SPECIFICATIONS

FOR

ROOF REPLACEMENT
BUILDING T
BLINN COLLEGE – BRYAN CAMPUS
PROJECT NUMBER 193910-01
RFP NO. 163

BLINN COLLEGE
BRYAN CAMPUS -- TEXAS

JANUARY 20, 2020

Prepared By

AESTIMO, INC.
TBPE FIRM REGISTRATION NO. F-1695
955 DAIRY ASHFORD, SUITE 204
HOUSTON, TEXAS 77079
(TELEPHONE: 281-556-1522; FAX: 281-556-1546)
ADVERTISEMET FOR COMPETITIVE SEALED PROPOSAL

PUBLIC NOTICE RFP #163
Roof Replacement Building T - Bryan Campus

Blinn College District, a Junior College District of Washington County is receiving competitive sealed proposals for General Contractor services for the construction of roof replacement to Building T on the Bryan campus in Bryan, Texas.

Sealed proposals addressed to Mr. Ross Schroeder, Director of Purchasing will be received at mailing address: 902 College Ave., Room 207 Old Main Bldg. Brenham, Texas 77833 or hand delivered to 806 College Ave., Room 207 Old Main Bldg., Brenham, Texas until 2:30 P.M. February 12, 2020, when they will be publicly opened and read aloud for furnishing all labor, materials, and equipment and performing all work required for the roof replacement, hereinafter termed "Project".

Proposals shall be submitted in sealed envelopes upon the blank form of proposal furnished. Prospective Bidders should also include an electronic copy of their proposal on a USB flash drive in the sealed envelope. Sealed envelopes shall be marked in the upper left-hand corner as follows:

"DO NOT OPEN IN MAIL ROOM"

RFP #163
CSP FOR ROOF REPLACEMENT OF BUILDING T
BLINN COLLEGE, BRYAN CAMPUS
Engineer’s Project Number: 193910-01

PROPOSALS OPENED: February 12, 2020 AT 2:30 P.M.

A Non-mandatory Pre-Proposal Meeting is scheduled at 10:00 a.m., February 6, 2020 in Conference Room 205 at Building T, Blinn-Bryan Campus, 2423 Blinn Blvd., Bryan, Texas for contractors submitting a proposal.

In general, the Scope of Work to be provided by the Contractor on this project includes the installation of a new 2-ply modified bitumen roof system at Building T on the Bryan campus. Refer to the project specifications and drawings for further detail on the scope of work.

The anticipated construction schedule will allow construction to commence on May 18, 2020. The success of this project relies on completion of all construction by August 3, 2020.
Construction documents will be available beginning January 21, 2020 from Aestimo, Inc. upon request by contacting David Swords at david@aestimo.com or 281-556-1522. All documents will be issued electronically.

All proposals shall be accompanied by a cashier's or certified check upon a national or state bank in the amount of five percent (5%) of the largest possible total of the bid submitted, payable to the Owner, or a bid bond in the same amount issued by a surety company with a minimum "A" or "A-" rating from Best's Key Rating Guide and who are licensed by the Texas Department of Insurance to do business in Texas and to issue said bonds. The bid bond must be signed by an authorized representative of the surety and be licensed by the State Board of Insurance. Proposals without a check or bid bond will not be considered.

All bid securities will be returned to the respective bidders within ten (10) days after bids are opened, except those which the Owner elects to hold until the successful bidder has executed the contract and furnished performance and payment bonds. Thereafter, all remaining securities, including security of the successful bidder, will be returned within then (10) days.

The successful bidder must furnish Performance bond and Payment Bond upon the forms which are attached hereto in the amount of one hundred percent (100%) of the contract price within 10 days after receipt of the contract documents. Performance and payment bonds shall be issued form sureties with a minimum "A" or "A-" rating from Best's Key Rating Guide and who are licensed by the Texas Department of Insurance to do business in Texas and to issue said bonds. The bonds must be signed by an authorized representative of the surety and be licensed by the State Board of Insurance.

The Owner reserves the right to reject any and all proposals and to waive any or all informalities and irregularities. In case of ambiguity or lack of clearness in stating prices in the proposal, the Owner reserves the right to adopt the prices written in words or to reject the proposal. No bidder may withdraw his bid within 60 days after actual date of opening thereof.

Bidders are expected to inspect the site of the work and to inform themselves of local conditions, and carefully examine the specifications and other documents. Should a bidder find discrepancies in, or omissions from the specifications or documents, or should question their meaning, he should at once notify David Swords with Aestimo Consultants and obtain clarification prior to submitting any proposal.

Blinn College reserves the right to award proposals in a manner most advantageous to the College.
**TABLE OF CONTENTS**

**BIDDING DOCUMENTS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Total Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Drawings</td>
<td>1</td>
</tr>
<tr>
<td>I Bid Requirements</td>
<td>2</td>
</tr>
<tr>
<td>II Bid Submittal</td>
<td>5</td>
</tr>
<tr>
<td>III Standard Form of Agreement</td>
<td>1</td>
</tr>
<tr>
<td>IV Performance Bond</td>
<td>2</td>
</tr>
<tr>
<td>V Payment Bond</td>
<td>1</td>
</tr>
<tr>
<td>VI Certificate of Insurance</td>
<td>1</td>
</tr>
<tr>
<td>VII Scope of Work</td>
<td>2</td>
</tr>
<tr>
<td>VIII Authorized Signatures</td>
<td>1</td>
</tr>
<tr>
<td>IX Felony Conviction Notice</td>
<td>1</td>
</tr>
<tr>
<td>X General Conditions (AIA A201-2017, by reference)</td>
<td>1+</td>
</tr>
<tr>
<td>Attachment A – Insurance &amp; Bond Requirements</td>
<td>2</td>
</tr>
<tr>
<td>Attachment B – Conflict of Interest Questionnaire</td>
<td>2</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Total Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 80 00 Supplementary Conditions</td>
<td>9</td>
</tr>
<tr>
<td>01 11 00 Summary of Work</td>
<td>2</td>
</tr>
<tr>
<td>01 21 00 Allowances</td>
<td>3</td>
</tr>
<tr>
<td>01 31 00 Project Management and Coordination</td>
<td>4</td>
</tr>
<tr>
<td>01 33 00 Submittal Procedures</td>
<td>8</td>
</tr>
<tr>
<td>01 42 00 Reference Standards and Definitions</td>
<td>5</td>
</tr>
<tr>
<td>01 45 00 Quality Controls</td>
<td>3</td>
</tr>
<tr>
<td>01 50 00 Temporary Facilities</td>
<td>7</td>
</tr>
<tr>
<td>01 60 00 Products, Materials and Equipment</td>
<td>8</td>
</tr>
<tr>
<td>01 70 00 Project Closeout</td>
<td>3</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>01 78 39</td>
<td>Project Record Documents</td>
</tr>
<tr>
<td>06 10 53</td>
<td>Rough Miscellaneous Carpentry</td>
</tr>
<tr>
<td>07 22 00</td>
<td>Roof and Deck Insulation</td>
</tr>
<tr>
<td>07 52 00</td>
<td>Modified Bituminous Membrane Roofing</td>
</tr>
<tr>
<td>07 62 00</td>
<td>Sheet Metal Flashings and Trim</td>
</tr>
<tr>
<td>07 92 00</td>
<td>Joint Sealants</td>
</tr>
<tr>
<td>09 91 00</td>
<td>Painting</td>
</tr>
</tbody>
</table>

END OF TABLE OF CONTENTS

Digitally signed by John C. Fairchild
Date: 2020.01.21
09:23:37 -06'00'
JANUARY 20, 2020

LIST OF DRAWINGS

ROOF DEMOLITION PLAN
BUILDING CODE COMPLIANCE PLAN
ROOF REPLACEMENT PLAN
ROOF REPLACEMENT DETAILS
ROOF REPLACEMENT DETAILS

R-1
R-2
R-3
R-4
R-5

END OF LIST OF DRAWINGS
I. BID REQUIREMENTS

A. Defined Terms:
   a. Bidder – one who submits a Bid directly to Owner as distinct from a sub-bidder, who submits a bid to a bidder.
   b. Owner – Blinn College
   c. Successful Bidder – the lowest, responsible and responsive bidder to whom Owner (on the basis of Owner’s evaluation as hereinafter provided) makes an award

B. Owner reserves the right to reject any or all Bids, including without invitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

C. In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted.

D. Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

E. Blinn College (Owner) is a state-supported public junior college and, as such, is exempt from payment of state sales tax.

F. To demonstrate Bidder’s qualifications to perform the Work, within five days of Owner’s request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below. Each bid must contain evidence of bidder's qualification to do business in the State of Texas.

G. It is the responsibility of each Bidder before submitting a Bid to:
   a. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;
   b. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and site conditions that may affect cost, progress, and performance of the Work;
   c. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;
H. All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

I. Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

J. The Successful Bidder agrees to enter into and execute a contract if awarded, on the basis of bidding documents, contract documents and the Base Bid and any alternates.

K. The Successful Bidder must provide a certificate of coverage to Blinn College (Owner) prior to starting project.

The Successful Bidder must provide and maintain in force at no cost to Blinn College (Owner) for the duration of the contract a Certificate of Liability Insurance. Successful Bidder is required to provide Blinn College (Owner) with a 30 day notification of cancellation / change. Certificate must meet the requirements provided in Attachment A – Insurance & Bond Requirements.

L. Successful Bidder must obtain from each sub-contractor a certificate of coverage, prior to that sub-contractor beginning work on the project. Successful Bidder shall provide such certificate to Blinn College (Owner).

M. Successful Bidder agrees to accomplish the work in accordance with the Contract Documents, Specifications, and Bidding Documents.

N. Successful Bidder must provide all material, equipment, and labor that are required to complete the project.

END OF DOCUMENT
II. BID SUBMITTAL

PROJECT IDENTIFICATION:

ROOF REPLACEMENT – BUILDING T
BLINN COLLEGE, BRYAN CAMPUS
Project Number: 193910-01
RFP No. 163

This Bid is submitted to:

Mr. Ross Schroeder
Director of Purchasing, Blinn College
902 College Ave. Room 204
Brenham, Texas 77833

1) The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2) Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

3) In submitting this Bid, Bidder represents that:

   A. Bidder has examined and carefully studied the Bidding Documents; the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

      | Addendum No. | Addendum Date |
      |--------------|---------------|

   B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

   C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

   D. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
E. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

K. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.

4) Bidder further represents that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

5) Ethics:

A. The Bidder shall not accept or propose gifts or anything of value nor enter into any business arrangement with any employee, official or agent of Blinn.

B. **House Bill 1295**: Effective January 1, 2016, Blinn College shall comply with the “Disclosure of Interested Parties” requirements mandated by HB 1295, as implemented by the Texas Ethics Commission. Briefly stated, contracts for goods or services which require an action vote by Blinn’s governing body may not be executed by the college until the awarded Bidder presents a signed and notarized form disclosing the interested parties to the contract. The awarded Bidder will be required to complete the form prior to the execution of the contract. If the awarded Bidder does not comply, the award may be revoked. The filing application and information can be accessed at: [http://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm](http://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm).
6) **Base Bid:** Bidder will complete the Work in accordance with the Contract Documents for the following prices, including all materials, labor, permit fees, taxes, and any other costs related to completing the work. Prices shall be for "as installed" and shall not be increased or affected by any physical or other condition at the site, whether or not BIDDER is aware of such condition, with the exception of unforeseen concealed obstacles. In general, the Base Bid Scope of Work shall include, but is not necessarily limited to:

A. **Roof Area - A:**

   (1) Remove and properly dispose of existing surfacing (gravel), roof membrane and flashings, insulation board, etc. to prepare for the installation of a new roof membrane system.

   (2) Remove and properly dispose of abandoned pitch pans near the southeast corner of Roof Area A, as indicated on drawings.

   (3) Remove and properly dispose of existing flagpole and steel flagpole mounting bracket on the north parapet wall, as indicated on drawings. Properly repair holes in concrete wall panels from bracket mounting bolts.

   (4) Raise existing gas line and/or HVAC condensate lines, as necessary, for the installation of the new roof membrane system.

   (5) Raise existing exhaust fan curbs and/or HVAC unit curbs to allow for a minimum of 8 inches in height of base flashing membrane at each location.

   (6) Install two layers of 2.2” flat-stock polyisocyanurate insulation, loose laid.

   (7) Install ½” flat-stock recovery board over flat-stock insulation, mechanically fasten to existing steel deck.

   (8) Install one-ply modified bitumen base sheet membrane, torch apply.

   (9) Install fire-rated, granule-surfaced modified bitumen cool roof cap sheet membrane, torch apply.

   (10) Install fire-rated, granule-surfaced modified bitumen base flashing membrane, torch apply.

   (11) Install reinforced liquid-applied flashing at pipe and other circular penetrations.

   (12) Install new pre-finished sheet metal copings, counter-flashings, penetration flashings, through-wall scuppers and other sheet metal components.

   (13) Install new treated wood pipe/conduit supports with membrane protection pads.

   (14) Install new modified bitumen walkway pads, where indicated on drawings.

   (15) Remove corrosion from, properly prepare and apply new paint to all roof-top appurtenances and conduits.

B. **Roof Area - B (canopy):**

   (1) Install polyisocyanurate flute-filler insulation board, loose lay over existing metal R-panel roof.

   (2) Install two layers of 2.2” flat-stock polyisocyanurate insulation board, loose lay over flute-filler insulation.
(3) Install 1/2” flat-stock recovery board, mechanically fasten to existing metal R-panel roof.

(4) Install one-ply modified bitumen base sheet membrane, torch apply.

(5) Install fire-rated, granule-surfaced modified bitumen cool roof cap sheet membrane, torch apply.

(6) Install fire-rated, granule-surfaced modified bitumen base and wall flashing membrane, torch apply.

(7) Install new pre-finished sheet metal copings, counter-flashings, gutters, downspouts and other sheet metal components.

Base Bid (including Owners Contingency): ____________________________________________

_________________________________________________________________________________ Dollars and Cents.

7) **Unit Rates:** In the event that additional itemized repairs are required or requested during this project, Bidder agrees to perform such services for the following unit rates:

   A. Steel Deck Replacement _____________________________ $__________/SF
   B. Roof Drain Replacement _______________________________ $__________/EA

8) **Owners Contingency:** Owners contingency, these funds shall be included in the contract price for use at the sole discretion of the Owner and Engineer, complete in place for the lump sum price of $40,000.00 dollars and cents.

9) Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 14.07.B of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

   A. Bidder agrees that the Work will be substantially complete by August 3, 2020 and will be completed and ready for final payment in accordance with Paragraph 9.10 of the General Conditions by ____________________________.
   B. Bidder accepts the provisions of the Agreement as to liquidated damages of $150.00 per calendar day in the event of failure to complete the Work within the Contract Times.

10) The following documents are attached to and made a condition of this Bid:

   A. Required Bid security in the form of a 5% Bid Bond.

11) The terms used in this Bid with initial capital letters have the meanings stated in the Bid Requirements, and the General Conditions.
RESPECTFULLY SUBMITTED,

Bidder: _______________________________ Signed: _______________________________
Address: ______________________________ Title: _______________________________
_______________________________________

Telephone: (_____)____________________  SEAL - If Bidder is a Corporation
III. STANDARD FORM OF AGREEMENT

I. CONSTRUCTION CONTRACT AGREEMENT
   A. The contract for the construction of the project shall be executed by the successful offeror on the 2017 Edition of AIA Document A101 "Standard Form of Agreement Between Owner and Contractor”. Said contract, fully executed, shall be delivered to the Owner within ten (10) days of receipt of said contract.

II. CONDITIONS OF THE CONTRACT
   A. The General Conditions of the Contract for Construction, AIA Document A201, 2017 Edition, is hereby specifically made a part of the Contract Documents, whether attached hereto or not; and as supplemented and amended herein, constitutes the General Conditions.
   B. Supplementary Conditions included in Section 00 80 00.

III. AVAILABILITY
   A. Proposal Documents are available, in electronic format only, from Aestimo Inc. by contacting David Swords at david@aestimo.com or 281-556-1522.

   Proposal documents are available for review at the following locations:

   Associated General Contractors of Houston (AGC) Plan Room
   BVCA Plan Room

END OF DOCUMENT
IV. PERFORMANCE BOND

TEXAS STATUTORY PERFORMANCE BOND

Bond No.: _________

(Penalty of this bond must be 100% of contract amount)

KNOW ALL MEN BY THESE PRESENTS, that: ________________________________________________

(hereinafter called the Principal), as principal, and a corporation organized and existing under the laws of
the State of ___________________________ authorized and admitted to do business in the State of Texas
and licensed by the State of Texas to execute bonds as Surety (hereinafter called the Surety), as Surety, are
held and firmly bound unto

______________________________________________

(hereinafter called the Obligee) in the amount of

______________________________________________

Dollars ($_______________________) for the payment whereof, the said Principal and Surety bind
themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly
by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the
day of _________________, 2020, for

Roof Replacement – Building T
BLINN COLLEGE – BRYAN CAMPUS

which contract is hereby referred to and made a part hereof as fully and the same extent as if copied at
length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal
shall faithfully perform the work in accordance with the plans, specifications and contract documents, then
this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 22.53 of the
Texas Government Code and all liabilities on this bond shall be determined in accordance with the
provisions of said Chapter to the same extent as if it were copied at length herein.
IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this Instrument this ______ day of __________________________, 2020.

(Seal)  Principal
__________________________

__________________________  Surety Address

__________________________  Surety

__________________________  Surety Telephone Number

__________________________  By:

(Seal)

__________________________  By:

Attorney-in-Fact

END OF DOCUMENT
V. PAYMENT BOND

TEXAS STATUTORY PAYMENT BOND No.: __________
(Penalty of this bond must be 100% of contract amount)

KNOW ALL MEN BY THESE PRESENTS, that: __________________________
(hereinafter called the Principal), as principal, a corporation organized and existing under the laws of the
State of ___________________________ authorized and admitted to do business in the State of Texas and
licensed by the State of Texas to execute bonds as Surety (hereinafter called the Surety), as Surety, are held
and firmly bound unto

_________________________
(hereinafter called the Obligee) in the amount of ____________________________ Dollars
($_______________________) for the payment whereof, the said Principal and Surety bind themselves,
and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these
presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the
_______ day of ____________________________, 2020, for

Roof Replacement – Building T
BLINN COLLEGE – BRYAN CAMPUS

which contract is hereby referred to and made a part hereof as fully and the same extent as if copied at
length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal
shall pay all claimants supplying labor and material to him or a Subcontractor in the prosecution of the
work provided for in said contract, then this obligation shall be void; otherwise to remain in full force and
effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 22.53 of the
Texas Government Code and all liabilities on this bond to all such claimants shall be determined in
accordance with the provisions of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this Instrument this
_______________ day of ____________________________, 2020.

Witness: __________________________ By: __________________________
(Seal) Principal

Witness: __________________________ By: __________________________
(Seal) Surety

Witness: __________________________
(Seal)

Attorney-in-Fact

________________________
Surety Address

________________________
Surety Telephone Number

END OF DOCUMENT
VI. CERTIFICATE OF INSURANCE

NOTE: (Provided by the successful low bidder)

END OF DOCUMENT
VII. SCOPE OF WORK

In general, the Scope of Work to be provided by the Contractor on this project includes the installation of a new 2-ply modified bitumen roof membrane system at Building T on the Bryan campus. Specifically, the work shall include, but is not necessarily limited to, the following:

A. Roof Area - A:

1. Remove and properly dispose of existing surfacing (gravel), roof membrane and flashings, insulation board, etc. to prepare for the installation of a new roof membrane system.

2. Remove and properly dispose of abandoned pitch pans near the southeast corner of Roof Area A, as indicated on drawings.

3. Remove and properly dispose of existing flagpole and steel flagpole mounting bracket on the north parapet wall, as indicated on drawings. Properly repair holes in concrete wall panels from bracket mounting bolts.

4. Raise existing gas line and/or HVAC condensate lines, as necessary, for the installation of the new roof membrane system.

5. Raise existing exhaust fan curbs and/or HVAC unit curbs to allow for a minimum of 8 inches in height of base flashing membrane at each location.

6. Install two layers of 2.2” flat-stock polyisocyanurate insulation, loose laid.

7. Install ½” flat-stock recovery board over flat-stock insulation, mechanically fasten to existing steel deck.

8. Install one-ply modified bitumen base sheet membrane, torch apply.

9. Install fire-rated, granule-surfaced modified bitumen cool roof cap sheet membrane, torch apply.

10. Install fire-rated, granule-surfaced modified bitumen base flashing membrane, torch apply.

11. Install reinforced liquid-applied flashing at pipe and other circular penetrations.

12. Install new pre-finished sheet metal copings, counter-flashings, penetration flashings, through-wall scuppers and other sheet metal components.

13. Install new treated wood pipe/conduit supports with membrane protection pads.

14. Install new modified bitumen walkway pads, where indicated on drawings.

15. Remove corrosion from, properly prepare and apply new paint to all roof-top appurtenances and conduits.
B. Roof Area - B (canopy):

1. Install polyisocyanurate flute-filler insulation board, loose lay over existing metal R-panel roof.

2. Install two layers of 2.2” flat-stock polyisocyanurate insulation board, loose lay over flute-filler insulation.

3. Install 1/2” flat-stock recovery board, mechanically fasten to existing metal R-panel roof.

4. Install one-ply modified bitumen base sheet membrane, torch apply.

5. Install fire-rated, granule-surfaced modified bitumen cool roof cap sheet membrane, torch apply.

6. Install fire-rated, granule-surfaced modified bitumen base and wall flashing membrane, torch apply.

7. Install new pre-finished sheet metal copings, counter-flashings, gutters, downspouts and other sheet metal components.

Division 1 – General Requirements, 01 11 00 Summary of Work, is provided in the Project Specifications to further describe the scope of work and contract requirements.

END OF DOCUMENT
VIII. AUTHORIZED SIGNATURES

“The undersigned affirms that they are duly authorized to execute this contract, that this company, corporation, firm, partnership or individual has not prepared this bid in collusion with any other Bidder, and that the contents of this bid as to prices, terms or conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this bid.”

Company Name ____________________________________________

Address ____________________________________________________

City ______________________ State _____________________ Zip Code ___________

Authorized Signature __________________________ Date _______________

Signature Typed or Printed ______________________________ Title _______________

Telephone ___________________ FAX ___________________ E-mail _____________

END OF DOCUMENT
IX. FELONY CONVICTION NOTICE

State of Texas Legislative Senate Bill No. 1, Section 44.034, Notification of Criminal History, Subsection (a), states a person or business entity that enters into a contract with a College must give advance notice to the College if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in the conviction of a felony.

(I) (We), the undersigned agent for the firm named below, certify that the information concerning notification of felony convictions has been reviewed by me and the following information furnished is true to the best of my knowledge.

COMPANY NAME: ______________________________________________________________________

AUTHORIZED PRINTED NAME: ______________________________________________________________________

Title: ______________________________________________________________________

Check the appropriate box and sign the form.

☐ My firm is a publicly-held corporation; therefore, this reporting requirement is not applicable.

AUTHORIZED SIGNATURE: ______________________________________________________________________

☐ My firm is not owned nor operated by anyone who has been convicted of a felony.

AUTHORIZED SIGNATURE: ______________________________________________________________________

☐ My firm is owned or operated by the following individual(s) who has/have been convicted of a felony.

Name of Felony: ______________________________________________________________________

Details of Conviction(s) ______________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

AUTHORIZED SIGNATURE: ______________________________________________________________________
X. GENERAL CONDITIONS


2. Supplementary Conditions included in Section 00 80 00.

END OF DOCUMENT
ATTACHMENT A

INSURANCE & BOND REQUIREMENTS

Contractor shall not commence work until all required bonds and insurance coverages have been obtained and such insurance has been reviewed and approved by the College. Certificates of Insurance on the current ACORD form shall be issued to the College showing all required insurance coverages.

Bonds Required

Construction, installation and service contracts (including repair and alteration) exceeding $25,000 require that 100% Performance and Payment Bonds be furnished by the successful bidder (contractor). All such bids must include a 5% Bid Bond.

Non Construction, non installation or supply contracts exceeding $25,000 require that a 100% Supply Bond be furnished by the successful bidder (contractor). Bonds shall be issued by a company authorized to do business in the State of Texas (http://www.tdi.texas.gov/webinfo/colists.html) with an A.M. Best Company (http://www3.ambest.com/ratings/RatingsSearch.asp) rating of at least A- VIII, and included on the U.S. Department of the Treasury Listing of Approved Sureties (Dept. Circular 570 (http://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570_a-z.htm). The contractor shall absorb any and all costs of such Bonds.

<table>
<thead>
<tr>
<th>Insurance Required</th>
<th>Limit Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automobile Liability</strong> insurance covering Any Auto</td>
<td>$1,000,000 Combined Single Limit</td>
</tr>
<tr>
<td><strong>Comprehensive (Commercial) General Liability</strong> insurance including Products, Completed Operations, Independent Contractors, Broad Form Property Damage, Pollution and Blanket Contractual Liability coverages. XCU exclusions to be removed when underground work is performed.</td>
<td>$1,000,000 Occurrence and Personal Injury $2,000,000 Aggregate $100,000 Fire Damage $5,000 Medical Payments</td>
</tr>
<tr>
<td><strong>Professional Errors &amp; Omissions Liability</strong> insurance may be required from all contractors, licensed or certified as professionals; e.g., engineers, architects, insurance agents, physicians, attorneys, etc.</td>
<td>$1,000,000 Occurrence &amp; Aggregate Retroactive Date preceding date of contract must be shown Extended Reporting Period two years past completion of contract</td>
</tr>
<tr>
<td><strong>Workers Compensation</strong> insurance with limits to comply with the requirements of the Texas Workers' Compensation Act</td>
<td>Statutory Limits</td>
</tr>
<tr>
<td><strong>Employers Liability insurance</strong></td>
<td>$1,000,000.</td>
</tr>
<tr>
<td><strong>Umbrella or Excess Liability</strong> insurance covering in excess of Automobile Liability, General Liability and Worker's Compensation Coverage B. Certificate must list underlying policies and indicate that coverage is “following form”.</td>
<td>One times contract amount for all contracts exceeding $100,000, up to $25,000,000 total limit; $1,000,000 minimum.</td>
</tr>
</tbody>
</table>
All Risk Property Insurance shall be required for any contract or work when property of the College is at risk or in the care, custody and control of the Contractor. Builders Risk insurance shall be required for all construction contracts requiring a bond. All Property insurance shall include coverage against the perils of Domestic & International Terrorism, Flood and Earthquake. (An Installation Floater may be substituted when contract involves installation only.)

Contract Limit or Replacement Cost Value of Scope of Work whichever is greater.

Permission to Occupy must be granted.

Deductible: $10,000  
or  
1/2% of contract up to a $25,000 maximum

Insurance Conditions
All insurance coverages shall be issued on an Occurrence basis (except Professional Liability) by companies acceptable to College and licensed to do business in the State of Texas by the Texas Department of Insurance. Such companies shall have a Best's Key rating of at least "A-X".

The College shall be shown as "Additional Insured" on the Property, General Liability, Automobile Liability and Umbrella (Excess) Liability policies. A "Waiver of Subrogation" clause in favor of the College will be attached to the Workers Compensation, General Liability, Umbrella and the Property insurance policies. Evidence must be included in Certificates of Insurance.

General Liability and Umbrella (Excess) Insurance must be maintained for two years following date of final payment to contractor. A two year extended reporting period is required for Professional Errors and Omissions Liability. Certificates of Insurance must be provided annually.

In addition to certificates of insurance, copies of policy endorsements must be provided a) listing Blinn College as Additional Insured and b) noting Waivers of Subrogation.

All insurance certificates shall obligate the insurance company to notify the College of any non-renewal, cancellation or material change to any of the policies at least 60 days prior to the effective date of the non-renewal, cancellation or change.

If a policy has aggregate limits, a statement of claims against the aggregate limits is required. Contractor shall be responsible for all deductibles; the College shall approve the deductibles selected.

The College reserves the right to review the insurance requirements during the effective period of any contract to make reasonable adjustments to insurance coverages and limits when deemed reasonably prudent by College based upon changes in statutory law, court decisions or potential increase in exposure to loss.

The following insurance documents must be provided to Blinn College prior to the commencement of work:
1. Certificates of Insurance
2. Copies of policy endorsements
   a) listing Blinn College as Additional Insured
   b) providing Waivers of Subrogation in favor of Blinn College
3. Deductible amounts listed by policy type
4. A statement of claims against aggregate limits

Certificate Holder:
Blinn College  E-mail: kbeckendorf@blinn.edu
c/o Kristina Beckendorf
902 College Avenue
Brenham, TX 77833
CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

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

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

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

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

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

   Name of Officer

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

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

      Yes  No

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

      Yes  No

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

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

7. Signature of vendor doing business with the governmental entity  Date
CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

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

Local Government Code § 176.001(1-a): “Business relationship” means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:
(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
(B) a transaction conducted at a price and subject to terms available to the public; or
(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):
(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:
   (2) the vendor:
      (A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that
         (i) a contract between the local governmental entity and vendor has been executed; or
         (ii) the local governmental entity is considering entering into a contract with the vendor;
      (B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:
         (i) a contract between the local governmental entity and vendor has been executed; or
         (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)
(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:
   (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
   (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
   (3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:
   (1) the date that the vendor:
      (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
      (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or
   (2) the date the vendor becomes aware:
      (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
      (B) that the vendor has given one or more gifts described by Subsection (a); or
      (C) of a family relationship with a local government officer.
DOCUMENT 008000 - SUPPLEMENTARY CONDITIONS

1.1 SUPPLEMENTS
A. The following supplements modify, change, delete from or add to the "General Conditions of the Contract for Construction", AIA Document A201, 2017. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the unaltered provision of the Article, Paragraph, Subparagraph or Clause shall remain in effect.

1.2 REFERENCE TO DIVISION 01
A. With regard to provisions of General Conditions related to project administrative or work-related requirements of the Contract, some of those paragraphs are modified or deleted from General Conditions, and are specified in Division 01, "General Requirements" of the Specifications.

ARTICLE 1 - GENERAL PROVISIONS
§ 1.1 Basic Definitions
Add the following new paragraphs:

§ 1.1.9 Product
The term "Product" as used in these Contract Documents includes materials, systems, and equipment.

§ 1.1.10 Provide
The term "provide" as used in this Project Manual means to furnish and install.

§ 1.2 Correlation and Intent of the Contract Documents
Add the following new subparagraphs:

§ 1.2.4 The inter-relation of the Project Manual, the Drawings and the schedules is as follows: The Project Manual determines the quality, nature and setting of the several materials; the Drawings establish the quantities, dimensions and details; and the schedules give the location. The documents are to be considered as one and whatever is called for by any one shall be as binding as if called for by all.

§ 1.2.5 Should the drawings disagree in themselves, or with the Project Manual, or if proprietary information disagrees with performance requirements in either the Drawings or the Project Manual, the better quality or greater quantity of the Work or materials shall be estimated upon, and unless otherwise ordered by the Architect in writing, shall be performed or furnished. Should discrepancies or doubt occur, do not proceed with the Work without clarification from the Architect. Contractor shall request clarification in sufficient time to avoid delays and increases in the contract sum.

Add the following new paragraphs:

§ 1.9 Wage Rates
The contractor shall not pay less than the wage scale of the various classes of labor as published in the Davis Bacon Act for Austin, Fayette, and Washington Counties; and as published by the Texas A&M University System for Brazos County. The specified wage rates are minimum rates only. The 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.
ARTICLE 2 – LAWS GOVERNING CONSTRUCTION

Modify the following paragraphs as follows:

§ 2.5 Owner’s Right to Carry Out the Work
If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner’s expenses and compensation for the Architect’s additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

Add following paragraphs:

§ 2.6 Wage Rates
The Contractor shall not pay less than the wage scale of the various classes of labor using the Davis Bacon Act. The specified wage rates are minimum rates only. The owner is not bound to pay any claims for additional compensation made by any contractor because the Contractor because the Contractor pays wages in excess of the applicable minimum rate contained in the Contract.

§ 2.7 The Owner qualifies for exemption from certain State and Local Sales and Use Taxes pursuant to the provisions of Tex. Tax Code, Chapter 151. The Contractor may claim exemption from payment of applicable State taxes by complying with such procedures as prescribed by State Comptroller of Public Accounts. Contractor shall not be entitled to reimbursement for taxes paid on items that are exempt from taxation.

ARTICLE 3 - CONTRACTOR

§ 3.2 Review of Contract Documents and Field Conditions by Contractor
Modify the following paragraphs as follows:

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor’s review is made in the Contractor’s capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. If a dimensional discrepancy exists, Contractor shall take field measurements required for proper fabrication and installation of work. Upon commencement of any item of work, Contractor shall be responsible for dimensions related to such item of Work and shall make any corrections necessary to make work properly fit at no additional cost to Owner. Before ordering any material or doing any work, Contractor shall verify dimensions and check conditions in order to assure himself that they properly reflect those on the Drawings. Any inconsistency shall be brought to attention of the Architect. In the event that discrepancies occur between ordered material and actual conditions, of which Architect was not notified beforehand, costs to correct such discrepancies shall be borne by Contractor.

§ 3.3 Supervision and Construction Procedures
Add the following new paragraphs:
§ 3.3.4 Supplement as provided in Division 1.

§ 3.4 Labor and Materials
Add the following new paragraph:

§ 3.4.4 After the Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements of the Specifications, Division 1. Refer to Division 01 for supplemental information.

§ 3.5 Warranty
Add the following new paragraphs:

§ 3.5.3 Supplement as provided in Division 01.

§ 3.8 Allowances
Add the following new paragraphs:

§ 3.8.4 Supplement as provided in Division 01.

§ 3.10 Contractor's Construction and Submittal Schedules
Add the following new paragraphs:

§ 3.10.4 Supplement as provided in Division 01.

§ 3.11 Documents and Samples at the Site
Add the following new paragraphs:

§ 3.11.1 Supplement as provided in Division 01.

§ 3.12 Shop Drawings, Product Data and Samples
Add the following new paragraphs:

§ 3.12.11 Supplement as provided in Division 01.

§ 3.13 Use of Site
Add the following new paragraphs:

§ 3.13.1 Supplement as provided in Division 01.

§ 3.14 Cutting and Patching
Add the following new paragraphs:

§ 3.14.3 Supplement as provided in Division 01.

§ 3.15 Cleaning Up
Add the following new paragraphs:

§ 3.15.3 Supplement as provided in Division 01.

§ 3.18 Indemnification
Modify the following paragraphs as follows:

§ 3.18.1 To the fullest extent permitted by applicable law, the Contractor agrees to indemnify, defend and hold harmless Owner, its officers, trustees, agents, employees, and representatives from and against any liability, damages, costs, loss, expenses, claims, actions, proceedings, suits (including attorneys’ fees, court
costs and other expenses of suit), whether groundless or not, judgements and awards, arising out of, in connection with or related to the performance of Work by Contractor, its employees, any subcontractor, or other person performing services or work on behalf of any of them, including a default by Contractor under the provisions of the Contract Documents or a failure to obtain or maintain insurance required by the Contract Documents. This indemnification shall apply to, but not be limited to, any damage to property or injury (including death) to person (including any damage or injury to property or person or any employee of the Contractor, its subcontractors, Owner, or the Architect) which may occur or be alleged to have occurred in connection with the performance of this Contract. Contractor shall not be obligated to indemnify any of the indemnified parties against their own negligence; however, to the fullest extent permitted by applicable law, Contractor shall be required to defend the indemnified parties against liability, damages, costs, loss, expenses, claims, actions, proceedings, or suits (including attorneys’ fees, court costs and other expenses of suit), whether groundless or not, for the bodily injury or death of an employee of the Contractor, its agent or its subcontractor of any tier, regardless of whether the action giving rise to such liability, damages, costs, loss, expenses, claim, action, proceeding or suit (including attorneys’ fees, court costs and other expenses of suit), is founded in whole or in part upon the alleged negligence of one or more parties indemnified hereunder. The Contractor assumes all risk of damage or injury (including death) to the Contractor’s own property or person or to the property or person of the Contractor’s employees or subcontractors from any cause whatsoever. This indemnification shall survive termination of the Contract or completion by the Contractor of all its obligations under this Contract, as to events arising prior to such termination or completion.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this section shall not be limited by a limitation on amount or type of damages, insurance, compensation or benefits payable by or for the Contractor or a subcontractor under workers’ compensation acts, disability benefit acts or other employee benefit acts.

Add the following new paragraphs:

§ 3.18.3 The provisions of this indemnification and all other indemnification obligations set out in the Contract Documents, shall survive the termination of this Contract, howsoever caused, or completion of the Contract as to events occurring prior to such termination or completion, and no payment, partial payment, nor issuance of a certificate of Substantial Completion nor a certificate of Final Completion nor acceptance or occupancy in whole or in part of the Work shall waive or release any of the provisions of this section or of any other indemnification contained in the Contract Documents.

ARTICLE 4  ARCHITECT

Modify the following paragraphs as follows:

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner.

§ 4.2 Administration of the Contract

Modify the following paragraphs as follows:

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor’s failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.
ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.2 Mutual Responsibility
Add the following new paragraph

§ 6.2.6 Coordinated construction work under this Contract includes, but not be limited to, providing concealed blocking as noted for attachment of separate contract items in locations necessary for the actual items to be installed. Providing proper dimensional coordination of separate contract supplied items for general construction work and trim that is to meet and/or adjoin Furniture, Fixtures, Equipment and Accessories.

§ 6.2.7 It is a requirement of the Contractor’s work schedule to provide the cooperation, coordination and exchange of information necessary for a timely execution of separate contract work.

ARTICLE 7 - CHANGES IN THE WORK

§ 7.1 General
Add the following new paragraphs:

§ 7.1.4 Supplement as provided in Division 1.

§ 7.1.5 Except as provided in this article, no oral statement, or direction of Architect or Owner shall be treated as a Change Order or entitle Contractor to an adjustment to the Contract Sum or the Contract Time.

§ 7.1.6 Unit prices shall be inclusive of all costs including mark-up for overhead and profit and shall be applied to units of measure as defined in the Contract Documents for each category of Work.

ARTICLE 8 - TIME

§ 8.3 Delays and Extensions of Time
Modify the following paragraphs as follows:

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor’s control; (4) by delay authorized by the Owner; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

Add the following new paragraphs

§ 8.3.4 Apart from extension of time, no payment or claim for damages shall be made to Contractor as compensation for damages for any ordinary delays or hindrances from any cause whatsoever in the progress of the Work, notwithstanding whether such delay be avoidable or unavoidable.

§ 8.3.5 In order to claim an inclement weather delay day, Contractor must:

1. Document, in writing, that the weather on the particular day was of such nature (rain, wind, snow, ice, and subsequent resultant effects) that it significantly impacted its ability to make progress on critical path work items. Inclement weather delay days will not be granted for weekends or holidays unless Contractor can demonstrate that it had been and intended to work on these days.

Aestimo, Inc. Aestimo Project No. 193910-01
Roof Replacement – Building T Blinn College – Bryan Campus
.2 Submit such delay claims on a weekly basis, not more than 7 days following the day of occurrence.

.3 Summarize the number of days claimed for the entire month accompanying each month’s application for payment.

ARTICLE 9 - PAYMENTS AND COMPLETION

§ 9.2 Schedule of Values
Add the following new paragraphs:

§ 9.2.1 Supplement as provided in Division 01.

§ 9.3 Applications for Payment
Add the following new subparagraph:

§ 9.3.4 Supplement as provided in Division 01.

§ 9.3.5 Unless otherwise stated in the Owner-Contractor Agreement, the Owner will retain, until Final Payment, Five (5) percent of the amount due the Contractor on account of progress payments, payable 30 days after Substantial Completion and/or satisfactory evidence to the owner that all payments, bills, and claims have been paid. Add following Sub-subparagraphs:

§ 9.3.6 Monthly Applications for Payment shall include waivers of liens for all work included in previous months’ application for payment. Waiver of Liens for subcontractors and materialmen shall be total amount paid prior to previous months’ application for payment.

§ 9.5 Decisions to Withhold Certification
Add the following new subparagraph:

§ 9.5.1.8 Failure to submit written plan indicating action by Contractor to regain time schedule for completion of Work within Contract Time.

§ 9.5.1.8 Failure to keep record documents current.

§ 9.8 Substantial Completion
Add the following new paragraphs:

§ 9.8.6 Supplement as provided in Division 01.

§ 9.10 Final Completion and Final Payment
Modify the following paragraphs as follows:
§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers’ warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees. The Contractor shall deliver 4 sets of the following items to the Owner before final payment will be made:

1. Other close-out submittals as specified in Division 01.
2. Project record documents as specified in Division 01.
3. Operations and maintenance data as specified in Division 01.
4. All warranties as required on specific products or portions of the Work, in format outlined in Division 01.
5. Spare parts, overages, and maintenance materials as outlined in Division 1 and described in the various technical sections.
6. Certificates of occupancy.
7. Copies of all inspection tags from authorities having jurisdiction.
8. Executed Certificate of Substantial Completion.

ARTICLE 10  PROTECTION OF PERSONS AND PROPERTY

§ 10.2 Safety of Persons and Property
Modify the following paragraphs as follows:

§ 10.2.1 The Contractor shall be solely responsible for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

.1 employees on the Work and other persons who may be affected thereby;
.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

ARTICLE 11 - INSURANCE AND BONDS

§ 11.1 Contractor’s Insurance and Bonds
Add the following new Sub-subparagraphs:

§ 11.1.5 Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:

.1 Premises Operations (including X-C-U).
.2 Independent Contractor's Protective.
.3 Products and Completed Operations.
.4 Contractual including specified provisions for the Contractor’s obligations under Paragraph 3.18.
.5 Broad Form Property Damage including Completed Operations.
.6 Personal Injury Liability with Employment Exclusion Deleted.
.7 Owner’s and Contractor’s Protective.
.8 Excess Umbrella.

§ 11.1.6 Insurance certificate(s) shall specify Owner as the certificate holder and (except for Workers’ Compensation) as an additional insured.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.2 Correction of Work
Modify the following paragraphs as follows:

§ 12.2.2.3 The one-year period for correction of Work shall be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law
Modify the following paragraphs as follows:

§ 13.1 Governing Law
The Contract shall be governed by the law of the place where the Project is located.

§ 13.4 Tests and Inspections
Add the following new paragraphs:

§ 13.4.6 Supplement as provided in Division 01.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor
Modify the following paragraphs as follows:

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days’ notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit.

§ 14.2 Termination by the Owner for Cause
Modify the following paragraphs as follows:

§ 14.2.1 The Owner may terminate the Contract if the Contractor
.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
.2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or Suppliers;
.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.
ARTICLE 15  CLAIMS AND DISPUTES

§ 15.1 Claims
Delete the following paragraphs:

§ 15.1.7 Waiver of Claims for Consequential Damages – Intentionally deleted

§ 15.2 Initial Decision
Modify the following paragraphs as follows:

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefore; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both.

Delete the following paragraphs:

§ 15.2.6 Intentionally Deleted.

§ 15.2.6.1 Intentionally Deleted.

§ 15.3 Mediation

§ 15.4 Arbitration
SECTION 01 11 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 PROJECT DESCRIPTION

A. The Project consists of the replacement of the roof on Building T at Blinn College, in Bryan, Texas. In general, the work includes, but is not necessarily limited to the following:

1. Roof Area - A:
   a. Remove and properly dispose of existing surfacing (gravel), roof membrane and flashings, insulation board, etc. to prepare for the installation of a new roof membrane system.
   b. Remove and properly dispose of abandoned pitch pans near the southeast corner of Roof Area A, as indicated on drawings.
   c. Remove and properly dispose of existing flagpole and steel flagpole mounting bracket on the north parapet wall, as indicated on drawings. Properly repair holes in concrete wall panels from bracket mounting bolts.
   d. Raise existing gas line and/or HVAC condensate lines, as necessary, for the installation of the new roof membrane system.
   e. Raise existing exhaust fan curbs and/or HVAC unit curbs to allow for a minimum of 8 inches in height of base flashing membrane at each location.
   f. Install two layers of 2.2” flat-stock polyisocyanurate insulation, loose laid.
   g. Install ½” flat-stock recovery board over flat-stock insulation, mechanically fasten to existing steel deck.
   h. Install one-ply modified bitumen base sheet membrane, torch apply.
   i. Install fire-rated, granule-surfaced modified bitumen cool roof cap sheet membrane, torch apply.
   j. Install fire-rated, granule-surfaced modified bitumen base flashing membrane, torch apply.
   k. Install reinforced liquid-applied flashing at pipe and other circular penetrations.
   l. Install new pre-finished sheet metal copings, counter-flashings, penetration flashings, through-wall scuppers and other sheet metal components.
   m. Install new treated wood pipe/conduit supports with membrane protection pads.
   n. Install new modified bitumen walkway pads, where indicated on drawings.
   o. Remove corrosion from, properly prepare and apply new paint to all roof-top appurtenances and conduits.

2. Roof Area - B (canopy):
   a. Install polyisocyanurate flute-filler insulation board, loose lay over existing metal R-panel roof.
   b. Install two layers of 2.2” flat-stock polyisocyanurate insulation board, loose lay over flute-filler insulation.
   c. Install 1/2” flat-stock recovery board, mechanically fasten to existing metal R-panel roof.
   d. Install one-ply modified bitumen base sheet membrane, torch apply.
   e. Install fire-rated, granule-surfaced modified bitumen cool roof cap sheet membrane, torch apply.
   f. Install fire-rated, granule-surfaced modified bitumen base and wall flashing membrane, torch apply.
   g. Install new pre-finished sheet metal copings, counter-flashings, gutters, downspouts and other sheet metal components.

1.3 CONTRACTOR USE OF PREMISES

A. Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.

1. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
2. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

B. Use of the Existing Building: Maintain the existing building in a weather-tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

1. Use of Building Interior and Existing Elevators: The building interiors and elevators (where applicable) will not be accessible to the Contractor. All roofing, waterproofing and related materials shall be transported on the building exterior only.
2. Contractor's Parking: Contractor shall be responsible for off-site parking of construction personnel.
3. Contractor's Laydown-Staging Area: As directed by Owner.
4. Signage: Not required.

1.4 OWNER OCCUPANCY

A. Full Owner Occupancy: The Owner will occupy the site and existing buildings during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations.

PART 2 - PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

END OF SECTION 01 11 00
SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including "The General Conditions of the Contract for Construction" and Division 1 Specification Sections, apply to the work of this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements governing handling and processing allowances.

   1. Selected materials and equipment, and in some cases, their installation is shown and specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. Additional requirements, if necessary, will be issued by Change Order.

1.3 ALLOWANCES:

A. Allowance amounts indicated herein, whether for purchase only or purchase and installation, apply to the designated quantity. The Contractor is responsible for determining the actual quantities of items required in the complete Work, and for inclusion of the appropriate lump sum amounts in his Bid.

   1. Include in the Contract Sum all Allowances stated in the Contract Documents.
   2. Designate in the construction Progress Schedule the delivery dates for products specified under each Allowance.
   3. Designate in the Schedule of Values the quantities of materials required under each unit cost Allowance.
   4. If the quantity provided by the Consultant for a material is +/- 10 percent of the material actual quantity, provide a unit rate for the material allowance.

1.4 PRODUCT ALLOWANCES:

A. Allowances for Furnishing of Products Only: The amount of each Allowance, based upon original bills, includes:

   1. Net cost of product to the Contractor, considering trade discounts.
   2. Delivery to the Project Site.

B. Costs of the following are not included in the Allowance amount. Include Contractor's costs applicable to each product allowance in the Base Bid Amount:

   1. Unloading and handling at Project Site, including uncrating and storage.
   2. Protection from damage and from the elements.
   3. Labor for installation and finishing.
   4. Bonds and insurance.
   5. Overhead and profit.
   6. All other expenses required for a complete, ready for use, installation.

1.5 FURNISH AND INSTALL ALLOWANCES:

A. Allowances for Furnishing and Installation of Products: The amount of each Allowance, based upon original bills, includes:

   1. Net cost of product to the Contractor, considering trade discounts.
   2. Delivery to the Project Site.
3. Unloading and handling at Project Site, including uncrating and storage.
4. Protection from damage and from the elements.
5. Labor for installation and finishing.
7. Overhead and profit.
8. All other expenses required for a complete, ready for use, installation.

1.6 SELECTION OF PRODUCTS UNDER ALLOWANCES:

A. Consultant's Duties:

1. Consult with the Contractor in consideration of products and suppliers or installers.
2. Make selection in consultation with the Owner.
3. Obtain Owner's written decision, designating:
   a. Product, model, and finish.
   b. Accessories and attachments.
   c. Supplier and installer as applicable.
   d. Cost to Contractor, delivered to the Site or installed, as applicable.
   e. Manufacturer's warranties.
4. Transmit Owner's decision to the Contractor.
5. Prepare Change Orders.

B. Contractor's Duties:

1. Assist Consultant and Owner in determining qualified suppliers or installers.
2. Obtain proposals from suppliers and installers when requested by Consultant.
3. Make appropriate recommendations for consideration of the Consultant.
4. Notify Consultant promptly of:
   a. Any reasonable objections Contractor may have against any supplier, or party under consideration for installation.
   b. Any effect on the construction Progress Schedule anticipated by selections under consideration.

1.7 CONTRACTOR RESPONSIBILITIES:

A. On notification of selection, execute purchase agreement with designated supplier.

1. Arrange for and process shop drawings, product data and samples, as required.
2. Make all arrangements for delivery.
3. Upon delivery, promptly inspect products for damage or defects.
4. Submit claims for transportation damage.
5. Install and finish products in compliance with requirements of reference specification sections.

B. Expenditures from Cash Allowance amounts shall be only upon written authorization of the Consultant with the approval of the Owner. Expenditures shall be kept within amounts set forth, unless specific authorization by Consultant and approval by Owner provides otherwise. Unexpended balances of Cash Allowances shall revert to the Owner in the final settlement of the Contract.

1.8 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to indicate actual quantities of materials delivered to the site for use in fulfillment of each allowance.
1.9 INSPECTION AND TESTING ALLOWANCES

A. Inspection and testing allowances include the cost of engaging the inspection or testing agencies and costs for reporting the results as well as costs for the actual inspections and tests.

B. The allowance does not include incidental labor required to assist the testing agency, or costs for retesting upon failure of previous tests and inspections. The allowance also does not include costs of services not required by the Contract Documents.

1. At Project closeout, credit unused amounts remaining in the inspection and testing allowance to Owner by Change Order.

1.10 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed for the Owner's purposes, and only by Change Orders which designate amounts to be charged to the allowance.

1. The Contractor's related costs for products or equipment ordered by the Owner under the contingency allowance, including delivery, installation, taxes, insurance, equipment rental, and similar costs are not part of the Contract Sum.

2. Change Orders authorizing use of funds from the contingency allowance will include the Contractor's related costs and reasonable overhead and profit margins.

3. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect products covered by an allowance promptly upon delivery for damage or defects.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related construction activities.

3.3 SCHEDULE OF ALLOWANCES

A. Include in the Base Bid a contingency allowance of $40,000.00 for use upon the Owner's instructions.

END OF SECTION 01 21 00
SECTION 01 31 00 – PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 PRE-BID SITE INSPECTION

A. The Contractor shall visit the site, verifying all existing items indicated on Plan and/or specified, and familiarize himself with the existing work conditions, hazards, grades, actual formations, soil, conditions, and local requirements. The submission of bids shall be deemed evidence of such visits. All proposals shall take these existing conditions into consideration, and the lack of specific information in the Contract Documents shall not relieve the Contractor of any responsibility.

1.3 PRE-CONSTRUCTION CONFERENCE

A. A preconstruction conference shall be scheduled by the owner's representative for the purpose of establishing procedures for project coordination. This meeting shall be attended by the General Contractors and all major sub-contractors.

1.4 CONTRACT DOCUMENTS

A. The Owner will furnish electronic copies of the contract documents to the successful contractor.

B. These specifications are accompanied by Drawings of the building and details of the installation indicating the locations of equipment, piping, ductwork, outlets, switch controls, circuits, lines, etc. The Drawings and these Specifications are complementary to each other, and what is required by one shall be as binding as if required by both.

1. If any departures from the Drawings are deemed necessary by the Contractor, details of such departures and the reasons therefore shall be submitted to owner’s representative for review. No departures shall be made without prior written acceptance of the Owners representative.

2. There are intricacies of construction which are impracticable to specify or indicate in detail; however, in such cases the current rules of good practice and applicable Specifications shall govern.

3. It is the Contractor's responsibility to properly use all information found on the Drawings where such information affects his work.

4. The interrelation of the Specifications, the Drawings, and the schedules are as follows: The Specifications determine the nature and setting of the several materials, the Drawings establish the quantities, dimensions and details and the schedules give the performance characteristics.

1.5 COORDINATION; GENERAL

A. Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.

1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.

2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.
B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.

C. Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project Close-out activities.

D. Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work. Refer to other sections for disposition of salvaged materials that are designated as Owner's property.

1.6 ACCEPTANCE OF PRIOR WORK:

A. Require that each trade or subcontractor whose work is executed in relation to prior work shall carefully inspect this prior work and submit written notice of any defects, improper workmanship or materials, or other conditions that would affect the satisfactory execution and permanency of his work. No further work shall be executed until such defects or conditions have been corrected or an agreement reached regarding defects that may develop due to conditions so noted. The absence of any such notifications will be construed as an acceptance by these trades or subcontractors of all prior related work, and later claims of defects in this work will not in any way relieve these trades or subcontractors from responsibility for correcting their work.

1.7 CONTRACTOR’S SUPERINTENDENT

A. The contractor shall employ and maintain a project superintendent whose sole responsibility is project coordination for this Project only. He shall be on site at all times when work is being performed by any craft.

B. He will be responsible for coordination between subcontractors. All questions to the owner's representative from the contractor or subcontractors shall pass through the superintendent. Such questions shall be submitted in written form as a request for information. The contractor shall maintain a log of RFI's numbered in consecutive order and dated. All directions and orders by the owner's representative will be given to the job superintendent.

1.8 GENERAL CONSTRUCTION CONTRACT ADMINISTRATION COORDINATION REQUIREMENTS

A. Project Progress Meetings (At request of Owner)

1. Held weekly at project site or location as designated at pre-construction meeting.
2. Contractor's Superintendent is required to attend.
3. Subcontractors may attend at their option or as required by Owner's Designated Representative.
4. Contractor must have representative who has authority to approve cost and time issues.


1. To be filled out daily by Contractor and copy issued to Owner.

C. Request for Information (RFI)
1. To be used by Contractor for documenting questions regarding the Project.
2. RFI Log must be maintained by Contractor, Consultant, and Owner’s Designated representative.
3. Routing of RFI: Contractor originates; sends to Consultant and copies Owner’s Designated Representative.
4. Consultant reviews and comments to Owner’s Designated Representative.
5. Owner’s Designated Representative approves and sends to Contractor.

D. Submittals

1. All required submittals are sent to Consultant with a transmittal.
2. A copy of the submittal, and the transmittal, is sent to the Owner’s Designated Representative.
3. Consultant returns submittals to Owner’s Designated Representative.
4. Owner’s Designated Representative distributes submittals to Contractor.
5. A log must be kept by the Contractor, Consultant, and Owner’s Designated Representative.

E. Pay Requests (Partial Payment)

1. Pay percentage approved at last progress meeting of each month.
2. Job progress schedule and current "As-Built" drawings will be reviewed prior to approval of each month’s pay request.

F. Request for Inspection

1. Minimum 24 hours’ notice.
2. NOTE: Substantial Completion per specifications.

G. Request for Utility & Service Shutdowns

1. Minimum three (3) week notice.

H. Change Proposal Request (C.P.R.)

1. To be on Owner approved form. Forms must be completed in their entirety.
2. C.P. Log must be kept by Contractor, Consultant, and Owner’s Designated Representative.
3. Routing: Contractor to Owner’s Designated Representative with a copy to Consultant.
4. Consultant reviews and sends to Owner’s Designated Representative.
5. Owner’s Designated Representative approves and sends to Contractor.

I. Field Orders

1. Issued by Owners Designated Representative for discretion of expediting work on unforeseen problems.

J. Change Orders

1. A compilation of Change Proposals and Field Orders submitted and approved. To be processed by Consultant and Owners Designated Representative.

J. Construction Schedule

1. Contractor submits to Owner’s designated Representative within two weeks after receipt of executed Contract and updates weekly.
Aestimo Project No. 193910-01
Blinn College – Bryan Campus
SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including "The General Conditions of the Contract for Construction" and Division 1 Specification Sections, apply to the work of this Section.

1.2 SUBMITTAL PROCEDURES

A. Submittals required in performance of the Work include, but are not limited to:

1. Contractor's Construction Schedule.
2. Submittal Schedule.
3. Schedule of Values.
4. Contractor's List of Subcontractors and Suppliers.
5. Contractor's Personnel List.
7. Product Data.
8. Samples.
9. Submittals for Information.
10. Daily Construction Reports.

B. Shop Drawings, Product Data, and Samples are required for all products, materials, and equipment to be included in the work. In those instances where Consultant's review is not required, as defined below, the Contractor still must arrange for necessary submittals from his subcontractors and suppliers and coordinate the work of all parties involved.

1. Maintain one copy of all submittals at the Project Site for use during construction and for distribution to the Owner upon completion of the work.
2. The Consultant may review items of work included with each application for payment and will not recommend payment for specific items of work unless the appropriate submittals are on file at the Project Site.

C. Where Contractor proposes to provide the exact manufacturer and product specified, no shop drawings, product data, or samples are required by the Consultant for that item unless specifically required within the individual specification section. Similarly, where more than one manufacturer's product is listed, and Contractor intends to provide one of the listed products, no shop drawings, product data, or samples are required by the Consultant for that item unless specifically required within the individual specification section.

1. Refer to each individual specification section and submit shop drawings, product data, and samples for the products, materials, and equipment indicated.
2. The Consultant will not accept or review shop drawings, product data, or samples unless specifically required in the referenced specification section.

D. When the specification is based upon products of only one manufacturer with a list of other acceptable manufacturers, and Contractor proposes to provide an equivalent product by one of the listed acceptable manufacturers, follow procedures specified for Consultant's review and action as specified herein, including number of copies required for distribution.

E. When Contractor proposes to provide an equivalent product by a manufacturer not listed, follow procedures specified in Section 01 60 00 for submittal of substitution requests. Provide submittals in accordance with the requirements of the individual technical specification section, and with this Section, only after receiving Consultant's approval of substitution request.
F. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

1. Permits.
2. Applications for payment.
3. Performance and payment bonds.
4. Insurance certificates.
5. List of Subcontractors.

G. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
   a. The Consultant reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
   a. The Consultant will endeavor to process submittals within fourteen (14) calendar days. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Consultant will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
   b. If an intermediate submittal is necessary, process the same as the initial submittal.
   c. Allow fourteen (14) calendar days for reprocessing each submittal.
   d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Consultant sufficiently in advance of the Work to permit processing.

H. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4” x 5” on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
   a. Prior to forwarding to Consultant, thoroughly check all submittals and affix Contractor's shop drawing stamp. Submittals received without the Contractor's approval stamp will be returned to the Contractor without action.
2. Include the following information on the label for processing and recording action taken.
   a. Project name.
   b. Date.
   c. Name and address of Consultant.
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Number and title of appropriate Specification Section.
   i. Drawing number and detail references, as appropriate.

I. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Consultant, with one copy direct to Owner, using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
1. Record relevant information and requests for data on the transmittal. On the form, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.3 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Within two weeks after receipt of the executed Contract, prepare and submit four (4) copies of a fully developed Contractor's Construction Schedule, showing all Project milestones, on the Owner-approved Contractor's form.

B. Submit schedule within two weeks after receipt of the executed Contract.

C. Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit Work by separate Contractors and partial occupancy by the Owner prior to Substantial Completion.

D. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.

E. Distribution: Following response to the initial submittal, print and distribute copies to the Consultant, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

F. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule weekly.

G. Reliance upon approved schedule: The construction schedule as approved by the owner will be an integral part of the Contract and will establish interim Contract completion dates for the various activities.

1. Should any activity not be completed within 15 days after the stated schedule date, the owner shall have the right to order the Contractor to expedite completion of the activity by whatever means the owner deems appropriate and necessary, without additional compensation to the Contractor.
2. Should any activity be 30 or more days behind schedule, the owner shall have the right to perform the activity or have the activity performed by whatever method the owner deems appropriate.
3. Costs incurred by the owner in connection with expediting construction activity under this Article shall be deducted from the contract by Change Order.
4. It is expressly understood and agreed that failure by the owner to exercise the option to either order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered precedent-setting for any other activities.

H. Extension of Schedule and Contract Time due to weather conditions: The contractor will be given extension of time when phases of the work on the project critical path are delayed due to weather.

1.4 SUBMITTAL SCHEDULE

A. Concurrent with the Contractor's Construction Schedule, and on the same form, prepare and submit a fully developed Submittal Schedule, showing the anticipated dates for all Project submittals.

1. Coordinate submittal schedule with the list of subcontracts, schedule of values and the specified products as well as the Contractor's construction schedule.
2. Base the schedule only on the specified products and manufacturers.
3. Prepare the schedule in chronological order; include all submittals required throughout the course of the Work. Provide the following information:
a. Scheduled date for the first submittal.
b. Related Section number.
c. Submittal category.
d. Name of subcontractor.
e. Description of the part of the Work covered.
f. Scheduled date for resubmittal.
g. Scheduled date the Consultant's final release or approval.
h. Indicate critical submittal and review items, and review durations, on the Progress Schedule.

4. Schedule submittal of all shop drawings, product data, and samples to be received by the Consultant for action before the "mid-point" of construction, but not later than six months after the "Date of Commencement of The Work" established by Contract.

a. Request for submittal review, received by the Consultant for processing after the mid-point of construction, will result in additional costs to the Owner. Contractor agrees to reimburse the Owner through deductive Change Order to the Contract, for all costs associated with such requests.

B. Distribution: Following response to initial submittal, print and distribute copies to the Consultant, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.5 SCHEDULE OF VALUES

A. Concurrent with the Contractor's Construction Schedule, submit a Schedule of Values.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

   a. Application for Payment form.
   b. List of subcontractors.
   c. Schedule of allowances.
   d. Schedule of alternates.
   e. List of products.
   f. List of principal suppliers and fabricators.
   g. Schedule of submittals.

2. Sub-Schedules: Where the Work is separated into phases that require separately phased payments, provide sub-schedules showing values correlated with each phase of payment.

B. Format and Content:

1. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.

2. Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.
For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

4. Unit Cost Allowances: Show line item value of unit cost allowances as a product of unit cost times measured quantity as estimated from the best indication in the Contract Documents.

5. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.6 CONTRACTOR'S LIST OF SUBCONTRACTORS AND SUPPLIERS

A. Concurrent with the Contractor's Construction Schedule, submit a list of the Contractor's principal subcontractors and suppliers.

1.7 CONTRACTOR'S PERSONNEL LIST

A. Concurrent with the Contractor's Construction Schedule, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.

1.8 SHOP DRAWINGS

A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.

B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:

1. Dimensions.
2. Identification of products and materials included.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.
6. Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2" x 11" but no larger than 30" x 42".

C. Unless otherwise required by the Contract Documents, submit four (4) copies (plus the number of copies the Contractor requires for his operations) plus an additional two (2) copies for inclusion in Operating and Maintenance Manuals of all blueline prints.

1. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

D. Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.

1. Preparation of coordination Drawings is specified in section "Project Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.
2. Submit coordination Drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.
1.9 PRODUCT DATA

A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

   a. Manufacturer's printed recommendations.
   b. Compliance with recognized trade association standards.
   c. Compliance with recognized testing agency standards.
   d. Application of testing agency labels and seals.
   e. Notation of dimensions verified by field measurement.
   f. Notation of coordination requirements.

2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

B. Unless otherwise required by the Contract Documents, submit four (4) copies (plus the number of copies the Contractor requires for his operations) plus an additional two (2) copies for inclusion in Operating and Maintenance Manuals of all Product Data.

1. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

   a. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
   b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.10 SAMPLES

A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.

1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Consultant's Sample. Include the following:

   a. Generic description of the Sample.
   b. Sample source.
   c. Product name or name of manufacturer.
   d. Compliance with recognized standards.
   e. Availability and delivery time.

2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.

   a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.
b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.

c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.

3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.

   a. Preliminary submittals will be reviewed and returned with the Consultant's mark indicating selection and other action.

4. Unless otherwise required by the Contract Documents, and except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; two will be returned marked with the action taken.

5. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.

   a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

   b. Sample sets may be used to obtain final acceptance of the construction associated with each set.

B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1.11 SUBMITTALS FOR INFORMATION

A. Certain submittals are required and listed in individual specification sections, that do not require action by the Consultant. These submittals are for Consultant's records only. Such submittals include, but are not limited to:

1. Material test reports by Testing Laboratory
2. Completed work test reports by Testing Laboratory
3. Material manufacturer's certifications
4. Material manufacturer's preconstruction test reports
5. Subcontractors/installers qualifications
6. Material Safety Data Sheets (MSDS)
7. Daily Construction Reports

1.12 DAILY CONSTRUCTION REPORTS

A. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Owner and Consultant.

1. List of subcontractors at the site.
2. Approximate count of personnel at the site.
3. High and low temperatures, general weather conditions.
4. Accidents and unusual events.
5. Meetings and significant decisions.
7. Meter readings and similar recordings.
8. Emergency procedures.
9. Orders and requests of governing authorities.
10. Change Orders received, implemented.
11. Services connected, disconnected.
12. Equipment or system tests and start-ups.
13. Partial Completions, occupancies.
15. Interim Life Safety Compliance

1.13 CONSULTANT’S ACTION

A. Except for submittals for record, information or similar purposes, the Consultant will review each submittal, mark to indicate action taken, and return promptly.

1. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp: The Consultant will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:

1. Final Unrestricted Release: Where submittals are marked “APPROVED” or “NO EXCEPTION TAKEN,” that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
2. Final-But-Restricted Release: When submittals are marked “APPROVED AS NOTED” or “EXCEPTIONS NOTED,” that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
3. Returned for Resubmittal: When submittal is marked “REVISE AND RESUBMIT,” do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary, to obtain a different action mark.
   a. Do not permit submittals marked “REVISE AND RESUBMIT” to be used at the Project site, or elsewhere where Work is in progress.
4. Submit Specified Item: Where submittals are marked “SUBMIT SPECIFIED ITEM”, do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal incorporating the specified item; resubmit without delay.
5. Action Not Required: Where submittals are marked "ACTION NOT REQUIRED", no review is required by the Consultant, and none will be performed.

PART 2 - PRODUCTS
Not Applicable

PART 3 - EXECUTION
Not Applicable

END OF SECTION 01 33 00
SECTION 01 42 00 - REFERENCE STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 CODES, FEES, PERMITS AND STANDARDS

A. All materials and workmanship shall comply with all applicable state and national codes, specifications, and specified industry standards.

B. All plumbing shall be installed in accordance with the International Plumbing Code.

C. In case of difference between building codes, specifications, state laws, industry standards and the contract documents, the most stringent shall govern. The Contractor shall promptly notify the owner's representative in writing of any such difference. Should the Contractor perform any work that does not comply with the requirements of the applicable building codes, state laws, industry standards, he shall bear all costs arising in correcting these deficiencies.

D. The entire Work of the Project shall meet or exceed the minimum standards prescribed in the latest editions of the all applicable codes and standards, including but not limited to the following which are made a part of these Specifications by reference.

   1. City of Brenham Fire Department as applicable to construction on this site.
   2. International Building Code with City of Brenham amendments.

E. In addition, all work shall be in accordance with all regulations and requirements of the Standards and Specifications for Handicapped and Disabled for the Construction of Public Buildings and Facilities in the State of Texas, usable by Physically Handicapped and Disabled persons, ANSI Standards.

1.3 DEFINITIONS

A. Basic Contract definitions are included in the Conditions of the Contract.

B. Indicated: The term "indicated" refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help the reader locate the reference; no limitation on location is intended.

C. Directed: Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean "directed by the Consultant," "requested by the Consultant," and similar phrases.

D. Approve: The term "approved," where used in conjunction with the Consultant's action on the Contractor's submittals, applications, and requests, is limited to the Consultant's duties and responsibilities as stated in the Conditions of the Contract.

E. Regulation: The term "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

   1. No provision of a reference standard, specification, manual, or code shall be effective to change the duties and responsibilities of the Owner, the Contractor, the Consultant and their consultants, their agents and employees from those duties and responsibilities set forth in the Contract Documents.
F. Furnish: The term "furnish" is used to mean "supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations."

G. Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations."

H. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."

I. "Required" shall be understood to refer to the requirements of the Contract Documents, unless its use clearly implies a different interpretation.

J. "Necessary" shall be understood to refer to proper completion of the Work.

K. "Addendum": An Addendum (plural - Addenda) is a document issued after the original document issue date, but prior to the date of the Owner/Contractor Agreement, which modifies the original documents to the extent indicated. An Addendum may describe certain modifications in words or may include a reissue of the modified original document with the modifications indicated.

L. Unless otherwise indicated, the following words, where they appear on the Drawings and in the Project Manual, shall have the following meanings:

   1. "Match" means providing a portion of the Work using the same construction products, techniques, sequences, dimensions, finishes, colors, and degree of craftsmanship as another portion of Work, or as existing conditions adjacent to the new portion of Work.
   2. "Similar" means a portion of the Work which matches the whole or part of another portion of Work but has a slightly different configuration.
   3. "Opposite Hand" means a portion of the Work which matches another portion of Work but is a mirror image.
   4. "Symmetrical" means a portion of the Work which matches adjacent Work, or itself, but reversed about centerlines of symmetry.
   5. "Finished Floor Elevation" means the elevation of the top of the floor to which flooring finishes and materials are to be applied except that for terrazzo, mortar bed set ceramic and quarry tile, and other materials requiring a depressed slab, finished floor elevation means the top surface of the installed materials and the slab shall be depressed as required for the appropriate setting bed.

M. Installer: An "Installer" is the Contractor, or an entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

   1. The term "experienced," when used with the term "Installer," means having a minimum of five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
   2. Trades: Use of titles such as "carpentry" is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
   3. Assignment of Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

      a. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
N. Project Site is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

O. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.4 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's format and MASTERFORMAT numbering system.

B. Specification Content: This Specification uses certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language: Language used in Specifications and other Contract Documents is the abbreviated type. Words and meanings shall be interpreted as appropriate. Words that are implied, but not stated shall be interpolated as the sense required. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and the context of the Contract Documents so indicates.

2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.

   a. The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.

C. The word "all" is implied throughout the Contract Documents as the Contractor is required to do all Work under the Contract. The word "all" requires the doing of all things except those listed items which are specifically excluded.

1. Where "complete" is used, it shall mean "complete with all connections, supports, attachments, and incidental items necessary for a finished and properly operating assembly or installation".

D. "Equal"/" Equivalent":

1. As used herein, in reference to the acceptability of products, materials, and equipment, other than those specified, the term "Equal" and/or "Equivalent" shall be defined as:

   a. Having the same form and function in terms of size and capacity.
   b. Having the same or better operating characteristics in terms of power requirements and output.
   c. Having the same or greater term and force of Warranty/Guarantee.
   d. Having the same or greater choices of available colors and patterns.
   e. Having the same or better availability and repair service.
   f. Having the same approvals of Code Officials and other governing authorities.
   g. Having the same or better compatibility with adjacent components and other related parts of the Work.
   h. Capable of providing the same design and artistic effect.
   i. Not requiring changes in details and construction of related work.
   j. Having the same or lower installed cost to the Owner.
2. It is understood that all the above characteristics of equality may not be applicable to each and every product and application required in the Work. Where a proposed product possesses some, but not all, of the equal characteristics, the Consultant with agreement of the Owner, will make a judgement as to which of the characteristics are most important to the particular application and may, at his option, waive those determined to be less important in the particular instance.

E. Where the term "product", "products", "item", "items", and similar terms are used they shall be understood to include, but not be limited to, materials, systems, and equipment as applicable.

F. Where the words "or equal", "equal to", "or equal accepted by the Consultant", and all similar phrases are used in connection with a specified product, material, or equipment, it shall be understood that the determination as to equality rests solely with the Consultant.

G. In the interest of brevity and clarity, the following single words and short phrases have, in some cases, been abbreviated from the following phrases. The single words and short phrases are defined as having the same meaning as the complete phrase from which it is derived.

1. "including ..." is the same as "including, by way of example only, but not limited to, ..."
2. "... or ...") is the same as "..., or ..., or both".
3. "such as ...." is the same as "which is a generic category of items including, but not limited to, such examples as ..."
4. "exposed" is the same as "exposed to interior or exterior ambient air before and after being covered with finishing fluids such as paint, sealers, and stains".
5. "at least ..." is the same as "at least and not less than ..."
6. "product" is the same as "product, material, system, and equipment".
7. "Accepted..." is the same as "accepted by the Owner, Consultant and his consultants, after review.

1.5 DRAWINGS ABBREVIATIONS

A. Language used on drawings is of abbreviated type in certain instances, and implies words and meaning that shall be appropriately interpreted as listed in the Construction Specification Institute Publication TD2.4, "Abbreviations", unless otherwise specified herein or on the Drawings.

1.6 INDUSTRY STANDARDS

A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with the standard in effect as of the date of the Contract Documents.

C. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards may establish different or conflicting requirements for minimum quantities or quality levels. Refer requirements that are different, but apparently equal, and uncertainties to the Owner and Consultant for a decision before proceeding.

D. Minimum Quantity or Quality Levels: The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Owner and Consultant for a decision before proceeding.

E. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
F. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

1.7 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION 01 42 00
SECTION 01 45 00 - QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 SUMMARY

A. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Owner.

B. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.

C. The Work of this Section includes the requirements of the Contractor's testing laboratory for Quality Control Testing, and a separate laboratory, paid for by the Owner under provisions of Section 01 21 00 - Allowances, to perform Quality Assurance Testing services.

1. Contractor shall engage the services of an independent laboratory to perform design testing and certification testing for Contractor's proposed methods and materials to be incorporated into the Work.

2. Contractor shall engage the services of a separate independent laboratory as directed by the Owner to perform Quality Assurance testing for materials and methods of installation.

D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.

2. Inspections, test and related actions specified are not intended to limit the Contractor’s quality control procedures that facilitate compliance with Contract Document requirements.

3. Requirements for the Contractor to provide quality control services required by the Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 CONTRACTOR RESPONSIBILITIES

A. The Contractor shall provide inspections, tests and similar quality control services, specified in individual Specification Sections and required by governing authorities, except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity; these services include those specified to be performed by an independent agency and not by the Contractor. Costs for these services shall be included in the Contract Sum.

1. The Contractor is responsible for retesting where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.

   a. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

B. Provide services of an independent testing laboratory or facility to perform required design testing and certification testing services.
1. Submit written description of testing laboratory giving qualifications of personnel, laboratory facilities and equipment, and other information as may be requested by Architect.

2. Contractor's testing laboratory shall not be the same as Owner's testing laboratory used for quality control testing unless otherwise acceptable to the Architect.

3. Employment of a testing laboratory by Contractor in no way relieves Contractor's obligation to perform work in accordance with the Contract Documents.

C. Required design testing and certification testing by Contractor's laboratory includes operations specified in the applicable technical specifications sections for areas of work including:

1. Insulating concrete roof fill mix design.

2. Preconstruction tests of unit masonry, mortar, and grout materials.

3. Certified welding procedure qualification and requalification tests as specified in various Division 5 Sections.

4. Preconstruction joint sealant adhesion tests.

5. Testing of above materials when mill certificates are not available.

6. Testing when source of material is changed after initial tests have been performed.

D. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:

1. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.

2. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.

3. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.

4. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.

5. Security and protection of samples and test equipment at the Project site.

E. Coordination: The Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition, the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

1. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

1.4 OWNER'S TESTING LABORATORY

A. The Owner's Laboratory will provide inspections, tests and similar quality control services specified to be performed by independent agencies and not by the Contractor, except where they are specifically indicated as the Contractor's responsibility or are provided by another identified entity. Costs for these services are included in the Contract Sum by allowance.

1.5 SUBMITTALS

A. The independent testing agency shall submit a certified written report of each inspection, test or similar service, to the Architect, in duplicate, unless the Contractor is responsible for the service. If the Contractor is responsible for the service, submit a certified written report of each inspection, test or similar service through the Contractor, in duplicate.

1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.

2. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
a. Date of issue.
b. Project title and number.
c. Name, address and telephone number of testing agency.
d. Dates and locations of samples and tests or inspections.
e. Names of individuals making the inspection or test.
f. Designation of the Work and test method.
g. Identification of product and Specification Section.
h. Complete inspection or test data.
i. Test results and an interpretations of test results.
j. Ambient conditions at the time of sample-taking and testing.
k. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
l. Name and signature of laboratory inspector.
m. Recommendations on retesting.

B. Include in the written report the actual specified/required design parameters and the specific test results, in a side-by-side comparison, along with comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.

1.6 QUALITY ASSURANCE

A. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.

1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Contract Document requirements for "Cutting and Patching."

B. Protect construction exposed by or for quality control service activities and protect repaired construction.

C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.
SECTION 01 50 00 - TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including "The General Conditions of the Contract for Construction" and Division 1 Specification Sections, apply to the work of this Section.

1.2 SUMMARY

A. Specific administrative and procedural minimum actions are specified in this section, as extensions or provisions in General Conditions and other contract documents. These requirements have been included for special purposes as indicated. Nothing in this section is intended to limit types and amounts of temporary work required, and no omission from this section will be recognized as an indication by owner’s representative that such temporary activity is not required for successful completion of the work and compliance with requirements of contract documents. Provisions of this section are applicable to but not by way of limitation, utility services, construction facilities, and security/protection provisions.

B. Existing Utilities: Water and electrical power that exist within the various areas of the Work will be made available to Contractor at no additional expense. By accepting use of these services and facilities, Contractor agrees to keep them clean and in good working condition at all times and upon completion of the Work, turn over all services and facilities, indicated to remain, in as good or better condition than existed at start of the Work. All additional temporary services and facilities necessary to complete the Project Work shall be included in the Base Bid.

1. The Contractor shall provide all required temporary lines for use of these utilities, and shall remove same from premises upon completion of project. The Contractor shall be back charged for any wasted or unnecessary use of the utilities at the current rates applicable.

C. Contractor shall provide all additional temporary services and facilities specified below and as necessary for the proper and expeditious prosecution of the Work. Make or have made all connections to and distribution from existing services and sources of supply as directed and pay all charges for same as required.

D. Requirements of service and utility authorities relating to the Work shall be ascertained by the Contractor. Contractor shall comply with all such requirements, including those relating to continued protection and maintenance until completion of the Project Work.

E. All temporary services and facilities shall be maintained by the Contractor and shall be kept in usable condition at all times until completion of the Work and/or their removal is authorized by the Consultant. Recondition and restore portions of the Site occupied by temporary facilities to a condition acceptable to Owner.

1.3 LOCATING UTILITIES

A. Within the limits of and adjacent to the work, there are known to exist public and private utilities, storm and sanitary sewers, underground and aerial power lines, telephone lines, gas and water service lines street lighting and irrigation systems.

B. This project is contiguous to a number of on-campus buildings. Maintenance of utility service is essential at all times.

C. The Contractor is responsible for notifying all Municipal Utilities (i.e.: gas, telephone, sewer, etc.) to mark on site existing utilities and proposed utilities within project area.
D. Before commencing the Work of the Contract, the Contractor shall coordinate with utility owners to determine actual location of existing facilities. Sole reliance on location of utility facilities as indicated shall not relieve the Contractor of his contractual obligations of contacting utility owners. Contractor shall coordinate all work affecting the facilities with appropriate utility owners and Owner.

E. Before commencing the work of this Contract, the Contractor shall verify by field investigation the actual locations of all utility facilities within and adjacent to the limits of the work that may be affected by work operations.

1.4 NOTICES

A. Contractor shall notify, in writing, all utility owners at least 72 hours in advance of his intent to excavate any segment of the site, so that each utility owner may mark facility locations to ensure safety of facilities as required by law. The Contractor shall confirm, in writing, all telephone notifications, with copies to Owner’s Designated Representative.

B. Contractor shall notify, in writing within 24 hours, the affected utility owners and Owner’s Designated Representative of damage to or loss of any utility facility. Repairs will be made by the utility owner, at the contractor's expense, for damage or loss caused by the contractor's or his subcontractor's operations.

1.5 OTHER CONTRACTS

A. Owner may let other Contracts for advance utility relocation or extensions. The contractor shall be cognizant of these relocations and protect and support in-place as necessary the relocated or expansion of utilities. Supports and protection shall be removed when no longer needed by the contractor or utility owner and as directed by Owner’s Designated Representative.

1.6 REARRANGEMENT OF UTILITY FACILITIES

A. If the contractor wishes to have any utilities temporarily or permanently relocated for his own convenience, he shall make necessary arrangements with utility owners and compensate them at his own expense for cost of such work as mutually agreed upon. Compensation shall be by certified check in advance of the contemplated work. Contractor must have written approval of the Owners Designated Representative for any utility relocation.

1.7 COOPERATION AND ACCESS

A. Contractor shall provide access to utility owners, and others as designated, to the work site at all times to relocate, service and inspect their facilities. The contractor shall cooperate with utility owners and others in facilitating such work so as not to delay the work of this Contract.

1.8 CONTINUITY OF SERVICE

A. Contractor shall ensure continuity of utility service and shall maintain, in a safe and satisfactory operating condition, all overhead, surface and subsurface utilities. This Article shall apply equally to facilities owned or operated by Owner, public utilities and private owners.

B. Existing service connections to buildings are not necessarily shown on the drawings, but contractor shall protect, support and maintain such connections to ensure continuous service.

1.9 PRESERVATION OR ABANDONMENT OF PROPERTY

A. Rearranged facilities and existing utilities not indicated as abandoned or to be abandoned shall be protected. When a facility rearrangement has been placed in-service, the utility owner will verify that those facilities to be abandoned are out-of-service before the contractor starts work in that area. Abandoned facilities shall be verified by the utility owner and contractor before removal of such facilities. Verification shall be confirmed in writing by the contractor to both the utility owner and Owner’s Designated Representative.
1.10 SUBMITTALS

A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Submit a schedule indicating implementation and termination of each temporary utility within 15 days of the date established for commencement of the Work.

1.11 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:

1. Building Code requirements.
2. Health and safety regulations.
3. Utility company regulations.
4. Police, Fire Department and Rescue Squad rules.
5. Environmental protection regulations.


1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).

C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.12 PROJECT CONDITIONS

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials; if acceptable to the Consultant, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.

B. Water: Provide potable water approved by local health authorities.

C. When noted and so indicated on the drawings, the contractor shall construct temporary job site fencing. This fence shall be 6' high and constructed with post spaced not over 8' o.c. and either chain link or wire mesh fencing tightly stretched over post. Provide construction gates as required and as approved by the owner's designated representative.

1. The contractor shall maintain the fence in good condition until directed by the owner's designated representative to remove it.
D. Protection for trees and shrubs shall be provided by an enclosure as specified above around all such items within the construction area as directed by the owner's designated representative.

1. The contractor shall not remove, cut or trim any existing planting without receiving approval.

2.2 EQUIPMENT

A. General: Provide new equipment; if acceptable to the Owner and Consultant, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.

B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.

C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.

D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.

E. Lamps and Light Fixtures: If required, provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.

F. Heating Units: If required, provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the type of fuel being consumed.

G. Temporary Offices: If required under the provisions of this contract, provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

H. Temporary Toilet Units: Provide one or more toilet buildings for the use of all persons employed on the job. He shall post notices, take such precautions as may be necessary, and remove refuse deposited in or about the buildings necessary to maintain the premises in a sanitary condition.

I. Drinking Water: Provide dispenser-type, electrical-power-cooled drinking water units; either piped with potable water or supplied with bottled water; adequate in number and locations for personnel at project site. Furnish paper cups and waste receptacles.

J. First Aid Supplies: Comply with governing regulations.

K. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.

1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company’s recommendations.

1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
3. Obtain easements to bring temporary utilities to the site, where the Owner's easements cannot be used for that purpose.
4. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Consultant, and will not be accepted as a basis of claims for a Change Order.

B. Water Service: Existing water service may be used for the project. Coordinate with Owner.

C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.

1. Except where overhead service must be used, install electric power service underground.
2. Power Distribution System: Install wiring overhead, and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, AC 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.

D. Temporary Lighting: Provide if necessary for the Work.

3.3 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

A. Temporary Heat: Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.

B. Heating Facilities: Except where use of the permanent system is authorized, provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited.

C. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.

D. Drinking Water Facilities: Provide acceptable drinking water for the project.

E. Project Identification and Temporary Signs: Not required.
F. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

3.4 SECURITY AND PROTECTION PROVISIONS

A. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.

B. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

C. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 SECURITY/PROTECTION PROVISIONS

A. The contractor or subcontractor at its own expense and option may employ a watchman at such time as it deems necessary to protect its work. The General Contractor shall provide a person or persons for janitor work, who shall keep all offices clean, attend to the temporary toilet rooms and keep them clean and supplied, attend to drinking water and supplies. This person shall also help to keep the construction areas swept and relatively clean.

B. At earliest possible date, secure building against unauthorized entrance at times when personnel are not working. Provide secure temporary enclosures at ground floor and other locations of possible entry, with locked entrances.

3.6 OPERATION, TERMINATION AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage.

2. Protection: Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
C. Termination and Removal: Unless the Owner or Consultant requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.

2. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
   a. Replace air filters and clean inside of ductwork and housings.
   b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
   c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

END OF SECTION 01 50 00
SECTION 01 60 00 - PRODUCTS, MATERIALS, AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including "The General Conditions of the Contract for Construction" and Division 1 Specification Sections, apply to the work of this Section.

1.2 DEFINITIONS

A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.

1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

   a. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

   b. "Foreign Products", as distinguished from "domestic products," are items substantially manufactured (50 percent or more of value) outside of the United States and its possessions; or produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of nor living within the United States and its possessions.

2. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

B. The terms "products", "material(s)", "equipment", "item(s)", "furnishing(s)", etc., shall mean any component object (capable of being seen, touched, or otherwise sensed), as defined in any subject matter under discussion which is to be incorporated in the Work to complement and effect complete construction as shown on the Drawings and specified or described in the Project Manual, completely furnished and installed, complete and ready for intended use.

C. The Contract is based on the products, materials, and equipment described in the Contract Documents.

1. If the Drawings disagree within themselves or with the Project Manual, the better quality or greater quantity of work or materials shall be included in the Contract Sum, and unless specified in writing, shall be provided.

D. The Contractor's requests for changes in the products, materials, equipment and methods of construction required by the Contract Documents are considered requests for "substitutions" and are subject to the requirements specified herein. The following are not considered as substitutions.

1. Revisions to the Contract Documents, where requested by the Owner, Consultant or Engineer are considered as "changes", not substitutions.

2. Substitutions requested during the bidding period, which have been accepted prior to the Contract Date, are included in the Contract Documents and are not subject to the requirements for substitutions as herein specified.
3. Specified Contractor options on products and construction methods included in the Contract Documents are choices available to the Contractor and are not subject to the requirements for substitutions as herein specified.

4. Except as otherwise provided in the Contract Documents, the Contractor's determination of and compliance with governing regulations and orders as issued by governing authorities do not constitute “substitutions” and do not constitute a basis for Change Orders.

E. Verify prior to bidding that all specified items will be available in time for installation during orderly and timely progress of the Work.

1. In the event specified items or items will not be so available, so notify the Consultant at least 10 days prior to receipt of Bids.
2. Additional costs due to delays because of non-availability of specified items, when such delays could have been avoided, will be back-charged to the Contractor and shall not be borne by the Owner.

F. Where the questions of appearance, artistic effect, or harmony of design are concerned, the Consultant, with approval of Owner, reserves the right to refuse acceptance of any product proposed to be substituted for that specified, if in his opinion the item to be substituted is not harmonious to the finished effect and appearance desired, as portrayed in the Drawings and Specifications. The Consultant's said refusal, with approval of Owner, to accept, established by this Article, is final.

1.3 QUALITY OF WORK

A. Notwithstanding anything to the contrary, the Contractor represents that all goods and services which he is providing shall be first-class, without defects, patent or latent, and installed and/or performed in a good and workmanlike manner consistent with the best grade work. Since "first class" is hard for some to understand, it means in the context of this project that all items of work shall be in straight alignment, plumb, square, and level, sloped where it is intended to slope, curved where it is intended to curve, and all to be within a tolerance of 1/8" in 10' (one eighth of an inch in ten feet).

1. All finished joints between like materials or between one material and another material either butting or being inserted or inlaid into another material must be a thin line or a very uniform joint.
2. All surfaces shall be properly prepared, and finishes applied in a uniform and consistent manner.
3. All fasteners shall be properly installed without marring the fastener or the materials being fastened.
4. All connections shall be made so that the finished item is ready for the use as designed and intended.
5. All exposed fasteners shall not be burred or left with sharp edges to injure anything or anyone.

1.4 SUBSTITUTIONS

A. Requests for substitutions must be fully documented and be from the General Contractor only. Substitution requests received directly from subcontractors, material suppliers, manufacturers, and parties other than the General Contractor, will not be acknowledged.

1. Requests for substitution, received by the Consultant later than 21 days after Contractor's receipt of the executed Contract will result in additional costs to the Owner. Contractor agrees to reimburse the Owner through deductive Change Order to the Contract, for all costs associated with such requests.

B. The Contractor's request for a substitution will be received and considered when such substitution does not require revisions to the Contract Documents, when the proposed substitutions comply with the Contract Documents, when the requests are timely, fully documented and properly submitted, and when, one or more of the following conditions is satisfied, all as judged by the Consultant with approval of Owner; otherwise the requests will be returned without action except to record non-compliance with these requirements.
1. The Consultant will consider a request for substitution where the request is directly related to an "or equal" clause or similar language in the Contract Documents.

2. The Consultant will consider a request for substitution where the specified product or method cannot be provided within the Contract time. However, the request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or to coordinate the various activities properly.

3. The Consultant will consider a request for a substitution where the specified product or method does not comply with requirements of governing authorities.

4. The Consultant will consider a request for a substitution where a substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations or merit, after deducting offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Consultant for redesign and evaluation services, the increased cost of other work by the Owner or by Owner's separate contractors, and similar considerations.

5. The Consultant will consider a request for substitution when the specified product or method cannot be provided in a manner which is compatible with other materials of the Work or cannot be properly coordinated with other materials in the Work, and where the Contractor certifies that the substitution will comply with all other requirements of the Work and that the proposed substitution can be properly coordinated.

C. The Contractor's submittal of and the Consultant's acceptance of shop drawings, product data or samples which relate to work not complying with requirements of the Contract Documents, does not constitute an acceptable or valid request for a substitution, nor approval thereof.

1.5 SUBSTITUTION REQUEST SUBMITTALS

A. All requests for substitution must be received by the Consultant no later than 21 days after Contractor's receipt of the executed Contract. Requests received later than 21 days will not be considered.

B. Substitution Request Submittal: Submit 3 copies of each request for substitution in form identical to that at the end of this Section. In each request identify the product, fabrication, and installation method to be replaced by the substitution; include related Specification Section and Drawing numbers, and complete documentation showing compliance with the requirements for substitutions. Include the following information, as appropriate, with each request.

1. Provide samples where applicable or requested.
2. Provide a detailed comparison of the significant qualities including elements such as size, weight, durability, performance and visual effect where applicable.
3. Provide complete coordination information. Include all changes required in other elements of the Work to accommodate the substitution, including work performed by the Owner and separate contractors.
4. Provide complete cost information, including a proposal of the net change, if any in the Contract sum.
5. After receipt of the Contractor's request for substitution, the Consultant will notify the Contractor of either the acceptance or rejection of the proposed substitution. Acceptance of substitute products will be contingent upon submission of information specified herein as well as substantiating data, satisfactory to the Consultant, that:
   a. There will be a Cost or Contract Completion Time advantage to the Owner.
   b. Item is equal to or better than the quality and serviceability of the specified product.
   c. Use of item will not entail changes in details and construction of related work.
   d. Item conforms to required design and artistic effect.

6. The burden of proof shall be upon the Contractor.

C. Do not resubmit requests for substitution for products, materials, and equipment that have previously been rejected for this Project. No action will be taken on such requests.
1.6 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Consultant for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities to the fullest extent possible.

B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

C. Flame Spread Properties of Materials: Materials and adhesives incorporated in this project shall conform to NFPA Standard 255(1984) "Method of Test of Surface Burning Characteristics of Building Materials." The classification shall not exceed a flame spread rating of 25 for all materials, adhesives, finishes, etc., specified for each system, and shall not exceed a smoke-developed rating of 50.

D. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.

2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:

   a. Name of product and manufacturer.
   b. Model and serial number.
   c. Capacity.
   d. Speed.
   e. Ratings.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

A. Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.

1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience.

C. Listing of manufacturers and specific model numbers on the Drawings and in the specifications, establishes standards for manufacture, form, function, appearance, and other pertinent properties required in the Work.

1. Where a single manufacturer's product is listed, provide that product.

2. Where more than one manufacturer and product are listed, provide one of the listed products.
3. Where a single manufacturer's product is listed, followed by a list of other acceptable manufacturers, provide the listed product or an equivalent product by one of the other listed acceptable manufacturers. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of the unnamed product.

4. Where products or manufacturers are specified by name, accompanied by the term "or equal," "or approved equal," or similar wording, provide one of the listed products or comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

5. When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

6. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

7. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.

   a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

8. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

9. Visual Matching: Where Specifications require matching an established Sample, the Consultant's decision will be final on whether a proposed product matches satisfactorily.

   a. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.

10. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Consultant will select the color, pattern and texture from the product line selected.

11. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division-1 for allowances that control product selection, and for procedures required for processing such selections.

PART 3 - EXECUTION

3.1 PRODUCT DELIVERY, STORAGE, AND HANDLING

   A. Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control delivery schedules to minimize long-term storage at the Site and to prevent overcrowding of construction spaces. In particular coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.

   1. Deliver products to the Site in the manufacturer's sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

   2. Store products at the Site in a manner that will facilitate inspection and measurement of quantity or counting of units.
3. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
4. Containers which are broken, opened, watermarked, or otherwise damaged, and which contain caked, lumpy or otherwise damaged materials are unacceptable and shall be immediately removed from the premises.
5. Store all cement, lime, plaster, aggregates, roofing materials, and similar items above ground and protected from dampness, weather and other damage.
6. Retain all loose and small detachable parts of apparatus and equipment until the completion of the Work. Turn over to the Owner or his representative designated to receive them and obtain from him an itemized receipt thereof in triplicate. Retain one copy of this receipt for final payment for the Work.

B. Ensure that products are delivered to the Project in accordance with the Progress Schedule. In determining date of delivery, allow sufficient time for submittal approvals, including the possibility of having to resubmit improperly prepared submittals or products other than those specified, and the necessary fabrication or procurement time along with the delivery method and distance involved.

3.2 GENERAL INSTALLATION PROVISIONS

A. Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
C. Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Consultant for final decision.
D. Recheck measurements and dimensions, before starting each installation.
E. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
F. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
G. Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the application indicated. Refer questionable mounting height decisions to the Consultant for final decision.

3.3 INSTALLATION OF PRODUCTS

A. Apply, install, connect, erect, use, clean, and condition all manufactured products in accordance with the manufacturer's printed directions, unless herein specified to the contrary. Where manufacturer's printed directions are available and where reference is made to manufacturer's directions in the Specifications, submit copies of such directions to the Consultant in accordance with the requirements of Section 01300 prior to the beginning of any work covered thereby.
B. Where specific installation instructions are not part of these Specifications and Drawings, install all products, materials, and equipment in strict accordance with instructions from the respective manufacturers.
C. Where construction procedures or installation instructions are included in the Contract Documents, or incorporated by reference to industry standards and codes, review the instructions to ensure the completed work will conform to the requirements of the Contract.
1. Make written request for clarification from the Consultant if:
The procedure deviates from good construction practice.

b. Following the procedure will adversely affect any required warranties and guarantees.

c. Contractor objects to procedures for any other reason.

Include in request for clarification Contractor's suggested procedures for accomplishing the work.

D. In accepting or assenting to the use of any apparatus or material, or name brand or arrangement thereof, the Consultant in no way waives any of the requirements of these Specifications or the warranty embodied therein.

3.4 ACCEPTANCE OF EQUIPMENT OR SYSTEMS

A. The Owner will not accept the start of the warranty period on systems or equipment until Substantial Completion is issued for Owner's occupancy of the building, in part or whole. Contractor shall make such provisions as required to extend the manufacturer's warranty from time of initial operation of systems or equipment until Substantial Completion is established in writing.
SUBSTITUTION REQUEST FORM

To: <insert Consultant's name>
<insert Consultant's address>

For the project identified at upper right corner of this page, in lieu of the following specified item:

(spec section title) (page no.) (paragraph)

(description)

the undersigned requests consideration of the following substitution:

(spec specific manufacturer and model number)

Attachments include product description, specifications, drawings, photographs, performance data, and test data adequate for evaluation of the request as it compares to the specified item. Applicable portions are clearly identified.

Attached data also includes description of changes to the Contract Documents which will be required for proper installation of the proposed substitution.

The undersigned states that the following statements, unless specifically indicated to the contrary below, are correct:

1. The proposed substitution does not materially affect dimensions given in the Contract Documents.
2. The undersigned will pay for required changes to the Project design, including Consultant and engineering design, detailing, construction cost, and all other additional expenses caused by the substitution.
3. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty/guarantee requirements and meets all applicable code requirements.
4. Maintenance and service parts for the substitution will be locally available.

The undersigned certifies that the function, appearance, and quality of the proposed substitution are equal or superior to the specified item, that the proposed substitution will result in work that in every significant respect is equal to or better than the work required by the Contract Documents, and that the proposed substitution is suitable for the intended purpose on this Project.

The proposed substitution will result in a Cost savings to the Owner in the amount of $_______________ Dollars.

The proposed substitution will result in a Time savings to the Owner in the amount of __________ Calendar Days.

SUBMITTED BY: FOR DESIGN TEAM USE FOR OWNER USE

(Gen (General Contractor) Accepted Accepted Accepted
eral Contractor) Rejected As Noted Rejected As Noted

(signature) Signed: Sig (Owner)

(date) Date: Date:

Attachments:
SECTION 01 70 00 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 SUBSTANTIAL COMPLETION

A. Before requesting for certification of Substantial Completion, complete the following. List exceptions in the request.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

   a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

2. Advise Owner of pending insurance change-over requirements.
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
5. Deliver tools, spare parts, extra stock, and similar items.
6. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
7. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
8. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

B. On receipt of a request for inspection, the Consultant will either proceed with inspection or advise the Contractor of unfilled requirements. The Consultant will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. If additional inspections are required due to Contractor's failure to properly complete items from previous lists, the Owner will incur additional costs. Contractor agrees to reimburse the Owner through deductive Change Order to the Contract for all costs associated with re-inspections.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.3 FINAL ACCEPTANCE

A. Before requesting final inspection and final "Certificate for Payment", complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Consultant's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Consultant.
4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.

5. Submit consent of surety to final payment.

6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. The Consultant will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Consultant.

1. Upon completion of re-inspection, the Consultant will prepare a final "Certificate for Payment", or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

2. If additional inspections are required due to Contractor's failure to properly complete items from previous lists, the Owner will incur additional costs. Contractor agrees to reimburse the Owner through deductive Change Order to the Contract for all costs associated with re-inspections.

1.4 RECORD DOCUMENT SUBMITTALS

A. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistant location; provide access to record documents for the Consultant's reference during normal working hours. Refer to Section 01 78 39 for additional requirements.

1.5 FINAL CLEANING

A. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.

   a. Remove labels that are not permanent labels.

   b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

   c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

   d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

   e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

B. Remove temporary protection and facilities installed for protection of the Work during construction.

C. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.
PART 2 - PRODUCTS
Not Applicable

PART 3 – EXECUTION
Not Applicable

END OF SECTION 01 70 00
SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 RECORD DRAWINGS

A. Mark-up Procedure: During the construction period, maintain a set of blue- or black-line white-prints of Contract Drawings and Shop Drawings for Project Record Document purposes.

1. Mark these Drawings to indicate the actual installation where the installation varies appreciably from the installation shown originally. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:

   a. Dimensional changes to the Drawings.
   b. Revisions to details shown on the Drawings.
   c. Revisions to routing of piping and conduits.
   d. Revisions to electrical circuitry.
   e. Actual equipment locations.
   f. Changes made by Change Order.
   g. Details not on original Contract Drawings.


3. Mark record sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.

4. Mark important additional information which was either shown schematically or omitted from original Drawings.

5. Note construction change directive numbers, alternate numbers, Change Order numbers and similar identification.

6. Responsibility for Markup: Where feasible, the individual or entity who obtained record data, whether the individual or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on record Drawings.

   a. Accurately record information in an understandable Drawing technique.
   b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.

7. At time of Substantial Completion, submit record Drawings to Consultant for Owner's records. Organize into sets and bind with durable paper cover sheets, with appropriate identification, including titles, dates and other information on cover sheets.

1.3 RECORD SPECIFICATIONS

A. During the construction period, maintain two copies of the Project Specifications, including addenda and modifications issued, for Project Record Document purposes.

1. Mark the Specifications to indicate the actual installation where the installation varies substantially from that indicated in Specifications and modifications issued. Note related Project Record Drawing information, where applicable. Give particular attention to substitutions, selection of product options, and information on concealed installations that would be difficult to identify or measure and record later.
a. In each Specification Section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.

b. Record the name of the manufacturer, supplier and installer, and other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.

2. Upon completion of mark-up, submit record Specifications to the Consultant for Owner's records.

1.4 RECORD PRODUCT DATA

A. During the construction period, maintain one copy of each Product Data submittal for Project Record Document purposes.

1. Mark Product Data to indicate the actual product installation where the installation varies substantially from that indicated in Product Data submitted. Include significant changes in the product delivered to the site, and changes in manufacturer's instructions and recommendations for installation.

2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

3. Note related Change Orders and mark-up of record Drawings, where applicable.

4. Upon completion of mark-up, submit a complete set of record Product Data to the Consultant for the Owner's records.

5. Where record Product Data is required as part of maintenance manuals, submit marked-up Product Data as an insert in the manual, instead of submittal as record Product Data.

1.5 RECORD SAMPLE SUBMITTAL

A. Immediately prior to date of Substantial Completion, the Contractor shall meet with the Consultant and, if desired, the Owner's personnel at the site to determine which of the Samples maintained during the construction period shall be transmitted to Owner for record purposes. Comply with the Consultant's instructions for packaging, identification marking, and delivery to Owner's Sample storage space. Dispose of other Samples in manner specified for disposal of surplus and waste materials.

1.6 MISCELLANEOUS RECORD SUBMITTALS

A. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Consultant for the Owner's records.

1. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:

   a. Authorized measurements utilizing unit prices or allowances.
   b. Ambient and substrate condition tests.
   c. Certifications received in lieu of labels on bulk products.
   d. Batch mixing and bulk delivery records.
   e. Testing and qualification of tradesmen.
   f. Documented qualification of installation firms.
   g. Load and performance testing.
   h. Inspections and certifications by governing authorities.
   i. Leakage and water-penetration tests.
   j. Fire resistance and flame spread test results.
   k. Final inspection and correction procedures.
1.7 RECORDING

A. Maintenance of Documents and Samples: Store record documents and Samples in the field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain record documents in good order, and in a clean, dry, legible condition. Make documents and Samples available at all times for inspection by the Owner's Designated Representative.

B. Post changes and modifications to the Documents as they occur. Do not wait until the end of the Project. The Consultant will periodically review record documents to assure compliance with this requirement.

1.8 CERTIFICATION

A. By submittal of Project Record Documents, Contractor certifies that, to the best of his knowledge, information, and belief the documents are a true and complete representation of the actual construction of the Work of this Project.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION 01 78 39
SECTION 06 10 53 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including "The General Conditions of the Contract for Construction" and Division 1 Specification Sections, apply to the work of this Section.

1.2 SUBMITTALS

A. In accordance with the requirements of Section 01 60 00, submit a complete listing of all manufacturers, products, model numbers, and designs proposed for use in the Work of this Section.

B. Maintain one copy all shop drawings, product data, and samples, manufacturer's specifications, recommendations, installation instructions, and maintenance data at the Project Site. At Project Closeout, turn over copy to the Architect who will transmit to the Owner.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack material above ground level on uniformly spaced supports to prevent deformation.

1. For material pressure treated with waterborne chemicals, place spacers between each bundle for air circulation.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

A. Standards: Furnish lumber manufactured to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

B. Grade Stamps: Furnish lumber with each piece factory-marked with grade stamp of inspection agency that indicates grading agency, grade, species, and moisture content at time of surfacing, and mill.

1. For exposed lumber, furnish pieces marked on ends or back of each piece.

C. Sizes: Provide nominal sizes indicated, complying with PS 20 except where actual sizes are specifically noted as being required.

D. Surfacing: Dressed lumber, S4S, unless otherwise indicated.

2.2 DIMENSION LUMBER

A. Species: Southern Pine or Douglas Fir.

B. Moisture Content: S-DRY, KD 19 or MC 19 (19 percent maximum moisture content).

C. Grade: No. 2 or standard grade.

2.3 PLYWOOD

   1. Trademark: Furnish construction panels that are each marked with APA trademark for grade specified.

B. Miscellaneous Concealed Plywood: C-C Plugged Exterior, thickness as indicated, but not less than ½ inch, nominal.

C. Plywood Treatment: Obtain preservative-treated plywood complying with AWPA Standards C1 and C9 or C18. Mark each treated member in accordance with AWPA Standard C1 and M6. Handling, storage and field treatments shall be in accordance with AWPA Standard M4. All plywood shall be pressure-treated with approved preservative treatment conforming to AWPA Standard P5 to a net retention of 0.25 pounds per cubic foot of wood by assay per AWPA Standards C1 and C9.

2.4 FASTENERS

A. General:
   1. Where miscellaneous carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of AISI Type 304 stainless steel.
   2. Ensure that fasteners are compatible with all materials with which they will be in contact so that dielectric corrosion does not occur.
   3. Unless otherwise indicated on Drawings, maximum fastener spacing shall be 8 inches on center.


C. Bolts: ASTM A 307, Grade A; with ASTM A 563 hex nuts and flat washers.

D. Schedule:
   1. Dimension Wood to Plywood Substrate: No. 10 galvanized wood screws, length to suit application.
   2. Dimension Wood to Dimension Wood: No. 12 stainless steel wood screws, length to suit application.
   3. Structural Concrete Substrate: Removable, heavy-duty roofing fasteners, length as required to ensure a minimum embedment of 1 inch; such as Olympic Catalog Series CRHD, or approved equivalent.
   4. Dimension Wood to Sheet Metal Deck Substrate: Removable, heavy-duty roofing fasteners, length as required to ensure a minimum penetration of 1/2 inch; such as Olympic CR Series, or approved equivalent.
   5. Dimension Wood to Masonry Substrate: Removable, weather-guard coated steel masonry screw anchor, such as Tapcon, or approved equivalent; length to ensure a minimum embedment of 1 ¾ inches, or approved equivalent.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Discard units of material with defects that impair quality of miscellaneous carpentry and in sizes that would require an excessive number or poor arrangement of joints.

B. Cut and fit miscellaneous carpentry accurately. Install members plumb and true to line and level.

C. Coat cut edges of preservative-treated wood to comply with AWPA M4.

D. Securely fasten miscellaneous carpentry as indicated and according to applicable codes and recognized standards.

E. Countersink fastener heads on exposed carpentry work and fill holes.
F. Use fasteners of appropriate type and length. Pre-drill members when necessary to avoid splitting wood.

G. Before installation, prime and paint wood surfaces of items or assemblies to be in contact with other materials.

3.2 WOOD CURBS, NAILERS, BLOCKING, AND SLEEPERS

A. Install where shown and where required for screeding or attachment of other work. Cut and shape to required size. Coordinate location with other work involved.

B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated.

C. Blocking and nailers indicated on Drawings may not reflect the actual number or thickness of members required. Provide shims, blocking and/or other materials as necessary to match surfaces indicated on Drawings.

D. New curbs should be of sufficient height to lift existing roof-mounted equipment a minimum of 8 inches above the finished roof surface.

E. Set and secure materials and components in place, plumb, level and properly aligned.

F. Bring areas of existing wood members or assemblies to remain in place that are suspected of being deteriorated or otherwise damaged to the attention of the Consultant or Owner’s Representative and obtain written approval to repair suspected areas before proceeding with repair of the area.

G. Install wood nailers and curbs as indicated on the Drawings and in accordance with equipment manufacturer’s recommendations.

H. Wood Nailer Installation:
   1. Attach new nailers to substrate with two staggered rows of appropriate fasteners. Space each row a maximum of 24 inches on center. Off-set fasteners from underlying fasteners.
   2. Install new wood nailers in multiple thicknesses and utilizing shims as necessary to run even with the adjacent roof insulation board.

I. Wood Curb Installation: Fasten wood curb to nailer with appropriate fasteners spaced a maximum of 12 inches on center; minimum of three fasteners per side.

J. Ensure that existing wood nailers, curbs and blocking to remain in place are properly fastened to the substrate in accordance with the above-specified fastening requirements. Correct deficiencies.

END OF SECTION 06 10 53
SECTION 07 22 00 – ROOF AND DECK INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including "The General Conditions of the Contract for Construction" and Division 1 Specification Sections, apply to the work of this Section.

1.2 DEFINITIONS

A. Thermal Resistivity: Where the thermal resistivity of insulation products is designated by "R-values," they represent the reciprocal of thermal conductivity (k-values). Thermal conductivity is the rate of heat flow through a homogenous material exactly 1 inch thick. Thermal resistivities are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

1.3 PERFORMANCE REQUIREMENTS

A. Material Compatibility: Provide roof insulation materials that are compatible with roofing membrane under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

B. Roofing System Design: Provide a membrane roofing system that is identical systems that have been successfully tested by a qualified testing and inspection agency to resist uplift pressure calculated in accordance with ASCE 7-10 and meet specified fire and hail resistance requirements, as follows:
   1. Wind Uplift Pressure Requirements (Worst Case):
      a. Field Uplift Pressure: 15 PSF
      b. Perimeter Uplift Pressure: 25 PSF
      c. Corner Uplift Pressure: 37 PSF
   2. Fire Classification: 1A
   3. Hail Resistance: SH

1.4 SUBMITTALS

A. In accordance with the requirements of Section 01 60 00, submit a complete listing of all manufacturers, products, model numbers, and designs proposed for use in the Work of this Section.

B. Maintain one copy all shop drawings, product data, and samples, manufacturer's specifications, recommendations, installation instructions, and maintenance data at the Project Site. At Project Closeout, turn over copy to the Consultant who will transmit to the Owner.

C. Submit only the items listed below to the Consultant for review in accordance with Conditions of the Contract and Division 01 sections.

D. Submit shop drawings at same scale as Consultant's roof plan showing layout of insulation units, location and identification marks for tapered units, fastener locations, and wood blocking requirements.

E. Submit copies of manufacturer's specifications and installation instructions for each type of insulation required. If printed instructions and recommendations are not available, or conflict with project conditions, consult with the insulation manufacturer's technical representative for specific recommendations before proceeding with the work. Include data substantiating that the materials comply with specified requirements.
1.5 QUALITY ASSURANCE

A. Provide all roof insulation required from the same manufacturer as the roofing membrane specified, or other as approved by the membrane manufacturer.

B. Roof design and details are based upon the specified insulation material. Bidders/Contractors desiring acceptance of different insulation material are responsible for ascertaining that all modifications to details are accounted for and included in his costs. Other parts of the work that may be affected by substitution include, but are not limited to:
1. Thickness of wood blocking.
2. Height and gage of metal flashing.
3. Fire rating of assembly.
4. Wind uplift rating of assembly.
5. Height of curbs and counter flashing.

C. Notify the Consultant, in writing, prior to starting roof deck insulation work if there are any conflicts between the Drawings and Specifications and manufacturer's recommendations for use of and installation of the insulation. Starting of roof deck insulation work indicates that Contractor acknowledges that no conflict exists and that all other materials in contact with the roof deck insulation are compatible with it.

D. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's warranty.

E. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
1. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.

1.6 COORDINATION

A. Coordinate the Work of this Section with that of the following Sections:
1. Section 06 10 53 – Miscellaneous Rough Carpentry
2. Section 07 52 00 – Modified Bituminous Membrane Roofing
3. Section 07 62 00 – Sheet Metal Flashing and Trim

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.

B. Do not expose to sunlight, except to extent necessary for period of installation and concealment.

C. Protect against ignition at all times. Do not deliver insulating materials to project site ahead of installation time.

D. Complete installation and concealment of insulation materials as rapidly as possible in each area of construction.
1.8 PROJECT CONDITIONS

A. Weather Limitations: Proceed with insulation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer’s written instructions and warranty requirements.

PART 2 - PRODUCTS

2.1 POLYISOCYANurate INSULATION BOARD (ISO)

A. Rigid, high thermal roof insulation board consisting of a core of rigid, closed-cell, polyisocyanurate foam, faced with glass-reinforced facers, such as Johns Manville ENRGY 3 Flat and Tapered Roof Insulation, or approved equivalent.

B. Meets ASTM C728, Type II.

C. Sizes: 2 foot by 4 foot, or 4 foot by 4 foot, 1-1/2" min. thickness.

2.2 RECOVERY BOARD

A. High-density, enhanced glass-mat faced board made of gypsum or expanded perlite and cellulosic fibers meeting the physical requirements of ASTM C1177, such as Johns Manville DensDeck Prime Roof Board, or approved equivalent.

2.3 FASTENERS

A. Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roof insulation to substrate, and furnished by roofing system manufacturer, such as Johns Manville UltraFast Fasteners and Plates, or approved equivalent.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements of the Sections in which substrates and related work are specified and to determine if other conditions affecting performance of roof insulation boards are satisfactory. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of substances harmful to the insulation board, including removal of projections that might prevent insulation board from laying flat or result in voids below the insulation board.

B. Remove all debris, dirt, oil, grease and standing water from surfaces before applying adhesive.

3.3 INSULATION AND RECOVERY BOARD INSTALLATION

A. Coordinate installation of roof system components so insulation and cover board are not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system manufacturer’s written instructions for installation of roof insulation and cover board.

C. Install flute-filler insulation package on metal R-panel roof with thickness to fill flutes the height of the panel corrugation.

D. Install two layers of insulation under area of roofing to achieve thickness of 4.4 inches.
E. Install overlay insulation boards with long joints in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with like material.

F. Fastened Insulation for Mechanically Fastened Systems: Install insulation with fasteners at rate required by roofing system manufacturer or applicable authority, whichever is more stringent.

G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.4 PROTECTION

A. General: Protect installed roof insulation, recovery board and gypsum sheathing from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 07 22 00
SECTION 07 52 00 – MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including "The General Conditions of the Contract for Construction" and Division 1 Specification Sections, apply to the work of this Section.

1.2 SUBMITTALS

A. In accordance with the requirements of Section 01 60 00, submit a complete listing of all manufacturers, products, model numbers, and designs proposed for use in the Work of this Section.

B. Maintain one copy all shop drawings, product data, and samples, manufacturer's specifications, recommendations, installation instructions, and maintenance data at the Project Site. At Project Closeout, turn over copy to the Consultant who will transmit to the Owner.

C. Submit only the items listed below to the Consultant for review in accordance with Conditions of the Contract and Division One sections.

D. Coordinate submittals required of Sections 07 22 00 and 07 62 00 and submit simultaneously with submittals required of this Section.

E. Shop drawings showing all flashing conditions, terminations, and penetrations of the roof membrane.

F. Samples of the following:
   1. 12-by-12-inch square samples of each color mineral surface modified bitumen sheets to be exposed as finished roof surface.

1.3 QUALITY ASSURANCE

A. Comply with primary roofing material manufacturer's general specification requirements, specified by manufacturer as part of the cold-applied bituminous roofing system specified in this Section, including applicable material specifications, recommendation for material handling, roof decks, flashing and cants, roof surfacing, preparation and use of materials and equipment, precautionary notes, and application quality control.

B. Installer Qualifications: Engage an experienced Installer (Roofer) to perform roofing work who has specialized in installing cold-applied bituminous roofing systems similar to that required for this Project and who is acceptable to manufacturer of primary roofing materials.
   1. Installer Certification: Obtain written certification from manufacturer of built-up roofing system certifying that Installer is approved by manufacturer to install specified roofing system. Provide copy of certification for Consultant prior to awarding roofing work.
   2. Installer's Field Supervision: Require Installer to maintain a full-time supervisor/foreman who is on job site during times that built-up asphalt roofing work is in progress and who is experienced in installing roofing systems similar to type and scope required for this Project.

C. Manufacturer Qualifications: Obtain primary products, including each type of roofing sheet, cold-applied adhesive/bitumen, flashings, roofing cement, from a single manufacturer. Provide secondary products as recommended by manufacturer of primary products to use with roofing system specified.

D. Insurance Certification: Assist Owner in preparing and submitting roof installation acceptance certification as necessary in connection with fire and extended-coverage insurance on roofing and associated work.
E. UL Listing: Provide built-up roofing system and component materials that have been tested for application and slopes indicated and that are listed by UL for Class A external fire exposure.
   1. Provide roof-covering materials bearing UL Classification Marking on bundle, package, or container indicating that materials have been produced under UL’s Classification and Follow-up Service.
   2. Provide built-up roofing system that can be installed to comply with UL requirements for Fire Classified and specified uplift resistance requirements.

F. FM Global Listing: Provide built-up roofing system and component materials that have been evaluated by FM Global for fire spread, uplift resistance, and hail damage (Class 1-SH) and are listed in "FM Global’s Approval Guide" for Class I construction, uplift resistance as specified on Drawings.
   1. Provide roof covering materials bearing FM Global approval marking on bundle, package, or container, indicating that material has been subjected to FM Global's examination and follow-up inspection service.

G. Preliminary Roofing Conference: As soon as possible after award of roofing work, meet with Installer (Roofer), Consultant, Owner, and representatives of other entities directly concerned with roofing system performance, including Owner's insurers and test agencies, as applicable.
   1. Review requirements (Contract Documents), submittals, status of coordinating work, availability of materials, and installation facilities and establish preliminary installation schedule. Review requirements for inspections, tests, certifications, forecasted weather conditions, governing regulations, insurance requirements, and proposed installation procedures.
   2. Discuss roofing system protection requirements for construction period extending beyond roofing installation. Discuss possible need for temporary roofing.
   3. Record discussion, including agreement or disagreement on matters of significance; furnish copy of recorded discussions to each participant. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.

H. Pre-application Roofing Conference: Approximately 2 weeks prior to scheduled commencement of roofing installation and associated work, meet at Project site with Installer, Consultant, Owner, roofing system manufacturer's representative, and other representatives directly concerned with work performance, including Owner's insurers, test agencies, as applicable, and governing authorities, where applicable.
   1. Review foreseeable methods and procedures related to roofing work, including, but not necessarily limited to, the following:
      a. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations, and other preparatory work performed by other trades, if any.
      b. Review structural loading limitations of deck and inspect deck for loss of flatness and for required mechanical fastening, as required.
      c. Review roofing system requirements: drawings, specifications, and other contract documents.
      d. Review required submittals, both complete and incomplete.
      e. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
      f. Review required inspection, testing, certifying, and material use accounting procedures.
      g. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing, if it is not a mandatory requirement.
   2. Record (Contractor) discussions of conference, including decisions and agreements or disagreements reached, and furnish a copy for each attendee. If substantial disagreements exist at the conclusion of the conference, determine how disagreements will be resolved and set a date for reconvening the conference.
1.4 PROJECT CONDITIONS

A. Weather Condition Limitations: Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed according to manufacturers' recommendations and warranty requirements.
   1. Do not apply roofing materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials, applied roofing and building interiors are protected from possible moisture damage or contamination.
   2. The minimum required substrate temperature at point of application for installing self-adhered base ply membrane is 40 degrees Fahrenheit. Maintain a minimum roof membrane material temperature above 50 degrees Fahrenheit. In low temperature conditions, materials should be kept warm prior to application. Suspend application in situations where the self-adhered base ply cannot be kept at temperatures allowing for proper adhesion.

B. Temporary Roofing: When adverse job conditions or weather conditions prevent permanent roofing and associated work from being installed according to requirements and Contractor determines that roofing cannot be delayed because of need for job progress or protection of other work, install temporary roofing. Provide temporary roofing and to remove it prior to proceeding with permanent roofing work.

C. Give manufacturer a minimum of 5 days notice prior to commencing work and provide further notification of any changes in work schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store and handle roofing materials to ensure dryness. Store in a dry, well-ventilated, weather-tight place. Unless protected from weather or other moisture sources, do not leave unused felts on the roof overnight or when roofing work is not in progress. Store rolls of felt and other sheet materials on end on pallets or another raised surface. Handle and store materials or equipment in a manner to avoid significant or permanent deck deflection.

1.6 WARRANTY

A. Provide a warranty, signed by the Contractor, agreeing to repair or replace all components of the total roofing system which fail to perform as protective roofing, whether the result of faulty workmanship or materials, for a period of 2 years from the Date of Substantial Completion at no additional cost to the Owner.
   1. In connection with Contractor's correction of work which has failed, remove and replace other work of the Project which has been damaged as a result of such failure, or must be removed to provide access for correction of work.
   2. Except as otherwise indicated or required by governing regulations, specific warranties are not extended to cover damage to building contents (other than work of this Contract) which occurs as a result of failure of roofing system work.
   3. For purposes of Contractor's Warranty, components of the roofing system include roof membrane, top surfacing, elastic and bituminous flashings, expansion and control joint assemblies, roof deck insulation, mechanical fasteners, adhesives, sheet metal flashing and counter-flashing, sealant, and all other materials utilized in the application of the roofing system.

B. Manufacturer's Warranty: Submit executed copy of roofing manufacturer's standard "Unlimited Penal Sum/No Dollar Limit" Warranty agreement, including flashing endorsement, signed by an authorized representative of modified bitumen roofing system manufacturer, on form that was published with product literature as of date of Contract Documents.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrently with other warranties made by the Contractor under requirements of the Contract Documents.
1.7 ROOF SYSTEM UPLIFT TESTING

A. Roof System Mock-up Uplift Resistance Testing (if required by Owner):
   1. Install the specified roof system within approved roof system mock-up areas in accordance with all project requirements for the selected areas. Each area shall have a minimum dimension of 10 feet and a total minimum area of 200 square feet.
   2. Each installation shall demonstrate the installation methods and materials to be incorporated into the project.
   3. Uplift testing will be performed by Owner’s Independent Consultant to a pressure equal to 150 percent of the maximum uplift pressure required for the project.
   4. If the installation meets the maximum uplift pressure required for the project, the mock-up may be incorporated into the final work product.
   5. If the installation does not meet the maximum uplift pressure required for the project, the mock-up shall be removed and reinstalled or modified as necessary to meet the specified uplift requirement.
   6. Reinstalled or modified systems will be retested until a satisfactory installation is confirmed by uplift testing.

B. Final Completion Uplift Resistance Testing (if required by Owner):
   1. Once the roof system has been installed, the roof system will be tested in accordance with FM Global’s Data Sheet FM 1-52.
   2. If the installation does not meet the maximum uplift pressures required for the various zones of each roof area, deficient areas shall be removed and reinstalled or modified in a manner approved by the Consultant and the roof membrane manufacturer to meet the specified uplift requirement.
   3. Reinstalled or modified areas of roof will be retested until a satisfactory installation is confirmed by uplift testing.

PART 2 - PRODUCTS

2.1 TWO-PLY MODIFIED BITUMEN ROOF SYSTEM

A. Roof System Description: Provide flat-stock polyisocyanurate insulation, recovery board, two-ply torch-applied modified bitumen roof membrane system.

B. Roof System Components:
   1. Flat Stock Insulation: See Section 07 22 00 – Roof Insulation.
   2. Gypsum Recovery Board: See Section 07 22 00 – Roof Insulation.
   3. Base Sheet Membrane: ASTM D 6163, Grade S, Type I, glass-fiber reinforced, Torch-grade SBS-modified asphalt sheet, smooth-surfaced, such as Johns Manville DynaBase HW, or approved equivalent.
   4. Stripping and Backer Membrane: ASTM D 6163, Grade S, Type I, glass-fiber reinforced, Torch-grade SBS-modified asphalt sheet, smooth-surfaced, such as Johns Manville DynaBase HW, or approved equivalent.
   5. Roof Cap Sheet Membrane: ASTM D 6163, Grade G, Type I, glass-fiber reinforced, Torch-grade SBS-modified asphalt sheet, granular-surfaced, such as Johns Manville DynaWeld Cap FR GR, or approved equivalent.
   6. Base Flashing Membrane: ASTM D 6163, Grade G, Type I, glass-fiber reinforced, Torch-grade SBS-modified asphalt sheet, granular-surfaced, such as Johns Manville DynaWeld Cap FR GR, or approved equivalent.
   10. Granules: No. 11 grade specification ceramic granules of color scheme matching the granule surfacing of the finish ply.
   11. Walkway Pads: Johns Manville DynaTred Walkway, or approved equivalent.

D. Minimum Roof System Uplift Resistance: The roof system must be capable of resisting the uplift pressures for each roof area and zone in accordance with the Table on Drawing R-2.

E. Minimum Fire Resistance: UL Class A.

F. Minimum Hail Resistance: FM Global Class 1-SH.

2.2 MISCELLANEOUS MATERIALS

A. Deck Primer: Comply with ASTM D41, such as Johns Manville Asphalt Primer, or approved equivalent.

B. Roofing Cement: Asphalactic cement, asbestos-free, complying with ASTM D 4586; such as Johns Manville MBR Utility Cement, or approved equivalent.

C. Wood Members: Refer to Section 06 10 53 – Rough Miscellaneous Carpentry.

D. Sheet Metal and Sheet Metal Accessories: Refer to Section 07 62 00 – Sheet Metal Flashing and Trim.

E. Roof Membrane Termination Fasteners:
   1. Masonry and Concrete Substrates: ¼” diameter hammer-set type anchors, length to ensure ¾ inch, minimum embedment, zinc plated body and pin; such as Hilti Hit Anchor, or approved equivalent.
   2. Wood or Plywood Substrate: 11-gauge barbed, galvanized Simplex Nails with 7/16 to 5/8-inch diameter heads, long enough to enter wood substrate a minimum of 1 inch or plywood substrate a minimum of ¾ inch.

F. PMMA Primer: Fast-curing PMMA-based primer for use on masonry and concrete vertical substrates; such as Johns Manville PermaFlash Primer, or approved equivalent.

G. PMMA Resin: Flexible PMMA-based resin for flashing applications; such as Johns Manville MBR Flashing Cement, or approved equivalent.

H. Flashing Reinforcement Fleece: Polyester fabric reinforcement; such as Johns Manville PermaFlash Scrim, or approved equivalent.

PART 3 - EXECUTION

3.1 SUBSTRATE PREPARATION

A. Comply with prime roofing materials manufacturer’s recommendations for either caulking joints in deck with mastic sealant or roofing cement or covering joints with substrate joint tape.

B. Surfaces to receive roofing work shall be dry and swept clean of all debris, foreign materials, dirt and dust. Metal flashings and other materials shall be available and ready for installation. All penetrations (piping, conduits, equipment supports, etc.) and curbs shall be in place, inspected and accepted prior to start of roofing system installation work.

C. Test concrete substrate for excessive moisture at start of each roof area or plane and following any precipitation. Do not proceed with roofing work if substrate is too wet. One method accepted by the NRCA (National Roofing Contractors Association) for determining deck dryness is as follows:
   1. During the midday sun, place a 12-inch by 12-inch pane of glass on the concrete deck and seal around the edges using caulk or tape, sealing the perimeter of the glass to the deck.
   2. Allow the glass to remain in place for two hours. If condensation appears on the bottom of the glass, the deck is not dry enough for roofing operations.

D. It is the responsibility of the contractor to use any and all methods to ensure that the existing substrate is dry and ready to receive roofing materials.
3.2 GENERAL INSTALLATION REQUIREMENTS

A. Use and apply all materials in strict compliance with manufacturer's published general specification requirements, application guidelines, and the particular system design specified.
   1. Installations not covered by definite manufacturer’s specifications or details shall be as per best practice for obtaining waterproof work as recommended by primary roofing materials manufacturer, NRCA Standards, and as specified herein. All proposed deviations from these specifications shall be reported to Consultant in accordance with Blinn’s Request for Information (RFI) procedures. Do not proceed with deviations until reviewed by Consultant.

B. Cooperate with inspection and test agencies engaged or required to perform services in connection with installing built-up roofing system.

C. Protect other work from spillage of roofing materials and prevent liquid materials from entering or clogging drains and conductors. Replace/restore other work damaged when installing roofing system work.

D. Insurance/Code Compliance: Install and test, where required, roofing system to comply with governing regulations and the following insurance requirements:
   1. FM Global requirements for Class I or Noncombustible construction, including zoned wind resistance as specified by FM Global.
   2. UL Fire Classified and uplift resistance.

E. Plan and conduct the work so that each section of the roof system begun one day is completed the same day, including final roof surfacing (unless specifically excepted otherwise by primary roofing materials manufacturer in writing), base flashings, expansion joint flashings, and roof penetration flashings.

F. Coordinate installing insulation, roofing sheets, flashings, stripping, coatings, and surfacing so that insulation and felts are not exposed to precipitation or exposed overnight. Provide cutoffs at end of each day's work to cover exposed felts and insulation with a course of coated felt with joints and edges sealed with roofing cement. Remove cutoffs immediately before resuming work.

3.3 ROOF MEMBRANE INSTALLATION OVER INSULATION BOARD

A. Ensure that specified insulation board, tapered edge strips, wood curbs, gypsum sheathing and continuous cants have been properly installed and surfaces are ready for the base sheet and cap sheet installation. Correct any deficiencies before proceeding with installation.

B. Unroll membrane into position and allow to “relax”.

C. Shingling Plies: Except as otherwise indicated, install base sheet and cap sheet shingled uniformly to achieve required membrane layout throughout. Shingle in proper direction to shed water.

D. Unroll the base sheet and set into place over the insulation and recovery board utilizing 3 inch, minimum, side and end laps.

E. Use hot air welding (torch), fully bond the base ply to the prepared substrate. Apply each sheet directly behind the torch applicator.

F. Stagger end laps of the cap sheet (finish ply) a minimum of 3 feet. Cut a dog ear angle at end laps on overlapping selvage edges. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application.

G. Stagger side laps of the cap sheet (finish ply) a minimum of 12 inches from side laps in the underlying base ply.

H. Stagger end laps of the finish ply a minimum of 3 feet from the end laps of the underlying base ply.
I. Ensure that heat welding applications do not overheat the membrane, causing damage to the membrane and/or reinforcements during application.

J. At run-out of hot asphalt at seams of cap sheet membrane, spread loose granules that match color of field of the roof surface to conceal and protect the exposed asphalt.

K. Where slope exceeds 2 inches per foot, run base sheet parallel with the slope, except run cap sheet surfacing near-parallel with 1:12 incline for proper water shed from exposed edges of cap sheets. Nail top ends of sheets.

L. Back Nailing for Slopes Exceeding 2:12: Comply with governing regulations, insurance requirements, prime roofing manufacturer's recommendations, and recognized industry standards, but not less than one nail per 1.5 sq. ft. of built-up roofing. Where possible, nail simultaneously through two ply sheets by nailing at laps as second sheet is installed. Where nailing is to prevent slippage, nail each sheet of built-up roofing membrane. On non-nailable substrates, nail membrane to each nailer in substrate. Conceal nailing within ply-sheet makeup of roofing membrane, with no exposed nails before applying roof coatings or aggregate surfacing.

M. Cold Weather Application Recommendations.
   1. Pre-warm the membrane to above 50 degrees Fahrenheit. Use a warm storage area or lightly warm -- not heat weld -- the underside of the roll with a roofing torch before adhering the membrane to the roof substrate.
   2. Maintain the substrate at a temperature above 40 degrees Fahrenheit.
   3. Roll out the membrane in place to allow it to relax. To facilitate the relaxing process and to minimize the occurrence of membrane wrinkling, the membrane may be cut into half sheets and allowed to relax prior to installation.
   4. If necessary, use a “garden drum” type roller, over the completed membrane prior to welding to ensure that more contact is accomplished.

3.4 ROOF FLASHING AND STRIPPING

A. Coordinate the work of this Section with Section 07 62 00 – Sheetmetal Flashing and Trim.

B. Coordinate materials and installation details as indicated on the Project Drawings and with manufacturer's recommendations for each flashing condition. Unless the roofing system manufacturer specifically prohibits such, details shall be in accordance with the Project Drawings. Report all details deemed inadequate by the manufacturer to Consultant for review before proceeding with any alternative detail.

C. Provide flashing membrane materials by the same manufacturer as the roof membrane.

D. Install flashing in compliance with the Project Drawings, except where more stringent requirements are required by the roof system manufacturer (as indicated above), and except where Project conditions require extra precautions or provisions to ensure satisfactory performance of the work.

E. Curb, Rise-wall and Parapet Base Flashings:
   1. Concrete and masonry surfaces must be clean, dry and primed prior to the installation of flashing materials.
   2. Fully adhere base flashing membrane to the primed substrate or base sheet over the entire contact surface using hot air or propane torch welding. Ensure that flashing plies are fully adhered with a continuous bead of molten asphalt visible at all laps and edges. Flashing surfaces should be rolled during installation, ensuring that the flashing sheet is continuously supported by the substrate material without voids or bridging.
   3. Curb and base flashing membrane height shall be a minimum of 8 inches and a maximum of 24 inches above the roof surface.
   4. Mechanically secure the top edge of the curb and/or base flashing membrane to the substrate with appropriate fasteners spaced at 8 inches on center, maximum.
5. Temporarily seal the top of all membrane flashing using plastic roofing cement reinforced with woven glass fiber fabric immediately following completion of membrane flashings and prior to installation of metal counter-flashings.

6. Heat weld and roll all vertical laps in the base flashing membrane. Ensure that a minimum of ¼ inch flow of modified bitumen is visible beyond the lap edge. Broadcast metallic powder into the hot asphalt bitumen over the foil-back flashing membrane.

7. For curb or base flashing height conditions in excess of 24 inches, terminate the base flashing membrane no higher than 24 inches above the roof surface, mechanically secure the top edge of the base flashing with appropriate fasteners spaced at 8 inches on center, maximum. Seal the top edge of the base flashing membrane with plastic roofing cement.

8. Install sheet metal counter-flashings in accordance with Section 07 62 00.

F. Wall Flashings:

1. For base flashing height conditions in excess of 24 inches, as well as wall flashing applications, fully-adhere wall flashing membrane sheets to the wall above the terminated base flashing using hot air, or propane torch welding, providing a 3 inch, minimum, lap over the base flashing.

2. If wall flashing membrane is installed vertically, mechanically secure the wall flashing to the wall substrate with appropriate fasteners spaced at 8 inches on center, maximum, along the concealed vertical edge of the membrane. Provide 3 inch, minimum, edge laps. Seal the exposed edge of the wall flashing membrane with plastic roofing cement.

3. If the wall flashing membrane is installed horizontally, mechanically secure the wall flashing to the wall substrate with appropriate fasteners spaced at 8 inches on center, maximum, along the top edge of each sheet of membrane installed. Provide 3 inch, minimum, lap over the base flashing and each successive course of wall membrane. Seal the top edges of each course of wall flashing membrane with plastic roofing cement.

G. Corner Flashings:

1. Install a membrane boot (a piece of flashing membrane, which has been cut into an oval shape) at all inside and outside corners of base flashings and curbs using heat welding or propane torch.

2. The boot size shall be a minimum of 1 ½ inch radius beyond all intersecting surfaces and have a minimum of ¼ inch flow of modified bitumen extending beyond all edges.

3. The shape and configuration of the boot shall be field determined to meet in-place conditions.

H. Allow for expansion of running metal flashing and edge trim that adjoins roofing.

3.5 LIQUID-APPLIED FLASHING

A. Using masking tape, mask off the top of the area to receive the flashing system 8 inches above the roof and an 8-inch perimeter around the penetration on the roof surface.

B. Pre-cut the reinforcement fleece to ensure a proper fit at transitions and corners prior to application.

C. Apply primer to the penetration and allow prime to cure.

D. Apply an even, generous base coat of flashing resin to prepared surfaces using a roller at the rate specified by the resin manufacturer.

E. Work the reinforcement fleece into the wet, catalyzed resin using a brush or roller to fully embed the fleece in the resin and remove trapped air. Lap fleece layers a minimum of 2 inches and apply an additional coat of resin between the layers.

F. Apply an even topcoat of resin immediately following the embedment of the fleece at the rate specified by the resin manufacturer, ensuring that the fleece is fully saturated. Ensure that the flashing resin is applied to extend beyond the fleece. Remove the tape before the catalyzed resin cures.
3.6 **ROOF WALKWAYS**

A. Lay-out the walkway membrane as indicated on the Drawings and mark the perimeter to define the boundaries of the membrane.

B. Hot-air weld the walkway membrane using a propane torch or hot air/electric welder equipment. Compress immediately behind the propane or electric welder using a 20-pound roller. The edge of the seam shall be left untooled (not buttered). A continuous bead of molten asphalt should be visible at all edges after application.

3.7 **FIRE SAFETY RECOMMENDATIONS**

A. Ensure that all applicators are properly trained in the proper application and safety techniques related to heat welded roofing membrane systems.

B. Follow recommendations included in the publication: “Torch Applied Roofing Do’s and Don’ts, published by the Asphalt Roofing Manufacturer’s Association (ARMA).

C. Crew members handling torches shall be trained by an Authorized Certified Roofing Torch Applicator (CERTA) Trainer, be certified according to CERTA torch safety guidelines as published by the National Roofing Contractors Association (NRCA) and follow torch safety practices as required by the contractor’s insurance carrier. Designate one person on each crew to perform a daily fire watch. The designated crew members shall watch for fires or smoldering materials on all areas during roof construction activity, and for the minimum period required by CERTA guidelines after roofing material application has been suspended for the day.

D. Propane Equipment:
   1. Ensure that all regulators, valves, tanks, hoses and torch assemblies are free from leaks.
   2. Do not use equipment if leaks are detected.
   3. Secure propane tanks in an upright position or secured to a wheeled dolly.
   4. Do not use open flame within 10 feet of the propane tanks.
   5. Do not bypass valves or regulators on propane equipment.
   6. All torches should be equipped with a support rest to maintain the torch head upright during periods of non-use.

E. Heat Welding Equipment:
   1. Provide a fire extinguisher of an appropriate type in areas where heat welding equipment is in use.
   2. Do not use open flame around open penetrations or “blind” area where the conditions beneath are not visible.
   3. Keep all combustible materials a safe distance from open flames.
   4. Avoid prolonged application of heat to all surfaces.
   5. “Back-torch” flashing membrane for application to penetration curbs or at areas where the entire area to which the torch must be applied is not visible.
   6. All torches should be equipped with a support rest to maintain the torch head upright during periods of non-use.

F. Fire Watch:
   1. Maintain a fire watch on the project for a minimum of 30 minutes following the last heat welding work on the job each day.
   2. Pay special attention to perimeters and penetrations where heat welded flashings have been installed. Any detected “hot spot” should be investigated prior to crew departure to ensure that necessary corrective action can be taken to replace smoldering materials, if required.
   3. Comply with all Blinn and other local ordinances and code requirements for fire watch following heat welded roofing system applications.
3.8 QUALITY CONTROL BY TESTING LABORATORY

A. If required by conditions of manufacturer’s guarantee, or if directed by Consultant, Contractor shall make test cuts in the roof membrane in accordance with ASTM D 3617 for purposes of verification of materials and procedures. Roof cuts, in general, will not be required by the Consultant unless observation of the completed roof, or of installation, indicates the possibility of nonconformance.

1. Quantity: 1 test cut, 4" x 40", for each 100 squares or each day’s work, unless nonconformance indicates necessity for additional cuts.
2. Perform test cuts at locations directed by and in presence of Consultant and immediately patch cut areas with materials identical to roof construction.
3. Employ an independent testing laboratory to examine test cuts to determine asphalt quantities, voids, dry spots, number of plies, moisture, and uniformity of asphalt application and to submit test reports as specified in Division 1.
4. Contractor shall pay for tests conducted, and other additional tests as may be required, if nonconforming work is verified.

B. Uplift tests, if performed, will be performed on the completed roof assemblies in accordance with FM Global’s Property Loss Prevention Data Sheet 1-52, dated February 2007, for verification of the wind uplift resistance of the completed roof.

1. Quantity:
   a. Roof mock-up assembly (prior to full-scale construction): 1 test, minimum.
   b. For each roof area less than 10,000 SF: 3 tests, minimum
   c. For each roof area greater than 10,000 SF & less than 60,000 SF: 5 tests, minimum.
2. Tests will be performed by Consultant selected by Owner.
3. Tests will be performed in the presence of Contractor and representative of FM Global, if requested.
4. Contractor will be responsible for repairing roof areas that fail during testing.
5. Retesting of corrected roof areas that failed initial testing will be the responsibility of the Contractor.

3.9 PROTECTION OF ROOFING

A. Water Cut-off Application and Temporary Roof Tie-In: Provide temporary water cut-offs at the end of each day’s work to protect the open edge of the new roof membrane in accordance with the manufacturer’s recommendations.

B. Upon completing roofing, including associated work, institute appropriate procedures for surveillance and protection of roofing during remainder of construction period. At end of construction period, or at a time when remaining construction will in no way affect or endanger roofing, inspect roofing and prepare a written report with copies to Consultant and Owner describing nature and extent of deterioration or damage found.

C. Repair or replace, as required, deteriorated or defective work found at time of above inspection to a condition free of damage and deterioration at time of Substantial Completion and according to requirements of specified warranty.

END OF SECTION 07 52 00
SECTION 07 62 00 – SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 RELATED WORK

A. Roofing accessories installed integral with roofing membrane are specified in roofing system sections as roofing work.

1.3 SUBMITTALS

A. In accordance with the requirements of Section 01 60 00, submit a complete listing of all manufacturers, products, model numbers, and designs proposed for use in the Work of this Section.

B. Maintain one copy all shop drawings, product data, and samples, manufacturer's specifications, recommendations, installation instructions, and maintenance data at the Project Site. At Project Closeout, turn over copy to the Architect who will transmit to the Owner.

C. Submit only the items listed below to the Architect for review in accordance with Conditions of the Contract and Division One sections.

D. Samples of the following flashing, sheet metal, and accessory items (samples, if acceptable, may be incorporated into the Work):
   1. Typical outside edge flashing corner.
   2. Typical edge flashing cover plate.
   3. Typical inside counter-flashing corner.
   4. Typical outside counter-flashing corner.
   5. Typical counter-flashing cover plate.
   6. Typical tubular flanged sleeve.
   7. Typical bonnet.
   8. Typical scupper.
   9. Typical pitch pan.
  10. Typical downspout.
  11. Typical conductor head.

E. Shop drawings showing layout, profiles, methods of joining, and anchorages details, including major counter-flashings, trim/fascia units, gutters, downspouts, scuppers, and expansion joint systems. Provide layouts at 1/4-inch scale and details at 3-inch scale.

1.4 PROJECT CONDITIONS

A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 - PRODUCTS

2.1 SHEET METAL FLASHING AND TRIM MATERIALS

A. Prefinished Steel: Steel sheet metal prefinished with Kynar finish meeting ASTM A446, Standard Color as approved by Owner, 24-gauge, unless noted otherwise.

B. Galvanized Steel: ASTM A525, G90 Coating Weight.
C. Stainless Steel: ASTM A167, Type 302/304, Soft temper, No. 2 finish.

2.2 SCHEDULE

A. Schedule:
   2. Counter-flashings: 24-gauge pre-finished sheet metal.
   5. Edge Flashing: 24-gauge pre-finished sheet metal.

2.3 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. Steel and Copper Sheetmetal Solder: Provide 50 - 50 tin/lead solder (ASTM B 32), with rosin flux.

B. Stainless Steel Sheetmetal Solder: Provide 60 - 40 tin/lead solder (ASTM B 32), with acid-chloride type flux, except use rosin flux over tinned surfaces.

C. Fasteners:
   1. Sheet Metal to Sheet Metal: Stainless steel rivets.

D. Bituminous Coating: SSPC - Paint 12, solvent-type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.

E. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.

F. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.

G. Clamping Collar: Stainless steel of size necessary to fit over vent or pipe circumference, as applicable; Create-A-Clamp, manufactured by Arrow Enterprises, Inc., or approved equivalent.

H. Lead: FS QQ-L-171e, hard lead, containing no less than 4 percent, or more than 6 percent antimony.

I. Roofing Cement: See Section 07 52 00 – Modified Bituminous Membrane Roofing.

J. Sealant: See Section 07 92 00 -- Joint Sealants.

2.3 FABRICATED UNITS

A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown on the Project Drawings and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

B. Form pieces in longest practical lengths.

C. Galvanized Steel Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder. Hem exposed edges of metal ½ inch, unless otherwise indicated on Drawings; miter and solder corners.
D. Form materials with cover plate seam.
E. Shop fabricate corners, transitions, terminations and intersections into ready-to-install single-piece assemblies, with 12 inch, minimum, 24-inch, maximum, legs; weld for rigidity. Leg profiles shall match adjacent joining pieces and shall be assembled in the field with a cover plate at the joint.
F. Fabricate with required connection pieces.
G. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
H. Form sections square, true and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance. Allow for expansion joints.
I. Slot all holes for fastening counter-flashing as necessary to allow for thermal expansion and contraction. Cover exposed holes with approved washers.
J. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.
K. Separations: Provide for separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.
L. Closures: Provide shop-fabricated sheet metal closures for all termination and intersection conditions.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Verify roof openings, curbs, pipes, sleeves, ducts and/or vents through roof are solidly set and secure, roofing and base flashings installed, sealed and secure and reglets ready to receive work.
B. Beginning installation means acceptance of existing conditions.

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

3.3 INSTALLATION REQUIREMENTS
A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with SMACNA "Architectural Sheet Metal Manual." Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.
B. Underlayment: Where stainless steel or copper is to be installed directly on cementitious or wood substrates, install a 30-pound building felt and a course of polyethylene underlayment, or adhesive-backed membrane between the sheet metal and substrate.
C. Flashings:
   1. Install and fasten continuous cleats to the substrate at spacing indicated on Drawing, but not more than 12 inches on center.
2. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Consultant.
3. Lock and seal all joints.
4. Apply roof cement generously between metal flashings and felt flashings.
5. Fit flashings tight in place, allowing for expansion/contraction along the length of flashings.
6. Primer metal flanges to receive roof cement or cold-applied adhesive.
7. Make corners square, surfaces true and straight in place and lines accurate to profiles.
8. Where existing, utilize reglets to install counter-flashing.
9. Install counter-flashing in reglets, either by snap-in seal arrangement or by welding in place for anchorage and filling reglet with elastomeric sealant.
10. For edge flashing installation, fasten continuous cleat and metal edge to the substrate a maximum of 12 inches, on center.
11. Provide shop-fabricated transition pieces at all inside and outside corners, as well as all other discontinuities or transitions.
12. If existing conditions prevent the use of shop-fabricated transition pieces, field fabrication that meets the same quality as shop fabrication may be acceptable, but Consultant must approve all such fabrications in advance.
13. Provide ⅛ inch gap between adjacent pieces of flashing to allow for expansion.
15. Install closures at all discontinuities, terminations and other locations where the flashings exhibit a void that can allow water infiltration.

D. Copings:
1. Install and fasten continuous cleats to the substrate at spacing indicated on Drawing, but not more than 12 inches on center.
2. If continuous cleats are provided on both the inside and outside faces of the parapet, fabricate coping with closed hem on the outside and an open hem on the inside. Clip the outside hem to the cleat and secure the inside hem by crimping in place. Ensure crimping is accomplished without damaging the coping.
3. If continuous cleats are provided only on one side of the parapet, clip the appropriate hem to the cleat and secure the opposite side of the coping to the substrate with appropriate fasteners at spacings indicated on Drawings, but not more than 12 inches, on center.
4. Lock and seal all joints.
5. Apply roof cement generously between metal coping and felt flashings.
6. Fit flashings tight in place, allowing for expansion/contraction along the length of coping.
7. Make corners square, surfaces true and straight in place and lines accurate to profiles.
8. Provide shop-fabricated transition pieces at all inside and outside corners, as well as all other discontinuities or transitions.
9. If existing conditions prevent the use of shop-fabricated transition pieces, field fabrication that meets the same quality as shop fabrication may be acceptable, but Consultant must approve all such fabrications in advance.
10. Provide ⅛ inch gap between adjacent pieces of flashing to allow for expansion.
11. Install cover plates at joints.
12. Install closures at all discontinuities, terminations and other locations where the coping exhibits a void that can allow water infiltration.

E. Sheetmetal Flange Appurtenances:
1. After roof membrane installation, prime bottom side of metal flange and set in a bed of roof cement.
2. Mechanically fasten flange to underlying wood nailers, where applicable
3. Space nails 4 inches, on center, staggered.
4. Prime top surface of metal flange to receive strip-in membrane.
3.4 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

B. Remove cold-applied adhesive deposits and other forms of contamination from finished surfaces.

C. Replace roofing materials contaminated by cleaning solvents, oils, greases, etc.

D. Provide surveillance and protection of flashings and sheet metal work during construction to ensure that Work will be without damage or deterioration, other than normal weathering, at the time of Substantial Completion.

END OF SECTION 07 62 00
SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 DESCRIPTION

A. Provide all labor, materials and equipment necessary to install new sealant at locations indicated on the Drawings and as otherwise necessary for the proper execution of the specified work.

1.3 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.

1.4 SUBMITTALS

A. In accordance with the requirements of Section 01 60 00, submit a complete listing of all manufacturers, products, model numbers, and designs proposed for use in the Work of this Section.

B. Maintain one copy all shop drawings, product data, and samples, manufacturer's specifications, recommendations, installation instructions, and maintenance data at the Project Site. At Project Closeout, turn over copy to the Consultant who will transmit to the Owner.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.

B. Single Source Responsibility for Joint Sealant Materials: Obtain joint sealant materials from a single manufacturer for each different product required.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multi-component materials.

B. Store and handle materials in compliance with manufacturer's recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer.
   2. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer or below 40 degrees Fahrenheit.
   3. When joint substrates are wet.

B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than or greater than that allowed by joint sealant manufacturer for application indicated.
C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

1.8 SAMPLING AND TESTING

A. Consultant may choose to have sealants tested for adhesion, cure, depth and profile of sealant.

B. Preliminary Field Test: Before commencing production work, at Consultant’s request, conduct a field test to demonstrate the installation procedures to be used. This test shall be representative of the full scope of the Work described in this Section.

C. Random Testing: After 7 days of each day’s application, two test cuts may be made at random locations selected by Consultant. If one cut indicates insufficient adhesion, improper cure or incorrect depth/profile, five additional cuts will be made. If two of the additional cuts indicate insufficient adhesion, improper cure or incorrect depth/profile, remove that day’s application of sealant and reinstall the work at no additional cost to Owner.

D. Re-seal test cuts.

PART 2 - PRODUCTS

2.1 SEALANTS

A. Metal to Masonry or Concrete Substrate: Multi-component non-sag polyurethane-based sealant; Type II, Class A, chemical curing; conforming to the requirements of ASTM C 920; for application in vertical joints; able to withstand movement of up to plus 25 percent of the joint width; uniform, homogeneous and free from lumps, skins and coarse particles when mixed; Shore “A” hardness of 15, minimum and 35, maximum; non-staining, non-bleeding; consisting of base, activator and color pack; such as BASF MasterSeal NP-2, or approved equivalent; standard color selected by Owner.

B. Metal to Metal (Cover Plate or Lapped Joint Bedding Sealant Applications Only): Polyurethane-based, one-component, low-modulus elastomeric sealant, such as BASF MasterSeal NP-1, or approved equivalent; standard color selected by Owner.

C. Masonry to Masonry: Silicone-based, one-component, low-modulus elastomeric sealant, such as Dow Corning 795 Silicone Building Sealant, or approved equivalent; standard color selected by Owner.

2.2 RELATED MATERIALS

A. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.

B. Urethane Sealant Primer: Non-staining primer, as recommended by sealant manufacturer to suit application.

C. Silicone Sealant Primer: Dow Corning 1205 Prime Coat, or approved equivalent.

D. Backer Rod: Round closed-cell polyurethane foam, compatible with sealant; oversized 25 percent of joint width; as recommended by sealant manufacturer.

E. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.
F. Masking Tape: Non-staining, nonabsorbent, pressure-sensitive adhesive paper tape compatible with joint sealants and surfaces adjacent to joints.

G. Vent Tubes: as recommended by sealant manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, material compatibility, and other conditions affecting joint sealant performance. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

3.2 PREPARATION FOR SEALANT APPLICATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer and the following requirements:
   1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including existing sealant and backer rods, if applicable; dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
   2. Clean concrete, masonry, unglazed surfaces of ceramic tile, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
   3. Remove laitance and form release agents from concrete.
   4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
   5. Clean joint faces with specified joint cleaner.

B. Joint Dimensions: Examine joint dimensions and size materials to achieve the required width/depth ratios. Report deficient conditions to Consultant for advice on corrective action. Do not proceed until Consultant has provided recommendations.

C. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealant manufacturer based on preconstruction joint sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.

D. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. Installation of sealant implies that the installer has inspected and accepts the existing surface conditions.

B. Remove no more existing sealant, where applicable, than can be cleaned and resealed the same day.

C. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

D. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

E. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
1. Use backer rod materials to achieve required joint depths and to provide support of sealants during application.
   a. Do not leave gaps between ends of backer rod/joint-fillers.
   b. Do not stretch, twist, puncture, or tear backer rod/joint-fillers.
   c. Do not reuse existing joint-fillers/backer rods.
2. Use bond breaker tape at the bottom of routed out channels and other locations to prevent three-sided adhesion where joint depth is not sufficient for use of backer rod.

F. Mixing of Sealants: Thoroughly mix multi-component sealants to a uniform texture and color in strict conformance with the sealant manufacturer's written instructions. No mixing is required for single-component, cartridge-type sealants.

G. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.

H. Tooling of Non-sag Sealants:
1. Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, embedded matter, ridges and sags and to ensure contact and adhesion of sealant with sides of joint.
2. Remove excess sealants from surfaces adjacent to joint.
3. Tool sealants smooth and slightly concave. Wet or dry tool, as recommended by sealant manufacturer.
4. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
5. Apply sealants with appropriate equipment and pressure to ensure penetration of the sealant to required joint depth.
6. Use masking tape to protect adjacent surfaces of recessed tooled joints.
7. After final tooling, do not disturb sealant by touching, washing or otherwise until sealant is fully cured.
8. Remove masking materials and excess sealant immediately after tooling.

3.4 CLEANING

A. Clean off excess sealants, sealant smears and glazing compound adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants and glazing compound during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that and installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 92 00
SECTION 09 91 00 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including “The General Conditions of the Contract for Construction” and Division 1 Specification Sections, apply to the work of this Section.

1.2 DESCRIPTION

A. Provide all labor, materials and equipment necessary to properly prepare, prime and paint the existing metal roof-top appurtenances, vents, power vents, and steel conduits.

1.3 PERFORMANCE REQUIREMENTS

A. “Paint” includes coating systems materials, primers, emulsions, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coat.

1.  “Substrate” as used herein means the surface to which paint is to be applied. In the case of previously painted existing surfaces, substrate means the surface to which the existing paint was applied.

1.4 SUBMITTALS

A. In accordance with the requirements of Section 01 60 00, submit a complete listing of all manufacturers, products, model numbers, and designs proposed for use in the Work of this Section.

B. Maintain one copy all shop drawings, product data, and samples, manufacturer's specifications, recommendations, installation instructions, and maintenance data at the Project Site. At Project Closeout, turn over copy to the Consultant who will transmit to the Owner.

C. Submit only the items listed below to the Consultant for review in accordance with Conditions of the Contract and Division One sections.

D. Manufacturer’s Product Data Sheets and Color Charts for specified products.

1.5 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

B. Qualifications of Painters: Use only qualified painters for the mixing and application of paint on exposed surfaces. No allowance will be made for lack of skill on the part of the painters in the acceptance or rejection of installed paint.

C. Coordination of the Work: Coordinate the work of this sections with that of other sections.

D. Material Quality: Provide the manufacturer' best quality paint material of the various coating types specified. Paint material containers not displaying manufacturer’s product identification will not be acceptable.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Federal Specification number, if applicable.
4. Manufacturer's stock number and date of manufacture.
5. Contents by volume, for pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Color name and number.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees Fahrenheit. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1. Protect from freezing.
2. Keep storage area neat and orderly.
3. Remove oily rags and waste daily.
4. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 PROJECT CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees Fahrenheit and 90 degrees Fahrenheit.

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees Fahrenheit and 95 degrees Fahrenheit.

C. Do not apply paint in snow, rain, fog, or mist, when the relative humidity exceeds 85 percent, at temperatures less than 5 degrees Fahrenheit above the dew point, or to damp or wet surfaces.

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

PART 2 - PRODUCTS

2.1 GENERAL

A. The use of lead-based paints will not be permitted on this project.

B. Steel Substrate:

1. Primer: Galvanized metal primer, such as Kelly-Moore 1772, Kel-guard, or approved equivalent.
2. Paint: Full-glass acrylic enamel, such as Kelly-Moore 1780, or approved equivalent; color as selected by Owner.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which painting will be performed for compliance with requirements for application of paint. Do not begin paint application until unsatisfactory conditions have been corrected.

1. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
3.2 PREPARATION

A. General Procedures: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted or provide surface-applied protection prior to surface preparation and painting. Remove these items if necessary, for complete painting of the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.

2. Clean surfaces before applying paint or surface treatments. Remove rust, oil and grease prior to cleaning. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

B. Surface Preparation: Clean and prepare surfaces to be painted in accordance with the manufacturer's instructions for each particular substrate condition and as specified.

1. Provide barrier coats over incompatible primers and existing surfaces or remove and re-prime. Notify Consultant in writing of problems anticipated with using the specified finish-coat material with substrates primed by others.

2. Ferrous Metals: Clean nongalvanized ferrous-metal surfaces that have not been shop coated; remove rust, oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.
   a. Blast steel surfaces clean as recommended by the paint system manufacturer and in accordance with requirements of SSPC specification SSPC-SP 10.
   b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
   c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.

C. Materials Preparation: Carefully mix and prepare paint materials in accordance with manufacturer's directions.

1. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3. Use only thinners approved by the paint manufacturer, and only within recommended limits.

D. Tinting: Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Paint exposed surfaces, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Consultant will select from standard colors or finishes available.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

1. Provide finish coats that are compatible with primers used.
2. The number of coats and film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce an even smooth surface in accordance with the manufacturer's directions.

3. Apply additional coats when undercoats or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.

4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas as required to maintain the system integrity and provide desired protection.

5. Sand lightly between each succeeding enamel coats.

6. Omit primer on metal surfaces that have been shop-primed and touch up painted.

D. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm and does not deform or feel sticky under moderate thumb pressure and where application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

E. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the entire system as recommended by the manufacturer.

F. Prime Coats: Before application of finish coats, apply a prime coat of material as recommended by the manufacturer to material that is required to be painted or finished and has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.

G. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

3.4 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. Upon completion of painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping, using care not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

A. Protect work of other trades, whether to be painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Consultant.

B. Provide "wet paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.