantity, more restrictive, and/or more expensive requirement shall be required and shall be the basis of Contractor pricing. 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.

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

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

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

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

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

6.1.6.7 The ODR makes no representations, express or implied, about the adequacy or accuracy of the Drawings, Specifications or other
Construction Documents provided or their suitability for their intended use. Owner expressly disclaims any implied warranty that the Construction Documents are adequate, accurate or suitable for their intended use.

6.2 Requirements for Record Documents. Contractor shall:

6.2.1 Maintain at the Site one copy of all Drawings, Specifications, addenda, keep current and maintain Drawings and Specifications in good order with as constructed 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 Not Applicable.

6.2.3 Not Applicable.

6.2.4 Prior to final payment application, Contractor shall furnish a copy of its marked-up Record Documents and a preliminary copy of each instructional manual, maintenance and operating manual, parts catalog, wiring diagrams, spare parts, specified written warranties and like publications, or parts for all installed equipment, systems, and like items and as described in the Contract Documents.

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

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

6.2.7 A/E shall be responsible for updating the Record Documents for any addenda, Change Orders, A/E supplemental instructions and any other alterations to the Contract Documents generated by A/E or Owner.

Article 7. Construction Safety

7.1 General. It is the duty and responsibility of Contractor and all of its Subcontractors to be familiar with, enforce and comply with all requirements of Public Law No. 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 (if applicable) 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, **ODR** is authorized to direct other forces to take action as necessary and **ODR** 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 ODR 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 ODR. 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 Contractor is responsible for coordinating 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.
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 ODR 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 ODR. 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, ODR and Owner (if applicable). The submittal register shall indicate the projected dates for procurement of all included items and shall be updated at least monthly with actual approval and procurement dates. Contractor’s Submittal Register must be reasonable in terms of the review time for complex submittals. Contractor’s submittal schedule must be consistent with the Work Progress Schedule and identify critical submittals. Show and allow a minimum of fifteen (15) days duration after receipt by A/E and ODR for review and approval. If re-submittal required, allow a minimum of an additional fifteen (15) days for review. Submit the updated Submittal Register with each request for progress payment. Owner may establish routine review procedures and schedules for submittals at the preconstruction conference and/or elsewhere in the Contract Documents. If Contractor fails to update and provide the Submittal Register as required, Owner may, after seven (7) days notice to Contractor withhold a reasonable sum of money that would otherwise be due Contractor. **Failure to update and provide the**
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; and has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and the Contract Documents.

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

8.3.3 Correction and Resubmission. Contractor shall make any corrections required to a submittal and resubmit the required number of corrected copies promptly 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 under Subsection 9.3.2. Construct all such work in accordance with reviewed submittals. Comments incorporated as part of the review in Subsection 9.3.2 of Shop Drawings and Samples is not authorization to Contractor to perform extra work or changed work unless authorized through a Change Order. A/E’s and ODR’s review, if any, does not relieve Contractor from responsibility for defects in the Work resulting from errors or omissions of any kind on the submittal, regardless of any approval action.
8.3.5 No Substitutions Without Approval. ODR and A/E may receive and consider Contractor’s request for substitution when Contractor agrees to reimburse Owner for review costs and satisfies the requirements of this section. If Contractor does not satisfy these conditions, ODR and A/E will return the request without action except to record noncompliance with these requirements. Owner will not consider the request if Contractor cannot provide the product or method because of failure to pursue the Work promptly or coordinate activities properly. Contractor’s request for a substitution may be considered by ODR and A/E when:

8.3.5.1 The Contract Documents do not require extensive revisions; and

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

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

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

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

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

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

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

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

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

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

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

8.4 Field Mock-up.

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

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

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

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

8.5 Inspection During Construction.

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

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

8.5.2.1 Should corrections of the Work be required for approval, Contractor shall not over 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, 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 in a reasonable time after Substantial Completion, Contractor shall be responsible for Owner’s additional inspection, project management, and maintenance cost to the extent caused by Contractor’s failure to achieve Final Completion.

9.2 Notice to Proceed. The ODR 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. Contractor shall submit their initial Work Progress Schedule for the Work in relation to the entire Project not later than ten (10) days after the effective date of the Notice to Proceed to ODR and A/E. Unless otherwise indicated in the Contract Documents, the Work Progress Schedule shall be computerized Critical Path Method (CPM) with fully editable logic. This initial schedule shall indicate the dates for starting and completing the various aspects required to complete the Work, including mobilization, procurement, installation, testing, inspection, delivery of Close-out Documents and acceptance of all the Work of the Contract. When acceptable to Owner, the initially accepted schedule shall be the Baseline Schedule for comparison to actual conditions throughout the Contract duration.

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

9.3.1.1 Contractor shall re-submit initial schedule as required to address review comments from A/E and 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 ODR 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 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/ODR 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/ODR, 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/ODR, 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 five (5) 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 related site conditions prevent Contractor from performing seven (7) continuous hours of Work between the hours of 7:00 a.m. and 6:00 p.m. Weather days are excusable delays. When weather conditions at the site prevent work from proceeding, Contractor shall immediately notify 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 for those weather days during that month which exceed the number expected, as shown in the Rainfall Table below. If Contractor and Owner cannot agree on the time extension, Owner may issue a ULCO for fair and reasonable time extension.

9.6.2.1.1 Rainfall Table

The number of weather days expected for each month during the term of this Contract is compiled by the State Climatologist, based on U.S. Weather Bureau records. The number of weather days shown in the Rainfall Table for the first and last months of the Contract will be prorated in determining the total number of weather days expected during the term of this Contract.

Texas A&M University (College Station/Bryan)

<table>
<thead>
<tr>
<th>Month</th>
<th>Weather Days</th>
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<td>November</td>
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<td>December</td>
<td>5</td>
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</table>

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

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

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

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

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

9.6.2.2.5 Suspension of Work for convenience of ODR, which prevents Contractor from completing the Work within the Contract Time.
9.6.3 Contractor's relief in the event of such delays is the time impact to the critical path as determined by analysis of Contractor's schedule. 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 ODR’s Response. ODR 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 ODR will not grant time extensions for delays that do not affect the Contract Substantial Completion date.

9.9.4.2 ODR will respond to each properly submitted Time Extension Request within fifteen (15) days following receipt. If ODR cannot reasonably make a determination about Contractor’s entitlement to a time extension within that time, ODR will notify Contractor in writing. Unless otherwise agreed by Contractor, ODR has no more than fifteen (15) additional days to prepare a final response. If the ODR fails to respond within forty-five (45) calendar days from the date the Time Extension Request is received, the 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. For each consecutive calendar day after the date of Substantial Completion, plus any extensions of time granted by Change Order, that the Work is not substantially completed, Contractor shall pay to ODR, within ten (10) days following written demand, an amount determined by the following schedule:

<table>
<thead>
<tr>
<th>Project Work - Actual Cost of Construction (ACC)</th>
<th>From</th>
<th>To</th>
<th>Per Day</th>
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Liquidated Damages shall be applied not as a penalty but as liquidated damages representing the parties’ estimate at the time of contract execution of the damages that
Owner or ODR will sustain for late completion. ODR may also recover the liquidated damages from any money due or that becomes due Contractor. The amount of liquidated damages may be adjusted by Owner in Special Conditions.

The parties stipulate and agree that the actual damages sustained by Owner or ODR for late completion of the Project will be uncertain and difficult to ascertain, that calculating Owner’s or ODR’s actual damages would be impractical, unduly burdensome, and cause unnecessary delay, and that the amount of daily liquidated damages set forth above is a reasonable estimate.

Payment of the liquidated damages does not preclude recovery by Owner or ODR of other damages or losses under other provisions of the Contract, except for claims related to delays in Substantial Completion (as defined below) or Final Completion. Owner’s right to receive liquidated damages shall not affect Owner’s right to terminate the Contract as provided in these UGSC or elsewhere in the Contract Documents, nor shall termination of the Contract release Contractor from the obligation to pay the liquidated damages.

Article 10. Payments

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

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

10.1.1 ODR 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.

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 ODR 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 ODR 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 **UGSC, Div 01 Specifications, Master Agreement Contract**, and certified by A/E. Progress payments are made provisionally and do not constitute acceptance of work not in accordance with the Contract Documents. ODR 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 ODR may require as set forth in the **UGSC** or elsewhere in the Contract Documents; and

10.2.1.5 Construction payment affidavit.

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

10.2.3 **Certification by Architect/Engineer (if applicable).** 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 ODR’s Duty to Pay. ODR has no duty to pay the Contractor except on receipt by ODR of: 1) a complete, accurate, and correct 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 ODR 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. ODR 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 UGSC or Special Conditions. Retainage is managed in conformance with Tex. Gov’t Code, Chapter 2252, Subchapter B.

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

10.3.2.2 At least sixty-five (65) percent of the Contract, or such other discrete Work phase as set forth in Subsection 12.1.6 or Work package delineated in the Contract Documents, must be completed before ODR 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 ODR under this subsection, unless otherwise acceptable to ODR.

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

10.3.3.1 Defective or incomplete Work not remedied;

10.3.3.2 Damage to Work of a separate Contractor;

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

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

10.3.3.5 Reasonable evidence that the Work cannot be completed for the unpaid portion of the Contract Sum;
10.3.3.6 Assessment of fines for violations of prevailing wage rate law; or

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

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

10.3.4.1 Transfer of title to Owner does not relieve Contractor and its Subcontractors of the sole responsibility for the care and protection of materials and Work upon which payments have been made until final acceptance, or the restoration of any damaged Work, or waive the right of ODR 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 ODR’s request, Contractor shall furnish manifest proof of the status of Subcontractor’s accounts in a form acceptable to ODR.

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 ODR 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 ODR.

10.5.1 Store materials in a bonded 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 Owner and ODR, must be filed with ODR.

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 **ODR** reserves the right to reject materials at any time prior to final acceptance of the complete **Project** 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**, **A/E** and **ODR’s Inspector** 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 **ODR’s**, 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 **ODR** 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 **Not Applicable.**

**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 (if applicable)**, 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/ODR**, without invalidating the Contract and without prior approval of the 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 **ODR** 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, Chapter 2260.

11.1.3 Procedures for administration of Change Orders shall be established by ODR and stated in Supplementary General Conditions, Special Conditions, or elsewhere in the Contract Documents.

11.1.4 No verbal order, verbal statement, or verbal direction of Owner or ODR shall be treated as a change under this article or entitle Contractor to an adjustment.

11.1.5 Contractor agrees that Owner or ODR 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 ODR 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, 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 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 ODR 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 8.2.1. No such claim shall be valid unless so made. If ODR 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 ODR 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 12.4, Contractor shall make such claim as provided in Subsection 12.3.1.

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 disturbed. Upon such notice, or upon its own observation of such conditions, A/E, with the approval of ODR, will promptly make such changes in the Drawings and Specifications as they deem necessary to conform to the different conditions, and any increase or decrease in the cost of the Work, or in the time within which the Work is to be completed, resulting from such changes will be adjusted by Change Order, subject to the prior approval of ODR.

11.6 Extension of Time. All changes to the Contract Time shall be made as a consequence of requests as required under Section 10.6, and as documented by Change Order as provided under Section 12.1.

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

11.7.1 Routine changes in the construction Contract shall be formally initiated by ODR or 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. ODR 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 ODR, 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, equipment charges, the total amount of wages paid for labor, plus the total cost of State and Federal payroll taxes and of worker’s compensation and comprehensive general liability insurance, plus additional bond and builders risk insurance cost if the change results in an increase in the premium paid by Contractor. To the total of the above costs, Contractor will be allowed to add a percentage as noted below to cover overhead and profit combined.

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

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

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

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

11.9 Not Applicable.

11.10 Not Applicable.

Article 12. Project Completion and Acceptance

12.1 Closing Inspections.

12.1.1 Substantial Completion Inspection. When Contractor considers the entire Work or part thereof Substantially Complete, it shall notify ODR in writing that the Work will be ready for Substantial Completion inspection on a specific date. Contractor shall include with this notice Contractor’s Punch List 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 ODR and its representatives will review the list of items and schedule the requested inspection, or inform Contractor in writing that such an inspection is premature because the Work is not sufficiently advanced or conditions are not as represented on Contractor’s list.

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

12.1.1.2 On the date requested by Contractor, or as mutually agreed upon pending the status of the Open Items List, A/E, ODR, Contractor, and other Owner representatives as determined by Owner will jointly attend the Substantial Completion inspection, which shall be conducted by ODR or their delegate. If ODR 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, and insurance. A/E (if applicable) will provide with this certificate a list of Punch List items (the pre-final Punch List) for completion prior to final inspection. This list may include items in addition to those on Contractor’s Punch List, which the inspection team deems necessary to correct or complete prior to final inspection. If Owner occupies the Project upon determination of Substantial Completion, Contractor shall complete all corrective Work at the convenience of Owner, without disruption to Owner’s use of the Project for its intended purposes.

12.1.2 Final Inspection. Contractor shall complete the list of items identified on the pre-final Punch List 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 Punch List 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 Punch List 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 Punch List 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 Punch List before requesting Final Payment. Unless otherwise agreed to in writing by the parties, complete this work within seven (7) days of receiving the final Punch List. Upon completion of the final Punch List, notify A/E and ODR in writing stating the disposition of each final Punch List item. A/E, Owner, and Contractor shall promptly inspect the completed items. When the final Punch List 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 Punch List 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 ODR’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 ODR’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 Punch List 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 and maintenance. Work performed on the premises by third parties on Owner’s behalf does not constitute occupation or use of the Work by Owner for purposes of this Article. All Work performed by Contractor after occupancy, whether in part or in whole, shall be at the convenience of Owner so as to not disrupt Owner’s use of, or access to occupied areas of the Project.

12.3 Acceptance and Payment

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

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

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

12.3.4 Offsets and Deductions. ODR 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, ODR may deduct the cost of remediying such deficiencies from the Final Payment. On such deductions, ODR will identify each deduction, the amount, and the explanation of the deduction on or by the twenty-first (21st) day after ODR’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 ODR, subject to all allowable offsets and deductions, on the thirtieth (30th) day following ODR’s approval of the Application for Payment. If Contractor disputes any amount deducted by ODR, 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 and ODR, relating to the condition of the Work except those arising from:

12.3.6.1 Faulty or defective Work appearing after Substantial Completion (latent defects);

12.3.6.2 Failure of the Work to comply with the requirements of the Contract Documents;

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

or

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

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

12.3.8 Effect on Warranty. Regardless of approval and issuance of Final Payment, the Contract is not deemed fully performed by Contractor and closed until the expiration of all warranty periods.

Article 13. Warranty and Guarantee

13.1 Contractor’s General Warranty and Guarantee. Contractor warrants to ODR 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. ODR 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 ODR, 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 or ODR.

13.2 Warranty Period. Except as may be otherwise specified or agreed, Contractor shall repair all defects in materials, equipment, or workmanship appearing within one year from the date of Substantial Completion of the Work. If Substantial Completion occurs by phase, then the warranty period for that particular Work begins on the date of such occurrence, or as otherwise stipulated on the Certificate of Substantial Completion for the particular Work.

13.2.1 Specific requirements for warranties and guarantees to include parts, labor, and other costs are noted in various sections of the technical specifications. Manufacturer’s warranties and guarantees are required for, but not limited to, the following: [Add or delete from list as required by Project]

Membrane Waterproofing ......................... 2 years  
Urethane Roofing System ......................... 20 years  
Joint Sealers ........................................... 2 years  
Insulated Glass ........................................ 5 years  
Aluminum Doors & Frames ....................... 3 years  
Wood & Plastic Faced Doors ........ Life of installation  
Upward Acting Doors ................................. 5 years  
Mirror Glazing ........................................ 5 years  
Window Wall System .................................. 2 years  
Access Flooring .......................................... 5 years  
Dampproofing ......................................... 2 years  
Water Repellent Coating ......................... 5 years  
Sheet Metal & Flashing ............................ 2 years  
Roof Hatches ............................................ 2 years  
Door Closers ........................................... 5 years  
Metal Windows ......................................... 3 years  
Curtain Wall/Skylights ............................. 2 years  
Fixed Seating .......................................... 10 years  
Carpet .................................................. 15 years  
Chalkboard Surfaces ................................. 50 years  
Dock Lift .................................................. 2 years  
Prefabricated Environmental Box .............. 10 years  
Environmental Box Refrigeration Systems and Controls .......................... 2 years
Air Conditioning and Refrigeration Systems ................................................. 2 years
HVAC Controls ...................................................................................... 2 years
Variable Speed Controllers ................................................................. 3 years

Until receipt of these guarantees, final inspection will not be conducted nor final payment released.

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 or ODR 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 ODR 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 ODR 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 ODR 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 ODR a complying warranty from a manufacturer, supplier, or Subcontractor. Where an assigned warranty is tendered and accepted by ODR which does not fully comply with the requirements of the Contract, Contractor remains liable to ODR 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/ODR 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/ODR that all equipment and materials used in fulfillment of their Contract responsibilities are non Asbestos Containing Building Materials (ACBM). This certification must be provided no later than Contractor’s application for Final Payment.

Article 14. Suspension and Termination

14.1 Suspension of Work for Cause. ODR may, at any time without prior notice, suspend all or any part of the Work, if after reasonable observation and/or investigation, ODR 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 ODR 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, ODR 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 ODR’s Convenience. Upon seven (7) days written notice to Contractor, ODR 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/ODR 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 ODR at any time on seven (7) days written notice to Contractor. If ODR 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 ODR for Cause.

14.3.1 Upon written notice to Contractor and its surety, ODR may, without prejudice to any right or remedy, terminate the Contract and take possession of the Site and of all materials, equipment, tools, construction equipment, and machinery thereon owned by Contractor under any of the following circumstances:

14.3.1.1 Persistent or repeated failure or refusal, except during complete or partial suspensions of work authorized under the Contract, to supply enough properly skilled workmen or proper materials;

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

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

14.3.1.4 Failure to remedy defective work condemned by ODR;

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

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

14.3.1.7 Failure to supply or maintain statutory bonds or to maintain required insurance, pursuant to the Contract;
14.3.1.8 Any material breach of the Contract; or

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

14.3.2 Failure by Owner/ODR 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/ODR decide to terminate the Contract under the provisions of Section 15.3, 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 ODR. 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 ODR to commence and continue correction of such default with diligence and promptness to the satisfaction of ODR within thirty (30) days following receipt of notice, ODR may immediately terminate the contract and make arrangements 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 ODR costs such as A/E services, other consultants, and contract administration.

14.3.5.2 ODR 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 ODR.

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

14.3.5.4 ODR 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 ODR 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 15.3 is later determined to have been improper, the termination shall automatically convert to a termination for convenience under Section 15.5 and Contractor’s recovery for termination shall be strictly limited to the payments allowable under Section 15.5.
14.5 **Termination for Convenience of ODR.** 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 **ODR** 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/ODR’s convenience, Contractor may recover from ODR payment for all Work executed before the notice of termination along with the actual and reasonable cost of any additional work required to secure the Project and property related to the Contract following the notice of termination. The Contractor will not be entitled to recover any other costs or damages arising from the termination for convenience of the ODR including, but not limited to, claims for 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, before the work stoppage along with the actual and reasonable cost of securing the Project and property related to the Contract during the period of work stoppage. The Contractor will not be entitled to recover any other costs or damages arising from the work stoppage including, but not limited to, claims for 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, but may be entitled to an equitable adjustment in the Contract Sum and Contract Time.
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 ODR based upon recoverable costs as provided under the Contract. If Contractor fails to submit the proposal within the time allowed, ODR may determine the amount due to Contractor because of the termination and pay the determined amount to Contractor.

**Article 15. Dispute Resolution**

15.1 **Dispute resolution shall be set forth as per the attached Sample Contract or Master Agreement.**

15.2 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.

15.3 Nothing herein shall waive or be construed as a waiver of the State’s sovereign immunity.

**Article 16. Miscellaneous**

16.1 **Special Conditions.** When the Work contemplated by Owner is of such a character that the foregoing *SSC Uniform General and Supplementary Conditions* of the Contract cannot adequately cover necessary and additional contractual relationships, the Contract may include Special Conditions. Special Conditions shall relate to a particular Project and be unique to that Project but shall not weaken the character or intent of the *SSC Uniform General and Supplementary Conditions*.

16.2 **Federally Funded Projects.** On Federally funded projects, Owner/ODR may waive, suspend or modify any Article in these *SSC Uniform General and Supplementary 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, ODR 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, ODR will make the software accessible via the Internet to all Project team members.

16.3.1.2 ODR shall administer the software.
16.3.2 **Training.** When used, **ODR** shall provide training to the Project team members.

16.4 **Not Applicable.**

This document is based on the 2010 Texas Facilities Commissions’ Uniform General Conditions and apply to all Texas A&M University System and member institution construction projects managed by SSC Services for Education. All text shown in *italics* are changes incorporated into this UGSC from Texas A&M University System Facilities Planning & Construction. All text shown in bold are SSC changes.

**End of SSC Uniform General and Supplementary Conditions**
1. **GENERAL COORDINATION** The following supplements modify, change, delete from or add to the “SSC UNIFORM GENERAL AND SUPPLEMENTARY CONDITIONS.” Where any Article of the SSC Uniform General and Supplementary Conditions is modified or any paragraph or clause thereof is modified or deleted by these supplements, the unaltered conditions of the article, paragraph, sub-paragraph or clause shall remain in effect.

2. **FEMA LAWS GOVERNING CONSTRUCTION**

2.1 The following references FEMA Procurement Guidance applicability guidelines for Non-Federal Entity (“NFE”) recipients and non-recipients.

2.2 [FEMA 41 C.F.R. Part 60-1.4(b)] **Equal Employment Opportunity.** During the performance of this contract, the contractor agrees as follows:

   During the performance of this contract, the contractor agrees as follows:

   (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

   (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

   (3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers’ representatives of the contractor's commitments under
this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.”

2.3 [FEMA 29 C.F.R. § 5.5 (a)] Copeland “Anti-Kickback” Act. Compliance with the Copeland “Anti-Kickback” Act:

(1) Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

(2) Subcontracts. The contractor or subcontractor shall insert in any
subcontracts the clause above and such other clauses as the FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

(3) Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.”

2.4 [FEMA 29 C.F.R. § 5.5 (b)] Contract Work Hours and Safety Standard Acts. Compliance with the Contract Work Hours and Safety Standards Act:

Compliance with the Contract Work Hours and Safety Standards Act.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section

(3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to
be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.


**Clean Air Act**

(1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

(2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

(3) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

**Federal Water Pollution Control Act**

(1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

(2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection
Agency Regional Office.

(3) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.”

2.6 [FEMA 2 C.F.R. Part 180 and Part 3000] Debarment and Suspension.

Suspension and Debarment

(1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the contractor is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

(2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by (insert name of subrecipient). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (name of state agency serving as recipient and name of subrecipient), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.”


Contractors who apply or bid for an award of $100,000 or more shall file the required
certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.”

2.8 FEMA Additional Requirements


(1) The contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.”

b. DHS Seal, Logo, and Flags.

(1) The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

c. Compliance with Federal Law, Regulations, and Executive Orders.

(1) This is an acknowledgement that FEMA financial assistance will be used to fund the contract only. The contractor will comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.”
d. **No Obligation by Federal Government.**

   (1) The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

e. **Program Fraud and False or Fraudulent Statements or Related Acts.**

   (1) The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor’s actions pertaining to this contract.”

2.9 Refer to Line Item 21: **FEMA REQUIREMENTS** for FEMA C.F.R. Appendix, and Required Contract Clauses in its entirety.
3. **WORK HOURS**

3.1 Work Hours: The building will be occupied during construction. Loud demolition or work can be performed during hours and dates detailed below. The schedule is not intended to limit the hours a contractor can perform work. Work that can be performed without generating an excessive amount of noise can be performed at the discretion of the contractor.

   3.1.1 Coordinate proposed work schedule with owner.

3.2 TAMU Occupancy: TAMU may occupy the adjacent spaces of facilities during the entire performance period of the contract. Cooperate fully with the TAMU representative and ODR during performance of work to minimize conflict and to facilitate TAMU usage. SAFETY is of a paramount concern. It is the sole responsibility of the Contractor to provide protective coverings, passage ways, barriers and any and all provisions as required to maintain required ADA/TAS approved means of egress and access and maintain all building exits as required by applicable Life Safety Codes. The Contractor is to coordinate with the ODR all work that may possibly affect building occupancy or continued SAFE use. Contractor is to provide ODR advanced scheduling as required to successful notify TAMU facility administrative staff of his activities related to the Work. Contractor is to adequately staff and incorporate into his Proposal all additional labor, materials, and equipment required under this section.

4. **UTILITIES**

4.1 Utility Outage: When a utility outage affecting occupied facilities is necessary to perform the Project Work unless agreed upon prior to performing the work, the Contractor shall give written notice to ODR five (5) days in advance of a scheduled outage. TAMU or ODR personnel will perform disconnection and reconnection of utilities. Fourteen days advance notice is required for connection and disconnection of temporary utilities by TAMU including, but not limited to temporary water taps, electrical taps and other temporary site utilities.

4.2 All information and documents regarding existing underground utilities, known to the ODR, will be made available to the Contractor. Contractor will be responsible for locating, marking, and protecting all underground utility lines during construction.
4.2.1 Utility Excavation: Before performing any excavation, grading, trenching or other operations whereby existing underground utilities may be distributed or damaged, contact the Texas Excavation Safety System (www.texas811.org) at 811 to have utilities marked. In accordance with Texas Utilities Code, Title 5, Chapter 251 - Underground Facility Damage Prevention And Safety, a person who intends to excavate shall notify Texas 811 not earlier than the 14th day before the date of the excavation is to begin or later than 48 hours before the time the excavation is to begin, excluding Saturdays, Sundays, and legal holidays. The Contractor shall allow sufficient time for Texas 811 and TAMU to accomplish marking of utilities at no additional cost to the ODR or TAMU. Once utilities are marked, the Contractor shall be responsible for maintaining the flags/paint at their proper location(s). No excavation will be permitted until all utilities existing in the area have been marked. If no utilities are marked during the utility locate process, Contractor shall confirm and notify the ODR’s project manager that locates have in fact been accomplished before performing any excavation.

4.2.2 Damage occurring to these lines, during construction, shall be repaired and/or replaced by Contractor or ODR, at the expense of the Contractor. Subsequent expenses incurred by TAMU Staff or personnel, resulting from the interruption of service caused by the damaging of underground utilities, shall be borne by the Contractor.

4.3 ODR’s personnel shall be notified for inspection of all buried utilities upon discovery. Damage and repairs shall be recorded by inspectors prior to approval of backfilling.

4.4 Should Contractor discover “Unknown Utilities”, promptly notify the ODR’s personnel for direction. Such piping systems and lines shall be treated as outlined above.

4.5 Procedures for notification if utility lines or piping systems are damaged during construction:

4.5.1 UPD at 361-825-4444 if gas lines are damaged.

4.5.2 ODR Project Manager, Jim Eckhart at 361-825-2839
4.5.3 If unavailable, notify SSC Facility Manager, Kevin Brown at 361-825-2220

5. **COMMUNICATIONS AND DATA** Work on telephone, fiber optic lines, data lines and other communication systems must be performed by TAMU IT personnel and/or their contractor(s). The Contractor shall coordinate his work with these agencies through the ODR.

6. **COORDINATION WITH OTHER WORK**

6.1 Coordination: Contractor shall coordinate work with the ODR, prior to beginning any Project Work. Additionally, prior to starting work each day, the Contractor’s superintendent shall inform and coordinate with the ODR and others as may be required.

6.2 Contractor will be required to coordinate construction activities with other contractors and agencies under the direction of the ODR or TAMU personnel. This will include but is not limited to telephone, custodial, fire alarm, equipment maintenance, and grounds maintenance.

7. **CRANES** When a crane is necessary to perform the contract work, the crane delivery, placement and lift dates shall be coordinated with the ODR, TAMU Environmental Health and Safety, TAMU Transportation, and others as may be required such as Texas Department of Transportation and City of Corpus Christi. The Contractor shall give written notice to TAMU fourteen (14) days in advance of a required crane placement and lift. The Contractor shall submit a crane lift plan (“Crane Lift Plan”) with the written notice of crane placement and lift. The Crane Lift Plan shall show the proposed crane location during the lift, the area of boom swing proposed for the lift, location and types of barricades, and affected streets, sidewalks, parking areas, and buildings. The area of boom swing shall be depicted as the arc of the boom for the proposed swing with a radius of the boom length if the boom were in the horizontal. Contractor shall comply with OSHA and ANSI safety standards for cranes.

8. **PARKING, STORAGE, AND SITE RESTRICTIONS**

8.1 Confine operations at the site to the areas permitted under the Contract Documents. Portions of the site beyond areas for which work is indicated are not to be disturbed. Comply with Owner’s requirements concerning the Contractor’s operations and use of the premises, parking, loading and unloading.
8.1.1 Keep existing driveways and entrances serving the adjacent TAMU facilities and parking spaces clear and available to the visitors, staff and service vehicles at all times. Do not use these areas for parking or for storage of materials.

8.1.2 Keep all storage areas free of debris, refuse, spills, leaks, stains, splashes and excess materials. All storage areas shall be maintained in a neat, clean, and safe condition. Do not unreasonably encumber the site with materials or equipment. Stockpiling of materials and the locations of storage sheds, trailers, or temporary field offices shall be confined to the area designated, area(s) shall be coordinated with TAMU.

8.1.3 Contractor storage and parking are at the job site in an area to be designated by TAMU. Parking is not allowed on sidewalks, drives, or roadways. Do not block parking spaces. Contractor shall comply with the requirements of the coordination agreement plan presented at the preconstruction meeting.

8.1.4 Lock automobiles and other mechanized or motorized construction equipment, when parked and unattended, to prevent unauthorized use. Do not leave vehicles or equipment unattended with the motor running or the ignition key in place. Contractor shall not allow any construction equipment to be parking on adjacent streets at night.

8.1.5 Designated roads shall be used for construction traffic. Contractor shall not close, block, or otherwise obstruct roads at any time without written permission of ODR and where required, the City of College Station. Contractor shall keep all debris and mud off all sidewalks and streets. Immediately clean all debris and mud that is a result of contract operations.

9. **EXISTING FACILITIES AND CONDITIONS** Maintain the existing facilities in a safe condition throughout the period work is being performed.

9.1 If available, areas designated around, or near the building will be made available for contractor staging and dumpsters. Coordinate with the ODR.
9.2 Prior to commencement of Project work, inspect areas in which work will be performed. Document and photograph existing conditions of structure, surfaces, equipment, and condition of surrounding properties, which could be misconstrued as damage resulting from demolition work or other contract operations. Inspection shall be verified, signed by, and filed with the Owner or ODR prior to starting work.

9.3 Any damage to the existing grounds or facilities caused by construction traffic or any construction operations shall be repaired or replaced by the Contractor to match or exceed existing undamaged conditions at no additional cost to the ODR or TAMU.

9.4 Contractor shall ensure that building plumbing systems within scope of work, are protected from freeze damage during periods of temperatures at or below freezing.

9.5 Structural Building Components: Unless indicated on the Contract Documents, do not cut or modify any structural building component (e.g. column, beam, floor slab) without prior approval of the structural engineer. If an existing structural component is accidentally cut, the remedial design work shall be by a professional structural engineer licensed in the State of Texas. The Contractor is responsible for engaging the structural engineer and for payment of all design fees. The structural engineer shall be acceptable to the ODR and all structural designs shall be submitted to the ODR for review and approval.

9.6 Endangered Species: No activity is authorized that is likely to jeopardize the continued existence of a threatened or endangered species as listed or proposed for listing under the Federal Endangered Species Act (ESA), and/or the State of Texas Parks and Wildlife Code on Endangered Species, or to destroy or adversely modify the habitat of such species. Contractor shall notify ODR of any planned construction activities that might affect endangered species.

9.6.1 If a threatened or endangered species is encountered during construction, the Contractor shall immediately cease work in the area of the encounter and notify the ODR, who will immediately implement actions in accordance with endangered species act and applicable State statutes. These actions shall include reporting the encounter to the Texas Parks and Wildlife Department, and obtaining any necessary
approvals or permits to enable the work to continue. The Contractor shall not resume work in the area of the encounter until authorized to do so by the ODR.

9.7 Airport Restrictions: The Contractor shall verify that Construction activities and/or equipment do not constitute an obstruction of hazard to the flight paths of the nearby airport. The Federal Aviation Administration and Naval Air Station regulate airport airspace which may limit the height or working height of cranes, etc. This limitation is determined by FAA formula which, if exceeded, requires notification of and approval by FAA. A preliminary assessment will be provided, upon Contractor request, by the Airport Manager or other authority based on the construction equipment proposed to be used. Texas A&M University will prepare and mail the appropriate forms to the FAA by the Airport Director should notification be required.

9.8 Archeological Discoveries: No activity which may affect a State Archeological Landmark is authorized until the Owner has complied with the provisions of the Texas Antiquities Code. The Owner has previously coordinated with the appropriate agencies and impacts to known cultural or archeological deposits have been avoided or mitigated. However, the Contractor may encounter unanticipated cultural or archeological deposits during Construction. Should an encounter occur the Contractor shall cease all work in the affected area and immediately notify the ODR. The ODR will take the appropriate notification steps and work will not resume until authorized by the ODR. (This paragraph applies only to Texas A&M International University.)

10. FIRE REGULATIONS
10.1 Comply with National Fire Protection Association, NFPA 241 guidelines. The Contractor shall use no explosives or fire in performing the work. Contractor shall understand and comply with OSHA welding and cutting requirements. If hot work is required, a hot work permit shall be obtained by coordination with TAMU Environmental Health and Safety through the ODR.
10.2 Coordinate all work on existing fire alarm and fire suppression systems with the ODR and TAMU Environmental Health and Safety prior to the start of Project Work. Any work that could cause dust, smoke or fumes must be coordinated with the ODR prior to commencing so the fire alarm system can be modified and protected as necessary if system is active. Contractor is required to cover and uncover fire alarm devices daily.

11. **CLEAN UP** The Contractor shall dispose of all trash, debris, refuse, garbage, etc., which is generated by the Contractor during the Project Work. Building sites shall be cleaned on a daily basis and disposal shall be outside the limits of TAMU property. Contractor shall routinely empty dumpsters to prevent windblown debris. Disposal shall be by sanitary landfill or other approved methods and shall conform to all local, state, and federal guidelines, criteria, and regulations.

12. **ENERGY CONSERVATION** The Contractor shall use good judgement in the conservation of utilities. Prevailing energy conservation practices shall be adhered to and enforced by the Contractor.

13. **SPECIAL STORAGE**

13.1 Petroleum Storage:

13.1.1 The Contractor shall store all fuel or petroleum products, whether new or used, in appropriate containers and within a bermed area with an impermeable liner (40 mil) or other approved containment measures. All storage areas shall be marked with appropriate signage (i.e., Flammable Storage - No Smoking Within 50 ft). All fuel tanks and petroleum storage containers shall be structurally sound and in good condition, be kept sealed when not in use, and be grounded and bonded according to NFPA Requirements.

13.1.2 The containment area shall be sized to hold fluid volume equal to 110% of the largest storage container, with a minimum of one foot of freeboard for earthen berms. The Contractor shall immediately clean up and dispose of any evidence of a fuel or oil spill in conformance with all federal and state regulations at no additional cost to the ODR or Owner. Any areas that incur contamination by any hazardous
substance shall be immediately remediated by the contractor at no additional expense to ODR. Any fuel or oil spill shall immediately be reported to the ODR and TAMU Environmental Health and Safety. Costs of all soil tests as a result of spills shall be a responsibility of the contractor.

13.1.3 The Contractor shall remove earthen berms at the completion of the job and restore the area to its original condition.

13.1.4 The Contractor shall keep all other storage areas free of debris, leaks, stains, or splashes. All storage areas shall be maintained in a neat, clean, and safe condition. Remediation may include subsequent soil analysis if directed by TAMU or the ODR. The Contractor shall store all paints, thinners, solvents and other hazardous materials in a contractor supplied trailer or storage unit, which shall be secured when not in use.

14. TESTING Testing indicated in these Contract Documents to be performed by TAMU, Contractor or the ODR will be performed at the option of TAMU. ODR will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

15. SAFETY

15.1 Comply with all applicable Occupations Safety and Health Act (OSHA) Standards and Regulations.

15.2 For accident reporting, comply with SSC requirements to file written reports and immediately notify ODR at 361-825-2127.

15.3 Furnish and install all necessary safeguards to provide safety and protection of the public and TAMU property adjacent to the contract work area. Comply with all Applicable Laws related to the safety of the public and TAMU property while performing contract operations.

15.4 Speed Limit: Contractor shall notify all employees and subcontractors of the speed limit of the adjacent streets and ensure all personnel understand and comply with this requirement.
15.5 Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate to support loads and to withstand exposure to traffic during contract operations.

15.6 Temporary Traffic Controls: Furnish and install Temporary Traffic Controls ("TTC") in accordance with the Texas Manual on Uniform Traffic Control Devices ("TMUTCD"). Submit a TTC plan for vehicular and pedestrian traffic to the ODR and project engineer for approval prior to the start of construction operations. Pedestrian traffic control plans shall provide a safe, convenient and accessible travel path that replicates as nearly as possible the most desirable characteristics of the existing sidewalks or footpaths throughout all phases of construction. Provide for continuous operation of signs and barricades designating restricted or dangerous conditions including but not limited to: illuminated barricades, danger signals, warning signs and obstructions.

15.7 Accessible Routes: Accessible routes for the disabled shall be kept accessible and safe at all times or alternate routes shall be constructed and signed in accordance with the Texas Accessibility Standards. Revised alternate routes shall require approval by the ODR and Owner.

15.8 Site Safety: Do not leave the work areas in an unsecured or unsafe condition at any time during operations. Contractor personnel and equipment operators shall monitor their surroundings at all times and be alert for people moving in or adjacent to contract work areas. Contractor shall use spotters when moving vehicles through the construction sites and no construction vehicles (e.g. backhoes, bobcats, etc.) shall be left unsecured on site. Contractor shall furnish and install temporary fences, barricades, signs and other required items to:

15.8.1 Warn/notify adjacent building occupants

15.8.2 Protect construction materials

15.8.3 Prevent unauthorized personnel from entering the construction site.

15.8.4 Redirect vehicular and pedestrian traffic flow when required to perform Work; comply with paragraph 15.5 above, Temporary Traffic Controls TTC.
15.9 Prior to spraying paint, coatings or power washing exterior structures the following criteria shall be met:

15.9.1 Contractor shall provide ODR and TAMU forty eight (48) hours’ notice prior to spraying any material, including primer, paint or coatings.

15.9.2 Consider use of dryfall paint when spray painting large areas of structure (e.g. metal building frames) or materials by conventional or airless spray.

15.9.3 The Contractor shall provide all necessary barricades, signs, warning of spray area as determined in the preconstruction conference. The Contractor shall set these signs out the night before spraying begins.

15.9.4 The Contractor shall be responsible for the removal of signs and barricades at the completion of the job.

15.9.5 The Contractor shall protect any automobile, bicycle, vehicle or other property which is located in a warning area where contact with the property owner has not been made before the commencement of work.

15.9.6 The Contractor shall employ approved wind screens, protective shrouds and other protection methods during all paint and coating applications. The Contractor is responsible for all overspray and shall have sole liability where damage occurs as a result of this work.

15.9.7 Spray equipment shall be as recommended by the materials manufacturer. Spray operations shall be performed only during adequate period calm weather with winds not exceeding 15 miles per hour. Protect all property from overspray or other damage.

15.9.8 To prevent sparking a flammable substance, smoking and other sources of flame near spray painting operations are prohibited and tools shall be properly rated and grounded for work in a spray painting area.

16. **LANDSCAPING** Take appropriate measures to prevent injury to landscaping in or near the worksite. Do not remove or prune any landscaping without the approval from the ODR. Plants which are damaged during work, that are not in the area designated to be demolished, shall
be replaced at no expense to TAMU or the ODR. Unless required by the contract documents, the ODR shall coordinate removal of all trees, tree branches, shrubs and plants that will interfere the Project Work. Actively nesting birds shall not be disturbed unless approved by the ODR. Disturbing actively nesting migratory birds will also require a permit to be obtained from the U.S. Fish and Wildlife Service.

17. ENVIRONMENTAL REQUIREMENTS

17.1 Compliance with Environmental Laws: The Contractor and all subcontractors shall comply with any and all applicable federal, state, and local laws, regulations, ordinances, policies and standards (“Applicable Laws”) related to environmental matters. Contractor and all subcontractors shall comply with all current TAMU/EHS and State of Texas Storm Water Pollution Prevention Plan (SWPPP) regulations. Please refer to the following links:
https://ehsd.tamu.edu

17.2 PCB Ballast Disposal Requirements: The transporting and disposal of lighting ballasts is subject to Environmental Protection Agency (EPA), D.O.T. and State of Texas laws, codes and guidelines. Any ballast that is not specifically marked “No PCB’s” shall be considered to contain PCB’s and shall be transported to an EPA approved incinerator and destroyed by incineration. Contractor shall furnish ODR with copies of tickets before and after transportation and a certificate of destruction from the firm that destroys the ballasts. The disposal company must be approved by the ODR. Contractors involved in projects that include the removal and/or disposal of fluorescent, mercury vapor, or HID Sodium Vapor lamps shall comply with the requirements of this section. Fluorescent lamps have been determined, by the TCEQ, to be hazardous waste and must be managed in accordance with 40 CFR 260-279, and 30 TAC 330-335. The Contractor shall immediately notify the ODR when activities involving the removal of the aforementioned lamps begin.

17.3 Nuisance and Polluting Activity Prohibited: Polluting, dumping, or discharging of any harmful, nuisance, or regulated materials (such as concrete truck washout, vehicle
maintenance fluids, residue from saw cutting operations, solid waste and hazardous substances) into building drains, site drains, streams, waterways, holding ponds or to the ground surface shall not be permitted. The Contractor shall be held responsible for any damages that may result. Further, the Contractor shall conduct activities in such a fashion to avoid creating any legal nuisance, including but not limited to, suppressing noise and dust, controlling erosion, and implementing other measures as necessary to minimize off-site impacts of work activities.

17.4 Asbestos Removal: If, in the process of performing the Work, the Contractor suspects that asbestos has been found, the ODR shall be notified immediately. The ODR shall cause the suspicious material to be tested and, if found to be asbestos, will be responsible for its removal. It will be the Contractor’s responsibility to protect its workers and other persons by regulating access to the affected area. Should the Contractor encounter previously unidentified and suspect asbestos-containing materials ("ACM"), mold, hazardous or potentially hazardous material or suspected lead containing paint which must be disturbed to comply with the Contract Documents, the Contractor shall cease all work that would disturb the suspect material and shall immediately notify the ODR.

17.5 Contractor is responsible for all materials brought on site, including hazardous materials. All hazardous waste or special waste generated by the Contractor as a result of its operations shall be identified, characterized, containerized and transported to a permitted disposal facility in strict accordance with the requirements of 40 CFR 260-279 (Hazardous waste and used oil regulations), 30 TAC 324, 330-335 (TCEQ Hazardous and Industrial Waste Regulations).

18. SUBMITTALS REQUIRING EXPEDITED SUBMISSION:

18.1 It is the owner’s intent for contractor to perform pier drilling during the University winter break from 6:00am December 15, 2016 through 6:00am January 18, 2017 due to the excessive noise associated with the drilling process. Foundation, drilled piers, concrete, reinforcement and related shop drawings and submittals must be submitted within one week of notice to proceed in an effort to perform work during this period.

18.2 When Bonds Are Due: Re: Uniform General and Supplementary Conditions,
Paragraph 5.1.3.2. Delete paragraph 5.1.3.2 in its entirety and insert the following in lieu thereof: “Payment and performance bonds are due within one day of Contractor’s receipt of a fully executed Contract on competitively bid or competitively sealed proposal projects.”

19. **COLOR AND MATERIAL SELECTIONS**

19.1 No color selections and no material selections will be made by the ODR until the Contractor submits all samples of all materials requiring color selections to the ODR or A/E (if applicable). In addition, prior to the ODR selection colors, the Contractor shall certify in writing that all colors and samples submitted are current, acceptable, and available to the Contractor for TAMU’s selection.

19.2 Any samples that are not applicable to the work shall be carefully removed from the submittal by the Contractor. The Contractor shall submit the manufacturer’s full range of applicable colors, patterns, and textures for the various materials that are required by the contract.

19.3 In the event that discontinued, non-current, or non-applicable colors, textures, or samples are submitted by the Contractor and their selection is made by the ODR, the Contractor shall immediately notify ODR of all associated delays required to resubmit and approve alternate materials.

20. **RIGHT TO AUDIT** The ODR shall have the right to verify and audit the details of Contractor’s and subcontractor’s billings, certificates, accountings, cost data, and statements, either before or after payment, by (1) inspecting the books and records of the Contractor and subcontractor’s during normal business hours; (2) examining any reports with respect to the Project Work; (3) interviewing Contractor’s and subcontractor’s employees; and (4) any other reasonable action. Contractor’s and subcontractor’s records shall be kept on the basis of generally accepted accounting principles in accordance with cost accounting standards issued by the Federal Office of Management and Budget Cost Accounting Standards Board and organized by each Application for Payment period.

(SEE ATTACHED - 21. SPECIAL FEMA REQUIREMENTS)
SSC SERVICES FOR EDUCATION
SPECIAL CONDITIONS
SECTION 00 7300

1. **GENERAL COORDINATION** The following supplements modify, change, delete from or add to the “SSC UNIFORM GENERAL AND SUPPLEMENTARY CONDITIONS.” Where any Article of the SSC Uniform General and Supplementary Conditions is modified or any paragraph or clause thereof is modified or deleted by these supplements, the unaltered conditions of the article, paragraph, sub-paragraph or clause shall remain in effect.

2. **FEMA LAWS GOVERNING CONSTRUCTION**

2.1 The following references FEMA Procurement Guidance applicability guidelines for Non-Federal Entity (“NFE”) recipients and non-recipients.

2.2 [FEMA 41 C.F.R. Part 60-1.4(b)] Equal Employment Opportunity. During the performance of this contract, the contractor agrees as follows:

   **During the performance of this contract, the contractor agrees as follows:**

   (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

   (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

   (3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers’ representatives of the contractor’s commitments under
this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.”

2.3 [FEMA 29 C.F.R. § 5.5 (a)] Copeland “Anti-Kickback” Act. Compliance with the Copeland “Anti-Kickback” Act:

(1) Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

(2) Subcontracts. The contractor or subcontractor shall insert in any...
subcontracts the clause above and such other clauses as the FEMA may by
appropriate instructions require, and also a clause requiring the
subcontractors to include these clauses in any lower tier subcontracts. The
prime contractor shall be responsible for the compliance by any
subcontractor or lower tier subcontractor with all of these contract clauses.

(3) Breach. A breach of the contract clauses above may be grounds for
termination of the contract, and for debarment as a contractor and
subcontractor as provided in 29 C.F.R. § 5.12.”

2.4 [FEMA 29 C.F.R. § 5.5 (b)] Contract Work Hours and Safety Standard Acts. Compliance
with the Contract Work Hours and Safety Standards Act:

Compliance with the Contract Work Hours and Safety Standards Act:

(1) Overtime requirements. No contractor or subcontractor contracting for
any part of the contract work which may require or involve the
employment of laborers or mechanics shall require or permit any such
laborer or mechanic in any workweek in which he or she is employed on
such work to work in excess of forty hours in such workweek unless
such laborer or mechanic receives compensation at a rate not less than
one and one-half times the basic rate of pay for all hours worked in
excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event
of any violation of the clause set forth in paragraph (1) of this section
the contractor and any subcontractor responsible therefor shall be liable
for the unpaid wages. In addition, such contractor and subcontractor
shall be liable to the United States (in the case of work done under
contract for the District of Columbia or a territory, to such District or to such
territory), for liquidated damages. Such liquidated damages shall be computed
with respect to each individual laborer or mechanic, including watchmen and
guards, employed in violation of the clause set forth in paragraph (1) of this
section, in the sum of $10 for each calendar day on which such individual was
required or permitted to work in excess of the standard workweek of forty
hours without payment of the overtime wages required by the clause set forth
in paragraph (1) of this section

(3) Withholding for unpaid wages and liquidated damages. The (write in the
name of the Federal agency or the loan or grant recipient) shall upon its
own action or upon written request of an authorized representative of
the Department of Labor withhold or cause to be withheld, from any
moneys payable on account of work performed by the contractor or
subcontractor under any such contract or any other Federal contract
with the same prime contractor, or any other federally-assisted contract
subject to the Contract Work Hours and Safety Standards Act, which is
held by the same prime contractor, such sums as may be determined to
be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

2.5 [FEMA 2 C.F.R. Part 200, Appendix II, ¶ F] **Clean Air Act and the Federal Water Pollution Control Act.**

**Clean Air Act**

(1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

(2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

(3) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

**Federal Water Pollution Control Act**

(1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

(2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection
Agency Regional Office.

(3) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.”

2.6 [FEMA 2 C.F.R. Part 180 and Part 3000] Debarment and Suspension.

Suspension and Debarment

(1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the contractor is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

(2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by (insert name of subrecipient). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (name of state agency serving as recipient and name of subrecipient), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.”

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.”

2.8 FEMA Additional Requirements


(1) The contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.”

b. DHS Seal, Logo, and Flags.

(1) The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

c. Compliance with Federal Law, Regulations, and Executive Orders.

(1) This is an acknowledgement that FEMA financial assistance will be used to fund the contract only. The contractor will comply with all applicable federal law, regulations, executive orders, FEMA
policies, procedures, and directives.”

d. **No Obligation by Federal Government.**

   (1) The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

e. **Program Fraud and False or Fraudulent Statements or Related Acts.**

   (1) The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor’s actions pertaining to this contract.”

2.9 Refer to Line Item 21: **FEMA REQUIREMENTS** for FEMA C.F.R. Appendix, and Required Contract Clauses in its entirety.
3. **WORK HOURS**

3.1 Work Hours: The building will be occupied during construction. Loud demolition or work can be performed during hours and dates detailed below. The schedule is not intended to limit the hours a contractor can perform work. Work that can be performed without generating an excessive amount of noise can be performed at the discretion of the contractor.

3.1.1 Coordinate proposed work schedule with owner.

3.2 TAMU Occupancy: TAMU may occupy the adjacent spaces of facilities during the entire performance period of the contract. Cooperate fully with the TAMU representative and ODR during performance of work to minimize conflict and to facilitate TAMU usage. **SAFETY** is of a paramount concern. It is the sole responsibility of the Contractor to provide protective coverings, passage ways, barriers and any and all provisions as required to maintain required ADA/TAS approved means of egress and access and maintain all building exits as required by applicable Life Safety Codes. The Contractor is to coordinate with the ODR all work that may possibly affect building occupancy or continued **SAFE** use. Contractor is to provide ODR advanced scheduling as required to successful notify TAMU facility administrative staff of his activities related to the Work. Contractor is to adequately staff and incorporate into his Proposal all additional labor, materials, and equipment required under this section.

4. **UTILITIES**

4.1 Utility Outage: When a utility outage affecting occupied facilities is necessary to perform the Project Work unless agreed upon prior to performing the work, the Contractor shall give written notice to ODR five (5) days in advance of a scheduled outage. TAMU or ODR personnel will perform disconnection and reconnection of utilities. Fourteen days advance notice is required for connection and disconnection of temporary utilities by TAMU including, but not limited to temporary water taps, electrical taps and other temporary site utilities.

4.2 All information and documents regarding existing underground utilities, known to the ODR, will be made available to the Contractor. Contractor will be responsible for locating, marking, and protecting all underground utility lines during construction.
4.2.1 Utility Excavation: Before performing any excavation, grading, trenching or other operations whereby existing underground utilities may be distributed or damaged, contact the Texas Excavation Safety System (www.texas811.org) at 811 to have utilities marked. In accordance with Texas Utilities Code, Title 5, Chapter 251 - Underground Facility Damage Prevention And Safety, a person who intends to excavate shall notify Texas 811 not earlier than the 14th day before the date of the excavation is to begin or later than 48 hours before the time the excavation is to begin, excluding Saturdays, Sundays, and legal holidays. The Contractor shall allow sufficient time for Texas 811 and TAMU to accomplish marking of utilities at no additional cost to the ODR or TAMU. Once utilities are marked, the Contractor shall be responsible for maintaining the flags/paint at their proper location(s). No excavation will be permitted until all utilities existing in the area have been marked. If no utilities are marked during the utility locate process, Contractor shall confirm and notify the ODR’s project manager that locates have in fact been accomplished before performing any excavation.

4.2.2 Damage occurring to these lines, during construction, shall be repaired and/or replaced by Contractor or ODR, at the expense of the Contractor. Subsequent expenses incurred by TAMU Staff or personnel, resulting from the interruption of service caused by the damaging of underground utilities, shall be borne by the Contractor.

4.3 ODR’s personnel shall be notified for inspection of all buried utilities upon discovery. Damage and repairs shall be recorded by inspectors prior to approval of backfilling.

4.4 Should Contractor discover “Unknown Utilities”, promptly notify the ODR’s personnel for direction. Such piping systems and lines shall be treated as outlined above.

4.5 Procedures for notification if utility lines or piping systems are damaged during construction:

   4.5.1 UPD at 361-825-4444 if gas lines are damaged.

   4.5.2 ODR Project Manager, Jim Eckhart at 361-825-2839
4.5.3 If unavailable, notify SSC Facility Manager, Kevin Brown at 361-825-2220

5. **COMMUNICATIONS AND DATA** Work on telephone, fiber optic lines, data lines and other communication systems must be performed by TAMU IT personnel and/or their contractor(s). The Contractor shall coordinate his work with these agencies through the ODR.

6. **COORDINATION WITH OTHER WORK**

6.1 Coordination: Contractor shall coordinate work with the ODR, prior to beginning any Project Work. Additionally, prior to starting work each day, the Contractor’s superintendent shall inform and coordinate with the ODR and others as may be required.

6.2 Contractor will be required to coordinate construction activities with other contractors and agencies under the direction of the ODR or TAMU personnel. This will include but is not limited to telephone, custodial, fire alarm, equipment maintenance, and grounds maintenance.

7. **CRANES** When a crane is necessary to perform the contract work, the crane delivery, placement and lift dates shall be coordinated with the ODR, TAMU Environmental Health and Safety, TAMU Transportation, and others as may be required such as Texas Department of Transportation and City of Corpus Christi. The Contractor shall give written notice to TAMU fourteen (14) days in advance of a required crane placement and lift. The Contractor shall submit a crane lift plan (“Crane Lift Plan”) with the written notice of crane placement and lift. The Crane Lift Plan shall show the proposed crane location during the lift, the area of boom swing proposed for the lift, location and types of barricades, and affected streets, sidewalks, parking areas, and buildings. The area of boom swing shall be depicted as the arc of the boom for the proposed swing with a radius of the boom length if the boom were in the horizontal. Contractor shall comply with OSHA and ANSI safety standards for cranes.

8. **PARKING, STORAGE, AND SITE RESTRICTIONS**

8.1 Confine operations at the site to the areas permitted under the Contract Documents. Portions of the site beyond areas for which work is indicated are not to be disturbed. Comply with Owner’s requirements concerning the Contractor’s operations and use of the premises, parking, loading and unloading.
8.1.1 Keep existing driveways and entrances serving the adjacent TAMU facilities and parking spaces clear and available to the visitors, staff and service vehicles at all times. Do not use these areas for parking or for storage of materials.

8.1.2 Keep all storage areas free of debris, refuse, spills, leaks, stains, splashes and excess materials. All storage areas shall be maintained in a neat, clean, and safe condition. Do not unreasonably encumber the site with materials or equipment. Stockpiling of materials and the locations of storage sheds, trailers, or temporary field offices shall be confined to the area designated, area(s) shall be coordinated with TAMU.

8.1.3 Contractor storage and parking are at the job site in an area to be designated by TAMU. Parking is not allowed on sidewalks, drives, or roadways. Do not block parking spaces. Contractor shall comply with the requirements of the coordination agreement plan presented at the preconstruction meeting.

8.1.4 Lock automobiles and other mechanized or motorized construction equipment, when parked and unattended, to prevent unauthorized use. Do not leave vehicles or equipment unattended with the motor running or the ignition key in place. Contractor shall not allow any construction equipment to be parking on adjacent streets at night.

8.1.5 Designated roads shall be used for construction traffic. Contractor shall not close, block, or otherwise obstruct roads at any time without written permission of ODR and where required, the City of College Station. Contractor shall keep all debris and mud off all sidewalks and streets. Immediately clean all debris and mud that is a result of contract operations.

9. **EXISTING FACILITIES AND CONDITIONS** Maintain the existing facilities in a safe condition throughout the period work is being performed.

9.1 If available, areas designated around, or near the building will be made available for contractor staging and dumpsters. Coordinate with the ODR.

9.2 Prior to commencement of Project work, inspect areas in which work will be performed. Document and photograph existing conditions of structure, surfaces, equipment, and
condition of surrounding properties, which could be misconstrued as damage resulting from demolition work or other contract operations. Inspection shall be verified, signed by, and filed with the Owner or ODR prior to starting work.

9.3 Any damage to the existing grounds or facilities caused by construction traffic or any construction operations shall be repaired or replaced by the Contractor to match or exceed existing undamaged conditions at no additional cost to the ODR or TAMU.

9.4 Contractor shall ensure that building plumbing systems within scope of work, are protected from freeze damage during periods of temperatures at or below freezing.

9.5 Structural Building Components: Unless indicated on the Contract Documents, do not cut or modify any structural building component (e.g. column, beam, floor slab) without prior approval of the structural engineer. If an existing structural component is accidentally cut, the remedial design work shall be by a professional structural engineer licensed in the State of Texas. The Contractor is responsible for engaging the structural engineer and for payment of all design fees. The structural engineer shall be acceptable to the ODR and all structural designs shall be submitted to the ODR for review and approval.

9.6 Endangered Species: No activity is authorized that is likely to jeopardize the continued existence of a threatened or endangered species as listed or proposed for listing under the Federal Endangered Species Act (ESA), and/or the State of Texas Parks and Wildlife Code on Endangered Species, or to destroy or adversely modify the habitat of such species. Contractor shall notify ODR of any planned construction activities that might affect endangered species.

9.6.1 If a threatened or endangered species is encountered during construction, the Contractor shall immediately cease work in the area of the encounter and notify the ODR, who will immediately implement actions in accordance with endangered species act and applicable State statutes. These actions shall include reporting the encounter to the Texas Parks and Wildlife Department, and obtaining any necessary approvals or permits to enable the work to continue. The Contractor shall not resume work in the area of the encounter until authorized to do so by the ODR.

9.7 Airport Restrictions: The Contractor shall verify that Construction activities and/or equipment do not constitute an obstruction of hazard to the flight paths of the nearby
airport. The Federal Aviation Administration and Naval Air Station regulate airport airspace which may limit the height or working height of cranes, etc. This limitation is determined by FAA formula which, if exceeded, requires notification of and approval by FAA. A preliminary assessment will be provided, upon Contractor request, by the Airport Manager or other authority based on the construction equipment proposed to be used. Texas A&M University will prepare and mail the appropriate forms to the FAA by the Airport Director should notification be required.

9.8 Archeological Discoveries: No activity which may affect a State Archeological Landmark is authorized until the Owner has complied with the provisions of the Texas Antiquities Code. The Owner has previously coordinated with the appropriate agencies and impacts to known cultural or archeological deposits have been avoided or mitigated. However, the Contractor may encounter unanticipated cultural or archeological deposits during Construction. Should an encounter occur the Contractor shall cease all work in the affected area and immediately notify the ODR. The ODR will take the appropriate notification steps and work will not resume until authorized by the ODR. (This paragraph applies only to Texas A&M International University.)

10. FIRE REGULATIONS

10.1 Comply with National Fire Protection Association, NFPA 241 guidelines. The Contractor shall use no explosives or fire in performing the work. Contractor shall understand and comply with OSHA welding and cutting requirements. If hot work is required, a hot work permit shall be obtained by coordination with TAMU Environmental Health and Safety through the ODR.

10.2 Coordinate all work on existing fire alarm and fire suppression systems with the ODR and TAMU Environmental Health and Safety prior to the start of Project Work. Any work that could cause dust, smoke or fumes must be coordinated with the ODR prior to commencing so the fire alarm system can be modified and protected as necessary if system is active. Contractor is required to cover and uncover fire alarm devices daily.

11. CLEAN UP The Contractor shall dispose of all trash, debris, refuse, garbage, etc., which is generated by the Contractor during the Project Work. Building sites shall be cleaned on a
daily basis and disposal shall be outside the limits of TAMU property. Contractor shall routinely empty dumpsters to prevent windblown debris. Disposal shall be by sanitary landfill or other approved methods and shall conform to all local, state, and federal guidelines, criteria, and regulations.

12. **ENERGY CONSERVATION** The Contractor shall use good judgement in the conservation of utilities. Prevailing energy conservation practices shall be adhered to and enforced by the Contractor.

13. **SPECIAL STORAGE**

13.1 Petroleum Storage:

13.1.1 The Contractor shall store all fuel or petroleum products, whether new or used, in appropriate containers and within a bermed area with an impermeable liner (40 mil) or other approved containment measures. All storage areas shall be marked with appropriate signage (i.e., Flammable Storage - No Smoking Within 50 ft). All fuel tanks and petroleum storage containers shall be structurally sound and in good condition, be kept sealed when not in use, and be grounded and bonded according to NFPA Requirements.

13.1.2 The containment area shall be sized to hold fluid volume equal to 110% of the largest storage container, with a minimum of one foot of freeboard for earthen berms. The Contractor shall immediately clean up and dispose of any evidence of a fuel or oil spill in conformance with all federal and state regulations at no additional cost to the ODR or Owner. Any areas that incur contamination by any hazardous substance shall be immediately remediated by the contractor at no additional expense to ODR. Any fuel or oil spill shall immediately be reported to the ODR and TAMU Environmental Health and Safety. Costs of all soil tests as a result of spills shall be a responsibility of the contractor.

13.1.3 The Contractor shall remove earthen berms at the completion of the job and restore the area to its original condition.

13.1.4 The Contractor shall keep all other storage areas free of debris, leaks, stains, or splashes. All storage areas shall be maintained in a neat, clean, and safe condition. Remediation may include subsequent soil analysis if directed by
TAMU or the ODR. The Contractor shall store all paints, thinners, solvents and other hazardous materials in a contractor supplied trailer or storage unit, which shall be secured when not in use.

14. **TESTING** Testing indicated in these Contract Documents to be performed by TAMU, Contractor or the ODR will be performed at the option of TAMU. ODR will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

15. **SAFETY**

15.1 Comply with all applicable Occupations Safety and Health Act (OSHA) Standards and Regulations.

15.2 For accident reporting, comply with SSC requirements to file written reports and immediately notify ODR at 361-825-2127.

15.3 Furnish and install all necessary safeguards to provide safety and protection of the public and TAMU property adjacent to the contract work area. Comply with all Applicable Laws related to the safety of the public and TAMU property while performing contract operations.

15.4 Speed Limit: Contractor shall notify all employees and subcontractors of the speed limit of the adjacent streets and ensure all personnel understand and comply with this requirement.

15.5 Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate to support loads and to withstand exposure to traffic during contract operations.

15.6 Temporary Traffic Controls: Furnish and install Temporary Traffic Controls (“TTC”) in accordance with the Texas Manual on Uniform Traffic Control Devices (“TMUTCD”). Submit a TTC plan for vehicular and pedestrian traffic to the ODR and project engineer for approval prior to the start of construction operations. Pedestrian traffic control plans shall provide a safe, convenient and accessible travel path that replicates as nearly as possible the most desirable characteristics of the existing sidewalks or footpaths throughout all phases of construction. Provide for continuous operation of signs and
barricades designating restricted or dangerous conditions including but not limited to: illuminated barricades, danger signals, warning signs and obstructions.

15.7 Accessible Routes: Accessible routes for the disabled shall be kept accessible and safe at all times or alternate routes shall be constructed and signed in accordance with the Texas Accessibility Standards. Revised alternate routes shall require approval by the ODR and Owner.

15.8 Site Safety: Do not leave the work areas in an unsecured or unsafe condition at any time during operations. Contractor personnel and equipment operators shall monitor their surroundings at all times and be alert for people moving in or adjacent to contract work areas. Contractor shall use spotters when moving vehicles through the construction sites and no construction vehicles (e.g. backhoes, bobcats, etc.) shall be left unsecured on site. Contractor shall furnish and install temporary fences, barricades, signs and other required items to:

15.8.1 Warn/notify adjacent building occupants

15.8.2 Protect construction materials

15.8.3 Prevent unauthorized personnel from entering the construction site.

15.8.4 Redirect vehicular and pedestrian traffic flow when required to perform Work; comply with paragraph 15.5 above, Temporary Traffic Controls TTC.

15.9 Prior to spraying paint, coatings or power washing exterior structures the following criteria shall be met:

15.9.1 Contractor shall provide ODR and TAMU forty eight (48) hours’ notice prior to spraying any material, including primer, paint or coatings.

15.9.2 Consider use of dryfall paint when spray painting large areas of structure (e.g. metal building frames) or materials by conventional or airless spray.

15.9.3 The Contractor shall provide all necessary barricades, signs, warning of spray area as determined in the preconstruction conference. The Contractor shall set these signs out the night before spraying begins.

15.9.4 The Contractor shall be responsible for the removal of signs and barricades
at the completion of the job.

15.9.5 The Contractor shall protect any automobile, bicycle, vehicle or other property which is located in a warning area where contact with the property owner has not been made before the commencement of work.

15.9.6 The Contractor shall employ approved wind screens, protective shrouds and other protection methods during all paint and coating applications. The Contractor is responsible for all overspray and shall have sole liability where damage occurs as a result of this work.

15.9.7 Spray equipment shall be as recommended by the materials manufacturer. Spray operations shall be performed only during adequate period calm weather with winds not exceeding 15 miles per hour. Protect all property from overspray or other damage.

15.9.8 To prevent sparking a flammable substance, smoking and other sources of flame near spray painting operations are prohibited and tools shall be properly rated and grounded for work in a spray painting area.

16. LANDSCAPING  Take appropriate measures to prevent injury to landscaping in or near the worksite. Do not remove or prune any landscaping without the approval from the ODR. Plants which are damaged during work, that are not in the area designated to be demolished, shall be replaced at no expense to TAMU or the ODR. Unless required by the contract documents, the ODR shall coordinate removal of all trees, tree branches, shrubs and plants that will interfere the Project Work. Actively nesting birds shall not be disturbed unless approved by the ODR. Disturbing actively nesting migratory birds will also require a permit to be obtained from the U.S. Fish and Wildlife Service.

17. ENVIRONMENTAL REQUIREMENTS

17.1 Compliance with Environmental Laws: The Contractor and all subcontractors shall comply with any and all applicable federal, state, and local laws, regulations, ordinances, policies and standards ("Applicable Laws") related to environmental matters. Contractor and all subcontractors shall comply with all current TAMU/EHS and State of Texas Storm Water Pollution Prevention Plan (SWPPP) regulations. Please refer to the following links:
17.2 PCB Ballast Disposal Requirements: The transporting and disposal of lighting ballasts is subject to Environmental Protection Agency (EPA), D.O.T. and State of Texas laws, codes and guidelines. Any ballast that is not specifically marked “No PCB’s” shall be considered to contain PCB’s and shall be transported to an EPA approved incinerator and destroyed by incineration. Contractor shall furnish ODR with copies of tickets before and after transportation and a certificate of destruction from the firm that destroys the ballasts. The disposal company must be approved by the ODR. Contractors involved in projects that include the removal and/or disposal of fluorescent, mercury vapor, or HID Sodium Vapor lamps shall comply with the requirements of this section. Fluorescent lamps have been determined, by the TCEQ, to be hazardous waste and must be managed in accordance with 40 CFR 260-279, and 30 TAC 330-335. The Contractor shall immediately notify the ODR when activities involving the removal of the aforementioned lamps begin.

17.3 Nuisance and Polluting Activity Prohibited: Polluting, dumping, or discharging of any harmful, nuisance, or regulated materials (such as concrete truck washout, vehicle maintenance fluids, residue from saw cutting operations, solid waste and hazardous substances) into building drains, site drains, streams, waterways, holding ponds or to the ground surface shall not be permitted. The Contractor shall be held responsible for any damages that may result. Further, the Contractor shall conduct activities in such a fashion to avoid creating any legal nuisance, including but not limited to, suppressing noise and dust, controlling erosion, and implementing other measures as necessary to minimize off-site impacts of work activities.

17.4 Asbestos Removal: If, in the process of performing the Work, the Contractor suspects that asbestos has been found, the ODR shall be notified immediately. The ODR shall cause the suspicious material to be tested and, if found to be asbestos, will be responsible for its removal. It will be the Contractor’s responsibility to protect its workers and other persons by regulating access to the affected area. Should the Contractor encounter previously unidentified and suspect asbestos-containing materials (“ACM”), mold, hazardous or potentially hazardous material or suspected lead containing paint which must be disturbed
to comply with the Contract Documents, the Contractor shall cease all work that would disturb the suspect material and shall immediately notify the ODR.

17.5 Contractor is responsible for all materials brought on site, including hazardous materials. All hazardous waste or special waste generated by the Contractor as a result of its operations shall be identified, characterized, containerized and transported to a permitted disposal facility in strict accordance with the requirements of 40 CFR 260-279 (Hazardous waste and used oil regulations), 30 TAC 324, 330-335 (TCEQ Hazardous and Industrial Waste Regulations).

18. **SUBMITTALS REQUIRING EXPEDITED SUBMISSION:**

18.1 It is the owner’s intent for contractor to perform pier drilling during the University winter break from 6:00am December 15, 2016 through 6:00am January 18, 2017 due to the excessive noise associated with the drilling process. Foundation, drilled piers, concrete, reinforcement and related shop drawings and submittals must be submitted within one week of notice to proceed in an effort to perform work during this period.

18.2 When Bonds Are Due: Re: Uniform General and Supplementary Conditions, Paragraph 5.1.3.2. Delete paragraph 5.1.3.2 in its entirety and insert the following in lieu thereof: “Payment and performance bonds are due within one day of Contractor’s receipt of a fully executed Contract on competitively bid or competitively sealed proposal projects.”

19. **COLOR AND MATERIAL SELECTIONS**

19.1 No color selections and no material selections will be made by the ODR until the Contractor submits all samples of all materials requiring color selections to the ODR or A/E (if applicable). In addition, prior to the ODR selection colors, the Contractor shall certify in writing that all colors and samples submitted are current, acceptable, and available to the Contractor for TAMU’s selection.

19.2 Any samples that are not applicable to the work shall be carefully removed from the submittal by the Contractor. The Contractor shall submit the manufacturer’s full range of applicable colors, patterns, and textures for the various materials that are required by the contract.
19.3 In the event that discontinued, non-current, or non-applicable colors, textures, or samples are submitted by the Contractor and their selection is made by the ODR, the Contractor shall immediately notify ODR of all associated delays required to resubmit and approve alternate materials.

20. **RIGHT TO AUDIT** The ODR shall have the right to verify and audit the details of Contractor’s and subcontractor’s billings, certificates, accountings, cost data, and statements, either before or after payment, by (1) inspecting the books and records of the Contractor and subcontractor’s during normal business hours; (2) examining any reports with respect to the Project Work; (3) interviewing Contractor’s and subcontractor’s employees; and (4) any other reasonable action. Contractor’s and subcontractor’s records shall be kept on the basis of generally accepted accounting principles in accordance with cost accounting standards issued by the Federal Office of Management and Budget Cost Accounting Standards Board and organized by each Application for Payment period.

(SEE ATTACHED - 21. SPECIAL FEMA REQUIREMENTS)

Requirements under the Uniform Rules. A non-Federal entity’s contracts must contain the applicable contract clauses described in Appendix II to the Uniform Rules (Contract Provisions for non-Federal Entity Contracts Under Federal Awards), which are set forth below. 2 C.F.R. § 200.326. For some of the required clauses we have included sample language or a reference a non-Federal entity can go to in order to find sample language. Please be aware that this is sample language only and that the non-Federal entity alone is responsible ensuring that all language included in their contracts meets the requirements of 2 C.F.R. § 200.326 and 2 C.F.R. Part 200, Appendix II. We do not include sample language for certain required clauses (remedies, termination for cause and convenience, changes) as these must necessarily be written based on the non-Federal entity’s own procedures in that area.

1. Remedies.

   a. **Standard**: Contracts for more than the simplified acquisition threshold ($150,000) must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate. See 2 C.F.R. Part 200, Appendix II, ¶ A.

   b. **Applicability**: This requirement applies to all FEMA grant and cooperative agreement programs.

2. Termination for Cause and Convenience.

   a. All contracts in excess of $10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement. See 2 C.F.R. Part 200, Appendix II, ¶ B.

   b. **Applicability**. This requirement applies to all FEMA grant and cooperative agreement programs.


b. Key Definitions.

(1) Federally Assisted Construction Contract. The regulation at 41 C.F.R. § 60-1.3 defines a “federally assisted construction contract” as any agreement or modification thereof between any applicant and a person for construction work which is paid for in whole or in part with funds obtained from the Government or borrowed on the credit of the Government pursuant to any Federal program involving a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, or any application or modification thereof approved by the Government for a grant, contract, loan, insurance, or guarantee under which the applicant itself participates in the construction work.

(2) Construction Work. The regulation at 41 C.F.R. § 60-1.3 defines “construction work” as the construction, rehabilitation, alteration, conversion, extension, demolition or repair of buildings, highways, or other changes or improvements to real property, including facilities providing utility services. The term also includes the supervision, inspection, and other onsite functions incidental to the actual construction.

c. Applicability. This requirement applies to all FEMA grant and cooperative agreement programs.

d. The regulation at 41 C.F.R. Part 60-1.4(b) requires the insertion of the following contract clause:

“During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of
workers with which he has a collective bargaining agreement or
other contract or understanding, a notice to be provided advising the
said labor union or workers' representatives of the contractor's
commitments under this section, and shall post copies of the notice
in conspicuous places available to employees and applicants for
employment.

(4) The contractor will comply with all provisions of Executive Order 11246
of September 24, 1965, and of the rules, regulations, and relevant orders of
the Secretary of Labor.

(5) The contractor will furnish all information and reports required by
Executive Order 11246 of September 24, 1965, and by rules, regulations, and
orders of the Secretary of Labor, or pursuant thereto, and will permit access to
his books, records, and accounts by the administering agency and the
Secretary of Labor for purposes of investigation to ascertain compliance with
such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the
nondiscrimination clauses of this contract or with any of the said rules,
regulations, or orders, this contract may be canceled, terminated, or
suspended in whole or in part and the contractor may be declared ineligible
for further Government contracts or federally assisted construction contracts
in accordance with procedures authorized in Executive Order 11246 of
September 24, 1965, and such other sanctions as may be imposed and
remedies invoked as provided in Executive Order 11246 of September 24,
1965, or by rule, regulation, or order of the Secretary of Labor, or as
otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately
preceding paragraph (1) and the provisions of paragraphs (1) through (7) in
every subcontract or purchase order unless exempted by rules, regulations, or
orders of the Secretary of Labor issued pursuant to section 204 of Executive
Order 11246 of September 24, 1965, so that such provisions will be binding
upon each subcontractor or vendor. The contractor will take such action with
respect to any subcontract or purchase order as the administering agency may
direct as a means of enforcing such provisions, including sanctions for
noncompliance: Provided, however, That in the event a contractor becomes
involved in, or is threatened with, litigation with a subcontractor or vendor as
a result of such direction by the administering agency the contractor may
request the United States to enter into such litigation to protect the interests of
the United States."

4. **Davis Bacon Act and Copeland Anti-Kickback Act.**

   a. **Applicability of Davis-Bacon Act.** The Davis-Bacon Act only applies to the
      emergency Management Preparedness Grant Program, Homeland Security Grant
      Program, Nonprofit Security Grant Program, Tribal Homeland Security Grant
      Program, Port Security Grant Program, and Transit Security Grant Program. **It
does not apply to other FEMA grant and cooperative agreement programs, including the Public Assistance Program.**

c. In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week.

d. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

e. In contracts subject to the Davis-Bacon Act, the contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations at 29 C.F.R. Part 3 (Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States). The Copeland Anti-Kickback Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to FEMA.

f. The regulation at 29 C.F.R. § 5.5(a) does provide the required contract clause that applies to compliance with both the Davis-Bacon and Copeland Acts. However, as discussed in the previous subsection, the Davis-Bacon Act does not apply to Public Assistance recipients and subrecipients. **In situations where the Davis-Bacon Act does not apply, neither does the Copeland “Anti-Kickback Act.”** However, for purposes of grant programs where both clauses do apply, FEMA requires the following contract clause:

“Compliance with the Copeland “Anti-Kickback” Act.

(1) Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

(2) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as the FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

(3) Breach. A breach of the contract clauses above may be grounds for
termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.”

5. **Contract Work Hours and Safety Standards Act.**

   a. **Applicability:** This requirement applies to all FEMA grant and cooperative agreement programs.

   b. Where applicable (see 40 U.S.C. § 3701), all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5. See 2 C.F.R. Part 200, Appendix II, ¶ E.

   c. Under 40 U.S.C. § 3702, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the workweek.

   d. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

   e. The regulation at 29 C.F.R. § 5.5(b) provides the required contract clause concerning compliance with the Contract Work Hours and Safety Standards Act:

   “Compliance with the Contract Work Hours and Safety Standards Act.

   (1) **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

   (2) **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in
paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) **Withholding for unpaid wages and liquidated damages.** The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.”

6. **Rights to Inventions Made Under a Contract or Agreement.**

   a. **Stafford Act Disaster Grants.** This requirement does not apply to the Public Assistance, Hazard Mitigation Grant Program, Fire Management Assistance Grant Program, Crisis Counseling Assistance and Training Grant Program, Disaster Case Management Grant Program, and Federal Assistance to Individuals and Households – Other Needs Assistance Grant Program, as FEMA awards under these programs do not meet the definition of “funding agreement.”

   b. If the FEMA award meets the definition of “funding agreement” under 37 C.F.R. § 401.2(a) and the non-Federal entity wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the non-Federal entity must comply with the requirements of 37 C.F.R. Part 401 (Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements), and any implementing regulations issued by FEMA. See 2 C.F.R. Part 200, Appendix II, ¶ F.

c. The regulation at 37 C.F.R. § 401.2(a) currently defines “funding agreement” as any contract, grant, or cooperative agreement entered into between any Federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal government. This term also includes any assignment,
substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a funding agreement as defined in the first sentence of this paragraph.

7. **Clean Air Act and the Federal Water Pollution Control Act.** Contracts of amounts in excess of $150,000 must contain a provision that requires the contractor to agree to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387). Violations must be reported to FEMA and the Regional Office of the Environmental Protection Agency. See 2 C.F.R. Part 200, Appendix II, ¶ G.

   a. The following provides a sample contract clause concerning compliance for contracts of amounts in excess of $150,000:

   **“Clean Air Act**

   (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

   (2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

   (3) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

   **Federal Water Pollution Control Act**

   (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

   (2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

   (3) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with
Federal assistance provided by FEMA.”

8. Debarment and Suspension.

a. **Applicability:** This requirement applies to all FEMA grant and cooperative agreement programs.


c. These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities. See 2 C.F.R. Part 200, Appendix II, ¶ H; and *Procurement Guidance for Recipients and Subrecipients Under 2 C.F.R. Part 200 (Uniform Rules): Supplement to the Public Assistance Procurement Disaster Assistance Team (PDAT) Field Manual* Chapter IV, ¶ 6.d, and Appendix C, ¶ 2 [hereinafter *PDAT Supplement*]. A contract award must not be made to parties listed in the SAM Exclusions. SAM Exclusions is the list maintained by the General Services Administration that contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. SAM exclusions can be accessed at [www.sam.gov](http://www.sam.gov). See 2 C.F.R. § 180.530; *PDAT Supplement*, Chapter IV, ¶ 6.d and Appendix C, ¶ 2.

d. In general, an “excluded” party cannot receive a Federal grant award or a contract within the meaning of a “covered transaction,” to include subawards and subcontracts. This includes parties that receive Federal funding indirectly, such as contractors to recipients and subrecipients. The key to the exclusion is whether there is a “covered transaction,” which is any nonprocurement transaction (unless excepted) at either a “primary” or “secondary” tier. Although “covered transactions” do not include contracts awarded by the Federal Government for purposes of the nonprocurement common rule and DHS’s implementing regulations, it does include some contracts awarded by recipients and subrecipient.

e. Specifically, a covered transaction includes the following contracts for goods or services:

   (1) The contract is awarded by a recipient or subrecipient in the amount of at least $25,000.

   (2) The contract requires the approval of FEMA, regardless of amount.

   (3) The contract is for federally-required audit services.

   (4) A subcontract is also a covered transaction if it is awarded by the contractor of a recipient or subrecipient and requires either the approval of FEMA or is in excess of $25,000.
d. The following provides a debarment and suspension clause. It incorporates an optional method of verifying that contractors are not excluded or disqualified:

“Suspension and Debarment

(1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the contractor is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

(2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by (insert name of subrecipient). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (name of state agency serving as recipient and name of subrecipient), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.”


a. Applicability: This requirement applies to all FEMA grant and cooperative agreement programs.

b. Contractors that apply or bid for an award of $100,000 or more must file the required certification. See 2 C.F.R. Part 200, Appendix II, ¶ I; 44 C.F.R. Part 18; PDAT Supplement, Chapter IV, 6.c; Appendix C, ¶ 4.


d. The following provides a Byrd Anti-Lobbying contract clause:

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.”

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be submitted with each bid or offer exceeding $100,000)

The undersigned [Contractor] certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352
(as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor,____________________, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to this certification and disclosure, if any.

______________________________
Signature of Contractor’s Authorized Official

______________________________
Name and Title of Contractor’s Authorized Official

______________________________
Date”


a. Applicability: This requirement applies to all FEMA grant and cooperative agreement programs.


c. The requirements of Section 6002 include procuring only items designated in guidelines of the EPA at 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired by the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

d. The following provides the clause that a state agency or agency of a political subdivision of a state and its contractors can include in contracts meeting the above contract thresholds:

“(1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—"
(i) Competitively within a timeframe providing for compliance with the contract performance schedule;

(ii) Meeting contract performance requirements; or

(iii) At a reasonable price.

(2) Information about this requirement, along with the list of EPA-designate items, is available at EPA’s Comprehensive Procurement Guidelines web site, https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program.”

11. Additional FEMA Requirements.

a. The Uniform Rules authorize FEMA to require additional provisions for non-Federal entity contracts. FEMA, pursuant to this authority, requires or recommends the following:

b. Changes.

To be eligible for FEMA assistance under the non-Federal entity’s FEMA grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope. FEMA recommends, therefore, that a non-Federal entity include a changes clause in its contract that describes how, if at all, changes can be made by either party to alter the method, price, or schedule of the work without breaching the contract. The language of the clause may differ depending on the nature of the contract and the end-item procured.


All non-Federal entities must place into their contracts a provision that all contractors and their successors, transferees, assignees, and subcontractors acknowledge and agree to comply with applicable provisions governing Department and FEMA access to records, accounts, documents, information, facilities, and staff. See DHS Standard Terms and Conditions, v 3.0, ¶ XXVI (2013).

d. The following provides a contract clause regarding access to records:

“Access to Records. The following access to records requirements apply to this contract:

(1) The contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.”

12. **DHS Seal, Logo, and Flags.**
   a. All non-Federal entities must place in their contracts a provision that a contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval. See DHS Standard Terms and Conditions, v 3.0, ¶ XXV (2013).
   b. The following provides a contract clause regarding DHS Seal, Logo, and Flags: “The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.”

13. **Compliance with Federal Law, Regulations, and Executive Orders.**
   a. All non-Federal entities must place into their contracts an acknowledgement that FEMA financial assistance will be used to fund the contract along with the requirement that the contractor will comply with all applicable federal law, regulations, executive orders, and FEMA policies, procedures, and directives.
   b. The following provides a contract clause regarding Compliance with Federal Law, Regulations, and Executive Orders: “This is an acknowledgement that FEMA financial assistance will be used to fund the contract only. The contractor will comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.”

14. **No Obligation by Federal Government.**
   a. The non-Federal entity must include a provision in its contract that states that the Federal Government is not a party to the contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.
   b. The following provides a contract clause regarding no obligation by the Federal Government: “The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.”

15. **Program Fraud and False or Fraudulent Statements or Related Acts.**
   a. The non-Federal entity must include a provision in its contract that the contractor
acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to its actions pertaining to the contract.

b. The following provides a contract clause regarding Fraud and False or Fraudulent or Related Acts: “The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor’s actions pertaining to this contract.”
SECTION 02 4100 - DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.2 REFERENCE STANDARDS


PART 2 - PRODUCTS -- NOT USED

PART 3 - EXECUTION

3.1 SCOPE

A. Remove existing roof and supporting structure as indicated.
B. Remove other items indicated for salvage.

3.2 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Comply with applicable requirements of NFPA 241.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   6. Do not close or obstruct roadways or sidewalks without permit.
   7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   8. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
   9. Comply with applicable requirements and obtain applicable FAA and Naval Air Station Corpus Christi permits for all work on site.
B. Do not begin removal until receipt of notification to proceed from Owner.

C. Do not begin removal until built elements to be salvaged or relocated have been removed.

D. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

E. Minimize production of dust due to demolition operations; do not use water if that will result in flooding, sedimentation of public waterways or storm sewers, or other pollution.

F. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB’s, and mercury.

G. Contractor is responsible for keeping dust and debris associated with the work from falling from the building or leaving the area of work. This includes the control of windborne dust and debris. A debris containment and mitigation plan shall be established by the contractor and maintained through the remainder of the work.

3.3 EXISTING UTILITIES

A. Protect existing utilities to remain from damage.

B. Do not disrupt public utilities without permit from authority having jurisdiction.

C. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

D. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

3.4 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as shown.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from other areas that are still occupied.
C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

D. Remove existing work as indicated and as required to accomplish new work.
   1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
   2. Remove items indicated on drawings.

E. Services (Including but not limited to HVAC and Electrical): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment; remove back to source of supply where possible, otherwise cap stub and tag with identification.

F. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

3.5 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION
SECTION 06 1000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION INCLUDES
   A. Rough opening framing for roof openings.

1.2 RELATED REQUIREMENTS
   A. Section 07 7200 - Roof Accessories: Prefabricated roof hatches.

1.3 REFERENCE STANDARDS
   A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel
      Hardware; 2009.
   B. PS 20 - American Softwood Lumber Standard; National Institute of Standards and
      Technology, Department of Commerce; 2010.

1.4 DELIVERY, STORAGE, AND HANDLING
   A. General: Cover wood products to protect against moisture. Support stacked products to
      prevent deformation and to allow air circulation.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS
   A. Dimension Lumber: Comply with PS 20 and requirements of specified grading
      agencies.
      1. Species: Douglas Fir-Larch, unless otherwise indicated.
      2. If no species is specified, provide any species graded by the agency specified; if no
         grading agency is specified, provide lumber graded by any grading agency meeting the
         specified requirements.
      3. Grading Agency: Any grading agency whose rules are approved by the Board of Review,
         American Lumber Standard Committee (www.alsc.org) and who provides grading
         service for the species and grade specified; provide lumber stamped with grade mark
         unless otherwise indicated.
   B. Lumber fabricated from old growth timber is not permitted.

2.2 DIMENSION LUMBER FOR CONCEALED APPLICATIONS
   A. Sizes: Nominal sizes as indicated on drawings, S4S.
   B. Cut and formed as indicated in drawings
   C. Moisture Content: S-dry or MC19.
D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.

2.3 ACCESSORIES

A. Fasteners and Anchors:
   2. FM Approved Stainless Steel at exposed locations.

2.4 FACTORY WOOD TREATMENT

A. Pressure Treatment: Unless otherwise stipulated, all lumber and plywood shall be pressure treated.

B. Treating solutions:
   1. Copper azole, Type A (CBA-A).
   2. Inorganic boron (SBX).

C. Waterborne Treatment: All water-borne treatment methods require incising of lumber of nominal 2 inch thickness (1-1/2 inches actual dimension).
   1. CBA-A: Treatment methods, depth of penetration and treating solution retention shall conform to AWPA C2 for lumber and C9 for plywood.
   2. SBX: Treatment method shall conform to AWPA C31. Treating solution retention shall be a minimum of 0.28 pounds per cubic foot (equivalent to 0.42 DOT).

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate installation of rough carpentry members specified in other sections and indicated in the drawings.

3.2 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.3 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support
finishes, fixtures, specialty items, and trim.

B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.

C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.

3.4 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

B. Provide wood curb at all roof openings except where prefabricated curbs are specified and where specifically indicated otherwise. Form corners by alternating lapping side members.

3.5 SITE APPLIED WOOD TREATMENT

A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.

B. Allow preservative to dry prior to erecting members.

3.6 CLEANING

A. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.

B. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION
SECTION 07 0150 - PREPARATION FOR REROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 00 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Section Includes:
      1. Full tear-off of entire roof system.
      2. Re-cover preparation of entire roof area.
      4. Temporary roofing.

1.3 DEFINITIONS
   A. EPS: Molded (expanded) polystyrene.
   B. Full Roof Tear-off: Removal of existing roofing system down to existing concrete fill at Performance Hall and down to metal roof deck at Mechanical building.
   C. OSB: Oriented strand board.
   D. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS
   A. Preliminary Roofing Conference: Before starting existing roofing removal Work, Owner shall require a pre-construction conference at on-campus location and time to be determined by ODR.
      1. Meet with Owner, ODR, Architect, Owner's insurer, testing and inspecting agency representative, roofing Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
      2. Review methods and procedures related to roofing tear-off, including, but not limited to, the following:
         a. Reroofing preparation, including roofing system manufacturer's written instructions.
         b. Temporary protection requirements for existing roofing system components that are to remain.
c. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to avoid delays.
e. Existing roof deck conditions requiring Architect notification.
f. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
g. Structural loading limitations of roof deck during reroofing.
h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
i. Governing regulations and requirements for insurance and certificates if applicable.
j. Existing conditions that may require Architect notification before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces that might be misconstrued as having been damaged by reroofing operations.

1. Submit before Work begins.

B. Landfill Records: Indicate receipt and acceptance of demolished roofing materials and hazardous wastes, if applicable, by a landfill facility licensed to accept them.

1.6 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Comply with governing EPA notification regulations before beginning roofing removal.
2. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.7 FIELD CONDITIONS

A. Existing Roofing System: The Existing roof system to be removed is believed to be APP-modified bituminous, or SBS-modified bituminous roofing. Contractor is responsible for visiting the project site and confirming the specific make-up of the modified roof system if necessary prior to demolition.

B. Owner will continuously occupy the entire building during the re-roofing process.

1. Conduct reroofing so Owner's operations within the project building, in adjacent buildings, and on the surrounding campus are not disrupted.
2. Provide Owner with not less than 72 hours' written notice of activities that may affect Owner's operations.
3. Coordinate work activities daily with Owner. It is presumed by the Owner that this project will be executed without need to suspend regular activities. Should any so Owner has adequate advance notice to place protective dust and water-leakage covers
over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.

4. Should Contractor uncover any roof deck appearing to be structurally compromised, all work on the roof shall be immediately suspended and the Owner and building occupants notified shall be notified of the concern.

   a. Architect and ODR shall be notified of findings prior to proceeding with work in any areas.

C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.

D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

E. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.

   1. Construction Drawings for existing roofing system are available for Contractor's convenience and information, but they are not a warranty of existing conditions. They are intended to supplement rather than serve in lieu of Contractor's own investigations. Contractor is responsible for conclusions derived from existing documents.

F. Limit construction loads on existing roof areas to remain, and existing roof areas scheduled to be reroofed to 1000 pounds for rooftop equipment wheel loads and 20 pounds per square foot for uniformly distributed loads.

G. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

   1. Remove only as much roofing in one day as can be made watertight in the same day.

H. Hazardous Materials: It is not expected that hazardous materials, such as asbestos-containing materials, will be encountered in the Work.

   1. Hazardous materials will be removed by Owner before start of the Work.
   2. Existing roof will be left no less watertight than before removal.
   3. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner.

      a. Hazardous materials will be removed by Owner under a separate contract.

PART 2 - PRODUCTS

2.1 TEMPORARY ROOFING MATERIALS

A. Design and selection of materials for temporary roofing are Contractor's responsibilities.
2.2  INFILL AND REPLACEMENT MATERIALS

A.  Use infill materials matching existing roofing system materials unless otherwise indicated.

1.  Infill materials are specified in Section 075216 "Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing unless otherwise indicated.

B.  Wood blocking, curbs, and nailers are specified in Section 061000 “Rough Carpentry.”

C.  Parapet Sheathing: At areas requiring replacement of parapet sheathing replace with one of two materials indicated below that is most similar to the existing material.

1.  ASTM C1177/C1177M or ASTM C1278/C1278M water-resistant gypsum substrate 1/2 inch thick.
2.  Exterior fire-retardant-treated plywood wall sheathing, 19/32 inch thick,

D.  Fasteners: Factory-coated steel fasteners with metal or plastic plates listed in FM Approvals' RoofNav, and acceptable to new roofing system manufacturer.

2.3  AUXILIARY REROOFING MATERIALS

A.  General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new roofing system.

PART 3 - EXECUTION

3.1  PREPARATION

A.  Seal or isolate windows that may be exposed to airborne substances created in removal of existing materials.

B.  Prevent debris from entering mechanical louvers and intakes without restricting airflow to same louvers and intakes.

C.  Shut off rooftop utilities and service piping before beginning the Work.

D.  Test existing roof drains to verify that they are not blocked or restricted.

1.  Immediately notify Architect of any blockages or restrictions.

E.  During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

F.  Maintain roof drains in functioning condition to ensure roof drainage at end of each workday.

1.  Prevent debris from entering or blocking roof drains and conductors.

   a.  Use roof-drain plugs specifically designed for this purpose.
b. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

2. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.
   a. Do not permit water to enter into or under existing roofing system components that are to remain.

3.2 ROOF TEAR-OFF
   A. Full Roof Tear-off: Remove existing roofing and other roofing system components down to the existing concrete fill.
      1. Remove any and all substrate board, vapor retarder, roof insulation, and, cover board.
      2. Remove base flashings and counter flashings.
      3. Remove perimeter edge flashing and gravel stops.
      4. Remove copings.
      5. Remove expansion-joint covers.
      6. Remove flashings at pipes, curbs, mechanical equipment, and other penetrations.
      7. Remove all roof drain clamp rings and strainer baskets.
      8. Remove wood blocking, curbs, and nailers if split, rotted or otherwise structurally deteriorated condition.
      9. Remove fasteners from deck or cut fasteners off slightly above deck surface.

3.3 DECK PREPARATION
   A. Inspect deck after tear-off of roofing system.
   B. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify Architect.
      1. Do not proceed with installation until directed by Architect.
   C. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect.
      1. Do not proceed with installation until directed by Architect.
   D. Provide additional deck securement as indicated on Drawings.
   E. Replace steel deck as indicated on Drawings.
   F. Replace steel deck as directed by Architect.
      1. Deck replacement will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.
G. Prepare and paint steel deck surface.
   1. Painting and preparation for painting is specified in Section 099113 "Exterior Painting."

H. Replace plywood roof sheathing as indicated on Drawings.

I. Replace plywood roof sheathing as directed by Architect.
   1. Roof sheathing replacement will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

3.4 INFILL MATERIALS INSTALLATION

A. Immediately after roof tear-off, and inspection and repair, if needed, of deck, fill in tear-off areas to match existing roofing system construction.
   1. Installation of infill materials is specified in Section 07 5216 Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing.
   2. Installation of wood blocking, curbs, and nailers is specified in Section 06 1000 Rough Carpentry.

B. Install new roofing patch over roof infill area.
   1. If new roofing is installed the same day tear-off is made, roofing patch is not required.

3.5 TEMPORARY ROOFING

A. Install approved temporary roofing over area to be reroofed.

B. Install temporary roofing over area to be reroofed.
   1. Install two glass-fiber felts or Mechanically fasten base sheet and install a glass-fiber felt, lapping each sheet 19 inches over preceding sheet.
   2. Embed glass-fiber felt in a solid mopping of hot roofing asphalt applied within equiviscous temperature range.
   3. Glaze-coat completed surface with hot roofing asphalt.

C. Remove temporary roofing before installing new roofing.

D. Prepare temporary roof to receive new roofing according to approved temporary roofing proposal.
   1. Restore temporary roofing to watertight condition.
   2. Obtain approval for temporary roof substrate from roofing manufacturer and Architect before installing new roof.
3.6 ROOF RE-COVER PREPARATION

A. Remove blisters, ridges, buckles, mechanically attached roofing fastener buttons projecting above roofing, and other substrate irregularities from existing roofing that inhibit new recover boards from conforming to substrate.

1. Remove loose aggregate from aggregate-surfaced, built-up bituminous roofing with a power broom.
2. Scarify surface of sprayed polyurethane foam as necessary to achieve a sufficiently uniform plane to receive new recover boards.
3. Broom clean existing substrate.
4. Coordinate with Owner's inspector to schedule times for tests and inspections.
5. Verify that existing substrate is dry.
   a. Spot check substrates with an electrical capacitance moisture-detection meter.
6. Remove materials that are wet or damp.
   a. Removal will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

B. Remove blisters, ridges, buckles, mechanically attached roofing fastener buttons projecting above roofing, and other substrate irregularities from existing roofing that inhibit new recover boards or roofing from conforming to substrate.

1. Remove loose aggregate from aggregate-surfaced, built-up bituminous roofing with a power broom.
2. Shave surface of sprayed polyurethane foam as necessary to achieve a sufficiently uniform plane to receive new recover boards or roofing.
3. Broom clean existing substrate.
4. Coordinate with Owner's inspector to schedule times for tests and inspections.
5. Verify that existing substrate is dry before proceeding with installation.
   a. Spot check substrates with an electrical capacitance moisture-detection meter.
6. Remove materials that are wet and damp.
   a. Removal will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

C. Remove blisters and areas of roofing not fully adhered.

D. Remove mechanically attached roofing fastener buttons projecting above roofing and other substrate irregularities that inhibit new recover boards from conforming to substrate.

1. Remove loose aggregate from aggregate-surfaced, built-up bituminous roofing with a power broom.
2. Clean substrate of contaminants, such as dirt, debris, oil, and grease that can affect adhesion of coated foamed roofing.
3. Power vacuum the existing roof surface.
a. If recommended by foam manufacturer, prime dried surface at recommended rate with recommended primer.

4. Scarify surface of coated polyurethane roofing as necessary to achieve a suitable substrate for new roofing.

5. Provide additional uplift securement for existing roofing system with new screws and plates applied as required to each roof zone indicated in the drawings.

6. Verify that surface is dry by pressing litmus paper to surface areas most likely to retain moisture, such as shaded areas and low spots.
   a. If paper changes color, surface is too wet to apply foam.

7. Build up isolated low spots on existing roofing with sprayed foam specified in Section 075700 "Coated Foamed Roofing" to prevent ponding.

3.7 BASE FLASHING REMOVAL

A. Remove existing base flashings.
   1. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.

B. Do not damage metal counterflashings that are to remain.
   1. Replace metal counterflashings damaged during removal with counterflashings specified in Section 07 6200 "Sheet Metal Flashing and Trim."

C. Inspect parapet sheathing, wood blocking, curbs, and nailers for deterioration and damage.
   1. If parapet sheathing, wood blocking, curbs, or nailers have deteriorated, immediately notify Architect.

D. Remove existing parapet sheathing and replace with new parapet sheathing to comply with Section 061600 "Sheathing."
   1. If parapet framing, wood blocking, curbs, or nailers have deteriorated, immediately notify Architect.

E. When directed by Architect, replace parapet framing, wood blocking, curbs, and nailers to comply with Section 06 1000 "Rough Carpentry."

3.8 FASTENER PULL-OUT TESTING

A. Perform fastener pull-out tests according to SPRI FX-1, and submit test report to Architect and roofing manufacturer before installing new roofing system.
   1. Obtain roofing manufacturer's and FM Global approval to proceed with specified fastening pattern.
a. Roofing manufacturer and/or FM Global may furnish revised fastening pattern commensurate with pull-out test results.

3.9 DISPOSAL

A. Collect demolished materials and place in containers.
   1. Promptly dispose of demolished materials.
   2. Do not allow demolished materials to accumulate on-site.
   3. Storage or sale of demolished items or materials on-site is not permitted.

B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 07 0150
SECTION 07 4213 - FORMED METAL WALL PANELS

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY
A. Section Includes:
   1. Exposed-fastener, lap-seam metal wall panels.

1.3 PREINSTALLATION MEETINGS
A. Preinstallation Conference: Conduct conference at Project site.
   1. Meet with Owner, Architect, Contractor, and Installer.
   2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   3. Review methods and procedures related to metal panel installation, including manufacturer's written instructions.
   4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
   5. Review details and verify existing conditions.
   6. Review adjacent existing panels for tie-in conditions.
   7. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.
   9. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.4 ACTION SUBMITTALS
A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:
   1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, anchorages, attachment system, trim, flashings, closures, and accessories; and special details required for complete assembly.

C. Samples for Verification: For each type of exposed finish, prepared on Samples of size indicated below:
1. Metal Panels: 12 inches (305 mm) long by actual panel width. Include fasteners, closures, and other metal panel accessories.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.
B. Product Test Reports: For each product, for tests performed by a qualified testing agency.
C. Field quality-control reports.
D. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal panels to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work where applicable.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
D. Retain strippable protective covering on metal panels during installation.
E. Copper Panels: Wear gloves when handling to prevent fingerprints and soiling of surface.
1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.10 COORDINATION

A. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.11 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship 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 and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal 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. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
   b. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:

1. Wind Loads: As indicated on Drawings.
2. FM Requirements as indicated on Drawings.
3. Deflection Limits: For wind loads, no greater than 1/180 of the span.

B. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E331 at the following test-pressure difference:
1. Test-Pressure Difference: 2.86 lbf/sq. ft. (137 Pa).

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient.

D. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 EXPOSED-FASTENER, LAP-SEAM METAL WALL PANELS

A. General: Provide factory-formed metal panels designed to be field assembled by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps. Include accessories required for weathertight installation.

B. Match existing aluminum panel pattern, profile, gauge, and finish.

1. Aluminum Sheet: ASTM B209: Match existing aluminum panel dimpled pattern, profile, gauge, and finish.

2. Additive Alternate No. 2 and Additive Alternate No. 3: Stainless-Steel Sheet: ASTM A240/A240M, Type 316L, fully annealed.
   a. Nominal Thickness: 0.031 inch (0.79 mm).
   b. Exterior Finish: No. 3 polish

2.3 MISCELLANEOUS MATERIALS

A. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Closures: Provide closures at eaves and rakes, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
4. Repair existing exterior sheathing substrate as required.
5. Repair or touch-up existing weather / air barrier with compatible fluid applied product as required.
B. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

C. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed 316 stainless steel fasteners to match existing. Provide EPDM or PVC sealing washers for exposed fasteners.

D. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
   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 (13 mm) wide and 1/8 inch (3 mm) thick.
   2. Joint Sealant: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.

2.4 FABRICATION

A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to 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.
3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

4. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.

5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.

6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

   a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal wall panel manufacturer for application but not less than thickness of metal being secured.

2.5 FINISHES

A. Finish to match existing.

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: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other 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 panel supports, and other conditions affecting performance of the Work.

1. Examine existing wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal wall panel manufacturer.

2. Examine existing wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal wall panel manufacturer.

   a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration. Touch-up existing air barrier as required with compatible fluid applied membrane.

B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

3.3 METAL PANEL INSTALLATION

A. General: Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Use stainless-steel fasteners for surfaces exposed to the exterior; match existing fasteners in profile.

C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

D. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

1. Lap ribbed or fluted sheets one full rib. Apply panels and associated items true to line for neat and weathertight enclosure.
2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
5. Flash and seal panels with weather closures at perimeter of all openings.

E. Watertight Installation:

1. Apply a continuous ribbon of sealant or tape to seal lapped joints of metal panels, using sealant or tape as recommend by manufacturer on side laps of nesting-type panels; and elsewhere as needed to make panels watertight.
2. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
3. At panel splices, nest panels with minimum 6-inch (152-mm) end lap, sealed with sealant and fastened together by interlocking clamping plates.

3.4 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. After metal panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

C. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 4213
SECTION 07 5216.1 - SBS MODIFIED BITUMINOUS MEMBRANE ROOFING, TORCH-APPLIED – CONCRETE COMPOSITE DECK

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. Styrene-butadiene-styrene (SBS) modified bituminous membrane roofing system on concrete deck, including but not limited to:
      a. Roof membrane and membrane base flashings.
      b. Roof surfacing consisting of mineral granulated cap sheet.
   2. Removal of all abandoned piping, equipment and supports as required and patching or repair of the existing deck, structure and interior as required.
   3. All existing roof penetration flashings will be replaced with new roof penetration flashings; including but not limited to lead plumbing vent flashings, heater vents, gravity vents, pitch pans, and any other miscellaneous roof penetration flashings.
   4. Installation of proper pipe supports under all pipes and conduit on the roof. Install proper pads under all pipe supports.
   5. Substrate board.
   6. Vapor retarder.
   7. Roof insulation.
   8. Cover board.

B. Related Requirements:

   1. Section 06 1000 "Rough Carpentry" for wood nailers, curbs, and blocking, and for wood-based, structural-use roof deck panels.
   2. Section 07 6200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
   3. Section 07 7200 "Roof aaccessories" for roof hatch.
   4. Section 07 7129 "Manufactured Roof Expansion Joints" for premanufactured roof expansion-joint assemblies.
   5. Section 07 9200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
   6. Section 26 4100 "Lightning Protection" for lightning protection system.

1.3 FIRE WATCH

A. Provide fire watch during torch application and continue for two hours after torch work has been completed. All roof areas worked on should be checked for hot spots and signs of
smoldering. If available, infrared roof scanners should be used. The inside of the building shall also be inspected for signs of fire and smoke

B. When torch applied materials are installed the Contractor shall provide a fire watch.

C. Provide fire watch during torch application and continue for one hour after torch work has been completed. All roof areas worked on should be checked for hot spots and signs of smoldering. If available, infrared roof scanners should be used. The inside of the building should also be inspected for signs of fire and smoke

D. Provide at least two 10lb (4.5 kg) multipurpose dry chemical portable extinguisher within 20 ft. (6.1 m) horizontal travel distance of torch-applied roofing equipment.

E. No full-time torch shall be used under any circumstances.

1.4 DEFINITIONS

A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include plans, sections, details, and attachments to other work, including the following:
   1. Layout and thickness of insulation.
   2. Base flashings and membrane terminations.
   3. Flashing details at penetrations.
   4. Tapered insulation, including slopes.
   5. Crickets, saddles, and tapered edge strips, including slopes.
   6. Insulation & cover board fastening patterns for corner, perimeter, and field-of-roof locations.
   7. Tie-in with adjoining air barrier.
   8. Requirements of NRCA and FMG applicable to the drawings and this section.

C. Samples for Verification: For the following products:
   1. Cap Sheet: Samples of manufacturer's standard colors for selection by Owner.
   2. Flashing Sheet: Samples of manufacturer's standard colors for selection by Owner.
   3. Walkway Pads or Rolls: Samples of manufacturer's standard colors for selection by Architect.

D. Wind Uplift Resistance Submittal: For roofing system indicating compliance with wind uplift performance requirements.
1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates:
   1. Submit evidence of compliance with performance requirements, including FM Global system approval.
   2. Indicate that proposed system components are compatible.

C. Product Test Reports: For roof membrane and insulation, tests performed by a qualified testing agency, indicating compliance with specified requirements.

D. Evaluation Reports: For components of membrane roofing system, from ICC-ES.

E. Field Test Reports:
   1. Concrete internal relative humidity test reports.
   2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

F. Field quality-control reports.

G. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

C. Executed copies of warranties.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.
   1. Installer must provide (2) manufacturer inspections per week of work.

B. Manufacturer Qualifications: Approved manufacturer with FM Global approved roofing systems comparable to those specified for this Project, with minimum five years' experience in manufacture of comparable products in successful use in similar applications, and able to furnish warranty with provisions matching specified requirements.
1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
   a. Product data, including certified independent test data indicating compliance with requirements.
   b. Samples of each component.
   c. Sample submittal from similar project.
   d. Project references: Minimum of five installations of specified products not less than five years old, with Owner and Architect contact information.
   e. Sample warranty.

2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.

3. Approved manufacturers must meet separate requirements of Submittals Article.

C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
   1. An authorized full-time technical employee of the manufacturer.

D. Random Sampling
   1. During course of work, the Architect may secure samples according to ASTM D140-93 of materials being used from containers at job site and submit them to an independent laboratory for comparison to specified material.
   2. Should test results prove that material is not equal to specified material:
      a. Contractor shall pay for all testing.
      b. Roofing installed and found not to comply with the specifications shall be removed and replaced with no change in the contract price.

3. Installation quality control
   a. The roofing inspector shall provide written and photographic reports, to be submitted to the architect, owner, roof system installation contractor, appraising the installation of the roof system at each of the project progress stages. The installation contractor shall make all necessary corrections, additions or remedial actions to resolve any issues raised in the reports.
   b. The roofing inspector shall have the authority to have any and all roofing work corrected, as required, to insure the proper installation and weather-tightness of the roof system, in accordance with the manufacturer's specifications.

E. Windstorm Resistance Certification:
   1. Contractor will provide the Owner with certification by a Registered Professional Engineer that the new roofing construction described within these specifications and installed on the referenced project complies with the current Windstorm resistance requirements prescribed by the State Board of Insurance.

F. Manufacturer's Installation Instructions: Obtain and maintain on-site access to manufacturer's written instructions for installation of products.

G. Preinstallation Roofing Conference: Conduct conference at Project site.
   1. Meet with Owner, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and
installers whose work interfaces with or affects roofing, including installers of roof
accessories and roof-mounted equipment.
2. Review drawings and specifications.
3. Review methods and procedures related to roofing installation, including manufacturer's
written instructions.
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. Examine substrate conditions and finishes for compliance with requirements, including
flatness and fastening.
6. Review structural loading limitations of roof deck during and after roofing.
7. Review base flashings, special roofing details, roof drainage, roof penetrations,
equipment curbs, and condition of other construction that will affect roofing system.
8. Review governing regulations and requirements for insurance and certificates if
applicable.
9. Review temporary protection requirements for roofing system during and after
installation.
10. Review roof observation and repair procedures after roofing installation.

1.9 DELIVERY, STORAGE, AND HANDLING
A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled
with manufacturer's name, product brand name and type, date of manufacture, approval or
listing agency markings, and directions for storing and mixing with other components.
B. Store liquid materials in their original undamaged containers in a clean, dry, protected location
and within the temperature range required by roofing system manufacturer.
   1. Protect stored liquid material from direct sunlight.
   2. Discard and legally dispose of liquid material that cannot be applied within its stated
      shelf life.
C. Protect roof insulation materials from physical damage and from deterioration by sunlight,
moisture, soiling, and other sources.
   1. Store in a dry location.
   2. Comply with insulation manufacturer's written instructions for handling, storing, and
      protecting during installation.
D. Handle and store roofing materials, and place equipment in a manner to avoid permanent
deflection of deck.

1.10 FIELD CONDITIONS
A. Weather Limitations: Proceed with installation only when existing and forecasted weather
conditions permit roofing system to be installed according to manufacturer's written instructions
and warranty requirements.
B. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1. Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
3. Remove temporary plugs from roof drains at end of each day.
4. Remove and discard temporary seals before beginning work on adjoining roofing.

1.11 WARRANTY

A. Warranty, General: Warranties specified shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Manufacturer's Warranty: Manufacturer's standard or customized form, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.

1. Manufacturer's warranty includes roofing membrane, base flashings, fasteners, roofing membrane accessories and other components of roofing system specified in this Section.
2. Warranty Period: 15 years from date of Substantial Completion.

C. Installer's Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

D. Extended Roof System Warranty: Warranties specified in this Section include the following components and systems specified in other sections supplied by the roofing system Manufacturer, and installed by the roofing system Installer:

1. Sheet metal flashing and trim, including roof penetration flashings.
2. Roof and parapet expansion joint assemblies.

E. Manufacturer Inspection and Preventive Maintenance Requirement: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections and preventive maintenance is included in the Contract Sum.

1. Inspections to occur in the following years subsequent to completion: 2, 5 and 10.
PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing system and flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.

1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746/D3746M, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

C. Wind Uplift Resistance: Design roofing system to resist wind uplift when tested according to FM Approvals 4474, UL 580, or UL 1897.
1. All Zones (Corner, Perimeter, and Field-of-Roof) Uplift Pressures: As indicated on Drawings.

D. FM Global Compliance: Roofing, base flashings, and component materials shall comply with requirements in FM Global 4470 as part of a roofing system and shall be listed in FM Global's "RoofNav" or shall receive written FM Global project approval for Class 1 or non-combustible construction, as applicable. Identify applicable materials with FM Global markings.
1. Fire/Windstorm Classification: Class 1A--360.
2. Hail Resistance Rating: SH.

E. SPRI Wind Design Standard: Manufacture and install copings tested according to SPRI ES-1 and capable of resisting the following design pressures:
1. Design Pressure: As indicated on Drawings.

F. Flashings and Fastening: Comply with requirements of Division 07 Sections "Sheet Metal Flashing and Trim" and "Roof Specialties." Provide base flashings, perimeter flashings, detail flashings and component materials and installation techniques that comply with requirements and recommendations of the following:
1. FM Global 1-49: Loss Prevention Data Sheet for Perimeter Flashings.
2. FM Global 1-29: Loss Prevention Data Sheet for Above Deck Roof Components.
3. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.

G. Fire-Resistance Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

H. Solar Reflectance Index: Not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.
2.2 MANUFACTURERS

A. FM RoofNav Basis-of-Design: Assembly # 274767-373990-0.

IT IS THE BIDDERS RESPONSIBILITY TO READ AND UNDERSTAND THE TESTED ASSEMBLY. IF NEEDED A COPY OF THE TESTED CONSTRUCTION ASSEMBLY LISTED ABOVE CAN BE OBTAINED FROM THE SYSTEM MANUFACTURER.

B. Basis-of-Design Manufacturer/Product: The roof system specified in this Section is based upon products of Tremco, Inc., www.tremcoroofing.com, named in other Part 2 articles. Subject to compliance with requirements, provide the named product or an approved comparable product.

C. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer. Obtain components for roofing system compatible with FM approved assembly.

2.3 ROOFING MEMBRANE MATERIALS

A. Base Sheet:
   1. ASTM D 6164, Type I, Grade S SBS-modified asphalt-coated glass scrim, polyester reinforced sheet, smooth surfaced, polyolefin burn-off film
      a. Basis of design product: Johns Manville, DynaWeld 250 S

B. SBS Modified Bituminous Cap Sheet:
   1. ASTM D 6163 Type I Grade G SBS-modified asphalt-coated glass-fiber-reinforced sheet, granular surfaced with a factory applied white reflective granule; CRRC listed and California Title 24 Energy Code compliant.
      a. Basis of design product: Tremco, POWERply Standard FR GT24 HW.
      b. Exterior Fire-Test Exposure, ASTM E 108: Class A.
      c. Tensile Strength at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction 70 lbf/in (12.0 kN/m); Cross machine direction 50 lbf/in (8.8 kN/m).
      d. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction, 100 lbf (400 N); Cross machine direction 90 lbf (400 N).
      e. Elongation at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction 4 percent; Cross machine direction 4 percent.
      g. Thickness, minimum, ASTM D 5147: 0.165 inch (4.2 mm).

C. Base Flashing Backer Sheet:
   1. ASTM D 6164, Type I, Grade S SBS-modified asphalt-coated glass scrim, polyester reinforced sheet, smooth surfaced, polyolefin burn-off film
      a. Basis of design product: Johns Manville, DynaWeld 250 S

D. Base Flashing Sheet:
1. ASTM D 6163 Type I Grade G SBS-modified asphalt-coated glass-fiber-reinforced sheet, granular surfaced with a factory applied white reflective granule; CRRC listed and California Title 24 Energy Code compliant.
   a. Basis of design product: Tremco, POWERply Standard FR GT24 HW.
   b. Exterior Fire-Test Exposure, ASTM E 108: Class A.
   c. Tensile Strength at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction 70 lbf/in (12.0 kN/m); Cross machine direction 50 lbf/in (8.8 kN/m).
   d. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction, 100 lbf (400 N); Cross machine direction 90 lbf (400 N).
   e. Elongation at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction 4 percent; Cross machine direction 4 percent.
   g. Thickness, minimum, ASTM D 5147: 0.165 inch (4.2 mm).

E. Detailing Fabric:
1. Woven Glass Fiber Mesh, Vinyl-Coated: Non-shrinking, non-rotting, vinyl-coated woven glass mesh for reinforcing flashing seams, membrane laps, and other roof system detailing.
   a. Basis of design product: Tremco, BURmesh.
   b. Tensile strength, 70 deg. F, ASTM D 146: Warp, 65 lbf/in (289 N); fill, 75 lbf/in (311 N).

2.4 ASPHALT MATERIALS

A. Asphalt primer, water-based, polymer modified.
   1. Basis of design product: Tremco, TREMprime WB.
   2. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 2 g/L.

B. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.

2.5 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Metal Flashing Sheet: Metal flashing sheet is specified in Division 07 Section "Sheet Metal Flashing and Trim."

C. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.
1. Elastomeric Roofing Mastic, Low-Volatile: One-part, trowel-grade, elastomeric roof mastic specially formulated for compatibility and use with specified roofing membranes and flashings.
   a. Basis of design product: Tremco, POLYroof LV.
   b. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 300 g/L.
   d. Recovery from 500 percent Elongation, minimum, ASTM D 412: 500 percent.
   e. Flexibility at -40 deg. F (-40 deg. C), ASTM D 3111: No cracking.

2. Asphalt mastic for miscellaneous sealing and waterproofing:
   a. An asphalt-based, heavily fibrated, asbestos free mastic.
   b. Basis of Design: Tremco ELS.

3. Pitch pan mastic:
   a. High performance single component roof elastomer.
   b. Basis of Design: Tremco POLYroof LV

4. Metal Joint Sealant:
   a. Asbestos-free. Moisture cured, one-component polyurethane sealant.
   b. Basis of Design: TremSEAL Pro

5. Reglet Joint Sealant
   a. One-part, bituminous polyurethane sealant.

6. Vents and/or Stacks:
   a. Stainless: Type 316, No 3 Polish.
b. Gage: Twenty-four (24).

c. Solder: ASTM B32-89, alloy grade 60A. Neutralize flux after soldering.

7. Termination Bar for top edge of all base flashings:

   a. Extruded aluminum, pre-punched 8” o.c.

8. Primary Scuppers and Overflow Scuppers:

   a. Stainless Steel, Type 316, No 3 Polish Finish (all locations except those designated as copper): Twenty-four (24) gauge minimum, stainless steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527.

9. Fascia, Coping, Collector Heads, Gutters, Downspouts and other Visible Sheet Metal Flashing:

   a. Stainless Steel, Type 316, No 3 Polish Finish (all locations except those designated as copper): Twenty-four (24) gauge minimum, stainless steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527.

10. Counter flashing, slip flashing:

    a. Stainless Steel, Type 316, No 3 Polish Finish (all locations except those designated as copper): Twenty-four (24) gauge minimum, stainless steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527.

11. Pitch pans with hoods:

    a. Stainless Steel, Type 316 No 3 Polish: Twenty-four (24) gauge minimum, stainless steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527, G90 coating in accordance with ASTM A 525.

12. Walkway Pads for all access panels at all A/C units:
a. Mineral-surfaced asphaltic composition panels, factory formed, nonporous, with a slip-resisting surface texture, manufactured specifically for adhering to built-up roofing as a protection course for foot traffic:

1) Thickness: 1/2 inch

b. Basis of Design: Tremco TremTred.

13. Pipe Supports:

a. Pipe supports for small pipes and conduit:

1) Pipe or Conduit size: 1/4” to 1.5” ID
2) Rubber triangle pipe blocks extruded from 100% EPDM rubber.

b. Basis of Design: Rubber Triangle Pipe Blocks by Tremco or pre-approved substitution.

14. Pipe Supports for large pipes and conduit:

a. Pipe or Conduit size: 1.5” or larger ID

b. Galvanized roller pipe supports.

c. Basis of Design: SS8-R or RB-18 as applicable by PHP Pipe supports of Houston, TX or approved equal.

15. Primer:

a. An asbestos free, modified water-based asphalt primer

b. 2. Basis of Design: Tremco Tremprime WB.

16. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

17. Flashing tape for top edge of base flashing

a. A flexible, non-drying, butyl-based, gasket-forming sealant tape.
b. Basis of design: Tremco TF Tape

18. Reinforcement membrane:

a. A non-shrinking, non-rotting, vinyl coated, woven glass mesh.

b. Basis of Design: Tremco Burmesh - 6”.

D. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.6 INSULATION ADHESIVES

A. Two-Part Urethane Insulation Adhesive (UIA) is a two-component polyurethane adhesive used for attaching insulation boards to the roof deck or to other insulation boards

1. Basis of design product: Johns Manville, JM Two-Part Urethane Insulation Adhesive (UIA)

2.7 VAPOR RETARDER

A. ASTM D 6163 Type I Grade S SBS/SIS/SEBS-modified asphalt-coated glass-fiber reinforced sheet, smooth surfaced, designed for heat-welded applications.


2. Tensile Strength at 73 deg. F (23 deg. C), minimum, ASTM D 5147: 70 lbf/in (12.3 kN/m) machine direction; 50 lbf/in (8.8 kN/m) cross-machine direction.

3. Tear Strength at 73 deg. F (23 deg. C), minimum, ASTM D 5147: 100 lbf (445 N) machine direction; 80 lbf (400 N) machine direction.


6. Thickness, ASTM D 5147: 0.118 inch (3.0 mm).
2.8 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Global-approved roof insulation.

1. Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches (1:48) unless otherwise indicated. Ensure for a minimum tapered start thickness of 3.5”.

2. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

3. Provide minimum R-25 ci or applicable requirement of the 2018 IECC

B. Roof Insulation:

1. Polyisocyanurate board insulation, ASTM C 1289 Type II Class 1 CFC- and HCFC- free, with recycled content glass-fiber mat facer on both major surfaces.

   a. Basis of design product: Johns Manville.

   b. Conditioned Thermal Resistance at 75 deg. F (24 deg. C): 14.4 at 2.5 inches (50.8 mm) thick.


   d. Available Manufacturers

   e. Johns Manville; Enrgy 3, Tapered Enrgy 3, ValuTherm, See approved FM assembly for other approved insulations

C. Roof Insulation Cover Board:

1. Cellulosic fiber reinforced water-resistant gypsum panel, ASTM C 1278/C 1278M.

   a. Basis of design product: Tremco/USG Securock.

   b. Thickness: 1/2 inch (13 mm).

D. Wood Cant Strips: Comply with requirements in Division 06 carpentry section
E. Tapered Edge Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.

F. Substrate Joint Tape: Minimum 6 inch (150 mm) wide, coated, glass-fiber joint tape.

2.9 WALKWAYS

A. Walkway pads, ceramic-granule-suraced reinforced asphaltic composition slip-resisting pads, manufactured as a traffic pad for foot traffic, 1/2 inch (13 mm) thick minimum.

2. Flexural Strength at max. load, minimum, ASTM C 203: 210 psi (1.5 kPa).
5. Pad Size: 36 by 48 inch (914 by 1220 mm).

PART 3 - EXECUTION

1.2 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
2. Verify that, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation. wood cants
3. Concrete Roof Deck:
   a. Verify that minimum concrete drying period recommended by roofing manufacturer has passed.
   b. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
c. Test for moisture by pouring 1 pint (0.5 L) of hot roofing asphalt on deck at start of each day's work and at start of each roof area or plane. Do not proceed with roofing work if test sample foams or can be easily and cleanly stripped after cooling.

d. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.

4. Verify that existing insulation and substrate is sound and dry.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1.3 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Concrete Surface Priming: Prime surface of concrete deck with asphalt primer at a rate of application recommended in writing by manufacturer for substrate type and condition.

1.4 INSTALLATION, GENERAL

A. Install roofing system in accordance with manufacturer's recommendations.

B. Install wood cants, blocking, curbs, and nailers in accordance with requirements of Division 06 carpentry section.

C. Install roofing membrane, base flashings, wood cants, blocking, curbs, and nailers, and component materials in compliance with requirements in FM Global 4470 as part of a membrane roofing system as listed in FM Global's "Approval Guide" for fire/windstorm classification indicated. Comply with recommendations in FM Global Loss Prevention Data Sheet 1-49, including requirements for wood nailers and cants.

D. Install roofing system in accordance with the following NRCA Manual Plates and NRCA recommendations; modify as required to comply with requirements of FM Global references above:
1. Metal Parapet Cap (Coping) and Base Flashing: Plates MB-1 and MB-1S.
2. Surface-Mounted Counterflashing for Concrete Walls (at Parapet Wall): Plates MB-4 and MB-4S.
3. Base Flashing for Wall-supported Deck: Plates MB-5 and MB-5S.
4. Base Flashing for Non-wall-supported deck (Movement Joint): Plates MB-6 and MB-6S.
5. Base and Surface-mounted Counterflashing: Plates MB-4 and MB-4S.
6. Base Flashing for Vented Base Sheet: Plates MB-5A and MB-5AS.
7. Raised Perimeter Edge with Metal Flashing (Fascia Cap): Plates MB-2 and MB-2S.
8. Embedded Edge Metal Flashing Edge (Gravel-stop): Plates MB-3 and MB-3S.
10. Gutter at Draining Edge: Plates MB-22 and MB-22S.
11. Expansion Joint with Metal Cover: Plates MB-7 and MB-7S and Division 07 Section "Sheet Metal Flashing and Trim."
12. Expansion Joint with Premanufactured Cover: Plates MB-7A and MB-7AS and Division 07 Section "Roof Expansion Assemblies."
13. Area Divider in Roof System: Plates MB-8 and MB-8S.
14. Equipment Support Curb: Plates MB-9 and MB-9S.
17. Raised Curb Detail at Rooftop HVAC Units, Premanufactured: Plates MB-12 and MB-12S and Division 7 Section "Roof Accessories."
18. Raised Curb Detail at Rooftop HVAC Units (Job site constructed wood curb): Plates MB-13 and MB-13S and Division 06 Section "Rough Carpentry."
19. Skylight, Scuttle (Roof Hatch), and Smoke Vents: Plates MB-14 and MB-14S and Division 07 Section "Roof Accessories."
20. Penetration, Structural Member through Roof Deck: Plates MB-15 and MB-15S.
21. Penetration, Sheet Metal Enclosure for Piping Through Roof Deck: Plates MB-16 and MB-16S.
22. Penetration, Isolated Stack Flashing: Plates MB-17 and MB-17S.
23. Penetration, Isolated Stack Flashing: Plates MB-17A and MB-17AS.

24. Penetration, Plumbing Vent: Plates MB-18 and MB-18S.

25. Penetration, Pocket: Plates MB-19 and MB-19S.

26. Roof Drain: Plates MB-20 and MB-20S.

27. Roof Drain: Plates MB-20A and MB-20AS.

28. Guide for Clearances between Pipes / Walls / Curbs - Table 4

29. Guide for Crickets and Saddles - Table 5

30. Guide for Edge Scuppers with Tapered Saddles - Table 6

1.5 VAPOR-RETARDER INSTALLATION

A. Vapor Retarder Installation, General: Completely seal vapor retarder/air barrier at terminations, obstructions, and penetrations to prevent air movement into roofing system. Seal vapor retarder/air barrier to air barrier in adjacent construction at perimeter of roofing system.

B. Contractor to use extreme care when installing torch applied vapor retarder adjacent to or in the vicinity of roof penetrations. Contractor to utilize “torch and flop” or cold process installation when working around roof penetrations per NRCA -CERTA recommendations.

C. Torch applied vapor retarder to be installed over primed concrete substrate.

1.6 INSULATION INSTALLATION

A. Comply with built-up roofing manufacturer's written instructions for installing roof insulation.

B. Cant Strips: Install and secure preformed 45-degree cant strips at junctures of built-up roofing with vertical surfaces or angle changes greater than 45 degrees.

C. Install tapered insulation under area of roofing to conform to slopes indicated.

D. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.

1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
E. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inch (70 mm) or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches (150 mm) in each direction.

1. Install insulation at minimum thickness of 4.5 inches.

F. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

G. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

H. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:

1. Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

I. Cover Board Installation: Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction. Loosely butt cover boards together. 1/8” spacing is recommended between gypsum coverboards. Tape joints if required by roofing manufacturer.

1. Adhere cover boards according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
2. Adhere cover boards to resist uplift pressure at corners, perimeter, and field of roof.
3. Set cover boards in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

1.7 TORCH-APPLIED ROOFING MEMBRANE INSTALLATION, GENERAL

A. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing" and as follows:

1. Deck Type: Concrete deck.
2. Base Sheet: One.

3. Granular-Surfaced SBS-Modified Asphalt Cap Sheet:

B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.

C. Cooperate with testing agencies engaged or required to perform services for installing roofing system.

D. Coordinate installation of roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

   1. Provide tie-offs at end of each day's work configured as recommended by NRCA Roofing Manual Appendix: Quality Control Guidelines - Insulation to protect new and existing roofing.
   2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
   3. Remove temporary plugs from roof drains at end of each day.
   4. Remove and discard temporary seals before beginning work on adjoining roofing.

1.8 BASE-SHEET INSTALLATION

A. Loosely lay one course of, lapping edges and ends a minimum of 2 inches and 6 inches (50 mm and 150 mm), respectively.

B. Install lapped base-sheet course, extending sheet over and terminating beyond cants. Attach base sheet as follows:

   1. Torch-apply to substrate.
1.9 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

A. Install modified bituminous roofing membrane sheet and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:

1. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer.

2. Torch apply to substrate in accordance with manufacturer's written instructions and NRCA CERTA guidelines.

B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Install roofing membrane sheets so side and end laps shed water. Completely bond and seal laps, leaving no voids.

1. Repair tears and voids in laps and lapped seams not completely sealed.

2. Apply roofing granules to cover exuded bead at laps while bead is hot.

1.10 FLASHING AND STRIPPING INSTALLATION

A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions, and as follows:

1. Extend base flashing up walls or parapets a minimum of 12 inches (300 mm) above built-up roofing and 6 inches (150 mm) onto field of roof membrane.

2. Prime substrates with asphalt primer if required by roofing system manufacturer.


4. Flashing Sheet Application: Adhere flashing sheet to substrate in cold-applied adhesive at rate required by roofing system manufacturer. Seal joints in flashing sheet. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.

5. Flashing Sheet Application: Torch-apply flashing sheet to substrate.

B. Seal top termination of base flashing with a metal termination bar.

C. Install roofing membrane cap-sheet stripping where metal flanges and edgings are set on membrane roofing according to roofing system manufacturer's written instructions.

D. Roof Drains: Set 30 by 30 inch (760 by 760 mm) square metal flashing in bed of asphalt roofing cement on completed roofing membrane. Cover metal flashing with roofing membrane cap-sheet stripping and extend a minimum of 6 inches beyond edge of metal flashing onto field of roofing membrane. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring.

1. Install stripping according to roofing system manufacturer's written instructions.

1.11 WALKWAY INSTALLATION

A. Walkway Pads: Install walkway pads using units of size indicated or, if not indicated, of manufacturer's standard size according to walkway pad manufacturer's written instructions.

1. Sweep away loose aggregate surfacing.

2. Set walkway pads in cold-applied adhesive.

4.11 FIELD QUALITY CONTROL

B. Roofing Inspector: Owner will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation at commencement and upon completion.

1. Notify Architect and Owner 48 hours in advance of date and time of inspection.

D. Repair or remove and replace components of built-up roofing where test results or inspections indicate that they do not comply with specified requirements.

1. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.
3.12 ROOF TESTING

E. Wind Uplift Resistance Testing

1. The Contractor will provide field verification of roof wind uplift resistance in accordance with FM Global Loss Prevention Data Sheet 1-52 as follows.

   a. Once a representative section of the new Roofing System has been installed and all cold process adhesives are allowed to set, at least eleven (11) negative pressure uplift tests will be performed

      1) Roof section A; 2 Field, 2 Perimeter, 1 Corner (approx. 33,412 sq ft)

      2) Roof Section B; 1 Field, 1 Perimeter, 1 Corner (approx. 2,808 sq ft)

   b. Tests results will be provided to the Owner’s representative for evaluation and recommendations by Factory Mutual if needed.

3.13 SUPERVISION

A. Full Time Supervision

1. Contractor to provide full time supervision by a Registered Roofing Inspector (RRO) or Registered Roofing Consultant (RRC) as licensed through RCI. Inspector to provide daily written and photographic reports along with maps showing roofing progress for the duration of the project. Inspections must follow all guidelines to meet requirements of FM 1-52, Section 3.5 Visual Construction Observation.

3.14 PROTECTING AND CLEANING

F. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

G. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

H. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07 5216
SECTION 07 5216.2 - SBS MODIFIED BITUMINOUS MEMBRANE ROOFING, TORCH-APPLIED – METAL DECK

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. Styrene-butadiene-styrene (SBS) modified bituminous membrane roofing system on metal deck, including but not limited to:
      a. Roof membrane and membrane base flashings.
      b. Roof surfacing consisting of mineral granulated cap sheet.
   2. Removal of all abandoned piping, equipment and supports as required and patching or repair of the existing deck, structure and interior as required.
   3. All existing roof penetration flashings will be replaced with new roof penetration flashings; including but not limited to lead plumbing vent flashings, heater vents, gravity vents, pitch pans, and any other miscellaneous roof penetration flashings.
   4. Installation of proper pipe supports under all pipes and conduit on the roof. Install proper pads under all pipe supports
   5. Thermal barrier substrate board.
   7. Roof insulation.
   8. Cover board.

B. Related Requirements:
   1. Section 06 1000 "Rough Carpentry" for wood nailers, curbs, and blocking, and for wood-based, structural-use roof deck panels.
   2. Section 07 6200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
   3. Section 07 7200 "Roof Accessories" for roof hatch.
   4. Section 07 7129 "Manufactured Roof Expansion Joints" for premanufactured roof expansion-joint assemblies.
   5. Section 07 9200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
   6. Section 26 4100 "Lightning Protection" for lightning protection system.

1.3 FIRE WATCH

A. Provide fire watch during torch application and continue for two hours after torch work has been completed. All roof areas worked on should be checked for hot spots and signs of
smoldering. If available, infrared roof scanners should be used. The inside of the building shall also be inspected for signs of fire and smoke

B. When torch applied materials are installed the Contractor shall provide a fire watch.

C. Provide fire watch during torch application and continue for one hour after torch work has been completed. All roof areas worked on should be checked for hot spots and signs of smoldering. If available, infrared roof scanners should be used. The inside of the building should also be inspected for signs of fire and smoke

D. Provide at least two 10lb (4.5 kg) multipurpose dry chemical portable extinguisher within 20 ft. (6.1 m) horizontal travel distance of torch-applied roofing equipment.

E. No full-time torch shall be used under any circumstances.

1.4 DEFINITIONS

A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA’s "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation, including slopes.
5. Crickets, saddles, and tapered edge strips, including slopes.
6. Insulation & cover board fastening patterns for corner, perimeter, and field-of-roof locations.
7. Tie-in with adjoining air barrier.
8. Requirements of NRCA and FMG applicable to the drawings and this section.

C. Samples for Verification: For the following products:

1. Cap Sheet: Samples of manufacturer's standard colors for selection by Owner.
2. Flashing Sheet: Samples of manufacturer's standard colors for selection by Owner.
3. Walkway Pads or Rolls: Samples of manufacturer's standard colors for selection by Architect.

D. Wind Uplift Resistance Submittal: For roofing system indicating compliance with wind uplift performance requirements.
1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates:

1. Submit evidence of compliance with performance requirements, including FM Global system approval.
2. Indicate that proposed system components are compatible.

C. Product Test Reports: For roof membrane and insulation, tests performed by a qualified testing agency, indicating compliance with specified requirements.

D. Evaluation Reports: For components of membrane roofing system, from ICC-ES.

E. Field Test Reports:

1. Concrete internal relative humidity test reports.
2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

F. Field quality-control reports.

G. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

C. Executed copies of warranties.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.

1. Installer must provide (2) manufacturer inspections per week of work.

B. Manufacturer Qualifications: Approved manufacturer with FM Global approved roofing systems comparable to those specified for this Project, with minimum five years' experience in manufacture of comparable products in successful use in similar applications, and able to furnish warranty with provisions matching specified requirements.
1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
   a. Product data, including certified independent test data indicating compliance with requirements.
   b. Samples of each component.
   c. Sample submittal from similar project.
   d. Project references: Minimum of five installations of specified products not less than five years old, with Owner and Architect contact information.
   e. Sample warranty.
2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
3. Approved manufacturers must meet separate requirements of Submittals Article.

C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
   1. An authorized full-time technical employee of the manufacturer.

D. Random Sampling
   1. During course of work, the Architect may secure samples according to ASTM D140-93 of materials being used from containers at job site and submit them to an independent laboratory for comparison to specified material.
   2. Should test results prove that material is not equal to specified material:
      a. Contractor shall pay for all testing.
      b. Roofing installed and found not to comply with the specifications shall be removed and replaced with no change in the contract price.
   3. Installation quality control
      a. The roofing inspector shall provide written and photographic reports, to be submitted to the architect, owner, roof system installation contractor, appraising the installation of the roof system at each of the project progress stages. The installation contractor shall make all necessary corrections, additions or remedial actions to resolve any issues raised in the reports.
      b. The roofing inspector shall have the authority to have any and all roofing work corrected, as required, to insure the proper installation and weather-tightness of the roof system, in accordance with the manufacturer's specifications.

E. Windstorm Resistance Certification:
   1. Contractor will provide the Owner with certification by a Registered Professional Engineer that the new roofing construction described within these specifications and installed on the referenced project complies with the current Windstorm resistance requirements prescribed by the State Board of Insurance.

F. Manufacturer's Installation Instructions: Obtain and maintain on-site access to manufacturer's written instructions for installation of products.

G. Preinstallation Roofing Conference: Conduct conference at Project site.
   1. Meet with Owner, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and
installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review drawings and specifications.
3. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
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. Examine substrate conditions and finishes for compliance with requirements, including flatness and fastening.
6. Review structural loading limitations of roof deck during and after roofing.
7. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
8. Review governing regulations and requirements for insurance and certificates if applicable.
9. Review temporary protection requirements for roofing system during and after installation.
10. Review roof observation and repair procedures after roofing installation.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer.
   1. Protect stored liquid material from direct sunlight.
   2. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources.
   1. Store in a dry location.
   2. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
B. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
   1. Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
   2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
   3. Remove temporary plugs from roof drains at end of each day.
   4. Remove and discard temporary seals before beginning work on adjoining roofing.

1.11 WARRANTY

A. Warranty, General: Warranties specified shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Manufacturer's Warranty: Manufacturer's standard or customized form, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.
   1. Manufacturer's warranty includes roofing membrane, base flashings, fasteners, roofing membrane accessories and other components of roofing system specified in this Section.
   2. Warranty Period: 15 years from date of Substantial Completion.

C. Installer's Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, and walkway products, for the following warranty period:
   1. Warranty Period: Two years from date of Substantial Completion.

D. Extended Roof System Warranty: Warranties specified in this Section include the following components and systems specified in other sections supplied by the roofing system Manufacturer, and installed by the roofing system Installer:
   1. Sheet metal flashing and trim, including roof penetration flashings.
   2. Roof and parapet expansion joint assemblies.

E. Manufacturer Inspection and Preventive Maintenance Requirement: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections and preventive maintenance is included in the Contract Sum.
   1. Inspections to occur in the following years subsequent to completion: 2, 5 and 10.
PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing system and flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.

1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746/D3746M, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

C. Wind Uplift Resistance: Design roofing system to resist wind uplift when tested according to FM Approvals 4474, UL 580, or UL 1897.
1. All Zones (Corner, Perimeter, and Field-of-Roof) Uplift Pressures: As indicated on Drawings.

D. FM Global Compliance: Roofing, base flashings, and component materials shall comply with requirements in FM Global 4470 as part of a roofing system and shall be listed in FM Global's "RoofNav" or shall receive written FM Global project approval for Class 1 or non-combustible construction, as applicable. Identify applicable materials with FM Global markings.
1. Fire/Windstorm Classification: Class 1A--360.
2. Hail Resistance Rating: SH.

E. SPRI Wind Design Standard: Manufacture and install copings tested according to SPRI ES-1 and capable of resisting the following design pressures:
1. Design Pressure: As indicated on Drawings.

F. Flashings and Fastening: Comply with requirements of Division 07 Sections "Sheet Metal Flashing and Trim" and "Roof Specialties." Provide base flashings, perimeter flashings, detail flashings and component materials and installation techniques that comply with requirements and recommendations of the following:
1. FM Global 1-49: Loss Prevention Data Sheet for Perimeter Flashings.
2. FM Global 1-29: Loss Prevention Data Sheet for Above Deck Roof Components.
3. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.

G. Fire-Resistance Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

H. Solar Reflectance Index: Not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.
2.2 MANUFACTURERS

A. FM RoofNav Basis-of-Design: Assembly # 381399-373990-0.

IT IS THE BIDDERS RESPONSIBILITY TO READ AND UNDERSTAND THE TESTED ASSEMBLY. IF NEEDED A COPY OF THE TESTED CONSTRUCTION ASSEMBLY LISTED ABOVE CAN BE OBTAINED FROM THE SYSTEM MANUFACTURER. BIDDER SHOULD NOTE THAT AN ADDITIONAL 1” OF ISO AND CRICKETS ARE ADDED BELOW THE NAILBASE AND 2 PLIES OF MECHANICALLY FASTENED BASE SHEET ARE TO BE INSTALLED PER FM APPROVED MODIFICATIONS.

B. Basis-of-Design Manufacturer/Product: The roof system specified in this Section is based upon products of Tremco, Inc., www.tremcoroofing.com, named in other Part 2 articles. Subject to compliance with requirements, provide the named product or an approved comparable product.

C. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer. Obtain components for roofing system compatible with FM approved assembly.

2.3 ROOFING MEMBRANE MATERIALS

A. Mechanically Fastened Base Sheet (2 PLIES)

1. ASTM D 6164, Type I, Grade S SBS-modified asphalt-coated, polyester reinforced sheet, smooth surfaced

   a. Basis of design product: Johns Manville, DynaLastic 250 S


   c. Thickness D 5147: 138mils

B. SBS Modified Bituminous Membrane Base Ply Sheets:

1. ASTM D 6163 Type I Grade S SBS/SIS/SEBS-modified asphalt-coated glass-fiber reinforced sheet, smooth surfaced, designed for heat-welded applications.


   b. Tensile Strength at 73 deg. F, minimum, ASTM D 5147: 100 lbf MD; 80 lbf MD

   c. Tear Strength at 73 deg. F, minimum, ASTM D 5147: 100 lbf MD; 80 lbf MD.
d. Elongation at 73 deg F, minimum, ASTM D 5147: 4%

e. Low Temp Flex, ASTM D5147: -30 deg. F.

f. Thickness, ASTM D 5147: 0.118 inch.

C. SBS Modified Bituminous Cap Sheet:

1. ASTM D 6163 Type I Grade G SBS-modified asphalt-coated glass-fiber-reinforced sheet, granular surfaced with a factory applied white reflective granule; CRRC listed and California Title 24 Energy Code compliant.

a. Basis of design product: Tremco, POWERply Standard FR GT24 HW.

b. Exterior Fire-Test Exposure, ASTM E 108: Class A.

c. Tensile Strength at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction 70 lb/in (12.0 kN/m); Cross machine direction 50 lb/in (8.8 kN/m).

d. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction, 100 lbf (400 N); Cross machine direction 90 lbf (400 N).

e. Elongation at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction 4 percent; Cross machine direction 4 percent.


g. Thickness, minimum, ASTM D 5147: 0.165 inch (4.2 mm).


D. Base Flashing Backer Sheet & Perimeter edging Striping Ply:

1. ASTM D 6162 Type III Grade S SBS/SIS/SEBS-modified asphalt-coated composite polyester and glass-fiber reinforced sheet, smooth surfaced, designed for heat-welded applications.


b. Tensile Strength at 73 deg. F (23 deg. C), minimum, ASTM D 5147: 275 lb/in (48 kN/m).

c. Tear Strength at 73 deg. F (23 deg. C), minimum, ASTM D 5147: 380 lbf (85 N)

d. Elongation at 73 deg. F (23 deg. C), minimum, ASTM D 5147: 3 percent.

e. Low Temperature Flex, ASTM D 5147: -20 deg. F (-28 deg. C)

f. Thickness, ASTM D 5147: 0.090 inch (2.3 mm).
E. Base Flashing Sheet:

1. ASTM D 6163 Type I Grade G SBS-modified asphalt-coated glass-fiber-reinforced sheet, granular surfaced with a factory applied white reflective granule; CRRC listed and California Title 24 Energy Code compliant.
   
   a. Basis of design product: Tremco, POWERply Standard FR GT24 HW.
   
   b. Exterior Fire-Test Exposure, ASTM E 108: Class A.
   
   c. Tensile Strength at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction 70 lbf/in (12.0 kN/m); Cross machine direction 50 lbf/in (8.8 kN/m).
   
   d. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction, 100 lbf (400 N); Cross machine direction 90 lbf (400 N).
   
   e. Elongation at 77 deg. F (25 deg. C), minimum, ASTM D 5147: Machine direction 4 percent; Cross machine direction 4 percent.
   
   
   g. Thickness, minimum, ASTM D 5147: 0.165 inch (4.2 mm).
   

F. Detailing Fabric:

1. Woven Glass Fiber Mesh, Vinyl-Coated: Non-shrinking, non-rotting, vinyl-coated woven glass mesh for reinforcing flashing seams, membrane laps, and other roof system detailing.
   
   a. Basis of design product: Tremco, BURmesh.
   
   b. Tensile strength, 70 deg. F, ASTM D 146: Warp, 65 lbf/in (289 N); fill, 75 lbf/in (311 N).

2.4 ASPHALT MATERIALS

A. Asphalt primer, water-based, polymer modified.
   1. Basis of design product: Tremco, TREMprime WB.
   2. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 2 g/L.

B. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.
2.5 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Metal Flashing Sheet: Metal flashing sheet is specified in Division 07 Section "Sheet Metal Flashing and Trim."

C. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

1. Elastomeric Roofing Mastic, Low-Volatile: One-part, trowel-grade, elastomeric roof mastic specially formulated for compatibility and use with specified roofing membranes and flashings.
   a. Basis of design product: Tremco, POLYroof LV.
   b. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 300 g/L.
   d. Recovery from 500 percent Elongation, minimum, ASTM D 412: 500 percent.
   e. Flexibility at -40 deg. F (-40 deg. C), ASTM D 3111: No cracking.

2. Asphalt mastic for miscellaneous sealing and waterproofing:
   a. An asphalt-based, heavily fibrated, asbestos free mastic.
   b. Basis of Design: Tremco ELS.

3. Pitch pan mastic:
   a. High performance single component roof elastomer.
   b. Basis of Design: Tremco POLYroof LV

4. Metal Joint Sealant:
a. Asbestos-free. Moisture cured, one-component polyurethane sealant.

b. Basis of Design: TremSEAL Pro

5. Reglet Joint Sealant

a. One-part, bituminous polyurethane sealant.


6. Vents and/or Stacks:

a. Stainless: Type 316, No 3 Polish.

b. Gage: Twenty-four (24).

c. Solder: ASTM B32-89, alloy grade 60A. Neutralize flux after soldering.

7. Termination Bar for top edge of all base flashings:

a. Extruded aluminum, pre-punched 8” o.c.

8. Primary Scuppers and Overflow Scuppers:

a. Stainless Steel, Type 316, No 3 Polish Finish (all locations except those designated as copper): Twenty-four (24) gauge minimum, stainless steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527.

9. Fascia, Coping, Collector Heads, Gutters, Downspouts and other Visible Sheet Metal Flashing:

a. Stainless Steel, Type 316, No 3 Polish Finish (all locations except those designated as copper): Twenty-four (24) gauge minimum, stainless steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527

10. Counter flashing, slip flashing:
a. Stainless Steel, Type 316, No 3 Polish Finish (all locations except those designated as copper): Twenty-four (24) gauge minimum, stainless steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527

11. Pitch pans with hoods:

a. Stainless Steel, Type 316 No 3 Polish: Twenty-four (24) gauge minimum, stainless steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527, G90 coating in accordance with ASTM A 525

12. Walkway Pads for all access panels at all A/C units:

a. Mineral-surfaced asphaltic composition panels, factory formed, nonporous, with a slip-resisting surface texture, manufactured specifically for adhering to built-up roofing as a protection course for foot traffic:

   1) Thickness: 1/2 inch

   b. Basis of Design: Tremco TremTred.

13. Pipe Supports:

a. Pipe supports for small pipes and conduit:

   1) Pipe or Conduit size: 1/4” to 1.5” ID

   2) Rubber triangle pipe blocks extruded from 100% EPDM rubber.

   b. Basis of Design: Rubber Triangle Pipe Blocks by Tremco or pre-approved substitution.

14. Pipe Supports for large pipes and conduit:

a. Pipe or Conduit size: 1.5” or larger ID

b. Galvanized roller pipe supports.

c. Basis of Design: SS8-R or RB-18 as applicable by PHP Pipe supports of Houston, TX or approved equal.
15. Primer:
   a. An asbestos free, modified water-based asphalt primer
   b. 2. Basis of Design: Tremco Tremprime WB.

16. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

17. Flashing tape for top edge of base flashing
   a. A flexible, non-drying, butyl-based, gasket-forming sealant tape.
   b. Basis of design: Tremco TF Tape

18. Reinforcement membrane:
   a. A non-shrinking, non-rotting, vinyl coated, woven glass mesh.
   b. Basis of Design: Tremco Burmesh - 6”.

D. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.6 INSULATION ADHESIVES

A. Two-Part Urethane Insulation Adhesive (UIA) is a two-component polyurethane adhesive used for attaching insulation boards to the roof deck or to other insulation boards

   1. Basis of design product: Johns Manville, JM Two-Part Urethane Insulation Adhesive (UIA)

2.7 THERMAL BARRIER

A. Cellulosic fiber reinforced water-resistant gypsum panel, ASTM C 1278/C 1278M.

   a. Basis of design product: Tremco/USG Securock.
b. Thickness: 1/2 inch (13 mm).

2.7 NAILBOARD

A. 7/16” minimum Exposure 1 Oriented Strand Board

2.8 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Global-approved roof insulation.

1. Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches (1:48) unless otherwise indicated. Ensure for a minimum tapered start thickness of 3.5”.

2. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

3. Provide minimum R-25 ci or applicable requirement of the 2018 IECC

B. Roof Insulation:

1. Polyisocyanurate board insulation, ASTM C 1289 Type II Class 1 CFC- and HCFC- free, with recycled content glass-fiber mat facer on both major surfaces.

   a. Basis of design product: Johns Manville.

   b. Conditioned Thermal Resistance at 75 deg. F (24 deg. C): 14.4 at 2.5 inches (50.8 mm) thick.


   d. Available Manufacturers

   e. Johns Manville; Energy 3, Tapered Energy 3, ValuTherm, See approved FM assembly for other approved insulations

C. Roof Insulation Cover Board:

1. Cellulosic fiber reinforced water-resistant gypsum panel, ASTM C 1278/C 1278M.
a. Basis of design product: Tremco/USG Securock.

b. Thickness: 1/2 inch (13 mm).

D. Wood Cant Strips: Comply with requirements in Division 06 carpentry section

E. Tapered Edge Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.

F. Substrate Joint Tape: Minimum 6 inch (150 mm) wide, coated, glass-fiber joint tape.

2.9 WALKWAYS

A. Walkway pads, ceramic-granule-surfaced reinforced asphaltic composition slip-resisting pads, manufactured as a traffic pad for foot traffic, 1/2 inch (13 mm) thick minimum.


2. Flexural Strength at max. load, minimum, ASTM C 203: 210 psi (1.5 kPa).


5. Pad Size: 36 by 48 inch (914 by 1220 mm).

PART 3 - EXECUTION

1.2 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.

2. Verify that, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation. wood cants

3. Concrete Roof Deck:
a. Verify that minimum concrete drying period recommended by roofing manufacturer has passed.

b. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

c. Test for moisture by pouring 1 pint (0.5 L) of hot roofing asphalt on deck at start of each day's work and at start of each roof area or plane. Do not proceed with roofing work if test sample foams or can be easily and cleanly stripped after cooling.

d. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.

4. Verify that existing insulation and substrate is sound and dry.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1.3 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Concrete Surface Priming: Prime surface of concrete deck with asphalt primer at a rate of application recommended in writing by manufacturer for substrate type and condition.

1.4 INSTALLATION, GENERAL

A. Install roofing system in accordance with manufacturer's recommendations.

B. Install wood cants, blocking, curbs, and nailers in accordance with requirements of Division 06 carpentry section.

C. Install roofing membrane, base flashings, wood cants, blocking, curbs, and nailers, and component materials in compliance with requirements in FM Global 4470 as part of a membrane roofing system as listed in FM Global's "Approval Guide" for fire/windstorm classification indicated. Comply with recommendations in FM Global Loss Prevention Data Sheet 1-49, including requirements for wood nailers and cants.
Install roofing system in accordance with the following NRCA Manual Plates and NRCA recommendations; modify as required to comply with requirements of FM Global references above:

1. Metal Parapet Cap (Coping) and Base Flashing: Plates MB-1 and MB-1S.
2. Surface-Mounted Counterflashing for Concrete Walls (at Parapet Wall): Plates MB-4 and MB-4S.
3. Base Flashing for Wall-supported Deck: Plates MB-5 and MB-5S.
4. Base Flashing for Non-wall-supported deck (Movement Joint): Plates MB-6 and MB-6S.
5. Base and Surface-mounted Counterflashing: Plates MB-4 and MB-4S.
6. Base Flashing for Vented Base Sheet: Plates MB-5A and MB-5AS.
7. Raised Perimeter Edge with Metal Flashing (Fascia Cap): Plates MB-2 and MB-2S.
8. Embedded Edge Metal Flashing Edge (Gravel-stop): Plates MB-3 and MB-3S.
10. Gutter at Draining Edge: Plates MB-22 and MB-22S.
11. Expansion Joint with Metal Cover: Plates MB-7 and MB-7S and Division 07 Section "Sheet Metal Flashing and Trim."
12. Expansion Joint with Premanufactured Cover: Plates MB-7A and MB-7AS and Division 07 Section "Roof Expansion Assemblies."
13. Area Divider in Roof System: Plates MB-8 and MB-8S.
14. Equipment Support Curb: Plates MB-9 and MB-9S.
17. Raised Curb Detail at Rooftop HVAC Units, Premanufactured: Plates MB-12 and MB-12S and Division 7 Section "Roof Accessories."
18. Raised Curb Detail at Rooftop HVAC Units (Job site constructed wood curb): Plates MB-13 and MB-13S and Division 06 Section "Rough Carpentry."
19. Skylight, Scuttle (Roof Hatch), and Smoke Vents: Plates MB-14 and MB-14S and Division 07 Section "Roof Accessories."
20. Penetration, Structural Member through Roof Deck: Plates MB-15 and MB-15S.
21. Penetration, Sheet Metal Enclosure for Piping Through Roof Deck: Plates MB-16 and MB-16S

22. Penetration, Isolated Stack Flashing: Plates MB-17 and MB-17S.

23. Penetration, Isolated Stack Flashing: Plates MB-17A and MB-17AS.

24. Penetration, Plumbing Vent: Plates MB-18 and MB-18S.

25. Penetration, Pocket: Plates MB-19 and MB-19S.

26. Roof Drain: Plates MB-20 and MB-20S.

27. Roof Drain: Plates MB-20A and MB-20AS.

28. Guide for Clearances between Pipes / Walls / Curbs - Table 4

29. Guide for Crickets and Saddles - Table 5

30. Guide for Edge Scuppers with Tapered Saddles - Table 6

1.5 INSULATION INSTALLATION

A. Comply with built-up roofing manufacturer's written instructions for installing roof insulation.

B. Cant Strips: Install and secure preformed 45-degree cant strips at junctures of built-up roofing with vertical surfaces or angle changes greater than 45 degrees.

C. Install tapered insulation under area of roofing to conform to slopes indicated.

D. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.

1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.

E. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inch (70 mm) or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches (150 mm) in each direction.

1. Install insulation at minimum thickness of 4.5 inches.
F. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

G. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

H. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:

1. Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

I. Cover Board Installation: Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction. Loosely butt cover boards together. 1/8” spacing is recommended between gypsum coverboards. Tape joints if required by roofing manufacturer.

1. Adhere cover boards according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
2. Adhere cover boards to resist uplift pressure at corners, perimeter, and field of roof.
3. Set cover boards in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

1.6 TORCH-APPLIED ROOFING MEMBRANE INSTALLATION, GENERAL

A. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing" and as follows:

1. Deck Type: Concrete deck.
2. Base Sheet: One.
3. Granular-Surfaced SBS-Modified Asphalt Cap Sheet:
B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.

C. Cooperate with testing agencies engaged or required to perform services for installing roofing system.

D. Coordinate installation of roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1. Provide tie-offs at end of each day's work configured as recommended by NRCA Roofing Manual Appendix: Quality Control Guidelines - Insulation to protect new and existing roofing.

2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.

3. Remove temporary plugs from roof drains at end of each day.

4. Remove and discard temporary seals before beginning work on adjoining roofing.

1.7 BASE-SHEET INSTALLATION

A. Loosely lay one course of, lapping edges and ends a minimum of 2 inches and 6 inches (50 mm and 150 mm), respectively.

B. Install lapped base-sheet course, extending sheet over and terminating beyond cants. Attach base sheet as follows:

1. Torch-apply to substrate.

1.8 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

A. Install modified bituminous roofing membrane sheet and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:

1. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer.

2. Torch apply to substrate in accordance with manufacturer's written instructions and NRCA CERTA guidelines.
B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Install roofing membrane sheets so side and end laps shed water. Completely bond and seal laps, leaving no voids.

1. Repair tears and voids in laps and lapped seams not completely sealed.
2. Apply roofing granules to cover exuded bead at laps while bead is hot.

1.9 FLASHING AND STRIPPING INSTALLATION

A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions, and as follows:

1. Extend base flashing up walls or parapets a minimum of 12 inches (300 mm) above built-up roofing and 6 inches (150 mm) onto field of roof membrane.
2. Prime substrates with asphalt primer if required by roofing system manufacturer.
4. Flashing Sheet Application: Adhere flashing sheet to substrate in cold-applied adhesive at rate required by roofing system manufacturer. Seal joints in flashing sheet. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
5. Flashing Sheet Application: Torch-apply flashing sheet to substrate.

B. Seal top termination of base flashing with a metal termination bar.

C. Install roofing membrane cap-sheet stripping where metal flanges and edgings are set on membrane roofing according to roofing system manufacturer's written instructions.

D. Roof Drains: Set 30 by 30 inch (760 by 760 mm) square metal flashing in bed of asphalt roofing cement on completed roofing membrane. Cover metal flashing with roofing membrane cap-sheet stripping and extend a minimum of 6 inches beyond edge of metal flashing onto field of roofing membrane. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring.

1. Install stripping according to roofing system manufacturer's written instructions.
1.10 WALKWAY INSTALLATION

A. Walkway Pads: Install walkway pads using units of size indicated or, if not indicated, of manufacturer's standard size according to walkway pad manufacturer's written instructions.

1. Sweep away loose aggregate surfacing.
2. Set walkway pads in cold-applied adhesive.

4.11 FIELD QUALITY CONTROL

B. Roofing Inspector: Owner will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation at commencement and upon completion.

1. Notify Architect and Owner 48 hours in advance of date and time of inspection.

D. Repair or remove and replace components of built-up roofing where test results or inspections indicate that they do not comply with specified requirements.

1. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.12 ROOF TESTING

E. Wind Uplift Resistance Testing

1. The Contractor will provide field verification of roof wind uplift resistance in accordance with FM Global Loss Prevention Data Sheet 1-52 as follows.

   a. Once a representative section of the new Roofing System has been installed and all cold process adhesives are allowed to set, at least eleven (11) negative pressure uplift tests will be performed

      1) Roof section A; 2 Field, 2 Perimeter, 1 Corner (approx. 33,412 sq ft)
      2) Roof Section B; 1 Field, 1 Perimeter, 1 Corner (approx. 2,808 sq ft)

   b. Tests results will be provided to the Owner’s representative for evaluation and recommendations by Factory Mutual if needed.
3.13 SUPERVISION

B. Full Time Supervision

1. Contractor to provide full time supervision by a Registered Roofing Inspector (RRO) or Registered Roofing Consultant (RRC) as licensed through RCI. Inspector to provide daily written and photographic reports along with maps showing roofing progress for the duration of the project. Inspections must follow all guidelines to meet requirements of FM 1-52, Section 3.5 Visual Construction Observation.

3.14 PROTECTING AND CLEANING

F. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

G. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

H. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07 5216
SECTION 07 6200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following sheet metal flashing and trim:
   1. Formed roof drainage system.
   2. Formed low-slope roof flashing and trim.
   3. Formed wall flashing and trim.
   4. Formed equipment support and curb flashing.

B. Related Requirements:
   1. Division 06 1000 "Rough Carpentry" for wood nailers, curbs, and blocking.
   2. Division 07 5216 “SBS Modified Bituminous Membrane Roofing” for installing sheet metal flashing and trim integral with roofing membrane.

1.3 PERFORMANCE REQUIREMENTS

A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

C. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:
1. Identify material, thickness, weight, and finish for each item and location in Project.
2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
4. Details of expansion-joint covers, including direction of expansion and contraction.

C. Samples for Initial Selection: For each type of sheet metal flashing and trim indicated with factory-applied color finishes.
   1. Include similar Samples of trim and accessories involving color selection.

1.5 QUALITY ASSURANCE

A. Sheet Metal Flashing and Trim Standard: Comply with the following. Conform to dimensions and profiles shown unless more stringent requirements are indicated.
   1. NRCA Roofing and Waterproofing Manual (Fifth Edition) for construction details and recommendations.

B. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
   1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
   2. Review methods and procedures related to sheet metal flashing and trim.
   3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
   4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weather-tight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
1.7 COORDINATION

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leak-proof, secure, and non-corrosive installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. FM Approvals Listing: Manufacture and install flashings, copings, and roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, see drawings for class. Identify materials with name of fabricator and design approved by FM Approvals.

2.2 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
   1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
   2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.3 SHEET METALS

A. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 316L.
   1. Finish: No. 3

B. Lead Sheet: ASTM B 749, Type L51121, copper-bearing lead sheet.
   1. Use prefabricated plumbing vent flashings with factory welded and sealed joints at all plumbing vents.
      a. Flange: 4” minimum
      b. Four (4) pounds per square foot minimum.

2.4 UNDERLayment MATERIALS

A. Self-Adhering Sheet Underlayment, Smooth Surfaced: ASTM D 6163, Type I, Grade S, minimum of 0.080 in. thick; fiberglass reinforced, SBS/SIS modified asphalt; with perforated and split release film backing; cold applied.
   1. Performance requirements:
      a. Thickness: 0.080 in., ASTM D 6163-00
      b. Tensile Strength at 0 deg. F, 70 lbf/in (MD), 70 lbf/in (XD), ASTM D 6163-00
      c. Elongation at 0 deg. F, 1.0% (MD), 1% (XD), ASTM D 6163-00
      d. Tensile Strength at 77 deg. F, 30 lbf/in (MD), 30 lbf/in (XD), ASTM D 6163-00
      e. Elongation at 77 deg. F, 2% (MD), 2% (XD), ASTM D 6163-00
      f. Tear Strength at 77 deg. F, 35 lbf, ASTM D 6163-00
      g. Low Temperature Flexibility, 0 deg. F, ASTM D 6163-00

B. Slip Sheet: Rosin-sized paper, minimum 3 lb/100 sq. ft.

2.5 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.

1. Exposed Fasteners: FM Approved Stainless Steel.
2. Fasteners for Flashing and Trim: FM Approved Stainless Steel Blind fasteners or self-drilling screws, gasketed, with hex washer head.

C. Solder for Lead: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.

D. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.

E. Burning Rod for Lead: Same composition as lead sheet.

F. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

G. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type non-corrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.


2.6 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with the drawings and the following recommendations that apply to design, dimensions, metal, and other characteristics of item indicated. Shop-fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.

1. NRCA Roofing and Waterproofing Manual (Fifth Edition) for construction details and recommendations.

B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
1. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

D. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with NRCA and/or SMACNA recommendations.

E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.

F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.

G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, non-corrosive metal.
1. Thickness: As recommended by the following for application but not less than thickness of metal being secured.
   a. NRCA Roofing and Waterproofing Manual (Fifth Edition) for construction details and recommendations.
   c. ANSI/SPRI ES-1, “Wind Design Standard for Edge Metal Systems Used with Low Slope Roof Systems”.

2.7 ROOF DRAINAGE SHEET METAL FABRICATIONS

A. Downspouts: Fabricate circular downspouts as required. Furnish with metal hangers, from same material as downspouts, and anchors.
1. Fabricate downspouts from the following material:
   a. Stainless Steel: 24 gauge.

B. Parapet Over-flow Scuppers: Fabricate scuppers of dimensions required with closure flange trim to exterior, 4-inch wide wall flanges to interior, and base extending 4 inches beyond cant or tapered strip into field of roof.
1. Fabricate parapet scuppers from the following material:
   a. Stainless Steel: 24 gauge.

C. Supper Escutcheon Plates and Trim: Fabricate scupper escutcheon plates and trim of dimensions required with closure flange trim to exterior.
1. Fabricate parapet scuppers from the following material:
   a. Stainless Steel: 24 gauge.

2.8 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Roof Edge Flashing (Gravel Stop) and Fascia Caps: Fabricate in minimum 96-inch- long, but not exceeding 10-foot- long, sections. Furnish with 6-inch- wide joint cover plates.
1. Joint Style: Butt, with 6-inch- wide exposed cover plates.
2. Fabricate roof edge flashings and fascia caps from the following material:
a. Stainless Steel: 24 gauge.

3. Fabricate continuous roof edge flashings and fascia cap anchor cleats form the following:
a. Stainless Steel: 22 gauge.

B. Copings: Fabricate in minimum 96-inch-long, but not exceeding 10-foot-long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, seal, and solder or weld watertight.
1. Joint Style: Butt, with 6-inch wide exposed cover plates.
2. Optional Joint Style: Double Lock Standing Seam, with minimum 1” high seam.
3. Fabricate copings from the following material:
a. Stainless Steel: 24 gauge.
4. Fabricate continuous coping anchor cleats form the following:
a. Stainless Steel: 22 gauge.

C. Roof to Roof and Roof to Wall Transition Expansion Joint Cover: Fabricate from the following material:
1. Stainless Steel: 24 gauge.

D. Counterflashing: Fabricate from the following material:
1. Stainless Steel: 24 gauge.

E. Flashing Receivers: Fabricate from the following material:
1. Stainless Steel: 24 gauge.

F. Roof-Penetration Flashing: Fabricate from the following material:
1. Stainless Steel: 24 gauge.

G. Roof-Drain Flashing: Fabricate from the following material:
1. Lead Sheet: Four (4) pounds per square foot minimum.

H. Continuous Anchor Cleats: Fabricate from the following material:
1. Stainless Steel: 22 gauge.

2.9 MISCELLANEOUS SHEET METAL FABRICATIONS

A. Equipment Support Flashing: Fabricate from the following material:
1. Stainless Steel: 24 gauge.

2.10 FINISHES

A. All exposed flashing components to be No. 3 Finish

B. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

C. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.
   1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
   2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the 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 to complete sheet metal flashing and trim system.
   1. Torch cutting of sheet metal flashing and trim is not permitted.

B. 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.
   1. Coat underside of sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
   2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene underlayment.

C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.

E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
   1. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.

F. 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 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not
be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.

G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
   1. Galvanized or Pre-painted, Metallic-Coated Steel: Use stainless-steel fasteners. 
   2. Stainless Steel: Use stainless-steel fasteners.

H. Seal joints with elastomeric sealant as required for watertight construction.
   1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
   2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."

I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches except where pre-tinned surface would show in finished Work.
   1. Do not solder pre-painted, metallic-coated steel sheet. 
   2. Stainless-Steel Soldering: Pre-tin edges of uncoated sheets to be soldered using solder recommended for stainless steel and phosphoric acid flux. Promptly wash off acid flux residue from metal after soldering.
   3. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.

3.3 ROOF DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to the following and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
   1. NRCA Roofing and Waterproofing Manual (Fifth Edition) for construction details and recommendations.

B. Hanging Gutters: Join sections with riveted and soldered joints or with lapped joints sealed with elastomeric sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored gutter brackets and straps spaced not more than 36 inches apart. Provide end closures and seal watertight with sealant. Slope to downspouts.
   1. Fasten gutter spacers to front and back of gutter.
   2. Loosely lock straps to front gutter bead and anchor to roof deck.
   3. Anchor and loosely lock back edge of gutter to continuous cleat.
   4. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 24 inches apart.
   5. Install gutter with expansion joints at locations indicated but not exceeding 50 feet apart. Install expansion joint caps.
C. Downspouts: Join sections with 1-1/2-inch telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c. in between.
   1. Provide elbows at base of downspout to direct water away from building.
   2. Connect downspouts to underground drainage system indicated.

D. Parapet Over-flow Scuppers: Install scuppers where indicated through parapet. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
   1. Anchor scupper closure trim flange to exterior wall and seal or solder to scupper.
   2. The bottom of each over-flow scupper must be placed at least two inches (2”) but no more than four inches (4”) above the primary roof drains.

E. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints a minimum of 4 inches in direction of water flow.

3.4 ROOF FLASHING INSTALLATION

A. General: Install sheet metal roof flashing and trim to comply with performance requirements and the following. Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
   1. NRCA Roofing and Waterproofing Manual (Fifth Edition) for construction details and recommendations.

B. Copings: Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone and as indicated.
   1. Interlock exterior bottom edge of coping with continuous cleats anchored to substrate at 16-inch centers.
   2. Anchor interior leg of coping with screw fasteners and washers at 18-inch centers.

C. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.

D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglet or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with elastomeric sealant.
   1. Secure in a waterproof manner by means of interlocking folded seam or blind rivets and sealant.

E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:
   1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.
   2. Seal with elastomeric sealant and clamp flashing to pipes penetrating roof except for lead flashing on vent piping.
3.5 MISCELLANEOUS FLASHING INSTALLATION

A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.

3.6 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 62 00
SECTION 07 7129 - MANUFACTURED ROOF EXPANSION JOINTS

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. Flanged bellows-type roof expansion joints.
   2. Extruded bellows roof expansion joints.
   3. Aluminum roof expansion joints.

B. Related Requirements:
   1. Section 06 1000 "Rough Carpentry" for wooden curbs or cants for mounting roof expansion joints.
   2. Section 07 6200 "Sheet Metal Flashing and Trim" for shop- and field-fabricated sheet metal expansion-joint systems, flashing, and other sheet metal items.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For roof expansion joints.
   1. Include plans, elevations, sections, and attachment details.
   2. Include details of splices, intersections, transitions, fittings, method of field assembly, and location and size of each field splice.
   3. Provide isometric drawings of intersections, terminations, changes in joint direction or planes, and transition to other expansion joint systems depicting how components interconnect with each other and adjacent construction to allow movement and achieve waterproof continuity.

C. Samples: For each exposed product and for each color specified, 6 inches (150 mm) in size.
1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For each fire-barrier provided as part of a roof-expansion-joint assembly, for tests performed by a qualified testing agency.

C. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Installer of roofing membrane.

1.7 WARRANTY

A. Special Warranty: Manufacturer and Installer agree to repair or replace roof expansion joints and components that leak, deteriorate beyond normal weathering, or otherwise fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof expansion joints that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
   a. Color fading more than five 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. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint seals, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

B. Fire-Resistance Rating: Comply with ASTM E1966 or UL 2079; testing by a qualified testing agency to resist the spread of fire and to accommodate building thermal and seismic movements without impairing its ability to resist the passage of fire and hot gases. Identify products with appropriate markings of applicable testing agency.
1. Rating: Not less than fire-resistance rating of the roof assembly.
2. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 ALUMINUM ROOF EXPANSION JOINTS

A. Aluminum Roof Expansion Joint: Factory-fabricated, continuous, waterproof, joint cover; consisting of a formed or extruded metal cover secured to extruded aluminum frames, with water-resistant gasketing between cover and frames, and with provision for securing assembly to substrate and sealing assembly to roofing membrane or flashing.

1. Basis of design product: Construction Specialties RJT-200
2. Field Verify existing joint width and configuration.
4. Frame Members: Extruded aluminum configured as indicated in drawings.
7. Corner, Intersection, and Transition Units: Provide factory-fabricated units for corner and joint intersections and horizontal and vertical transitions including those to other building expansion joints.
8. Accessories: Provide splicing units, adhesives, and other components as recommended by roof-expansion-joint manufacturer for complete installation.
9. Secondary Seal: Continuous, waterproof membrane within joint and attached to substrate on sides of joint below the cover.
   a. Drain-Tube Assemblies: Equip secondary seal with drain tubes and seals to direct collected moisture to exterior-wall expansion joint cover.
   b. Thermal Insulation: Fill space above secondary seal with mineral-fiber blanket insulation; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E84.
10. Fire Barrier: Manufacturer's standard fire barrier for fire-resistance-rated expansion joint system.

B. Materials:

1. Aluminum: ASTM B209 (ASTM B209M) for sheet and plate, ASTM B221 (ASTM B221M) for extrusions; alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
   a. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious or preservative-treated wood materials.
   b. Mill Finish: As manufactured.
   c. Class II, Clear Anodic Finish: Architectural Class II, clear coating 0.010 mm or thicker, complying with AAMA 611.
   d. Class I, Clear Anodic Finish: Architectural Class I, clear coating 0.018 mm or thicker, complying with AAMA 611.
e. Class I, Color Anodic Finish: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker, complying with AAMA 611.

f. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

   1) Two-Coat Fluoropolymer: System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
   2) Three-Coat Fluoropolymer: System consisting of primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent PVDF resin by weight.

g. Aluminum Finish Color: As selected by Architect from manufacturer's standard range.

2. Stainless-Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304; finish 2B.

2.3 MISCELLANEOUS MATERIALS

A. Adhesives: As recommended by roof-expansion-joint manufacturer.

B. Fasteners: FM Approved Manufacturer's recommended fasteners, suitable for application and designed to withstand design loads.

   1. Exposed Fasteners: Stainless Steel Gasketed. Use screws with hex washer heads matching color of material being fastened.


D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joint openings, substrates, and expansion-control joint systems that interface with roof expansion joints, for suitable conditions where roof expansion joints will be installed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Comply with manufacturer's written instructions for handling and installing roof expansion joints.
1. Anchor roof expansion joints securely in place, with provisions for required movement. Use fasteners, protective coatings, sealants, and miscellaneous items as required to complete roof expansion joints.

2. Install roof expansion joints true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.

3. Provide for linear thermal expansion of roof expansion joint materials.

4. Provide uniform profile of roof expansion joint throughout its length; do not stretch or squeeze membranes.

5. Provide uniform, neat seams.

6. Install roof expansion joints to fit substrates and to result in watertight performance.

B. Directional Changes: Install factory-fabricated units at directional changes to provide continuous, uninterrupted, and watertight joints.

C. Transitions to Other Expansion-Control Joint Assemblies: Coordinate installation of roof expansion joints with other exterior expansion-control joint assemblies specified in Section 079513.16 "Exterior Expansion Joint Cover Assemblies" to result in watertight performance.

D. Splices: Splice roof expansion joints to provide continuous, uninterrupted, and waterproof joints.

   1. Install waterproof splices and prefabricated end dams to prevent leakage of secondary-seal membrane.

E. Fire Barrier: Install fire barrier as required by manufacturer to provide continuous, uninterrupted fire resistance throughout length of roof expansion joint, including transitions and end joints.

F. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

END OF SECTION 07 7129
SECTION 07 7200 - ROOF ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES
   A. Roof hatches.

1.2 REFERENCE STANDARDS

1.3 ADMINISTRATIVE REQUIREMENTS
   A. Preinstallation Meeting:
      1. Review preparation and installation procedures and coordinating and scheduling required with related work.
      2. Representatives of the Owner, Architect, and Installer shall be present at pre-installation conference.

1.4 SUBMITTALS
   A. See Division 01 - Submittal Procedures.
   B. Product Data: Manufacturer's data sheets on each product to be used.
      1. Compliance with project FM Requirements.
      2. Preparation instructions and recommendations.
      3. Storage and handling requirements and recommendations.
      4. Installation methods.
      5. Maintenance requirements.
   C. Shop Drawings: Submit detailed layout developed for this project. Show dimensioned location and number for each type of roof accessory.
      1. Submit design calculations for loadings and spacings for railings and fall arrest anchors.
      2. Submit shop drawings sealed and signed by a Professional Engineer experienced in design of this type of work and licensed in the State of Hawaii.
   D. Warranty Documentation:
      1. Submit manufacturer warranty.
      2. Ensure that forms have been completed in State's name and registered with
1.5 DELIVERY, STORAGE, AND HANDLING
A. Store products in manufacturer’s unopened packaging until ready for installation.
B. Store products under cover and elevated above grade.

1.6 WARRANTY
A. Correct defective Work within a five year period after Date of Project Acceptance.
B. Provide five year manufacturer warranty for defects in material and workmanship.
C. The Surety shall not be held liable beyond two years from the project acceptance date.

PART 2 PRODUCTS

2.01 ROOFHATCHES
A. Basis of Design: Type L (service stair size), Bilco Company; www.bilco.com/sle.
B. Other Acceptable Manufacturers:
C. Roof Hatches - General: Factory-assembled aluminum frame and cover, complete with operating and release hardware.
   1. Style: Provide flat metal covers unless otherwise indicated.
   2. Mounting: Provide frames and curbs suitable for mounting conditions indicated on the drawings and verified in the field.
   3. For Stair Access: Single leaf; 30 by 96 inches (762 by 2438 mm) – verify size with existing opening.
D. Frames/Curbs: One-piece curb and frame with integral cap flashing to receive roof flashings; extended bottom flange to suit mounting.
   1. Material: Mill finished aluminum, 11 gage, 0.0907 inch (2.3 mm) thick.
   2. Insulation: Manufacturer's standard; 1 inch (25 mm) rigid glass fiber, located on outside face of curb.
   3. Curb Height: As indicated on drawings.
E. Metal Covers: Flush, insulated, hollow metal construction.
   1. Capable of supporting 40 psf (1.92 kPa) live load.
   2. Material: Mill finished aluminum; outer cover 11 gage, 0.0907 inch (2.3 mm) thick, liner 0.04 inch (1.0 mm) thick.
3. Insulation: Manufacturer's standard 1 inch (25 mm) rigid glass fiber.


F. Safety Railing System: Manufacturer's standard accessory safety rail system mounted directly to curb.
   3. Gate: Same material as railing; automatic closing with latch.
   4. Finish: Manufacturer's standard; molded in integral safety yellow treated with a UV inhibitor.
   5. Gate Hinges and Post Guides: ASTM B221 (ASTM B221M), 6063 alloy, T5 temper aluminum.
   6. Mounting Brackets: Hot dipped galvanized steel, 1/4 inch (6.4 mm) thick, minimum.
   7. Fasteners: Type 316 stainless steel.

G. Hardware: Steel, zinc coated and chromate sealed, unless otherwise indicated or required by manufacturer. Stainless Steel where exposed to exterior.
   1. Lifting Mechanisms: Compression or torsion spring operator with shock absorbers that automatically opens upon release of latch; capable of lifting covers despite 10 psf (475 kPa) load.
   2. Hinges: Heavy duty pintle type with 3/8” 316 stainless steel hinge pins.
   3. Hold open arm with vinyl-coated handle for manual release.

PART 3 EXECUTION

3.1 EXAMINATION
   A. Do not begin installation until substrates have been properly prepared.
   B. If substrate preparation is the responsibility of another installer, notify Contracting Officer of unsatisfactory preparation before proceeding.

3.2 PREPARATION
   A. Clean surfaces thoroughly prior to installation.
   B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION
Texas A&M University Corpus Christi  
PAC Re-Roof

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing weather integrity.

### 3.4 CLEANING

A. Clean installed work to like-new condition.

### 3.5 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION
SECTION 07 9200 - JOINT SEALANTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Nonsag gunnable joint sealants.
B. Joint backings and accessories.

1.2 REFERENCE STANDARDS


1.3 SUBMITTALS

A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used that includes the following.
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.
   5. Substrates for which use of primer is required.
B. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
B. Field Quality Control Plan:
   1. Visual inspection of entire length of sealant joints.
2. Non-destructive field adhesion testing of sealant joints, except interior acrylic latex sealants.
   a. Test the entire length of every sealant joint.

C. Non-Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Continuous Method.

1.5 WARRANTY
A. Correct defective work within a five year period after Date of Substantial Completion.
B. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.1 MANUFACTURERS
D. Dow Corning Corporation: www.dowcorning.com/construction.

2.2 JOINT SEALANT APPLICATIONS
A. Scope:
   1. Exterior Joints: Seal open joints, whether or not the joint is indicated on the drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
      a. Joints between different exposed materials.

B. Exterior Joints: Use nonsag non-staining silicone sealant, unless otherwise indicated.
   1. Ensure compatibility with adjacent components and materials.
   2. Where specified in other sections utilize manufacturer’s recommended sealant.
2.3 JOINT SEALANTS - GENERAL

2.4 NONSAG JOINT SEALANTS
   
   A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
      1. Movement Capability: Plus and minus 50 percent, minimum.
      2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
      3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
      5. Cure Type: Single-component, neutral moisture curing.

2.5 ACCESSORIES
   
   A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
   B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
   C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
   D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
   E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.1 EXAMINATION
   
   A. Verify that joints are ready to receive work.
   B. Verify that backing materials are compatible with sealants.
   C. Verify that backer rods are of the correct size.

3.2 PREPARATION
   
   A. Remove loose materials and foreign matter that could impair adhesion of sealant.
   B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.3 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.

D. Install bond breaker backing tape where backer rod cannot be used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.4 FIELD QUALITY CONTROL

A. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.

B. Non-Destructive Adhesion Testing: If there are any failures in first 100 linear feet (30 linear m), notify Architect immediately.

C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

END OF SECTION
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies the lightning protection system for the Texas A&M University Corpus Christi Performing Arts Center Re-Roof. This system shall provide safety for the building and occupants by preventing damage to the structure caused by lightning. The design of this system is to be in strict accordance with this section of the specification and all contract drawings that apply.

B. The work covered under this section of the specifications consists of furnishing labor, materials and services required for the completion of a functional, unobtrusive, certified lightning protection system.

C. Work is exclusive to firms actively engaged in the installation of certified lightning protection systems.

1.3 SYSTEM DESCRIPTION/DESIGN

A. The entire lightning protection system shall be designed and installed in accordance with one or more of the following:
   1. National Fire Protection Assoc. (NFPA) Document # 780
   2. Underwriters’ Laboratories, Inc. (UL) Standard # 96 and 96A
   3. Lightning Protection Institute (LPI) Standard # 175

B. The lightning protection system shall be designed by an LPI Certified Master Designer and the shop drawings shall bear the designers seal. The seal shall be current at the time of submission and shall be signed by the Master Designer. This shall be accepted in lieu of a state certified engineers stamp on the lightning protection drawings.

1.4 SUBMITTALS

A. Complete shop drawings shall be submitted for approval prior to commencement of the installation. The shop drawing will show the extent of the system layout designed for the structure along with details of the products to be used in the installation.

B. Submit a copy of the LPI Master Installer Certificate for the certified person selected to perform on-site oversight of the job.
1.5 QUALITY ASSURANCE

A. The lightning protection system shall conform to the requirements and standards for lightning protection systems of LPI, UL and NFPA. Provide Lightning Protection Institute Inspection Program inspection and issuance of the system certification.

1.6 PRODUCTS

A. All materials shall comply in weight, size, and composition with the requirements of a nationally recognized testing laboratory. All equipment shall be listed and properly labeled. The system furnished under this specification shall be the standard product of a manufacturer regularly engaged in the production of lightning protection equipment and a member of LPI. Equipment shall be the manufacturer’s latest approved design of construction to suit the application where it is to be used in accordance with accepted industry standards and with NFPA, LPI, & UL requirements.

B. Components must meet the FM Requirements of the project.

C. Acceptable Manufacturers

1. Advanced Lightning Technology, Ltd. (www.altfab.com)
2. East Coast Lightning Equipment, Inc. (www.ecle.biz)
3. ERICO, Inc. (www.erico.com)
4. Harger, Inc. (www.harger.com)
5. Heary Brothers Lightning Protection Co., Inc. (www.hearybros.com)
7. Preferred Lightning Protection (www.preferredlp.com)
8. Robbins Lightning, Inc. (www.robbinslightning.com)

PART 2 - PRODUCTS

2.1 PRODUCTS

A. All materials shall comply in weight, size, and composition with the requirements of a nationally recognized testing laboratory. All equipment shall be listed and properly labeled. The system furnished under this specification shall be the standard product of a manufacturer regularly engaged in the production of lightning protection equipment and a member of LPI. Equipment shall be the manufacturer’s latest approved design of construction to suit the application where it is to be used in accordance with accepted industry standards and with NFPA, LPI, & UL requirements.

B. Components must meet the FM Requirements of the project.
C. Acceptable Manufacturers:

1. Advanced Lightning Technology, Ltd. (www.altfab.com)
2. East Coast Lightning Equipment, Inc. (www.eclle.biz)
3. ERICO, Inc. (www.erico.com)
4. Harger, Inc. (www.harger.com)
5. Heary Brothers Lightning Protection Co., Inc. (www.hearybros.com)
7. Preferred Lightning Protection (www.preferredlp.com)
8. Robbins Lightning, Inc. (www.robbinslightning.com)

2.2 MATERIALS

A. Where deemed appropriate by the LPI Master Installer, existing materials and components may be salvaged and reinstalled provided they meet project requirements including wind loads, FM Requirements, and waterproofing requirements.

B. Class I materials shall be used for systems on structures not exceeding 75 feet in height and Class II materials shall be used for systems on structures exceeding 75 feet above grade.

C. Copper shall be of the grade ordinarily required for commercial electrical work, generally designated as being 95 percent conductive when annealed. Aluminum conductors shall be of electrical grade aluminum.

D. Lightning protection materials shall be coordinated with building construction materials to assure compatibility. Aluminum lightning protection materials shall not be embedded in concrete or masonry, installed on or below copper surfaces, or used for the in-ground system. Copper lightning protection materials shall not be installed on aluminum surfaces. Copper system components within 2 feet of chimney exhausts shall be tin coated to protect against deterioration.

E. Strike termination devices shall be provided to place the entire structure under a zone of protection as defined by the Standards. Air terminals shall project a minimum of 10 inches above protected areas or objects. Air terminals shall be located within 2 feet of exposed corners and roof edges.

F. Metallic bodies having a thickness 3/16” or greater may serve as strike termination devices without the addition of air terminals. These bodies shall be made a part of the lightning protection system by connection(s) according to the Standards using main size conductors and bonding fittings with 3 square inches of surface contact area.

G. Cable conductors shall provide a two-way path from strike termination devices horizontally and downward to connections with the ground system. Cable conductors shall be free of excessive splices and sharp bends. No bend of a conductor shall form a final included angle of less than 90 degrees nor have a radius of bend less than 8 inches. Structural elements and design features shall be used whenever possible to minimize the visual impact of exposed conductors.

H. Cable down conductors shall be routed in such a way as to minimize them from view from roof to grade level. Down conductors shall be spaced at intervals averaging not more than 100 feet.
around the protected perimeter of the structure. In no case shall any structure have fewer than two down conductors. Where down conductors exposed to environmental hazards at grade level, guards shall be used to protect the conductor to a point 6 feet above grade.

I. Exposed cable conductors shall be secured to the structure at intervals not exceeding 3 feet – 0 inches. Fasteners, nails, screws, or bolts shall be of suitable configuration for the intended application and of the same material as the conductor or of electrolytically compatible materials. Galvanized or plated steels are not acceptable.

J. Connectors and splices shall be of suitable configuration and type for the intended application and of the same material as the conductors or of electrolytically compatible materials.

K. Ground terminations suitable for the soil conditions shall be provided for each down lead conductor. For any structure in excess of 60 ft. in vertical elevation above grade, a ground loop interconnecting all ground terminals and other building grounded systems shall be provided.

L. Common interconnection of all grounded systems within the building shall be accomplished using main size conductors and fittings. Grounded metal bodies located within the calculated bonding distance as determined by the formulas of the Standards shall be bonded to the system using properly sized bonding conductors.

M. Verify surge suppression has been provided at every system entrance to the structure to prevent massive lightning over voltages from entering the structure.

PART 3 - EXECUTION

3.1 GENERAL

A. The installation shall comply with the requirements of NFPA 780, UL96A, and LPI 175.

3.2 ACCEPTABLE INSTALLERS

A. The lightning protection installation company shall employ an LPI Certified Master Installer to oversee/lead on-site installation of the subject lightening protection system. A copy of that certified person’s certification shall be part of the submittal package. The card shall be carried onsite at all times.

3.3 SYSTEM INSTALLATION

A. The installation of the lightning protection system components shall be done in a neat and workmanlike manner.

B. Roof penetrations will not be allowed. Down conductors shall be routed around roof assemblies, taking care to keep them neat and as concealed as possible

C. LPI certification requires a signature by a representative of the owner for two stages of the installation – the in-ground system and the exposed or roof level section. LPI certification also requires photo documentation of the in-ground system and the concealed portions of the
installation. LPI certification requires inspection by their third-party field staff after completion of the installation. Upon completion of the lightning protection installation, the installing contractor shall provide to the owner an as-built drawing of the system, along with copies of the LPI Certificates of completion.

D. If the protected structure is an addition to or is attached to an existing structure that does not have a lightning protection system, the contractor shall certify that the system installed complies with the requirements of the Standards, and advise the owner of the lightning protection work required on the existing structure to obtain full certification for the structure. If the existing structure does have a lightning protection system, the contractor shall advise the owner of any additional work required on the existing system to bring it into compliance with current Standards and thus qualify for and LPI certification.

END OF SECTION 26 4100