

City of Weslaco

"The City on the Grow"



David Suarez, Mayor
Gerardo "Jerry" Tafolla, Mayor Pro-Tem, District 4
Leo Muñoz, Commissioner, District 1
Greg Kerr, Commissioner, District 2
Olga M. Noriega, Commissioner, District 3
Letty Lopez, Commissioner, District 5
Josh Pedraza, Commissioner, District 6

Mike R. Perez, City Manager

CITY OF WESLACO

Invitation to Bid

The City of Weslaco hereby requests sealed bids for the following:

Roofing Repairs at Public Library / RFB No.: 2016-17-11

Sealed bids addressed to Homer Rhodes, will be accepted at the Weslaco City Hall Purchasing Office, 255 S. Kansas Avenue, Weslaco, Texas 78596, until **3:00 p.m.** on **February 2, 2017**, at which time they will be opened and read aloud. Please mark envelope, "Sealed Bid"

Roofing Repairs at Public Library / RFB No.: 2016-17-11

A pre-proposal Conference/walk-thru will be held on **January 26, 2017** at **2:00 p.m.** at the Weslaco City Hall Purchasing Office, Weslaco, Texas. All prospective vendors are encouraged to attend.

Potential Bidders/Respondents are advised that the bidding documents can be downloaded from the City of Weslaco web page address: www.weslacotx.gov, and may also be secured at the Weslaco City Hall Purchasing Office, 255 S. Kansas Avenue, Weslaco, Texas 78596, or by calling 956.447-2240. Be advised that if your company is contemplating on bidding this project you must contact the Purchasing Office, so that any changes/additions via addendum form can be forwarded to your company. (Please include your company name, address, e-mail, telephone and fax, and contact person). **No electronic bids will be accepted.**

The City of Weslaco reserves the right to accept or reject any or all bids, to waive any informalities, and to accept the bid to be the best and most advantageous to the City and to hold bids for a period of forty-five (45) days without taking action, for the purpose of reviewing the bids and investigation of bidders' qualifications prior to bid award. Bids submitted past the aforementioned date and time will not be accepted.

City of Weslaco

Homer Rhodes,
Purchasing Office

hrhodes@weslacotx.gov

PROJECT 201624
CITY OF WESLACO
PUBLIC LIBRARY ROOFING REPAIRS

SET NO. _____

PROJECT MANUAL
FOR
PUBLIC LIBRARY ROOFING REPAIRS
FOR THE
CITY OF WESLACO



2017

City of Weslaco
255 S. Kansas Avenue
Weslaco, Texas 78596
(956) 968-3181

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City of Weslaco
255 S. Kansas Avenue
Weslaco, Texas 78596
(956) 968-3181

Document 00001

TITLE SHEET

PROJECT MANUAL

FOR

PUBLIC LIBRARY ROOFING REPAIRS

FOR

WESLACO, TEXAS

ARCHITECT



Signature

01-12-2017

Date

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Document 00003

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(For filing) Documents listed "for filing" are to be provided by the Bidder and are not included in this Project Manual unless indicated for example only. The Document numbers and titles hold places for actual documents to be submitted by the Contractor during the bid, post-bid, or construction phase of the Project.

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END OF DOCUMENT



Document 00004

LIST OF DRAWINGS

The list of Drawings is provided on the Sheet Index page of City of Weslaco Public Library Roofing Repairs.

END OF DOCUMENT



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Document 00020

NOTICE TO BIDDERS

Owner: City of Weslaco, Texas
255 S. Kansas Avenue
Weslaco, Texas 78596
Phone: (956) 968-3181
Fax: (956) 973-3128

1.00 INVITATION

- A. Bidders are invited to submit an offer for performance of a Contract to the City of Weslaco located at the above address, for the following construction Project:
Project: City of Weslaco Public Library Roofing Repairs
Located: In the City of Weslaco, Hidalgo County, Texas
- B. Work of the Project consists of construction of parking lot with asphalt, curb and gutter and appropriate drainage features.
- C. The Contract Documents are identified 5310 Sidewalk Project as listed in the Project Manual, issued by the City of Weslaco/Engineer of Record.
- D. The bidder shall bear all costs associated with the preparation and submission of its bid, and the Owner will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- E. When requested, the successful Bidder shall present satisfactory evidence that Bidder has regularly engaged in furnishing products and performing construction work as proposed, and has the capital, labor, equipment, and material to execute the Work required by Contract Documents.

2.00 BID SUBMISSION

- A. Bids signed by an officer of the company and dated will be received at the City of Weslaco Purchasing Office, at 255 South Kansas Ave. Weslaco, Texas until 3:00 P.M. local time, on Thursday, 02 of February, 2017.
- B. Bids submitted after the above time will be returned to the Bidder unopened.
- C. Bids shall be submitted in United States Currency and the English language on the Bid Forms and Supplements to Bid Forms provided with this Project Manual.
- D. Oral, telephonic, facsimile, or telegraphic bids are invalid and will not receive consideration.
- E. Bids will be opened and publicly read in the City of Weslaco Purchasing Conference Room at 255 S. Kansas Ave. Weslaco, Texas, on the same date bids are received.
- F. Bids will be irrevocable for **90 days** from the bid date. Bidder may withdraw after 90 days without penalty if no mutual agreement can be reached.



3.00 MODIFICATION OR WITHDRAWAL

- A. Bids submitted early may be modified or withdrawn by notice to the City of Weslaco at the place and prior to the time designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder and shall be so worded as not to reveal the amount of the original Bid.
- B. Oral, telephonic, facsimile, or telegraphic modification of Bids will not receive consideration.
- C. Withdrawn Bids may be resubmitted up to the time designated for receipt of Bids.

4.00 CONTRACT TIME

- A. The Work shall be performed within **90 calendar days** from the date established in the Notice to Proceed.
- B. Contractor shall pay liquidated damages in the amounts stated in Document 00500 - Agreement for failure to complete the Work within the Contract Time.
- C. Contract is for **90 calendar days**. The work is to be performed only during weekdays 8:00 AM to 5:00 PM (Monday to Friday). City recognized holidays are recommended to be avoided. Work performed during weekends (Saturday-Sunday) and holidays will incur a Contractor payment of **\$50** per hour to Owner for onsite inspection.

5.00 SECURITY DEPOSIT REQUIREMENTS

- A. Bids shall be accompanied by a security deposit as stated in Document 00100 - Instructions to Bidders.

6.00 EXAMINATION

- A. Bid Documents are on display on the City of Weslaco website and may be examined at the City of Weslaco- Planning Department.

7.00 AVAILABILITY

- A. Bid Documents may be purchased from the Planning Department or are available for printing at <http://www.weslacotx.gov/Bids.htm>.
- B. Bid Documents may be purchased by bidders upon receipt of a cashier's check, certified check, money order, company check, or personal check in the amount established by City of Weslaco Master Fee Schedule. The cost includes the Project Manual w/ Specifications and one full sized set of Drawings. They can also be downloaded at no cost, as specified on 7(A).
- C. **The cost for the bid documents will not be refunded.**
- D. Bid Documents are made available only for the purpose of obtaining offers for this Project. Purchase of Bid Documents does not grant a license for other purposes.
- E. On receipt of Bid Documents, verify that documents are legible and complete. Compare contents of Project Manual with Table of Contents; see that all drawings listed in the List of Drawings are included. Notify City of Weslaco should the documents be incomplete as issued.



8.00 QUESTIONS AND INTERPRETATIONS

- A. Bidder is required to study Bid Documents, the site, and conditions affecting the Work, and submit written questions on interpretation of those documents and conditions, or other factors affecting the Work, to the City of Weslaco.
- B. Written questions may be submitted by facsimile or email, addressed to the Architect. **No questions will be accepted after 5:00 PM, Friday, January 27, 2017.** All facsimile communications shall be confirmed by mailing the original correspondence to the City of Weslaco Planning Department, if applicable.
- C. Immediately notify the Engineer upon finding discrepancies or omissions in the Bid Documents.

9.00 ACCEPTANCE/REJECTION OF BIDS

- A. The Owner reserves the right to reject or accept any bids as stated in Document 00100 - Instructions to Bidders.

10.00 PRE-BID CONFERENCE

- A. One (1) pre-bid conference will be conducted by the Owner on **Thursday, January 26th, 2017 at 2:00 PM.** The pre-bid conference shall be conducted at the City of Weslaco Planning Conference Room: located at 255 S. Kansas Ave. in Weslaco, Texas. **Attendance by prospective Bidders is highly recommended.** Sub-contractors, suppliers, and equipment suppliers may attend.
- B. Recognizing that free and open communication will benefit all participants, the Owner does not intend to limit or curtail the exchange of information between the Engineer and the prospective Bidders. However, the pre-bid conference is conducted primarily for the benefit of prospective Bidders. As such, a specific procedure will be followed during the conference:
 - a. All attendees will sign-in, indicating their role with the project: contractor, supplier, manufacturer, etc.
 - b. Seating priority will be given to Prospective Bidders. Sub-contractors, suppliers, and manufacturer's representatives shall remain behind the contractor area.
 - c. The Owner will make introductions of his staff and consultants.
 - d. The Owner and consultants will give a brief description of the project.
 - e. Only Contracting firms (Prospective Bidders) are permitted to ask questions. Sub-contractors suppliers, and manufacturer's shall deliver their questions to the Contractor they are working with for presentation.
 - f. Questions and answers will be recorded and developed into Meeting Minutes. Meeting Minutes will be distributed to meeting attendees. The Owner reserves the right to use electronic recording, or some other method to record the meeting.
- C. The meeting will be conducted in English. Translators will not be provided.
- D. If necessary, written clarifications or instructions will be issued in the form of an Addendum. Refer to Section 00100 – Instructions to Bidders for specific information concerning Addendums.

END OF DOCUMENT



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REQUEST FOR BIDS

The City of Weslaco is soliciting sealed Request for Bids; hereinafter referred to as RFB, to be received by the City's Purchasing Office located at 255 S. Kansas Avenue, Weslaco, Texas 78596. City of Weslaco normal business days are Monday through Friday between the hours of 8:00 a.m. to 5:00 p.m. and shall be closed on recognized holidays. A **pre-bid conference** will be conducted by the Owner /Engineer on Thursday, January 26, 2017 at 2:00 p.m. The pre-bid conference shall be conducted at the City of Weslaco City Hall – Planning Conference Room located at, 255 S. Kansas Avenue, Weslaco, Texas 78596. Attendance by prospective Bidders is recommended for all general contractors submitting bids. Sub-contractors, suppliers, and equipment suppliers may attend.

The City of Weslaco will receive sealed bids for City of Weslaco Public Library Roofing Repairs until 3:00 p.m. on Thursday, February 02, 2017 addressed to the City of Weslaco's Purchasing Office, Weslaco City Hall, 255 S. Kansas Avenue, Weslaco, Texas 78596. The bids will be publicly opened and read aloud as near as practical after 4:00 p.m. on the date of submittal at the Weslaco City Hall. Bids received after closing time will be returned unopened. It is the responsibility of the submitter to see that any BID submitted shall have sufficient time to be received by the City's Purchasing Office prior to the BID opening date and time. The receiving time in the City Secretary's Office will be the governing time for acceptability of the BIDS. BIDS will not be accepted by telephone or facsimile machine. All BIDS must bear original signatures and figures. The BID shall be for:

RFB # 2016-17-01

City of Weslaco Public Library Roofing Repairs

Respondents receiving a "NOTICE TO RESPONDENTS" and/or "REQUEST FOR BIDS" notice in the mail or reading same in the newspaper are advised that the Bid Packets may be obtained from the office of City of Weslaco – Planning & Code Enforcement Department, 255 S. Kansas Avenue, Weslaco, Texas 78596, Phone No (956) 447-3403 for the amount established on Weslaco Master Fee Schedule. Additionally, BIDS can be downloaded from the City of Weslaco web page address: www.weslacotx.gov. General and/or Prime Contractors submitting bids and/or proposals to the City of Weslaco shall be non-refundable.

If you have any questions or require additional information regarding this RFB, please contact **Mardoqueo Hinojosa, P.E., CFM**, Planning Director/City Engineer, at (956) 447-3403.

Hand Delivered RFB'S:

Homer Rhodes
255 S. Kansas Avenue
C/o Purchasing Office

If using Land Courier (i.e. FedEx, UPS):

City of Weslaco
C/o Purchasing Office
255 S. Kansas Avenue
Weslaco, Texas 78596

If Mailing Proposals:

City of Weslaco
C/o Purchasing Office
255 S. Kansas Avenue
Weslaco, Texas 78596

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INSTRUCTIONS TO BIDDERS

1.00 SUMMARY

1.01 DOCUMENT INCLUDES

- A. Bid Documents and Contract Documents.
- B. Site Assessment.
- C. Subcontractors/Suppliers/Others.
- D. Bid Submission.
- E. Bid Enclosure Requirements.
- F. Offer, Acceptance, Rejection.

1.02 RELATED DOCUMENTS

- A. Document 00020 - Notice to Bidders: Date, time and place for receipt of bids; Contract Time.
- B. Document 00310 - Form of Proposal.
- C. Document 00405 - Schedule of Unit Price Work.
- D. Document 00450 - Post Bid Procedures.
- E. Document 00500 - Agreement.
- F. Document 00700 - General Conditions.
- G. Document 00800 - Supplementary Conditions.

2.00 BID DOCUMENTS AND CONTRACT DOCUMENTS

2.01 DEFINITIONS

- A. Definitions set forth in Document 00700 – General Conditions and in other Contract Documents, are applicable to the Bid Documents.
- B. Addenda: Written or graphic instruments issued prior to the opening of Bids, which clarify, modify, correct, or change the Bid Documents.
- C. Alternate Bid: The total amount bid for additions to the Work, as described in the Bid Documents. Each Alternate Bid shall include the cost of effects on adjacent or related components, and the Contractor's overhead and profit.
- D. Bid Documents: The Project Manual and Drawings, including Addenda, plus Notice to Bidders, Instructions to Bidders, and Supplements to Bid Forms identified in Document 00310 - Form of Proposal.
- E. Bidder: A person or entity who submits a Bid.
- F. Low Bidder: The apparent successful Bidder who qualifies as a responsible Bidder and who submits the Bid with the lowest Total Bid Price.



- G. Bid, Offer, Bidding: The act of submitting a complete and properly signed offer in accordance with these Instructions to Bidders. The Bid will be in the English language.
- H. Total Bid Price: The monetary amount for performing the Work as identified by the Bidder in Document 00310 - Form of Proposal, which amount includes Cash Allowances and Alternate Bids, if any. Bid Price(s) will be in United States.
- I. Security Deposit: A certified check, cashiers check or bid bond in at least the sum of 5 percent of the Total Bid Price which includes Cash Allowances and Alternate Bids, if any.

2.02 QUESTIONS, INTERPRETATIONS

- A. Bidder shall: 1) carefully study the Bid Documents and compare them with each other, 2) examine the site, conditions thereon, and local conditions, and 3) report at once to the Engineer any errors, inconsistencies or ambiguities discovered.
- B. Direct questions to City Engineer or Purchasing Agent. Contact with persons other than City's Engineering staff or Purchasing agent are grounds for elimination from the selection process.
- C. Verbal discussions and answers are not binding. Requests from Bidders for clarifications and interpretations of content of documents must be in writing (mail or facsimile transmission only), and **must be received not less than 3 business days before the date set for receipt of Bids.**
- D. The reply will be by Addendum.

2.03 ADDENDA

- A. Addenda issued to Bidding Requirements are applicable only during the bidding period. Addenda to the Post-Bid Procedures are applicable only through the issuance of the Notice to Proceed. Any Addenda issued to Contract Forms, Conditions of the Contract, Specifications or Drawings become a part of the Contract Documents. Include resultant costs in the Total Bid Price.
- B. Addenda will be issued by the Engineer to Bidders of record by facsimile transmission. Addenda will also be mailed to Bidders of record.
- C. Each Bidder shall ascertain, prior to submitting a Bid that the Bidder has received all Addenda issued. The Bidder shall acknowledge their receipt in the place indicated in Document 00310 - Form of Proposal.

2.04 SUBSTITUTIONS OF MATERIALS/EQUIPMENT

- A. Product substitutions will be considered on this Project during the bidding period, deadline for request for substitutions or approved equal shall be **submitted prior or by Thursday, January 26, 2017 at 3:00pm.** Submit product substitution or approve equals supported with complete data, drawings and samples as appropriate including:
 - 1. Comparison of the qualities of the proposed substitution with that specified.
 - a. Cut sheets & supporting data of specified product.
 - b. Cut sheets & supporting data of proposed product substitution.
 - 2. Changes required in other elements of the work because of the substitution.
 - 3. Effect on the Construction Schedule.



4. Cost data comparing the proposed substitution with the product specified.
 5. Any required licenses fees or royalties.
 6. Availability of maintenance service, and source of replacement materials.
- B. Failure to submit any of the above items will result as an incomplete submittal and therefore the product substitution will not be considered.
- C. Voluntary substitutions by the Bidder will not be considered.

3.00 SITE ASSESSMENT

- A. Bidders shall examine the Project site before submitting a Bid, become familiar with local conditions under which the Work will be performed, conduct appropriate explorations, and correlate personal observations with requirements of the Bid Documents. Work will be performed in public right-of-way and City property. The site may be examined at any time during daylight hours.
- B. Bidder shall make site investigations to the extent Bidder deems necessary to ascertain the extent of subsurface conditions and variations thereof.
- C. Failure to perform such investigations during the bid period shall not relieve Bidder from responsibility for investigations, interpretations and proper use of available information in preparation of Bidder's proposal.
- D. Publications by the United States Department of Agriculture, Soil Conservation Service and others may be helpful to the bidder in his subsurface site investigation.
- E. Geotechnical investigation reports for the proposed Boys and Girls Club may also be helpful to the bidder in his subsurface site investigation.

4.00 SUBCONTRACTORS/SUPPLIERS/OTHERS

- A. The Owner reserves the right to reject a proposed Subcontractor or Supplier for reasonable cause.

5.00 BID SUBMISSION

5.01 SUBMISSION PROCEDURES

- A. Bidders shall be solely responsible for the delivery of their Bids in the manner and time prescribed in Document 00020 - Notice to Bidders.
- B. Submit **one copy of the original executed offer** on the bid forms provided, properly signed, with required Security Deposit, and other Supplements to Bid Forms, in a sealed, opaque envelope. On the outside of the envelope, clearly indicate that it is a sealed bid and include the Bidder's name, Project name and Owner name. Bids submitted by mail shall be enclosed in a separate envelope addressed for mailing, and identifying the enclosure as a bid. In addition, **four copies must also be submitted.**
- C. Fill in all blanks in the Bid forms. Acknowledge receipt of Addenda. Bid all Alternate Bids required by Bid Documents.
- D. A summary of submitted Bids will be made available to Bidders following the Bid opening.



- E. All costs and expenses incurred by the Bidder that are associated with preparation of the Bid shall be paid by and be the sole responsibility of the Bidder.

5.02 BID INELIGIBILITY

- A. Failure to provide required Security Deposit in the proper amount will be cause to declare the Bid invalid.
- B. Improperly completed information may be cause for declaring the Bid invalid.
- C. Bids that are unsigned, improperly signed, illegible, obscure, altered, or which contain qualifications or irregularities of any kind, may be declared invalid. Document 00310 - Form of Proposal, Supplements to the Bid Forms identified in the Form of Proposal, or enclosures which are improperly prepared, may be declared invalid.

6.00 BID ENCLOSURE REQUIREMENTS

6.01 SUPPLEMENTS TO BID FORMS

- A. Bid submittals shall include any other documents specified in Document 00310 - Form of Proposal.

6.02 SECURITY DEPOSIT

- A. Bids shall be accompanied by a Security Deposit.
- B. The Security Deposit of the Bidders will be retained until after the Contract is executed.
- C. After execution of the Contract, Security Deposits will be returned to the Bidders.
- D. If no Contract is awarded, all Security Deposits will be returned to the respective Bidders.

6.03 CERTIFIED CHECK/CASHIER'S CHECK

- A. Make certified check or cashier's check (security checks) payable to the Owner.
- B. The security checks are submitted on the condition that if the Bidder is named apparent Low Bidder and then fails either to timely execute the Agreement or to timely provide any required bonds, or to do both, then in that event the Owner will cash the security check.
- C. The Owner will retain an amount equal to the difference between the Bid of the Bidder providing the security check and the Bid of the Bidder who is finally awarded the Contract and who executes the Agreement and provides the required bonds.
- D. Any balance remaining will be reimbursed by the Owner to the Bidder who provided the security check.

6.04 BID BOND

- A. The bid bond must be a valid and enforceable bond, executed by a corporate Surety authorized by the Texas State Board of Insurance to conduct insurance business in the State of Texas and shall comply with other requirements set out by law or included in the Bid Documents.



- B. Endorse the bid bond in the name of the Owner as obligee, signed by the Contractor as principal and executed, signed and sealed by the Surety.
- C. The bid bond must be conditioned such that if the Bidder is named apparent Low Bidder and then fails either to execute the Agreement timely or to provide any required bonds timely, or to do both, then in that event the Surety will be obligated to pay to the Owner an amount equal to the difference between the Bid of the Bidder on whom the bond was written and the Bid of the Bidder who is finally awarded the Contract and who executes the Agreement and provides the required bonds, up to the penal sum of the Bond.
- D. In addition, the Owner expressly reserves the right to reject any Bid if the Bid Bond (or Bid Bond rider) conditions the Bid in a way inconsistent with the Bid Documents. Examples include but are not limited to:
 - 1. a condition prohibiting the Owner from making a Claim against the Performance Bond Surety that would be allowable under the Contract and Performance Bond form published in the Bid Documents;
 - 2. a condition that provides that the Performance Bond Surety cannot be held liable for completing the Contract in case of default; or
 - 3. a condition limiting the Performance Bond Surety's liability for damages inconsistent with the Contract and Performance Bond form published in the Bid Documents.
- E. On all contracts that will equal to or exceed \$100,000, the Performance Bond and the Payment Bond must be provided by a surety that has a rating of "A" from AM BEST, MOODY'S or STANDARD & POORS.

In the event that the total bid amount is \$50,000 or less, the successful contractor has the option to enter into a single payment contract with the City of Weslaco in lieu of a Performance Bond, provided that no money shall be paid to the contractor until completion of the work by the contractor and accepted of same by the City of Weslaco. In the event that the total bid amount is \$25,000 or less, the successful contractor has the option to enter into a single payment contract with the City of Weslaco in lieu of a Payment and Performance Bond.

6.05 BID FORM SIGNATURE

- A. Document 00310 - Form of Proposal shall be signed by the Bidder as follows:
 - 1. Sole Proprietorship: Full name, address, and signature of sole proprietor, signed in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature.
 - 2. Partnership: Name and address of the firm, signature of each partner in the presence of a witness who will also sign. The full name and address of each partner shall be given.
 - 3. Corporation: Signature of duly authorized officer.
 - 4. Joint Venture: Each party of the joint venture shall execute Document 00310 - Form of Proposal under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

6.06 LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

00100- 5 of 10



- A. The successful bidder, upon failure or refusal to execute and deliver the contract and bonds required within ten (10) days after receipt of notice of acceptance of the bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposit submitted with his bid.
- B. Liquidated damages in the amount per day shown in the "Liquidated Damages" of the Agreement Between Owner and Contractor will be assessed against the contractor for each Calendar Day or portion thereof that: (1) the Contractor has not fully and timely completed the specific portion or part of the work to be completed by the end of the current month as provided in the detailed description of work and/or schedule previously submitted by the contractor on the first day of that particular month, after accounting for any agreed-upon change orders, which will entitle the owner to withhold the liquidated damages from payment otherwise owed to the contractor for work completed in that particular month; (2) the Contractor has not substantially completed all work following the expiration of the number of calendar days to complete the work reference under "Liquidated Damages" of the Agreement Between Owner and Contractor after accounting for any agreed upon change orders; or (3) all items listed as incomplete and attached to the Certificate of Substantial Completion are not completed or corrected after expiration of the agreed time allotted for completion and correction, including any approved extensions of time granted. These liquidated damages are cumulative.
- C. Any failure on the part of the Owner to request or require payment or withholding of liquidated damages in any particular month shall not constitute a waiver of Contractor's requirement to pay, or the Owner's ability to withhold from payments owed to Contractor, any liquidated damages for work performed or completed in that particular month, in any prior or subsequent month, or at the time the work has been completed.

7.00 DETERMINING LOWEST RESPONSIVE, RESPONSIBLE BIDDER

7.01 BIDDERS QUALIFICATIONS

- A. Bids must contain evidence of Bidder's qualifications to do business in the state of Texas. To demonstrate that the Bidder is responsible and able to perform the Work, funding policies dictate each Bidder must submit, as a part of the Bidding Documents, all of the items listed below:
 - 00310 Form of Proposal
 - 00405 Schedule of Unit Price Work
 - 00411 Bid Bond
 - 00420 Statement of Bidder's Qualifications
 - 00423 Certification of Bidder's Qualifications
 - 00425 Equipment & Material Suppliers List
 - 00429 Non-Bribery Model Form
 - 00460 Non-Collusion Affidavit
- B. Only the above data/information provided with the Bidding Documents may be used for evaluation and developing the Recommendation to Award by the Engineer. Bidders will not be allowed to substitute any "Key Personnel" other than alternates presented in the bid or examples of previous projects submitted in the bid package. Minor clarifications of submitted materials will be permitted after bid opening. Such request for clarifications will only be initiated by the Engineer in writing and only written responses will be accepted.
- C. In determining the lowest responsible, responsive Bidder, in addition to price, the following elements will be considered:



1. The quality, availability, and adaptability of the supplies, materials, equipment, or contractual services, to the particular use required;
2. The ability, capacity and skill of the bidder to perform the contract or to provide the service required;
3. Whether the bidder can perform the contract and provide the service promptly, or within the time required, without delay or interference;
4. The character, responsibility, integrity, reputation, and experience of the bidder;
5. The quality of performance of previous services, or contracts;
6. The previous and existing compliance by the bidder with laws relating to the contract or service;
7. Any previous or existing noncompliance by the bidder with specifications, or requirements relating to time of submission of specified data such as samples, models, drawings, certificates, or other information;
8. The sufficiency of the financial resources and ability of the bidder to perform the contract or to provide the service; and
9. The ability of the bidder to provide competent personnel for the job, as demonstrated by the submitted listing of the names and the skills of experienced personnel, including potential alternates, whom the bidder currently employs and who will be available for performing this work;
10. The experience of the bidder in performing work similar in type, size and complexity to this project, as demonstrated by a listing of projects, with verifiable references (names, addresses, phone numbers, etc.), successfully completed.
11. Bidder shall provide with the Bid an experience statement with pertinent information regarding similar projects and other evidence of qualifications for each such Subcontractor, Supplier, person, or organization.

7.02 BIDDER MUST MEET THE FOLLOWING MINIMUM CRITERIA:

- (A) The Bidder must demonstrate **Successful Completion during the last five (5) years of at least one project comparable in nature and scope to this project. The comparable scope shall be at least 1/4 the size of the proposed project.
- (B) At least two *Key Personnel, and their potential alternate, employed by the Bidder must have a minimum of five (5) years experience in similar construction projects.
- (C) The Bidder must have an employee, to be dedicated to this project, who is experienced in scheduling, with demonstrated ability in employing scheduling techniques similar to those to be used for this project.
- (D) Bidder may, at its discretion, include resumes of alternates for Key Personnel, and if in the



process of bid evaluation, the Owner rejects any Key Personnel, the Owner will consider the alternates.

* **KEY PERSONNEL:** Individuals who will be directly assigned to this project. Resumes of Key Personnel must be submitted with the Bid (include in Document 00420) and accepted by the Owner in order for Bidder to receive the Award. At the minimum, the resumes for the following personnel that are to be assigned to this Project are to be submitted.

- (a) Owner or Principals of the Bidder
- (b) The Project Manager
- (c) The Project Superintendent
- (d) The Project Scheduler
- (e) Minimum of two Foremen

****SUCCESSFUL COMPLETION:** Defined as completion of a project on time, no more than thirty (30) days later than the original contract time, and within budget, within 5% of the original contract price. If there is any project submitted by the Bidder as qualifying, but which does not meet these requirements, in order to be fully responsible, the Bidder is required to submit detailed information on that project demonstrating what caused the increases to cost or time. The name and telephone numbers of the Design Engineer and the Client are to be provided for evaluation as to whether the project may be considered "successful". For any project where liquidated damages were assessed, the Bidder will not be considered to have been on time.

7.03 BIDDERS ARE REQUIRED TO SUBMIT WITH THEIR BID:

00310 Form of Proposal

00405 Schedule of Unit Price Work

00411 Bid Bond

00420 Statement of Bidder's Qualifications

00423 Certification of Bidder's Qualifications

00425 Equipment & Material Suppliers List

00429 Non-Bribery Model Form

00460 Non-Collusion Affidavit

- (A) Failure to submit these items with the bid will result in a finding that the bid is non-responsive and the bid will be disqualified.

7.04 The Owner will evaluate and compare only the bids determined to be responsive in accordance with the following:

- (a) Is the bid complete (all Bidding Documents submitted);
- (b) Have documents been properly signed;
- (c) Are the required bid securities part of the bid package; and
- (d) Are there any computational errors present?

7.05 The Owner reserves the right to accept or reject any variation, deviation, or alternative offer which is not submitted in accordance with the bidding documents. Variations, deviations,



alternative offers, and other factors that are in excess of the requirements of the bidding documents or which otherwise result in unsolicited benefits for the Owner, shall not be taken into account in bid evaluation.

7.06 In evaluating the bids, the Owner will determine for each bid, the evaluated bid price by adjusting the bid price as follows:

- A. Making any correction for errors;
- B. Excluding provisional sums and the provision, if any, for contingencies in the price schedules;
- C. Taking an appropriate adjustment for any other quantifiable acceptable non-material variations, deviations or alternative offers; and
- D. Making appropriate adjustments to reflect additional factors in the manner and to the extent indicated in the Bidding Documents.

7.07 The Owner will award the contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated bid price provided that such bidder has been determined to be qualified to perform the contract satisfactorily in accordance with the provisions of the Bidding Documents.

8.00 OFFER ACCEPTANCE, REJECTION

8.01 ACCEPTANCE

- A. The Owner will give notice of intent to award the Contract to the Low Bidder. Acceptance by the Owner is conditioned upon Bidder's submission of information for establishing satisfactory qualifications, if required; and execution of submittals required in Document 00450 - Post-Bid Procedures.
- B. The Bid shall remain open to acceptance and shall be irrevocable for the Period for Bid Acceptance stated in Document 00020 – Notice to Bidders.
- C. Additional time taken by Contractor to fulfill requirements for submittals, including review and re-submittal, shall be added to the acceptance period.

8.02 REJECTION

- A. The Owner reserves the right to reject any and all Bids or to accept any Bid deemed advantageous to it.

8.03 BID TABULATION

- A. The Engineer will tabulate, record, and evaluate the Bids of all responsible Bidders after the Bid opening.
- B. In tabulating Bids, the amount written for a unit price governs over the total amount calculated. Therefore, the Engineer may correct any mathematical errors in the extension of the total amount based on the unit price given by a Bidder and adjust their Total Bid Price.

9.00 APPROVAL BY THE FUNDING AGENCIES

- A. All addenda, contracts, work directives, change orders, time extensions, and other matters specified in the Contract Documents are not valid until the Weslaco City Commission approves them.

END OF DOCUMENT



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SECTION 00150

TAX EXEMPT ORGANIZATION CERTIFICATE

PART 1 - GENERAL

1.1 DEFINITION

- A. This Contract is to be performed for an exempt organization as defined by Title 2; Subtitle E; Chapter 150 of the Texas Limited Sales, Excise and Use Tax Act and Section 151.311 of the State Statutes. The Owner will furnish the Contractor proof or Certificate of Exemption upon award of contract.
- B. Proposer shall not include sales tax in their Proposal.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION



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Document 00300

CONTRACTOR NOTICE OF INTENT TO RESPOND

Firms interested in submitting a bid on the project as outlined in the specifications, should indicate their intention by signing, dating and returning the form to the address below prior to January 30, 2017, so that they may receive any addendums to the specifications should the need arise.

Owner:	City of Weslaco Attn: Homer Rhodes 255 S. Kansas Avenue Weslaco, Texas 78596 Phone: (956) 968-3181 hrhodes@weslacotx.gov	Architect:	ROFA Architects Attn: Humberto Rodriguez, AIA 1007 Walnut Avenue McAllen, Texas 78501 Phone: (956) 686-7771 humbertor@rofainc.com
---------------	---	-------------------	--

Bidder: _____
[Please print or type the full name of your proprietorship, partnership, corporation, or joint venture.*]

Contact Name: _____
[Please print or type name] [Title]

Address: _____
[Mailing]

[Street, if different]

Telephone: _____
[Print or type telephone number]

Fax: _____
[Print or type telephone number]

Email: _____
[Print or type telephone number]

END OF DOCUMENT



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Document 00310

FORM OF PROPOSAL

To: CITY OF WESLACO

Project No.: 201624

Project: City of Weslaco Public Library Roofing Repairs

Bidder: _____
[Print or type full name of proprietorship, partnership, corporation, or joint venture]

1.0 OFFER

Having examined the place of the Work and all matters referred to in the Bid Documents, and the Contract Documents prepared by or approved by the Engineer for the named Project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Total Bid Price of:

_____ (Dollars)
[Print or type in words, Bidder's Total Base Bid Price]

(\$ _____)
[Print or type in figures, Bidder's Total Base Bid Price]

_____ (Dollars)
[Print or type in words, Bidder's Total Alternate Bid Price No. 1 Elastomeric Coating on Stucco Walls]

(\$ _____)
[Print or type in figures, Bidder's Total Alternate Bid Price No. 1 Elastomeric Coating on Stucco Walls]

_____ (Dollars)
[Print or type in words, Bidder's Total Alternate Bid Price No. 2 Metal Canopy]

(\$ _____)
[Print or type in figures, Bidder's Total Alternate Bid Price No. 2 Metal Canopy]

Lump Sum Bid. Total Lump Sum Bid, including Contingency Allowance indicated on Document 01020. Document 00405 - Schedule of Unit Price Work and Alternate Bids.

Alternate Bids. Alternate Bid work, as described in the Bid Documents, will be performed for an amount added or deducted to the Total Bid Price for each Alternate Bid that is accepted by the Owner. The Owner may accept or reject any or all Alternate Bids.

Security Deposit. Included herewith is a Security Deposit in the amount of 5 percent of the greatest amount of the Total Bid Price, or Total Alternate Bid Price(s).



Period for Bid Acceptance. This offer shall be open to acceptance and is irrevocable for 90 days from the Bid date. That period may be extended by mutual written agreement of the Owner and the Bidder. After 90 days, the Bidder may withdraw without penalty if no mutual agreement can be reached.

2.0 CONTRACT TIME

If this offer is accepted, Substantial Completion of the Work will be achieved within the time stated in Document 00020 - Notice to Bidders. The Date of Commencement will be established by the Notice to Proceed.

3.0 ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted therein have been considered and all costs relating thereto are included in the Bid Price:

Addendum No. _____, dated _____

4.0 SUPPLEMENTS TO THIS BID:

The following Supplements are attached as an integral part of this Bid:

- Document 00405 - Schedule of Unit Price Work, if applicable
- Document 00411 – Bid Bond (*Form supplied by Bidder*)
- Document 00420 – Statement of Bidder’s Qualifications
- Document 00423 – Certification to Bidder’s Experience & Qualifications
- Document 00425 – Equipment & Material Suppliers List

5.0 SIGNATURES:

Bidder: _____
[Please print or type the full name of your proprietorship, partnership, corporation, or joint venture.*]

By: _____
[Signature]** [Date]



Name: _____
[Please print or type name] [Title]

Address: _____
[Mailing]

[Street, if different]

Telephone: _____
[Print or type telephone number]

* *If the Bid is a joint venture, add additional Bid form signature sheets for each member of the joint venture.*

** *The undersigned, as bidder, certifies that the only person or parties interested in this proposal as principals are those named herein; that the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the Contract for the Project.*

Note: *This document constitutes a government record, as defined by § 37.01 of the Texas Penal Code. Submission of a false government record is punishable as provided In § 37.10 of the Texas Penal Code.*

END OF DOCUMENT



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Notes:

United States Dollars

Project: _____

Project No. _____ Bidder's Signature: _____

Company: _____ Name: _____

Date: _____ Title: _____

END OF DOCUMENT



Document 00411

BID BOND

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section describes the standardized bid bond form to be submitted with the bid on the project.

1.02 REFERENCES – Not Used

1.03 DEFINITIONS – Section 0700

1.04 BID BOND FORMS

Bidder is to inset an original bid bond or a copy of cashiers check provided for bid bond Purposes. Original check is to be submitted along with bid.

PART 2 - PRODUCT – Not Used

PART 3 - EXECUTION

STANDARIZED FORMS FOLLOW



BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we the undersigned _____ as Principal, and _____ as Surety, are hereby held and firmly bound unto **City of Weslaco** as OWNER in the penal sum of (*amount*) or 5% of the bid for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this ____ day of _____, 20__.

The Condition of the above obligation is such that whereas the Principal has submitted to **City of Weslaco** a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing for the **Public Library Roofing Repairs**.

NOW, THEREFORE, if said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith and shall in all other respects perform the agreement created by the acceptance of said BID then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal

(SEAL)
ATTEST:

Title

Surety

By: Attorney-in-Fact

IMPORTANT - Surety companies executing BONDS must be authorized to transact business in the State where the project is located.

END OF DOCUMENT



DOCUMENT 00420

STATEMENT OF BIDDER'S QUALIFICATIONS

BIDDER:

PROJECT NAME:

--	--

1. ORGANIZATION

1.1 How many years has your organization been in business as a Contractor? _____

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

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

1.3 If your organization is a corporation, answer the following:

1.3.1 Date of incorporation: _____

1.3.2 State of incorporation: _____

1.3.3 President's name: _____

1.3.4 Vice-president's name(s): _____

1.3.5 Secretary's name: _____

1.3.6 Treasurer's name: _____

1.4 If your organization is a partnership, answer the following:

1.4.1 Date of organization: _____

1.4.2 Type of partnership
(if applicable): _____

1.4.3 Name(s) of general
partner(s): _____



- 1.5 If your organization is individually owned, answer the following:
 - 1.5.1 Date of organization: _____
 - 1.5.2 Name of owner: _____
- 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

2. LICENSING

- 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable. Indicate name, license number and expiration date for Master Plumber or other trade required under the Instructions to Bidders section of this Bid, if applicable.

- 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

3. EXPERIENCE

- 3.1 List the categories of work that your organization normally performs with its own forces.

- 3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)
 - 3.2.1 Has your organization ever failed to complete any work awarded to it? _____
 - 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers? _____
 - 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years? _____



3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please attach details.) _____

3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

3.4.1 State total worth of work in progress and under contract: _____

3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

3.5.1 State annual amount of construction work performed each year during the past five years:

Year	Amount
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization. Submit resumes of Key Personnel (as defined in the Instructions to Bidders. Bidder hereby certifies that the Resident Superintendent has the authority to act on behalf of the Contractor at all times. No substitution shall be made without the written authorization of the Owner and the Engineer based upon acceptance of the qualifications of the proposed substitute.

3.7 Provide form 00423 "Certification of Bidder's Qualifications" as evidence that the Bidder meets the minimum criteria called out in the Instructions to Bidders.

4. REFERENCES

4.1 On a separate sheet, list three (3) Trade References and two (2) Bank References :

4.2 Surety:

Name and telephone number of Bonding Company: _____

Name, telephone and address of Agent: _____



5. FINANCING

5.1 Financial Statement **(Not Applicable to this Request for Bid Proposals)**

6. SIGNATURE

6.1 To be executed by a Principal of the firm authorized to certify the foregoing information:

_____, being duly sworn, deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

6.2 Dated at _____ this ____ day of _____, 201__.

Name of Organization: _____

By: _____

Printed Name: _____

Title: _____

END OF DOCUMENT



DOCUMENT 00423

**CERTIFICATE OF BIDDER'S
EXPERIENCE & QUALIFICATIONS**

The undersigned bidder certifies that he is, at the time of bidding, and shall be, throughout the period of the contract, licensed by the State of Texas to do the type of work required under terms of the contract documents. Bidder further certifies that he is skilled and regularly engaged in the general class and type of work called for in the contract documents.

The bidder represents that he is competent, knowledgeable and has special skills on the nature, extent and inherent conditions of the work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the particular facilities which may create, during the construction program, unusual or peculiar unsafe conditions hazardous to persons and property. Bidder expressly acknowledges that he is aware of such peculiar risks and that he has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the construction work with respect to such hazards.

Signed this _____ day of _____, 20____.

Name of Bidder

Contractor's License No. and State

Signature of Bidder

Title of Signatory

END OF DOCUMENT



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BIDDER

Executed this: _____ Day of : _____ 20. _____

By: _____
BIDDER

Title: _____

NOTARY PUBLIC

State of Texas

County of:

Subscribed and sworn to before me this: _____

NOTARY PUBLIC

END OF DOCUMENT



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DOCUMENT 00429

CITY OF WESLACO NON-BRIBERY MODEL FORM

[*Bidder's letterhead*]

[*Date*]

[*Name and address*]

Dear [*Name of Owner*] :

The undersigned party certifies that [*Name of bidding company*] complies with the following criteria:

1. They have not engaged and will not engage in bribery of officials related to potential or active City of Weslaco projects.
2. They have corporate policies that clearly prohibit the use of any bribery in a corporate activity.
3. They have neither been convicted of (nor found by a civil judgment to have committed) bribery of domestic officials, fraud, embezzlement, theft, forgery, destruction of records, making false statements to government officials, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty, within five years of the date of this certification.

Printed name

Signature

Position in bidding company

Date

END OF DOCUMENT



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Document 00450

POST-BID PROCEDURES

1.0 DOCUMENT INCLUDES

- A. Notice of Intent to Award.
- B. Agreement.
- C. Requirements of Bidder.
- D. Failure of Bidder to comply with requirements.
- E. Notice to Proceed.
- F. Pre-construction Conference.
- G. Starting the Project.

2.0 NOTICE OF INTENT TO AWARD

- A. Owner will provide written Notice of Intent to Award (the Contract) to the Low Bidder, stating that upon compliance with the conditions listed herein within 14 days after receipt of the notice, and on approval by Owner, Owner will execute and deliver the Agreement.

3.0 FORM OF AGREEMENT

- A. The Agreement shall be Document 00500 - Agreement between the Owner and Contractor, together with Supplements enumerated in and attached thereto.

4.0 REQUIREMENTS OF BIDDER

- A. Within 14 days of receipt of the Notice of Intent to Award, the Low Bidder shall execute and deliver to the Engineer for the Owner's approval those documents indicated by an "X" below:

- Document 00500 - Agreement Between the Owner and Contractor
- Document 00610 - Performance Bond (100% of the Contract Amount)
- Document 00620 - Payment Bond (100% of the Contract Amount)
- Document 00625 - Affidavit of Insurance (*with Certificate of Insurance attached*)

5.0 FAILURE OF BIDDER TO COMPLY WITH REQUIREMENTS

- A. Should the Bidder on receipt of the Notice of Intent to Award fail to comply with requirements of this Document 00450 within the stated time, the Owner may declare the award in default and require forfeiture of the Security Deposit.
- B. After Owner's written notice of default to the Bidder, Owner may award the Contract to the responsible Bidder whose offer is the next lowest bid, and the Security Deposit of the Bidder in default shall be forfeited to the Owner in accordance with the provisions of Document 00100 - Instructions to Bidders.



6.0 NOTICE TO PROCEED

- A. Upon Owner's execution of the Agreement and delivery to Contractor, the Engineer shall give the Contractor Notice to Proceed within 30 days after the Effective Date of the Agreement, which notice shall establish the Date of Commencement of the Work.

7.0 PRE-CONSTRUCTION CONFERENCE

- A. Not later than 10 days after the date of Notice to Proceed, but before Contractor starts work at the site, Owner will convene a Pre-construction Conference as specified in Section 01312 - Coordination and Meetings.

8.0 STARTING THE PROJECT

- A. Contractor shall start performance of the Work at the site on the Date of the Commencement of the Work, but no Work shall be done at the site prior to that date.
- B. As Contractor, verify that you and all Subcontractors pay the Prevailing Wage.

END OF DOCUMENT



SECTION 00460

NONCOLLUSION AFFIDAVIT

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section describes the standardized forms for use in Bidder and Contractor representations and certifications for the project.

1.02 REFERENCES – Not Used

1.03 DEFINITIONS – Section 0700

1.04 REPRESENTATIONS AND CERTIFICATIONS

- A. Affidavit of Non-collusion
- B. Historically Underutilized Business (HUB) Certification (Bidder to insert appropriate certification notice at the end of this Section).

PART 2 - PRODUCT – Not Used

PART 3 - EXECUTION – Not Used

STANDARIZED FORMS FOLLOW



NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

STATE OF TEXAS
COUNTY OF HIDALGO

_____, being first duly sworn, deposes and says that:

(Name)

- (1) He is President of _____, the Bidder that has submitted the attached Bid;
(Company)
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid.
- (4) Neither said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed directly or indirectly with another Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix an overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the **CITY OF WESLACO**, or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including affiant.

Sign _____

Title _____

Subscribed and sworn to me this _____ day of _____, 20_____.

By:

Notary Public
My commission expires

END OF SECTION



AGREEMENT BETWEEN OWNER AND CONTRACTOR

THIS AGREEMENT is by and between The City of Weslaco, Texas

(hereinafter called OWNER) and _____

(hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 – WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Water Distribution.

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

City of Weslaco Public Library Roofing Repairs

ARTICLE 3 – ARCHITECT

3.01 The Project has been designed by the ARCHITECT who is herein after called ARCHITECT and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ARCHITECT in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 TIME OF THE ESSENCE

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 DAYS TO ACHIEVE SUBSTANTIAL COMPLETION AND FINAL PAYMENT

A. The Work will be substantially completed within the time stated in Document 00020 – Notice to Bidders.

4.03 LIQUIDATED DAMAGES

A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not



completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER for each day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially complete, as shown on table below. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER \$ 350.00 for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

Amount of Contract Range	Cost per Day
\$5000.00 to \$25,000.00	\$100.00
\$25,000.01 to \$100,000.00	\$200.00
\$100,000.01 to \$500,000.00	\$350.00
\$500,000.01 and over	\$500.00

*City inspection cost not included in this price.

ARTICLE 5 – CONTRACT PRICE

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amount determined pursuant to paragraph 5.01. A below:

- A. For all Work, at the prices stated in CONTRACTOR's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 SUBMITTAL AND PROCESSING OF PAYMENTS

- A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

6.02 PROGRESS PAYMENTS; RETAINAGE

- A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in paragraphs 6.02. A. 1 below, unless agreed otherwise with City Engineer. All such payments will be measured by the schedule of values established in paragraph 2.07. A. of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ARCHITECT may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions:
 - a. 90% of Work completed (with the balance being retainage).
 - b. 90% of cost of materials and equipment not incorporated in the Work (with the balance being retainage).



6.03 FINAL PAYMENT

- A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ARCHITECT as provided in said paragraph 14.07 and upon approval by the Weslaco City Commission. All closing documents must be received by Owner's representative before a recommendation for final payment is given to the Weslaco City Commission.

ARTICLE 7 – INTEREST

- 7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the prevailing money market rate.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce OWNER to enter this Agreement, CONTRACTOR makes the following representations:
 - A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
 - B. CONTRACTOR 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. CONTRACTOR 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. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all 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 CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
 - E. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
 - F. CONTRACTOR 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 Contract Documents.
 - G. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, and all examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
 - H. CONTRACTOR has given ARCHITECT written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolutions thereof by ENGINEER is acceptable to CONTRACTOR.



- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 CONTENTS

- A. The Contract Documents consist of the documents listed in the table of contents of the Project Manual and the drawings listed on the Sheet Index in the Drawings. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 1. Written Amendments;
 2. Work Change Directives;
 3. Change Order(s).
- B. The documents listed in paragraph 9.01. A. are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.04 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 TERMS

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

10.02 ASSIGNMENT OF CONTRACT

- A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 SUCCESSORS AND ASSIGNS

- A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 SEVERABILITY

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be



reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.



This Agreement will be effective on _____, 20____ (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR:

City of Weslaco, Texas _____

By: _____
David Suarez, Mayor

By: _____

[CORPORATE SEAL]

Attest _____
Elizabeth M. Walker, City Secretary

Attest _____

As to Form: _____
Juan Gonzalez, City Attorney

Address for giving notices:

_____ 255 S. Kansas Avenue

_____ Weslaco, Texas 78596

Address for giving notices:

License No. _____
(Where Applicable)

Agent for service of process: _____

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

Designated Representative:

Name: Mike R. Perez

Designated Representative:

Name: _____

Title: City Manager

Title: _____

Address: 255 S. Kansas Avenue

Address: _____

_____ Weslaco, Texas, 78596

Phone: _____ 956-968-3181

Phone: _____

Facsimile: _____

Facsimile: _____

END OF DOCUMENT

00500- 6 of 6



SECTION 00510

NOTICE OF AWARD

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section describes the standardized Notice of Award form for use in the project.

1.02 REFERENCES – Not Used

1.03 DEFINITIONS – Section 0700

PART 2 - PRODUCT – Not Used

PART 3 - EXECUTION (FORMS ON FOLLOWING PAGES)

STANDARIZED FORM FOLLOWS



NOTICE OF AWARD

TO:

PROJECT DESCRIPTION:

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for Bids and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$ _____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND, and Certificates of Insurance within ten (10) calendar days from the date of this Notice to you, and ONE YEAR GUARANTEE on all workmanship and materials on this Project.

If you fail to execute said Agreement and to furnish said Certificates within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are requested to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____ 2016.

OWNER: City of Weslaco

ENGINEER: City of Weslaco

BY: _____

BY: _____

TITLE: City Manager

TITLE: Planning Director/City Engineer

ACCEPTANCE OF NOTICE BY BIDDER

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____, this the _____ day of _____, 20____.

BY: _____

TITLE: _____

END OF SECTION



SECTION 00550

NOTICE TO PROCEED

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section describes the standardized Notice to Proceed form for use in the project.

1.02 REFERENCES – Not Used

1.03 DEFINITIONS – Section 0700

PART 2 - PRODUCT – Not Used

PART 3 - EXECUTION

TO BE ISSUED BY ENGINEER



NOTICE TO PROCEED

Date:

To:

Project No.: 2016-17-01
Project: 5310 Sidewalk Project

You are notified that the Contract Time under the above contract will commence to run on _____.
By this date you are to start performing your obligations under the Contract Documents.

In accordance with the Agreement the date of Substantial Completion is _____ and Final
Completion is _____ respectively.

Before you may start any Work at the site, the General Conditions and Contract Documents provides that
you and Owner must each deliver to the other (with copies to ENGINEER) certificates of insurance which
each is required to purchase and maintain in accordance with the Contract Documents.

- Also before you may start any work at the site you must
1. Notify the City 48 hours prior to beginning construction.
 2. Setup construction barricades.
 3. Setup erosion control measures.
 4. Provide Traffic Control Plan.
 5. _____

Copy to ENGINEER:

City of Weslaco

OWNER: City of Weslaco

By _____
Mardoqueo Hinojosa, P.E.

By _____
Mike R. Perez

Planning Director/ City Engineer
Title

City Manager
Title

ACCEPTANCE OF NOTICE BY BIDDER

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____,
this the _____ day of _____, 20____. (Contractor)

BY: _____

TITLE: _____

END OF SECTION



PERFORMANCE BOND

STATUTORY PAYMENT BOND PURSUANT TO ARTICLE 5160
OF THE REVISED CIVIL STATUTES OF TEXAS AS
ACTS OF THE 56TH LEGISLATURE, REGULAR SESSION 1959

KNOW ALL MEN BY THESE PRESENTS, that _____

_____ (hereinafter

called the Principal (s), as Principal (s) , and _____

_____ (hereinafter called the

Surety (s), as Surety (s), are held and firmly bond 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 _____, 2006, for the _____

_____ which contract is hereby referred to and made a part hereof

as fully and to the same extent as if copies 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 plans, specifications and contract documents, then the obligation shall be void; otherwise to remain in full force and affect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Article 5160 of the Revised Civil Statutes of Texas as amended by the Acts of the 56th Legislature, Regular Session, 1959, and provisions of said Article to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, this instrument is executed in four counterparts, each one of which shall be deemed an original, this the _____ day of _____, A.D., 2006.

ATTEST:

(Principal) Secretary
(SEAL)

Witness as to Principal

(Address)

ATTEST:

(Surety) Secretary
(SEAL)

Witness as to Surety

(Address)

Principal

By: _____
Signature

(Print/ Type Name)

(Address)

Surety

By: _____
Attorney-in-Fact (Signature)

(Print/Type Name)

(Address)

NOTE: Date of Bond must not be prior to date of Contract (1) Correct name of Contractor; (2) A Corporation, a Partnership or an Individual, as case may be; (3) Correct name of Surety; (4) Correct name of Owner; (5) County or Parish and State; (6) Owner; (7)If Contractor is Partnership, all partners should execute bond.

P A Y M E N T B O N D

STATUTORY PAYMENT BOND PURSUANT TO ARTICLE 5160
OF THE REVISED CIVIL STATUTES OF TEXAS AS
AMENDED BY
ACTS OF THE 56TH LEGISLATURE, REGULAR SESSION 1959

KNOW ALL MEN BY THESE PRESENTS, that _____

_____ (hereinafter
called the Principal (s), as Principal (s) _____

_____ (hereinafter called the
Surety (s), as Surety (s), are held and firmly bond 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 _____, 2006, for the _____
_____ which contract is hereby referred to
and made a part hereof as fully and to the same extent as if copies 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 the obligation shall be void; otherwise to remain in full force and affect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Article 5160 of the Revised Civil Statutes of Texas as amended by the Acts of the 56th Legislature, Regular Session, 1959, and provisions of said Article to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, this instrument is executed in four counterparts, each one of which shall be deemed an original, this the _____ day of _____, A.D., 2006.

ATTEST:

(Principal) Secretary
(SEAL)

Witness as to Principal

(Address)

Principal

By: _____
Signature

(Print/ Type Name)

(Address)

Surety

ATTEST:

(Surety) Secretary
(SEAL)

Witness as to Surety

(Address)

By: _____
Attorney-in-Fact (Signature)

(Print/Type Name)

(Address)

NOTE: Date of Bond must not be prior to date of Contract (1) Correct name of Contractor; (2) A Corporation, a Partnership or an Individual, as case may be; (3) Correct name of Surety; (4) Correct name of Owner; (5) County or Parish and State; (6) Owner; (7)If Contractor is Partnership, all partners should execute bond.

Document 00625

AFFIDAVIT OF INSURANCE

THE STATE OF TEXAS

§

§

KNOW ALL MEN BY THESE PRESENTS:

THE COUNTY OF _____

BEFORE ME, the undersigned authority, on this day personally appeared

_____, who
[Affiant]

being by me duly sworn on his oath stated that he is _____, of
[Title]

[Contractor's Company Name]

the Contractor named and referred to within the Contract Documents; that he is fully competent and authorized to give this affidavit and that the attached original insurance certificate truly and accurately reflects the insurance coverage that is now available and will be available during the term of the Agreement.

[Affiant's Signature]

SWORN AND SUBSCRIBED before me on _____.
[Date]

Notary Public in and for the State of TEXAS

[Print or type Notary Public name]

[Notary Seal]

My Commission Expires: _____
[Expiration Date]

END OF DOCUMENT



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Document 00627

STATE SALES TAX / SEPARATED CONTRACT

DATE: _____

PROJECT: Project 201624

PROJECT ID: 2016-17-11

TO: City of Weslaco

SUMMARY SEPARATION OF MATERIALS AND LABOR:

The total amount bid shall be separated into Materials Costs and Services Charges, which result in a "Separated Contract". The Bidder is expected to comply with all the requirements of the State Sales Tax Law, plus separate the total Contract amount, for the total amount bid listed in the Proposal into material costs and services charges as provided below.

Materials which are incorporated into, or become part of the project, are exempt from sales tax. The Contractor is expected to execute a resale certificate instead of paying the sales tax at the time of purchase. The City will issue an exemption certificate for the materials as long as they are a part of the finished project

If the Contractor does not issue a resale certificate, then the amount of sales tax must be included in the prices quoted. No additional compensation, beyond the prices quoted, is due the Contractor for sales tax.

MATERIALS.....\$ _____

SERVICES.....\$ _____

TOTAL AMOUNT BID.....\$ _____

PRINCIPAL

(_____) _____
TELEPHONE NUMBER

SIGNATURE

NAME & TITLE

END OF DOCUMENT



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Document 00630

FORM OF BUSINESS

Please, fill in the appropriate area describing your firm's form of business and include the relevant attachments.

Corporation:

Corporate Name: _____

State of Incorporation: _____

Mailing Address: _____

- Certificate of Assumed Name, if operating under a name different than that on the corporate charter (the Certificate must have been issued within the past ten years to be valid)
- Certificate of Good Standing*
- Certificate of Existence (if non-Texas corporation, Certificate of Authority) *

Partnership/Joint Venture:

Partnership/Joint Venture Name: _____

Mailing Address: _____

- Copy of the Partnership or Joint Venture Agreement, or Affidavit with the name of the partnership or joint venture, the names of the individual partners or participants in the joint venture, and a statement that the partnership or joint venture is in existence
- Certificate of Assumed Name, (the Certificate must have been issued within the past ten years to be valid)
- If firm is a limited partnership, the Certificate of Limited Partnership
- If any partner or joint venturer is a corporation, the above information relating to corporation must be included as to each sum partner or joint venturer.

Sole Proprietorship

Name: _____

Mailing Address: _____

- Certificate of Assumed Name, if operating under a name different than that of the sole proprietor (the Certificate must have been issued within the past ten years to be valid)

* *Must be furnished upon request of the Owner and must be less than 90 days old.*

[Typed Name and Title of Authorized Representative]

[Signature of Authorized Representative]

[Typed Date]

END OF DOCUMENT



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Document 00631

RESOLUTION OF CORPORATION

I hereby certify that it was RESOLVED by a quorum of the directors of

[Name of Corporation / Contractor]

meeting on this _____ day of _____, 20____, that _____,

[Corporate Representative]

be, and hereby is, authorized to act on behalf of the Corporation, as its representative, in all business transactions conducted in the State of Texas, and that the above resolution was unanimously ratified by the Board of Directors at said meeting and that the resolution has not been rescinded or amended and is now in full force and effect; and in authentication of the adoption of this resolution, I subscribe my name and affix the seal of the Corporation on this

_____ day of, _____, 20____.

Secretary/Assistant Secretary

[Seal]

END OF DOCUMENT



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Document 00632

**CONTRACTOR'S RESOLUTION
ON
AUTHORIZED REPRESENTATIVE (ED-104)**

Name or Names

I hereby certify that it was RESOLVED by a quorum of the directors of the

_____, meeting
name of corporation

on the day of _____, 20__, that _____,
_____, and _____, be, and hereby is,
authorized to act on behalf of _____, as its
name of corporation

representative, in all business transactions conducted in the State of Texas, and;

That all above resolution was unanimously ratified by the Board of Directors at said
meeting and that the resolution has not been rescinded or amended and is now in full forces
and effect; and;

In authentication of the adoption of this resolution, I subscribe my name and
affix the seal of the corporation this _____ day of _____, 20__.

Secretary

(seal)

END OF DOCUMENT



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Document 00635

CONTRACTOR'S ACT OF ASSURANCE

THE STATE OF TEXAS

KNOW ALL MEN BY THESE PRESENTS:

THE COUNTY OF _____

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas,

on this day personally appeared _____, Affiant,
[Affiant]

who being by me duly sworn on his oath stated that he is _____, of
[Title]

the _____, Contractor, that he is authorized to represent Contractor
[Contractor]

pursuant to provisions of a resolution adopted on this _____ day of _____, 20____. A duly certified copy of such resolution is attached to and is hereby made a part of this document.

Affiant, in such capacity declares and assures the City of Weslaco that Contractor will construct the Project in accordance with sound construction practice and all laws of the State of Texas.

[Affiant]

SWORN AND SUBSCRIBED before me on this _____ day of _____, 20____.

Notary Public in and for the State of TEXAS

[Print or Type Notary Public Name]

My Commission Expires: _____
[Expiration Date]

[Seal]

END OF DOCUMENT



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Document 00636

VENDOR COMPLIANCE WITH RECIPROCITY ON NON-RESIDENT BIDDERS

Government Code 2252.002 provides that, in order to be awarded a contract as low bidder, a non-resident bidder must bid projects for construction, improvements, supplies or services in Texas at an amount lower than the lowest Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a non-resident bidder in order to obtain a comparable contract in the state in which the non-resident's principal place of business is located. A non-resident bidder is a contractor whose corporate offices or principal place of business is outside of the state of Texas. This requirement does not apply to a contract involving Federal funds. The appropriate blanks in Section A must be filled out by all out-of-state or non-resident bidders in order for your bid to meet specifications. The failure of out-of-state or non-resident contractors to do so will automatically disqualify that bidder. Resident bidders must check the blank in Section B.

- A. Non-resident vendors in _____(give state), our principal place of business, are required to be _____ percent lower than resident bidders by state law. A copy of the statute is attached.

Non-resident vendors in _____(give state), our principal place of business, are not required to underbid resident bidders.

- B. Our principal place of business or corporate offices are in the State of Texas:_____

BIDDER:

Company

City State Zip

By: (please print)

Signature

Title: (please print)

THIS FORM MUST BE RETURNED WITH THE BID

END OF DOCUMENT



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Document 00640

**CERTIFICATION REGARDING DEPARTMENT,
SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State, or local department or agency;
- (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Section 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

[Typed Name of Company:]

[Typed Name & Title of Authorized Representative]

[Signature of Authorized Representative]

[Date]

If unable certify the above statements, explanation is attached.

END OF DOCUMENT



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Document 00641

**AFFIDAVIT AND WAIVER OF LIEN
PRIME CONTRACTOR**

THE STATE OF TEXAS

§

§

KNOW ALL MEN BY THESE PRESENTS:

THE COUNTY OF _____

Personally appeared before me, the undersigned Notary Public for said County and State
_____ (Name of Individual),

_____ (Title) of _____

(Prime Contractor), who being duly sworn by me states on oath that all product suppliers and Subcontractors, payrolls, sales tax, privilege tax or license, old age benefits tax, state and federal unemployment insurance, and other liabilities incurred in the performance of _____

(Type of Contract) Contract for the construction of improvements at **Project No. #** _____

Project Title _____ (**Name of Project**), have been paid in full and

that the above named Prime Contractor waives any claims and released _____

(Owner) from any rights or claims (including lien rights) for debts due and owing by virtue of the furnishing of any labor, products, and supplies furnished for such improvements.

The above named Prime Contractor agrees to indemnify the Owner and save him harmless on account of any loss he may sustain in reliance upon this Affidavit and Waiver of Lien including the amount of any lien he may be compelled to pay all costs relating thereto and a reasonable attorney's fee.

[Prime Contractor's Signature]

SWORN AND SUBSCRIBED before me on _____
[Date]

Notary Public in and for the State of TEXAS

[Print or type Notary Public name]

[Notary Seal]

My Commission Expires: _____
[Expiration Date]

END OF DOCUMENT

00641- 1 of 2



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Document 00642

**RELEASE AND WAIVER OF CLAIMS BY
SUBCONTRACTORS AND PRODUCT VENDORS**

THE STATE OF TEXAS

§

§

KNOW ALL MEN BY THESE PRESENTS:

THE COUNTY OF _____

Personally appeared before me the undersigned authority in and for said County and State (Name of Individual), _____ (Title) of _____ (Company), who, being duly sworn by me states on oath that all bills for labor and products, sales tax, privilege tax or license, old age benefits tax, state and federal unemployment insurance and other liability have been paid in full, or that funds are in hand to discharge such liabilities when due, incurred in the performance of its Subcontract for furnishing labor or products in the construction of improvements at **Project No. #** _____ **Project Title** _____
_____ (Name of Project & Location), upon receipt of check in the amount \$ _____, the undersigned company waives any claims and releases (Owner) _____ (Contractor) from any rights or claims for debts due and owing by virtue of the furnishing of any labor or products and any lien therefore.

[NAME OF COMPANY]

SWORN AND SUBSCRIBED before me on _____
[Date]

Notary Public in and for the State of TEXAS

[Print or type Notary Public name]

[Notary Seal]

My Commission Expires: _____
[Expiration Date]

END OF DOCUMENT



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Document 00643

CONTRACTOR'S AFFIDAVIT
AS TO STATUS OF LIENS

THE STATE OF TEXAS

§

§

KNOW ALL MEN BY THESE PRESENTS:

THE COUNTY OF _____

Personally appeared before me, the undersigned Notary Public for said County and State,
_____(Name of Individual), _____(Title), of _____(Prime Contractor),
who being duly sworn by me states on oath that to the best of his knowledge and belief, except as
listed below, the Releases and Waivers of Claim attached hereto include all Subcontractors and all
suppliers of labor, products, and equipment provided by all persons who may have lien against the
property of _____(Owner), **Project No. #** **Project Title** _____,
located at _____(Location of Project),
arising out of the construction of improvements thereon.

Exceptions: (If none, write "NONE." Any exception listed shall be bonded by the Contractor to indemnify the Owner, and a copy of each such bond shall be attached hereto.)

- 1.
- 2.
- 3.
- 4.

[NAME OF COMPANY]

SWORN AND SUBSCRIBED before me on _____
[Date]

Notary Public in and for the State of TEXAS

[Print or type Notary Public name]

[Notary Seal]

My Commission Expires: _____
[Expiration Date]



END OF DOCUMENT

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**Engineers Joint Documents Committee
Design and Construction Related Documents
Instructions and License Agreement**

Instructions

Before you use any EJCDC document:

1. Read the License Agreement. You agree to it and are bound by its terms when you use the EJCDC document.
2. Make sure that you have the correct version for your word processing software.

How to Use:

1. While EJCDC has expended considerable effort to make the software translations exact, it can be that a few document controls (e.g., bold, underline) did not carry over.
2. Similarly, your software may change the font specification if the font is not available in your system. It will choose a font that is close in appearance. In this event, the pagination may not match the control set.
3. If you modify the document, you must follow the instructions in the License Agreement about notification.
4. Also note the instruction in the License Agreement about the EJCDC copyright.

License Agreement

You should carefully read the following terms and conditions before using this document. Commencement of use of this document indicates your acceptance of these terms and conditions. If you do not agree to them, you should promptly return the materials to the vendor, and your money will be refunded.

The Engineers Joint Contract Documents Committee ("EJCDC") provides **EJCDC Design and Construction Related Documents** and licenses their use worldwide. You assume sole responsibility for the selection of specific documents or portions thereof to achieve your intended results, and for the installation, use, and results obtained from **EJCDC Design and Construction Related Documents**.

You acknowledge that you understand that the text of the contract documents of **EJCDC Design and Construction Related Documents** has important legal consequences and that consultation with an attorney is recommended with respect to use or modification of the text. You further acknowledge that EJCDC documents are protected by the copyright laws of the United States.

License:

You have a limited nonexclusive license to:

1. Use **EJCDC Design and Construction Related Documents** on any number of machines owned, leased or rented by your company or organization.
2. Use **EJCDC Design and Construction Related Documents** in printed form for bona fide contract documents.
3. Copy **EJCDC Design and Construction Related Documents** into any machine readable or printed form for backup or modification purposes in support of your use of **EJCDC Design and Construction Related Documents**.

You agree that you will:

1. Reproduce and include EJCDC's copyright notice on any printed or machine-readable copy, modification, or portion merged into another document or program. All proprietary rights in **EJCDC Design and Construction Related Documents** are and shall remain the property of EJCDC.
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This Agreement shall be governed by the laws of the State of Virginia. Should you have any questions concerning this Agreement, you may contact EJCDC by writing to:

Arthur Schwartz, Esq.
General Counsel
National Society of Professional Engineers
1420 King Street
Alexandria, VA 22314

Phone: (703) 684-2845
Fax: (703) 836-4875
e-mail: aschwartz@nspe.org

You acknowledge that you have read this agreement, understand it and agree to be bound by its terms and conditions. You further agree that it is the complete and exclusive statement of the agreement between us which supersedes any proposal or prior agreement, oral or written, and any other communications between us relating to the subject matter of this agreement.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

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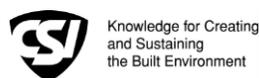
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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain

administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times

but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
- c. has been damaged prior to Engineer's - recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement

or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Starting the Work

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 Before Starting Construction

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 Preconstruction Conference

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 Initial Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a

Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained

or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party..

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will

promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to

entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified

in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection

from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any

deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order .

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract

Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or

received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

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

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract

Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual

or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Draw-

ings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals , any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents

with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 Continuing the Work

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or

disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 Contractor's General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal

shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and
2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and

properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep

Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show

partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall

promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 - COST OF THE WORK;
ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive

bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph

5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work

times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all

costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and

reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the

Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's

observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 Contractor's Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, , Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral

satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

14.08 Final Completion Delayed

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
2. agrees with the other party to submit the Claim to another dispute resolution process, or
3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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Document 00800

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (C-700, 2002 Edition) and other provisions of the Contract Documents as indicated below. All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

SC-2.03.A Delete the last sentence of paragraph 2.03.A.

SC-5.04 Add the following new paragraph immediately after paragraph 5.04.B:

- C. The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
 - 1. Workers' Compensation and related coverage's under paragraphs 5.04.A.1 and A.2 of the General Conditions.
 - a. State: Statutory
 - b. Applicable Federal (e.g., Longshoreman's): Statutory
 - c. Employer's Liability
 - \$ 100,000 for each accident
 - \$ 100,000 for disease – each employee
 - \$ 500,000 disease – policy limit
 - 2. Contractor's General Liability under paragraph's 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor:
 - a. General Aggregate \$ 1,000,000
 - b. Products – Completed Operations Aggregate \$ 1,000,000
 - c. Personal and Advertising Injury \$ 600,000
 - d. Each Occurrence (Bodily Injury and Property Damage) \$ 600,000
 - e. Property Damage liability insurance will provide Explosion, Collapse and Underground coverages where applicable.



- f. Excess or Umbrella Liability
 - 1) General Aggregate \$ 1,000,000
 - 2) Each Occurrence \$ 1,000,000
- 3. Automobile Liability under paragraph 5.04.A.6 of the General Conditions:
 - a. Bodily Injury:
 - Each Person \$ 250,000
 - Each Accident \$ 500,000
 - b. Property Damage:
 - Each Accident \$ 100,000
- 4. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:
 - a. Bodily Injury:
 - Each Accident \$ 600,000
 - Annual Aggregate \$ 1,000,000
 - b. Property Damage:
 - Each Accident \$ 600,000
 - Annual Aggregate \$ 1,000,000
- 5. Additional named insureds:
Owner, Engineer

SC-5.06.A. Delete paragraph 5.06.A in its entirety and insert the following in its place:

- A. CONTRACTOR shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof.
This insurance shall:
 - 1. Include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
 - 2. Be written on a Builder's Risk "all – risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 - 3. Include expense incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);



4. Cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER; and
5. Allow for partial utilization of the Work by OWNER;
6. Include testing and startup; and
7. Be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

CONTRACTOR shall be responsible for any deductible or self – insured retention.

The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with this paragraph SC-5.06 shall comply with the requirements of paragraph 5.06C. of the General Conditions.

SC-5.06.E. Delete paragraph 5.06.E in it's entirety.

SC-6.01.C Add the following new paragraph immediately after paragraph 6.01.B:

- C. At all times during the progress of the Work, CONTRACTOR shall be responsible for the security of all completed work, all materials stored but not yet incorporated into the Work, and material assets used to perform the Work.

SC-6.02.C Add the following paragraphs immediately after paragraph 6.02.B:

- C. Regular working hours are as established in General Conditions paragraph 6.02.B. If, at CONTRACTOR'S request and for his benefit, the OWNER consents to performance of work by CONTRACTOR outside of normal working hours, CONTRACTOR shall reimburse the OWNER for all reasonable costs associated with maintaining Resident Project Representative, Testing Laboratory, and Engineer functions during that or those overtime work period(s). Reasonable costs, in this instance, shall be taken to mean:
 1. Payroll costs for full-time employees required to perform the Resident Project Representative and Engineer functions. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay application thereto. The expenses of performing overtime work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.
 2. Supplemental costs including:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Resident Project Representative staff, and Engineer staff incurred in discharge of duties connected with the overtime work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, which are consumed in the performance of the overtime work.



- c. Rentals of equipment and machinery, and the parts thereof in accordance with rental agreements and the costs of transportation, loading, unloading, assembly, dismantling and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the overtime work.
- d. Sales, consumer, use, and other similar tax related to the overtime work as imposed by Laws and Regulations.
- e. The cost of additional fuel.
- f. Minor expenses such as telegrams, long distance telephone calls, expressage, and similar petty cash items in connection with the overtime work.
- g. Testing Laboratory overtime charges.

SC-6.04.A. Add the following sentence to the end of paragraph 6.04.A;

Updated progress schedule shall be submitted at least monthly.

SC-6.08.B Add the following new paragraph immediately after paragraph 6.08.A:

- B. Work sites and easements; and permits for construction inside highway right-of-way; and licenses agreements for crossing railroads; as required to construct the Work if required will be acquired by the Owner. Acquisition of any other special licenses and permits required will be the responsibility of the Contractor. The lands involved will be assumed to encompass at least the minimum areas needed to complete the Work, but this does not necessarily mean that all trenches or other excavations can be back-sloped without bracing or shoring. Copies of all such deeds, easements, permits, etc., shall be made available to the Contractor.
 - 1. Construction and access to the Work within State right-of-way shall conform to the requirements of the Texas Department of Transportation. Copies of permits, if any are included in the pages following Section 00800.
 - 2. Construction within the right-of-way of the Border Pacific Railroad shall conform to the requirements of the Border Pacific Railroad. Railroad Permits, if any are included in the pages following Section 00800.
 - 3. Construction and access to the Work within Hidalgo County right-of-way shall conform to the requirements of Hidalgo County. Copies of permits, if any are included in the pages following Section 00800.

SC-6.12.B Add the following new paragraphs; immediately after paragraph 6.12.A:

- B. OWNER reserves the right to stop work for CONTRACTOR'S failure to maintain Record Drawings as described herein. CONTRACTOR shall make no claim for damages as a result of OWNER stopping work for CONTRACTOR'S failure to maintain Record Drawings.
- C. CONTRACTOR'S failure to maintain Record Drawings as described herein will result in the suspension of Progress Payment(s) until such time as the Record Drawings are made current to the OWNER'S satisfaction. CONTRACTOR shall make no claim for damages as a result of the suspension of Progress Payment(s) due to CONTRACTOR'S failure to maintain Record Drawings.



SC-9.10 Add the following paragraphs immediately after paragraph 9.09:

9.10 Resident Project Representative

- A. The authority and duties of the Resident Project Representative is limited to examining the material furnished and observing the work done, and to report findings to the OWNER and ENGINEER. The OWNER does not underwrite, guarantee or insure the work done by the Contractors, and since it is the Contractor's responsibility to perform the work in accordance with the Contract Documents, the OWNER is not responsible or liable for the Contractor's failure to do so. Failure by any Resident Project Representative or other personnel engaged in on-the-site observation to discover defects or deficiencies in the work of the Contractors shall never relieve the Contractors for liability thereof or subject the OWNER to any liability for any such defect or deficiencies.
- B. Neither Resident Project Representative's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Resident Project Representative in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Resident Project Representative shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Resident Project Representative to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- C. Resident Project Representative will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. Resident Project Representative will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.
- D. Resident Project Representative will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- E. Resident Project Representative's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- F. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to Resident Project Representative's assistants.

SC-11.03.D Delete paragraph 11.03.C. in its entirety and insert the following in its place:

- D. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
 - 1. If the total cost of a particular item of Unit Price Work amounts to 10% or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25% from the estimated quantity of such item indicated in the Agreement;



2. If there is no corresponding adjustment with respect to any other item of Work; and
3. If CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof; or if OWNER believes that the quantity variation entitles OWNER to an adjustment in the unit price, either OWNER or CONTRACTOR may make a claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

SC-14.02.A.1 Revise the submittal date to the 25th of each month.

SC-14.02.A.4 Add the following new paragraph immediately after paragraph 14.02.A.3;

4. The anticipated amount of the next progress payment shall be submitted with each application for payment

SC-14.02.C.1 At the beginning of paragraph 14.02.C.1 Delete "Ten" and put in its place "Twenty".

SC-17.07 Add the following paragraph immediately after paragraph 17.06:

17.07 *Contractor Claims and Third – Party Beneficiaries*

- A. Contractors, subcontractors and equipment and materials suppliers on the PROJECT, or their sureties, shall maintain no direct action against the ENGINEER, its officers, employees, and subcontractors, for any claim arising out of, in connection with, or resulting from the engineering services performed. Only the OWNER will be the beneficiary of any undertaking by the ENGINEER.

END OF DOCUMENT



Document 00811

FEDERAL WAGE RATE DECISION

1.01 In accordance with the Davis-Bacon Act (Public Law No. 403, 7th Congress), the public body awarding this Contract does hereby specify the following to be assigned minimum wage rates which will be paid by the Contractor and all Subcontractors for this Project.

1.02 This prevailing wage rate does not prohibit the payment of more than the rates stated.

1.03 The wage scale for building construction is to be applied to work on a building including an area within 5 feet of the exterior wall.

1.04 The wage scale for engineering construction is to be applied to all site work greater than 5 feet from an exterior wall of new building under construction or from an exterior wall of an existing building.

1.05 The minimum wage rates for this project are duplicated following.



General Decision Number: TX160005 01/08/2016 TX5

Superseded General Decision Number: TX20150005

State: Texas

Construction Type: Residential

Counties: Cameron and Hidalgo Counties in Texas.

RESIDENTIAL CONSTRUCTION PROJECTS (including single family homes and garden apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number Publication Date
0 01/08/2016

** SUTX1990-013 05/01/1990*

	<i>Rates</i>	<i>Fringes</i>
<i>BOILERMAKER.....</i>	<i>\$ 16.35</i>	<i>2.315</i>
<i>BRICKLAYER.....</i>	<i>\$ 7.25</i>	
<i>CARPENTER.....</i>	<i>\$ 7.25</i>	
<i>CEMENT MASON/CONCRETE FINISHER...\$</i>	<i>7.25</i>	
<i>Electricians: (Residential).....\$</i>	<i>7.25</i>	
<i>FLOOR LAYER: Carpet.....\$</i>	<i>7.25</i>	
<i>Insulation Installer.....\$</i>	<i>7.25</i>	
<i>IRONWORKER, REINFORCING.....\$</i>	<i>7.25</i>	
<i>LABORER</i>		
<i> Pipelayer.....\$</i>	<i>7.25</i>	
<i> Unskilled.....\$</i>	<i>7.25</i>	



PAINTER.....\$ 7.25
PLASTERER.....\$ 7.25
Plumbers and Pipefitters.....\$ 8.20
Power equipment operators:
Backhoe.....\$ 7.25
Grader.....\$ 7.25
Loader.....\$ 7.25
ROOFER.....\$ 7.25
Sheet metal worker.....\$ 7.25
Sheet Rock Installer.....\$ 7.25
TILE SETTER.....\$ 7.25
TRUCK DRIVER.....\$ 7.25

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example:



PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.



WAGE DETERMINATION APPEALS PROCESS

1.) *Has there been an initial decision in the matter? This can be:*

- * an existing published wage determination*
- * a survey underlying a wage determination*
- * a Wage and Hour Division letter setting forth a position on a wage determination matter*
- * a conformance (additional classification and rate) ruling*

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

*Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210*

2.) *If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:*

*Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210*

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) *If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:*

*Administrative Review Board
U.S. Department of Labor*



200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

General Decision Number: TX160008 01/08/2016 TX8

Superseded General Decision Number: TX20150008

State: Texas

Construction Types: Heavy and Highway

Counties: Cameron, Hidalgo and Webb Counties in Texas.

HEAVY & HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number Publication Date
0 01/08/2016

* SUTX2011-003 08/02/2011

Rates Fringes

CEMENT MASON/CONCRETE
FINISHER (Paving & Structures)...\$ 12.46

FORM BUILDER/FORM SETTER
(Structures).....\$ 12.30

FORM SETTER (Paving & Curb).....\$ 12.16

LABORER
Asphalt Raker.....\$ 10.61
Flagger.....\$ 9.10



Laborer, Common.....\$ 9.86
Laborer, Utility.....\$ 11.53
Pipelayer.....\$ 11.87
Work Zone Barricade
Servicer.....\$ 12.88

POWER EQUIPMENT OPERATOR:

Asphalt Distributor.....\$ 13.48
Asphalt Paving Machine.....\$ 12.25
Broom or Sweeper.....\$ 10.33
Crane, Lattice Boom 80
Tons or Less.....\$ 14.39
Crawler Tractor.....\$ 16.63
Excavator, 50,000 lbs or
less.....\$ 12.56
Excavator, over 50,000 lbs..\$ 15.23
Foundation Drill, Truck
Mounted.....\$ 16.86
Front End Loader Operator,
Over 3 CY.....\$ 13.69
Front End Loader, 3 CY or
less.....\$ 13.49
Loader/Backhoe.....\$ 12.77
Mechanic.....\$ 15.47
Milling Machine.....\$ 14.64
Motor Grader Operator,
Rough.....\$ 14.62
Motor Grader, Fine Grade....\$ 16.52
Scraper.....\$ 11.07

Servicer.....\$ 12.34

Steel Worker (Reinforcing).....\$ 14.07

TRUCK DRIVER

Lowboy-Float.....\$ 13.63
Single Axle.....\$ 10.82
Single or Tandem Axle Dump..\$ 14.53
Tandem Axle Tractor with
Semi Trailer.....\$ 12.12

WELDER.....\$ 14.02

*WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.*

=====
*Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses*



(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

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new survey is conducted.

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A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

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2.) If the answer to the question in 1.) is yes, then an



interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210*

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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*Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210*

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

END OF SECTION



SECTION 00830

WARRANTY

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section describes the warranty. The conditions contained in this Section are specific administrative and policy requirements in addition to the general conditions and other requirements listed in the contract documents.

1.02 REFERENCES – Not Used

1.03 DEFINITIONS – Section 0700

1.04 CONTRACTOR'S WARRANTY OF TITLE

CONTRACTOR warrants and guarantees that all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

1.05 SUBSTANTIAL COMPLETION

- A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefore. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.
- B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial



Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

1.06 PARTIAL UTILIZATION

- A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.
- B. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers that part of the Work to be substantially complete, the above provisions will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirement of regarding property insurance.

1.07 FINAL INSPECTION

- A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

1.08 FINAL PAYMENT

- A. Application for Payment
 - 1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.
 - 2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to



the evidence of insurance required; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified above and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. Review of Application and Acceptance

If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the above provisions. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

D. Final Completion Delayed

If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required above, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

1.09 WAIVER OF CLAIMS

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to the above, from failure to comply with the Contract Documents or the terms of any special



guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

END OF SECTION



Document 00900

ADDENDUM NO. _____
(Sample Form)

Date of Addendum: _____
[Enter date]

PROJECT NAME: 5310 Sidewalk Project

PROJECT NO: 2016-17-01

BID DATE: December 9, 2016. (There is no change to the Bid Date.)

FROM: City of Weslaco
255 S. Kansas Avenue
Weslaco, Texas 78596
Phone: (956) 447-3403

TO: **Prospective Bidders**

This Addendum forms a part of the Bidding Documents and will be incorporated into Contract Documents, as applicable. Insofar as the original Project Manual and Drawings are inconsistent, this Addendum governs. Acknowledge receipt of the Addendum by inserting its number in Document 00310 - Form of Proposal. **FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.**

Use the following heading and select the appropriate wording for postponement of the Bid Date. Delete the statement beside Bid Date above which indicates that the Bid Date is unchanged. If change in Bid Date, issue as separate addendum. Delete this section entirely if there is no change in Bid Date.

CHANGE IN BID DATE

The bid date for this Project has been changed from _____ to _____
[Date] [Date]

[Time of day and place for submittal of bid remains the same]. [Time of submittal has been changed from _____ to _____. The place for submittal remains the same].
[Time] [Time]

[OR]

The bid date for this project has been indefinitely postponed. Another Addendum will be issued to reset the bid date or to cancel bidding on this Project.

Delete the following paragraph if the sole purpose of the Addendum is to postpone the Bid Date.



This Addendum uses the change page method: remove and replace or add pages, or Drawing sheets, as directed in the change instructions below. Change bars (|) are provided in the right margins of pages from the Project Manual to indicate where changes have been made; no change bars are provided in added Sections. Reissued Drawing Sheets show the Addendum number above the title block and changes in the Drawing are noted by a revision mark.

Number each item of the Addendum beginning with 1 through the total number of change items in the Addendum. Sample entries are provided in brackets.

CHANGES TO PREVIOUS ADDENDA

Reference Addendum Number and item number to correct clarifications or make minor corrections of changes issued by previous Addenda.

ADDENDUM NO. _____

[1. Item 5. Change to read as follows:]

CHANGES TO PROJECT MANUAL

Follow this format to sequence changes to the Project Manual.

BIDDING REQUIREMENTS

Give the individual change instructions for each item of change by Document number and title. List changes in order of Document number.

[2. Document 00020 - Notice to Bidders. Replace page 00020-2.]

CONTRACT FORMS

[3. Document 00610 - Replace revised Performance Bond, page 00610-1.]

CONDITIONS OF THE CONTRACT

[4. Document 00800 - Supplementary Conditions. Replace page 00800-4 and add page 00800-5.]

SPECIFICATIONS

[5. Section 02050 - Demolition. Add section including pages 02050-1 through 02050-3.]



CHANGES TO DRAWINGS

[6. Delete Sheet S-9, Beam Schedule, and replace with Sheet S-9-A.]

CLARIFICATIONS

[7. Document 00100 - Instructions to Bidders states that no substitutions will be considered during the bidding phase. Substitutions will be considered during the first 15 percent of the Contract Time or first 90 days of the Contract, whichever is less, as stated in Document 00700 - General Conditions.]

MINUTES OF PRE-BID CONFERENCE

Minutes of the Pre-Bid Conference held on _____, _____, 20____, are
[Day] [Date]
attached as a record and for the Bidders information.

END OF ADDENDUM NO. _____

Name, P.E. DATED: _____

END OF DOCUMENT



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Document 00910

MODIFICATIONS

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section contains information pertaining to modifications and changes for the Contract Documents for the Project.

1.02 REFERENCES – Not Used

1.03 DEFINITIONS - Section 0700

1.04 MODIFICATIONS OF CONTRACT DOCUMENTS

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) Engineer's approval of a Shop Drawing or Sample; or (iii) Engineer's written interpretation or clarification.
- C. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with Owner: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adoption by Engineer. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

PART 2 - PRODUCT – Not Used

PART 3 - EXECUTION – Not Used

END OF SECTION



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PART 1: GENERAL

1.01 GENERAL:

- A. The Work for this Contract comprises of the roofing repairs of **CITY OF WESLACO PUBLIC LIBRARY ROOFING REPAIRS located at 525 S. KANSAS AVENUE, WESLACO, TEXAS 78596.**

1.02 ASSIGNED CONTRACTS:

- A. Relations and responsibilities between Contractor and assigned subcontractors shall be identical to that between Contractor and subcontractors he has selected.
- B. Assigned subcontractors shall furnish to Contractor bonds covering faithful performance of the subcontract work and payment of all obligations thereunder, when Contractor is required to furnish such bonds to Owner.
- C. Employ subcontractors assigned by the Owner for:
1. None

1.03 WORK BY OTHERS:

- A. Work on the Project will be executed concurrent with the Work of this Contract, and which is excluded from this Contract, are as follows:
1. ***Utilities and Drainage Contract, beyond project site boundaries, unless otherwise indicated on Drawings.***
 2. ***Owner provided and installed F.F.E.***
 3. ***Certain alternates, if not accepted, may be bid separately later.***

1.04 CONTRACTOR'S USE OF PREMISES:

- A. Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on the site.
- B. Move any stored Products, under Contractor's control, which interfere with operations of the Owner and separate contractor.

1.05 PRE-ORDERED PRODUCTS:

- A. None

1.06 OWNER-FURNISHED PRODUCTS:

- A. Products furnished and paid for by the Owner, described in specification sections:
1. Furniture, Fixtures, and Equipment (FFE): Owner furnished; Owner installed.
- B. Owner's Responsibilities:
1. Arrange and pay for products delivery to the site and installation thereof, in accordance with the construction schedule.
 2. Inspect deliveries.
 3. Submit claims for transportation damage.
 4. Arrange for manufacturer's warranties, bonds, services, inspections, as required.
- C. Contractor's Responsibilities:
1. Protect products from exposure to elements and from damage until Substantial Completion.

END OF SECTION

PART 1: GENERAL:

1.01 GENERAL:

- A. Include in the Contract Sum the following allowances and cause the work so covered to be performed in accordance with the Contract Documents.
- B. Refer to Conditions of the Contract for general requirements with regard to allowances. Allowance sum covers materials delivered to the job site only, unless otherwise indicated.
- C. Allowance money may, if required, be returned to the Owner by Change Order for purpose of payment for materials or services specified.
- D. Where allowance is indicated as a cost, this is to establish the quality of material, and Contractor shall be responsible for ascertaining the total quantity required, including waste, necessary to complete the installation.
- E. The amount of each allowance includes:
 - 1. The cost of the Contractor of materials and equipment delivered to the site.
 - 2. All required taxes, unless exempt from State sales tax.
 - 3. Labor required under the allowance, only when labor is specified to be included in the allowance.
 - 4. Respective overhead and profit per Section 00811, Paragraph 7.3.10.
- F. In addition to the amount of each allowance, include in the Contract sum an amount of 6% of the Allowance as Contractor's cost for:
 - 1. Handling at the Site; including unloading, uncrating, and storage.
 - 2. Labor for installation and finishing, except where labor is specified to be a part of the Allowance.
 - 3. Protection from the elements and from damage.
 - 4. Other expenses contemplated or required for stated allowance.
 - 5. Contractor's overhead and profit per Section 00811 paragraph 7.3.10.2.

1.02 CONTINGENCY ALLOWANCE:

- A. Include in the Contract Sum a lump sum CONTINGENCY ALLOWANCE of **FIVE THOUSAND (\$5,000.00) DOLLARS** including respective labor.
- B. At the closeout of Contract, balance of monies remaining in the CONTINGENCY ALLOWANCE and applicable contractor's cost of 6% of the Contingency Allowance balance will be credited to the Owner by Change Order.

END OF SECTION

PART 1: GENERAL:

1.01 DESCRIPTION:

- A. Contractor shall be responsible for all cutting, fitting and patching, including attendant excavation and backfill, required to complete the Work and to make its several parts fit together properly.

1.02 SUBMITTALS:

- A. Submit a written request to Architect well in advance of executing any cutting or alteration which affects the structural value or integrity of any structural element of the Project. Obtain Architect's approval prior to executing any of the foregoing.

PART 2: PRODUCTS:

2.01 MATERIALS:

- A. Comply with applicable specifications section for each specific product involved.

PART 3: EXECUTION:

3.01 INSPECTION:

- A. Report unsatisfactory or questionable conditions to the Architect in writing; do not proceed with the work until the Architect has provided further instructions.

3.02 PREPARATION:

- A. Provide adequate temporary support as necessary to assure the structural value or integrity of the affected portion of the Work.
- B. Provide devices and methods to protect other portions of the Project from damage.
- C. Provide protection from the elements for that portion of the Project which may be exposed by cutting and patching work, and maintain excavations free from water.

3.03 PERFORMANCE:

- A. Execute cutting by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
- B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.
- C. After installation of the Work, carefully fit around, close up, repair, patch and/or point up all such work to match adjoining surface by use of proper tools and materials and by skilled workmen to which the work belongs.
- D. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- E. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
- F. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
- G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes. For continuous surfaces, refinish to nearest intersection. For an assembly, refinish the entire unit.

END OF SECTION

PART 1: GENERAL:

1.01 DESCRIPTION:

A. Work Included:

1. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.
2. Where materials or workmanship are required by these Contract Documents to meet or exceed the specifically named code or standard, it is the Contractor's responsibility to provide materials and workmanship which meet or exceed the specifically named code or standard.
3. It is also the Contractor's responsibility, when so required by the Contract Documents or by written request from the Architect, to deliver to the Architect all required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested in writing by the Architect, and generally will be required to be copies of a certified report of tests conducted by a testing agency approved for that purpose by the Architect.

B. Related Work Described Elsewhere:

Specific naming of codes or standards occurs on the Drawings and in other Sections of these specifications.

1.02 QUALITY ASSURANCE:

A. Familiarity with pertinent codes and standards: In procuring all items used in this work, it is the Contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this work meet or exceed the specified requirements.

B. Rejection of non-complying items: The Architect reserves the right to reject items incorporated into the work which fail to meet the specified minimum requirements. The Architect further reserves the right, and without prejudice to other recourse the Architect may take, to accept non-complying items subject to an adjustment in the Contract Amount as approved by the Architect and the Owner.

C. Applicable standards listed in these specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:

1. AASHTO = American Association of State Highway and Transportation Officials, 341 National Press, Washington, D.C. 20004
2. ACI = American Concrete Institute, Box 19150, Redford Station, Detroit, Michigan 48129
3. AISC = American Institute of Steel Construction, Inc., 1221 Avenue of the American, New York, New York 10020.
4. ANSI = American National Standards Institute (successor to USASI and ASA), 1430 Broadway, New York, New York 10018.
5. ASTM = American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.
6. AWS = American Welding Society, Inc., 2501 N.W. 7th Street, Miami, Florida 33125.
7. AWWA = American Water Works Association, Inc., 6666 West Quincy Avenue, Denver, Colorado 80235.
8. CRSI = Concrete Reinforcing Steel Institute, 228 North LaSalle Street, Chicago, Illinois 60610.

9. CS = Commercial Standard of NBS, U.S. Department of Commerce, Government Printing Office, Washington, D.C. 20402.
10. FGMA = Flat Glass Marketing Association, 3310 Harrison, Topeka, Kansas 66611
11. NAAMM = National Association of Architectural Metal Manufacturers, 1033 South Boulevard, Oak Park, Illinois 60403.
12. NEC = National Electrical Code (see NFPA).
13. NEMA = National Electrical Manufacturers Association, 155 East 44th Street, New York, New York 10017.
14. NFPA = National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210.
15. SDI = Steel Deck Institute, 135 Addison Avenue, Elmhurst, Illinois 60125.
16. SSPC = Steel Structures Painting Council, 4400 5th Avenue, Pittsburgh, Pennsylvania 15213.
17. TCA = Tile Council of America, Inc., P.O. Box 326, Princeton, New Jersey 08540.
18. UL = Underwriter's Laboratories, Inc., 207 East Ohio Street, Chicago, Illinois 60611.
19. FED SPECS and FED STANDARDS:
Specifications Sales (3FRI), Bldg. 197, Washington Navy Yard, General Services Administration, Washington, D.C. 20407.
20. INTERNATIONAL BUILDING CODE 2012 or latest edition. 2009 Energy Conservation Code.
21. NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS:/CURRENT EDITION
22. INTERNATIONAL PLUMBING CODE – 2012 or latest edition.
23. ANSI A 17.1, -Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks; and Supplement ANSI A17.1a, current edition.
24. American Society of Heating, Refrigerating and Air Conditionings Engineers ANSI/ASHREA/IES Standard 90.1-2010- Energy Conservation in New Building Design, current edition.
25. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHREA)-Standard No.52- - Methods of Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter , current edition.
26. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHREA)-Handbook of Applications, current edition.
27. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHREA)-Handbook of Fundamentals, current edition.
28. American Society for Testing and Materials (ASTM)-Standard No.E 84- Method of Test for Surface Burning Characteristic of Building Materials, current edition.
29. INTERNATIONAL MECHANICAL CODE – 2012 or latest edition.
30. National Bureau of Standards (NBS) (available through GPO - Technical No.#708 - Appendix II, GPO SD Catalog No. C13.45, 708, NTIS COM:72:50062-Inner Laboratory Evaluation of Smoke Density Chamber. Appendix II-Test Method for Measuring the Smoke Generation Characteristics of Solid Materials.

31. Underwriter's Laboratories, Inc. (UL) - Standard No.181, - Factory Made Air Duct Material and Air Duct Connectors.
32. State Purchasing and General Services Commission-Commission's Rules and Regulations for the Elimination of Architectural Barriers.
33. Texas Department of Licensing and Regulation, Texas Architectural Barriers Act.

END OF SECTION

PART 1 - GENERAL:

1.01 SCOPE:

- A. Quote as additions or deductions to the Base Proposal, Alternates to the various sections of the Work, which may be included in the Contract Price.
- B. Price all Alternates complete, furnished and installed, including taxes, insurance, overhead and profit. Alternates shall be listed in the order shown on Proposal Form and shall be shown as one figure only; that is, the credit and/or extra involved for any one alternate shall have been reconciled into one figure, which can at Owner's option be added to (or deducted from - as the case may be) the Base Proposal, thus deleting or adding the applicable work in Proposal.
- C. Include in the price quoted for each Alternate, any changes required in other Sections as a result of the Alternate.
- D. Refer to the respective Section for complete Specifications of each Alternate.
- E. If an Alternate is accepted, it shall be included as a part of the Contract Documents.

ALTERNATE NO. 1 ELASTOMERIC COATING ON STUCCO WALLS:

ALTERNATE NO. 2 METAL CANOPY:

END OF SECTION

PART 1: GENERAL:

1.01 GENERAL:

- A. Submit Applications for Payment to Architect for each site in accordance with the schedule established by Conditions of the Contract and Agreement Between Owner and Contractor.
- B. Submit applications on original AIA DOCUMENT G702 - Application and Certificate for Payment. Use AIA DOCUMENT G703 for Architect approval of itemized schedule of values. Forms can be downloaded via www.lrgv.org/documents/.
- C. ***Application for payment shall also be accompanied by a written notarized statement from the surety confirming that the surety has reviewed the application for payment and approves, without reservation, of its payment by the Owner.***

1.02 PREPARATION OF APPLICATION:

- A. Application Form:
 - 1. Fill in required information, including that for Change Orders executed prior to the date of submittal of application.
 - 2. Fill in summary of dollar values to agree with the respective totals indicated on the continuation sheets.
 - 3. Indicate percentage of retainage for completed work and for stored materials as agreed upon in the Owner-Contractor Agreement.
 - 4. Execute notarized certification with the signature of a responsible officer of the Contract firm.
- B. Continuation Sheets:
 - 1. Fill in total list of all scheduled component items of Work, with item number and the scheduled dollar value for each item.
 - 2. Fill in the dollar value in each column for each scheduled line item when work has been performed or products presently stored.
 - a. Round off values to nearest dollar, or as specified for the Schedule of Values.
 - 3. List any change to Contract Sum or Allowance and description, executed prior to the date of submission, at the end of the continuation sheets unless otherwise agreed upon.
- C. Construction Schedule:
 - 1. **Provide original construction schedule with first application for payment.**
 - 2. **With subsequent applications provide updated construction schedule indicating deviations from original construction schedule.**

1.03 SUBMITTAL PROCEDURE:

- A. Submit three (3) notarized, original AIA – G702 Application and Certificate for Payment to Architect at the times agreed upon in Pre-Construction meeting.
- B. When Architect finds the Application properly completed and correct, he will transmit a certificate of payment to Owner. If an adjustment in the requested amount is made, he will advise the Contractor in writing.

END OF SECTION

PART 1: GENERAL:

1.01 PROPOSED CHANGES:

- A. Upon discovery of circumstances or conditions leading to the conclusion that a construction change should be made, the Architect will issue a Request for Change Order Proposal (R.F.P.) form.
- B. Any work done by Contractor not authorized by the Owner shall be subject to removal at the Contractor's expense.
- C. Upon determination that a proposed change appears feasible, the Architect will assign a R.F.P. number and log the information. The Architect will then prepare necessary drawings, specifications or descriptions as required for pricing.
- D. The Architect will forward the package to the Contractor for pricing. Typically, ten (10) working days will be allowed for pricing; however, additional time will be allowed for more extensive changes.
- E. **The Contractor shall submit his price proposal along with all required back-up information to the Architect. The submittal shall include separate breakdowns for general contract and subcontract work.**
- F. **The breakdowns shall show materials by quantities and unit prices. Cost including labor, tax, insurance mark-ups, and equipment costs. Overhead and profit shall be shown separately. Quotation shall include all costs. No additional costs will be allowed for a proposed change.**
- G. The Contractor's proposed change quotations will be reviewed by the Architect within a reasonable amount of time, usually not more than ten (10) working days. Conformance with the contract and the proposed change documents, as well as material, labor and equipment quantities and costs, and allowed mark-up percentages will be verified. Requests for additional time will also be evaluated based on the contractor's written evidence submitted along with a revised construction schedule proving impact on final completion date. Lack of such written evidence shall cause the request for time extension to be rejected. In case of differences, discrepancies, errors, etc. the Contractor will take action to obtain necessary revisions or corrections to the quotation.
- H. "Cost of Doing business" items such as, but not limited to, supervision, field and home office expenses, warranty reserve, clean-up, and expendable supplies are a part of the overhead expense and as such shall not be included as a part of the change order proposal.
- I. Bond premiums may be included as an expense item in an additive R.F.P. if also included in a deductive R.F.P. Percentage allowed shall be limited to actual percentage paid by General Contractor to bonding agent. Premiums for subcontractor bonds, if required by General Contractor, shall not be passed on the Owner.
- J. When a price quotation has been considered acceptable, the Architect will forward his recommendations and all back-up information to the Owner. A recommendation either for or against the proposed change will accompany this submittal from the Architect.

1.02 AUTHORIZATION FOR CONSTRUCTION TO PROCEED:

- A. Within a reasonable time, the Owner will notify the Architect whether the change will be implemented. If the change is approved, the Architect will issue a Change Order. The Change Order may be issued, at the Architect's discretion, immediately or in conjunction with several other approved RFP's if considered appropriate.

END OF SECTION

PART 1 - GENERAL:

1.01 DESCRIPTION:

- A. Contractor shall schedule and administrate monthly or bi-weekly Architect Owner Contractor (AOC) meetings, and special called meeting throughout the progress of the project.
 - 1. Prepare agenda for meetings.
 - 2. Distribute written notice of each meeting and the agenda four (4) working days in advance of meeting date.
 - 3. Make physical arrangements for meetings.
 - 4. Preside at meetings.
 - 5. Record the minutes; include all significant proceedings and decisions.
 - 6. Reproduce and distribute copies of minutes within three (3) working days after each meeting.
- B. Representative of contractors, subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. Architect's and Owner's Representative may attend meetings.

1.02 PRE-CONSTRUCTION MEETING:

- A. Architect shall schedule a Pre-Construction meeting within fifteen (15) days after date of Notice to Proceed.
- B. Location: As agreed upon by all parties.
- C. Attendance:
 - 1. Owner's Representative.
 - 2. Architect and his professional consultants.
 - 3. Contractor's project manager and superintendent.
 - 4. Major Subcontractors.
 - 5. Others as appropriate.

1.03 PROGRESS MEETINGS:

- A. Schedule regular bi-weekly or monthly meetings at **a scheduled time** on an agreed upon date.
- B. Hold called meetings as required by progress of the Work.
- C. Location of the meetings: on site or designated meeting place.
- D. Attendance:
 - 1. Owner representative.
 - 2. Architect and his professional consultants needed.
 - 3. Contractor's project manager and superintendent.
 - 4. Subcontractors and suppliers as appropriate to agenda.
 - 5. Others as appropriate.

END OF SECTION

PART 1: GENERAL:

1.01 DESCRIPTION:

A. Work Included:

1. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined by manufacturer's name and catalog numbers, reference to recognized industry and government standards, or description of required attributes and performance.
2. To ensure that the specified products are furnished and installed in accordance with design intent, procedures have been established for advance submittal of design data and for their review by the Architect.
3. Make all submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements. Submittals should include cut sheets of original specified items.
4. ***Product substitutions request shall be submitted no later than 7 days prior to opening of Bids (Proposals) as noted in Section 00020.***

B. Related Work Described Elsewhere: Individual requirements for submittals are described in pertinent other Sections of these Specifications.

1.02 QUALITY ASSURANCE:

A. Coordination of Submittals: Prior to each submittal, carefully review and coordinate all aspects of each item being submitted and verify that each item and the submittal for it conforms in all respects with the requirements of the Contract Documents. By affixing the Contractor's signature to each submittal, Contractor certifies that this coordination has been performed. Contractor shall approve all submittals prior to submission to Architect. Contractor shall verify all dimensions and conditions on the job.

B. Certificate of Compliance:

1. Certify that all materials used in the work comply with all specified provisions thereof. Certification shall not be construed as relieving the Contractor from furnishing satisfactory materials if, after tests are performed on selected samples, the material is found to not meet specified requirements.
2. Show on each certification the name and location of the work, name and address of Contractor, quantity and date or dates of shipment or delivery to which the certificate applies, and name of the manufacturing or fabricating company. Certification shall be in the form of letter or company-standard forms containing all required data. Certificates shall be signed by an officer of the manufacturing or fabricating company.
3. In addition to the above information, all laboratory test reports submitted with Certificates of Compliance shall show the date or dates of testing, the specified requirements for which testing was performed, and results of the test or tests.

1.03 SUBMITTALS:

A. Submittals Schedule: Provide submittal schedule with first Application for Payment, and before any

- items are submitted for approval, submit to the Architect two copies of the schedule described in Article 2.01 of this Section.
- B. Certification of Compliance: Upon completion of the Work, and as a condition of its acceptance, submit to the Architect all Certificates of Compliance.
- C. Procedures: Make submittals in strict accordance with the provisions of this Section.

PART 2: PRODUCTS:

2.01 SUBMITTAL SCHEDULE:

- A. General: Compile a complete and comprehensive schedule of all submittals anticipated to be made during progress of the work. Include a list of each type of item for which Contractor's drawings, shop drawings, Certificates of Compliance, material samples, guarantees, or other types of submittals are required. Upon approval by the Architect this schedule will become part of the Contract and the Contractor will be required to adhere to the schedule except when specifically, otherwise permitted. **Submittals will not be processed & reviewed until schedule is received.**
- B. Coordination: Coordinate the schedule with all subcontractors and materials suppliers to ensure their understanding of the importance of adhering to the approved schedule. Coordinate as required to ensure the grouping of submittals as described in Paragraph 3.02 below.
- C. Revisions: Revise and update the schedule on a monthly basis as necessary to reflect conditions and sequences. Promptly submit revised schedule to the Architect for review and comment with each application for payment.
- D. It is the Contractor's responsibility to notify the Architect in writing if and when the submittal not returned from review are going to impact the construction schedule.

2.02 SHOP DRAWINGS AND COORDINATION DRAWINGS:

- A. Shop Drawings:
1. Scale and Measurements: Make all shop drawings accurately to a scale sufficiently large to show all pertinent aspects of the items and its method of connection to the work (construction document drawings shall not be traced, copied or reproduced).
 2. Type of Prints Required: Submit two printed copies and one reproducible (vellum) of each submittal.
 3. Review of Shop Drawings: All review comments of the Architect will be shown on the reproducible drawings when it is returned to the Contractor. The Contractor shall be responsible for making all copies required for his purpose and distributing them to the subcontractors & suppliers.
 4. Failure to submit one printed & one reproducible copy will cause the submittal to be returned unchecked.

2.03 MANUFACTURERS' LITERATURE:

- A. General: Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, **clearly indicate which portion of the contents is being submitted for review. Highlight pertinent information with green highlighter.**
- B. Number of Copies Required: **Submit number required by the general contractor for**

construction plus one copy for architect, one copy for consultants, one copy for owner.
General contractor copies will be returned to the contractor with all review comments of the architect and respective consultant.

2.04 SAMPLES:

- A. Accuracy of Samples: Samples shall be of the precise article proposed to be furnished.
- B. Number of Samples Required: Unless otherwise specified, submit all samples in the quantity which is required to be returned plus two (2) which will be retained by the Architect.
- C. Reuse of Samples: In situations specifically so approved by the Architect, the Architect's retained sample may be used in the construction as one of the installed items.

2.05 COLORS AND PATTERNS:

- A. Unless the precise color and pattern is specifically described in the Contract Documents, and whenever a choice of color pattern is available in a specified product, submit accurate color and pattern charts to the Architect for review and selection.

2.06 SUBSTITUTIONS:

- A. Approval Required:
 - 1. The Contract is based on the standards of quality established in the Contract Documents.
 - 2. All products proposed for use, including those specified by required attributes and performance, shall require approval by the Architect before being incorporated into the work.
 - 3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this work by the Architect.
 - 4. ***Product substitution requests shall be submitted no later than 72 hours prior to Opening of Bids (Proposals) as noted in Section 00020.***
- B. "Or Equal":
 - 1. Where the phrase "or equal" or "or equal as approved by the Architect" occurs in the Contract Documents, do not assume that materials, equipment, or methods will be approved as equal unless the item has been specifically approved for this work by the Architect.
 - 2. The decision of the Architect will be final.
 - 3. It is the Contractor's responsibility to compare all aspects of the substitute and prove the substitute is equal.
 - 4. Coordinate submission of submittals with the different submittals related to the parts of Work so that the submittal will proceed according to the submittal schedule.
 - 5. Processing of submittal which contain finishes for selection will not begin until all related

submittals are received.

2.07 DEVIATIONS:

- A. Clearly note, in written form, any deviations from the contract documents.

2.08 COMPLIANCE:

- A. Clearly mark specific items which are submitted in compliance with the contract documents.

PART 3: EXECUTION:

3.01 IDENTIFICATION OF SUBMITTALS:

- A. General: Identify each submittal with specification section number and project name. Accompany each submittal with a letter of transmittal containing all pertinent information required for identification and check of submittals.
- B. Internal Identification: On at least the first page of each copy of each submittal, and elsewhere as required for positive identification, clearly indicate the submittal specification section number in which the item was included.
- C. Resubmittals: When material is resubmitted for any reason, transmit under a "REVISED" letter of transmittal and with a "REVISED" submittal specification section number. (e.g.: 03100 becomes 03100R-1)
- D. Submittal Log: Maintain an accurate submittal log for the duration of the Contract, showing current status of all submittals at all times. Make the submittal log available for the Architect's review upon request.

3.02 COORDINATION OF SUBMITTALS:

- A. Coordinate, prepare, and process submittals in accordance with work to be performed.
- B. General: Prior to submittal for approval, use all means necessary to fully coordinate all materials and work task activities including, but not necessarily limited to:
 - 1. Determine and verify all conditions, catalog numbers, and similar data.
 - 2. Coordinate with other trades as required.
 - 3. Clearly indicate all deviations from requirements of the Contract Documents.
- C. Grouping of Submittals: Unless otherwise specified, make all submittals in groups containing all associated items to ensure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying with the provisions of the Contract Documents and the Contractor shall be strictly liable for all delays so occasioned.

3.03 SUBMITTAL SCHEDULE:

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmitted, ordering, manufacturing, fabrication, and delivery when establishing dates.
 - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and

Contractor's Construction Schedule.

2. Material Submittal: Submit all material submittals required to maintain orderly progress of the Work and those required early because of long lead-time for manufacture or fabrication or for final color selection.

3.04 TIMING OF SUBMITTALS:

- A. General: Make all submittals far enough in advance of scheduled dates for installation to provide all time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery. Allow time for the above tasks in construction submittal schedule.
- B. Submittal time schedules: Submittals shall be provided to architect for project based on:
 - 3 months to 6-month projected completion 1 month from date of contract for items requiring color selection and 2 months for other items.***
 - 7 months to 12-month projected completion 2 months from date of contract for items requiring color selection and 3 months for other items.***
 - 13 months to 16-month projected completion 3 months from date of contract for items requiring color selection and 4 months for other items.***
 - over 17 months projected completion 4 months from date of contract for items requiring color selection and 5 months for other items.***
- C. Architect's Initial Review Time: In scheduling, allow at least fifteen (15) working days for initial review by the Architect following receipt of the submittal. Items requiring color coordination will be delayed pending receipt of all items that require color coordination and owner approval.
- D. Consultant's review time: In scheduling allow at least (20) work days for initial review of each submittals.
- E. Delays: Delays caused by tardiness in receipt of submittals will not be an acceptable basis for extension of the Contract completion date.

3.05 ARCHITECT'S REVIEW:

- A. General: Review by the Architect shall not be construed as a complete check, but only that the general method of construction and detailing is satisfactory. Review shall not relieve the Contractor from responsibility for errors which may exist.
- B. Authority to Proceed: The notations "**no exception taken**" or "**make corrections noted**" authorize the Contractor to proceed with fabrication, purchase, or both, of the items so noted, subject to the revisions, if any, required by the Architect's review comments.
- C. Revisions: Make all revisions required by the Architect. If the Contractor considers any required revision to be a change, he shall so notify the Architect as provided for under "Changes" in the General Conditions before proceeding with the work. Show each drawing revision by number, date, and subject in a revision block on the drawing. Make only those revisions directed or approved by Architect.

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SECTION 01300

SUBMITTALS & SUBSTITUTIONS

- D. Revisions after Approval: When a submittal has been reviewed by the Architect, resubmittal for substitution of materials, or equipment, will not be considered.

END OF SECTION

PART 1: GENERAL:

1.01 CONSTRUCTION SCHEDULE:

- A. The Contractor shall, within thirty (30) working days after Notice to Proceed, prepare and submit to the Owner and Architect for approval, a practicable Work Schedule, showing the order in which the Contractor proposes to carry on the Work and the time at which the several milestone features will be started and completed.
- B. The Contractor shall incorporate into this analysis that work being performed by each subcontractor so that all work involved is shown in the schedule for the complete project.
- C. Activities shown on the schedule shall consist not only of the actual construction operations, but will include also the submittal of shop drawings and samples, procurement of materials and equipment and installation and testing of major and critical items.
- D. Activities of the Owner that affect the progress, such as approvals and the deliveries of Owner-furnished materials shall also be shown.
- E. Related activities shall be grouped on the schedule for simplification. The selection of activities will be subject to approval by the Owner and Architect.
- F. For each activity there shall be listed an earliest and latest start time, the earliest and latest finish time and the slack time.
- G. During progress of the work, any changes in the original schedule desired by the Contractor must be approved by the Owner and Architect before being put into effect.
- H. When changes in the work are required and directed by the Owner and Architect under applicable paragraphs of this Contract, the original schedule may if required, be revised without delay to incorporate such changes, or new work, and indicate the effect, if any, thereof on the Project as a whole. The cost of such schedule change shall be considered as part of the overhead cost of revised work.
- I. If the Contractor falls behind the original Schedule, the Contractor shall take such steps as may be necessary to improve the progress, which may require the contractor to increase the number of shifts, and/or overtime operation, days of work and/or the amount of construction plant, and to submit for approval revised schedules in the form above in order to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the Owner.

END OF SECTION

PART 1: GENERAL:

1.01 GENERAL:

- A. The Contractor shall submit to the Architect upon request, Daily Reports, wherein the following data is provided relative to his work and the Work of his Subcontractors:
1. Location and description of work being performed.
 2. Problems, if any, encountered during the course of the day's work.
 3. Number of personnel on job for Contractor and each Subcontractor (broken down as to the number of journeymen, apprentices, etc.).
 4. Temperature and weather conditions.
 5. Report of any accident or accidents that may have occurred during the reporting period.
 6. General description of delivery of material to be stored on site.

END OF SECTION

PART 1: GENERAL:

1.01 RELATED DOCUMENTS:

- A. Related Documents:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY:

- A. This Section includes administration and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
1. Preliminary Construction Schedule.
 2. Contractor's Construction Schedule.
 3. Submittal Schedule.
 4. Daily construction reports.
 5. Material location reports.
 6. Field condition reports.
 7. Special reports.
 8. Construction photographs.
- B. Related Sections include the following:
1. Division 1 Section Schedule of Values for submitting the Schedule of Values.
 2. Division 1 Section "Project meetings" for submitting and distributing meeting and conference minutes.
 3. Division 1 Section "Submittal and Substitutions" for submitting schedules and reports.
 4. Division 1 Section "Testing Laboratory Services" for submitting a schedule of tests and inspections.
 5. Division 1 Section "Contract Closeout" for submitting photographic negatives as Project Record Documents at Project closeout.

1.03 DEFINITIONS:

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determined when activities can be performed and the critical path of Project.
- C. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.

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- E. Float the measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

- F. Fragment: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

- G. Major Area: A story of construction, a separate building, or a similar significant construction element.

- H. Milestone: A key or critical point in time for reference or measurement.

- I. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

1.04 SUBMITTALS:

- A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format.
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's final release or approval.

- B. Contractor's Construction Schedule: The construction schedule shall be in the form of a CPM. Provide the CPM in graphic flow chart format along with reports. Submit two copies of the CPM in printed form and one in reproducible form. Concurrent with CPM schedule, submit three printed copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float.
 - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 - 3. Total Float Report: List of all activities sorted in ascending order of total float.

- C. Daily Construction Progress Reports: Contractor shall maintain a daily log on the site. It shall be available for review by the Architect and Owner at any time during normal working hours.

The Contractor shall submit to the Architect upon request, Daily Reports, wherein the following data is provided relative to the work and the Work of the Subcontractors:

- 1. Location and description of work being performed.

2. Problems, if any, encountered during the course of the day's work.
 3. Number of personnel on job for Contractor and each Subcontractor (broken down as to the number of journeymen, apprentices, etc.).
 4. Temperature and weather conditions.
 5. Report of any accident or accidents that may have occurred during the reporting period.
 6. General description of delivery of material to be stored on site.
- D. Material Location Reports: Should materials be stored off site for which the contractor is requesting payment, a complete inventory of the material shall be made. Each month the off-site inventory continues to be stored off-site then the report shall be maintained including the description of the material, the location of the material and a certification by the General Contractor that he has inventoried and examined the material at the location and certifies to the correctness of the report. The General Contractor shall accompany the Architect each month to verify the inventory prior to the progress payment.

1.05 COORDINATION:

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from parties involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

END OF SECTION

PART 1: GENERAL:

1.01 SUMMARY:

- A. Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.
- B. RELATED WORK:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Preparation and submittal of a Schedule of Values is required by the General Conditions.
 - 3. Schedule of Values is required to be compatible with the "Continuation Sheet" accompanying Applications for Payment, as described in Section 01152.

1.02 SUBMITTAL:

- A. With first Application for Payment, submit a proposed Schedule of Values to the Architect.

1.03 QUALITY ASSURANCE:

- A. Use required means to assure arithmetical accuracy of the sums described.
- B. When so required by the Architect, provide copies of the subcontracts or other data acceptable to the Architect, substantiating the sums described.

END OF SECTION

PART 1: GENERAL:

1.01 CONSTRUCTION PHOTOGRAPHS:

- A. Construction progress photographs shall be taken once a month with the time, direction of view and vantage points noted, **and submit to architect at monthly construction meeting.**
- B. Photograph from locations to adequately illustrate the condition of construction and the state of the Project.
 - 1. At successive periods of construction, take at least one photograph from the same overall view as previously and other locations to demonstrate the daily activity of construction please submit photos in electronic format in form of DVD.

END OF SECTION

PART 1: GENERAL:

1.01 SCOPE:

- A. Furnish, install and maintain temporary utilities required for construction; remove on completion of Work.

1.02 TESTING:

- A. All power, water, light or heat required for testing of Architectural, Structural, Mechanical and Electrical Work shall be paid for by the Contractor.

1.03 REQUIREMENTS OF REGULATORY AGENCIES:

- A. Comply with National Electric Code.
- B. Comply with Federal, State and local codes and regulations and with utility company requirements.

PART 2: PRODUCTS:

2.01 MATERIALS, GENERAL:

- A. Materials and equipment may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

2.02 TEMPORARY ELECTRICITY AND LIGHTING:

- A. Provide connections and temporary metering, size to provide services required for power and lighting; Contractor shall pay for the costs of power used for construction.
- B. Install ground fault interrupting circuit(s) and branch wiring, with area distribution boxes located so that power and lighting is available throughout the construction using construction-type power cords.
- C. Provide adequate artificial lighting for all areas of work when natural light is not adequate for work.
- D. Each Sub-contractor shall provide its own extension cords and any additional lighting that may be required to complete its work.
- E. Prior to final inspection remove temporary lamps and install new lamps if permanent fixtures were used for temporary lighting.

2.03 TEMPORARY HEAT AND VENTILATION:

- A. Provide temporary heat and ventilation as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials, and to protect materials and finishes from damage due to temperature or humidity.
- B. Provide adequate forced ventilation of enclosed areas for curing of installed materials to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors or gases.
- C. Portable heaters shall be standard U.L. approved units complete with controls. Pay all costs of installation, maintenance, operation and removal, and for fuel consumed.

2.04 TEMPORARY TELEPHONE SERVICE:

- A. Arrange with local telephone service company, provide direct line telephone service at the construction site for the use of personnel and the Architect.
- B. List telephone with information operator in the name of the Project and in the name of the Contractor.
- C. Pay all costs for installation, maintenance and removal, and service charges for local calls. Contractor may install a pay telephone for sub-contractors use.

2.05 TEMPORARY WATER:

- A. General Contractor shall provide water at site for construction purposes; General Contractor will pay costs of water used for construction.
- B. General Contractor shall provide potable drinking water at the site.

2.06 TEMPORARY SANITARY FACILITIES:

- A. Provide and maintain adequate temporary outside toilet facilities for use of persons working at the Site, same shall be padlocked at all times when no construction personnel are on Site.
- B. Keep toilets clean and in sanitary condition. Provide toilet tissue in suitable holders. Comply with applicable legal, health and OSHA requirements.

2.07 TEMPORARY FIRE PROTECTION:

- A. Observe and enforce throughout the work during the whole period of construction all requirements of the local City and State Fire Marshal and Insurance Authorities to minimize the fire hazard during the progress of the work.

PART 3: EXECUTION:

3.01 GENERAL:

- A. Comply with applicable requirements specified in Division 15 - Mechanical, and in Division 16 - Electrical.
- B. Maintain and operate systems to assure continuous service.
- C. Modify and extend systems as work progress requires.

3.02 REMOVAL:

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installation or use of temporary facilities.
- C. Restore permanent facilities used for temporary services to specified condition.

END OF SECTION

PART 1: GENERAL:

1.01 SCOPE:

- A. Furnish, install and maintain temporary personnel, traffic and materials handling facilities required for construction; remove on completion of Work.

1.02 REQUIREMENTS OF REGULATORY AGENCIES:

- A. Comply with Federal, State and local codes and regulations and with utility company and insurance agencies' requirements.

PART 2: PRODUCTS:

2.01 MATERIALS, GENERAL:

- A. Materials and equipment may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.
- B. Provide and maintain signs to prevent damage or injury. Surround site with signs warning of construction hazards at intervals not greater than 200' apart.
- C. Should it become necessary to remove runways, safety handrails, or other safety items it will be that Contractor's responsibility to replace the runway, safety handrails, or other safety items, immediately in keeping with OSHA standards.
- D. Pay all costs for installation, maintenance relocation and removal, and service charges for rented equipment.

2.02 SCAFFOLDING:

- A. Erect and maintain in a safe manner scaffolding, ramps, runways, platforms, guards, rails, stairs and ladders as necessary for the work.

2.03 LIFTING AND HOISTING:

- A. Provide hoists, temporary elevators, lifts, cranes and towers necessary for expediting the handling of materials.
- B. Install lifting and hoisting equipment to meet applicable safety requirements.

2.04 PUMPING AND DRAINING:

- A. Keep working and storage areas free from water that could cause damage or that would interfere with work.
- B. Do not pump or drain water onto adjacent property. Distribute discharge to prevent excessive erosion.

PART 3: EXECUTION:

3.01 GENERAL:

- A. Maintain and operate systems to assure continuous service.
- B. Modify and extend systems as work progress requires.

3.02 REMOVAL:

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Restore permanent facilities used for temporary services to specified condition.

END OF SECTION

PART 1: GENERAL:

1.01 FENCING AND BARRICADES:

- A. Provide proper and adequate barricades, runways, safety handrails, fencing or other safety items to protect and provide access in or around the site by other than construction personnel. Non construction personnel must be accompanied by general contractor, architect or architect representative, owner or owner representative.
- B. Provide all vertical shafts with safe, temporary railings and supports, adequately braced.
- C. Cover trenches and holes when not in use. Erect barriers at sharp changes in plane more than 3 feet high.

1.02 CONSTRUCTION FENCE:

- A. Provide a construction fence around the structure and material storage areas to prevent unauthorized entry to the construction site.
- B. Install fence at the beginning of excavation operations and maintain in good condition until removal is approved by the Architect.
- C. Unless otherwise required by local codes or ordinances, construct wire mesh fence a minimum of 8'-0" high with securely anchored line, corner and gate posts.
- D. Provide a minimum number of gates which will be padlocked shut during nonworking hours.
- E. Locate pedestrian entrance gates as required to provide controlled personnel entry, in suitable relation to construction parking facilities.

1.03 REMOVAL:

- A. Completely remove barricades and other safety barriers including foundations, when construction has progressed to the point that they are no longer needed, and when approved by Architect.
- B. Clean and repair damage caused by installation, fill and grade the areas of the Site to required elevations and slopes, and clean the area.

END OF SECTION

PART 1: GENERAL:

1.01 MANUFACTURER'S INSTRUCTIONS:

- A. When Contract Documents require that installation of work shall comply with manufacturer's instructions, obtain and distribute copies of such instructions to parties involved in the installation, including three (3) copies to the Architect.
 - 1. Maintain one set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Architect for further instructions.
 - 2. Do not proceed with work without clear instructions.
- C. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.02 DELIVERY OF MATERIALS:

- A. All materials shall be delivered in their original, unopened, containers which shall bear the seal, trademark or hallmark of the respective associations or councils and the identification label of the manufacturer.
- B. The Contractor shall inspect all materials upon their arrival at the job and see that they conform to the requirements of these Specifications and prevent the unloading of unsatisfactory material or promptly remove same from the premises without waiting instruction from the Architect to do so.
- C. Time deliveries and unloading to prevent traffic congestion and blocking of access, and to avoid interferences and delays in work.
- D. Provide for continuity of any phase of work. Sufficient quantities for completion of a phase shall be on the Project Site before that phase is started.
- E. Pack and handle materials to prevent damage during delivery. Store materials at designated locations to avoid interference with work and arrange in order of intended use.

1.03 STORAGE AND PROTECTION:

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weathertight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- B. Exterior Storage:
 - 1. Store fabricated products above the ground, on blocking or skids, to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
 - 2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- D. After installation provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

END OF SECTION

PART 1: GENERAL:

1.01 SUBSTITUTIONS:

- A. Bids or proposals shall be based upon providing the specified materials, processed products, persons or organizations, etc., identified in this Specification and/or indicated on the Drawings.
- B. Product substitution requests shall be submitted no later than 7 days prior to Opening of Bids (Proposals) as noted in Section 00020.**
- C. The burden of proof of equality rests with the Contractor, and supporting technical literature, samples, drawings and performance data must be submitted with each request for substitutions.
- D. The Owner and/or Architect reserve the right to accept or reject proposed substitutions. Each request shall state the amount of savings to the Owner, if the substitution is approved.
- E. Cost of any testing required for analysis of proposed substitution shall be paid for by the Contractor at a testing agency selected and approved by the Architect.
- F. Should a substitution be accepted, the Contractor shall be responsible to make all necessary adjustments in the Work which may be affected as a result of the substitution at no additional cost to the Owner.
- G. Should a substitution be accepted and this substitution prove to be defective within the one year guarantee period, the Contractor shall replace the substituted material with that specified and bear the costs incurred thereby.

1.02 PRODUCT OPTIONS:

- A. Contractor's Options:
 - 1. For Products specified only by reference standard, select any product meeting that standard.
 - 2. For Products specified by naming several products or manufacturers, select any one of the products, or manufacturer's names, which complies with the Contract Documents.
 - 3. For Products specified by naming only one Product or manufacturer, Contractor must submit a request as for substitutions for any Product or manufacturer not specifically named.
 - 4. For Products specified by naming only one Product and manufacturer and indicated as "no substitute", there is no option.
- B. Submit a separate request for each Product Substitution, supported with complete data, with drawings and samples as appropriate, including:
 - 1. Comparison of the qualities of the proposed substitution with that specified.
 - a. Cutsheets & supporting data of specified product.
 - b. Cutsheets & supporting data of proposed product substitution.
 - 2. Changes required in other elements of the work because of the substitution.
 - 3. Effect on the Construction Schedule.

4. Cost data comparing the proposed substitution with the Product specified.
 5. Any required license fees or royalties.
 6. Availability of maintenance service, and source of replacement materials.
- C. A request for a substitution constitutes a representation that Contractor:
1. Has investigated the proposed Product and determined that it is equal to or superior in all respects to that specified.
 2. Will provide the same warranties or bonds for the substitution as for the Product specified.
 3. Will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work complete in all respects.
 4. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.
- D. Architect will review requests for substitutions with reasonable promptness, and notify Contractor, in writing, of the decision to accept or reject the requested substitution.

END OF SECTION

PART 1: GENERAL:

1.01 REQUIREMENTS:

- A. Comply with requirements stated in Conditions of Contract and in Specifications for administrative procedures in closing out the Work.
- B. Related requirements in other parts of the Project Manual:
1. Fiscal provisions, legal submittals and additional administrative requirements: Conditions of the Contract.
- C. Related requirements specified in other Sections:
1. CLEANING: Section 01710.
 2. PROJECT RECORD DOCUMENTS: Section 01720
 3. OPERATING AND MAINTENANCE DATA: Section 01730
 4. WARRANTIES AND BONDS: Section 01740
 5. CONTRACTOR'S ASBESTOS FREE AFFIDAVIT: Section 01800
- D. General Contractor to provide the following:
- 1.) 5 DVD sets containing PDF files, organized in a PDF portfolio, containing all pertinent information in this section and related sections. File naming and organization should be as per Rike Ogden Figueroa Alex Architect's Closeout Document - Electronic Submission Form (attached).
 - 2.) 1 Set of hard copies in binders divided into tap sections organized and named in the same way as folders are in the electronic submissions.
 - 3.) AS-BUILT drawings and specifications incorporating all addenda's, approved change proposals/change orders, Architectural Supplemental Instructions (ASI), and Request For Information (RFI).

1.02 SUBSTANTIAL COMPLETION:

- A. When Contractor considers the Work is substantially complete, he shall submit to Architect, written notice that the Work, or designated portion thereof, is substantially complete and include a list of items (Contractor's punchlist) that have already been addressed.
- B. Within 10 working days of receipt of such notice, Architect will review the work to determine the status of completion.
- C. Should Architect determine that the work is not substantially complete:
1. Architect will promptly notify the Contractor in writing, giving the reasons therefore including list of items to be completed or corrected.
 2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Architect.
 3. Architect will re-review the Work.
- D. When Architect concurs that the Work is substantially complete, the architect will:
1. Prepare a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Architect.

2. Submit the Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.

1.03 CONTRACTOR CERTIFICATION OF FINAL COMPLETION:

- A. When Contractor considers the Work is complete, he shall submit **written certification** that:
 1. Contract Documents have been reviewed.
 2. Work has been inspected for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 5. Work is completed.
- B. Architect will review the work to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should Architect consider that the Work is incomplete or defective:
 1. Architect will promptly notify the Contractor in writing, listing the incomplete or defective work.
 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Architect that the Work is complete.
 3. Architect will re-inspect the Work.
- D. When the Architect finds that the Work is acceptable under the Contract Documents, the architect shall request the Contractor to make closeout submittals.

1.04 RE-REVIEW FEES:

- A. Should Architect perform re-review due to failure of the Work to comply with the claims of status of completion made by the Contractor:
 1. Owner will deduct the amount of such compensation from the final payment to the Contractor, for re-review compensation to architect.

1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS:

- A.) List of all subcontractors and suppliers organized by specification section
- B.) Contractor's Release of Lien Provide AIA Document G707 and G706A.
- C.) Subcontractor's release of liens waiver.
- D.) One Year Warranties – General and Subcontractors
- E.) Meeting Notes: Refer to requirements of Section 1720 – Project Record Documents
- F.) Submittals organized by specification section: Refer to requirements of Section 1720 – Project Record Documents
- G.) Construction Photographs organized by month: Refer to requirements of Section 1720 – Project Record Documents

H.) All City and/or County Inspections

I.) All Substantial Completion & Punchlists

J.) All Certificate of Occupancy

K.) Contractor's Asbestos Free Affidavit Letter: Refer to requirements of Section 1800 – General Notes

L.) Keying Schedule: Refer to requirements of Section 08710 - Finish Hardware

M.) Training Sign-In Sheets with signatures of attendees

N.) HVAC Test and Balance Report

O.) Product Warranties organized by specification section: Refer to requirements of Section 1740 Warranties and Bonds

P.) Operating and Maintenance Data organized by specification section: Refer to requirements of Section 1730 – Operating and Maintenance Data

Q.) Material Testing: Refer to requirements of Section 1720 – Project Record Documents

R.) Material Safety and Data Sheets (MSDS) of products organized by specification section.

1.06 FINAL ADJUSTMENTS OF ACCOUNTS:

- A. Submit a final statement of accounting to Architect. Statement shall reflect all adjustments to the Contract sum:
1. The original Contract sum.
 2. Additions and deductions resulting from:
 - a} Previous change orders.
 - b} Allowances.
 - c} Unit Prices.
 - d} Deductions for uncorrected work.
 - e} Deductions for re-review payments.
 - f} Other adjustments.
 3. Total Contract sum, as adjusted.
 4. Previous payments.
 5. Sum remaining due.
- B. Architect will prepare a final Change Order, reflecting approved adjustments to the Contract sum, which were not previously made by Change Orders.

1.07 FINAL APPLICATION FOR PAYMENT:

- A. Contractor shall submit the final Application for Payment, labeled as Final, and in accordance with procedures and requirements stated in the Conditions of the Contract.

1.08 CLOSEOUT DOCUMENTS – ELECTRONIC SUBMISSION FORMAT:

- A. Contractor shall submit 5 DVD's, each DVD with the following information and format:

Folder Name: 01 List of Subcontractors

- Filename: *List of Subcontractors.pdf*

Folder Name: 02 Contractor's Payment and Release of Liens

- Filename: *AIA – G706A Contractor's Affidavit of Release of Liens.pdf*
- Filename: *AIA-G707 – Consent of Surety to Final Payment Form.pdf*

Folder Name: 03 Subcontractor's payments & release of liens waiver.

- Filename: *Release of Lien – Company Name.pdf*

Examples:

Release of Lien - EMI

Release of Lien - D&J Site Utilities

Conditional Release of Liens are acceptable when retainage is still pending. Conditional release should explicitly say release of liens upon receiving retainage.

Folder Name: 04 One Year Warranties – General and Subcontractors

- Filename: *One Year Warranty – Company Name.pdf*

Examples:

One Year Warranty – Spawglass.pdf

One Year Warranty – D&J Site Utilities.pdf

Folder Name: 05 Meeting Notes

- Filename: *Date – Meeting Agenda.pdf*

- Filename: *Date – Meeting Notes.pdf*

Examples:

2016.03.03 – Meeting Agenda.pdf

2016.03.03 – Meeting Notes.pdf

Folder Name: 06 Submittals

- Filename:

Specification Number – Specification Name – Shop Drawings.pdf

Specification Number – Specification Name – Data Sheets.pdf

Examples:

08740 – Access Control Systems – Shop Drawings.pdf

11131 – Motorized Projection Screens – Data Sheets.pdf

Folder Name: 07 Construction Photographs

Note: All photos need to be submitted in .JPG format.

Sub-Folder: Year - Month

- Filename of photograph: Year – Month – Date - #.jpg

Examples:

2016 – 03 – 01 – Photo 1.jpg

2016 – 03 – 01 – Photo 2.jpg

Folder Name: 08 City – County Inspections

- Filename: *Inspection - Type.pdf*

Examples:

Inspection - Underground Plumbing.pdf

Folder Name: 09 Substantial Completion & Punchlists

- Filename: *Substantial Completion.pdf*

If more than one Substantial Completions are used in the project, such as different buildings, file naming should be as follows:

- Filename: *Substantial Completion – Building Name.pdf*
Building Name is the actual name of the building
Examples:
Substantial Completion – Administration.pdf
Substantial Completion – Gymnasium.pdf
- Filename: *Punchlist - Entity.pdf*
Entity is the actual name of the entity performing the punchlist
Examples:
Punchlist – Architect.pdf
Punchlist – Owner.pdf
Punchlist – MEP.pdf

Folder Name: 10 Certificate of Occupancy

- Filename: *Certificate of Occupancy.pdf*
If more than one Certificate of Occupancies are used in the project, such as different buildings, file naming should be as follows:
- Filename: *Certificate of Occupancy – Building Name.pdf*
Building Name is the actual name of the building
Examples:
Certificate of Occupancy – Administration.pdf
Certificate of Occupancy – Gymnasium.pdf

Folder Name: 11 Contractor's Asbestos Free Affidavit Letter

- Filename: *Contractor's Asbestos Free Affidavit.pdf*

Folder Name: 12 Keying Schedule

- Filename: *Keying Schedule.pdf*
Provide date of key transfer meeting.

Folder Name: 13 Training

- Filename: *Specification Number – Specification Name – Sign-In.pdf*
Examples:
08740 – Access Control Systems – Sign-in.pdf
11131 – Motorized Projection Screens – Sign-in.pdf
15950 – Building Automatic Controls – Sign-in.pdf

Folder Name: 14 HVAC Test and Balance Report

- Filename: *Project Name – HVAC Test and Balance Report.pdf*

Folder Name: 15 Product Warranties

- Filename: *Specification Number – Specification Name – Warranty.pdf*
Examples:
07535 – Fully Adhered Multi-Ply Roofing System - Warranty.pdf
15732 – Rooftop Units – Warranty.pdf

Folder Name: 16 Operating and Maintenance Data.

- Filename: *Specification Number – Specification Name – Maintenance or Manuel.pdf*
Examples:
10100 – Markerboards and Tackboards – Maintenance.pdf

15732 – Rooftop Units – Operating Manual.pdf

Folder Name: 17 Material Testing

Note: Please use sub-folders to separate different tests, such as compaction, concrete, grout, welding, asphalt, etc.

Sub-Folder: Compaction

- Filename as per testing laboratory

Sub-Folder: Concrete Breaks

- Filename as per testing laboratory

Sub-Folder: Grout

- Filename as per testing laboratory

Folder Name: 18 Material Safety and Data Sheets

- Filename: *Specification Number – Specification Name – MSDS.pdf*

Examples:

09260 – Gypsum Drywall – MSDS.pdf

09300 - Tiling – MSDS.pdf

Sample Folder Hierarchy



END OF SECTION

PART 1: GENERAL:

1.01 DESCRIPTION:

- A. Execute cleaning, during progress of the Work, and at completion of the Work, as required by General Conditions.

1.02 DISPOSAL REQUIREMENTS:

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2: PRODUCTS:

2.01 MATERIALS:

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3: EXECUTION:

3.01 DURING CONSTRUCTION:

- A. Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations or his subcontractor's operations. Oversee cleaning and ensure that building and grounds are maintained free from accumulations of waste materials and rubbish.
- B. At reasonable intervals during progress of work, clean up site, building and access, and dispose of waste materials, rubbish and debris. Provide containers and locate on site for collection of waste materials, rubbish and debris. Do not allow waste materials, rubbish and debris to accumulate and become an unsightly or hazardous condition.
- C. Transport waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces. Sprinkle dusty debris with water.
- D. Burning or burying of rubbish and waste materials on the project site is not permitted. Disposal of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems is not permitted. Remove waste materials, rubbish and debris from the site and legally dispose of at public or private dumping areas off the Owner's property.
- E. Contractor shall coordinate efforts to properly protect new and existing material from damage by ongoing construction work.

3.02 FINAL CLEANING:

- A. At completion of construction and just prior to acceptance or occupancy conduct a final inspection of exposed surfaces. Perform final cleaning and maintain cleaning until building, or portion thereof, is accepted by Owner.
- B. Remove dirt stains, labels, fingerprints and other foreign materials from surfaces. Repair marred surfaces to match adjacent finishes.
- C. Remove all waste materials and rubbish from and about the Project as well as all tools, construction equipment, machinery and surplus materials.

END OF SECTION

PART 1: GENERAL:

1.01 GENERAL:

- A. Maintain at the site for the Owner one record copy of:
1. Drawings
 2. Specifications
 3. Addenda
 4. Change Orders and other Modifications to the Contract.
 5. Architect/Engineer Field Orders or written instructions.
 6. Approved Shop Drawings, Product Data and Samples.
 7. Field Test records.
 8. Construction photographs.
 9. Meeting Reports.
- B. The Contractor shall use one set of Construction Drawings provided to the Contractor at the time construction is commenced. These Drawings shall be marked-up by each Contractor, throughout the construction period, indicating all changes, revisions and additions to the Work, including field relocations of work concealed from view.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES:

- A. Store documents and samples in Contractor's field office apart from documents used for construction.
1. Provide files and racks for storage of documents.
 2. Provide locked cabinets or secure storage space for storage of samples.
- B. File documents and samples in accordance with Data Filing Format of the Uniform Construction Index.
- C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for view by Architect.

1.03 RECORDING:

- A. Label each document "PROJECT RECORD" in neat large printed letters.
- B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- C. Drawings: Legibly mark to record actual construction:
1. Depths of various elements of foundation in relation to finish first floor datum.
 2. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 4. Field changes of dimension and detail.
 5. Changes made by Field Order, Architectural Supplemental Instructions, Request for Information, Addenda, Construction Change Directive or by Change Order.
 6. Details not on original Contract Drawings.
- D. Specifications and Addenda: Legibly mark each Section to record:
1. Manufacturer, trade name, catalog number, and supplier of each Product and item of equipment actually installed.
 2. Changes made by Field Order, Architectural Supplemental Instructions, Request for Information, Addenda, Construction Change Directive or by Change Order.

1.04 SUBMITTAL:

- A. At the completion of work, Contractor shall certify, by endorsement thereof, that each of the revised drawings is complete and accurate. Prior to Contractor's application for final payment, and within forty-five {45} days of final acceptance of all the work by the Owner, unless otherwise modified by the Contract Agreement, and as a condition of acceptance by the Owner, Contractor shall deliver the certified Record Documents to the Architect for transmittal to the Owner.

END OF SECTION

PART 1: GENERAL:

1.01 INFORMATION DATA:

- A. Compile Manufacturer's Directions and Manuals, Product Data and related information appropriate for Owner's maintenance and operation of product furnished under the Contract.
 - 1. Furnish operating and maintenance data as specified in other pertinent sections of Specifications.
- B. Instruct Owner's personnel in the maintenance of products and in the operation of equipment and systems.

1.02 FORM OF SUBMITTALS:

- A. Prepare data in the form of an instructional manual for use by Owner's personnel.
- B. Provide indexed tabs fly-leaf for each separate product, or each piece of operating equipment. Provide typed description of product and major component parts of equipment.
- C. Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS".
- D. Bind in and identify in DVD PDF files, organized in a PDF portfolio with index.
- E. When multiple binders are used, correlate the data into related consistent groupings.

1.03 CONTENT OF MANUAL:

- A. Neatly typewritten table of contents for each volume, arranged in a systematic order.
 - 1. Contractor, name of responsible principal, address and telephone number.
 - 2. A list of each product required to be included, indexed to the content of the volume.
 - 3. List with each product, the name, address and telephone number of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Identify the area of responsibility of each.
 - d. Local source of supply for parts and replacement.
 - 4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
- B. Product Data: Include only those sheets which are pertinent to the specific product. Annotate each sheet to:
 - 1. Clearly identify the specific product or part installed.
 - 2. Clearly identify the data applicable to the installation.
 - 3. Delete references to inapplicable information.
- C. Drawings: Supplement product data with drawings as necessary to clearly illustrate relations of component parts of equipment and systems, and control and flow diagrams.
 - 1. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
 - 2. Do not use Project Record Documents as maintenance drawings.

- D. Written text, as required to supplement product data for the particular installation:
 - 1. Organize in a consistent format under separate headings for different procedures.
 - 2. Provide a logical sequence of instructions for each procedure.
- E. Copy of each warranty, bond and service contract issued. Provide information sheet for Owner's personnel, give:
 - 1. Proper procedures in the event of failure.
 - 2. Instance which might affect the validity of warranties or bonds.

1.04 MANUAL FOR MATERIALS AND FINISHES:

- A. Submit in electronic file complete manual in final form and document in respective division.
- B. Content, for architectural products, applied materials and finishes:
 - 1. Manufacturer's data, giving full information on products.
 - 2. Instructions for care and maintenance.
- C. Content, for moisture-protection and weather-exposed products:
 - 1. Manufacturer's data, giving full information on products.
- D. Additional requirements for Maintenance Data: the respective sections of Specifications.

1.05 MANUAL FOR EQUIPMENT AND SYSTEMS:

- A. Submit in electronic file complete manual in final form and document in respective division.
- B. Content, for each unit of equipment and system, as appropriate:
 - 1. Description of unit and component parts.
 - 2. Operating procedures.
 - 3. Maintenance procedures.
 - 4. Servicing and lubrication schedule.
 - 5. Manufacturer's printed operating and maintenance instructions.
 - 6. Description of sequence of operation by control manufacturer.
 - 7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
 - 8. As-installed control diagrams by controls manufacturer.
 - 9. Each contractor's coordination drawings.
 - 10. Charts of valve tag numbers, with the location and function of each valve.
 - 11. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 - 12. Other data as required under pertinent sections of specifications.
- C. Content, for each electric and electronic system, as appropriate:
 - 1. Description of system and component parts.
 - 2. Circuit directories of panelboards.
 - 3. As-installed color coded wiring diagrams.
 - 4. Operating procedures.

5. Maintenance procedures.
 6. Manufacturer's printed operating and maintenance instructions.
 7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 8. Other data as required under pertinent sections of specifications.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
- E. Additional requirements for Operating and Maintenance Data: the respective sections of specifications.

1.06 INSTRUCTIONS OF OWNER'S PERSONNEL:

- A. Prior to final review or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment and maintenance of all products, equipment and systems.
- B. Operating and maintenance manual shall constitute the basis of instruction.
- C. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

END OF SECTION

PART 1: GENERAL:

1.01 SUBMITTAL REQUIREMENTS:

- A. Assemble warranties, bonds and services and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Review submittals to verify compliance with Contract Documents. Submit to Architect for review and transmittal to Owner.

1.02 TIME OF SUBMITTALS:

- A. For equipment or component parts of equipment put into service during progress of construction submit within ten {10} days after review and acceptance.
- B. Otherwise make submittals within ten {10} days after Date of Substantial Completion, prior to final request for payment.
- C. For items of work, where acceptance is delayed materially beyond the Date of Substantial Completion, provide updated submittal within ten {10} days after acceptance, listing the date of acceptance as the start of the warranty period.

END OF SECTION

SECTION 01800
GENERAL NOTES

PART 1: GENERAL:

1.01 GENERAL NOTES:

- A. Contractor shall protect all streets and sidewalks and shall make all necessary repairs at his own expense.
- B. Shall at all times protect the excavations, trenches, and/or the building from damage from rain water, ground water, backing up drains or sewers and all other water. He shall provide all pumps and equipment and enclosures to provide this protection.
- C. Contractor shall provide all shoring, bracing and sheathing as required for safety and proper execution of the work and remove same when work is completed. Contractor shall be responsible for all scaffolding, shoring, bracing, sheathing, temporary construction and temporary walkways, etc., and shall hold harmless the Owner and Architect from any injury or litigation as a result of causes related to any scaffolding, shoring, bracing, sheathing, temporary construction, temporary walkways, and similar construction technics.
- D. Contractor shall comply with the Trench Safety Law Requirements.

2.01 WAIVER OF LIEN:

- A. In submitting a Proposal (Bid) Contractor, if awarded the Contract, explicitly warrants that the Owner shall be held free of any claim or lien of any nature resulting from Contractor's pursuance or prosecution of the work. This shall cover any third party lien in any manner whatsoever concerning Contractor's performance or payment on this project.

3.01 PREVAILING WAGES:

- A. *Article 5159a, Vernon's Annotated Texas Civil Statutes as below noted apply to this project.*

"Not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the work is performed, and not less than the general per diem wages for legal holiday and overtime work, shall be paid to all laborers, workmen and mechanics employed by or on behalf of the State of Texas, or by or on behalf of any county, district or other political subdivision of the State, engaged in the construction of public works, exclusive of maintenance work".

- B. Refer to HUD Forms.

4.01 CONTRACTOR'S ASBESTOS FREE AFFIDAVIT:

- A. In order to protect staff, employees and public in general from any unnecessary exposure to asbestos fibers, the Asbestos Hazard Emergency Response Act prohibits the use of asbestos containing materials in all forms in the construction and operation of this facility.
- B. Failure to complete this waiver constitutes non-compliance with the job specifications. This document shall be attached to the Contract between Owner and Contractor.

AFFIDAVIT:

I certify that I am familiar with the materials used in the construction of, and incorporated into, the construction described below. I further certify that to the best of my knowledge and belief no asbestos containing materials, either friable or otherwise were used in the process of constructing or incorporated into the construction.

The undersigned, being duly sworn upon his/her oath deposes and says that he/she is the person making the foregoing statements and that they are made in good faith and are true in every respect.

Contractor's signature: _____.

STATE OF

COUNTY OF

I, _____, a Notary Public in and for said County, in the State aforesaid, DO THEREBY CERTIFY THAT _____ personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person, and acknowledged that he/she signed, sealed, and delivered said instrument as his/her free and voluntary act, for the uses and purposes herein set forth.

GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS _____ DATE OF _____, 20 .

NOTARY PUBLIC: _____

MY COMMISSION EXPIRES: _____

(NOTARY SEAL)

END OF SECTION

PART 1 - GENERAL:

1.1 DESCRIPTION:

- A. **WORK INCLUDED:** Provide all wood, nails, bolts, screws, framing anchors, and other rough hardware, and all other items needed for rough and finished carpentry in this Work but not specifically described in other Sections of these Specifications.
- B. **RELATED WORK DESCRIBED ELSEWHERE:**
1. **FORM LUMBER:** SECTION 03100

1.2 QUALITY ASSURANCE:

- A. **STANDARDS:** Comply with all pertinent codes and regulations, and with the standards listed in this Section as described in Section 01085.
- B. **CONFLICTING REQUIREMENTS:** In the event of conflict between pertinent codes and regulations and the requirements of the referenced standards or these Specifications, the provisions of the more stringent shall govern.

1.3 SUBMITTALS:

- A. Make all proposals for substitution in strict accordance with the provisions of Section 01300 of these Specifications.

1.4 PRODUCT HANDLING:

- A. **PROTECTION:**
1. Use all means necessary to protect lumber materials before, during, and after delivery to the job site, and to protect the installed work and materials of all other trades.
 2. Deliver the materials to the job site and store, all in a safe area, out of the way of traffic, and shored up off the ground surface.
 3. Identify all framing lumber as to grades, and store all grades separately from the other grades.
 4. Protect all metal products with adequate waterproof outer wrappings.
 5. Use extreme care in the off-loading of lumber to prevent damage, splitting, and breaking of materials.
- B. **REPLACEMENTS:** In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2: PRODUCTS

2.1 GRADE STAMPS:

- A. **FRAMING LUMBER:** Identify all framing lumber by the grade stamp of the West Cost Lumber Inspection Bureau.
- B. **PLYWOOD:** Identify all plywood as to species, grade, and glue type by the stamp of the American Plywood Association.
- C. **OTHER:** Identify all other materials of this Section by the appropriate stamp of the agency listed in the reference standards, or by such other means as are approved by the Architect.

2.2 MATERIALS:

- A. All materials, unless otherwise specifically approved in advance by the Architect, shall meet or exceed the following:

<u>ITEM:</u>	<u>DESCRIPTION:</u>
STUDS:	Yellow pine fir, stud grade, Douglas Fir-Hemlock, stud grade
POSTS AND BEAMS:	Douglas Fir, Structural Number 1
ALL OTHER HORIZONTAL FRAMING MEMBERS:	Douglas Fir-Hemlock, Construction Grade
ALL OTHER VERTICAL FRAMING MEMBERS:	Douglas Fir-Hemlock, Standard or better grade
PLYWOOD: Concealed Sheathing:	Standard interior-grade with exterior glue
EXTERIOR WOOD TRIM:	Redwood or Cedar, Select Heart Grade, Smooth
INTERIOR WOOD TRIM: Base:	White Pine, ½" by 1 7/8", reversible, fingerjointed acceptable.
Door & Window Casing:	White Pine, 5/8 by 1 5/8", beveled casing, finger-jointed acceptable.
CLOSET SHELVES:	White Pine, 1"X12", Number 2 or better, on 1"x4" White Pine cleats continuous 3 sides, or as shown on the Drawings in 3/4" plywood.
WOOD PRESERVATIVE:	Ammoniacal copper arsenite, or 5% solution of pentachlorophenol.
STEEL HARDWARE:	ASTM A7 or A36 (use galvanized at exterior locations).
MACHINE BOLTS:	ASTM A307
LAG BOLTS:	FED. SPEC. FF-B-561
NAILS:	Common (except on noted), Fed. Spec. FF-N-1-1 (use galvanized at exterior locations)

2.3 OTHER MATERIALS:

- A. All other materials, not specifically described but required for a complete and proper installation as indicated on the Drawings, shall be new, suitable for intended use, and subject to the approval of the Architect.

PART 3: EXECUTION

3.1 DELIVERIES:

- A. STOCKPILING: Stockpile all materials sufficiently in advance of need to ensure their availability in a timely manner for this work.
- B. DELIVERY SCHEDULE: Make as many trips to the job site as are necessary to deliver all materials of this Section in a timely manner to ensure orderly progress of the total work.
- C. COMPLIANCE: Do not permit materials not complying with the provisions of this Section of these Specifications to be brought onto or to be stored at the job site. Immediately remove from the job site all non-complying materials and replace them with materials meeting the requirements of this Section.

END OF SECTION

PART 1 - GENERAL:

1.01 DESCRIPTION:

- A. WORK INCLUDED: Provide all wood framing indicated on the Drawings or required for a complete and operable facility.
- B. RELATED WORK DESCRIBED ELSEWHERE:
 - 1. LUMBER: SECTION 06010

1.02 QUALITY ASSURANCE:

- A. QUALIFICATIONS OF WORKMEN: Provide sufficient workmen and supervisors who shall be present at all times during execution of this portion of the Work, and who shall be thoroughly familiar with the type of construction involved and the materials and techniques specified.
- B. REJECTION: In the acceptance or rejection of rough carpentry, the Architect will make no allowance for lack of skill on the part of the workmen.

1.03 PRODUCT HANDLING:

- A. PROTECTION:
 - 1. Store all materials in such a manner as to ensure proper ventilation and drainage, and to protect against damage and the weather.
 - 2. Keep all materials clearly identified with all grade marks legible. Keep all damaged material clearly identified as damaged, and store separately to prevent its inadvertent use.
 - 3. Do not allow installation of damaged or otherwise non-complying material.
 - 4. Use all means necessary to protect the installed work and materials of all other trades.
- B. REPLACEMENTS: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2: PRODUCTS

2.01 (NO PRODUCTS ARE REQUIRED IN THIS SECTION)

PART 3: EXECUTION

3.01 INSPECTION:

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 WORKMANSHIP:

- A. GENERAL: All rough carpentry shall produce joints true, tight, and well nailed, with all members assembled in accordance with the Drawings and with all pertinent codes and regulations.

B. SELECTION OF LUMBER PIECES:

1. Carefully select all members. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making connections.
2. Cut and discard all defects which will render a piece unable to serve its intended function. Lumber may be rejected by the Architect, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.
3. SHIMMING: Do not shim sills, joists, short studs, trimmers, headers, lintels, or other framing components.

3.03 WOOD TREATMENTS:

- A. Treat all blocking and framing lumber, and other wood members used in contact with concrete, masonry, plaster, or other damp material, and all exterior members including roof blocking in accordance with AWPA.
1. Reduce moisture content to 19% or less after treatment for members which will be painted.
 2. Brush coat surfaces that have been cut after treatment.
 3. Approved Material: KOPPERS "WOLMANIZED" or OSMOSE "K-33".
- B. Treat members indicated as "Fire-Retardant" with Koppers "Non-Com" or Osmose "Flameproof". (All members within the building including framing members above the ceiling).
1. Reduce moisture content to 19% or less after treatment.
 2. Each piece shall bear UL label for flame spread of 25 or less.
 3. Reduce moisture content to 12% or less after treatment for members which will be painted.

3.04 GENERAL FRAMING:

A. GENERAL:

1. In addition to all framing operations normal to fabrication and erection indicated on the Drawings, install all backing and blocking required for work of other trades.
2. Set all horizontal or sloped members with crown up.
3. Do not notch, bore, or cut members for pipes, ducts, conduits, or other reasons except as shown on the Drawings or as specifically approved in advance by the Architect.

B. BEARINGS:

1. Make all bearings full unless otherwise indicated on the Drawings.
2. Finish all bearing surfaces on which structural members are to rest so as to give sure and even support. Where framing members slope, cut or notch the ends as required to give uniform bearing surface.

3.05 BLOCKING AND BRIDGING:

A. BLOCKING:

1. Install all blocking required to support all items of finish and to cut off all concealed draft openings, both vertical and horizontal, between ceiling and floor areas.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. Section 01 10 00 - General Requirements
- B. Section 07 62 00 - Flashing and Sheet Metal

1.02 INSTALLER QUALIFICATIONS

- A. Roofing installer must be:
 - 1. Currently prequalified with the Owner in accordance with Owner's prequalification requirements.
 - 2. Currently in good standing with the manufacturer.
 - 3. Installer must be an experienced single firm specializing in the type of roofing repair and/or removal and replacement work required, employing only experienced workers for the class of work in which they are employed, having at least five (5) years successful experience on projects similar in size and scope and acceptable as applicators by the Owner's representative.
 - 4. Contractor must have successfully completed previous projects warranted by the manufacturer.
- B. It shall remain each Bidder's responsibility to determine his current status with the manufacturer's certification plan.

1.03 CODES AND STANDARDS

- A. Comply with the provisions of the latest edition of the following ASTM standards, except as otherwise specified or shown:
 - 1. ASTM A 167 Standard specification for Stainless Steel and Heat Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
 - 2. ASTM B 370 Standard Specification for Copper Sheet and Strip for Building Construction.
 - 3. ASTM B 749 Standard Specification for Lead and Lead Alloy Strip, sheet and Plate.
 - 4. ASTM C 67 Standard Test Methods of Sampling and Testing Brick and Structural Clay Tile.
 - 5. ASTM C 387 Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
 - 6. ASTM C 887 Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar.
 - 7. ASTM C 920 Standard Specifications for Elastomeric Sealants.
 - 8. ASTM C 1167 Standard Specification for Clay Roof Tiles.
 - 9. ASTM C 1492 Standard Specification for Concrete Roof Tile.
 - 10. ASTM D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials for Used as Steep Roofing Underlayment for Ice Dam Protection.
 - 11. ASTM D 4586 Standard Specification for Asphalt Roof Cement, Asbestos Free.
- B. Comply with the provisions of the latest edition of the following Industry standards, except as otherwise specified or shown:
 - 1. Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions, Latest Edition.
 - 2. Roof Tile Institute
 - 3. American Society for Testing and Materials (ASTM)

4. American Society of Civil Engineers (ASCE): Minimum Design Codes for Buildings and Other Structures, ASCE 7 Latest Edition
5. National Roofing Contractor's Association (NRCA): Roofing and Waterproofing Manual, Fifth Edition, 2001 with all current updates
6. Sheet Metal & Air-Conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual, current edition
7. ICC ER 2656 (ICBO-ES) – International Code Council Evaluation Services

1.04 APPLICABLE CODES & ORDINANCES

- A. International Building Code, version as adopted and/or amended by jurisdiction.

1.05 DESIGN REQUIREMENTS

- A. Roofing tile materials and installations shall conform to the requirements of ICC ER 1647.
- B. General: Provide installed concrete tile roofing, including waterproof membrane and related flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- C. Material Compatibility: Provide concrete tile roofing and related materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

1.06 SUBMITTALS

- A. General: Submit each item in this specification in conjunction with the requirements by Section 01 10 00.
- B. Shop Drawings: Submit the following:
 1. Six (6) copies of all Shop Drawings and all specified submittals.
 3. Prepare scaled roof plan locating and identifying all illustrated details and penetrations, and manufacturer's standard details and penetrations.
 4. Indicate complete installation details of roofing, flashing, underlayments, including seam layout, roof slopes, flashing details, penetration details and accessories.
 5. Indicate metal flashing profiles, dimensions, gage, material, joint locations, and fastening locations.
 6. Illustrate complete installation of perimeter flashing and penetrations.
 - a) Outline of roof with dimensions, including all levels and roof deck elevations
 - b) Locations and type of all penetrations
 - c) Perimeter and penetration details
 - d) Deck type
 - e) Roof slope and designated direction of slope
- C. Product Data: For each type of product indicated. Submit latest edition of manufacturer's roofing and flashing specifications including list of material proposed for use, installation procedures, and manufacturer's data sheets for other products.
- D. Certificates: Submit the following written certifications:
 1. Submit manufacturer's certification that materials and components furnished conform to Project requirements, including Specification requirements, and that materials are compatible for Project conditions and compatible to adjacent related work.
 2. At completion of work, submit roofing manufacturer's written confirmation that roofing system was installed in accordance with manufacturer's requirements.

- E. Product Test Reports: Based on evaluation of comprehensive tests performed by the manufacturer and witnessed by a qualified testing agency, for components of concrete tile roofing system.
- F. Research/Evaluation Reports: For concrete tile, fasteners and fastener systems.
- G. Samples for Initial Selection: For each type of concrete tile and concrete tile accessory indicated.
 - 1. Include similar Samples of trim involving color selection.
- H. Samples for Verification: For the following products, of sizes indicated, to verify color selected.
 - 1. Tile: Full size
 - 2. Tile Accessories: Full size.
 - 3. Self-Adhering Underlayment: Twelve inches (12") square.
- I. Warranty: Submit specimen copy of roof manufacturer's full fifty (50) year limited warranty with Product Data submittal, including evidence of application for warranty.
- J. Manufacturer's Reports:
 - 1. Concurrent with Shop Drawing submittal; submit roof manufacturer's review of the specifier's execution documents and acceptance of application for warranty. This acceptance shall be made in writing by the manufacturer.
 - 2. At completion of the projection submit two (2) copies of warranty, shop drawings.
- K. Maintenance Data: For concrete tile roofing to include in maintenance manuals. Submit manufacturer's complete recommended maintenance procedures for roofing system, including precautions and warnings to prevent damage and deterioration to roofing system.

1.07 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be performed according to manufacturer's written instructions and warranty requirements.
 - 1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

1.08 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. Follow local, state, and federal requirements, safety standards, and codes.
 - 2. Refer to applicable building codes for roofing system installation requirements and limitations. When conflict exists, the more restrictive document will govern.
 - 3. New roof system shall be an approved assembly as determined by ASCE 7 for wind uplift resistance in accordance with the criteria established by Minimum Design Loads for Structures and Other Structures, as well as state and local codes and requirements.
 - 4. System shall be classified by Underwriters Laboratories Inc., UL 790, as a "Class A" rated roof covering.
 - 5. Comply with local, state, and federal requirements, safety standards, and codes.
 - 6. Refer to applicable building codes for roofing system installation requirements and limitations. When conflict exists, the more restrictive document will govern.
- B. Submit all approved data on written approval sheets to the Project Manager, and/or Owner's Manager with the material submittals requested.
- C. Source Limitations: Obtain concrete tiles and concrete tile accessories through one source from a single manufacturer.

- D. Fire-Test-Response Characteristics: Provide concrete tiles and related roofing material with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
1. Exterior Fire-Test Exposures: Class A; UL 790 or ASTM E 108 for application and roof slopes indicated.
- E. Material Compatibility: Provide accessories, underlayments and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.
- F. Coordination of Work: Review this and other Sections in which materials are provided to ensure compatibility of the total system for various substrates. Notify Owner's Manager and/or Project Manager of any anticipated problems using the materials specified, proposed or recommended by manufacturer's and installers of Work of this Section.
- G. Roofing Contractor: This work must be performed by a firm having not less than five (5) years successful experience in comparable roofing projects and must employ personnel skilled in the operation indicated.
- H. Roofing Applicator Contractor Warranty: Furnish a five (5) year roofing system warranty for all completed work to include materials and labor, and against all leaks and/or defects in materials and workmanship.
- I. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Approval of mockups is limited to aesthetic appearance unless specifically indicated in writing for other material and construction qualities specifically approved by the Architect.
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by the Architect in writing.
 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- J. Pre-installation Conference:
1. Prior to roofing installation, conduct pre-installation conference at project site.
 2. Attendance: Owner's Manager, Project Manager, Contractor, Project Superintendent, Contractor's Superintendent, and roof manufacturer's technical representative as applicable.
 3. Agenda:
 - a) Scheduling of roofing operation.
 - b) Daily production anticipated.
 - c) Designation of key individuals and their respective responsibilities.
 - d) Processing procedures of field and change orders.
 - e) Review of staging and material storage locations.
 - f) Accommodations for temporary services (water, power).
 - g) Coordination of work by other trades.
 - h) Protection of completed roofing.
 - i) Emergency rain protection procedures.
 - j) Discussion of process for manufacturer's inspection and acceptance of completed roofing and flashings.
- K. There shall be no deviations made from manufacturer's published specification, this specification, or approved shop drawings without prior written approval of Owner's Representative and Roof Membrane Manufacturer.

- L. Perform work on this section in accordance with best standards of practice relating to trades involved.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers and rolls with all labels intact and legible including labels indicating appropriate warnings, storage conditions, lot numbers, and usage instructions. Materials damaged in shipping or storage shall not be used.
- B. Manufacturer's packaging and/or roll plastic is not acceptable for exterior storage. Tarpaulin with grommets shall be minimum acceptable for exterior coverings. All materials stored as above shall be minimum of four inches (4") off the substrate, and the tarpaulin tied off with rope.
- C. Deliver materials requiring fire resistance classification to the job with labels attached and packaged as required by labeling service.
- D. Deliver materials in sufficient quantity to allow continuity of work.
- E. Handle and store material and equipment in such a manner as to avoid damage. Liquid products shall be delivered sealed, in original containers.
- F. Handle rolled goods so as to prevent damage to edge or ends.
- G. Select and operate material handling equipment so as not to damage existing construction or applied roofing.
- H. Moisture-sensitive products shall be maintained in dry storage areas and properly covered. Provide continuous protection of materials against wetting and moisture absorption. Store roofing and flashing materials on clean raised platforms with weather protective covering when stored outdoors.
- I. Store rolled goods on end.
- J. Protect materials against damage by construction traffic.
- K. The proper storage of materials is the sole responsibility of the contractor and any wet or damaged roofing materials shall be discarded, removed from the project site, and replaced prior to application.
- L. Comply with fire and safety regulations, especially with materials which are extremely flammable and/or toxic. Use safety precautions indicated on labels.
- M. No storage of materials shall be permitted on roof areas other than those materials that are to be installed the same day.
- N. The contractor is to erect a temporary chain link fence, minimum six feet (6') in height, around work area stage and kettles. Fence is to be secured on a daily basis.

1.10 SITE CONDITIONS

- A. Job Condition Requirements:
 - 1. Coordinate the work of the contractor with the work to be performed by the Owner's personnel, to ensure proper sequencing of the entire work. The Owner's personnel will be erecting interior protection for equipment, if required. The contractor is to schedule his work so that adequate time is allowed for the Owner's personnel to perform this work. No roof work shall be performed until the Owner's personnel have completed erection of the interior protection in that area.
 - 2. Apply roofing in dry weather.
 - 3. Do not apply roofing when ambient temperature is below 40° F.

4. Proceed with roofing work only when weather conditions are in compliance with manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with specifications.
 5. For further information regarding roofing material manufacturer's recommendations for project conditions, refer to the manufacturer's published application manual.
 6. Schedule the work so the building will be left watertight at the end of each day. Do not remove more roofing or insulation material than can be reinstalled in any working day.
 7. All surfaces to receive new roofing shall be smooth, dry, and free from dirt, debris, and foreign material before any of this work is installed. Competent operators shall be in attendance at all times equipment is in use. Materials shall be stored neatly in areas designated by the Owner. Load placed on the roof at any point shall not exceed the safe load for which the roof is designed.
 8. The contractor shall take all necessary precautions to protect the roof and deck from damage. The contractor shall be responsible for repairing all new areas of damage caused by the negligence of the contractor, at the contractor's expense. The Owner's on-site representative shall determine damage caused by contractor negligence.
 9. The contractor is to be aware of the potential for roof leaks on the existing roof as a result of tear off and/or roof mat damage, foot traffic, or material and equipment storage. The contractor is to take all necessary precautions to prevent damage to the existing roof. All damage to the existing roof that could result in roof leaks is to be repaired on a daily basis by the roofing contractor.
 10. The contractor shall follow local, state, and federal regulations, safety standards, and codes for the removal, handling, and disposal of asbestos containing materials, if present. When a conflict exists, use the stricter document.
 11. Due caution should be exercised so as not to alter the structural integrity of the deck. When cutting through any deck, care should be taken so as not to damage the deck or any part of the deck, etc.
 12. The contractor is to verify the location of all interior ducts, electrical lines, piping, conduit, and/or similar obstructions. The contractor is to perform all work in such a manner as to avoid contact with the above mentioned items.
 13. Surface and air temperatures should be a minimum 45° F during applications of cleaner and waterproof coating and remain above 45° F for a minimum of four (4) hours following applications. Verify compatibility of cleaner with coatings, paints, primers and joint sealers specified. Advise Owner's representative of any problems in this regard prior to commencing cleaning operations.
 14. Temporary Sanitary Facilities: The contractor shall furnish and maintain temporary sanitary facilities for employees' use during this project. These will be removed after the completion of the project. All portable facilities shall comply with local laws, codes, and regulations.
- B. Protection of Work and Property:
1. Work: The contractor shall maintain adequate protection of all his work from damage and shall protect the Owner's and adjacent property from injury or loss arising from this contract. He shall provide and maintain at all times any OSHA required danger signs, guards, and/or obstructions necessary to protect the public and his workmen from any dangers inherent with or created by the work in progress. All federal, state, and city rules and requirements pertaining to safety and all EPA standards, OSHA standards, NESHAP regulations pertaining to asbestos as required shall be fulfilled by the contractor as part of his proposal.
 2. Property: Protect existing planting and landscaping as necessary or required to provide and maintain clearance and access to the work of this contract. Examples of two categories or degrees of protection are generally as follows: a) removal, protection, preservation, or replacement and replanting of plant materials; b) protection of plant materials in place, and replacement of any damage resulting from the contractor's operations.

3. Twenty-four Hour Call: The contractor shall have personnel on call 24 hours per day, seven (7) days per week for emergencies during the course of a job. The Owner's project manager is to have the 24 hour numbers for the contact. Contractor must be able to respond to any emergency call and have personnel on-site within two (2) hours after contact. Numbers available to the Owner's project manager are to be both home and office numbers for:
 - a. Job Foreman
 - b. Job Superintendent
 - c. Owner or Company Officer

- C. Damage to Work of Others: The contractor shall repair, refinish, and make good any damage to the building or landscaping resulting from any of his operation. This shall include, but is not limited to, any damage to plaster, tile work, wall covering, paint, ceilings, floors, or any other finished work. Damage done to the building, equipment, or grounds must be repaired at the successful contractor's expense holding the Owner harmless from any other claims for property damage and/or personal injury.

- D. Measurements: It will be the contractor's responsibility to obtain and/or verify any necessary dimensions by visiting the job site, and the contractor shall be responsible for the correctness of same. Any drawings supplied are for reference only.

- E. Use of Premises:
 1. The contractor is advised that the Owner will occupy the building at all times, and the contractor must provide all safeguards required to protect personnel and to keep noise levels as low as reasonably possible for each operation.
 2. The contractor shall:
 - a) Coordinate work in such a manner as to not interfere with the normal operation of the building.
 - b) Assume full responsibility for protection and safekeeping of products stored on premises.
 - c) Agree to hold the Owner harmless in any and all liability of every nature and description which may be suffered through bodily injuries, including death of any persons by reason of negligence of the contractor, agents, employees, or subcontractors.

- F. Cleaning and Disposal of Materials:
 1. Contractor shall keep the job clean and free from all loose materials and foreign matter. Contractor shall take necessary precautions to keep outside walls clean and shall allow no roofing materials to remain on the outside walls.
 2. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust. A suitable scrap chute or hoist must be used to lower any debris. At completion, all work areas shall be left broom clean and all contractor's equipment and materials removed from the site.
 3. All bituminous or roofing related materials shall be removed from ladders, stairs, railings, and similar parts of the building.
 4. Debris shall be deposited at an approved disposal site.

1.11 WARRANTY

- A. Roofing – Manufacturer of Underlayment: Project shall be installed in such a manner that the roofing material manufacturer will furnish a written Standard 10 year Materials/Limited Lifetime warranty from the date of substantial completion of the completed project.

- B. Roofing - Contractor: The contractor, jointly with any subcontractors employed by him, shall guarantee the work required and performed under this contract will be free from defects in workmanship and materials, and that the building will be and remain waterproof for a two (2) warranty period, after the Owner accepts the work as substantially complete. The warranty shall be in approved notarized written form, to obligate the contractor and his subcontractors, if any, to make good the requirements of the warranty.

- C. Warranty repairs shall be performed by a certified installer. The repairs shall be performed in accordance with the manufacturer's written instructions and recommended procedures so as to not void the warranty. Repair of the system, including materials and labor, shall be done at no cost to the Owner.
- D. During the proposal period each Bidder shall make arrangements with the material manufacturer to provide the required warranty.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products from one of the following:
 - 1. Concrete Tiles:
 - a) Boral Roofing, 7575 Irvine Center Drive, Suite 100; Irvine, CA 92618; 800.571.8453 or approved equal.
 - 2. Wood Products:
 - a) Dricon, Arch Wood Protection, Inc., Smyrna, GA
 - b) D Blaze, Chemical Specialties, Inc., Charlotte, NC
 - 3. Self-sealing Sheet Waterproof Underlayment, Type A
 - a) Polystick TU Plus (80) mils thick, by PolyGlass USA, Inc., Fernley, Nevada or approved equal.
 - 4. Elastomeric Sealant:
 - a) Sonolastic NP-1, Sonneborn Building Products or approved equal.

2.02 CONCRETE TILES

- A. Concrete Roof Tile: shall be molded, concrete tile units of shape and configuration indicated, and free of surface imperfections meeting ASTM C 1167. Provide with fastening holed prepunched at factory before drying.
 - 1. Durability: Grade 1.
 - 2. Tejas Espana, as manufactured by Boral or approved equal. Color; as selected by architect/to match existing tile.
 - 3. Size: As required, to match appearance of existing roof tiles.
 - a) 16 1/2" inches by 13 inches, nominal.
 - 4. Finish and Texture: Match existing.
 - 5. Color: Standard Color(s)/Manufacturer's full range of colors including blends.
 - 6. Pre-punched Holes for Fasteners: Two inches (2"), in locations for direct connection to deck substrate.
 - 7. Shaped Concrete Tile Units and Accessories, including the following:
 - a) Field tile
 - b) Rake tile
 - c) Ridge tile
 - d) Hip starter
 - e) Apex 3 or 4 way
 - f) Eave closure
 - 8. Color(s) shall match finish and profiles of newly installed tile.

2.03 INSULATION

- A. Polyisocyanurate Roof Insulation at octagonal Theater roof area only as referenced in the Specific Roof Notes on Sheet R1.01: Insulation shall be **two layers** of rigid polyisocyanurate foam board; total thickness and LTTR-value shall be a minimum of 4.5" = 25.8; meeting Federal Specification No. HH-I-1972/1 or 2 with 20 psi minimum compressive strength and 2.0 pcf minimum density. Board shall be surfaced on two (2) sides with non-asphaltic facer material.

2.03 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.
- B. Elastomeric Sealant: ASTM C 920, polyurethane joint sealant; of Type S, Grade NS, Class 25, use NT related to exposure, and, as applicable to joint substrates indicated, Use O.
- C. Cold-Applied Adhesive: Manufacturer's standard asphalt-based, one- or two-part, asbestos-free, cold-applied adhesive specially formulated for compatibility and use with underlayments.
- D. Polyurethane Adhesive: Manufacturer's patented two-component expanding polyurethane adhesive for adhering roofing tiles and other roofing components. Dispensing equipment shall be FoamPro RTF1000.
- E. Eave Riser: Manufacturer's pre-finished galvanized metal vented eave riser.
- F. Ribbed Valley Metal: Shop fabricated galvanized, minimum 24 guage, ribbed valley metal pan flashing.

2.04 ROOF TILE MORTAR AND ADHESIVE

- A. Mortar: ASTM C 270, Type M, natural color for concealed-from-view mortar.
 - 1. Mortar Pigment: ASTM C 979. Product mortar matching the color of tile selection from exposed-to-view mortar.
 - 2. Color: Match tiles.

2.05 FASTENERS, CONCRETE TILE, NAILERS AND BATTENS

- A. Screw Fasteners: Shall be #8 course thread, stainless steel, sized to penetrate the plywood substrate a minimum of three-fourths inch (3/4").
 - 1. Concrete Tile Fasteners: Complying with ASTM 641, Class 1, of sufficient lengths to provide connections that penetrate plywood nailable deck structural-use panels a minimum of three-fourths inch (3/4").
 - 2. Plywood Panel Fasteners: Fasteners shall have .625" diameter flat head and .190" diameter shank with a CR10 corrosion resistant coating. "HeadLok" fastener as manufactured by OMG Roofing Products or approved equal. Fasteners shall be capable of withstanding pullout and wind loads, and which comply with manufacturer's written requirements and engineering analysis for attachment and approved submittals. Fasteners shall be listed in the FM Global Approval Guide.

3. Fastener for wood nailers into Cementitious Fiber (Tectum) Deck: Shall be a precision formed coated steel tube fastener, of appropriate length (minimum embedment of 1" into cementitious fiber board or as required to meet uplift requirements), shaped to easily penetrate decking with a dual (twin) locking staple nail and three inch (3") coated steel, smooth secured galvanized washer (plate). Pre-drilling through wood nailers required. "Twin Loc-Nail", as manufactured by TRUFast, LLC., or approved equal. Fasteners and washers shall be listed in the FM Global Approval Guide.

2.06 WOOD LUMBER, BATTENS AND DECK PRODUCTS

- A. Fire-Retardant and integral Decay-Resistance-Treated Wood Products: Comply with applicable requirements, standards, and performance requirements. Identify fire-retardant-and Decay-Resistance-treated wood with appropriate classification marking of UL; U.S. Testing; Timber Products Inspection, Inc.; or another testing and inspecting agency acceptable to authorities having jurisdiction.
 1. Wood Products in Protected Weathering Exposure Applications: Fire-retardant treatment with integral resistance against decay and termites for protected exposure to weathering; for all wood products and wood substrates contained within concrete tile roof construction.
 2. Identify fire-retardant treated products with manufacturer's identifying marks indicating composition, exposure and other ratings, and other marks evidencing compliance with requirements, in addition to the classification markings.
 3. Lumber Standards: Comply with DCC 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.
 - a) Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, and moisture content at time of surfacing and mill.
 - b) Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - i Provide dressed lumber, S4S, unless otherwise indicated.
 - ii Provide dry lumber with nineteen percent (19%) maximum moisture content at time of dressing for two inch (2") nominal thickness or less, unless otherwise indicated.
 4. Concealed Lumber: Provide lumber with the following moisture content, species and grade, and exposure:
 - a) Moisture Content: Nineteen percent (19%) maximum moisture content.
 - b) Grade: No. 2 or Standard Grade.
 - c) Species: Any wood listed by PS20, fire-retardant treated.
 - d) Exposure: Exterior.
 5. Structural-Use Panel Standards: Provide plywood panels complying with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood", and APA RRP-108 "Performance Standards and Policies for Structural Use Panels" for fire-retardant-treated-performance-rated panels.
 - a) Trademark: Factory mark structural-use panels with APA trademark evidencing compliance with grade requirements.
 - i Spa Ratings: Provide panels with span ratings required to meet "Code Plus" provisions of APA Form No. ESO, "APA Design/Construction Guide: Residential & Commercial."
 - ii Furnish panels for exterior exposure with exterior-grade construction and adhesives/glues used in laminating process.
 - a. Minimum Exposure rating, Protected Weathering: Exposure 1.
 - b. Minimum Thickness: Three-fourths (3/4") nominal.
- B. Fasteners: Provide screw-type fasteners of size and type that comply with requirements specified in this Article for material and manufacturer.

1. Provide steel screw-type fasteners for tile with a G185 inch-dip zinc coating per ASTM A 153 zinc-plated to comply with ASTM B 633, Class Fe/Zn 5, or stainless steel screw fasteners of Type 304 stainless steel.

2.07 UNDERLAYMENT MATERIALS

- A. Type A-Self-Adhering Sheet Waterproof Underlayment: ASTM D 1970, slip-resisting, flexible rubberized asphalt, fiberglass reinforced membrane with a granular surface and release-paper backing; cold applied.
 1. Provide underlayment which remains waterproof for in-service conditions of elevated and high temperatures for extended periods of time.
- B. Performance Properties: Provide underlayment materials which comply with the following minimum physical and performance characteristics: Basis of design; Polyglass TU Plus or approved equal.
 1. Thickness: 80 mil.
 2. Surface: Polyester fabric on the upper surface.
 3. Mat: Fiberglass reinforced.
 4. Tensile Resistance: Longitudinal and transverse, min, N (lbf) 89 (20) as per ASTM D 5147.
 5. Peel Adhesion: Four pounds (12#) lbf/ft. width at 75° F, per and ASTM D 1970.
 6. Elongation: Minimum ten percent (10%) of original, when tested per ASTM D 5147.

2.08 LEAD JACKS

- A. Shall be four pound (4#) lead, and of dimensions required to completely cover existing plumbing stack.

2.09 PRECAUTIONS

- A. Some of the indicated materials are extremely flammable and/or toxic. Use precautions indicated on can and carton labels.

PART 3 - EXECUTION

3.01 REFERENCE

- A. The manufacturer's Technical Specifications shall be considered a part of this specification and should be referred to for more specific application procedures and recommendations.
- B. Application of materials shall be in strict accordance with the manufacturer's recommendations except where more stringent requirements are shown or specified. In the instance of a conflict between these specifications and those of the manufacturer, the more stringent specifications shall take precedence.

3.02 EXAMINATION

- A. Examine substrates, areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
 1. Verify that substrate is sound, dry, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings.
 2. For the re-code, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 SURFACE PREPARATION

- A. Tear-off: Remove all existing concrete tile, underlayments, battens, and sheet metal down to the original metal deck, wood deck, or cementitious fiber board substrate as applicable or as noted otherwise. Contractor shall take all precautions and exercise care in removing components from areas of cementitious fiber decks so as not to damage said deck. Existing vertical nailers (counter battens) may remain in place for reuse but shall not exceed 24" o.c. and must be re-secured into the existing deck with the appropriate fastener. New vertical nailers (counter battens) shall be installed so that spacing between vertical nailers (counter battens) shall not exceed twenty-four inches (24"). **Refer to specific roof notes for more information regarding scope of work requirements for each tile roof area.** Discard all existing tile, broken, chipped or deteriorated tile and associated debris from job site. Steel deck substrate shall be smooth and free of debris, sharp edges and other surface irregularities. Substrate repair or replacement shall be performed as required by the deck manufacturer and to minimum standards as recommended by the NRCA.

3.04 DECK PRODUCTS

- A. General: Fastening to Metal Roof Deck Products: Use only screw fasteners to attach wood products to metal roof deck or other wood products.
1. Pneumatic Nailing: Pneumatically driven pins and air driven fasteners (nails) **shall not** be used to attach wood products to metal roof deck or other wood products.
 2. Powder-Actuated Fasteners: Powder-actuated fasteners **shall not** be used to attach wood products to metal roof deck or other wood products.
 3. Set screw fasteners so that heads are flush with surrounding wood products. Do not overdrive fasteners or break face ply of attached plywood products.
- B. General: Fastening to existing Cementitious Fiber Deck Products: Use only appropriate fasteners for securement into said materials as specified.
1. Pneumatic Nailing: Pneumatically driven pins and air driven fasteners (nails) **shall not** be used to attach wood products to metal roof deck or other wood products.
 2. Powder-Actuated Fasteners: Powder-actuated fasteners **shall not** be used to attach wood products to metal roof deck or other wood products.
 3. Pre-drill existing and new wood nailers and set fasteners so that fastener/plates are fully seated and engaged into cementitious fiber board. Fasteners shall not be spaced greater than sixteen inches (16") on center.
- C. Wood Nailers for Attachment of Structural Use Wood Deck Panels: Install wood nailers of required lengths for installation of structural-use plywood panels. Secure by screw-fastening to structural use panels at intervals as required to resist uplift but not greater than that indicated in Structural Contract Documents.
1. Install wood nailers of nominal thickness indicated, at intervals not exceeding twenty-four inches (24") on center for height of sloped roof area, continuous for the length of roof areas, unless otherwise indicated.
- D. Structural-Use Plywood Panels: Comply with applicable recommendations contained in APA Form No. ESC, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.
1. Comply with "Code Plus" provisions of above-referenced guide.
 2. Comply with provisions of SSTD 10 and WPPC "Guide to Wood Construction in High Wind Areas".
 3. Fasten structural-use panels so that panel joints are supported by top flanges of metal deck, framing and blocking or metal clips and that installation is within flatness tolerances.
 4. Secure panels by screw fastening to wood nailers at intervals as required to resist uplift but not greater than indicated by engineer's recommendations.

- E. Edge Strips, Wood Nailers: Install wood edge strips cut to required heights and profiles, and of required lengths for concrete tile installation. Secure by screw-fastening to structural use panels at intervals as required to resist uplift but not greater than sixteen inches (16") on center.
 - 1. Install edge strips, and wood nailers at rakes and similar conditions, and securely fasten to roof deck.
 - 2. Install beveled wood cant at eaves and securely fasten to roof deck and nailers.
- F. Hip/ Ridge Wood Nailers: Install lumber ridge stringer of required heights and cut to required lengths for concrete tile installation. Secure by screw fastening to nailers, structural use panels, and metal roof deck at intervals as required to resist uplift but not greater than eighteen inches (18") on center.
 - 1. Install stringers and wood nailers at ridges, hips and similar conditions, and securely fasten to roof deck.

3.05 UNDERLAYMENT INSTALLATION

- A. General: Install underlayments according to the manufacturer's specific written recommendations and recommendations in "Concrete and Clay Roof Tile Installation Manual."
- B. Self-Adhering Sheet Waterproof Underlayment: Install specified underlayment and all components, wrinkle free, in strict accordance with the manufacturer recommended procedures. Install at locations indicated below, lapped in direction to shed water. Lap sides not less than four inch (4"). Lap ends not less than six inches (6"), staggered twenty-four inches (24") between succeeding courses. Roll laps with roller. Cover underlayment within seven (7) days.
 - 1. Extend primary underlayment layer over entire roof substrate in one ply shingle fashion, in accordance with the manufacturer's recommendations.
 - 2. To the field of the roof, provide one (1) layer of self-adhering underlayment up to the ridge up to openings in deck provided for ventilation, along the eave and rake, and other similar projections and changes in substrate planes,
 - 3. Eave Flashing: Install base layer of underlayment at roof bottom edge; fully cover substrate. Install eave flashing in continuous strips atop base layer of underlayment, lapping flashing ends.
 - 4. Open Valley Flashings: Install base layer of underlayment at valley; do not terminate or cut base underlayment underneath valley. Provide one layer, full width of self-adhering sheet waterproof underlayment atop base layer, centered in valley. Provide one additional layer of self-adhering membrane in eighteen inch widths over the center of valley. Install shop-fabricated sheet metal valley metal as specified, reference Section 07600 Sheet Metal.
 - 5. Excess Exposure: Remove and replace any underlayment exposed for more than seven (7) days, without exception.

3.06 GENERAL TILE INSTALLATION

- A. General: Install roof tiles according to manufacturer's written instructions and recommendations in TRIWSRCA's "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions," and to NRCA's "The NRCA Roofing and Waterproofing Manual".
 - 1. Maintain uniform exposure and coursing of tiles throughout roof.
 - 2. Install tiles with color blend to match existing roof.
 - 3. Do not install cracked, chipped, broken, or stained tiles, or tiles which exhibit other defects.
 - 4. Each tile shall be installed with a minimum of two (2) stainless steel fasteners.
 - 5. Provide and install new, wood nailers, standing on end, to all hip and non-venting ridge applications.
 - 6. New wood nailers shall be installed in accordance with the details with galvanized sheet metal protection over nailer.
- B. Screw Fastening: Provide and install concrete tile with a minimum of two (2) stainless steel fasteners per tile with the manufacturer's proprietary screw and mechanical device. Drive fasteners to clear the tile so the tile hangs from the fastener and is not drawn up.

- C. High-Profile Concrete Tile Installation, General:
1. Install manufacturer's pre-formed eave closure with minimum three-eighths inch (3/8") weepholes, or decorative vent/weep; completely flashed with plastic roof cement and fiberglass mesh.
 2. Install eave closure tiles to provide overlay of top edges of closure tile by first course of starter tiles.
 3. Align starter course of tiles with the front bottom edge of tiles.
 4. Install hip and non-venting ridge tile in accordance with the rolled take tiles, to match existing installation in appearance.
 5. Extend roll end tiles a minimum of four inches (4") over eave fascia or rake.
 6. Extend tolled rake and tile a minimum of four inches (4") over eave fascia or rake.
 7. Extend rolled rake and tiles a minimum of four inches (4") integral gutter openings.
 8. Install ridge tiles with laps facing away from prevailing wind. Seal laps with elastomeric sealant.
- D. Open Valleys: Cut tiles at open valleys for form straight lines. Maintain uniform width of exposed open valley, to match existing roof, from highest to lowest point. Match existing dimension of open valley tile and gaps between tiles. Match existing pattern of open valley tiles.

3.07 APPLICATION OF TILE

- A. Beginning at the lower right, install eave closures with a field tile. Install one (1) complete horizontal course with field tiles all the way to and including the fitting at the left. It is usually a good procedure to lay this first course loose before fastening to determine what adjustments, if any, are needed in the field so that the fit is good throughout.
- B. Continue with the layout of the ride caps loose on the ridge stringer to determine the lap which should be no less than two inches (2"). If it is necessary to cut a ridge piece, do it now so that you will not have to traverse the installed tiles to do it later.
- C. Upon the completion of the first course, the work should progress in diagonal fashion from right to left. Installation of lower courses is always furthest to the left with installation of the higher courses trailing.
- D. Field tiles are fastened with the top of the tiles laid at or close to the horizontal chalk lines. Tiles are raised or lowered slightly in relation to the horizontal chalk lines to obtain straight butt lines. Each field tile and fitting should have a fastener in each hole provided.
- E. When application of the field tiles in each horizontal course reaches about five feet (5') from the left, care should be taken to ensure a proper fit to the final piece which, depending upon construction, may be a field tile, end band, cut hip, cut valley, or special fitting. As a slight crowding or stretching of the width exposure may be necessary, it is advisable to lay these pieces out loose before fastening.
- F. When the top course of field tile is installed, the ridge tiles should be fastened and cemented where they lap and where they rest on the field tiles. Use plastic cement. Do not stain the exposed surface of tiles.
- G. When the edge of the field ends in a hip or a valley, the field tile pieces to be cut should be laid loose, but lapped, up the hip or valley and a chalk line struck to mark the angle of the hip or valley. The pieces should then be cut to the line and installed. Large pieces should be fastened. Small pieces should be set in plastic cement. When installing cut tile at the hip stringer, a heavy bead of cement should be set against the stringer and the cut tile embedded into it prior to fastening.
- H. Under no circumstances should fasteners penetrate the valley metal. Where necessary, the cut valley tiles may be wired (use copper wire) to fasteners driven into the deck beyond the valley metal.

- I. A liberal supply of plastic cement is to be applied over the hip stringer as the hip rolls are fastened to it so that the entire hip stringer and cut hip tiles are sealed. Where the hip rolls lap, they are to be cemented. Lay the hip rolls from bottom of hip. Determine first how much lap is required to eliminate, if possible, any cutting of these pieces. Lap is to be no less than two inches (2"). At the ridge/hip juncture, if a terminal fitting has not been ordered, it is necessary to miter the intersecting ridge and hip caps, wire them and set them in plastic cement.
- J. The foregoing procedure is generally applicable to the installation of all patterns of tile. The roofer should understand how it relates to the particular pattern of tile which is to be installed before beginning the work.

3.08 FLASHING – GENERAL

- A. All flashing procedures and recommendations shall be in strict conformance to the manufacturer's published specifications and those of the National Roofing Contractors Association (NRCA) instructions for steep roofing practices.

3.09 VENT PIPE FLASHING

- A. All projection flashing shall receive new leads as specified. All lead flashing must extend at least six inches (6") under the course of tile immediately above the vent and the top is folded over one-half inch (1/2") to prevent water from driving under the tiles. This flashing extends under the tiles on either side of the vent approximately four inches (4"), and its sides are folded over one-half inch (1/2"). At the lower edge, the flashing extends four inches (4") over the top of the tiles and is turned under one-half inch (1/2") for stiffness.

3.10 EAVE FLASHING

- A. All sheet metal flashing and gutter installation shall be complete.
- B. First row of tile shall extend a minimum of one and one-fourth inches (1-1/4") over eave sheet metal and over all eave closures completely installed. All successive layers of tile shall be completed as required with nailing procedures complete. Sealant or mortar bed shall be completed on eave closures as required.

3.11 RIDGE CAP FLASHING

- A. Installation of ridge sheet metal flashing shall be completely prior to the installation of ridge cap tile.
- B. New ridge nailer shall be installed and fastened to the substrate with fasteners as specified by SMACNA provisions for nailer attachment, Factory Mutual 1-29.
- C. All venting ridge applications shall be constructed in accordance with the details provided and in strict accordance with the manufacturer's recommendations.
- D. All standard ridge applications shall be set in colored matching mortar and nailed as required in straight and properly aligned patterns across the roof area. All tile shall be cut as required for complete installation.

3.12 REPAIR AND REPLACEMENT PROCEDURES DURING CONSTRUCTION

- A. Remove and replace damaged or broken tiles.
- B. Replace clay tiles and related sheet metal flashing and trim that when installed are damaged, abraded, marred, stained or otherwise do not comply with requirements.

- C. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.
- D. Remove debris from project site.
- E. Provide Owner with sufficient stock quantities of all concrete/clay tile products for future use, a minimum amount equal to two (2) roofing squares.

3.13 PRECAUTIONS

- A. Adhesives may be flammable and/or toxic. Use precautions indicated on can and carton labels and as required by all applicable codes.
- B. Surfaces to be bonded shall be dry and clean.
- C. All fasteners shall be installed with a depth-sensing screw gun to prevent overdriving. Underside of deck should be checked to prevent penetration by screws of any conduit or lines which might be attached directly to deck. On metal decks, use only adjustable clutch-driven screw guns.
- D. Mixing of solvents shall take place on the ground and away from the air-handling equipment or other intake equipment, or sources of ignition, at locations authorized by Owner's Representative.

3.14 CLEANING

- A. Remove flux and residual acid immediately from sheet metal flashings and trim by neutralizing with baking soda and washing with clean water. Leave work clean and free of stains, scrap and debris.
- B. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.
- C. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- D. On completion of installation, clean finished surfaces, including removing unused fasteners, metal fillings, pop rivet stems and pieces of flashing.
- E. Remove excess mortar and other materials promptly from clay tile and metal surfaces to avoid staining.

3.15 PROTECTION

- A. Institute protective measures required throughout the remainder of the construction period to ensure that clay roof tile systems will be without damage or deterioration, other than normal weathering, at time of preliminary acceptance/Substantial Completion.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This specification is for a high performance three (3) coat non-reinforced fluid applied membrane system applied over approved MODIFIED BITUMEN substrates. The fluid applied membrane system for modified bitumen consists of one coat of Stain Blocker and one (1) intermediate coat and one (1) wear or finish coat. Each is a single component cold-applied liquid SEBS resin. The system is reinforced at the seams and certain critical areas which shall have polyester reinforcement scrim added and/or an Mastic grade product.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 07 62 00 Sheet Metal

1.03 DEFINITIONS

- A. Roofing Terminology: Refer to the following publications for terms related to roofing work not otherwise defined in this section.
 1. ASTM D 1079: Definitions of terms related to roofing, waterproofing, and bituminous materials
 2. NRCA Roofing and Waterproofing Manual
 3. Roof Consultants Institute Glossary of Terms
 4. Factory Mutual Research Corporation
 5. Underwriters Laboratories

1.04 SUBMITTALS

- A. Provide four (4) 12" x 12" cured samples of the subject target membrane showing the completed thickness of the specified coating system and colored finish layer AS APPLICABLE.
- B. Submit manufacturer's current published installation instructions, product data sheets and Material Safety Data Sheets.
- C. Certifications:
 1. Manufacturer's written certification that installer is approved and licensed to install specified roofing system.
 2. Manufacturer's affidavits that materials used in Project contain no asbestos.
 3. Submit certification that the materials to be used meet these specifications and are acceptable for use with the field membrane system and for the surfaces that they are to be applied.
 4. Manufacturer's written certification of approval / acceptance of these specifications and details.
 5. Warranty: Submit letter from manufacturer signed by agent authorized to do so, stating acceptance of warranty as specified and detailed.
 6. Underwriters Laboratory product certification
 7. Manufacturer's ISO 9001:2008 certification (letter of ISO compliance is not acceptable)
- D. Shop Drawings:
 1. Provide manufacturer's details for the application of the specified products meeting the requirements of the warranty.

2. Furnish shop drawings for all proposed details. Details shall be approved in writing by roofing manufacturer.
 3. Furnish detailed project sequencing, staging, material loading, manpower plans, and project construction schedule for approval.
- E. Warranty:
1. Submit Manufacturer's standard 10-Year warranty covering only manufacturer's materials installed by contractor.
 2. Submit Contractor's Guarantee covering all work for defects in workmanship and labor for a period of 2 years.
 3. Maintenance Procedures: Submit manufacturer's printed instructions for Owner's use regarding care and maintenance of roof.

1.05 INSPECTIONS

- A. The Owner's and Manufacturers' representative shall at all times have access to the job site and work area. The contractor shall provide proper and safe facilities for such access and inspection.
- B. Specification Note: Contractor is required to maintain best roofing practices applicable to roof perimeter safety delineation and warnings apparatus stanchion placement. Contractor is also required to actively enforce and maintain perimeter protection and fall prevention protection as per OSHA requirements at all times.
- C. Manufacturer Observations: Material manufacturer (manufacturer) shall provide weekly on-site observations, performed by a representative of the manufacturer or their duly appointed representative. Such observations may consist of pre-construction, through and including conclusion of installation work, to observe that said project is properly installed in accordance with the manufacturer's specifications, installation protocol, and illustrated details.
- D. At the conclusion of the project, and prior to the issuance of a warranty, a final observation shall be conducted by a representative of the material manufacturer or their duly appointed representative to provide assurance that said project is installed in general accordance with the manufacturer's specifications and illustrated details and the project is eligible for the issuance of warranty protection to the owner.
- E. Any failure by the Owner's or Manufacturers' Representative to detect, pinpoint, or object to any defect or noncompliance of these specifications of work in progress or completed work shall not relieve the contractor, or reduce, or in any way limit, his responsibility of full performance of work required of him under these specifications.

1.06 QUALIFICATIONS

- A. Applicator must be approved by the membrane manufacturer.
- B. Liquid applied system must qualify for the manufacturer's warranty.

1.07 DELIVERY STORAGE AND HANDLING

- A. Deliver all materials and store in their original unopened containers.
- B. Store containers on pallets in a covered or shaded area.

- C. Store all material in a manner, which meets all federal, state and local requirements.
- D. Store in areas where the maximum temperature does not exceed 90° F and at a minimum of 40° F.
- E. Ensure drums are properly covered with a moisture proof covering. Under certain conditions condensation or rain may infiltrate and contaminate the drum contents through the “bung” and ring areas.
- F. KEEP OUT OF THE REACH OF CHILDREN. KEEP AWAY FROM HEAT, FLAME OR ANY OTHER SOURCE OF IGNITION.

1.08 QUALITY ASSURANCE

- A. Submit certification that the materials to be used meet these specifications and are acceptable for use with the field membrane system and for the surfaces on which they are to be applied.

Installation:

1. Unless otherwise indicated, the materials to be used in this specification are those specified and denote the type, quality, performance, etc. required. All proposals shall be based upon the use of the specified material.
2. Install materials in accordance with the manufacturer's current published application procedures and the general recommendations of the National Roofing Contractor's Association.
3. It will be the contractor's responsibility to obtain and/or verify any necessary dimensions and/or jobsite conditions by visiting the job site, and the contractor shall be responsible for the correctness of same. Any drawings supplied are for reference only. Failure to do so does not relieve the contractor of any contractual obligations.
4. Contractor shall plan and conduct the operations of the work so that each section started on one day is complete, details installed and thoroughly protected and in watertight condition before the close of work for that day.
5. Materials will be securely fastened in place in a watertight, neat and workmanlike manner. All workmen shall be thoroughly experienced in the particular class of work upon which employed.
6. Work shall be performed in accordance with these specifications and shall meet the approval in the field of the Architect, consultant, or designated owner's representative.
7. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust, and shall be deposited at an approved disposal site.

1.09 WARRANTY

- A. Upon completion of work provide a Manufacturer's standard 10-Year warranty covering manufacturer's materials installed by contractor. Warranty is to cover materials only for the full liquid system specified including all flashings.
- B. The contractor is responsible to provide diligent vigilance and to take reasonable and prudent preventive action to avoid damages occurring to the building resulting from penetration of water during construction.

- C. The contractor shall guarantee all work against defects in labor and workmanship for a period of two (2) years from the date of final acceptance.

1.10 PRE-INSTALLATION CONFERENCE

- A. Contractor shall schedule with the Owner/Architect no less than 10 days in advance of commencing work, a pre-installation meeting to discuss installation requirements, jobsite coordination, precautions, and any additional concerns.

1.11 SITE PROTECTION

- A. Protect all exposed surfaces and finished walls with a tarp or suitable covering to prevent damage to such areas. The contractor shall assume full responsibility for any damage to finished areas.

1.12 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original unopened packaging with all tags and labels intact and legible. Container labels shall indicate appropriate warnings, storage conditions, lot numbers, and usage instructions. Handle and store materials and equipment in such a manner as to avoid damage. The proper storage of materials is the sole responsibility of the contractor. Materials damaged in shipping or storage shall not be used. Wet or damaged roofing materials shall be discarded, removed from job site, and replaced with new materials prior to application.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Provide manufacturer's standard 10-Year warranty covering manufacturer's materials in accordance with all manufacturer's application requirements and details.
- B. Approved Manufacturer's:
 - a. ELASTIKOTE LLC, 1480 Englewood Avenue, Akron, OH 44305. Phone: 800-992-1053.
 - b. R. M. Lucas Co., 12400 Laramie, Alsip, IL, 60803. Phone: 773-523-4300.
 - c. TRUCO Inc., 3033 W. 44th St., Cleveland, OH, 44113. Phone: 800-227-4569.

2.02 FLUID APPLIED MEMBRANE

- A. Fluid Applied Membrane System Components. Basis of design: ElastiKote 1000 system.
 - 1. Liquid resin membrane. Ready to use single component high performance SEBS resin liquid applied coating. Characteristics ASTM D 6083.

Physical Properties:

Physical State	Viscous liquid
Viscosity @ 77° F, cps	5,000 +/-500
VOC	<250 g/l
Solar Reflectance index (white only)	108 (Initial), 80 (3 yr)
Shelf Life (in unopened container)	2 years
Initial Tensile Strength @ 73° F, psi	1502

Tear Resistance lb/in	208
Initial Elongation @ 73° F, %	1069 (2weeks cure time)
Initial Elongation @ 73° F, % fully cured	1240
Permeance, perms	2.7 (2 weeks cure time)
Permeance, perms, fully cured	0.08
Water Swelling, Mass %	0
Elongation @ 73° F, % (after accelrated Weathering, 1000 hours)	1029

- Fiber reinforced mastic. Flexible high performance, watertight, single component, fiber reinforced mastic. (For use without reinforcement scrim).

Physical Properties:

Viscosity (cps)	400,000 +/-50,000
VOC	<250 g/l
Density at 77° F	7.5 lb/gal +/- 0.5
UV Resistant	Yes
Permeance	2.88 perms

- SEBS mastic. Flexible high performance, watertight, single component, reinforced SEBS resin mastic. (For use with polyester fleece reinforcement scrim).

Physical Properties:

Viscosity (cps)	300,000 +/-50,000
Density at 77° F	7.5 lb/gal +/-0.5

- Sprayable Mastic. Flexible high performance, watertight, single component, micro-fiber reinforced sprayable SEBS mastic. (For use in spray applications as applicable).

Physical Properties:

Viscosity (cps)	19,000 +/-500
Odor	Low aromatic (masked)
Density at 77° F	8.0 lb/gal +/- 0.5

- Stain Blocker (Silver). Ready to use polymeric, SEBS liquid resin stain blocker.

Physical Properties:

Physical State	Viscous liquid
Viscosity	6,500 +/-500
VOC	<250 g/l
Shelf Life (in unopened container)	2 Years
Initial Tensile Strength @ 73° F, psi	812.9
Tear Resistance lbf/in	202.21
Initial Elongation (break) @ 73° F, %	431.3
Permeance, perms	0.903
Water Swelling, Mass %	0
Final Elongation (break) @ 73° F, %	224.6

- Liquid resin membrane intermediate coat (Light Gray) and top coat (White). Ready to use polymeric, SEBS resin liquid applied with stain blocking properties.

Physical Properties:

Physical State	Viscous liquid
Viscosity @ 77° F, cps	5,500 +/-500

VOC	<250 g/l
Solar Reflectance index (white only) CRRC listed	103 (Initial)
Solar Reflectivity (white)	0.82
Thermal Emittance	0.88
Shelf Life (in unopened container)	2 years
Initial Tensile Strength @ 73° F, psi	812.9
Tear Resistance lb/in	202.21
Initial Elongation @ 73° F, %	431.3
Permeance, perms	0.93
Water Swelling, Mass %	0
Final Elongation @ 73° F, %	224.6

B. Packaging

1. 5-gallon pails or 55 gallon drums (50 gallons net by weight)

C. Storage

1. Two (2) years in original unopened container.

2.03 PRIMER

- A. A primer application is not required unless determined and prescribed by Manufacturer. For primer application, always contact manufacturer for specific need, type and protocol.

2.04 REINFORCEMENT

- A. Spun-laced high performance polyester reinforcement scrim used at change of plane junctures, penetrations, curbs, projections, repairs, and seams.

1. Prior to 2nd coat field installation, contractor shall spray apply, or roller apply, directly to the previously installed 1st coat field application, a minimum width 4" reinforcement "strip" and the specified polymeric, SEBS resin liquid applied with stain blocking properties resin over all seams. Such strip shall be applied at a minimum rate of 1.5 gallons per square.

2.05 TOOLS AND EQUIPMENT

- A. Follow manufacturer's published recommendations and installation guidelines for applications, rates, tools, equipment, accessories, and etc.

- B. Contractor shall maintain efficiency, in preparing materials and surfaces for installation according the manufacturer's guidelines and best practices so as to maintain a steady uninterrupted flow of work and installation of specified materials.

1. If using spray equipment, consult manufacture for proper spray rig equipment, tips, procedures, and etc.

- C. Stir product thoroughly from bottom of container to top according to manufacturer's recommendations being careful not to over mix products as that may cause air bubbles and/or pinholes.

- D. Refer to manufacturer's recommende guidelines and procedures of heating materials prior to application.

- E. During application in cold weather, always ensure substrate to be totally dry with no ice, dew, frost, snow, or any other type moisture present.
- F. Never apply products when ambient temperature is below 40° F
- G. Cleaning: Clean tools with mineral spirits after application of any product.

PART 3 - APPLICATION

3.01 SURFACE PREPARATION

- A. Surfaces must be structurally sound, dry and clean, free from moisture, dirt, biological growth (mold, mildew, and algae), grease, oil, paint or any other loose or existing waterproof coatings. Remove all previous coatings, fine particles or any other contamination which may affect the bond of the fluid applied membrane system. Gravel or debris between the substrate and plies is not acceptable. All work surfaces must be in sound condition.
- B. Mechanically remove all loose gravel, dirt, etc. by vacuum, mechanical broom, power washing, etc. Spray pressure shall not exceed 1500 psi. Carefully inspect substrate for loose seams, tears, punctures, or other areas of vulnerability that could allow high pressure cleaning water to ingress into the substrate. Refrain from high pressure cleaning in these vulnerable areas.
- C. After initial power washing and debris removal, clean surface area with manufacturer's recommended cleaner consisting of a water based heavy-duty degreaser mixed with water. Prior to applying cleaning agent, surface must be sprinkled with water to dampen the surface. Working in a systematic grid pattern, apply cleaning agent mixed with water using a hand held sprayer at a rate of 200 square feet per gallon. Allow product to rest on surface for approximately 3 - 4 minutes and then using a push broom apparatus, methodically scrub treated surface area. Rinse thoroughly with water to remove all debris and residues.
- D. If any existing coating or prior contaminants cannot be removed, perform an adhesion test prior to the application of stain blocker resin to insure compatibility and proper bonding properties of resin to substrate.
- E. Any deteriorated roofing membrane being coated should first be repaired using like membrane to the existing roof system. All areas displaying membrane open orifices, severe "alligating", or modified bitumen dehydration cracking, must be addressed (filled) utilizing either the "slurry" mix or manufacturer's recommend mastic(s) material. Any roof system with excess moisture in the insulation must have the wet areas removed and replaced. Consult Manufacturer regarding any moisture issue.
- F. All rust and contaminants need to be removed from metal to be flashed. Clean all metal to bright. Mechanical abrasion (SSPC SP-3 or SSPC SP-10) may be necessary to remove contaminants. Perform an adhesion test in the event potential vulnerability exists in pre-existing substrate conditions.
- G. For PVC piping use sandpaper or similar to "rough up" the surface before flashing.
- H. Follow all manufacturer's recommendations and published guidelines for the proper preparation of target surfaces and preparation of coating materials. Coating materials shall be properly mixed, stirred, and/or heated in strict accordance to the manufacturer's requirements.

- I. All modified bitumen roofs with severe existing membrane defects or which display the presence of excessive and/or deep dehydration cracks (alligatoring) that are to remain within the target substrate, may be subject to the usage of a slurry mix as described below in (C.) or a supplemental coating of SEBS mastic to properly prepare such defective areas prior to commencing with the restoration process.
- J. Existing modified bitumen roofs displaying contraction ridges (mole runs), such ridge areas must be properly "lanced", dried, and repaired prior to beginning the restoration process. The existence of a "ridge" condition could also necessitate utilization of a slurry mix or SEBS mastic preparation method in those specific areas.
- K. After undergoing the initial preparation process of washing, sweeping and/or vacuuming the existing modified bitumen roof, the incorporation of a slurry mix or application of SEBS mastic will properly fill and stabilize strategic areas of the substrate prior to commencing with restoration activity. If a slurry mix is necessitated to maximize the effectiveness of the restoration process, contractor shall prepare and install an SEBS "slurry" mix following the specific protocol depicted below utilizing the manufacturer's recommended product.
 1. Properly heat to 110°F (or as required by manufacturer) a five (5) gallon pail of SEBS liquid membrane resin and stir for a minimum of five (5) minutes to prepare the liquid membrane to receive an infusion of sand particulate.
 2. Separate the heated, stirred, and properly prepared five (5) gallon pail of SEBS liquid membrane into two equal parcels of 2.5 gallons each in separate containers.
 3. Immediately after preparing the two (2) containers of SEBS liquid membrane, introduce 35 lbs - 40 lbs of dry commercial medium grade sand into each container. Stir thoroughly until sand is totally incorporated throughout the mixture and creates a slurry.
 4. Utilizing a smooth squeegee methodology, spread slurry contents of both containers over 100 square feet. This will result in stabilizing the substrate and creation of a smooth, hard substrate surface desirable to maximize the restoration process.
 5. Following same protocol, apply SEBS liquid membrane slurry over entire restoration area and allow to properly dry for a minimum of 24 - 48 hours prior to commencing with further restoration activities.

3.02 PRIMING

- A. A primer application is not required unless determined and prescribed by Manufacturer. For primer application, always contact manufacturer for specific need, type and protocol.

3.03 REPAIRS

- A. Before application of the stain blocker fluid applied membrane, perform all repairs using Elmanufacturer's recommended mastic and spun-laced high performance polyester reinforcement scrim. An initial "slurry" mix preparatory application may be applicable. For seams, cracks, and penetrations with separation cracks that are a maximum of 3/16" wide or less, it is acceptable to properly seal such physical details using manufacturer's recommended mastic applied at a minimum thickness of 3/16" and a minimum width of 4" wide.

For repairs of severe surface separation cracks or severely damaged repair areas, utilize manufacturer's recommended mastic and spun-laced high performance polyester

reinforcement scrim. Properly place spun-laced high performance polyester reinforcement scrim in wet liquid, remove all wrinkles, "fishmouths", or other membrane surface irregularities in the membrane and then immediately apply a topcoat of manufacturer's recommended mastic or spray mastic wet-on-wet to ensure complete saturation and encapsulation of the scrim.

Severe surface separation or dehydration cracks (alligatoring) may be prepared by using manufacturer's recommended "slurry" mix mentioned previously. Before application of the liquid applied membrane, perform all repairs using specified mastic and spun-laced high performance polyester reinforcement scrim. For seams, cracks, and penetrations that are a *maximum* of 3/16" wide or less, it is acceptable to properly seal such physical details using manufacturer's recommended mastic applied at a minimum thickness of 3/16" and a minimum width of 4" wide.

Inspect and immediately correct and remove all voids, wrinkles, fish-mouths, trapped air, etc.

Base and top spun-laced high performance polyester reinforcement scrim coats must extend a minimum of 2" past the perimeter of the repaired area.

If the repair is to a crack, split or similar, a minimum 4" wide reinforcement scrim must be used.

1. Base Repair Coat: Minimum consumption of 2.0 gal/sq (25 wet mils—verify with *Wet Film Gauge*) depending on surface texture.
 - A. Top Scrim Coat: Minimum consumption of 2.0 gal/sq (25 wet mils—verify with *Wet Film Gauge*) depending on surface texture.
 - B. Top Scrim Coat: Minimum consumption of 2.0 gal/sq (25 wet mils—verify with *Wet Film Gauge*) depending on surface texture.

3.04 FLASHING & OTHER DETAIL APPLICATION

- A. Prior to final restoration coating process, prepare all flashings and flashing seams using manufacturer's recommended mastic product. Prepare all change of plane flashing areas. For all change of plane flashing areas with separation cracks that are a *maximum* of 3/16" wide or less, it is acceptable to properly seal such physical details using manufacturer's recommended mastic product applied at a minimum thickness of 3/16" and a minimum width of 4" wide polyester reinforcement scrim. For all flashings and details that are greater than 3/16" wide, apply an even base scrim coat of manufacturer's SEBS recommended mastic with a brush or roller. Embed reinforcement scrim in this layer and immediately apply a top scrim coat of SEBS mastic or sprayable mastic wet-on-wet. Configure the reinforcement by cutting reinforcement scrim 4" wider than the split, seam or transition in each direction.

Ensure that polyester reinforcement is fully saturated and encapsulated within applicable mastic and does not have voids, fish mouths, trapped air, or wrinkles.

1. Base Scrim Coat: Minimum consumption of 2.0 gal/sq (25 wet mils—verify with *Wet Film Gauge*) depending on surface texture.
1. Top Scrim Coat: Minimum consumption of 2.0 gal/sq (25 wet mils—verify with *Wet Film Gauge*) depending on surface texture.
- C. All coping materials and/or termination bars incorporated within the roofing assembly must be inspected. All coping material joints (if applicable) must be

properly prepared and sealed. All termination bars must be sealed and encapsulated utilizing manufacturer's specified mastic. All fasteners must be inspected, replaced if defective, and properly sealed with a "dollop" application of manufacturer's specified mastic prior to restoration coating process.

3.05 FIELD APPLICATION

A. SYSTEM APPLICATION (GENERAL APPLICATION)

MANDATORY THREE (3) STEP PRODUCT ASSEMBLY PROCESS UTILIZING A STAIN BLOCKER, A FOUR (4) INCH WIDE REINFORCEMENT BAND OVER ALL SEAMS WITH AN INTERMEDIATE LAYER OF SPECIFIED LIQUID APPLIED MEMBRANE AND THE TOP COAT LAYER OF SPECIFIED WEAR/FINISH COAT LIQUID APPLIED MEMBRANE.

1. Apply an initial 1st Coat" of Silver Stain Blocker resin with a sprayer and/or a roller at a rate of 2.0 gallons per square over the entire roof surface. Allow the Stain Blocker resin to cure a *minimum* of a complete twenty-four (24) hour period to prevent chemically reacting compatible oils from migrating through the initial 1st coat to the surface and staining the final wear surface coating.
2. After installation of 1st coat and waiting for a minimum period of 24 hours, perform a physical inspection to identify all seams. Install a minimum four (4) inch wide seam reinforcement band over all seams prior to commencing with the 2nd coat (intermediate layer) application, at a rate of 1.5 gallons per square. Upon completion of the reinforcement band installation, allow a minimum of 2 hrs for the band to properly "flash off" prior to applying the 2nd coat
3. Upon completion of reinforcement band installation, apply the 2nd Coat (intermediate layer) following manufacturer's application procedures.
4. After installation of the 2nd coat (intermediate layer), allow a minimum of 2-6 hrs for the coat to properly "flash off" prior to applying the 3rd coat (wear or finish coat). Apply the 3rd coat following manufacturer's application procedures.
5. After completion of the final application, which is to serve as the "wear" coat, wait a minimum of 24 hours before trafficking.

B. Cured Final Membrane Thickness: (THREE COAT APPLICATION) A minimum of 31 dry mils.

3.06 COATING INSTALLATION - GENERAL

A. Membrane Application: Install roofing in accordance with roofing system manufacturer's current published instructions and the following requirements.

B. Aesthetic Considerations: The overall aesthetically pleasing appearance of the finished roof is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials and exercise care in ensuring that the finished application is acceptable to the Owner.

C. General Installation:

1. Contractor shall prevent overspray and be responsible for parking lot areas and/or adjoining areas not part of this contract.

2. Contractor shall be responsible for sealing, as required, all openings that may allow coating migration or dripping, i.e. pitch dams, envelopes, and filler strips.
3. Correct all errors in application the same work day they occur, including bare spots, improper application, physical damage and all work not meeting specifications.
4. Protect adjacent areas and materials from damage by coating operations with tarpaulin or other durable materials.
5. Apply materials in straight, smooth lines without smears, overlaps, or splatter on adjoining materials. Complete roofing operations promptly.

3.07 CLEANING

- A. Remove all used containers and wrappings from the site.
- B. Dispose in approved location and manner.
- C. Remove markings from any finished area.
- D. Repair any finished areas damaged by this application.
- E. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust, and shall be deposited at an approved disposal site. At completion, all work areas shall be left broom clean and all contractor's equipment and materials removed from the site.

3.08 COMPLETION

- A. Upon completion of new installation (including all associated work), institute appropriate procedures for surveillance and protection of finished work during remainder of construction period. Protect all areas where Coating has been installed.
- B. Notify the Owner and the Manufacturer when finished. Coordinate final inspection by Manufacturer. Complete all repairs or requests promptly. Comply with all paperwork and payment requirements necessary to acquire the specified warranty.

END OF SECTION

PART 1 - GENERAL

1.01 AREAS COVERED

- A. Low slope roof areas as indicated on plans.

1.02 INSTALLER QUALIFICATIONS

- A. Roofing Installer must be:
1. Currently prequalified with the Owner in accordance with Owner's prequalification requirements.
 2. Currently in good standing with the manufacturer.
- B. It shall remain each Contractor's responsibility to determine his current status with the manufacturer's certification plan.

1.03 QUALITY ASSURANCE

- A. Applicator/Installer:
1. Acceptable to roof material manufacturer for the manufacturer's warranty requirements.
 2. Five (5) years successful experience on projects similar in size and scope.
 3. Experienced in the type of roofing work required.
 4. Successfully completed previous projects warranted by the manufacturer.
- B. Manufacturer's Observation Reports: Beginning with the commencement of the roofing system installation for the project and continuing through the completion of the roofing system installation and all its associated components, the Roofing System Manufacturer or their appointed representative will provide written field observation reports including digital photos as follows; and this shall be confirmed in writing by the manufacturer and made part of the roofing submittals.
1. Keep the Architect / Owner informed as to the progress, status, and quality of work as observed.
 2. Provide jobsite observations no less than (2) hours per week throughout the installation of the roofing system and its associated components. Reports shall include detailed weekly reports to the Architect, Contractor, and Subcontractor along with digital photographs of work in progress. These reports and photographs shall be descriptive of actual work in progress, status, and condition, and be presented in a written format with digital color photographs.
 3. Report to the Architect / Owner in writing any failure of the Contractor to correct unacceptable practices or conditions noted in reports and/or called to the Contractor's attention.
 4. Confirming, after completion of the project and based on manufacturer's observations and tests (if necessary), that manufacturer has observed no deviations from application procedures in conflict with the plans and specifications or the manufacturer's installation requirements for warranty other than those that may have been previously reported or approved.
 5. It will be the sole responsibility of each bidder to ensure these conditions are to be met by the roofing system manufacturer or their appointed representative prior to bidding.

1.04 MANUFACTURER QUALIFICATIONS

- A. A qualified manufacturer that has been UL Listed and has FM Approvals for membrane roofing system similar to that used in this project for a minimum of fifteen (15) years.
- B. The roofing membrane manufacturer is defined as a company which makes the primary roofing membrane and flashing membrane in its own factories from ruder, rawer states of material. No "Private Label" roofing membrane or flashing membrane material (in which one company's name goes on a product manufactured by others) is acceptable for this project.
- C. Testing Laboratory Services: Test results shall meet or exceed established standards.
- D. Underwriters Laboratory (Roofing Covering): Class A fire hazard classification.

- E. Comply with governing local, state, and federal regulations, safety standards, and codes.

1.05 REFERENCES (INCLUDING LATEST REVISIONS)

A. American Society for Testing and Materials:

1. ASTM B 209 Specification for Aluminum and Aluminum Alloy Sheet and Plate
2. ASTM C 719 Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cycle Movement (Hockman Cycle)
3. ASTM C 794 Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
4. ASTM C 920 Specification for Elastomeric Joint Sealants
5. ASTM D 312 Specification for Asphalt Used in Roofing
6. ASTM D 1863 Specification for Mineral Aggregate Used on Built-up Roofs
7. ASTM D 2178 Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
8. ASTM D 2824 Specification for Aluminum - Pigmented Asphalt Roof Coatings
9. ASTM D 4586 Specification for Asphalt Roof Cement, Asbestos Free
10. ASTM A 361 Sheet Steel, Zinc-Coated (Galv.) by the Hot-Dip Process for Roofing and Siding
11. ASTM C 177 Test for Thermal Laboratory Services
12. ASTM C 728 Perlite Thermal Insulation Board

B. Federal Specifications:

1. LLL-I-535B
2. SS-A-701B
3. SS-C-153
4. SS-C-153C
5. SS-R-620B
6. TT-C-498C
7. TT-P-320D
8. TT-S-00227E
9. TT-S-00230C
10. SS-S-001534 (GSA-FSS)
11. L-P-375

C. Industry Standards:

1. The National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual
2. Single-ply Roofing Institute (SPRI) - A Professional Guide to Specifications Manual
3. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) - Architectural Sheet Metal Manual
4. American Society of Civil Engineers – ASCE 7

1.06 SUBMITTALS

A. Samples and Manufacturer's Submittals: Submit prior to delivery or installation.

1. Samples of all roofing system components including all specified accessories.
2. Submit samples of proposed warranty complete with any addenda necessary to meet the warranty requirements as specified.
3. Submit latest edition of manufacturer's specifications and installation procedures. Submit only those items applicable to this project.
4. A written statement from the roofing materials manufacturer approving the installer, specifications and drawings as described and/or shown for this project and stating the intent to guarantee the completed project.

B. Shop Drawings: Provide manufacturer's approved **job specific details** of all perimeter conditions, projection conditions, and any additional special job conditions which require details other than indicated in the drawings.

- C. Maintenance Procedures: Within ten days of the date of Substantial Completion of the project, deliver to the Owner three copies of the manufacturer's printed instructions regarding care and maintenance of the roof.
- D. Written confirmation from manufacturer's stating conformance to quality assurance as listed above in Section 1.03, Quality Assurance, Item B, Nos. 1 thru 5.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers and rolls with all labels intact and legible including labels indicating appropriate warnings, storage conditions, lot numbers, and usage instructions. Materials damaged in shipping or storage shall not be used.
- B. Deliver materials requiring fire resistance classification to the job with labels attached and packaged as required by labeling service.
- C. Deliver materials in sufficient quantity to allow continuity of work.
- D. Handle and store material and equipment in such a manner as to avoid damage. Liquid products shall be delivered sealed, in original containers.
- E. Handle rolled goods so as to prevent damage to edge or ends.
- F. Select and operate material handling equipment so as not to damage existing construction or applied roofing.
- G. Moisture-sensitive products shall be maintained in dry storage areas and properly covered. Provide continuous protection of materials against wetting and moisture absorption. Store roofing and flashing materials on clean raised platforms with weather protective covering when stored outdoors.
- H. Store rolled goods on end.
- I. Protect materials against damage by construction traffic.
- J. The proper storage of materials is the sole responsibility of the contractor and any wet or damaged roofing materials shall be discarded, removed from the project site, and replaced prior to application.
- K. Comply with fire and safety regulations, especially with materials which are extremely flammable and/or toxic. Use safety precautions indicated on labels.
- L. Products liable, such as emulsions, to degrade as a result of being frozen shall be maintained above 40° F in heated storage.
- M. No storage of materials shall be permitted on roof areas other than those materials that are to be installed the same day.

1.08 SITE CONDITIONS

- A. Job Condition Requirements:
 - 1. Apply roofing in dry weather.
 - 2. Do not apply roofing when ambient temperature is below 40° F.
 - 3. Coordinate the work of the contractor with the work to be performed by the Owner's personnel, to ensure proper sequencing of the entire work. The Owner's personnel will be erecting interior protection for equipment, if required. The contractor is to schedule his work so that adequate time is allowed for the Owner's personnel to perform the work. No roof work shall be performed until the Owner's personnel have completed erection of the interior protection in that area.

4. Proceed with roofing work only when weather conditions are in compliance with manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with specifications.
 5. Schedule the work so the building will be left watertight at the end of each day. Do not remove more roofing material than can be reinstalled in any working day.
 6. All surfaces to receive new roofing shall be smooth, dry, and free from dirt, debris, and foreign material before any of this work is installed. Competent operators shall be in attendance at all times equipment is in use. Materials shall be stored neatly in areas designated by the Owner. Load placed on the roof at any point shall not exceed the safe load for which the roof is designed.
 7. The contractor shall take all necessary precautions to protect the roof mat and deck from damage. The contractor shall be responsible for repairing all new areas of damage caused by the negligence of the contractor, at the contractor's expense. The Owner's on-site representative shall determine damage caused by contractor negligence.
 8. The contractor shall follow local, state, and federal regulations, safety standards, and codes for the removal, handling, and disposal of asbestos containing materials, if present. When a conflict exists, use the stricter document.
 9. Follow insurance underwriter's requirements acceptable for use with specified products or systems.
 10. Due caution should be exercised so as not to alter the structural integrity of the deck. When cutting through any deck, care should be taken so as not to damage the deck or any part of the deck, such as post tension cables, etc.
 11. All kettles shall have an automatic thermostat control, and temperature gauge, all in working order.
 12. The contractor is to verify the location of all interior ducts, electrical lines, piping, conduit, and/or similar obstructions. The contractor is to perform all work in such a manner as to avoid contact with the above mentioned items.
 13. Surface and air temperatures should be a minimum 45° F during applications of cleaner and waterproof coating and remain above 45° F for a minimum of four (4) hours following applications. Verify compatibility of cleaner with coatings, paints, primers and joint sealers specified. Advise Owner's representative of any problems in this regard prior to commencing cleaning operations.
 14. Temporary Sanitary Facilities: The contractor shall furnish and maintain temporary sanitary facilities for employees use during this project. These will be removed after the completion of the project. All portable facilities shall comply with local laws, codes, and regulations.
- B. Protection of Work and Property:
1. Work: The contractor shall maintain adequate protection of all his work from damage and shall protect the Owner's and adjacent property from injury or loss arising from this contract. He shall provide and maintain at all times any OSHA required danger signs, guards, and/or obstructions necessary to protect the public and his workmen from any dangers inherent with or created by the work in progress. All federal, state, and city rules and requirements pertaining to safety and all EPA standards, OSHA standards, NESHAP regulations pertaining to asbestos as required shall be fulfilled by the contractor as part of his proposal.
 2. Property: Protect existing planting and landscaping as necessary or required to provide and maintain clearance and access to the work of this contract. Examples of two categories or degrees of protection are generally as follows: a) removal, protection, preservation, or replacement and replanting of plant materials; b) protection of plant materials in place, and replacement of any damage resulting from the contractor's operations.
 3. Twenty-four Hour Call: The contractor shall have personnel on call 24 hours per day, seven (7) days per week for emergencies during the course of a job. The Owner's Project Manager is to have the 24 hour numbers for the contact. Contractor must be able to respond to any emergency call and have personnel on-site within two (2) hours after contact. Numbers available to the Owner's Project Manager are to be both home and office numbers for:
 - a) Job Foreman
 - b) Job Superintendent
 - c) Owner or Company Officer

- C. Damage to Work of Others: The contractor shall repair, refinish, and make good any damage to the building or landscaping resulting from any of his operation. This shall include, but is not limited to, any damage to plaster, tile work, wall covering, paint, ceilings, floors, or any other finished work. Damage done to the building, equipment, or grounds must be repaired at the successful contractor's expense holding the Owner harmless from any other claims for property damage and/or personal injury.
- D. Measurements: It will be the contractor's responsibility to obtain and/or verify any necessary dimensions by visiting the job site, and the contractor shall be responsible for the correctness of same. Any drawings supplied are for reference only.
- E. Use of Premises:
 - 1. The contractor is advised that the Owner will occupy the building at all times, and the contractor must provide all safeguards required to protect personnel and to keep noise levels as low as reasonably possible for each operation.
 - 2. The contractor shall:
 - a) Coordinate work in such a manner as to not interfere with the normal operation of the building.
 - b) Assume full responsibility for protection and safekeeping of products stored on premises.
 - c) Agree to hold the Owner harmless in any and all liability of every nature and description which may be suffered through bodily injuries, including death of any persons by reason of negligence of the contractor, agents, employees, or subcontractors.
- F. Cleaning and Disposal of Materials:
 - 1. Contractor shall keep the job clean and free from all loose materials and foreign matter. Contractor shall take necessary precautions to keep outside walls clean and shall allow no roofing materials to remain on the outside walls.
 - 2. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust. A suitable scrap chute or hoist must be used to lower any debris. At completion, all work areas shall be left broom clean and all contractor's equipment and materials removed from the site.
 - 3. All bituminous or roofing related materials shall be removed from ladders, stairs, railings, and similar parts of the building.
 - 4. Debris shall be deposited at an approved disposal site.

1.09 WARRANTY

- A. Twenty (20) Year NDL Warranty: The completed roofing system shall be guaranteed for a minimum of twenty (20) years from the date of Substantial Completion for this project. Guarantee responsibilities shall be as follows:
 - 1. Roofing contractor shall guarantee the entire roofing system for a period of two (2) years from the date of Substantial Completion.
 - 2. The materials manufacturer shall guarantee the entire roofing system as supplied by system manufacturer for a total period of twenty (20) years from the date of substantial completion.
 - 3. Membrane manufacturer shall provide the written warranty as specified.
 - 4. The entire roofing system shall be guaranteed to be watertight and against any failures of workmanship and materials. Repair of the system, including materials and labor, shall be done at no cost to the Owner.
 - 5. Warranty repairs shall be performed by a certified installer. The repairs shall be performed in accordance with the manufacturer's written instructions and recommended procedures so as to not void the warranty.
- B. During the proposal period each Contractor shall make arrangements with the materials manufacturer to provide the required warranty. Refer to SUBMITTALS paragraph in this section for requirements concerning submittals of warranty.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Compatibility: Provide materials that are recommended by manufacturers to be fully compatible with indicated substrates, or provide separation materials as required to eliminate contact between incompatible materials.
- B. Materials herein specified shall be supplied or approved in writing by the manufacturer issuing the warranty.
- C. The white polyester reinforced fleece backed adhered Elvaloy® roofing system shall only be applied by manufacturer approved and trained roofing contractors.
- D. The manufacturer shall have 15 years UL listing for the membrane to be used on the project. Membrane manufacturer shall have a minimum of 15 years FM approval, and 15 years manufacturing experience with the roofing membrane specified for this project.
- E. All roofing and roof accessories shall be installed in compliance with manufacturer's current specifications and details.
- F. All materials used on the project shall be asbestos free.
- G. Approved manufacturer's:
 - 1. Flex Membrane International
 - 2. Garland Company
 - 3. Tremco Roofing and Waterproofing
 - 4. SR Products
 - 5. Pre-approved equal

2.02 ROOFING MEMBRANE

- A. The white 60 mil polyester reinforced membrane with a minimum 5.50 oz. polyester fleece backed Elvaloy® membrane shall have the following minimum physical properties, or pre-approved equal.

<u>Property</u>	<u>Test Procedure</u>	<u>Physical Properties</u>
Color		White
Thickness	ASTM D 751	60 mil Nominal Membrane with 5.50 oz. polyester fleece backing
Roll Size		76" x 90'
Breaking Strength	ASTM D 751	325 x 324 lbf
Tear Strength	ASTM D 751	89 x 109 lbf
Seam Strength	ASTM D 751	295 lbf
Elongation	ASTM D 751	50% x 42%
Heat Aging	ASTM D 3045	>90 %
Low Temp Bend	ASTM D 2136	Pass (-40° F)
Static Puncture Resistance	ASTM D 5602	Pass
Dynamic Puncture Resistance	ASTM D 5635	Pass
Permeance	ASTM E 96	0.003 Perms
Dimensional Stability	ASTM D 1204	0.3%
Weight Change after Water Immersion		ASTM D 570 1.20%
Accelerated Weathering	ASTM G 155	Pass
Fungi Resistance	ASTM G 21	No growth
Solar Reflectivity	ASTM C 1549	0.82 (white)
Emissivity	ASTM C 1371	0.91 (white)

PUBLIC LIBRARY ROOFING REPAIRS

FULLY ADHERED MULTI – PLY ROOF SYSTEM

	Solar Reflectance Index (SRI)	ASTM E 1980	109 (white)
	Underwriters Laboratory	Class A	Approved
	Factory Mutual	Class 1-90	Exceeds
	Thermoplastic Membrane	ASTM D 4434	Exceeds
2.03	FLASHING MEMBRANE		

- A. The flashing membrane shall be a white Elvaloy® polyester reinforced flexible sheet, or pre-approved equal.

<u>Property</u>	<u>Test Procedure</u>	<u>Physical Properties</u>
Color		White
Thickness	ASTM D 751	60 mil Nominal
Breaking Strength	ASTM D 751	298 x 278 lbf
Seam Strength	ASTM D 751	286 lbf
Tear Strength	ASTM D751	89 x 109 lbf
Elongation	ASTM D 751	35% x 34%
Heat Aging	ASTM D 3045	>90%
Static Puncture Resistance	ASTM D 5602	Pass
Dynamic Puncture Resistance	ASTM D 5635	Pass
Low Temperature Bend	ASTM D 2136	Pass @ -40°F
Permeance	ASTM E 96	0.003 Perms
Dimensional Stability	ASTM D 1204	0.3%
Wt. Change after Immersion	ASTM D 570	1.20%
Accelerated Weathering	ASTM G 155	Pass
Fungi Resistance	ASTM G 21	Pass
Solar Reflectivity	ASTM C 1549	0.82
Solar Emissivity	ASTM C 1371	0.91
Solar Reflectance Index (SRI)	ASTM E 1980	109
Underwriters Laboratory		Class A
Factory Mutual		Class 1-90

2.04 **NON-REINFORCED MEMBRANE**

- A. The non-reinforced membrane shall have the following minimum properties, or pre-approved equal.
1. Description: Non-reinforced thermoplastic white membrane, thickness approximately 45 mils.
 2. Use: Inside/outside corners, multiangled intersections, sealant pockets and other conditions where molding of the membrane is required.

2.05 **BITUMEN**

- A. Shall be ASTM D 312 Type IV steep asphalt.

<u>Slope</u>	<u>Base Sheet</u>	<u>Cap Sheet</u>	<u>Backnail</u>	<u>Strap</u>
0 - 1/2" per 12"	Type IV	Type IV	No	No
1/2" - 2" per 12"	Type IV	Type IV	Yes	Strap if Possible
2" - 3" per 12"	Type IV	Type IV	Yes	Yes

2.06 **CAULKS**

- A. Sealant for use at coping joints, reglet joints, etc., shall be a one-component urethane non-sag, gun grade sealant designed for use in active exterior joints, and shall meet or exceed Federal Specification No. 1 TT-S-00230C, Type II, Class A, ASTM C 920. Where joint surfaces are contained or are contaminated with bituminous materials, provide manufacturer's modified-type sealant (modified with coal-tar or asphalt as required), or pre-approved equal.

- B. To seal the leading edge of the membrane, to bond membrane at terminations with metal, and for open seam repair, sealant shall be a thermosetting, solvent free, non-slump, self-fixturing, multipurpose structural sealant which shall meet the following physical and performance properties, M-1 as manufactured by Chem Link Inc., or pre-approved equal.

Properties

Specific Gravity	1.62 (13.5 lbs./gallon)
Viscosity	800,000 cps Brookfield RTV, TF spindle, 4 rpm 70° F.
Shear Strength (ASTM D-1002)	300 psi+ (7 day ambient cure)
Elongation @ break (ASTM D-412)	300% (7 day ambient cure)
Hardness Shore A (ASTM C-661)	50 – 55 (14 day ambient cure)
Tack free time (ASTM C-679)	35 minutes
Low temperature flex	Minus 20° F: PASS
Slump (sag) (ASTM C-639)	Zero slump
Shrinkage (ASTM D-2453)	No measurable shrinkage (14 day cure)
Service temperature	-40° F to 200° F

2.07 UNDERLAYMENT PLIES

- A. Shall be Underwriters Laboratory approved and listed in the FM Global Approval Guide.
- B. Shall be venting base sheet, Underwriters Laboratory Type G-2, ASTM D 3672, Type II, as manufactured by Johns Manville., or approved equal.

2.08 INSULATION

- A. All insulation shall be approved in writing by the membrane manufacturer as to thickness, type, and manufacturer. All insulation must be approved for the specific application, Underwriters Laboratory approved, and be listed in the FM Global Approval Guide.
- B. Polyisocyanurate Roof Insulation at structurally sloped roof areas: Insulation shall be **two layers** of rigid polyisocyanurate foam board; total thickness and LTTR-value shall be a minimum of 4.5" = 25.8; meeting Federal Specification No. HH-I-1972/1 or 2 with 20 psi minimum compressive strength and 2.0 pcf minimum density. Board shall be surfaced on two (2) sides with non-asphaltic facer material.
- C. Polyisocyanurate Roof Insulation at structurally flat roof areas: Base layer insulation shall be rigid polyisocyanurate foam board; total thickness and LTTR-value shall be a minimum of 1.5" = 8.6; meeting Federal Specification No. HH-I-1972/1 or 2 with 20 psi minimum compressive strength and 2.0 pcf minimum density. Board shall be surfaced on two (2) sides with non-asphaltic facer material.
- D. Tapered Polyisocyanurate Roof Insulation: Shall be tapered polyisocyanurate board per Federal Specification No. HH-I-1972/1 or 2, with a 20 psi minimum compressive strength and 2.0 pcf density minimum. Insulation shall be of thickness required for one-fourth inch (1/4") slope per foot to roof drains as shown on drawings and shall provide an average LTTR-value of 25 when combined with the 1.5" base layer described in paragraph C above. Insulation shall be surfaced on two (2) sides with a non-asphaltic facer material.
- E. Recovery Board: Impact-resistant, nonstructural, specially engineered gypsum and cellulose fiber panels with 95% recycled content; uniform water-resistance throughout core and surface. Board four feet by eight feet (4' x 8'), thickness 1/2"; conforming to ASTM C 1278, meeting FM 4470 Class 1 criteria, classified by Underwriters Laboratory, and listed in the FM Global Approval Guide. Board will meet the following physical properties, Securock™ Roof Board, as manufactured by USG Corporation, or approved equal.

<u>Test</u>	<u>Typical Value</u>	<u>Test Method</u>
Fire Resistance	Class A	UL 790
Permeance	≤ 30	ASTM C473
Surface water absorption	≤ 1.6 nominal grams	ASTM C473
Water resistance	Maximum 10% weight percentage gain	
Mold Resistance	Minimum rating of "10"	ASTM D3273

2.09 FASTENERS AND PLATES

- A. General: All fasteners and plates for the installation of insulation, and for the installation of the membrane, shall be supplied and warranted by the membrane manufacturer for the specific application.
- B. Membrane attachment toggles, if required, shall be provided and warranted by the membrane manufacturer.
- C. All fasteners and plates shall be FM Global approved corrosion resistant screws or anchors supplied and warranted by the membrane manufacturer. Fasteners shall be of a type and length recommended by the manufacturer for fastening the insulation and/or protection layer (through the existing roof in reroofing) to the structural roof deck.

2.10 FASTENERS

- A. Fasteners and fastening plates or bars shall be listed in the FM Global Approval Guide, and be as recommended by the fastener manufacturer for the specific application.
- B. Fastener for Brick: Shall be one-fourth inch by two inches (1/4" x 2"), zinc with plated steel or stainless steel nail, one piece unit, flat head, as manufactured by Rawl Zamac Nailin, or approved equal.
- C. Fastener for Steel Deck: Shall be a #15 extra heavy duty fastener, fluorocarbon coated, with CR-10 coating. A minimum .204 diameter shank and .265 diameter thread. To be used with round pressure plates or bar, and having a fluorocarbon CR-10 coating, when subjected to thirty (30) Kesternich cycles (DIN 50018) shows less than ten percent (10%) red rust which surpasses FM Global Approval Standard 4470, as manufactured by TRUFAST, LLC., or approved equal. Fasteners, plates, and/or bars shall be listed in the FM Global Approval Guide.
- D. Fastener for Lightweight Concrete Deck and Cementitious Fiber (Tectum) Deck: Shall be a precision formed coated steel tube fastener, of appropriate length (minimum embedment of 1" or as required to meet uplift requirements), shaped to easily penetrate decking with a dual (twin) locking staple nail and three inch (3") coated steel, smooth secured galvanized washer (plate). Twin Loc-Nail 1.8", as manufactured by TRUFAST, LLC., or approved equal. Fasteners and washers shall be listed in the FM Global Approval Guide

2.11 BONDING ADHESIVE FOR FLASHING

- A. Description: Adhesive is a bonding cement of synthetic rubber for fully adhering membranes to various substrates, produced by Ashland Chemical, or approved equal.

Typical Liquid Properties (Room Temperature)

Color	Amber/Yellow
Base Product	Neoprene
Solids	25%
Specific Gravity	.87
Pounds/Gallon	7.25
Viscosity (CPS)	2500
Solvents	Ketone, Toluene, Aliphatic Hydrocarbon, Zylene
Estimated Coverage	
2 Sided Application	55/70 sq. ft. (2/2.5 mils dry)
DOT Label Required	Flammable Liquid
Code - 584661	

- B. Handling: Contains ingredients which could be harmful if mishandled. Contact with skin and eyes should be avoided and necessary protective equipment and clothing should be worn.

2.12 ASPHALT ROOF PRIMER

- A. Quick-dry asphalt-based primer for priming of asphalt roof surfaces.

Applicable Federal Specification	SS-A-701B
ASTM	D 41
Flash Point	105° F
Viscosity at 80° F (ASTM D 217)	50-60 K.U.
Weight per gallon	7.4 pounds
Drying time (to touch)	Min. 4 hours

2.13 CANT STRIP

- A. Shall be wood fiber where used for non-structural purposes. Shall be treated solid wood where used for structural purposes meeting NRCA, FM Global and Underwriters Laboratory guidelines. If solid wood cant is used where insulation exists, cant is to be toe nailed into treated solid wood nailer the same height as insulation.

2.14 WOOD

- A. All nailers, cants and wooden curbs shall be fire rated, treated lumber as required by NRCA, FM Global and Underwriters Laboratory guidelines.

2.15 TRIM STRIP

- A. The trim strip shall have the following minimum properties.
1. Six inch (6") wide non-reinforced 45 mil thermoplastic used for capping butted ends of rolls.
 2. The trim strip is seamed with the use of hot-air welding.

2.16 CORNERS

- A. Inside and outside corners shall be supplied by the membrane manufacturer and shall be of the same base material as the roof membrane.

2.17 PIPE BANDS

- A. Stainless steel bands with self-locking heads.
- B. Tighten with hand tool for tension control and flush cut off.

2.18 PRE-MOLDED BOOTS

- A. Non-reinforced thermoplastic tapered molds for various pipes, heat welded to field membrane and sealed at top with stainless steel pipe bands and seam sealer.

2.19 PITCH PAN SEALANT

- A. Shall be one-part, self-leveling polyurethane sealant meeting Federal Specification No. TT-S-00230C, Type I, Class A, ASTM C 920, Type S, Grade P, Class 25, for use in new pitch pans, as recommended by roof system manufacturer, or pre-approved equal.

2.20 PIPESTANDS (6" OR SMALLER - LESS THAN 9" OFF ROOF SURFACE)

- A. Black, polycarbonate construction with stainless steel roller pin assembly suitable for gas lines and conduit set in finished roof assemblies, Model No. 24R, sized accordingly, as manufactured by Miro Industries, Inc. or approved equal.

2.21 LEAD FLASHING DRAINS

- A. Shall be four pound (4#) lead, minimum thirty-six inches by thirty-six inches (36" x 36"), used for flashing of internal drains.

2.22 WALKWAY PAD

- A. The walkway pad shall have the following minimum physical properties, and be applied with edges heat or solvent welded.

<u>Property</u>	<u>Test Procedure</u>	<u>Physical Properties</u>
Color		Gray
Size		36" wide x 60' long
Thickness	ASTM D 638	.080" nominal
Reinforcement		1000 Denier Polyester
Tear Strength	ASTM D 751	210 X 200 lbf
Puncture Resistance		96 lbs
Cold Resistance	ASTM D 1043	-40° C
Shore A Durometer		85
Hydrostatic Resistance		400 psi
Dimensional Stability	ASTM D 1240	≤ 1%
Ultraviolet Stability		12,000 hrs. Excellent

2.23 TERMINATION/PRESSURE BARS

- A. Aluminum strip shall be extruded channel bar with a mill finish, width one inch (1"), thickness 0.100" ± .008", leg height one-fourth inch (1/4") top and bottom, leg angle ninety degrees (90°), for perimeter and curb anchorage, having predrilled holes six inches (6") on center, as manufactured by Olympic Fasteners, or approved equal.

2.24 T- JOINT COVERS

- A. Supplied by the membrane manufacturer as a secondary covering to all T – Joints in the installation of thermoplastic roof systems consisting of waterproofing coverings equal to or

greater than 60 mils in thickness.

2.25 VERTICAL WALL SHIMMING MATERIAL

- A. Shall be one of the following unless otherwise accepted by Owner's representative: OSB, exterior grade plywood, gypsum core board or concrete core board. Proper selection of material is required to achieve FM Global and UL guidelines.

2.26 SELF-ADHERING UNDERLAYMENT FOR TEMPORARY WATERPROOFING

- A. A premium heavyweight, minimum 60 mil, self-adhering underlayment, to use as a temporary waterproofing barrier.

2.27 OVERNIGHT SEAL

- A. Hot applied asphalt bitumen shall be provided for the purpose of night sealing the roof system.

2.28 DELIVERY AND STORAGE

- A. All materials shall be delivered with appropriate carton and can labels indicating appropriate warnings, storage conditions, lot numbers, and usage instructions. Materials damaged in shipping or storage shall not be used.

2.28 PRECAUTIONS

- A. Some of the indicated materials are extremely flammable and/or toxic. Use precautions indicated on can and carton labels.

2.29 MISCELLANEOUS MATERIALS

- A. Other materials shall be as specified or of the best grade for the proposed use as recommended by the manufacturer.

PART 3 - EXECUTION

3.01 REFERENCE

- A. The manufacturer's Technical Specifications shall be considered a part of this specification and should be referred to for more specific application procedures and recommendations.
- B. Application of materials shall be in strict accordance with the manufacturer's recommendations except where more stringent requirements are shown or specified. In the instance of a conflict between these specifications and those of the manufacturer, the more stringent specifications shall take precedence.
- C. General Installation:
 1. Protect adjacent areas with tarpaulin or other durable materials.
 2. Contractor shall prevent overspray, and be responsible for parking lot areas and/or adjoining areas not part of this contract.
 3. Contractor shall be responsible for sealing, as required, all openings that may allow bitumen migration or drippage, i.e. pitch dams, envelopes, and filler strips.
 4. Prepare surfaces according to manufacturer's or applicator's published instructions. All metal that is to receive bitumen, or come in contact with bitumen or adhesive, shall be first primed with appropriate primer. Any prefinished sheet steel that is to receive bitumen, or come in contact with bitumen or adhesive, shall be scored, scuffed or abraded prior to receiving primer.
 5. Use cleaning materials or primers necessary to render an acceptable surface/substrate.
 6. All surfaces/substrates shall be clean and dry prior to application of materials.
 7. Prior to application of felts and membrane, all foreign matter, gravel, etc., shall be removed from the insulation and/or substrate. Gravel or debris between the insulation/substrate and plies is not acceptable.

8. Bitumen kettle shall have a visible thermometer and thermostatic control or some other means to provide positive monitoring of the bitumen temperature when it is heated in accordance with manufacturer's instructions.
9. Ambient temperature shall be 45° F and rising.
10. The maximum heating temperature of Type IV asphalt shall be 500° F.
11. The temperature of Type IV asphalt shall be approximately 430° F ± at the point of application or as recommended by the membrane manufacturer.
12. Maintain kettle and/or tanker temperature at least 25° F below the actual flash point of the bituminous materials used.
13. Never heat the bituminous materials at high temperatures for prolonged periods of time.
14. Do not allow bituminous materials to stand in luggers for long periods.
15. Circulate bituminous materials.
16. Insulate hot transport lines if required.
17. Wrinkles, buckles, kinks, and fishmouths are not acceptable when laying membrane.
18. Where deteriorated base flashing is removed, primed cant strips shall be installed at the intersection of the deck and the vertical surfaces. All flashings shall be mechanically top-fastened with a termination bar a minimum of six inches (6") on center at the top leading edge, and be a minimum of eight inches (8") in height from finished membrane.
19. Provide a water test of each roof section prior to substantial completion. The test should simulate rainfall of one inch (1") per hour minimum.
20. On slopes greater than one inch (1") in twelve inches (12"), refer to NRCA and/or manufacturer's guidelines for backnailing procedures and follow the more stringent guidelines for all specified materials.

3.02 SUBSTRATE PREPARATION

- A. Tear-off: Remove all built-up roofing, flashing, insulation, and sheet metal down to the roof deck or original substrate. Substrate shall be smooth, free of debris, sharp edges, and other surface irregularities prior to starting roofing application. Substrate repair shall be performed as required to minimum of NRCA standards.
- B. Metal Decks - Reroof:
 1. All loose rust, bitumen, or other foreign material shall be removed from the deck before applying asphalt primer at the minimal rate of one and one-half (1-1/2) gallons per one hundred (100) square feet of area.
 2. Deteriorated metal decking shall be repaired or replaced as required and as recommended by the deck manufacturer on a unit cost basis as approved by the Owner's representative.
 3. The metal deck shall be of like kind, quality, gauge and configuration. The deck span shall not exceed that recommended by FM Global Bulletin 1-28.
 4. If metal deck must be replaced:
 - a) Erect metal decking as recommended by the SDI. Properly align and level on structural supports.
 - b) Allow minimum three inch (3") bearing when supported by structural steel and minimum six inch (6") bearing when supported by masonry.
 - c) Care shall be exercised in the selection of electrodes and amperage to provide positive welds and to prevent blowholes.
 - d) Weld metal shall penetrate all layers of deck material at end laps and side joints and shall have good fusion to the supporting members.
 - e) Side lap fasteners shall be No. 12, self-drilling, self-tapping screws.
 - f) Install closure strips and angle flashings as required to close openings between deck and walls, columns and openings.
 - g) Immediately after installation, touchup welds, burned areas and damaged spots with prime paint.
 - h) Expansion/control joints shall be installed so that no one area exceeds two hundred feet by two hundred feet (200' x 200').
- C. Above-Deck Fills:
 1. Roofing substrate must be acceptable to the manufacturer prior to application of roof materials.

2. Nailable fills shall receive base sheet properly fastened with suitable fasteners.
3. Fill shall be patched with quick setting cement as required to provide a smooth substrate for installation.

D. Cementitious Wood Fiber Decks:

1. Damaged planks caused by membrane removal, moisture or deflection shall be replaced with planks similar in type and size in strict accordance with the deck manufacturer's recommendations.
2. All planks must be securely anchored to the supporting members in strict accordance with the deck manufacturer's recommendations.
3. Dry rosin-sized sheathing paper shall be tacked into place over the deck to prevent asphalt from dripping into the building.
4. It is required that insulation board be mechanically fastened to the deck with suitable fasteners as recommended by the manufacturer of the insulation. The insulation board is used to isolate the deck from the membrane.

3.03 CATEGORY II (NON-FRIABLE) ASBESTOS CONTAINING MATERIALS (ACM) REMOVAL

- A. Owner and Contractor agree to exonerate, indemnify, defend, and hold harmless the roofing material manufacturer from and against all claims, demands, lawsuits, damages, expenses and losses incurred by Contractor's removal of asbestos-containing materials from Owner's building and work site. Contractor must conduct its operations according to applicable requirements including but not limited to those established by:
1. Occupation Safety and Health Administration (OSHA).
 2. Environmental Protection Agency (EPA).
 3. Department of Transportation (DOT).
 4. State or Local Air Pollution Control Authorities/Agencies.
 5. State or Local Solid Waste or Hazardous Waste Authorities/Agencies.
 6. State or Local Health Department(s).
 7. State or Local Building Code Authorities.
 8. Other federal, state or local agencies or authorities.
- B. Contractor or Owner shall perform appropriate inspections, surveys and file timely notifications to proper authorities prior to starting roof renovation or demolition activities. Inspectors, project planners, project managers, contractors and workers involved in the roof project shall have appropriate training, licenses and registrations. Contractor and Owner shall be responsible for determining and implementing regulatory compliance activities, including but not limited to work practices, engineering controls, personal protection, air monitoring, testing, hazard communication, material handling, record retention, and arranging for waste disposal/handling.
- C. Contractor must file a Uniform Hazardous Waste Manifest from proper landfill site for each load of asbestos containing material removed. Copies must be sent to Owner and material manufacturer/specifier. Transportation of waste shall be in accordance with applicable Department of Transportation (DOT) requirements.

3.04 MECHANICALLY FASTENED BASE PLY

- A. Lightweight concrete decks and cementitious wood fiber substrates shall be covered with specified venting base sheet mechanically fastened as follows:

Securement shall conform to the ASCE 7 criteria for wind uplift as dictated by wind zone applicable to location of project. Fasteners and fastening patterns shall be determined by building height, location and geographical area of the United States. It is the contractor's responsibility to consult current publications, literature, and bulletins of IBC and the fastener manufacturer that are in effect at the time of this project.

3.05 INSULATION

- A. Manufacturer's Instructions: In regard to attachment, the manufacturer's instructions or specifications shall determine the suitability for an application. Installation must meet ASCE 7 criteria and meet local governing building codes.
- B. Precautions: The surface of the insulation must not be ruptured due to overdriving of fasteners.
- C. Thermal insulation boards shall be laid on the substrate in parallel rows with end joints staggered and butted as close as possible. All joints shall be tight and at the roof perimeter and roof penetrations, insulation shall be cut neatly and fitted to reduce openings to a minimum. All openings one-fourth inch (1/4") or larger shall be filled with insulation.
- D. Insulation shall be tapered or feathered at drains and scuppers to provide proper drainage (if applicable).
- E. No more insulation shall be installed than can be covered by the completed roof system by the end of the day or the onset of inclement weather.
- F. Tapered insulation and crickets, when specified, shall be placed in accordance with the drawings and/or as required to minimum of NRCA standards.

3.06 FULLY ADHERED INSULATION AT LWC & CEMENTITIOUS WOOD FIBER DECKS

- A. At lightweight concrete decks and cementitious wood fiber decks, first layer of specified insulation shall be bonded to the venting base sheet with a solid mopping of asphalt Type IV, as required by slope (NRCA), at the minimum rate of thirty pounds (30#) ± 20% per one hundred (100) square feet and immediately walked in place.
- B. The top surface of the first layer of insulation shall be coated with hot asphalt using twenty-five pounds (25#) per one hundred (100) square feet of surface, and a second layer of insulation shall be applied using offset joints, so that each layer breaks joints to a minimum of six inches (6") both ways with the preceding layer, and immediately walked in place.
- C. The top surface of the second layer of insulation shall be coated with hot asphalt using twenty-five pounds (25#) per one hundred (100) square feet of surface, and a one-fourth inch (1/4") tapered layer of insulation shall be applied using offset joints, so that each layer breaks joints to a minimum of six inches (6") both ways with the preceding layer, and immediately walked in place.
- D. The top surface of the tapered insulation shall be coated with hot asphalt using twenty-five pounds (25#) per one hundred (100) square feet of surface, and the specified cover board shall be applied using offset joints, so that each layer breaks joints to a minimum of six inches (6") both ways with the preceding layer, and immediately walked in place.

3.07 MECHANICALLY FASTENED INSULATION AT METAL DECKS

- A. Specified insulation shall be mechanically fastened to conform to the ASCE 7 criteria for wind uplift as dictated by wind zone applicable to location of project. Fasteners and fastening patterns shall be determined by building height, location and geographical area of the United States. It is the contractor's responsibility to consult current publications, literature, and bulletins of IBC and the manufacturer that are in effect at the time of this project. Boards shall be staggered and butted as close as possible with voids over one-fourth inch (1/4") to be filled.
- B. Insulation shall be laid with edges parallel to flutes and bearing on deck surface/flats. The long dimension of base insulation layer must be fully supported by the top flange of the metal deck. The edges of insulation boards must not cantilever over the flutes of the metal deck.
- C. At roof areas to receive tapered insulation, the top surface of the first layer of insulation shall

be coated with hot asphalt using twenty-five pounds (25#) per one hundred (100) square feet of surface, and the specified tapered insulation and fill shall be applied in hot asphalt as described above using offset joints, so that each layer breaks joints to a minimum of six inches (6") both ways with the preceding layer, and immediately walked in place.

- D. At structurally sloped roof areas, the top surface of the first layer of insulation shall be coated with hot asphalt using twenty-five pounds (25#) per one hundred (100) square feet of surface, and the second layer of insulation and fill shall be applied using offset joints, so that each layer breaks joints to a minimum of six inches (6") both ways with the preceding layer, and immediately walked in place.
- E. The top surface of the second layer of thermal insulation shall be coated with hot asphalt using twenty-five pounds (25#) per one hundred (100) square feet of surface, and the specified cover board shall be applied using offset joints, so that each layer breaks joints to a minimum of six inches (6") both ways with the preceding layer, and immediately walked in place.

3.08 NAILERS

- A. Wooden nailers shall be installed at gravel stops, drip edges, and expansion joints on outside perimeter of building according to NRCA, Underwriters Laboratory and IBC guidelines.
 - a. All Construction: Nailers shall be the same height as the new recovery board being installed where required. Nailers shall be raised if necessary by anchoring an additional nailer of appropriate height to the existing nailer if the existing nailer is not to be replaced. Nailers shall be anchored to resist a pull-out force of one hundred seventy-five pounds (175#) per foot. Fasteners shall be no less than two (2) per nailer, and be spaced at three feet (3') on center maximum. Expansion joint nailers shall extend upward a minimum of eight inches (8") above finish roof height.

3.09 WOOD CANTS

- A. Toe of cant shall be level with the surface to receive new roof membrane and in all cases anchored according to NRCA, Underwriters Laboratory and IBC guidelines.

3.10 APPLICATION OF BASE SHEET

- A. Cover Board shall be covered with SBS 80 mil SS base sheet fully adhered as follows:

All layers shall be solid mopped at the nominal rate of thirty pounds (30#) ± 20 percent per one hundred (100) square feet using asphalt Type IV as required by slope, properly heated. Specified layers shall be applied in accordance with the manufacturer's recommendations and in accordance with general practices as set forth by the NRCA Roofing Manual.

- 1. (Note: If base sheet is to be left exposed to the elements for more than 30 days, the top ply must be glazed coated with a solid mopping of Type IV asphalt at the nominal rate of thirty pounds (30#) per one hundred (100) square feet.

3.11 HOT APPLIED FLEECE BACKED MEMBRANE

- A. Fully Adhered Application: Fully adhere membrane to acceptable substrate with hot asphalt applied at the rate specified by the manufacturer.
 - 1. The roof surface must be clean, dry and free of foreign material.
 - 2. Position sheets as indicated on approved shop drawings.
 - 3. Fold one end of the Elvaloy® sheet on top of itself until both ends meet. Apply hot asphalt to the prepared roof surface. The sheet can then be pulled and laid into the bonding material using care not to create any wrinkles.
 - 4. Carefully push into place from fold line to overlap, avoiding wrinkles and air pockets. Roll or broom membrane flat. Roll membrane with a water filled weighted roller (minimum 200 lbs.) to seat membrane into adhesive.
 - 5. Repeat procedure for other sheet half.

6. Lap seams shall be done by lapping the two inch (2") selvedge edge over the non-selvedge edge of the previous roll. The selvedge edge seam shall be made with the heat gun method.
7. Roll ends are butted together and capped with a six inch (6") wide trim strip. The trim strip is then seamed with the heat gun.
8. T-Joint covers are required over all t joints on installations of thermoplastic roofing membranes equal too or greater than 60 mils in thickness. Center T-Joint cover over the t-joint and completely hot air weld the cover to the field membrane.

B. Lap Seaming Procedure: Overlap membrane for attachment method specified and hot-air welded with manufacturer's approved equipment.

1. All surfaces to be weld shall be clean, dry and free of foreign material.
2. All seams must then be checked with a needle probe and any voids repaired with the heat gun.

C. Lap Seaming Procedure: Overlap membrane as specified and hot-air weld with manufacturer's approved equipment.

1. All surfaces to be welded shall be clean, dry and free of foreign material.
2. All seams must then be checked with a needle probe and any voids repaired with the heat gun.

3.12 FLASHING

A. Flash all penetrations, metal edge systems, walls, curbs, expansion joints, drains as shown on details and approved shop drawings with white reinforced Elvaloy® flashing membrane.

1. Use prefabricated flashing accessories or components such as sealant pockets, premolded vent/pipe flashing.
2. Mechanically fasten flashing at terminations according to approved details.
3. Fastening membrane flashing through metal counterflashing is not acceptable.

B. Any lumber or shimming required for attachment or to make material flashing flush or level with offsets and/or transitions shall be incorporated in the flashing specifications.

3.13 BASE FLASHING (APPROXIMATELY 8" IN HEIGHT MINIMUM)

A. Base flashings shall be installed using the flashing membrane, with length of run not to exceed twenty linear feet (20').

B. Wooden nailers or curbs shall be installed at all edges and openings in the roof, mechanically fastened to the deck.

C. Cant strips shall be installed at the intersection of the deck and all vertical surfaces.

D. The roofing field membrane shall extend up over and two inches (2") above the top of cant strips at all vertical intersections or out to the roof's edge.

E. All existing substrates receiving flashing membrane shall be clean and primed with primer, prior to application as required.

F. All flashings shall be mechanically fastened with a termination bar a maximum of six inches (6") on center, be a maximum of eight inches (8") above finished roof height, extend a minimum of four inches (4") onto the field of horizontal roof membrane, and not exceed twenty linear feet (20') of run in length.

G. After proper termination of the base flashing at a minimum eight inch (8") height (or maximum eighteen inch (18") height), a saw cut reglet with counterflashing shall be installed according to NRCA and SMACNA guidelines.

H. All vertical flashing lap seams of the flashing membrane shall be hot-air welded.

I. All flashing membrane shall be adhered with flashing bonding adhesive to the vertical substrate and hot-air welded to the field of roof membrane; hot-air weld vertical laps.

- J. Flashing laps shall be minimum two inch (2") width, no maximum. Hot-air weld of flashing lap shall be minimum two inch (2") width, no maximum.
 - K. Hot-Air Welding of Flashing Laps:
 - 1. When using a hand-held hot-air welder, the seams should be pressed together using a hand-held roller. The speed and temperature settings of the welding equipment can be affected by the weather conditions at the site of application, therefore, these parameters should be set by trial and error using two (2) pieces of the flashing membrane. Minimum width of hot-air weld two inches (2"), no maximum.
 - 2. Lay the laps together and apply pressure to the welded seam to ensure full adhesion.
 - 3. Allow the seams to set fully, and probe the entire length for voids. Reseam voids immediately with a hot-air gun and roller.
 - L. All hot-air welded seams/laps shall be tested daily with a probe for integrity, no variance.
- 3.14 VERTICAL WALL FLASHING (FOR USE APPROXIMATELY 8-18" ABOVE THE FINISHED ROOF LINE AND EXTENDING UPWARD)
- A. Flashing membrane shall be installed on the vertical beginning a minimum of eight inches (8") above the finished roof line (where the base flashing is terminated), with length of run not to exceed twenty feet (20'). Flashing shall be installed in strict accordance with the manufacturer's recommendations.
 - B. The termination bar used to terminate the minimum eight inch (8") high base flashing shall be used to terminate the lower edge of the vertical flashing. This will cause the termination bar to be buried at the termination point. Care should be taken to ensure the top edge of the base flashing and bottom edge of the vertical flashing are both secured.
 - C. All existing substrates receiving flashing membrane shall be clean and primed with asphalt primer, prior to application.
 - D. All substrates receiving welded-seam flashing membrane shall be clean and primed with primer, prior to application when applicable.
 - E. The vertical wall flashing membrane shall be set in flashing bonding adhesive according to manufacturer's guidelines.
 - F. All vertical flashing lap seams of the flashing membrane shall be hot-air welded.
 - G. Flashing laps shall be minimum two inch (2") width, no maximum. Hot-air weld of flashing lap shall be minimum two inch (2") width, no maximum.
 - H. Immediately following the laying of the flashing membrane, it shall be pressed or rolled in the width direction of the membrane. This will prevent excessive entrapment of air beneath the membrane. The pressing or rolling shall be in the width direction and with the laps so as not to buck the laps.
 - I. Any flashing extending further than eighteen inches (18") up onto a vertical surface shall be installed using the strapped method and must be fastened with a termination bar or installed up and over the parapet wall and fastened to the nailer on the outside of the wall.
 - J. The flashing membrane shall be run up the wall in sheet widths, run under the coping cap and be terminated on the outside of the wall six inches (6") on center; then the coping cap shall be reset. All side laps are to be hot-air welded.

- K. Hot-air Welding Laps:
 - 1. When using a hand-held hot-air welder, the seams should be pressed together using a hand-held roller. The speed and temperature settings of the welding equipment can be affected by the weather conditions at the site of application, therefore, these parameters should be set by the contractor by using two (2) pieces of flashing membrane. Minimum width of hot-air weld shall be two inches (2").
 - 2. Lay the laps together and apply pressure to the welded seam to ensure full adhesion.
 - 3. Allow the seams to set fully, and probe the entire length for voids. Reseam voids immediately with a hot-air gun and roller.
 - L. All hot-air welded seams/laps shall be tested daily by the contractor with a probe for integrity, no variance.
 - M. Any lumber or shimming required for attachment or to make material flashing flush or level with offsets and/or transitions shall be incorporated in the flashing specifications.
- 3.15 PERIMETER FASTENING
- A. Wood nailers are required for perimeter gravel stops or drip edges. Field membrane and all plies shall be mechanically fastened to nailer on twelve inch (12") centers maximum.
- 3.16 EDGING FLASHINGS
- A. An NRCA-approved gravel stop/fascia system shall be installed in strict accordance with published instructions to meet ES-1.
- 3.17 ROOF DRAINS
- A. Inspect and test drain and drain lines prior to start of work in contact area. Open if blocked or clogged and repair/replace all broken, missing above deck roof drain components and lines as required (excluding drain bowl, hub connections, leader lines, etc.). Verify in writing that all drains and lines are free flowing and watertight prior to substantial completion. Comply with local plumbing codes.
 - B. Remove strainer and clamping ring. Repair (or replace if damaged) and reset.
- 3.18 WALKWAY PADS
- A. Fully adhere and heat weld walkway pads where shown on drawings or where required to provide protected pathways from rooftop access points to mechanical or other equipment requiring rooftop maintenance.
- 3.19 CLEANING
- A. Clean exposed surfaces of excess cement, adhesive, sealants, mortar and paint associated with the new work.
 - B. Clean work area of excess roofing materials and installation debris daily.
 - C. Repair or replace defaced or disfigured finishes caused by the work.
- 3.20 MEMBRANE CLEANING
- A. After all membrane has been installed, it shall be cleaned with a cleaning agent compatible with the membrane to return the membrane to like new appearance.
- 3.21 PROTECTION
- A. Protect all building surfaces against damage from roofing work.

- B. Where traffic must continue over finished, installed roofing system, protect membrane, underlayment accessories and finishes from damage.

3.22 MEMBRANE PROTECTION

- A. Where equipment pads, wood sleepers, or walkway slabs are to be installed over the roofing membrane, an additional layer of the roofing membrane shall be installed between the roofing membrane and the pad, sleeper, or slab. Due caution shall be exercised to prevent roofing membrane damage during placement. Where required, membrane shall be welded to field membrane to prevent slippage.

3.23 PIPING/CONDUIT

- A. Piping/conduit shall be raised to NRCA recommended heights, and new supports furnished. Permanent supports shall be installed upon pads approved by membrane manufacturer. Coordinate work with Owner's representative.
- B. All gas lines, piping, and conduits shall be coated with industrial grade yellow paint.

3.24 PIPE/EQUIPMENT SUPPORTS

- A. Designated pipe/equipment supports shall be removed and replaced with new specified pipe supports. Pipe supports shall be placed approximately ten feet (10') on center. Supports shall be set on a layer of membrane adhered to the roof surface.
- B. Gas lines three inches (3") and over must be supported on wood block with pipe roll stands.

3.25 OVERNIGHT SEAL

- A. Shall be performed according to accepted roofing practice as outlined in the NRCA Roofing Manual, SPRI and membrane manufacturer's recommended procedure.
- B. The roofing membrane shall be sealed to the roof deck or existing roof at the end of the day or at the onset of inclement weather to prevent water from flowing into the completed roofing system. Temporary seals shall be removed upon resumption of work.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Provide flashing and sheet metal components for moisture protection.
 - 2. Related accessories.

1.02 SUBMITTALS

- A. Product Data:
 - 1. Submit shop fabrication drawings of all sheet metal fabrications to be used on the project. Shop drawings shall be drafted and indicate approximate dimensions (to be field verified), material type, gauge, and finish. Freehand sketches are not acceptable.
 - 2. Submit product data of all sheet metal materials.

1.03 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers in satisfactory use in similar service for five (5) years. Use experienced installers. Deliver, handle and store materials in accordance with manufacturer's instructions.
- B. Reference Standards: Applicable portions of ASCE, SMACNA, ASTM and NAAMM publications.

1.04 WARRANTIES

- A. Manufacturer's Product Warranty: Submit manufacturer's standard limited product warranty signed by the manufacturer's authorized official, guaranteeing to correct failures in product which may occur during the warranty period, without reducing or otherwise limiting any other rights to correction which the Owner/Project Consultant may have under the contract documents. Failure is defined to include product failure which leads to interruption of a watertight installation. Correction may include repair or replacement of failed product.
- B. Contractor's Warranty Period: For roofing flashing and sheet metal, provide a written warranty which shall warrant work to be free of leaks and defects in materials and workmanship for two (2) years, starting from date of substantial completion.
- C. Defects of the sheet metal occurring during the warranty period shall be promptly corrected by the contractor, and defects of the roofing shall be promptly corrected by the manufacturer at no additional cost to the Owner. Upon notification from the Owner or the Owner's representative that evidence of a defect exists, the responsible party shall immediately inform the Owner's representative of the date on which corrective work will be scheduled, and shall notify the Owner's representative when the corrective work has been completed.

PART 2 - PRODUCTS

2.01 SHEET METAL MATERIAL

- A. Hot-dipped Galvanized Steel for use as counterflashings (where not visible from the ground) and expansion joints: Minimum 24-gauge, G-90, hot-dipped galvanized metal, commercial quality, ASTM A 525.
- B. Elvaloy® Cladded Metal for Pitch Pans: Shall be G-90 galvanized steel with 25 mil Elvaloy® membrane.

- C. Elvaloy® Cladded Metal: Shall be G-90 galvanized steel with 25 mil Elvaloy® membrane lamination; width shall be four feet (4'), length shall be eight feet (8') or ten feet (10').
- D. Hot-dipped Galvanized Steel for use as continuous clips: Minimum 22-gauge, G-90, hot-dipped galvanized metal, commercial quality, ASTM A 525.
- E. Prefinished Galvanized Sheet Steel (where visible from the ground): Shall be 24-gauge flat stock, prefinished with Kynar finish meeting ASTM A 446, forty-five and one-half inches to forty-eight inches width by one hundred twenty inches in length (45-1/2" - 48" x 120") for use as new metal edge gravel guard, downspouts, gutters, coping and miscellaneous metal.
- F. Stainless Steel: QQ-S-766, Class 301, 302, 304, or 316; or ASTM A 167, Type 301, 302, 304, or 316; form and condition most suitable for the purpose.
- G. Aluminum and Aluminum Alloy Plate and Sheet: QQ-A-250; form, alloy, and temper shall be that most suitable for the purpose.
- H. Sheet Lead: QQ-L-201, Grade B.
- I. All existing sheet metal shall be replaced with new metal of like gauge and type, or as specified on drawings.
- J. All prefinished metal color shall be as selected by Owner/Architect from manufacturer's full range of colors, including metallics.

2.02 FASTENERS

- A. Fasteners shall be same metal as flashing/sheet metal, or other non-corrosive metal as recommended by sheet manufacturer for the specific application. Match finish of exposed heads with material being fastened.
- B. Fasteners and fastening plates or bars shall be listed in the FM Global Approval Guide.
- C. Fastener for Brick: Shall be one-fourth inch by two inches (1/4" x 2"), zinc with plated steel or stainless steel nail, one piece unit, flat head.
- D. Screws: Self-taping sheet metal type with neoprene washer, as appropriate.
- E. Pop Rivets: Full stainless steel Series 42 or 44, as appropriate.
- F. Continuous Clip: Concealed hold-down clip type; of same materials as coping, gravel guard, sized to suit application. Use a continuous clip, minimum 20-gauge G-90 galvanized.

2.03 RELATED MATERIAL

- A. Plastic Cement: FS SS-C-153, cutback asphalt type.
- B. Solder: QQ-S-571 composition best suited for purpose; use high tin content, minimum 60/40, for stainless steel and monel alloy.
- C. Solder: For use with galvanized steel or copper, provide 50-50 tin/lead solder (ASTM B 32), with rosin flux.
- D. Copper, Sheet, and Strip: QQ-C-576, ASTM B 370, light cold-rolled temper, minimum 16 ounce.
- E. Sealant (for Sheet Metal): One-component polyurethane, conforming to requirements of FS TT-S-230C, non-staining and non-bleeding.

- F. Miscellaneous Materials:
1. Splash Blocks: Concrete, 3000 psi, 28 days. Provide and install with protection pads at all downspouts. Dimensions shall be a minimum eighteen inches wide by thirty-six inches long (18" x 36").
 2. Metal Accessories: Provide and install sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size, and gauge required for performance.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, cant strips and reglets in place, substrates are smooth and clean and nailing strips located.
- B. Verify membrane termination and base flashings are in place, sealed and secure.
- C. Beginning of installation means acceptance of conditions.

3.02 PREPARATION

- A. Field measure site conditions prior to fabricating work. Provide all shop drawings and mock-ups one month prior to installation to the Owner/Project Consultant for approval.
- B. Install starter and edge strips and cleats before starting installation.

3.03 FABRICATION - GENERAL

- A. Shop-fabricate work to greatest extent possible. Comply with details shown, 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's instructions and recommendations. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels as indicated, with exposed edges folded back to form hems.
- B. Fabricate gravel stops/fascia, gutters/downspouts, counterflashings, expansion joints, and copings with new galvanized sheet metal as specified. Fabricate gravel guard and fascia to size and dimensions as indicated on the drawings. Fabricate light metal coping, gutters and downspouts as indicated.
- C. Fabricate pitch pans with Elvaloy® clad metal as specified.
- D. Form sheet metal on bending brake.
- E. Form materials with straight lines, sharp angles and smooth curves.
- F. Fold back edges on concealed side of exposed edge to form hem (1/2" minimum).
- G. Weld or solder joints on parts that are to be permanently and rigidly assembled.
- H. Limit single-piece lengths to ten feet (10').
- I. Fabricate corner pieces with eighteen inch (18") extensions, mitered and sealed by forming as one piece.

- J. Where installing flashing directly to masonry or dissimilar materials, backpaint with bituminous paint
- K. Install new metal rooftop projections. New rooftop projection details shall be as recommended in NRCA or SMACNA handbooks. All rooftop projections shall be cleaned, all joints sealed, and painted with a rust inhibitive paint.
- L. All sheet metal shall be sealed and watertight.
- M. Metal work should be secured so as to prevent damage from buckling or wind. Where clips are shown, these are to be continuous.
- N. All metal to receive bitumen or adhesive shall be first primed with asphalt primer.
- O. All prefinished metal shall be sanded and/or abraded prior to receiving primer.
- P. 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.
- Q. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

3.04 INSTALLATION

- A. General: All sheet metal termination to vertical wall shall have a through-wall with receiver installed on masonry walls or prefabricated "Z" bar flashing pre-installed to fluid applied wall finished prior to installation of sheet metal termination. This applies to edge metal, base flashing closures and all vertical surface intersections. Refer to NRCA, SMACNA, and metal manufacturer's guidelines.
- B. Elvaloy® cladded metal shall be fabricated as needed; follow these specifications and standard sheet metal practice for attachment to roof details.
- C. Edge Metal/Fascia:
 - 1. Shall be installed with expansion joints, ten feet (10') on center, one-fourth inch (1/4") expansion leeway, with a cover plate.
 - 2. Secure metal flashings per specifications.
 - 3. Lock seams and end joints.
 - 4. Form sections identical to profiles as shown or approved similar, to match existing building.
 - 5. Fabricate corner pieces with minimum eighteen inch (18"), maximum forty-eight inch (48") extensions, formed and sealed with rivets and sealant, as one piece.
 - 6. Hem exposed edges one-half inch (1/2") minimum.
 - 7. Backpaint flashing in contact with masonry or dissimilar materials with bituminous paint. Surface sand before applying primers.
 - 8. Integrate flashing in a manner consistent with detailing.
 - 9. Provide and install continuous clip around perimeter.
 - 10. Shall be fabricated in accordance with all SMACNA provisions.
- D. Coping:
 - 1. Install new pre-manufactured metal coping for a permanent watertight installation.
 - 2. All coping shall be pre-manufactured to include low profile standing metal seam to meet ES-1 requirements.
 - 3. Shall be minimum 24-gauge prefinished Kynar installed in ten foot (10') sections maximum.
 - 4. Vertical fascia shall extend minimum two and one-half inches (2-1/2") or be minimum one and one-half inches (1-1/2") below bottom of nailer, whichever is greater.
 - 5. Fabricate corner pieces with minimum eighteen inch (18"), maximum forty-eight inch (48") extensions, formed and sealed with rivets and sealant, as one piece.
 - 6. Hem exposed edges one-fourth inch (1/4") minimum.
 - 7. Provide and install continuous clip, minimum 22-gauge.

8. Shall be fabricated in accordance with published details.
- E. Expansion Joint Field and at Wall:
1. Shall be as outlined by details, and be in full compliance with these specifications.
 2. Lock seams and end joints.
 3. Fabricate corner pieces with minimum eighteen inch (18"), maximum forty-eight inch (48") extensions, formed and sealed with rivets and sealant, as one piece.
 4. Hem exposed edges one-fourth inch (1/4") minimum.
 5. Backpaint flashing in contact with masonry or dissimilar materials with bituminous paint. Surface sand before applying primers.
 6. Integrate flashing in a manner consistent with detailing.
 7. Provide and install continuous clip, minimum 20-gauge or one gauge thicker than flashing.
 8. Shall be fabricated in accordance with published details.
- F. Counterflashing:
1. Provide and install new metal counterflashing as required for a permanent watertight installation.
 2. Saw cut brick mortar joint to receive friction fit reglet and removable counterflashing as detailed in SMACNA Figure 4-4E.
- G. Gutter and Downspout:
1. Fabrication:
 - a) Fabricate gutter and downspout of profile and size indicated.
 - b) Field measure site conditions prior to fabricating work.
 - c) Fabricate with required connection pieces.
 - d) Fabricate section square, true, and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance.
 - e) Hem exposed edges of metal.
 - f) Form and seal all metal joints; provide for expansion joints per SMACNA.
 2. Installation:
 - a) Install gutter, downspout, and accessories.
 - b) Join lengths with seams pop riveted and sealed watertight. Flash and seal collector head to downspouts and accessories.
 - c) Seal all metal joints watertight for full metal surface contact.
 - d) Gutter: SMACNA style profile; six inches by six inches (6" x 6"); submit detail for approval.
 - e) Downspouts: Rectangular profile. Seal all joints, four inches by six inches (4" x 6") minimum.
 - f) Support Brackets, Joint Fasteners: Profiled to suit gutters and downspouts.
 - g) Anchorage Devices: SMACNA requirements. Type recommended by fabricator.
 - h) Gutter Support: Kynar.
 - i) Downspout Supports: Straps, Kynar. Spaced at 6'-0" o.c. maximum.
- H. Overflow Scupper, Collector Head and Downspout:
1. Fabrication:
 - a) Fabricate overflow scupper, collector head and downspout of profile and size indicated, taking care that the roof drain leader fits properly into the back of the collector head. Seal the pipe to the collector head for watertightness.
 - b) Field measure site conditions prior to fabricating work.
 - c) Fabricate with required connection pieces.
 - d) Fabricate section square, true, and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance.
 - e) Hem exposed edges of metal.
 - f) Form and seal all metal joints; provide for expansion joints per SMACNA.
 2. Installation:
 - a) Install collector head, downspout, and accessories.
 - b) Join lengths with seams pop riveted and sealed watertight. Flash and seal collector head to downspouts and accessories.
 - c) Seal all metal joints watertight for full metal surface contact.

- d) Collector Head: SMACNA style profile; submit detail for approval.
- e) Downspouts: Rectangular profile. Seal all joints, four inches by six inches (4" x 6").
- f) Support Brackets, Joint Fasteners: Profiled to suit gutters and downspouts.
- g) Anchorage Devices: SMACNA requirements. Type recommended by fabricator.
- h) Collector Head Support: Kynar.
- i) Downspout Supports: Straps, Kynar.

I. Pitch Pans:

- 1. Install pitch pans of 24-gauge, G-90 galvanized steel with a 25 Mil Elvaloy® Kee membrane lamination according to NRCA standards, minimum of six inches by six inches (6" x 6").
- 2. Pitch pans shall be fabricated to a minimum of six inches (6") above the finished roof membrane. The top vertical edge of the thermoplastic clad metal must be folded over to conceal the uncoated side of the metal inside the pitch pan. The pitch pan flange must be a minimum of three and one half inches (3.5") wide in contact with the horizontal roof plain or field of roof membrane.
- 3. Approved caulking or water block shall be applied under the pitch pan flange prior to securing the flange to the deck with approved fasteners a minimum of 4" on center.
- 4. All projections enclosed in pitch pans shall be cleaned in any manner suitable and coated with a rust inhibitive coating as approved by the Owner/Project Consultant. Coating shall be allowed to dry prior to pitch pan fill.
- 5. Base of pitch pans shall be filled with grout or cementitious binder to proper height and allowed to cure.
- 6. Top finish fill shall be self-leveling, one-part urethane, with maximum fill to within three-eighths inch (3/8") of top of pitch pan sides.
- 7. Strip the thermoplastic clad metal flange of the pitch pan to the field membrane with one strip of flashing membrane. The flashing membrane must extend from the outer edge of the pitch pan flange onto the field membrane a minimum of three inches (3") and butt to the vertical sides of the pitch pan on all 4 sides. The flashing membrane shall be hot air welded to the thermoplastic clad metal pitch pan and to the field membrane. Hot air welds shall be a minimum of two inches (2") wide.
- 8. Install preformed outside corners by hot air welding in place at all four (4) corners of the pitch pan.
- 9. Apply seam sealer to the edges of the flashing membrane.

J. Bonnets/Hoods:

- 1. Fabricate and install above all pitch pans, where necessary, or reinstall as applicable, metal bonnets over all pitch pans, NO EXCEPTIONS.
- 2. Bonnets/Hoods shall be manufactured with metal compatible with metal to which bonnet is to be attached.
- 3. On beams and other steel, weld in place bonnets fabricated from one-fourth inch (1/4") steel plate.
- 4. Draw band bonnets fabricated from 22-gauge galvanized steel may be used on circular projections.

3.05 FINISH

- A. Backpaint concealed metal surfaces with bituminous paint where expected to be in contact with cementitious materials or dissimilar metals. Exposed surfaces to be provided with a factory applied fluorocarbon Kynar finish meeting ASTM A 446 and AAMA specification 605.2 for high performance coating.

- B. New 24-gauge hot-dipped galvanized metal shall be painted on all locations visible from the ground with an industrial grade paint as selected by Project Manager/Architect from manufacturer's full range of colors, including metallics. Galvanized metal surface must be properly prepared by removing all oil, grease, and/or protective mill coatings by solvent cleaning surface in accordance with SSPC-SP1, and according to paint manufacturer's recommendation, to ensure proper adhesion of paint to metal.

END OF SECTION

ROOF PLANS/DETAIL DRAWINGS

1.01 ROOF PLANS

- A. Any drawings supplied are for reference purposes only. Dimensions, penetrations, curbs, etc. must be field verified. Those shown are typical but may not be all inclusive, and contractor shall be responsible for the correctness of same. Any existing insulation thickness, deck type or other details shown on the drawings shall be subject to contractor confirmation.

1.02 DETAIL DRAWINGS

- A. The enclosed details for this project are intended primarily to present the proper installation of the membranes used for waterproofing at flashings, perimeter closures, roof projections, etc. Specific underlying construction configurations, such as walls, nailers, wood backing, structural steel, etc., which may currently be in place may or may not be accurately depicted on the attached details. Unless specifically called out in the accompanying written specifications, or where a detail is noted "AS DRAWN", and/or proper roofing and construction practices are not being followed, underlying construction configurations are to remain unchanged from those in place on the building prior to this reroofing.

END OF SECTION

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CAULKING

PART 1: GENERAL:

1.01 DESCRIPTION:

- A. **WORK INCLUDED:** Throughout the project, caulk and seal all joints where shown on the Drawings and elsewhere as required to provide a positive barrier against passage of air and passage of moisture.

1.02 QUALITY ASSURANCE:

- A. **Qualifications of Installers:**
1. Proper caulking and proper installation of sealants require that installer be thoroughly trained and experienced in the necessary skills and thoroughly familiar with the specified requirements.
 2. For caulking and installation of sealants throughout the work, use only personnel who have been specifically trained in such procedures and who are completely familiar with the joint details shown on the Drawings and the installation requirements called for in this Section.

1.03 SUBMITTALS:

- A. **General:** Comply with provisions of Section 01300.
- B. **Manufacturer's Data:** Submit:
1. A complete materials list showing all items proposed to be furnished and installed under this Section.
 2. Sufficient data to demonstrate that all such materials meet or exceed the specified requirements.
- C. **Samples:** Accompanying the submittal required in Paragraph "B" submit samples of each sealant, each backing material, each primer, and each bond breaker proposed to be used.

1.04 PRODUCT HANDLING:

- A. **Delivery and Storage:** Deliver all materials of this Section to the jobsite in the original unopened containers with all labels intact and legible at time of use. Store only under conditions recommended by the manufacturers. Do not retain on the jobsite any material which has exceeded the shelf life recommended by its manufacturer.
- B. **Protection:** Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.
- C. **Replacements:** In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2: PRODUCTS:

2.01 CAULKING:

- A. **General:** Except as otherwise approved by the Architect, in writing, use only the type of caulking described in this Article.

B. Caulking Materials:

1. Around Fixed Glass "Storefront" Aluminum Frames use silicone based caulking in color matching the aluminum. This caulking furnished and installed by "storefront" aluminum installer.
2. Around Windows: (if any) Use DAP Acrylic Latex Caulk with Silicone, in color to match window color or approved equal.
3. Around Exterior Door Frames: Use DAP Acrylic Latex Caulk with silicone in "Clear" color or approved equal.
4. Miscellaneous Exterior Connections Between Dissimilar Materials: Use DAP Acrylic Latex Caulk with silicone in "Clear" color unless another standard color of the manufacturer would be more suitable.
5. Exterior Masonry Control Joints: Use Dow Corning 790 sealant or approved equal. Prime where required by manufacturer. Provide foam backer rod approved for use by sealant manufacturer.
6. Interior Caulking: Use DAP Acrylic Latex Caulk with silicone or approved equal. Color as selected from manufacturer's standard colors.
7. Caulking Joints Not Otherwise Specified: Use DAP Acrylic Latex Caulk with silicone or approved equal.
8. Top-of-wall sealant for fire rated masonry wall sealant shall be: CP606, CP 672 with respective UL No. recommended by Hilti Company.
9. Fire rated wall penetrations shall be: FS-one intumescent fire stop sealant with respective UL No. recommended by Hilti Company.
10. Smoke and acoustical walls sealant shall be: CP506 Sealant by Hilti.
11. Exterior/Interior of Masonry Walls Dow Corning 790 silicone sealant.

C. Prime:

1. In accordance with sealant manufacturer recommendations.

PART 3: EXECUTION:

3.01 INSPECTION:

- A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until satisfactory conditions have been corrected.

3.02 PREPARATION:

A. All Surfaces:

1. All surfaces in contact with caulking shall be dry, sound, and well brushed and wiped free from dust, and oil or grease.
2. Use solvent, where necessary, to remove oil and grease, wiping the surfaces with clean rags.
3. Remove all mortar from the joint cavity.
4. Where backstop is required, insert the approved backup material in the joint cavity to the depth required.

3.03 INSTALLATION OF SEALANTS:

- A. General: Prior to start of installation in each joint, verify the joint type, and verify that the required proportion of width of joint to depth of joint has been secured.
- B. Equipment: Apply sealant under pressure with hand or power-actuated gun or other appropriate means. Guns

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CAULKING

shall have nozzle of proper size and shall provide sufficient pressure to completely fill joints as designed.

- C. Masking: Thoroughly and completely mask all joints where the appearance of sealant on adjacent surfaces would be objectionable.
- D. Installation of Sealant: Install the sealant in strict accordance with the manufacturer's recommendations thoroughly filling all joints to the recommended depth.
- E. Tooling: Tool all joints to the profile recommended by the caulking manufacturer or as shown by details in the Drawings.
- F. Cleaning Up:
 - 1. Remove masking tape immediately after joints have been tooled.
 - 2. Clean adjacent surfaces free from sealant as the installation progresses. Use solvent or cleaning agent as recommended by the sealant manufacturer.

END OF SECTION

PART 1: GENERAL

1.01 SCOPE

- A. Perform all work required to complete the Finish Painting indicated by the Contract Documents and furnish all supplementary items necessary for its proper installation.
- B. The requirements of Division O - "Bidding and Contract Requirements" and Division 1 - "General Requirements" of this Project Manual shall apply to all work required for this section.
- C. Paint to completion of all exposed surfaces throughout the Project, both interior and exterior with the exception of the following:
 - 1. Surfaces which are delivered to the job site with a factory finish, unless indicated to be painted.
 - 2. Nonferrous metals.
 - 3. Integral color Concrete, Stucco or Cementitious Coatings.
 - 4. Exposed concrete floors.
 - 5. Face brick.

1.02 SUBMITTALS

- A. Detailed Painting Schedule
 - 1. Furnish a "Detailed Painting Schedule" for approval by the Architect. Indicate type of surface, type of paint material, and number of coats required, as set forth in the "Painting Requirements" hereinafter specified.
 - 2. Submit brand designation and grade of the indicated type produced by the approved manufacturer for each application listed or required.
 - 3. Submit product analyses and performance characteristics for all paint materials as requested by the Architect.
 - 4. Submit approval of the "Detailed Painting Schedule" before delivering material to the job site.
 - 5. No claim by the Painting Contractor as to the unsuitability or unavailability of any material specified or his unwillingness to use same or his inability to produce first-class work with same will be entertained, unless such claims are made in writing and submitted with his bid.
 - 6. The Architect will check the "Detailed Painting Schedule" and if any painting material listed therein does not represent, in the opinion of the Architect, such highest quality of the manufacturer, the Architect may direct its replacement with an acceptable painting material at no additional cost to the Owner.
 - 7. Owners maintenance manual: Upon conclusion of the project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin Williams "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.
- B. Samples
 - 1. Submit duplicate samples of each type paint finish proposed for use.
 - 2. Samples shall be 3"x6" on suitable materials and shall be as true a representation of

- finished work as is practicable.
3. Label each sample and show various stages of finish on each sample.

1.03 PRODUCT HANDLING

A. Delivery

1. Deliver material to job site in original, unopened containers and packages bearing manufacturers name, type of paint, stock number and color.
2. Deliver all paints ready-mixed unless otherwise directed by the Architect.

B. Storage

1. Keep storage area neat, clean and adequately protected from paint spillage. Repair damage caused to surfaces within storage areas.
2. Dispose of all cloths and cotton waste which might constitute a fire hazard at the end of each work day.

1.04 ENVIRONMENTAL CONDITIONS

- A. Do not apply paint or varnish under conditions that could adversely affect drying of final finish. Apply all materials under adequate illumination and ventilation.
- B. Do not apply paint or varnish when temperature is less than 50 deg. F. or more than 90 deg. F., or when excess humidity is present.

1.05 PROTECTION

- A. Protect or remove hardware, escutcheons, fixtures, plates, covers, and other items subject to damage or discoloration from painting.
- B. Carefully and adequately protect, as required, all surfaces not requiring painting in areas where painting is being carried on. Use tarpaulins or other suitable covers, with supports, if needed, to protect adjacent or underlying surfaces
- C. Maintain all wrappings or other factory-applied protection furnished with finishing hardware or other items provided by other trades and installed in areas where painting is required. If wrappings are displaced or removed, protect surfaces for the duration of painting work.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Material manufactured by The Sherwin Williams Company is the acceptable standard of quality. Coating systems from other listed manufacturers shall match the systems specified provided it complies with the Contract Documents.
 1. PAINT:
Sherwin-Williams Company
Glidden Professional
Pratt and Lambert, Inc.
PPG Industries, Inc.
Benjamin Moore

2.02 MATERIALS

- A. PREPARED PAINTS AND COATINGS: All by the same manufacturer, unless otherwise specified.
- B. TINTING COLORS: By manufacturer of Prepared Paint.
- C. SPACKLING COMPOUND: Finely ground, grit-free when dry will set with no shrinkage to a smooth, hard, white surface and will sand properly and receive any finish.
- D. PATCHING PLASTER: White, nonshrinking, containing no lime and uniform in set and quality.
- E. TAPE AND BED MATERIALS:
1. JOINT TAPE: USF Perf-A-Tape
 2. EMBEDDING AND FINISHING COMPOUND: USG Ready-Mixed Joint Compound All Purpose.
- F. PRIMERS:
1. FERROUS METAL PRIMER: Sherwin Williams Pro-Cryl Universal Water Based Primer B66-310.
Glidden Professional: Devflex 4020PF DTM Primer/Finish
 2. ALKYD ENAMEL PRIMER: Sherwin Williams Pro-Cryl Universal Water Based Primer B66-310.
Glidden Professional: 4160 Devguard DTM Primer
 3. ALKYD WOOD PRIMER: Sherwin Williams Premium Wall and Wood Primer B28W8111.
Glidden Professional: Coverstain Oil Based Primer
 4. OIL PAINT PRIMER: Sherwin Williams Premium Wall and Wood Primer B28W8111.
Glidden Professional: Coverstain Oil Based Primer
 5. LATEX WALL PAINT PRIMER: Sherwin Williams Prep Rite High Build Primer B28W601 with texture to produce fine finish plaster appearance on Drywall.
Glidden Professional: 1040 Fill & Seal High-Build Primer
 6. SPOT PRIMER: Sherwin Williams Pro-Cryl Universal Water Based Primer B66-310.
Glidden Professional: Devflex 4020 PF DTM Primer/Finish
 7. GALVANIZED PRIMER: Sherwin Williams Pro-Cryl Universal Water Based Primer B66-310
Glidden Professional: Devflex 4020 PF DTM Primer/Finish
 8. WATERPROOF EXTERIOR PRIMER/FINISH: Sherwin Williams Loxon XP.
- G. FILLERS/SEALERS:
1. WOOD FILLER: Sherwin Williams Wood Filler.
 2. KNOT SEALER: Formula WP0578 of the Western Pine Association.
- H. ALKYD/OIL BASE PAINTS:
1. ALKYD GLOSS ENAMEL: Sherwin Williams Industrial Enamel B54 Series.
Glidden Professional: Industrial Gloss Alkyd 4308
 2. ALKYD SEMIGLOSS ENAMEL: Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional: Alkyd Semi-Gloss 1516
- I. LATEX PAINTS:
1. LATEX FLAT WALL PAINT: Sherwin Williams Pro Mar 200, Antimicrobial, Zero VOC, Latex Finish, Flat, Eg-Shell and Semi-Gloss.

Glidden Professional: Lifemaster No VOC (flat, eggshell, semi-gloss)

2. LATEX MASONRY PAINT, ACRYLIC: Sherwin Williams Loxon XP.
 3. VINYL LATEX EMULSION: Sher-Tex medium texture.
Glidden Professional: Textured Coatings Flat 3230
- J. LACQUER: Fed. Spec. TTP-P-143.
- K. WOOD STAIN: Sherwin Williams Semi-Transparent Polyurethane Exterior Stain A15T5.
Glidden Professional: Flood Semi-Transparent Polyurethane Stain
- L. WOOD STAIN: Sherwin Williams Woodscapes Solid Color Acrylic House Stain A15 Series.
Glidden Professional: Flood Acrylic Stain
- M. OIL: Watco Danish Oil
- M. WAX: Watco Satin Carnauba Liquid Wax
- O. (1) INTERIOR EPOXY: One (1) coat Sherwin Williams Heavy Duty block-filler; then Sherwin Williams Pro Industrial Water Based Epoxy B73 Series.
Glidden Professional: 4000 Bloxfil Heavy Duty Block Filler, finish coat: Tru Glaze 4426 Semi-Gloss (or 4428 Tru Glaze Gloss)
- P. EXTERIOR Elastomeric: Sherwin Williams two (2) coats Loxon XP Waterproofing System
Glidden Professional: 1 Coat Gripper 3210-1200
2 Coats Decra Flex 300 Smooth Flat Z260
- Q. FIRE RETARDANT PAINT: Sherwin Williams or Glidden Professional: Flame Control No. 20-20 interior fire retardant flat latex, shall be used on all exposed painted wood except doors and millwork.

2.03 MIXING:

- A. Tint prime coats and undercoats approximately to the shade of the final coat, but each with a slight variation in color to distinguish them from the preceding coat.
- B. Apply paint of consistency recommended by manufacturer. Additional thinning permitted only with specified approval.
- C. Use factory mixed colors, shades, and tints with finish paints matching the approved color samples. Job mixing permitted only with specific approval.

2.04 FINISH AND COLORS:

- A. Paint colors shall be as selected by the Architect. Before any work is begun, the Architect will furnish the Painting Contractor with a color schedule and/or chips showing where the **various** colors shall be used.
- B. **60% of wall paint shall cover field wall and accent walls and surfaces terminating at corners floor and ceilings, 40% of wall paint shall be accent stripping, wall patterns, logo or graphics as selected by architect.**

PART 3: EXECUTION

3.01 CONDITION OF SURFACES

- A. Examine surfaces to receive painting before beginning work and correct defects that could affect quality of finished work. Prepare surfaces, as necessary, to receive painting as specified. Retouch shop coats and prime coats as necessary.
- B. Starting painting work shall be construed as evidence of acceptance of conditions under which work will be done.
- C. Clean surfaces to be painted and spaces in which painting will be done, broom-clean and dust-free. Remove soil, prints, stains, and adhered materials that would affect finish painting.
- D. If acids have been used for cleaning, all traces of acid shall be thoroughly neutralized and rinsed and dried before any paint is applied.
- E. Meet requirements of other portions of specifications for preparation of specific items.
- F. Apply primer or first coat immediately after surface preparation to prevent contamination of the surface.

3.02 PREPARATION

- A. Shop Painted Ferrous Metal
 - 1. Clean surfaces free of concrete, mortar, plaster, rust, shavings, dirt, dust and other objectionable materials. Remove grease and oil with gasoline, benzine or other similar volatile cleaner. Use cleaner when space is properly ventilated and not in the presence of any open flame.
 - 2. Touch up abraded or marred shop coats with spot primer specified.
- B. Unpainted Ferrous Metal
 - 1. Clean surfaces free of loose scale, rust, shavings, filings, dirt, dust and other objectionable material with wire brushes or other proper and acceptable means.
 - 2. Remove grease and oil with gasoline, benzine or other similar volatile cleaner. Sandblast or wire brush to base metal all rusted areas on exposed exterior members. Use cleaner when space is properly ventilated and not in the presence of any open flame.
- C. Zinc-Coated Metal (Galvanized)
 - 1. Clean surfaces free of loose particles and other objectionable material. Remove grease and oil with mineral spirits or other similar cleaner.
 - 2. Coat welded, chipped or abraded surfaces with "Galvalloy" galvanizing stick compound or ZRC Zinc Coating after wire brush cleaning.
 - 3. Treat surfaces with an approved chemical compound such as a phosphoric acid-wash. Remove chemical compound completely with clean, fresh water and thoroughly dry surfaces prior to priming.
- D. Gypsum Board
 - 1. Mix and apply tape and bedding system in accordance with the manufacturer's recommendations.
 - 2. Apply joint compound (embedding coat) to internal angles and butt joints approximately 3" wide and sufficiently thick to hide board surfaces. Cover screw heads and depressions with compound.

3. Apply tape to angles and joints, centered and seated into compound leaving sufficient compound under tape to provide proper bond. Apply a skim coat of compound over tape and clean excess compound from wallboard surface.
 4. When first coat has thoroughly dried, apply second coat (fill coat) over embedding coat, filling board taper flush with board surface. For joints without taper, feather out 4" on either side of tape.
 5. When second coat has thoroughly dried, apply third coat (finishing coat) tapered beyond edges of second coat and feathered to a smooth uniform finish which does not protrude beyond the plane of the board surface.
 6. Apply at least two coats of compound to flanges of corner beads and metal edging. Extend compound approximately 8 to 10 inches either side of exposed metal. Apply three coats of compound in succession for all dimples at fastener heads
 7. Sand all coats after each application has dried and leave wallboard and treated areas uniformly smooth, ready to receive decoration.
- E. Plaster: **shall be painted as described in this specification. Color as selected by architect.**
- F. Wood
1. Clean knots, pitch streaks or visible sap spots free of residue and treat with Knot Sealer. Apply second coat of sealer no less than two hours after the application of the first coat.
 2. Fill nail holes and other indentations with wood filler after first coat, matching color of stain or paint. Finish flush with adjacent surfaces.
 3. Sand wood surfaces smooth with No. 00 sand paper and remove dust prior to painting.
- G. Factory Finished Items
1. Factory finished items requiring painting shall be etched or otherwise prepared in an approved manner to receive final finish coat.
- H. Insulation
1. Clean surfaces of pipe, duct and equipment insulation, such as canvas jackets and troweled-on insulation and of rigid wall or ceiling insulation where items are required to be painted.
 2. Remove all loose, foreign and objectionable material prior to the application of any paint materials.
- I. Copper Piping
1. Wash surfaces with a 5 percent acetic acid solution and allow to dry. Do not damage adjacent surfaces due to acid spillage.
- J. Aluminum: Prefinished (or anodized) aluminum shall not be painted.
1. Remove oil or grease film by washing surfaces with mineral spirits or turpentine. Allow new, bare aluminum to weather for a month or roughen with steel wool before painting.

3.03 APPLICATION

- A. Do not open containers until required for use. Thoroughly mix paint before application and frequently stir during application so as to maintain pigment satisfactorily in suspension.
- B. Do not thin paint in excess of the printed directions of the manufacturer. Do not allow caking or setting of pigment into a hard mass.

- C. Apply paint uniformly without visible laps, sags, curtains, holidays or objectionable brushmarks. Exercise care so that paint does not splatter on surfaces not required to be painted. Remove promptly paint applied or splattered on surfaces not required to be painted.
- D. Insure that all primer and intermediate coats of paint are unscarred and completely integral at the time of application of each succeeding coat. Allow sufficient time between coats to ensure proper drying.
- E. Sand between all coats on wood and-metal surfaces prior to the application of succeeding coats.
- F. Remove doors for painting tops and bottoms. Finish top and bottom edges of doors the same as faces, after fitting.
- G. Match final coat of paint in color, tint and hue with the color displays approved by the Architect.
- H. Paint edges of doors occurring between rooms or spaces having different finishes the same as the room or space from which the same are visible when the door is in a partly opened position.
- I. Paint factory finished access panels, registers, grilles, diffusers, electrical panel boxes, connector covers and similar items the same color as adjoining walls or ceilings. Use color as directed where adjacent surfaces do not require painting.
- J. Finish all closets the same as the adjoining rooms, unless otherwise specified. Finish all other surfaces the same as nearest or adjoining surfaces unless otherwise shown.
- K. Paint exposed insulated and non-insulated piping, conduits, duct work and hangers a color and texture to match walls or ceilings adjacent to it. Where adjacent surfaces are unpainted, use color as directed.
- L. Back-prime all interior wood trim before installation, with alkyd primer or Okene Preservative.
- M. Protect all accent colors on walls with a coating of pale varnish as approved by the Architect.
- N. Application of Oil Finish:
 - 1. Apply Watco oil for saturated coat with brush or rag. Let set 30 minutes. Repeat procedure and let set 5 to 10 minutes. Wipe off excess with clean dry rag.
 - 2. Let set overnight. Repeat entire procedure.
 - 3. Let set overnight. Sand with light sandpaper. Apply coat of liquid wax and buff with clean dry rag.
 - 4. Match sample in Architect's office.

3.04 FIELD QUALITY CONTROL

- A. When painting is to be started, the manufacturer whose materials have been approved for use shall furnish competent technical assistance on the job to ensure that his materials are being applied properly. Manufacturer's assistance shall be available at all times until completion of the work.
- B. Each coat must be inspected and approved before application of the succeeding specified coat, otherwise no credit for the coat applied will be given and the Contractor automatically assumes the responsibility to recoat the work in question.
- C. Application equipment shall be cleaned a minimum of daily and no work shall be done with equipment which leaves adulterants in the coat of paint being applied.

3.05 CLEANING

- A. Remove from the premises upon completion of the work all staging, scaffolding and containers.
- B. Remove misplaced paint spots, oil or stains upon adjacent surfaces and leave the entire work in a clean condition. Touch up and restore finish where damaged.

3.06 PAINTING SCHEDULE

A. EXTERIOR WORK

1. Iron and Steel

- 1st coat Sherwin Williams Pro-Cryl Universal Metal Primer
Glidden Professional: Devguard 4160 DTM Primer
- 2nd coat Sherwin Williams DTM Acrylic Semi-Gloss
Glidden Professional: Devflex 4216 Semi-Gloss (Maintenance)
- 3rd coat Sherwin Williams DTM Acrylic Semi-Gloss
Glidden Professional: Devflex 4216 Semi-Gloss

2. Galvanized Iron and Steel

- 1st coat Sherwin Williams Pro-Cryl Universal Metal Primer
Glidden Professional: Devguard 4160 DTM Primer
- 2nd coat Sherwin Williams DTM Acrylic Semi-Gloss
Glidden Professional: Devflex 4216 Semi-Gloss (Maintenance)
- 3rd coat Sherwin Williams DTM Acrylic Semi-Gloss
Glidden Professional: Devflex 4216 Semi-Gloss

3. Machinery and Equipment.

- Spot Prime Sherwin Williams Pro-Cryl Universal Metal Primer
Glidden Professional: Devguard 4160 DTM Primer
- 2nd Coat Sherwin Williams Industrial Enamel
Glidden Professional: Industrial Gloss Enamel 4308

4. Exterior CMU

- 1 coat Sherwin Williams Loxon Block Surfacer A24W200
Glidden Professional: 3210-1200 Gripper
- 2 coats Sherwin Williams Loxon XP Elastomeric Waterproofing System,
A24-1400 Series
Glidden Professional: Decra Flex 300 Elastomeric 2260

5. Exterior Masonry

- Sherwin Williams Pro Industrial Anti-Graffiti Coating Clear,
B97C150
Blok-Guard & Graffiti Control by Prosoco Clear

6. Exterior Stucco
2 Coats

- Sherwin Williams Loxon XP Elastomeric Waterproofing System,
A24-1400 Series

B. INTERIOR WORK

1. Miscellaneous Iron and Steel
 - 1st coat Sherwin Williams Pro-Cryl Universal Metal Primer
Glidden Professional: Devguard 4160 DTM Primer
 - 2nd coat Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional: Industrial Gloss 4308 (Maintenance)
 - 3rd coat Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional: Industrial Gloss 4308 (Maintenance)
2. Primer Miscellaneous Iron and Steel
 - spot prime Sherwin Williams Pro-Cryl Universal Metal Primer
Glidden Professional: Devguard 4160 DTM Primer
 - 1st coat Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional: Industrial Gloss 4308 (Maintenance)
 - 2nd coat Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional: Industrial Gloss 4308 (Maintenance)
3. Galvanized Iron and Steel
 - 1st coat Sherwin Williams Pro-Cryl Universal Metal Primer
Glidden Professional: Devguard 4160 DTM Primer
 - 2nd coat Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional: Industrial Gloss 4308 (Maintenance)
 - 3rd coat Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional; Industrial Gloss 4308
4. Bonderized Steel
 - 1st coat Sherwin Williams Pro-Cryl Universal Metal Primer
Glidden Professional: Devguard 4160 DTM Primer
 - 2nd coat Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional: Industrial Gloss 4308 (Maintenance)
 - 3rd coat Sherwin Williams Pro Mar Alkyd Semi-Gloss
Glidden Professional: Industrial Gloss 4308 (Maintenance)
5. Gypsum Drywall
 - 1st coat Sherwin Williams Prep Rite Hi-Build Primer
Glidden Professional: High Build Primer 1000-1200 (Maintenance)
 - 2nd coat Sherwin Williams Pro Mar 200 Zero VOC Latex Egg-Shell
B20W2600
Glidden Professional: Lifemaster No VOC Egg-shell 9300
Speed Wall 1452 (Maintenance-not equivalent)
 - 3rd coat Sherwin Williams Pro Mar 200 Zero VOC Latex Egg-shell B20W2600
Glidden Professional: Lifemaster No VOC Egg-shell 9300
Speed Wall 1452 (Maintenance-not equivalent)
6. Portland Cement Plaster & Stucco (that is not integral color)
 - 1st coat Sherwin Williams Prep Rite Masonry Primer
Glidden Professional: 1000 High Hide Primer
 - 2nd coat Sherwin Williams Pro Mar 200 Zero VOC Latex Egg-Shell
B20W2600
Glidden Professional: Lifemaster 9300 0VOC

3rd coat Sherwin Williams Pro Mar 200 Zero VOC Latex Egg-Shell
B20W2600
Glidden Professional: Lifemaster 9300 0VOC

7. Wood Surfaces (Natural Finish)
 - 1st coat Oil
 - 2nd coat Oil
 - 3rd coat Oil
 - 4th coat Wax

8. Wood Surfaces (Stained)
 - 1st coat Stain
 - 2nd coat Filler (open grain wood, only)
 - 3rd coat Lacquer Sanding Sealer
 - 4th coat Dull Rubbed Lacquer
 - 5th coat Dull Rubbed Lacquer

9. Machinery and Equipment
 - Spot Prime Sherwin Williams Pro-Cryl Primer
Glidden Professional: Devguard 4160 DTM Primer
 - 2nd Coat Sherwin Williams Industrial Enamel
Glidden Professional: 4308 Industrial Gloss (Maintenance)

10. Exposed Canvas Covered Piping
 - 1st coat Sherwin Williams Drywall Latex Primer B28W8100
Glidden Professional: Gripper 3210 (Maintenance)
 - 2nd coat To match paint specified for
 - 3rd coat coats adjoining surfaces

11. Exposed Rigid Insulation
 - 1st coat Primer as recommended by the manufacturer of the finish coats
XIM, UMA 400 Bonding Primer
 - 2nd coat Sherwin Williams Pro Mar Alkyd Eggshell Enamel
Glidden Professional: Ultra Hide 150 1512 Alkyd Eggshell

12. Exposed-High: Temperature Metal Piping
 - 1st coat Sherwin Williams Kem Hi Temp Heat Resistant Paint
 - 2nd coat Sherwin Williams Kem Hi Temp Heat Resistant Paint

13. CMU
 - 1st coat Sherwin Williams Heavy Duty Block Filler or Loxon Block Surfacers
Glidden Professional: Bloxfil 4000 Heavy Dut Block Filler

 - 2nd coat Sherwin Williams Pro Mar 200 Zero VOC, Latex Semi-Gloss,
B31W2651 or Pro Industrial Water Based Catalyzed
Epoxy B73-300 Series Where indicated on drawings
Glidden Professional: Devflex 4216 Semi Gloss or
Ultra Hide 150 0 VOC 1415 Semi Gloss

3rd coat Sherwin Williams Pro Mar 200 Zero VOC, Latex Semi-Gloss,
B31W2651 or Pro Industrial Water Based Catalyzed Epoxy B73-300 Series Where
indicated on drawings.

Glidden Professional: Devflex 4216 Semi Gloss or Ultra Hide 150 0 VOC 1415 Semi Gloss

14. Where indicated on drawings interior concrete floors shall be trowel smooth finish and shall be etched with 10% muriatic acid, flush with water and allowed to dry thoroughly.
 - 1st coat Sherwin Williams solvent base H & C Concrete Clear or color
as selected by architect
 - 2nd coat Sherwin Williams solvent base H & C Concrete Clear or color
as selected by architect
 - 3rd coat Sherwin Williams solvent base H & C Concrete Clear or color
as selected by architect Sealer provide Anti-slip grit on the final coat.

15. Exposed Structural Steel
 - 1 – 2 coats Sherwin Williams Low VOC Waterborne Acrylic Dryfall B42 Series

3.07 PIPE IDENTIFICATION

- A. Conform to requirements of ASA A13, "Scheme for the Identification of Pipe Systems," as published by the American Society of Mechanical Engineers. Provide complete painting of piping in mechanical rooms only.

- B. Color Coding:
 1. Domestic Water, Cold or Hot – Green SW4085
 2. Chilled, Heating or Condenser - Water - Green SW4085
 3. Gas - Orange SW4083
 4. Air - White SW4087
 5. Condensate - Black SW4090
 6. Electric Conduit - Yellow SW4084
 7. Oil - Orange SW4083
 8. Drain Lines - Black SW4090
 9. Steam - Orange SW4083
 10. Fire Protection Sprinkler – Red SW4081

3.08 SMOKE AND FIRE WALLS

- A. Contractor shall identify all one-hour smoke walls and horizontal exit walls, by painting with stencil on both sides of wall, the rating which applies to the wall, Identifications shall be 11'-0" above finish floor, or above finish ceiling where wall does not extend above 11'-0", and shall be spaced at maximum distance of 29'-0" o.c. Height of letters shall be 4". Color of paint for letters will be Black.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Work Included: Provide application of coating to protect all exterior face of plaster/stucco and CMU walls, full height, as specified herein, and as needed for a complete and proper installation.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. Federal Specifications and Standards

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's product data sheets on all products to be used for the work. Submit description for protection of surrounding areas and non-masonry surfaces, surface preparation, application, and final cleaning.
- B. Applicator Qualifications: Submit qualifications of applicator.
 - 1. Certification stating applicator is experienced in the application of the specified products.
 - 2. List of recently completed parapet coating projects, including project name and location, names of owner and architect, and description of products used substrates, applicable local environmental regulations, and application procedures.

Environmental Regulations: Submit applicable local environmental regulations.

- C. Submit sample of Manufacturer's 10 Year Labor and Materials Warranty and Contractor's 2 Year Labor Warranty.
- D. Submit current letter from manufacturer show the applicator is an Approved Applicator by the manufacturer.
- E. Submit a physical mock-up sample of the completed system and final color selections showing all products in their representative dry mil thickness to accurately show the system being installed.
- F. Submit manufacturer's full range of color samples. Color to be selected by Owner's project manager or duly appointed representative.

1.04 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Applicator: Minimum of five (5) years experience in the successful application of elastomeric acrylic textured coatings. Successful completion of a minimum of three projects of similar size and complexity to the specified work.
 - 2. Manufacturer: Minimum five (5) years experience in manufacturing of cementitious products and acrylic textured coatings.

- B. Mock-up: Install at the project site a pre-selected job mock-up, five feet by five feet (5' x 5'), using specified coating system. Obtain Architect/Engineer/Owner's approval of surface preparation, repair, color, texture, finish and workmanship as a standard by which remainder of the project will be judged. Apply material in strict accordance with manufacturer's written application instructions. Mock-up must be approved and accepted prior to start of system application. Maintain mock-up during construction for workmanship comparison. Do not alter, move or destroy mock-up until the work is completed and approved by the Owner's representative.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with manufacturer's recommended provisions.
- B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Deliver coating system materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- D. Store tightly sealed coating system materials off the ground and away from moisture, direct sunlight, extreme heat and freezing temperatures.

1.06 PROJECT CONDITIONS

- A. Substrate and ambient air temperature shall be a minimum of 40° F (4° C) and rising at application time and remain above 40° F (4° C) for at least 24 hours after application.
- B. Do not apply coatings in snow, rain, fog, mist or at temperatures less than 5° F (2° C) above the dew point. Allow surfaces to attain temperature and conditions specified before proceeding with coating application. Do not apply if rain is anticipated within 24 hours of application.
- C. Provide protection for plants, vegetation, automobiles, equipment, sidewalks, pavers, tile, etc. from overspray or damage could result. Contractor is responsible for all damages.

1.07 WARRANTY

- A. Provide manufacturer's full warranty for work against defects in materials and workmanship for ten (10) years following completion of work. Warranty should specifically provide for a watertight condition for all completed work.
- B. Provide contractor's full warranty for work against defects in the workmanship for two (2) years following completion of work. Warranty shall provide for a watertight condition for all completed work.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: BASF Corporation, Construction Chemicals, 889 Valley Park Drive, Shakopee, MN 55379, 512-496-6000 or pre-approved equal.

2.02 MATERIALS

- A. MASTERPROTECT EL 750AA (formerly THOROLASTIC), 2-Coat Elastomeric, Algae-resistant, Acrylic Coating System, Topcoat color as selected by the architect/owner.

B. Performance Requirements: A two coat system for MASTERPROTECT EL 750AA (formerly Thorolastic) at 16 to 20 mils DFT shall meet or exceed the following performance standards.

Elongation Recovery	ASTM D412	After 10 min. 96.9% After 24 hours, 98.4%
Ultimate Elongation	ASTM D 412	344%
Ultimate Tensile Strength, psi	ASTM D412	220 psi
Density, lbs/gal	ASTM 1475	11.2 – 12.2
Solids, %	ASTM D 5201	By weight 64.2 By volume 50
Viscosity, KU	ASTM D 562 (Stormer)	127-135
Crack Bridging, mils(mm)	PR EN 1062-7	@ -77°F (-60°C) = 12 (0.3) @ 32°F (0°C) = 19.5 (0.5) @ 73°F (23°C) = 27.5 (0.7)
Accelerated Weathering	ASTM G23, Type D	5,000 hrs. = No defects 400 hrs. = Meets requirements
Mildew Resistance	ASTM D-3273 / 3274	No growth.
Anti-algae Resistance	Singapore Test, SS 345; 1990	
Salt Spray Resistance	ASTM B-117	300 hours=No defects
Wind Driven Rain Resistance	TT-C-555-B	No water penetration
Water Vapor Transmission	ASTM 1653	Perms=10
Flexibility, in(mm) mandrel At -30°F (-34°C)	ASTM D 522	1/8 (3)
Freeze/Thaw resistance	ASTM C 67	60 cycles

2.03 RELATED MATERIALS

- A. Sealant
 - 1. MasterProtect Sealant NP-1 or pre-approved equal, Polyurethane Sealant.
- B. Crack Repair
 - 1. MasterProtect EL746 & EL748 or pre-approved equal; an elastomeric crack filler. As recommended by the manufacturer.
- C. Primer or Surface Conditioner
 - 1. MasterProtect P100 primer or pre-approved equal, for soft, friable aggregate surfaces, as recommended by the manufacturer.
 - 2. MasterProtect P150 primer or pre-approved equal, for new, aged or previously coated cementitious surfaces, as recommended by the manufacturer.

3. MasterProtect FL749 blockfiller or pre-approved equal, for CMU or other porous or open substrates, as recommended by the manufacturer.

2.04 MIXES

- A. Mix coating system materials in accordance with manufacturer's printed recommendations and product technical bulletins. Mix with approved mechanical mixers using light agitation to ensure color uniformity, aggregate dispersion and to minimize air entrapment.
 1. In multi-pail applications, mix contents of each new pail into the partially used pail to ensure color consistency and smooth transitions.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect adjacent work areas and finish surfaces from damage during coating system application.
- B. Test and clean substrate in accordance with coating system manufacturer's recommendations and the following national standards:
 1. ASTM D 3359 Methods for Measuring Adhesion by Tape Test
 2. ASTM D 4258-83 (1988) Surface Cleaning Concrete for Coating
 3. ASTM D 4259-88 Practice for Abrading Concrete
 4. ASTM D 4261-83 (1988) Practice for Surface Cleaning Concrete Masonry for Coating
 5. ASTM D 4285-83 (1988) Indication Oil or Water in Compressed Air
 6. ASTM D 4541-85 (1989) Pull-Off Strength of Coatings Using Portable Adhesion Testers
 7. ICRI Tech Guide #32 Selecting and Specifying Surface Prep for Concrete
- C. Substrate shall be sound, clean, dry and free of all dust, dirt, oils, grease, laitance, efflorescence, mildew, fungus, biological residues, chemical contaminants or previous coatings that could prevent good adhesion. Removal shall be by approved methods demonstrated during mock-up.
- D. Repair all spalled areas and voids with MasterEmaco N426 patch according to the manufacturer's recommendations.
- E. Remove all loose, soft, friable mortar. Replace with new to match existing mortar. Cure replacement mortar seven (7) days.
- F. Repair cracks in surface up to 1/16" x 1/16" with MasterProtect EL746 & EL748, as recommended by manufacturer.
- G. Repair cracks in surface up to 1/4" x 1/4" with MasterProtect EL746 & EL748, as recommended by manufacturer.
- H. Treat, neutralize and remove efflorescence, mold, and mildew prior to coating application with suitable cleaner as recommended by manufacturer.
- I. Substrate shall exhibit a surface profile of CSP 3 – CSP 6 as specified by ICRI Tech Guide #32.

3.02 APPLICATION

- A. Apply MasterProtect P100 at a rate not to exceed 375 square feet per gallon or MasterProtect P150 at a rate not to exceed 275 square feet per gallon or MasterProtect FL749 at a rate not to exceed 100 square feet per gallon. Allow a minimum of two to four hours drying time before top coats are applied.
- B. Apply two coats of MasterProtect EL750 AA by brush, roller, or spray and backroll to achieve a waterproof finish.

- C. Application shall be roller applied use a 3/4" to 1" nap roller cover. Keep rollers fully loaded with material, cross-roll working uniformly, maintaining a wet edge throughout. Material may need to be brush applied into mortar joints.
- D. Allow MasterProtect EL750 AA to cure a minimum of 12 to 24 hours between applications at a minimum of 70° F. and percent relative humidity. Lower temperatures and higher relative humidity will require longer curing times.
- E. Finished system shall be pin-hole free.
- F. Match approved samples for color, sheen and coverage. Remove, refinish or recoat work not in compliance with Contract documents.

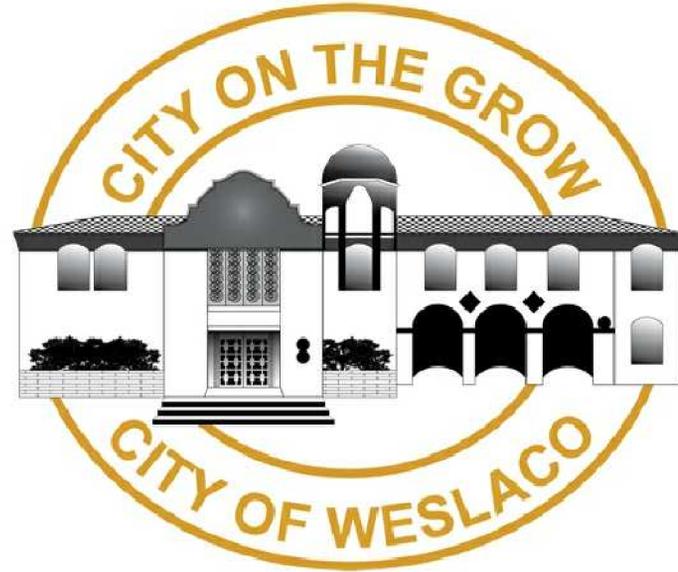
3.03 CLEANING AND PROTECTION

- A. Remove temporary coverings and protection of adjacent work areas. Remove over-spray coating from areas not intended to be coated. Remove construction debris from project site.
- B. Protect applied coating system finish from damage during construction.

END OF SECTION

CITY OF WESLACO PUBLIC LIBRARY

ROOFING REPAIRS



CITY COMMISIONERS

DAVID SUAREZ
 GERARDO "JERRY" TAFOLLA
 LEO MUNOZ
 GREG KERR
 OLGA M. NORIEGA
 LETTY LOPEZ
 JOSH PEDRAZA

MAYOR
 MAYOR PRO-TEAM
 COMMISSIONER
 COMMISSIONER
 COMMISSIONER
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ARMKO INDUSTRIES, INC.....ROOFING CONSULTANT

INDEX OF DRAWINGS

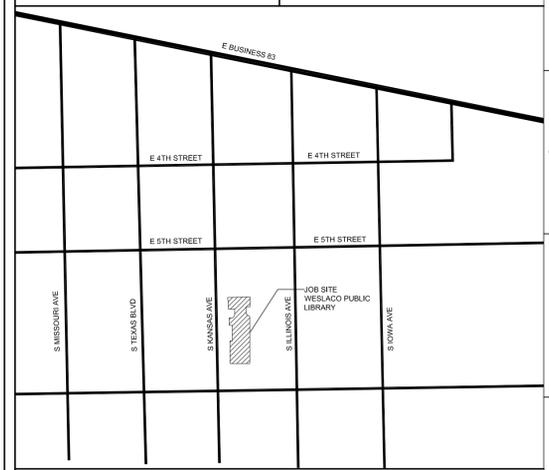
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COVER SHEET / INDEX OF DRAWINGS

CS-1

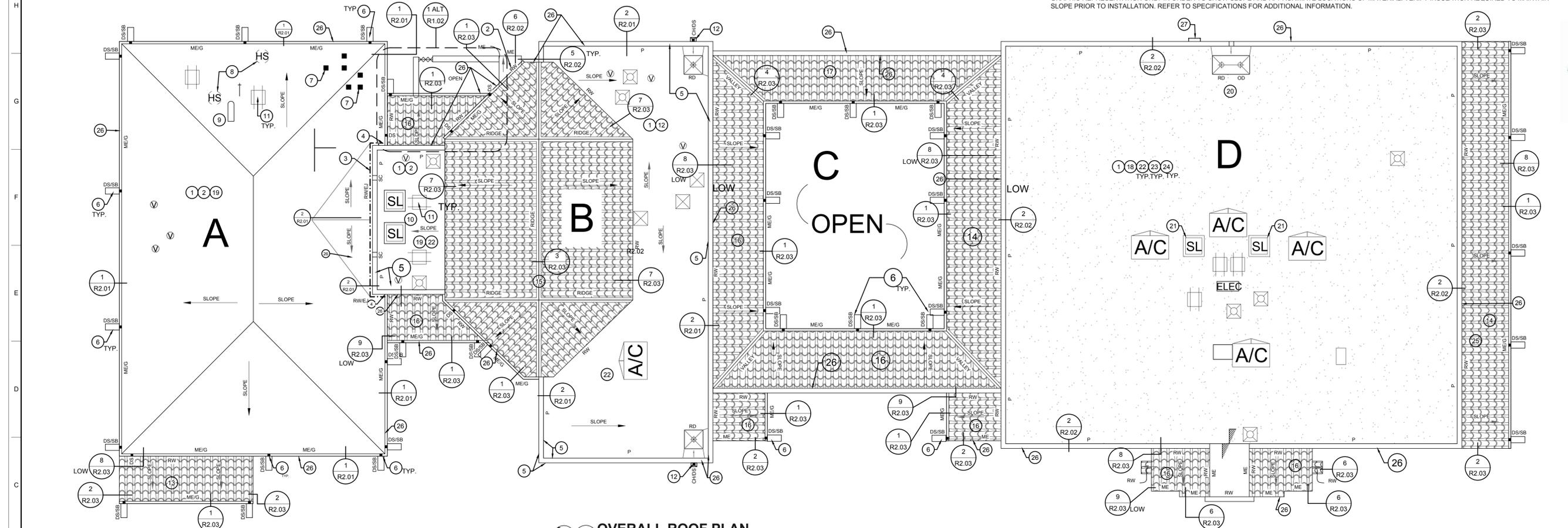
SPECIFIC GENERAL ROOF NOTES

- 1 PROVIDE NEW PIPE SUPPORTS FOR EXISTING PIPING AS SPEC.
- 2 PROVIDE TAPERED INSULATION AS SPECIFIED TO PROVIDE POSITIVE DRAINAGE TOWARDS GUTTERS, SCUPPERS AND/OR ROOF DRAINS.
- 3 PROVIDE ROOF TO RISE WALL EXPANSION JOINT FLASHING AS DETAILED.
- 4 PROVIDE SHEET METAL END CLOSURE WHERE EXPANSION JOINT, AND/OR BASE FLASHINGS, METAL FLASHINGS, ETC. TERMINATE AT THE EDGE OF ROOF. TYPICAL AT ALL LOCATIONS.
- 5 PROVIDE NEW SHEET METAL COPING CAP AND NEW WOOD NAILERS AS SPECIFIED.
- 6 PROVIDE CONCRETE SPLASH BLOCK AS DETAILED AND SPEC.
- 7 REMOVE EXISTING PITCH PANS AND THREADED STEEL RODS. PATCH METAL DECK TO MATCH EXISTING AND PROVIDE INFILL MATERIAL TO REPAIR LWC DECK PRIOR TO INSTALLING NEW ROOFING SYSTEM.
- 8 REMOVE EXISTING HOT STACK VENTS. PATCH METAL DECK TO MATCH EXISTING AND PROVIDE INFILL MATERIAL TO REPAIR LWC DECK PRIOR TO INSTALLING NEW ROOFING SYSTEM.
- 9 REMOVE AND REPLACE EXISTING SHEETMETAL GOOSE NECK VENT WITH NEW CURB MOUNTED GOOSE NECK VENT. NEW VENT SHALL BE 22 GA. GALVANIZED SHEET METAL AND MATCH EXISTING IN SIZE AND PROFILE CONFIGURATION. CONTRACTOR SHALL PROVIDE NEW CURB, AND SHALL BE PROPERLY SECURED TO DECK AND PROVIDING FOR A CURB BASE FLASHING HEIGHT OF 8" ABOVE THE FINISHED ROOF SURFACE AND BE PROPERLY FLASHED TO THE NEW ROOFING SYSTEM.
- 10 REMOVE AND REPLACE EXISTING SKYLIGHT LENS AND REPLACE WITH NEW DOUBLE LENS TO MATCH EXISTING CURB. RAISE EXISTING SKYLIGHT CURBS AS NECESSARY TO PROVIDE A MINIMUM OF 8" BASE FLASHING HEIGHT ABOVE THE NEW FINISHED ROOF SURFACE. CONTRACTOR SHALL PROVIDE SKYLIGHT FALL PROTECTION SCREENS AT EACH SKYLIGHT. SCREENS SHALL BE NON-PENETRATING WITH ALUMINUM RAILS. SCREEN MATERIAL SHALL BE 250 DIAMETER 304 STAINLESS STEEL IN A 4" X 4" GRID AND SHALL COMPLY WITH OSHA GENERAL INDUSTRY STANDARD 29 CFR 1920.23 (a)(4) AND 29 CFR 1920.23 (a)(5).
- 11 PROVIDE NEW 4" X 4" TREATED WOOD SLEEPERS FOR CONDENSING UNITS. SET SLEEPERS PARALLEL TO ROOF SLOPE.
- 12 REMOVE AND REPLACE EXISTING SHEET METAL COLLECTOR HEAD AND DOWNSPOUT WITH NEW AS SPECIFIED.
- 13 TEAR OFF THE EXISTING TILE ROOFING, BATTENS AND UNDERLAYMENT DOWN TO THE EXISTING 2X TONGUE AND GROOVE WOOD DECK. REMOVE AND REPLACE ROTTED, DAMAGED, AND/OR UNSUITABLE WOOD DECKING, NAILERS, SUB-FASCIA, AND/OR FASCIA AS NECESSARY AND IN ACCORDANCE TO TILE ROOFING INSTITUTE AND NRCA STANDARDS TO MATCH EXISTING MATERIALS AND CONSTRUCTION ACCORDING TO UNIT PRICING SET FORTH ON BID FORM. PROVIDE NEW UNDERLAYMENT, 1 X 4 TREATED BATTENS AND CONCRETE TILE TO INCLUDE ALL TERMINATIONS, FLASHINGS, ACCESSORIES, AND ETC. FOR A COMPLETE AND WARRANTABLE INSTALLATION.
- 14 TEAR OFF EXISTING TILE ROOFING, BATTENS, AND UNDERLAYMENT DOWN TO EXISTING INSULATION SUBSTRATE. EXISTING INSULATION AND VERTICAL BATTENS BETWEEN THE EXISTING INSULATION TO REMAIN. PROVIDE NEW UNDERLAYMENT, 1 X 4 TREATED BATTENS AND CONCRETE TILE AS SPECIFIED TO INCLUDE ALL ASSOCIATED FLASHINGS, TERMINATIONS, ACCESSORIES, AND ETC. FOR A COMPLETE AND WARRANTABLE INSTALLATION.
- 15 TEAR OFF EXISTING TILE ROOFING, BATTENS, UNDERLAYMENT AND INSULATION DOWN TO EXISTING METAL DECK. PROVIDE TWO (2) LAYERS OF NEW THERMAL POLYISOCYANURATE RIGID BOARD INSULATION, MEETING A MINIMUM OF LTR-VALUE OF R-25. PROVIDE 3/4" EXTERIOR GRADE PLYWOOD SHEATHING OVER THE THERMAL INSULATION AND MECHANICALLY FASTEN THRU THE INSULATION AND INTO THE METAL DECK. PROVIDE NEW UNDERLAYMENT 1X4 TREATED BATTEN AND CONCRETE TILE AS SPECIFIED TO INCLUDE ALL PERIMETER, HIP AND RIDGE WOOD NAILERS, ASSOCIATED FLASHING, TERMINATIONS ACCESSORIES, AND ETC. FOR A COMPLETE AND WARRANTABLE INSTALLATION.
- 16 TEAR OFF EXISTING TILE ROOFING, BATTENS, 2X COUNTER BATTENS AND UNDERLAYMENT DOWN TO EXISTING CEMENTITIOUS FIBER DECK SUBSTRATE. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS AND UTILIZE TOOLS AND METHODS SO AS NOT TO DAMAGE EXISTING CEMENTITIOUS FIBER DECK WHEN REMOVING TILE, BATTENS AND COUNTER BATTENS. ROTTED OR DAMAGED DECK SHALL BE REPLACED ACCORDING TO UNIT PRICING SET FORTH ON BID FORM. PROVIDE NEW UNDERLAYMENT, 2X COUNTER BATTENS SPACED AT 2'-0" O.C. SECURED WITH SPECIFIED FASTENER SPACED AT 16" O.C. PRE-DRILLING THROUGH WOOD COUNTER BATTEN. PROVIDE NEW 1 X 4 TREATED BATTENS, AND TILE ROOFING AS SPECIFIED TO INCLUDE ALL ASSOCIATED FLASHINGS, TERMINATIONS, NAILERS AND ACCESSORIES, ETC. FOR A COMPLETE AND WARRANTABLE INSTALLATION.

- 17 TEAR OFF EXISTING TILE ROOFING, METAL HAT CHANNEL BATTENS, AND UNDERLAYMENT DOWN TO EXISTING CEMENTITIOUS DECK SUBSTRATE. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS AND UTILIZE TOOLS AND METHODS SO AS NOT TO DAMAGE EXISTING CEMENTITIOUS FIBER DECK WHEN REMOVING TILE, METAL BATTENS AND UNDERLAYMENT. IT IS RECOMMENDED THAT THE EXISTING METAL BATTEN FASTENERS BE CUT WITH AN APPROPRIATE TOOL PRIOR TO REMOVING THE METAL BATTENS TO FACILITATE THIS PROCESS. ROTTED OR DAMAGED DECK SHALL BE REPLACED ACCORDING TO UNIT PRICING SET FORTH ON BID FORM. PROVIDE NEW UNDERLAYMENT, 2X COUNTER BATTENS SPACED AT 2'-0" O.C. SECURED WITH SPECIFIED FASTENER SPACED AT 16" O.C. PRE-DRILLING THROUGH WOOD COUNTER BATTEN. PROVIDE NEW 1 X 4 TREATED BATTENS AND TILE ROOFING AS SPECIFIED TO INCLUDE ALL ASSOCIATED FLASHINGS, TERMINATIONS, ACCESSORIES, ETC. FOR A COMPLETE AND WARRANTABLE INSTALLATION.
- 18 PROVIDE NEW SEBS ROOF COATING AS SPECIFIED OVER EXISTING MODIFIED BITUMEN ROOFING SYSTEM.
- 19 PROVIDE NEW THERMOPLASTIC ROOFING SYSTEM AS SPECIFIED.
- 20 AT EXISTING ROOF DRAIN SUM AREA; CUT OUT AND REMOVE THE EXISTING SBS MEMBRANE, BASE SHEET AND ROOF DRAIN LEAD(S). REMOVE ANY WET INSULATION MATERIALS AND REPLACE WITH NEW TO MATCH. PROVIDE NEW 4LB SHEET LEAD, SBS MODIFIED BITUMEN 85 MIL (MIN.) SMOOTH SURFACED BASE SHEET, (GAF RUBBEROID 20 SMOOTH OR APPROVED EQUAL), AND SBS MODIFIED BITUMEN 140 MIL (MIN.) GRANULATED CAP SHEET, (GAF RUBBEROID 30 FR OR APPROVED EQUAL) PRIOR TO APPLICATION OF THE NEW SEBS COATING SYSTEM. ADHERE TO COATING MANUFACTURER'S REQUIREMENTS AND RECOMMENDED PROCEDURES IN PREPARATION OF NEW COATING INSTALLATION.
- 21 PROVIDE NEW MODIFIED BITUMEN ROOFING BASE FLASHINGS AT EXISTING SKYLIGHTS CURBS TO INCLUDE NEW CANT STRIP, SBS MODIFIED BITUMEN 85 MIL (MIN.) SMOOTH SURFACED BASE SHEET, (GAF RUBBEROID 20 SMOOTH OR APPROVED EQUAL), AND SBS MODIFIED BITUMEN 140 MIL (MIN.) GRANULATED CAP SHEET, (GAF RUBBEROID 30 FR OR APPROVED EQUAL), SHEET METAL RECEIVER FLASHING, COUNTER FLASHINGS AND TERMINATION BAR, PRIOR TO APPLICATION OF THE NEW SEBS COATING SYSTEM. ADHERE TO COATING MANUFACTURER'S REQUIREMENTS AND RECOMMENDED PROCEDURES IN PREPARATION OF NEW COATING.
- 22 PROVIDE NEW UNISTRUT MOUNTING FRAMES FOR ALL EXISTING ELECTRICAL DISCONNECTS. UNISTRUT FRAME MEMBERS SHALL BE WELDED. SUPPORT RAILS SHALL BE SECURED TO NEW 4" X 4" TREATED WOOD SLEEPERS SET ON SUPPORT PADS ON TOP OF FINISHED ROOF COATING. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DISCONNECT, RECONNECT AND ANY NECESSARY EXTENSION OF ELECTRICAL LINES ABOVE THE ROOF ONLY TO ACCOMMODATE THE RELOCATION OF THE EXISTING DISCONNECTS TO THE NEW UNISTRUT MOUNTING FRAMES. FRAMES SHALL BE FABRICATED TO APPROPRIATE SIZE FOR EACH LOCATION AND NUMBER OF DISCONNECTS. ALL MEP WORK SHALL BE PERFORMED IN ACCORDANCE TO CURRENT CODES. REFER TO DETAIL 4/R2.02.
- 23 AT ROOF AREA TO RECEIVE NEW SEBS ROOF COATING, ALL EXISTING PITCH PANS SHALL HAVE THE EXISTING PITCH PAN SEALANTS REMOVED AND REPLACED WITH NEW ONE PART URETHANE POURABLE SEALANT. ALL PITCH PANS SHALL HAVE NEW SHEET METAL HOODS/COVERS OR CAPS, THIS SHALL ALSO INCLUDE PIPE BOX INSTALLATIONS.
- 24 ALL EXISTING HVAC CONDENSATE LINES SHALL BE MODIFIED TO EXTEND TO DRAINS. LINES SHALL BE PROPERLY FITTED WITH A P-TRAP AND VENT. PROVIDE POSITIVE SLOPE AND SPECIFIED PIPE SUPPORTS.
- 25 REATTACH EXISTING EXTERIOR LIGHT FIXTURE TO EXTERIOR WALL. SEAL FASTENER PENETRATIONS.
- 26 PROVIDE NEW ELASTOMERIC WALL COATING AND JOINT SEALANTS AS SPECIFIED UNDER ALTERNATE 1. AT ALL EXISTING EXTERIOR WALL STUCCO FINISHED SURFACES THROUGHOUT THE FACILITY FULL HEIGHT CONTRACTOR TO VERIFY ALL LOCATIONS AND QUANTITIES ALL LOCATIONS MAY OR MAY NOT BE KEYED TO PLAN.
- 27 EXISTING ROOF LADDER.

GENERAL ROOF NOTES

- A. PROVIDE ALL REQUIRED UTILITY / STRUCTURAL COMPONENTS AND/OR CONNECTIONS FOR THE FUNCTIONAL USE OF ALL CONTRACTOR SUPPLIED EQUIPMENT OR APPLIANCES, REGARDLESS OF ANY OMISSIONS OR INCONSISTENCIES ENCOUNTERED IN THE CONSTRUCTION DOCUMENTS.
- B. THE WORD 'PROVIDE' SHALL MEAN 'FURNISH AND INSTALL COMPLETE AND READY TO USE.'
- C. IF DISCREPANCIES APPEAR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE HIGHER QUALITY, QUANTITY, AND PRICE SHALL SUPERSEDE.
- D. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL BECOME FAMILIAR WITH THE PROJECT AND THE ON-SITE / OFF-SITE CONDITIONS PRIOR TO BIDDING OR COMMENCING WORK.
- E. PROVIDE METAL END CLOSURE ON EXPANSION JOINTS WHERE THEY OCCUR AT THE EDGE OF THE ROOF.
- F. ROOF SLOPES SHOWN ON DRAWING ARE GENERAL AND CONCEPTUAL ONLY. PROVIDE POSITIVE DRAINAGE TO ALL ROOF DRAINS. VERIFY TAPER IN SHOP DRAWINGS. REFER TO STRUCTURAL DOCUMENTS FOR EXACT TOS/BOB ELEVATIONS.
- G. PROVIDE TAPERED INSULATION CRICKETS (1/2" FT. MIN. SLOPE) AT HIGH SIDE OF ALL MECHANICAL UNITS SMOKE VENTS, ROOF HATCHES & OTHER MISC. ROOF PENETRATIONS, TO SHED WATER AROUND & TO ENSURE POSITIVE ROOF DRAINAGE.
- H. PROVIDE ADDITIONALLY ADHERED MEMBRANES AS PROTECTION AT "SERVICE SIDE" OF ALL MECH. EQUIPMENT, AT "ACCESS SIDE" OF ALL ROOF HATCHES AND ROOF ACCESS LADDERS - FIELD VERIFY LOCATIONS.
- I. ALL WOOD BLOCKING AT ROOF EDGES ARE TO BE FABRICATED FROM CONT. 2X6 FR-WD BOARDS. PROVIDE LARGER 2X FR-WD AS REQUIRED PER DIMENSIONED DETAILED OR AS FIELD CONDITIONS DICTATE. ALL COPING TO BE SLOPED TOWARD THE INTERIOR.
- J. ALL EXPOSED FLASHING, COPING (IF APPLICABLE) AND THEIR ACCESSORIES SHALL BE AS SPECIFIED. PAINT ALL METAL FLASHING THAT IS NOT PREFINISHED (TYP) AND VISIBLE FROM THE GROUND.
- K. HEIGHT OF ALL NAILERS SHALL BE FLUSH WITH NEW INSULATION THICKNESS.
- L. ALL THROUGH WALL FLASHING SYSTEMS TO ACCOMMODATE 8" MINIMUM FLASHING HEIGHT FROM FINISHED ROOF SURFACE. PROVIDE END DAMS AS CONDITIONS ALLOW. ALL FLASHING TO HAVE 4" LAP MINIMUM AND/OR STEP.
- M. ALL PITCH PANS SHALL BE DOUBLE SOLDERED CLAD METAL AND RECEIVE EITHER MECHANICALLY ATTACHED GOOSENECK OR METAL BONNETS. METAL BONNETS SHALL BE SECURED WITH CLAMPING RING AND SEALANT. SPECIAL CARE GIVEN TO WASH ALL METAL PRIOR TO INSTALLATION.
- N. ANY CRACKS OR VOIDS IN RISE WALLS ABOVE COUNTER FLASHING SHALL BE REPAIRED WITH COMPATIBLE SEALANT.
- O. ALL VERTICAL MEMBRANE FLASHING SHALL BE MECHANICALLY FASTENED AND INSTALLED WITH NEW METAL COUNTER FLASHING UTILIZING A CONTINUOUS CLIP, SLIDE METAL COVER PLATE DOWN OVER VERTICAL CLIP AND SEAL.
- P. PROVIDE NEW CONCRETE SPLASH BLOCKS ON ROOF ELEVATION SUPPORTED BY A WALK PAD WHERE DOWNSPOUTS OCCUR.
- Q. ALL PIPE AND CONDUIT SHALL RECEIVE PIPE SUPPORTS AND RELATED SHIMS, AND SHALL BE PLACED ON AN ADDITIONAL FULLY ADHERED ROOF MEMBRANE UNDER SPECIFIED WALK PAD PRIOR TO SURFACE APPLICATION. SUPPORTS TO OCCUR AT 10'-0" O.C. AND WITHIN 2'-0" OF ALL SLOPES, TEES AND CORNERS. ALL PIPE TO BE PAINTED PER BUILDING CODE REQUIREMENTS.
- R. ALL METAL FLASHING SHALL EXTEND BEYOND ROOF EDGE MIN. 8" WHERE FLASHING ABUTS VERTICAL WALL SURFACE AS DETAILED. ALL FLASHING SHALL BE INSTALLED IN SHINGLE FASHION.
- S. AT ALL LOCATIONS WHERE CONVERGENCE OF MULTIPLE PLANE OF ROOFING TO WALL OCCURS, FIELD FABRICATE THERMOPLASTIC BOOT TO BE INSTALLED OVER NEW ROOFING, COMPLETELY OVERLAYING THE TRANSITIONS OF ALL ROOF TO WALL, ELEVATIONS, INSIDE / OUTSIDE 90'S ETC. PRIOR TO METAL INSTALLATION.
- T. ALL EQUIPMENT CURBS TO BE RAISED AS NECESSARY TO MAINTAIN 10" MINIMUM HEIGHT ABOVE FINISHED ROOF SURFACE.
- U. MECHANICAL, ELECTRICAL, AND PLUMBING ROOF EQUIPMENT SHOWN ON THIS PLAN IS FOR GENERAL ARCHITECTURAL INFORMATION FIELD VERIFY EQUIPMENT NOT SHOWN, AND FOR ADDITIONAL REQUIREMENTS AND COORDINATION.
- V. FLASHING AND STRIPPING MATERIALS, BASE PLY SHEETS, MEMBRANES, INSULATION, AND ACCESSORIES SHOULD BE RECOMMENDED BY THE ROOFING SYSTEM MANUFACTURER FOR INTENDED USE AND COMPATIBILITY WITH THE MEMBRANE ROOFING SYSTEM.
- W. WHERE WOOD BLOCKING EXCEEDS 6" IN VERTICAL THICKNESS AT TAPERED INSULATION, PROVIDE STEM WALL CONSTRUCTED OF 6" GALVANIZED COLD FORMED METAL FRAMING AT 16" O.C. WITH CON. TRACK AT TOP AND BOTTOM AND WITH 3/4" FR-EXT GRADE PLYWOOD AT EACH SIDE, TOP TO SLOPE WITH TAPERED INSULATION.
- X. ALL VERTICAL MEMBRANE FLASHING SHALL BE MECHANICALLY FASTENED AND INSTALLED WITH NEW METAL COUNTER FLASHING UTILIZING A CONTINUOUS CLIP, SLIDE METAL COVER PLATE DOWN OVER VERTICAL CLIP AND SEAL.
- Y. GUTTERS SHALL BE PREFINISHED GALVANIZED STEEL, SIZE PER ROOF PLAN, UNO, PROVIDE PREFINISHED 1/4"x1 1/2" GALVANIZED STEEL BENT PLATE BRACKETS AND PREFINISHED 1" GALVANIZED STEEL SPACERS AT 36" O.C. MAX, STAGGER WITH EACH OTHER AT 18" O.C.
- Z. PROVIDE PREFINISHED GUTTER EJS 30'-0" O.C. MAX.
- AA. DOWNSPOUTS SHALL BE 4"x6" PLAN, PROVIDE PREFINISHED 2" GALVANIZED STEEL HANGERS AT 36" O.C. PROVIDE VANDAL PROOF STAINLESS STEEL STRAINERS AT EACH OUTLET. COORDINATE LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
- AB. PROVIDE SPLASH BLOCKS AT ALL ROOF LEADER NOZZLES THAT SPILL ONTO GROUND.
- AC. ROOF PLAN SHOWS TAPERED INSULATION CONCEPTUALLY AND FOR INTENT ONLY. TAPERED INSULATION IS NOT SHOWN TO SCALE AND IS SHOWN AS GRAPHIC REPRESENTATION ONLY IN ORDER TO SHOW SLOPE AND APPROXIMATE LOCATIONS OF MATERIAL. VERIFY INSULATION REQUIRED TO MAINTAIN SLOPE PRIOR TO INSTALLATION. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.



1 OVERALL ROOF PLAN
NORTH NOT TO SCALE

BUILDING AREA DESIGNATION KEY

A - OLD LIBRARY BUILDING
B - THEATER BUILDING
C - COURTYARD AREA
D - MAIN LIBRARY AREA

ROOF LEGEND



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ROOF PLAN

R1.01



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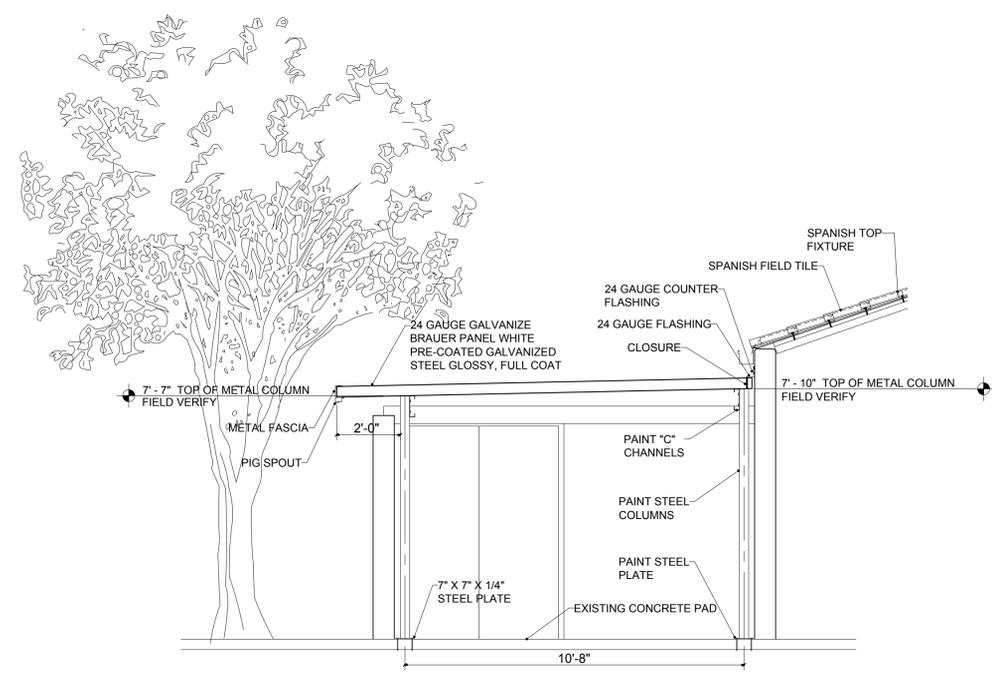
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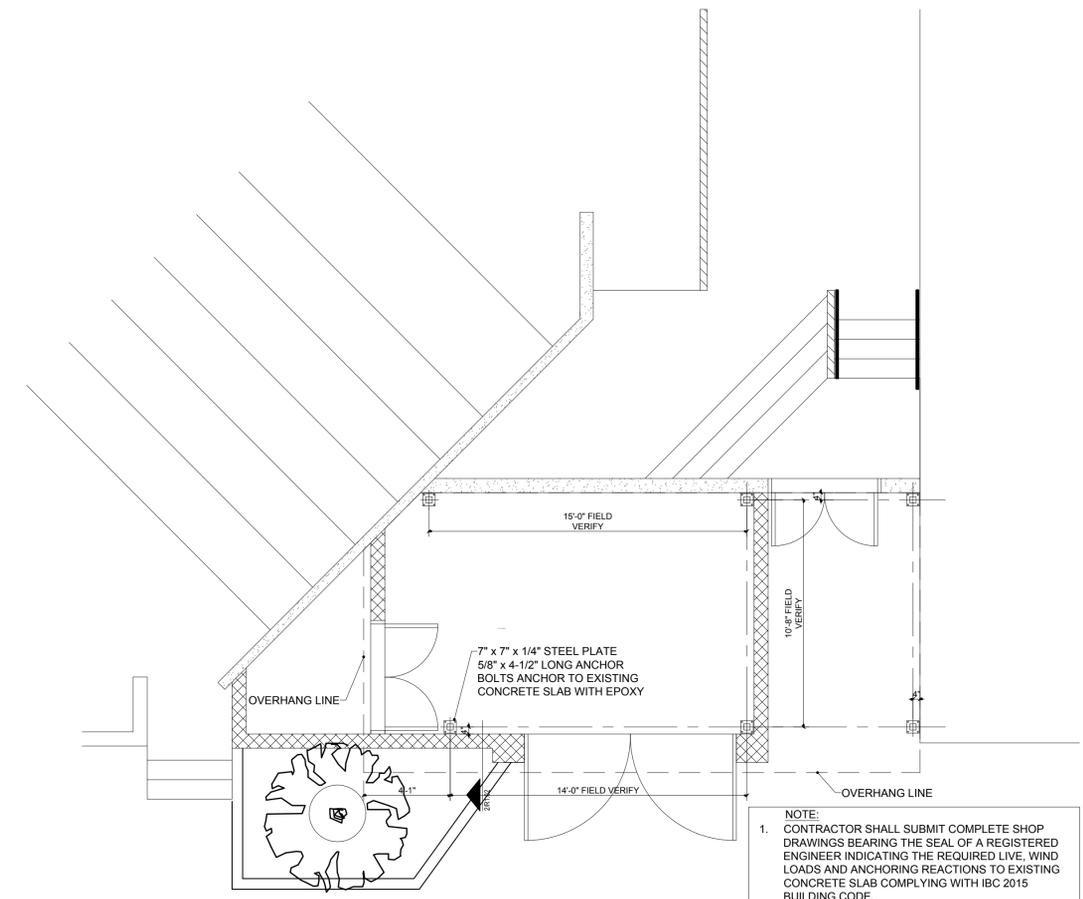
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PLAN & SECTION

R1.02



2 SECTION 'ALTERNATE 2'
SCALE: 3/8"=1'-0"



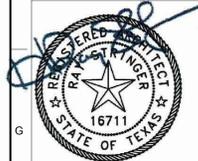
1 FLOOR PLAN 'ALTERNATE 2'
SCALE: 1/4"=1'-0"

NOTE:
1. CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS BEARING THE SEAL OF A REGISTERED ENGINEER INDICATING THE REQUIRED LIVE, WIND LOADS AND ANCHORING REACTIONS TO EXISTING CONCRETE SLAB COMPLYING WITH IBC 2015 BUILDING CODE.

CHANGE IN ELEVATION	ANTENNA	SOIL/PLUMBING VENT	FLANGE MOUNTED EQUIPMENT	HOT STACK	CURB MOUNTED VENT	A/C UNIT	CURB MOUNTED EQUIPMENT	MISCELLANEOUS EQUIPMENT ON PP	PRIMARY ROOF DRAIN	OVERFLOW ROOF DRAIN	PRIMARY AND OVERFLOW ROOF DRAIN	DOWNSPOUT/SPLASHBLOCK	EXPANSION JOINT	METAL EDGE W/GUTTER	METAL EDGE	RISE WALL	RAISED METAL EDGE	RISE WALL W/EXPANSION JOINT
SECURITY CAMERA	PITCH PAN	PROCESS VENT STACK	VENT STACK	FLANGE MOUNTED VENT	PLENUM A/C ON PITCH PANS	MISCELLANEOUS EQUIPMENT	ROOF HATCH	THROUGH WALL SCUPPER	OVERFLOW SCUPPER	EDGE SCUPPER	DOWNSPOUT/ COLLECTOR HEAD	DS/CH	DS	ROOF ACCESS LADDER	PARAPET	EXPANSION JOINT AT PARAPET	SLOPE DIRECTION	SKYLIGHT

ROOF LEGEND

- LOW SLOPE ROOF SYSTEM AS SPECIFIED
- SPANISH TILE ROOF SYSTEM AS SPECIFIED
- EXISTING ROOF WITH NEW COATING



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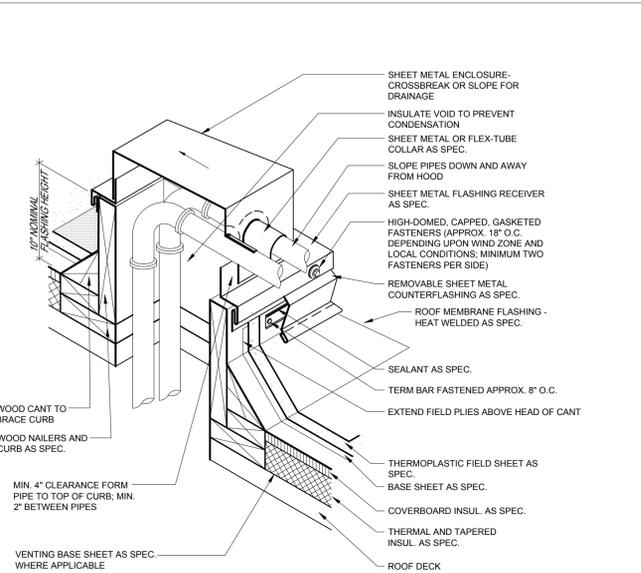
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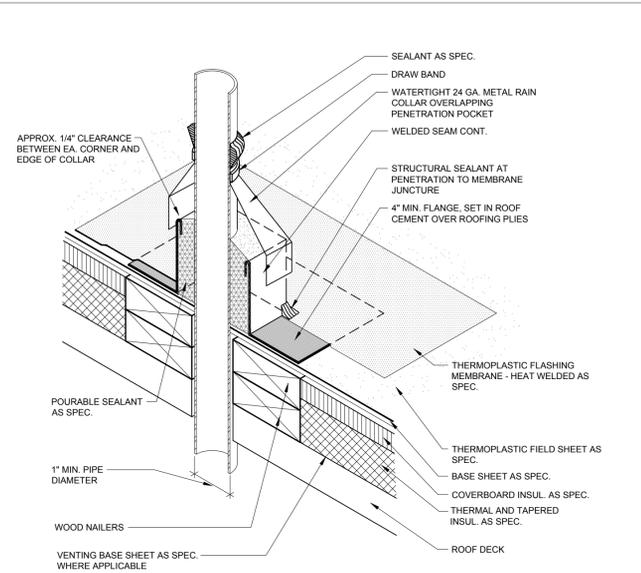
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ROOFING DETAILS

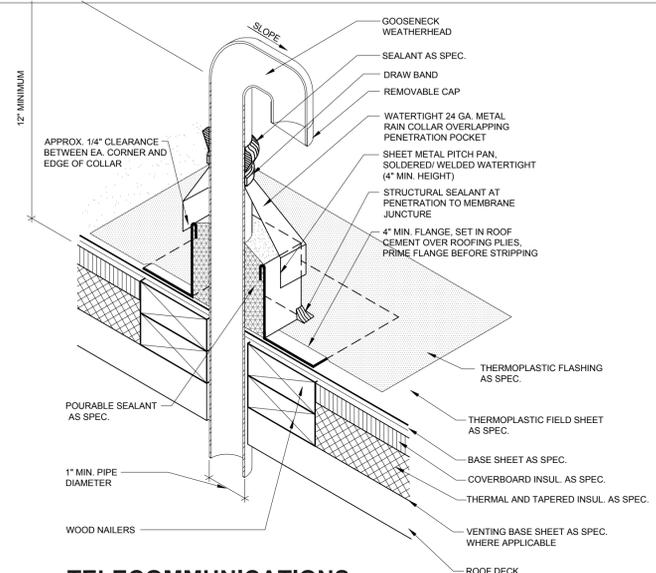
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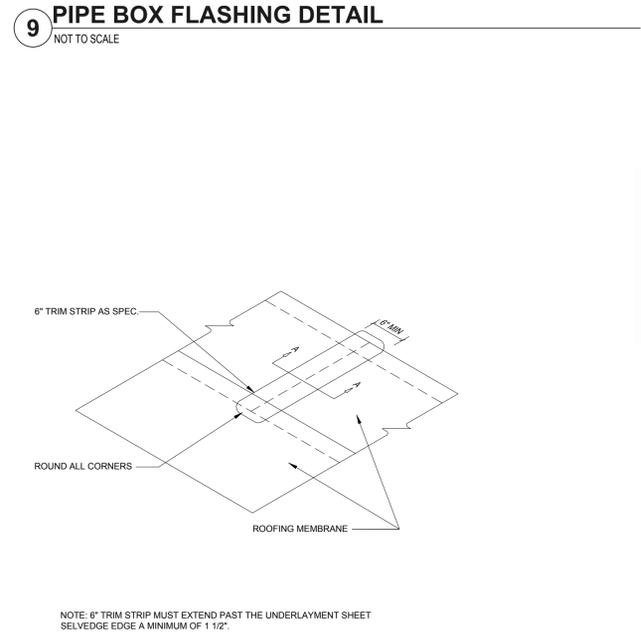
9 PIPE BOX FLASHING DETAIL
NOT TO SCALE



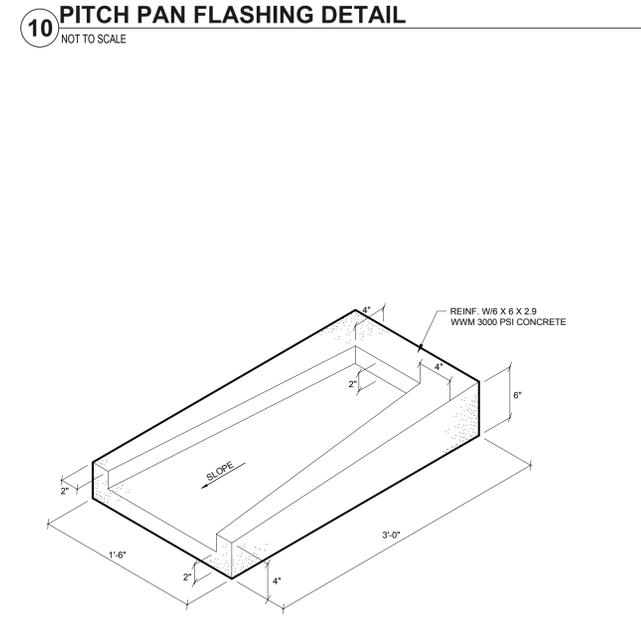
10 PITCH PAN FLASHING DETAIL
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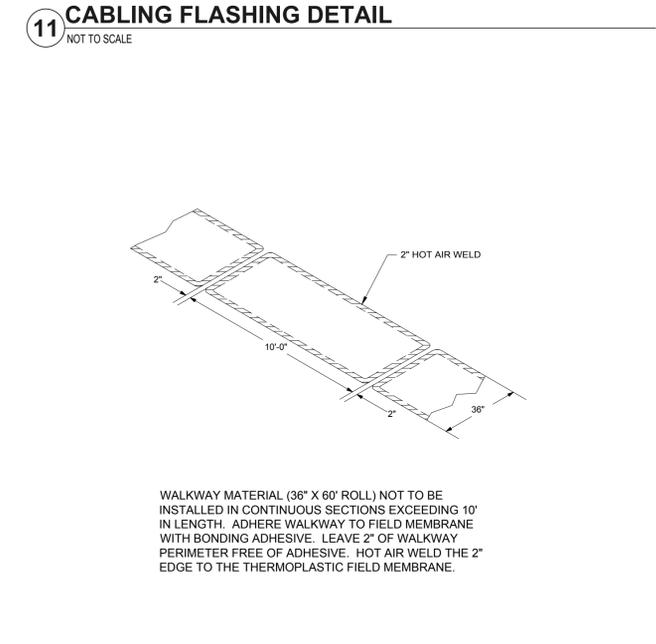
11 TELECOMMUNICATIONS CABLING FLASHING DETAIL
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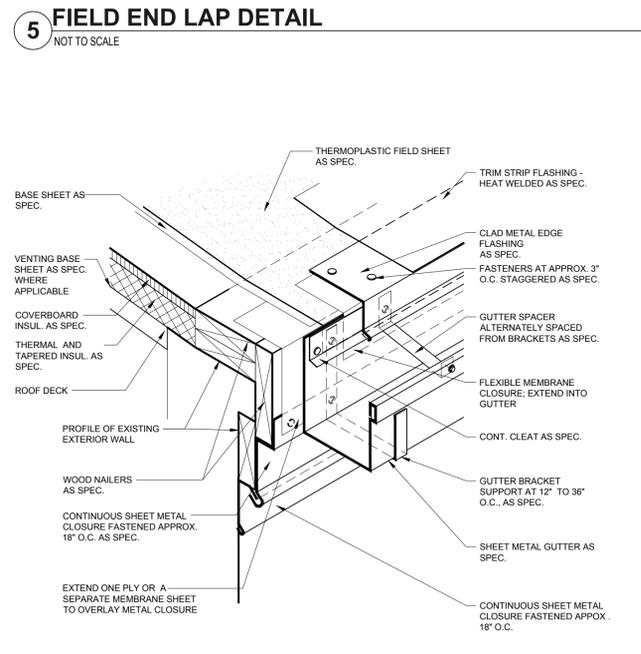
5 FIELD END LAP DETAIL
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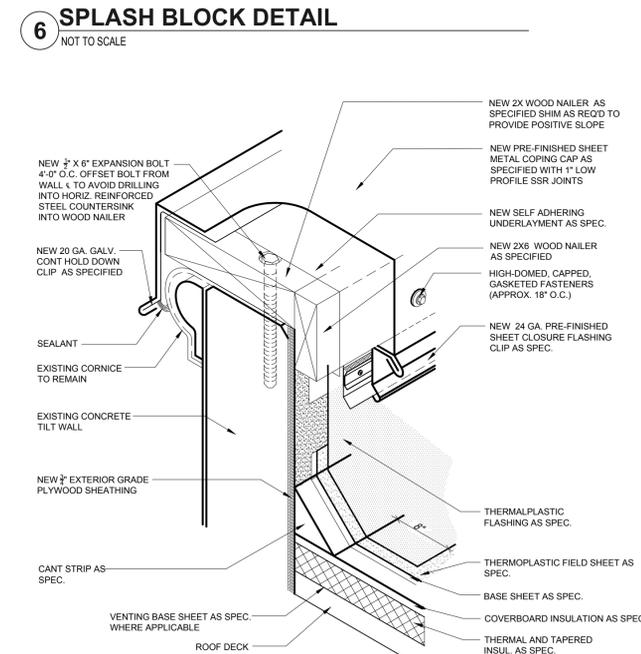
6 SPLASH BLOCK DETAIL
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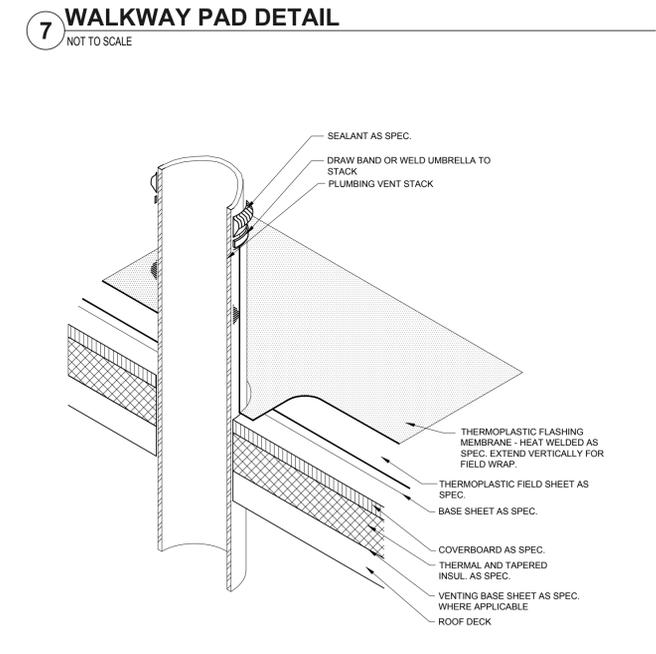
7 WALKWAY PAD DETAIL
NOT TO SCALE



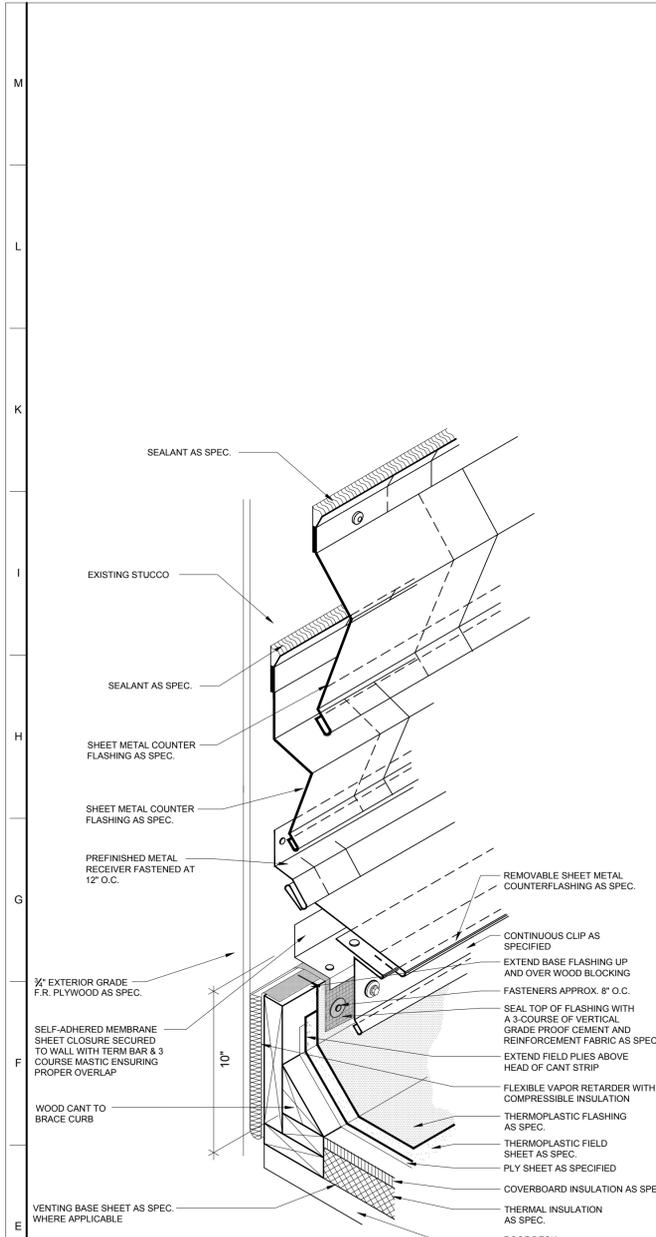
1 ROOF EDGE WITH GUTTER DETAIL
NOT TO SCALE



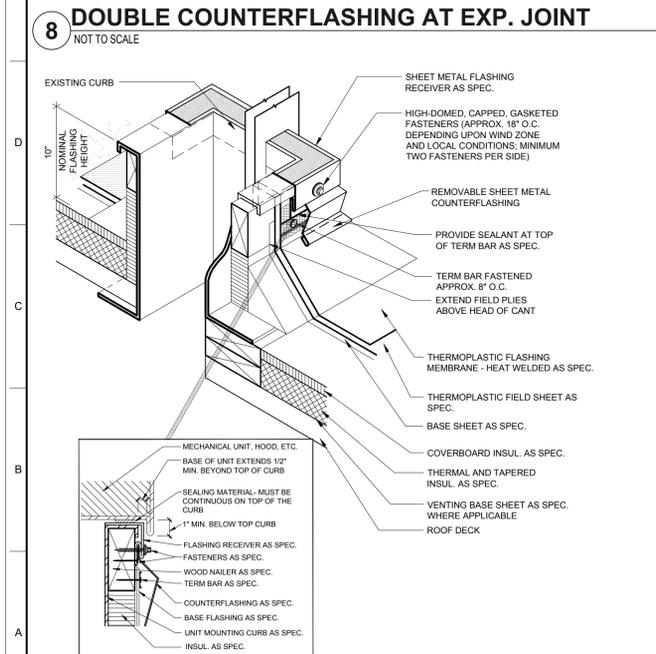
2 PARAPET DETAIL
NOT TO SCALE



3 VENT FLASHING DETAIL
NOT TO SCALE



8 DOUBLE COUNTERFLASHING AT EXP. JOINT
NOT TO SCALE



4 EQUIPMENT CURB DETAIL
NOT TO SCALE

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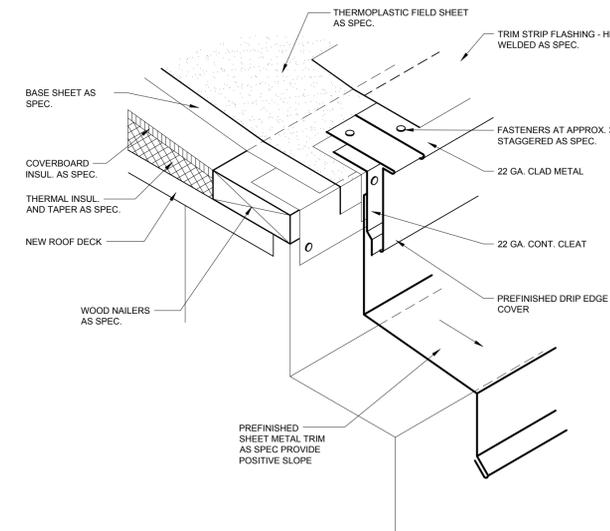
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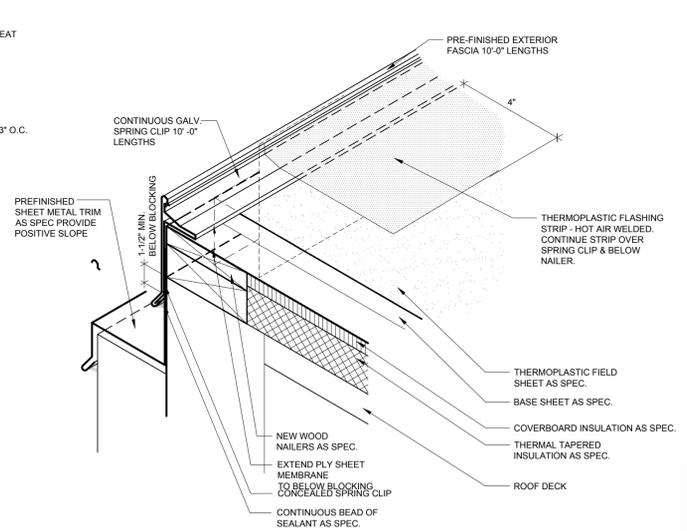
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ROOFING DETAILS

R2.02

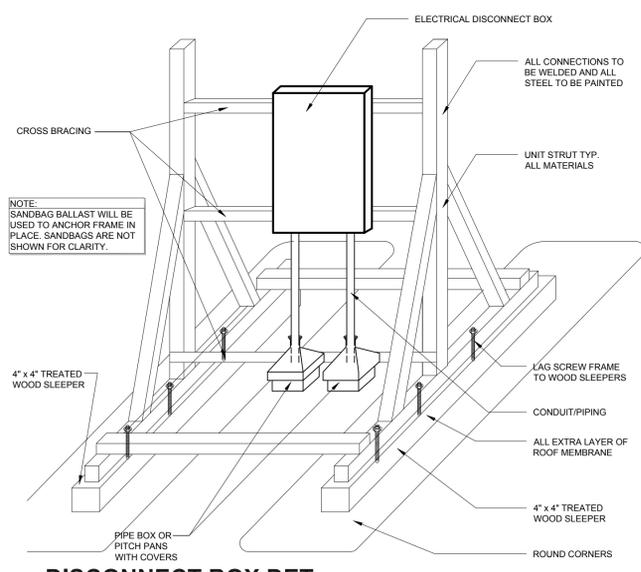


6 TAPERED ROOF EDGE DETAIL
NOT TO SCALE

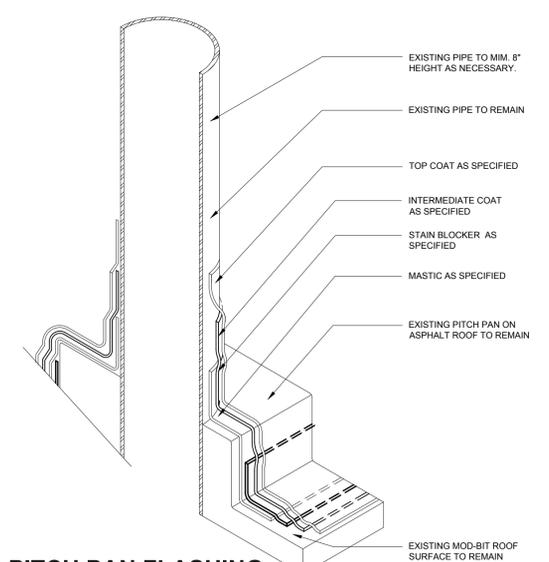


5 TAPERED ROOF EDGE W/ FASCIA DETAIL
NOT TO SCALE

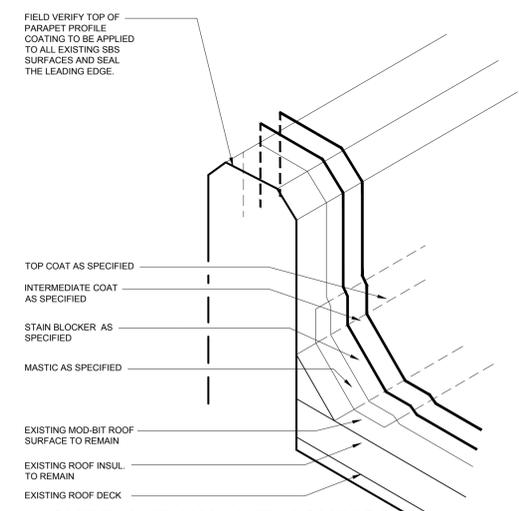
NOTE TO CONTRACTOR:
DETAILS ONE THRU FOUR (1-4) SHOWN BELOW ON THIS PAGE ARE FOR VISUAL REFERENCE OF THE DESIGN INTENT FOR THE SPECIFIED SBS COATING APPLICATION OVER THE EXISTING SBS MODIFIED BITUMEN ROOFING SYSTEM AT THE LOW SLOPED MAIN LIBRARY HIGH ROOF AREA ONLY. THESE DETAILS MAY OR MAY NOT BE ALL INCLUSIVE OF EACH EXISTING CONDITION FOUND ON SAID ROOF AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL CONDITIONS QUANTITIES, MEASUREMENTS, SIZES, AND ETC. PRIOR TO BIDDING AND COMMENCING WORK. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE TO THE SPECIFICATION AND THE MANUFACTURER'S REQUIREMENTS FOR A WARRANTABLE INSTALLATION AS SPECIFIED.



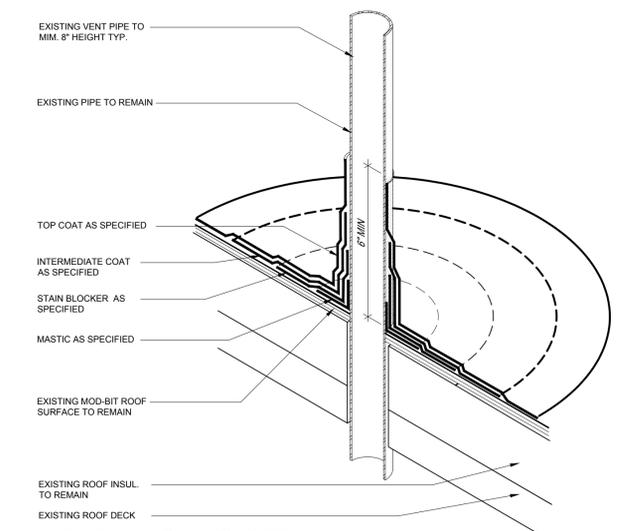
4 @ MAIN LIBRARY HIGH ROOF
NOT TO SCALE



3 @ MAIN LIBRARY HIGH ROOF
NOT TO SCALE



2 @ MAIN LIBRARY HIGH ROOF
NOT TO SCALE

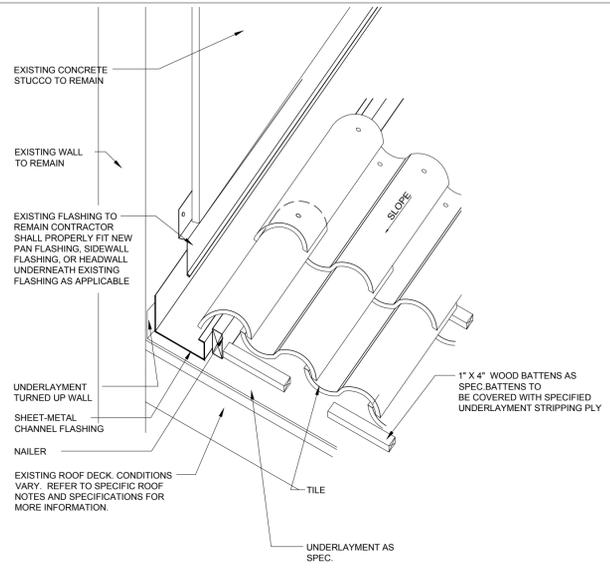


1 @ MAIN LIBRARY HIGH ROOF
NOT TO SCALE

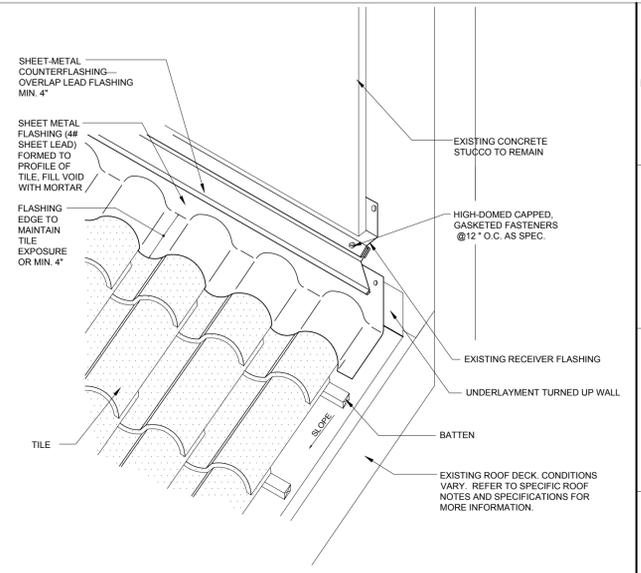
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NOTE
DUE TO THE VARIED EXISTING CONDITIONS FOUND AT THE TILE ROOF AREAS, TILE DETAILS ARE FOR ILLUSTRATIVE PURPOSES OF THE TILE ROOFING MATERIAL COMPONENTS DESIGN INTENT. NOT ALL SPECIFIC ROOF DECK, BATTENS, COUNTERBATTENS, UNDERLAYMENTS OR SHEATHING COMPONENTS MAY OR MAY NOT BE SHOWN IN DETAILS FOR EACH SPECIFIC CONDITION FOR CLARITY. REFER TO SPECIFIC ROOF NOTES FOR MORE INFORMATION REGARDING EACH ROOFING AREA SCOPE OF WORK, REQUIREMENTS, AND DECK, BATTEN COUNTERBATTEN, SHEATHING, AND UNDERLAYMENT COMPONENTS AND ETC.

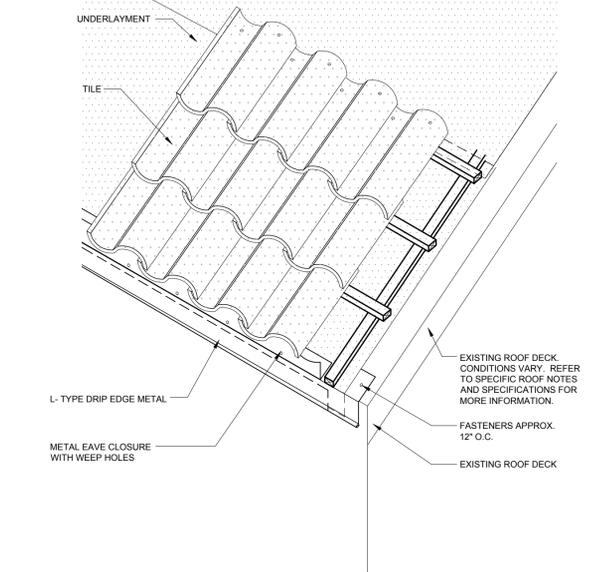
NOTE
AT TILE ROOFING INSTALLATION LOCATION THAT REQUIRE THE USE OF NEW THERMAL INSULATION, CONTRACTOR SHALL PROVIDE TREATED 2" X 4" SOLID WOOD NAILERS AT ALL PERIMETER EAVES EQUAL TO THE TOTAL HEIGHT OF THE THERMAL INSULATION AND PROPERLY SECURE TO DECK.



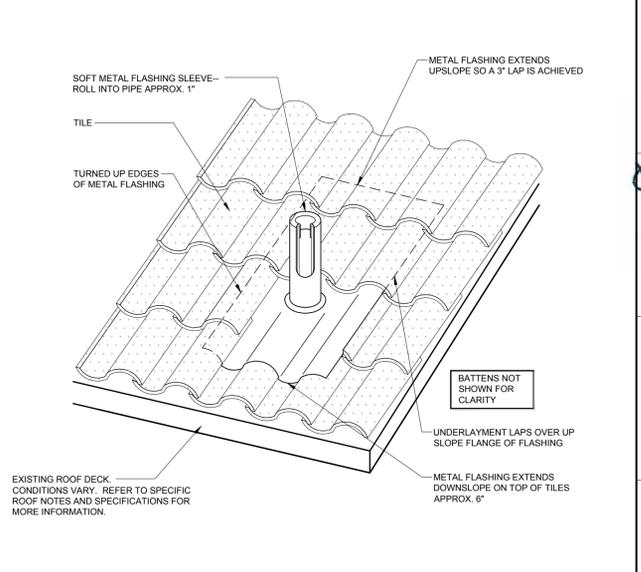
9 RISE WALL W/ METAL PANEL DETAIL
NOT TO SCALE



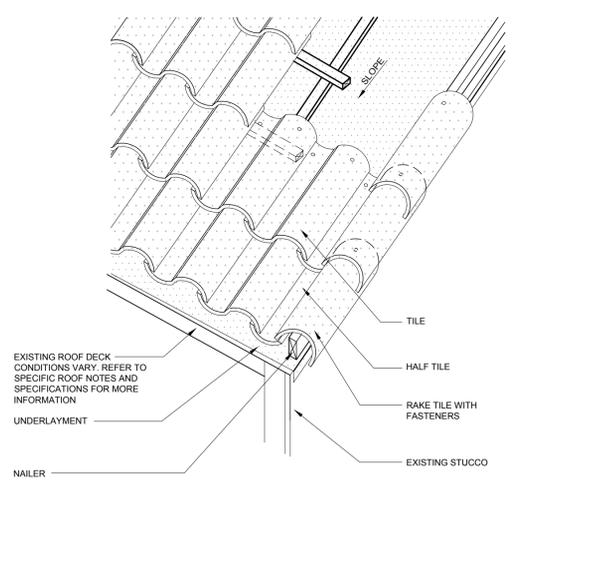
8 TILE FLASHING AT RISE WALL DETAIL
NOT TO SCALE



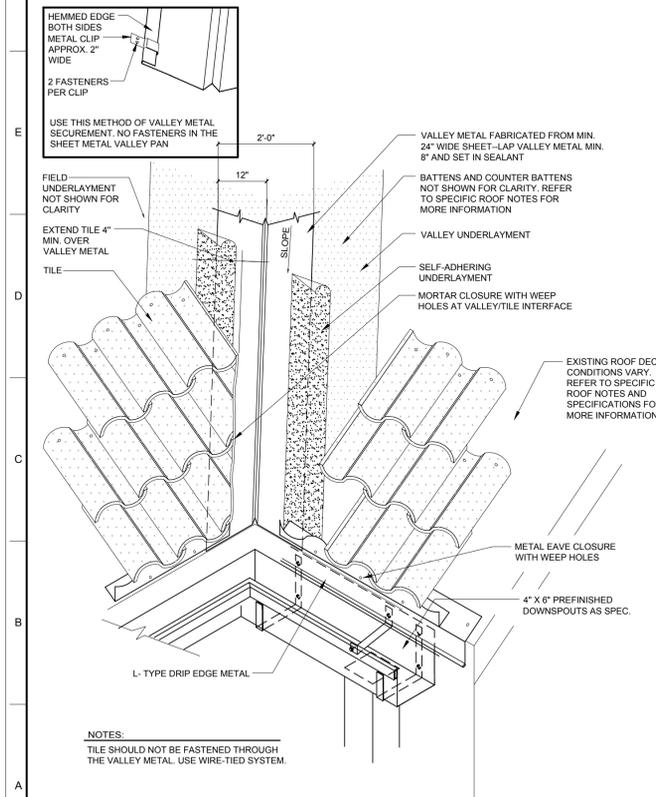
6 EAVE FLASHING DETAIL
NOT TO SCALE



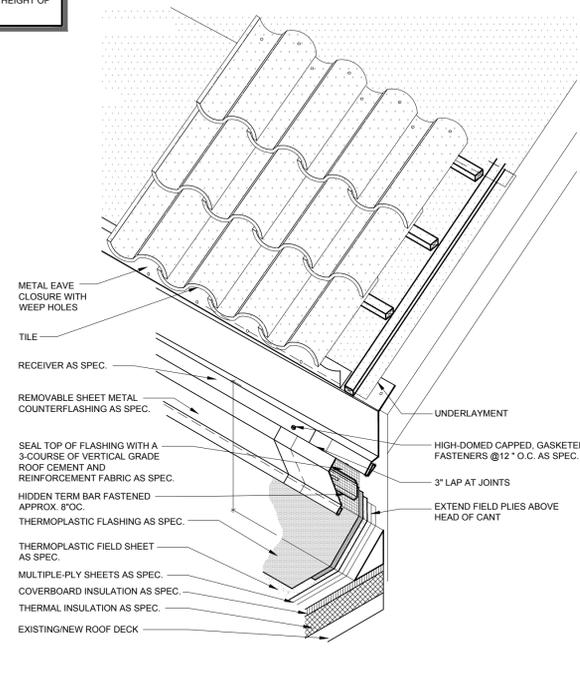
5 PIPE PENETRATION DETAIL
NOT TO SCALE



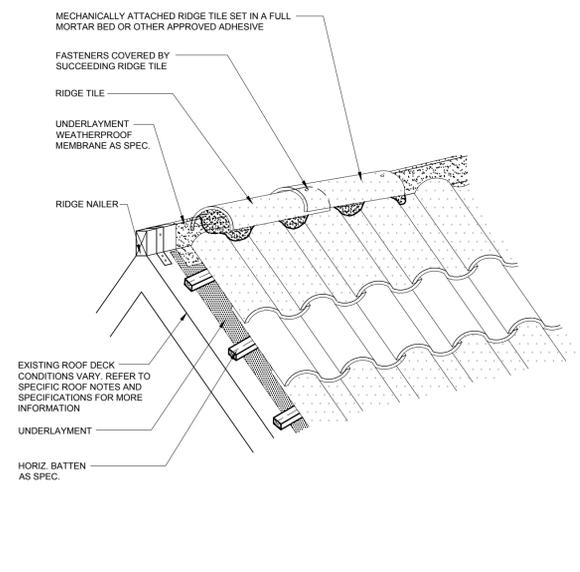
2 RAKE EDGE FLASHING DETAIL
NOT TO SCALE



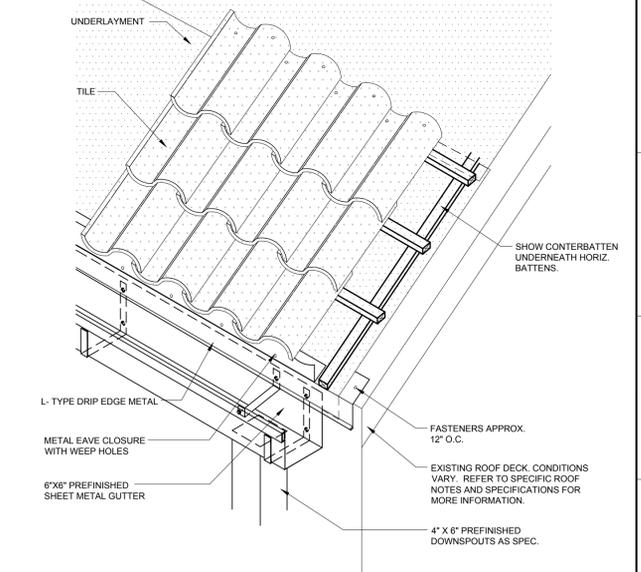
4 OPEN VALLEY DETAIL
NOT TO SCALE



7 FLASHING DETAIL
NOT TO SCALE



3 RIDGE DETAIL
NOT TO SCALE



1 EAVE FLASHING DETAIL
NOT TO SCALE



01/12/17

NO.	DATE	DESCRIPTION

CITY OF WESLACO
WESLACO PUBLIC LIBRARY
ROOFING REPAIR
525 S. KANSAS AVE
WESLACO, TEXAS

PROJECT NO: 2016.24
DATE: .
STARTING DATE:
CK BY: DWN BY: GM

ROOFING DETAILS

R2.03

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15