

Specification Documents

June 18, 2024

Obion County Health Department Phase 1 - Re-Roof *for* Obion County, TN

TLM Project No. J-7169



EST. 1964

117 East Lafayette St.
Jackson, Tennessee 38301

PH: 731-988-9840

www.tlmae.com

Obion County Health Department

Phase 1 – Re-Roof

1008 Mt. Zion Rd.

Union City, TN 38261

TLM Project No. J-7169

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DIVISION 0
PROCUREMENT AND CONTRACT
REQUIREMENTS

SECTION 00 01 15 – LIST OF DRAWINGS

<u>Sheet No.</u>	<u>Description</u>
CS-1	Cover Sheet
A-1	Roof Plan & Details
A-2	Existing Conditions Pictures

END OF SECTION 00 01 15

SECTION 00 11 13 – ADVERTISEMENT FOR BIDS

Bidders may submit bids for the project as described in this Document.

Submit bids according to the Instructions to Bidders.

Project Identification: **Obion County Health Department – Phase 1 Re-Roof | J-7169**

Project Location: **1008 Mount Zion Road, Union City, TN 38261**

Owner: **Obion County and Its Officials; 216 South 3rd Street, Union City, TN 38281**

Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**

Bids will be received for the following Work:

- a. General Building Construction
- b. Re-Roof Work

Proposed forms of contract documents, including plans and specifications, are on file at the following:

- TLM Associates, Inc., 117 E. Lafayette Street, Jackson, TN 38301, www.tlmae.com
- Builder's Exchange, 2728 Eugenia Avenue Suite 108, Nashville, TN 37211, www.bxtn.org
- Dodge Data & Analytics, dodge.docs@construction.com
- West Tennessee Plans Room, www.wtplanroom.com

Copies of the documents must be obtained by providing a deposit to TLM Associates, Inc. TLM Associates, Inc. can be reached by phone at (731)988-9840 or through receptionist@tlmae.com to purchase bid documents.

Each General Contractor will receive one (1) set of plans and specifications documents by depositing **\$200.00** with TLM Associates, Inc. Additional complete sets may be purchased at their own expense. Such deposit will be *100% refunded* to the persons who return the plans, specifications, and other documents in good condition *within 10 days after the bid opening*. **The successful bidders deposit will be retained.**

Each Sub-Contractor, supplier, etc. other than General Contractors will pay **\$150.00** which is *refundable* to TLM Associates, Inc. to receive one (1) set of plans and specifications. Additional complete sets may be purchased at their own expense. **A digital copy of the plans and specifications are available upon request after the purchase of a bid set.**

Owner will receive sealed bids until the bid time and date at the location given below. Owner will consider bids prepared in compliance with the Instructions to Bidders, and delivered as follows:

Bid Date: **August 23, 2024**

Bid Time: **2: 00 p.m.**, local time.

Location: **Obion County Mayor's Office; 216 South 3rd Street, Union City, TN 38281**

Bids will thereafter be publicly opened and read aloud.

Obion County reserves the right to reject any and all bids or to waive any informality in the bidding whenever such rejection or waiver is in the interest of the Owner.

A certified check or bank draft, payable to **Obion County**, U.S. Government bonds, or a satisfactory bid bond executed by the bidder and acceptable sureties in an amount equal to five (5) percent of the bid shall be submitted with each bid. No bids may be withdrawn for a period of **90** days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

All bidders are required to comply with General Licensing Act of 1976, also known as Tennessee House Bill No. 2180 and T.C.A. 62-6-119 of 1994.

Effective January 1, 2011, a masonry subcontractor must be licensed with an "LMC" classification in order to bid or to be listed on the outside of bid envelope as a Licensed Masonry Contractor (LMC) when the masonry portion is \$100,000 or more (*including materials and labor*). The BC-9 or BC will not be acceptable.

Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder. The successful bidder will be required to furnish and pay for satisfactory performance and payment bond, bonds, or insurance surety.

A Pre-bid meeting for all bidders will be held at **the project location** on **August 9, 2024** at **10:00 AM**, local time. Prospective bidders are **highly recommended** to attend.

SECTION 00 21 13 – INSTRUCTIONS TO BIDDERS

PART 1 - DOCUMENTS

1.1 BID FORMS AND BID PREPARATION:

- A. Bid Forms and Bid Preparation: All bids will be submitted on forms contained herein and shall be subject to all requirements of the specifications and drawings. Bid forms can be removed from the project manual.
- B. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.
- C. By the General Contractors Licensing Act of 1976 and T.C.A. 62-6-119 of 1994, each bidder must submit the following information for his bid to be considered valid. Each bid must be submitted in a sealed envelope bearing on the outside the following information:
 - 1. Name of Bidder.
 - 2. Address of Bidder, including Zip Code and Phone Number, to show whether bidder is a resident of the State of Tennessee.
 - 3. Tennessee License Number of Bidder.
 - 4. Expiration Date of Tennessee License Number.
 - 5. That Classification of Bidder's License which applies to this Bid / Bidder must write out the work classifications of his license which apply to the work of this project.
 - 6. Name of the Project for which the Bid is submitted.
 - 7. List Subcontractors, License Number, Expiration Date thereof, and License Classification for the following subcontractors on the outside of the envelope containing the Bid:
 - a. Electrical
 - b. Plumbing
 - c. HVAC
 - d. Masonry
 - e. Fire Protection
 - 8. Item No. 7 is required by Tennessee Law, T.C.A. 62-6-119.
 - a. "The Architect, Engineer, Construction Manager, Construction Consultant or any other persons or entity involved in the preparation of the invitation to bid or comparable bid, documents shall direct that the license number, expiration date thereof, and license classification of the contractor applying to the bid for electrical, plumbing or heating ventilation or air conditioning, appear on the outside of the envelope containing the bid; otherwise the Bid shall not be opened or considered."
 - b. "Any Bid envelope which contains the listing of more than one contractor in each classification shall be considered in violation. Failure to observe this section constitutes a Class A Misdemeanor."

- D. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as "SEALED BID ENCLOSED".
- E. Conditional bids will not be accepted.
- F. Examination of Site: Bidders shall visit the site of the project, and the Contractor shall be assumed to have visited the premises and to have allowed for all conditions that might affect his work. No consideration will be given any claim based on lack of knowledge of existing conditions.
- G. Obligation of Bidder: Bidders shall notify the Architect immediately should, during his examination of the site or any of the associated documents, he finds a discrepancy. At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and be thoroughly familiar with plans and contract documents (including all addenda). Failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect to bid.
- H. Conditions of Work: Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Employ such means and methods that will not cause any interruptions or interference with work by others.

1.2 ADDENDA:

- A. Interpretations and Addenda: The Architect will make every effort necessary to cooperate with bidders in making the proper interpretations of the Contract Documents and in advising all bidders of such interpretation.
- B. Questions from bidders must be directed to the Engineer or Owner as soon as possible to allow sufficient time for preparation and distribution of addenda.
- C. It shall be the bidder's responsibility to make inquiry as to addenda issued. All such addenda shall become a part of the contract and all bidders shall be bound by such addenda, whether they are received by the bidders, or not.
- D. Responsibility of General Contractor to Subcontractor Regarding Addenda: Each prime bidder (i.e., General Contractor) will receive every addendum. Copies of addenda will also be mailed to construction plans rooms, but not to the subcontractors. It shall be the responsibility of each prime bidder to forward copies of addenda or otherwise inform their subcontractors.

1.3 BID SECURITY:

- A. Bid Guaranty (Bid Bond): The bid must be accompanied by a bid guaranty that shall not be less than 5 percent (5%) of the amount of the bid, and at the option of the bidder may be a certified check, bank draft, U. S. Government Bonds at par value, or a bid bond secured by a surety company. Certified check or bank draft must be made payable to the order of the

Owner. The bid guaranty shall insure the execution of the Contract and the furnishing of performance and payment bond or bonds by the successful bidder all as required by the specifications. If the successful bidder withdraws his bid within Ninety (90) days of the bid opening, then his bid bond will automatically be forfeited to the Owner.

PART 2 - CONSIDERATION OF BIDS

2.1 BIDDER(S) CONSTRUCTION EXPERIENCE:

- A. Before a bid is considered for award, the bidder may be requested by the Owner to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, and financial resources.

2.2 QUALIFICATIONS OF BIDDER(S):

- A. Bids are acceptable only from contractors, properly and currently licensed.
- B. The bidder is advised that any person, firm, or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the Owner and/or Architect.

2.3 RECEIVING BIDS:

- A. Bids received prior to the time of opening will be securely kept, unopened. The officer whose duty it is to open them will decide when the specified time has arrived, and no bid received thereafter will be considered; except that when a bid arrived by mail after the time fixed for opening, but before award is made, and it is shown to the satisfaction of the officer authorized to make the award that the non arrival on time was due solely to delay in the mails for which the bidder was not responsible, such bid will be received and considered. No responsibility will be attached to an officer for the premature opening of a bid not properly addressed and identified. Unless specifically authorized, telegraphic bids will not be considered.
- B. Bids will be publicly opened at the time and place fixed for the opening of bids indicated on the Invitation for Bid. Every bid received within the time fixed for receiving bids and that meets all requirements listed in the Instructions to Bidders will be opened and the results made known.
- C. Bids may be withdrawn on written or telegraphic request dispatched by the bidder in time for delivery in the normal course of business prior to the time fixed for opening; provided, that written confirmation of any telegraphic withdrawal over the signature of the bidder is placed in the mail and postmarked prior to the time set for bid opening. Negligence on the part of the bidder in preparing his bid confers no right of withdrawal or modification of his bid after such bid has been opened.

2.4 AWARD OF CONTRACT:

- A. The contract will be awarded to the responsible bidder submitting the lowest proposal complying with the conditions of the Invitation to Bid, provided his bid is reasonable and it is to the best interest of the Owner, at the earliest practicable date. The Owner, however, reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the interest of the Owner.
- B. The Owner also reserves the right to reject the bid of any bidder who has previously failed to perform properly, or to complete on time, contracts of a similar nature, who is not in a position to perform the contract, or who has habitually and without just cause neglected the payment of bills or otherwise disregarded his obligations to subcontractors, material men, or employees.
- C. The ability of a bidder to obtain a performance bond shall not be regarded as the sole test of such bidder's competency or responsibility.

PART 3 - PERFORMANCE AND PAYMENT BOND:

- 3.1 Subsequent to the award and within ten days after the prescribed forms are presented for signature the successful bidder shall execute and deliver to the Owner a contract in the form furnished in such number of counterparts as the Owner may require.
- 3.2 Having satisfied all conditions of award as set forth elsewhere in these documents, the successful bidder shall, within the period specified above, furnish bond(s) in a penal sum of at least the full amount of the contract as awarded, in the form included in the specifications, which secures the faithful performance of the contract, and for the payment of all persons, firms, or corporations to whom the contractor may become legally indebted for labor, materials, tools equipment or services of any nature employed or used by him in performing the work. Such bond(s) shall bear the same date as or a date subsequent to, the date of the contract.
 - 1. The current power of attorney for the person who signs for any surety company shall be attached to such bond.
- 3.3 The failure of the successful bidder to execute such contract and to supply the required bonds within ten days after the prescribed forms are presented for signature, or within such extended period as the Owner may grant based upon reasons determined adequate by the Owner shall constitute a default, and the Owner may either award the contract to the next responsible bidder or re-advertise for bids, and may charge against the bidder the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid guaranty.

PART 4 - POST-BID INFORMATION

4.1 LAWS AND REGULATIONS:

- A. The bidder's attention is directed to the fact that all applicable State Laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout and they will be deemed to be included in the contract the same as though herein written out in full.
- B. The contractor and all subcontractors shall further comply with applicable building codes as referenced in the various sections of these specifications.
- C. The contractor shall include, either on the bid form or attached thereto, a statement to the fact that the contractor is an Equal Opportunity Employer, and that the contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin.
 - 1. Refer to further requirements as specified in the General Conditions.
- D. Project Superintendent: The contractor will employ a qualified superintendent to run the project, with at least 4 years previous experience as a superintendent. The superintendent shall not be removed or transferred from the project by the contractor without prior approval of the Engineer. The Engineer reserves the right to request the removal of the superintendent or any employee, subcontractor, etc. if in his judgment it is in the best interest of the Owner and the Project.

4.2 PRE-CONSTRUCTION CONFERENCE:

- A. Either before or soon after the actual award of the contract (but in any event prior to the start of construction), the contractor or his representative shall attend a pre-construction conference with representatives of the Owner. The conference will serve to acquaint the participants with the general plan of contract administration and requirements under which the construction operation is to proceed and will inform the contractor of the obligations imposed on him and his subcontractors.
 - 1. The date, time, and place of the conference will be furnished to the contractor by the Architect.

4.3 CONTRACTOR'S LICENSE REQUIREMENTS:

- A. The following is excerpted from the Contractor's Licensing Act of 1976:
 - 1. 62-6-103. Contractor's License Required-- Recovery of Expenses by Unlicensed Contractor.
 - a. Any person, firm or corporation engaged in contracting in this state shall be required to submit evidence that he is qualified to engage in contracting, and shall be licensed as hereinafter provided; it shall be unlawful for any person, firm or corporation to engage in or offer to engage in contracting in the state, unless

such person, firm or corporation has been duly licensed under the provisions of this chapter, as hereinafter provided. Any person, firm, or corporation engaged in contracting, including such person, firm, or corporation that engages in the construction of residences or dwellings constructed on private property for the purpose of resale, lease, rent or any other similar purpose shall be required to submit evidence that he is qualified to engage in contracting and/or building, and shall be licensed. It shall be unlawful for any person, firm, or corporation to engage in, or offer to engage in contracting or building as hereinabove described, unless such person, firm or corporation has been duly licensed under the provisions of this chapter. Any person, firm, or church that owns property and buildings for individual use, and not for resale, lease, rent or other similar purpose, is exempt from the requirements of this chapter. Notwithstanding the foregoing, the license of any person, firm or corporation licensed as a general contractor on March 29, 1976, shall continue in force until the natural expiration thereof.

- b. Contracts entered into by a person who is licensed by the Board shall clearly state that such person is licensed by the State Board for Licensing Contractors and that the Board is authorized to receive complaints relative to such person's professional conduct.
- c. Any unlicensed general contractor covered by the provisions of this chapter shall be permitted in a court of equity to recover actual documented expenses only upon a showing of clear and convincing proof. (Acts 1976 (Adj. S.), Ch. 822, Section 3; 1977, Ch. 9, Section 1; 1979, Ch. 59, Section 7; 1980 (Adj. S.), Ch. 652, Section 5; T.C.A., Section 62-603.)

END OF SECTION 00 21 13

SECTION 00 41 13 – BID FORM

PART 1 - GENERAL

1.1 BID INFORMATION

- A. Bidder: _____.
- B. Project Name: **Obion County Health Department – Phase 1 Re-Roof**
- C. Project Location: **1008 Mount Zion Road, Union City, TN 38261**
- D. Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**
- E. Architect Project Number: **J-7169**

1.2 CERTIFICATIONS AND BASE BID

- A. **Base Bid:** The undersigned Bidder, having carefully examined the Existing Conditions of the project area affecting the cost of the work, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by TLM Associates, Inc. and Architect's consultants, having and being familiar with all conditions and requirements of the work, hereby agrees to furnish all supervision, technical personnel, materials, labor, machinery, tools, services appurtenances, equipment including utility and transportation services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

- 1. Base Bid Immunization Funds:

_____ Dollars (\$_____).

Note: These are required to be broken out separately. Immunization Funds are for Pharmacy renovations.

- B. List of Itemized Priority: Refer to Priority Legend on Drawings.

1.3 SUBCONTRACTORS AND SUPPLIERS

- A. The following companies shall execute subcontracts for the portions of the work indicated:
 - 1. Mechanical Work:
 - 2. Plumbing Work:
 - 3. Electrical Work:
 - 4. Masonry Work:

1.4 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect and

shall fully complete the work within 210 calendar days.

- B. If delays are anticipated in material deliveries to complete the project, list separately with an approximate delivery date.

1.5 ACKNOWLEDGEMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:
 - 1. Addendum No. 1, dated _____.
 - 2. Addendum No. 2, dated _____.
 - 3. Addendum No. 3, dated _____.

1.6 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed contractor for the type of work proposed, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.7 SUBMISSION OF BID

Respectfully submitted this _____ day of _____, 2024.

Submitted By: _____
(Name of Bidding Firm or Corporation)

Street Address: _____

City, State, Zip _____

License No.: _____

Authorized Signature: _____
(Handwritten Signature)

Signed By: _____
(Type or Print Name)

Title: _____
(Owner / Partner / President / Vice President)

Witness By: _____
(Notary Public)

Term of Witness Expires: _____
(Date)

END OF SECTION 00 41 13

SECTION 00 43 13 – BID SECURITY FORM

The American Institute of Architect, A.I.A. Document A310, latest edition, shall be the bid bond form for this contract. Bid Bonds required on bids in excess of \$25,000.00.

END OF SECTION 00 43 13

DOCUMENT 00 43 21 - ALLOWANCE FORM

1.1 BID INFORMATION

- A. Bidder: _____.
- B. Project Name: **Obion County Health Department – Phase 1 Re-Roof**
- C. Project Location: **1008 Mount Zion Road, Union City, TN 38261**
- D. Owner: **Obion County and Its Officials; 216 South 3rd Street, Union City, TN 38281**
- E. Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**
- F. Architect Project Number: **J-7169**

1.2 BID FORM SUPPLEMENT

- A. This form is required to be attached to the Bid Form.
- B. The undersigned Bidder certifies that Base Bid submission to which this Bid Supplement is attached includes those allowances described in the Contract Documents and scheduled in Specification Section 01 21 16 – Allowances.

1.3 SUBMISSION OF BID SUPPLEMENT

- A. Respectfully submitted this ____ day of _____, 2024.
- B. Submitted By: _____
(Name of Bidding Firm or Corporation)
- C. Authorized Signature: _____
(Handwritten Signature)
- D. Signed By: _____
(Type or Print Name)
- E. Title: _____
(Owner/Partner/President/Vice President)

END OF DOCUMENT 00 43 21

DOCUMENT 00 43 73 - PROPOSED SCHEDULE OF VALUES FORM

1.1 PROPOSED SCHEDULE OF VALUES FORM

- A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents. Provide multiple line items for principal material and subcontract amounts in excess of **five** percent of the Contract Sum.
- B. Arrange schedule of values consistent with format of AIA Document G703.
 - 1. Copies of AIA standard forms may be obtained from the American Institute of Architects
 - a. <http://www.aia.org/contractdocs/purchase/index.htm>
 - b. docspurchases@aia.org
 - c. (800) 942-7732

Note: This is not required until successful bidder is awarded the contract.

END OF DOCUMENT 00 43 73

SECTION 00 45 00 – DRUG FREE WORKPLACE AFFIDAVIT

STATE OF: TENNESSEE
COUNTY OF: OBION

The undersigned, principal officer, of _____, an employer of five (5) or more employees contracting with, Lauderdale County, Tennessee government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company") and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the *Tennessee Code Annotated*.
3. The Company is in compliance with T.C.A. § 50-9-113.
4. Attached hereto is a true and correct copy of the company's "certificate of compliance" (certified application) from the Tennessee Department of Labor and Workforce Development.

Further affiant saith not.

Principal Officer

STATE OF:
COUNTY OF:

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of _____ 2024.

My commission expires:

Notary Public

ATTACH A COPY OF YOUR CERTIFICATE OF COMPLIANCE TO THIS AFFIDAVIT, PLACE IN A SEPARATE SEALED ENVELOPE, AND ATTACH TO THE OUTSIDE OF THE SEALED ENVELOPE CONTAINING YOUR BID.

IF YOUR COMPANY HAS LESS THAN FIVE (5) EMPLOYEES, SIGN BELOW, PLACE THIS AFFIDAVIT ONLY IN A SEPARATE SEALED ENVELOPE, AND ATTACH TO THE OUTSIDE OF THE SEALED ENVELOPE CONTAINING YOUR BID.

IF LESS THAN FIVE (5) Employees

Sign Here:

Title:

IRAN DIVESTMENT ACT AFFIDAVIT

As per Tennessee Code Annotated, Title 12, and effective July 1, 2016:

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to § 12-12-106.

Signature

Date

NON-BOYCOTT OF ISRAEL AFFIDAVIT

Concerning the Non-Boycott of Israel Act (TCA 12-4-1 et seq.), by submission of this bid/quote/proposal, each supplier and each person signing on behalf of any supplier certifies, and in the case of a joint bid/quote/proposal, each party thereto certifies as to its own organization, under penalty of perjury, "that to the best of its knowledge and belief that each supplier is not boycotting Israel pursuant to § 12-4-1 and will not during the term of any award. Note: Applicable only to contracts of \$250,000 or more and to suppliers with 10 or more employees.

The undersigned hereby acknowledges receipt of this affidavit and certifies that the submittal in response to this solicitation is in full compliance with the listed requirements. Failure to properly acknowledge issues concerning the above is grounds for bid rejection and may subject the signer to penalties as directed by the appropriate laws.

A contract entered into on or after July 1, 2022, that fails to comply with this section is void.

Signature

Printed Name

Title

Date

SECTION 00 45 49- DRUG-FREE AFFIDAVIT

STATE OF: TENNESSEE
COUNTY OF:

The undersigned, Principal Officer of _____, an employer of five (5) or more employees contracting with _____, Tennessee, government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company") and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the *Tennessee Code Annotated*.
3. The Company is in compliance with T.C.A. § 50-9-113.

Attached hereto is a true and correct copy of the Company's "Certificate of Compliance" (certified application) from the Tennessee Department of Labor and Workforce Development.

Further affiant saith not.

Principal Officer

STATE OF: TENNESSEE
COUNTY OF:

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of _____, 20__.

Notary Public My commission expires: _____

Attach a copy of your certificate of compliance to this affidavit.

If your company has less than five (5) employees, sign below.

If less than five (5) employees sign here:

Principal

Title

END OF SECTION 00 45 49



STATE OF TENNESSEE

BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352.

Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING – REQUIRED FOR CONTRACTS OVER \$100,000 *Certification for Contracts, Grants, Loans, and Cooperative Agreements*

The undersigned certifies, to the best of his or her knowledge and belief, that:

- No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Authorized Representative	Date
Printed Name and Title	Phone Number / Email Address



STATE OF TENNESSEE
IRAN DIVESTMENT ACT CERTIFICATION

SUBJECT CONTRACT NUMBER(S):	
CONTRACTOR LEGAL ENTITY NAME:	
EDISON SUPPLIER IDENTIFICATION NUMBER:	

The Iran Divestment Act, Tenn. Code Ann. § 12-12-101 et. seq. requires a person that attempts to contract with the state, including a contract renewal or assumption, to certify at the time the bid is submitted or the contract is entered into, renewed, or assigned, that the person or the assignee is not identified on a list created pursuant to § 12-12-106.

Currently, the list is available online at the following website: <https://www.tn.gov/generalservices/procurement/central-procurement-office--cpo-/library-/public-information-library.html>

The Contractor, identified above, certifies by signature below that it is not included on the list of persons created pursuant to Tenn. Code Ann. § 12-12-106 of the Iran Divestment Act.

CONTRACTOR SIGNATURE

NOTICE: This certification MUST be signed by an individual with legal capacity to contractually bind the Contractor.

PRINTED NAME AND TITLE OF SIGNATORY

DATE



STATE OF TENNESSEE
CERTIFICATION REGARDING DEBARMENT, SUSPENSION
AND OTHER RESPONSIBILITY MATTERS

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

- Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- Have not within a three-year period preceding this proposal been convicted of or had a civil judgement 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;
- 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
- 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 Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Signature of Authorized Representative	Date
Printed Name	Phone Number / Email Address

I am unable to certify to the above statements. Explanation is attached.



STATE OF TENNESSEE
NON-BOYCOTT OF ISRAEL CERTIFICATION

The Bidder certifies that it is not currently engaged in, and will not for the duration of the contract engage in, a boycott of Israel as defined by Tenn. Code Ann. § 12-4-119. This provision shall not apply to contracts with a total value of less than two hundred fifty thousand dollars (\$250,000) or to contractors with less than ten (10) employees.

According to the law, a boycott of Israel means engaging in refusals to deal, terminating business activities, or other commercial actions that are intended to limit commercial relations with Israel, or companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel to do business, or persons or entities doing business in Israel, when such actions are taken:

- 1) In compliance with, or adherence to, calls for a boycott of Israel, or
- 2) In a manner that discriminates on the basis of nationality, national origin, religion, or other unreasonable basis, and is not based on a valid business reason. Tenn. Code Ann. § 12-4-119.

Signature of Authorized Representative	Date
Printed Name	Phone Number / Email Address

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

Certification by Bidder

Bidder/Firm: _____

Address: _____

City: _____ State _____ Zip _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. Yes No
2. Compliance reports were required to be filed in connection with such contract or subcontract. Yes No
3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. Yes No None Req.
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? Yes No

Bidder Name: _____

Title: _____

Signature: _____

Date: _____

ACKNOWLEDGEMENT REGARDING BIDDER SAM REGISTRATION

Pursuant to 2 CFR Parts 183 and 215 and the requirement of the U.S. Department of Housing and Urban Development (HUD), contractors procured directly by grantees, sub-grantees, and/or sub-recipients of HUD funds, including CDBG are required to have an active registration in the System of Award Management (SAM). This document shall be completed and submitted as part of the bid proposal.

1. By submitting this proposal, the prospective bidder certifies that it has an active registration in SAM that is not set to expire within the next 90 days.
2. By submitting this proposal, the prospective bidder certifies neither it, its principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
3. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies.
4. Further, the prospective bidder shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. By submitting this proposal, it is agreed that should the proposed covered transaction be entered into, the prospective bidder will not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.
6. It is further agreed that by submitting this proposal, the prospective bidder will include Certification of Subcontractor Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion without modification, in all lower-tier covered transactions and in all solicitations for lower-tier covered transactions.

Provide the following information as detailed in the prospective bidder's SAM registration:

Entity Name: _____

Address: _____

City: _____ State: _____ Zip: _____

SAM Entity ID: _____ Expiration Date: _____

Active Exclusions: Yes No



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
RECREATION EDUCATIONAL SERVICES**

WR Snodgrass TN Tower, 312 Rosa L. Parks Avenue, 2nd Floor, Nashville, TN 37243
PH: 615-532-0748 FAX: 615-532-0732

**CERTIFICATION OF CONTRACTOR
REGARDING CONFLICTS OF INTEREST,
LOBBYING, NONDISCRIMINATION, PUBLIC ACCOUNTABILITY,
AND PUBLIC NOTICE**

This certification is required by the agency that has funded, in part, by: **(check one)**

- Local Park & Recreation Fund (LPRF)** **Land & Water Conservation Fund (LWCF)**
 Recreation Trail Program (RTP) **Other** ARP

The Contractor, _____, by signing and submitting this Certification, acknowledges the following: This Certification will be incorporated into the Agreement executed between: _____ (*the Grantee*) and the Contractor.

By signing and submitting this Certification, the Contractor certifies that neither it, its principals nor affiliates has violated the following:

1. **Conflicts of Interest:** The Grantee warrants that no part of the total Grant Contract Amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Grantee in connection with any work contemplated or performed relative to this Grant Contract.
2. **Lobbying:** The Grantee certifies to the best of its knowledge and belief that:
 - a. No federally appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
 - b. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, grant, loan, or cooperative agreement, the Grantee shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.
 - c. The Grantee shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into and is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352.

3. **Nondiscrimination:** The Grantee hereby agrees, warrants, and assures that no person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of this Grant Contract or in the employment practices of the Grantee on the grounds of handicap or disability, age, race, color,

religion, sex, national origin, or any other classification protected by federal, Tennessee state constitutional, or statutory law. The Grantee shall, upon request, show proof of nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.

4. Public Accountability: If the Grantee is subject to Tenn. Code Ann. § 8-4-401 *et seq.*, or if this Grant Contract involves the provision of services to citizens by the Grantee on behalf of the State, the Grantee agrees to establish a system through which recipients of services may present grievances about the operation of the service program. The Grantee shall also display in a prominent place, located near the passageway through which the public enters in order to receive Grant supported services, a sign at least eleven inches (11") in height and seventeen inches (17") in width stating:

NOTICE: THIS AGENCY IS A RECIPIENT OF TAXPAYER FUNDING. IF YOU OBSERVE AN AGENCY DIRECTOR OR EMPLOYEE ENGAGING IN ANY ACTIVITY WHICH YOU CONSIDER TO BE ILLEGAL, IMPROPER, OR WASTEFUL, PLEASE CALL THE STATE COMPTROLLER'S TOLL-FREE HOTLINE: 1-800-232-5454.

The sign shall be on the form prescribed by the Comptroller of the Treasury. The Grantor State Agency shall obtain copies of the sign from the Comptroller of the Treasury, and upon request from the Grantee, provide Grantee with any necessary signs.

5. Public Notice: All notices, informational pamphlets, press releases, research reports, signs, and similar public notices prepared and released by the Grantee in relation to this Grant Contract shall include the statement, "This project is funded under a grant contract with the State of Tennessee." All notices by the Grantee in relation to this Grant Contract shall be approved by the State.
6. Records: The Grantee and any approved subcontractor shall maintain documentation for all charges under this Grant Contract. The books, records, and documents of the Grantee and any approved subcontractor, insofar as they relate to work performed or money received under this Grant Contract, shall be maintained in accordance with applicable Tennessee law. In no case shall the records be maintained for a period of less than five (5) full years from the date of the final payment. The Grantee's records shall be subject to audit at any reasonable time and upon reasonable notice by the Grantor State Agency, the Comptroller of the Treasury, or their duly appointed representatives.

The records shall be maintained in accordance with Governmental Accounting Standards Board (GASB) Accounting Standards or the Financial Accounting Standards Board (FASB) Accounting Standards Codification, as applicable, and any related AICPA Industry Audit and Accounting guides.

In addition, documentation of grant applications, budgets, reports, awards, and expenditures will be maintained in accordance with U.S. Office of Management and Budget's Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

Grant expenditures shall be made in accordance with local government purchasing policies and procedures and purchasing procedures for local governments authorized under state law.

The Grantee shall also comply with any recordkeeping and reporting requirements prescribed by the Tennessee Comptroller of the Treasury.

The Grantee shall establish a system of internal controls that utilize the COSO Internal Control - Integrated Framework model as the basic foundation for the internal control system. The Grantee shall incorporate any additional Comptroller of the Treasury directives into its internal control system.

Any other required records or reports which are not contemplated in the above standards shall follow the format designated by the head of the Grantor State Agency, the Central Procurement Office, or the Commissioner of Finance and Administration of the State of Tennessee.

Grantee's Authorized Representative:

Signature

Print Name

Title

Date

CONTRACTOR: _____

Signature

Print Name

Title

Date

NOTICE

THIS ENTITY IS A RECIPIENT OF **STATE AND FEDERAL** FUNDS. IF YOU HAVE KNOWLEDGE OF ANY ACTIVITY WHICH YOU CONSIDER TO BE ILLEGAL, IMPROPER, OR WASTEFUL, PLEASE CALL THE STATE COMPTROLLER'S TOLL-FREE HOTLINE:

1-800-232-5454



DOCUMENT 00 51 00 - NOTICE OF AWARD

1.1 BID INFORMATION

- A. Bidder: _____.
- B. Bidder's Address: _____.
- C. Prime Contact: _____.
- D. Project Name: **Obion County Health Department – Phase 1 Re-Roof**
- E. Project Location: **1008 Mount Zion Road, Union City, TN 38261**
- F. Owner: **Obion County and Its Officials; 216 South 3rd Street, Union City, TN 38281**
- G. Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**
- H. Architect Project Number: **J-7169**

1.2 NOTICE OF AWARD OF CONTRACT

- A. Notice: The above Bidder is hereby notified that their bid, dated _____, for the above Contract has been considered and the Bidder is hereby awarded a contract for **<Insert brief description of Work or sections of Work awarded>**.
- B. Alternates Accepted: The following alternates have been accepted by Owner and have been incorporated in the Contract Sum:
 - 1. Alternate No. 1: <Insert alternate title>.
 - 2. Alternate No. 2: <Insert alternate title>.
- C. Contract Sum: The Contract Sum is _____ dollars (\$_____).

1.3 EXECUTION OF CONTRACT

- A. Contract Documents: Copies of the Contract Documents will be made available to the Bidder immediately. The Bidder must comply with the following conditions precedent within 10 days of the above date of issuance of the Notice:
 - 1. Deliver to Owner **three (3)** sets of signed copies of the Contract Documents to be signed by Owner. Dispersment of fully executed copies shall be: one (1) for the Owner, one (1) for the Architect, and one (1) for you, the bidder.
 - 2. Deliver with the executed Contract Documents Bonds and Certificates of Insurance required by the Contract Documents.

B. Compliance: Failure to comply with conditions of this Notice within the time specified will entitle Owner to consider the Bidder in default, annul this Notice, and declare the Bidder's Bid security forfeited.

1. Within **10** days after the Bidder complies with the conditions of this Notice, Owner will return to the Bidder one fully executed copy of the Contract Documents.

1.4 NOTIFICATION

A. This Notice is issued by:

Owner: _____

Signed: _____

By: _____

Title: _____

END OF DOCUMENT 00 51 00

SECTION 00 52 13 – AGREEMENT FORM

The American Institute of Architect, A.I.A. Document A101, 2017 Edition entitled "Standard Form of Agreement between Owner and Contractor" shall be the contract form for this project.

END OF SECTION 00 52 13

SECTION 00 55 00 – NOTICE TO PROCEED

TO:

DATE:

PROJECT NAME: Obion County Health Department –
Phase 1 Re-Roof

TLM PROJECT NO. J-7169

You are hereby notified to commence work in accordance with the Agreement dated _____, 2024, on or before _____, and you are to complete the work within **150** consecutive calendar days thereafter.

The date of completion for substantial completion is therefore, _____, 20____.

Owner: _____ Obion County and Its Officials _____

Signed: _____

By: _____

Title: _____

ACCEPTANCE OF NOTICE
Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:
this, the _____ day of _____, 2024
By: _____
Title: _____

SECTION 00 60 00 – PROJECT FORMS

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

- A. The following form of Owner / Contractor Agreement and form of the General Conditions shall be used for Project:
1. AIA Document A101, "Standard Form of Agreement between Owner and Contractor, Stipulated Sum."
 - a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."
 2. AIA Document A102, "Standard Form of Agreement between Owner and Contractor, Cost Plus Fee, Guaranteed Maximum Price."
 - a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."
 3. AIA Document A103, "Standard Form of Agreement between Owner and Contractor, Cost Plus Fee."
 - a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."
 4. AIA Document A105, "Standard Form of Agreement between Owner and Contractor for a Small Project, Where the Basis of Payment Is a Stipulated Sum."
 - a. The General Conditions for Project are AIA Document A205, "General Conditions of the Contract for Construction of a Small Project."
 5. AIA Document A132, "Standard Form of Agreement between Owner and Contractor, Construction Manager as Adviser Edition."
 - a. The General Conditions for Project are AIA Document A232, "General Conditions of the Contract for Construction, Construction Manager as Adviser Edition."
 6. AIA Document A133, "Standard Form of Agreement between Owner and Contractor, Construction Manager as Constructor, Guaranteed Maximum Price."
 - a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."
 7. AIA Document A133, "Standard Form of Agreement between Owner and Contractor for Integrated Project Delivery."
 - a. The General Conditions for Project are AIA Document A295, "General Conditions of the Contract for Integrated Project Delivery."

8. The General Conditions are included in the Project Manual, incorporated by reference.
9. The Supplementary Conditions for Project are separately prepared and included in the Project Manual.
10. Owner's document(s) bound following this Document.

1.2 ADMINISTRATIVE FORMS

- A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.
- B. Copies of AIA standard forms may be obtained from the American Institute of Architects; <http://www.aia.org/contractdocs/purchase/index.htm>; docspurchases@aia.org; (800) 942-7732.
- C. Preconstruction Forms:
 1. Form of Performance Bond and Labor and Material Bond: AIA Document A312, "Performance Bond and Payment Bond."
 2. Form of Certificate of Insurance: AIA Document G715, "Supplemental Attachment for ACORD Certificate of Insurance 25-S."
- D. Information and Modification Forms:
 1. Form for Requests for Information (RFIs): AIA Document G716, "Request for Information (RFI)."
 2. Form of Request for Proposal: AIA Document G709, "Work Changes Proposal Request."
 3. Change Order Form: AIA Document G701, "Change Order."
 4. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G707, "Architect's Supplemental Instructions."
 5. Form of Change Directive: AIA Document G714, "Construction Change Directive."
- E. Payment Forms:
 1. Schedule of Values Form: AIA Document G703, "Continuation Sheet."
 2. Payment Application: AIA Document G702/703, "Application and Certificate for Payment and Continuation Sheet."
 3. Form of Contractor's Affidavit: AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 4. Form of Affidavit of Release of Liens: AIA Document G706A, "Contractor's Affidavit of Payment of Release of Liens."
 5. Form of Consent of Surety: AIA Document G707, "Consent of Surety to Final Payment."

END OF DOCUMENT 00 60 00

SECTION 00 61 13 – PERFORMANCE AND PAYMENT BONDS

The American Institute of Architects, A.I.A. Document A312, 2010 Edition, entitled “Performance Bond” and “Payment Bond” shall be the contract bond form for this project. These bonds are required on contracts in excess of \$50,000.00.

END OF SECTION 00 61 13

SECTION 00 72 13 - GENERAL CONDITIONS

The American Institute of Architects A201-2017, Articles 1 through 15, pages 1 through 40 is hereby made a part of the specification.

END OF SECTION 00 72 13

SECTION 00 81 00 – SUPPLEMENTARY CONDITIONS

Modifications to General Conditions

Introduction: The following supplements modify, delete and/or add to the General Conditions. Where any article, paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph or subparagraph in the General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph or subparagraph not so amended, voided, or superseded shall remain in effect.

Supplements and Changes to the General Conditions, A.I.A. Form A201 2017 Edition.

ARTICLE 1 - CONTRACT DOCUMENTS

1.2 Execution, Correlation, Intent, and Interpretations:

Add the following to 1.2.1 - Later claims for extra compensation for labor, materials, and equipment which could have been foreseen shall not be recognized.

ADD 1.2.4 as follows:

1.2.4 If any error, discrepancy, or variances are found in the documents, the Contractor shall notify the Architect before beginning the work involved. The Architect will make correction, interpretation, or clarification promptly, basing his decision on the intent of the Documents.

ARTICLE 3 - CONTRACTOR

3.4 Labor and Materials: Add the following:

3.4.4 All material delivered to the job site shall be so stored and handled as to preclude inclusion of any foreign substances or causing of any discoloration therein and to prevent any damage thereto which might reduce its effectiveness as part of the work.

3.4.5 All work as described or required shall be executed in neat, skillful, workmanlike manner in accordance with best recognized trade practices. Only competent workmen who satisfactorily perform their duties shall be employed on work.

3.4.6 Trade Names: Where trade names appear in the specifications, they are used to indicate standards of quality. However, this is intended to be an open specification (except as otherwise designated), accessible to any reputable manufacturer whose product, in Architect's opinion, is equal to that named or described and meets requirements of Contract Documents. The Architect, however, shall be sole judge of products submitted as being equal to those specified in respect to comparative qualities, and his decision shall be final and conclusive.

3.4.7 No asbestos containing materials may be used in this project nor may asbestos containing building materials be included as a building element.

3.9 Superintendent: Add the following:

3.9.4 Contractor's Superintendent shall devote his full time to this project and shall maintain his office on job site. He shall direct, coordinate and supervise all work under this contract and shall inspect all materials delivered to project. He shall ascertain whether or not they comply with contract requirements and shall reject all nonconforming materials. He shall have all nonconforming materials removed immediately from the project site.

3.14 Cutting and Patching of Work: Add the following:

3.14.3 Cutting and patching shall be the responsibility of the subcontractor requiring access to an area such as the mechanical contractor or electrical contractor needing to get to their respective equipment or lines.

3.14.4 Patch work shall be performed by the appropriate subcontractor engaged in a given craft or trade; that is, the plaster subcontractor shall do all patching of plaster; ceramic tile subcontractor shall patch ceramic tile, etc.

3.14.5 The cost of required patching shall be the responsibility of that subcontractor requiring access.

3.14.6 Patching of all finishes shall match existing to meet Architect's approval.

3.15 Cleaning Up: Add to 3.15.1 the following: He shall replace any broken glass, remove stains, spots, marks and dirt from decorated work, clean hardware, remove paint spots and smears from all surfaces, clean fixtures and wash all concrete and tile.

ARTICLE 7 - CHANGES IN THE WORK

7.3 Construction Change Directives - Add after Clause 7.3.6 the following:

A "reasonable" allowance for overhead and profit shall be defined as follows:

- (1) For the subcontractor, 11% of the net extra cost of the work he performs.
- (2) For the Contractor, 5-1/2% of the net extra cost of the work performed by subcontractors.
- (3) For the Contractor, 11% of the net extra cost of the work he performs with his own forces.

9.3.1 Application for Payments: Add to 9.3.1 the following:

Ninety-five percent (95%) of value of work executed and ninety-five percent (95%) of value of materials properly stored on site, less previous payments, shall be paid each month by Owner to Contractor based on Architect's approval of Application for Payment. Approved forms are A.I.A. forms G702 and G703, 1992 Edition.

9.8 Substantial Completion

Add to 9.8.2 the following:

9.8.2.1 Upon notification by the Contractor that the work is sufficiently complete for Architect's inspection, the architect will, within a reasonable time conduct an inspection. As a result of this inspection the Architect will issue a list of items (Punch List) to the Contractor which requires completion or correction.

9.8.2.2 After the Architect has inspected the project and provided the Contractor with a "Punch List", and the Contractor has corrected those items listed in the "Punch List", the Contractor shall notify the Architect of corrections and ask for a final inspection.

9.8.2.3 When the Architect makes his final inspection to verify those corrections and perhaps finds that some of the items which were previously listed have not been corrected, the Architect may elect to retain the full amount of the dollar estimate of the "Punch List". This retainage will be paid upon final completion requirements as specified in 9.10 of the General Conditions. See Section 01 77 00 - Close-Out Procedures for Re-Inspection fees.

10.2 Safety of Persons and Property: Add the following, 10.2.9:

All work shall be considered under the care, custody, or control of the Contractor until completion and acceptance by the Owner and Architect.

ARTICLE 11 - INSURANCE AND BONDS

11.1.1 Supplement as follows: Workman's Compensation and Employer's Liability.

The Contractor agrees to comply with the provisions of the Workman's Compensation Laws of the State in which the work is performed and to require all subcontractors likewise to comply. The Contractor agrees that, prior to the beginning of any work by the Contractor or Subcontractors, as the case may be, the Contractor will furnish to the Owner for himself and for each subcontractor a certificate from insurance company showing issuance of workman's compensation coverage for the State, or a certificate from the State Workman's Board showing proof of liability to pay compensation directly.

Employer's Protective Liability: \$100,000.00 per person - \$300,000.00 each occurrence for Property Damage.

\$300,000.00 per person - \$500,000.00 each occurrence for Bodily Injury Liability.

Further, the Contractor shall maintain such other insurance (with limits as shown below) to protect the Contractor, the Owner, and the Architect from any claims for property damage or personal injury, including death, which may arise out of operations under the Contract. The Contractor shall furnish the Owner certificates and policies of such insurance (as specified below) before the work begins.

Below is listed the additional insurance coverage which shall be procured by the Contractor at his own expense.

1. The Contractor's General Liability Insurance shall be in an amount not less than \$1,000,000.00 combined single limits for injuries and property damage, for any one occurrence, with a \$2,000,000.00 aggregate.
 - 1B. There shall also be a \$1,000,000.00 "umbrella".
 - 1C. Vehicle - \$1,000,000.00 Combined Single Limit occurrence, including Hired and Non-Owned Auto Liability.
2. Owners Contractors Protective (OCP) shall be provided in the name of the Owner and for a minimum of \$1,000,000.00 per occurrence \$2,000,000 aggregate.

ADD 11.1.5 as follows:

The Owner and TLM Associates, Inc. shall be additional named insureds under the Contractor's insurance policy or policies and the Certificate of Insurance shall so state.

ADD 11.1.6 as follows:

The insurance as specified above shall contain a "**per project endorsement**" such that the above coverages shall apply to this specific project.

When such hazard exists and before any earth moving or excavating equipment is used on the premises, the Contractor or Subcontractor involved shall provide coverage for liability arising from the destruction of property below the surface of the ground (U coverage).

When explosives are used or when such hazard exists or becomes present on the premises, the contractor or Subcontractor shall purchase insurance covering all liability arising from blasting or explosion (X & C Coverage). The Architect shall be notified 72 hours (excluding weekends and holidays) prior to the use of explosives.

11.3 Property Insurance – Add the following:

11.3.1.6 Builder's Risk Insurance shall be purchased by the **Contractor** at his own expense and shall cover fire, extended coverage, vandalism, and malicious mischief. Said insurance policy to be in the name of the Owner, Architect, the Contractor, and the Subcontractor "as their interests may appear" and to cover the full value of the work in sufficient amount to cover fully the value of the work performed and material on the site. This insurance will not be applicable to any tools or equipment when such tools and equipment are not part of the structure being constructed. The Contractor shall be responsible for the securing and maintaining of fire insurance and other insurance on any tools, equipment, or supplies which are to remain his property.

Change 11.4.1 to read as follows:

11.4.1 The Contractor shall furnish a Performance Bond and a Labor and Materials Payment Bond in an amount equal to 100% of the Contract Sum as security for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract. Form of Instruments shall be A.I.A. A-311, February 1970 Edition; no substitutes. Bond shall be furnished through an agent domiciled and legally authorized to do business in the State in which the work is to be performed and delivered to the Owner not later than the date of execution of the contract. Surety company shall be one acceptable to the Owner and Architect.

ARBITRATION

References to Arbitration shall be removed from the General Conditions. These deletions are located as follows: 8.3.1, 11.3.10, 13.1.1, 15.3.2 and the entirety of 15.4.

ADDITIONAL CONDITIONS

FIRE RATED ASSEMBLIES

- A. The Contractor shall be responsible for providing assemblies which conform to fire ratings indicated. He shall coordinate the work of subcontractor and suppliers involved in floor assemblies, roof assemblies, wall and partition assemblies required to be fire rated and shall submit evidence that such assemblies conform to fire ratings indicated. No claims for extra compensation for work required to conform to fire ratings shall be recognized.
- B. The Architect shall furnish to the Contractor required sets of plans and specifications properly sealed, for use in obtaining a building permit. It shall be the responsibility of the Architect to ensure that the plans are in agreement with the local codes.
- C. The Contractor shall be responsible for obtaining approvals of the plans from all governmental agencies having jurisdiction.

EXECUTION OF CONTRACT

- A. Subsequent to the award and within ten days after the prescribed forms are presented for signature the successful bidder shall execute and deliver to the Owner a contract in the form furnished in such number of counterparts as the Owner may require.
- B. The failure of the successful bidder to execute such contract and to supply the required bonds within ten days after the prescribed forms are presented for signature, or within such extended period as the Architect may grant based upon reasons determined adequate by the Owner shall constitute a default, and the Owner may either award the Contract to the next responsible bidder or re-advertise for bids, and may charge against the bidder the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid guaranty.

PRE-CONSTRUCTION CONFERENCE

- A. Either before or soon after the actual award of the contract (but in any event prior to the start of construction), the Contractor or his representative shall attend a pre-construction conference with representatives of the Owner and the Architect. The conference will serve to acquaint the participants with the general plan of contract administration and requirements under which the construction operation is to proceed and will inform the Contractor of the obligations imposed on him and his subcontractors.
- B. The date, time and place of the conference will be furnished to the Contractor by the Architect.

LAWS AND REGULATIONS

- A. The bidder's attention is directed to the fact that all applicable State Laws, municipal ordinances and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout and they will be deemed to be included in the contract the same as though herein written out in full.
- B. The Contractor and all subcontractors shall further comply with applicable building codes as referenced in the various sections of the specifications.
- C. The Contractor shall include, on the bid form, a statement to the fact that the Contractor is an Equal Opportunity Employer, and that the Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin.

PROJECT SUPERINTENDENT: The Contractor will employ a qualified superintendent to run the project, with at least 4 years previous experience as a superintendent.

END OF SECTION 00 81 00

DIVISION 1
GENERAL REQUIREMENTS

SECTION 01 11 13 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 The General Conditions of the Contract and Supplementary General Conditions of the Contract of this specification are herein made a part of this section of the specifications. The Contractor and Subcontractor shall carefully examine all drawings and all sections of the specifications so as to properly coordinate his work with the work of others.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The work of this contract comprises of:

1. Roof Replacement as indicated by the Contract Documents

1.3 CONTRACTOR'S DUTIES

A. Except as specifically noted, provide and pay for labor, materials and equipment, tools, construction equipment and machinery, water, heat and utilities required for construction, other facilities and services necessary for proper execution and completion of work.

B. Pay legally required sales, consumer and use taxes.

C. Secure and pay for, as necessary for proper execution and completion of work and as applicable at time of receipt of bids, Permits, Government Fees and Licenses.

D. Give required notices.

E. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of work.

F. Promptly submit written notice to Designer of observed variance of Contract Documents from legal requirements. It is not the Contractor's responsibility to make certain that drawings and specifications comply with codes and regulations.

G. Appropriate modifications to contract documents will adjust necessary changes. Assume responsibility for work known to be contrary to requirements without notice.

H. Enforce strict discipline and good order among employees. Do not employ or work unfit persons or persons not skilled in assigned work.

1.4 CONTRACTS

A. Construct work under single lump sum contract.

1.5 SPECIAL ORDER MATERIALS

- A. The Contractor shall be advised that certain products, materials, and equipment may be available on special order basis only; and shall place his order for same with the manufacturer early so as not to delay the work.

1.6 CONTRACTOR USE OF PREMISES

- A. Confine operations at site to areas permitted by Law, Ordinances, Permits and Contract Documents.
- B. Do not unreasonably encumber site with materials or equipment.
- C. Do not load structure with weight that will endanger structure.
- D. Assume full responsibility for protection and safe keeping of products stored on premises.
- E. Move any stored products which interfere with operations of Owner or other Contractor.
- F. Obtain and pay for use of additional storage or work areas for needed operations.

1.7 EXAMINATION OF SURFACES

- A. All Contractors shall examine all surfaces on which, or against which, their work is to be applied and shall notify the Designer of any defects that they may discover which, in their opinion would be detrimental to the proper installation of their product. Installation of material by the Contractors shall be considered as indication of acceptance of the surface by them.

1.8 COMPLETION

- A. It is the intent of these specifications and the Contract Documents that each and every fixture, piece of equipment, appliance, and any other related articles shown on the drawings or specified herein, as required for the proper completion of the work, shall be completely installed, connected, wired, and made satisfactorily operable for use and service for which it was intended. The manufacturer or vendor of any fixture, equipment or appliance shall see to it that all connections, whether mechanical or wired, are properly built-in or attached to the article when or before it reaches the job site so it will operate with the connections prepared therefore in the building. Nevertheless, and notwithstanding any omission or failure on the part of the manufacturer or vendor to provide suitable connections, it shall be and it is the responsibility of the Contractor to install and connect such articles.

PART 2 - PRODUCTS

N/A

PART 3 - EXECUTION

N/A

END OF SECTION 01 11 13

SECTION 01 21 16 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Quantity allowances.
 - 3. Contingency allowances.

1.3 DEFINITIONS

- A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.5 ACTION SUBMITTALS

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

1.6 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.7 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 UNIT-COST ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.9 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installations, taxes, insurance, equipment rental, and similar costs.
- C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.
- D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.10 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, required maintenance materials, and similar margins.
 - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
 - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
 - 3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
 - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs due to a change in the scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
 - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
 - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - EXECUTION

2.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

2.2 PREPARATION

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

2.3 SCHEDULE OF ALLOWANCES

- A. General Contingency Allowance
 - 1. Include in the Interior Base Bid a Lump Sum General Contingency Allowance of \$10,000.00.

END OF SECTION 01 21 00

SECTION 01 25 00 – SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Specification Section 01 60 00 – Product Requirements for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit substitution request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

- c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from applicable code organization.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 15 (fifteen) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within [15] fifteen days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than [15] days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provided.
 - c. Substitution request is fully documented and properly submitted.
 - d. Requested substitution will not adversely affect Contractor's construction schedule.
 - e. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - f. Requested substitution is compatible with other portions of the Work.
 - g. Requested substitution has been coordinated with other portions of the Work.
 - h. Requested substitution provides specified warranty.
 - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within [30] thirty days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
- b. Requested substitution does not require extensive revisions to the Contract Documents.
- c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- d. Substitution request is fully documented and properly submitted.
- e. Requested substitution will not adversely affect Contractor's construction schedule.
- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

SECTION 01 26 20 – WEATHER DELAYS

PART 1 - GENERAL

1.1 EXTENSION OF CONTRACT TIME

- A. If the basis exists for an extension of time in accordance with paragraph 8.3 of the Conditions, an extension of time on the basis of weather may be granted only for the number of Weather Delay Days in excess of the number of days listed as the Standard Baseline for that month.

1.2 STANDARD BASELINE FOR AVERAGE CLIMATIC RANGE

- A. The Owner has reviewed weather data available from the National Oceanic and Atmospheric Administration and determined a Standard Baseline of average climatic range for the State of Tennessee.
- B. Standard Baseline shall be regarded as the normal and anticipatable number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.
- C. Standard Baseline is as follows:
 - Jan - 12
 - Feb - 11
 - Mar - 8
 - Apr - 7
 - May - 7
 - Jun - 6
 - Jul - 7
 - Aug - 5
 - Sep - 4
 - Oct - 5
 - Nov - 6
 - Dec - 11

1.3 ADVERSE WEATHER AND WEATHER DELAY DAYS

- A. Adverse Weather is defined as the occurrence of one or more of the following conditions which prevents exterior construction activity or access to the site within twenty-four (24) hours:
 - B. Precipitation (rain, snow, or ice) in excess of one-tenth inch (0.10") liquid measure.

- C. Temperatures which do not rise above that specified for the day's construction activity by 10:00 a.m., if any is specified.
- D. Sustained wind in excess of twenty-five (25) m.p.h.
- E. Standing snow in excess of one inch (1.00")
- F. Adverse Weather may include, if appropriate, "dry-out" or "mud" days when all the following conditions are met:
 - 1. For rain days above the standard baseline.
 - 2. Only if there is a hindrance to site access or sitework, such as excavation, backfill, and footings.
 - 3. At a rate no greater than 1 make-up day for each day or consecutive days of rain beyond the standard baseline that total 1.0 inch or more, liquid measure, unless specifically recommended otherwise by the Designer.
 - 4. A Weather Delay Day may be counted if adverse weather prevents work on the project for fifty percent (50%) or more of the contractor's scheduled work, including a weekend day or holiday if Contractor has scheduled construction activity that day.

1.4 DOCUMENTATION AND SUBMITTAL

- A. Submit daily jobsite work logs showing which and to what extent construction activities have been affected by weather on a monthly basis.
- B. Submit actual weather data to support claim for time extension obtained from nearest NOAA weather station or other independently verified source approved by Designer at beginning of project.
- C. Use Standard Baseline data provided in this Section when documenting actual delays due to weather in excess of the average climatic range.
- D. Organize claim and documentation to facilitate evaluation on a basis of calendar month periods and submit in accordance with the procedures for Claims established in paragraph 4.3 of the Conditions.
- E. If an extension of the Contract Time is appropriate, it shall be affected in accordance with the provisions of Article 7 of the Conditions, and the applicable General Requirements.

PART 2 - PRODUCTS

N/A

PART 3 - EXECUTION

N/A

END OF SECTION 01 21 46

SECTION 01 26 63 – CHANGE ORDERS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Promptly implement change order procedures.
- B. Provide full written data required to evaluate changes.
- C. Maintain detailed records of work done on a time-and-material/force account basis.
- D. Provide full documentation to Architect on request.
- E. Designate in writing the member of Contractor's organization:
- F. Who is authorized to accept changes in the work.
- G. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the work.
- H. Owner will designate in writing the person who is authorized to execute Change Orders.

1.2 RELATED REQUIREMENTS

- A. Agreement: The amounts of established unit prices.
- B. Conditions of the Contract:
 - 1. Methods of determining cost or credit to Owner resulting from changes in Work made on a time and material basis.
- C. Contractor's claims for additional costs.
- D. Specification Section 01 29 76 – Payment Procedures

1.3 DEFINITIONS

- A. Change Orders: See General Conditions
- B. Architect's Supplemental Instructions: A written order, instructions, or interpretations, signed by Architect making minor changes in the Work not involving a change in Contract Sum or Contract Time.

1.4 PRELIMINARY PROCEDURES

- A. Owner or Architect may initiate changes by submitting a Proposal Request to Contractor. Request will include:
 - 1. Detailed description of the Change, Products, and location of the change in the Project.
 - 2. Supplementary or revised Drawings and Specifications.
 - 3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.
 - 4. A specified period of time during which the requested price will be considered valid.
 - 5. Such request is for information only, and is not an instruction to execute the changes, nor to stop Work in progress.

- B. On request, provide additional data to support time and cost computations:
 - 1. Labor required.
 - 2. Equipment required.

- C. Products required:
 - 1. Recommended source of purchase and unit cost.
 - 2. Quantities required.
 - 3. Taxes, insurance, and bonds.
 - 4. Credit for work deleted from Contract, similarly documented.
 - 5. Overhead and profit.
 - 6. Justification for any change in Contract Time.

- D. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.

- E. Name of the Owner's authorized agent who ordered the work, and date on the order.

- F. Dates and times work was performed, and by whom.

- G. Time record, summary of hours worked, and hourly rates paid.

- H. Receipts and invoices for:
 - 1. Equipment used, listing dates and times of use.
 - 2. Products used, listing of quantities.
 - 3. Subcontracts.

1.5 PREPARATION OF CHANGE ORDERS

- A. Architect will prepare each Change Order.

- B. Form: Change order: AIA Document G701 – 2001 Change Order.

- C. Change Order will describe changes in the Work, both deletions, with attachments of revised
- D. Contract Documents to define details of the change.
- E. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.6 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 - 1. Architect's Proposal Request and Contractor's responsive Proposal as mutually agreed between Owner and Contractor.
 - 2. Contractor's Proposal for a change, as recommended by Architect.
- B. Owner and Architect will sign and date the Change Order as authorization for the Contractor to proceed with the changes.
- C. Contractor may sign and date the Change Order to indicate agreement with the terms therein.

1.7 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 - 1. Architect's definition of the scope of the required changes.
 - 2. Contractor's Proposal for a change, as recommended by Architect.
 - 3. Survey of complete work.
- B. The amount of the unit prices to be:
 - 1. Those stated in the Agreement.
 - 2. Those mutually agreed upon between Owner and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
 - 1. Owner and Architect will sign and date the Change Order as authorization for Contractor to proceed with the changes.
 - 2. Contractor may sign and date the Change Order to indicate agreement with the terms therein.
- D. When quantities of the items cannot be determined prior to start of the work:

1. Architect or Owner will issue a construction change authorization directing Contractor to proceed with the change on this basis of unit prices and will cite the applicable unit prices.
2. At completion of the change, Architect will determine the cost of such work based on the unit prices and quantities used. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
3. Architect will sign and date the Change Order to indicate their agreement with the terms therein.
4. Owner and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.8 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.
- B. Periodically revise the construction Schedule to reflect each change in Contract Time.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 - PRODUCTS

- A. N/A

PART 3 - EXECUTION

- A. N/A

END OF SECTION 01 26 63

SECTION 01 29 76 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Submit Applications for Payment to Engineer/Architect of Record in accordance with the schedule established by Conditions of the Contract and Agreement between Owner and Contractor.

1.2 RELATED REQUIREMENTS

- A. Agreement between Owner and Contractor: Lump Sum and/or Unit Prices.
- B. Conditions of the Contract: Progress Payments, Retainages and Final Payment.

1.3 FORMAT AND DATA REQUIRED

- A. Submit applications typed on an AIA Document G-702, Application for Payment, with itemized data arranged on a schedule of values consistent with format of AIA Document G703.
- B. Provide itemized data on continuation sheet. Format, schedules, line items and values: Those of the Schedule of Values accepted by Engineer.

1.4 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application Form:
 - 1. Fill in required information, including that for Change Order executed prior to date of submittal of application.
 - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
 - 3. Execute certification with signature of a responsible officer of Contractor's firm.
- B. Continuation Sheets:
 - 1. Fill in total list of all scheduled component items of Work, with item number and scheduled dollar value for each item.
 - 2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
 - 3. Round off values to nearest dollar or as specified for Schedule of Values.
- C. List each Change Order executed prior to date of submission, at the end of the continuation sheets.

- D. List by Change Order Number, and description, as for an original component item of work.

1.5 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the Owner or the Engineer/Architect of Record requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
 - 1. Project
 - 2. Application number and date
 - 3. Detailed list of enclosures
- B. For stored products:
 - 1. Item number and identification as shown on application.
 - 2. Description of specific material.
 - 3. Submit one (1) copy of data and cover letter for each copy of application.

1.6 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.

1.7 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment to Engineer/Architect of Record at the times stipulated in the Agreement.
- B. Submit one pdf copy of application to EOR via email.
- C. When Engineer/Architect finds Application properly completed and correct, he will transmit certificate for payment to Owner, with copy to Contractor.

PART 2 - PRODUCTS

N/A

PART 3 - EXECUTION

N/A

END OF SECTION 01 29 76

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

- A. The types of submittal requirements specified in this section include shop drawings, product data, samples, and miscellaneous work-related submittals. Individual submittal requirements are specified in applicable sections for each unit of work. Refer to other Division 1 sections and other contract documents for requirements of administrative submittals.
- B. Definitions: Work related submittals of this section are categorized for convenience as follows:
 - 1. Shop drawings include specially prepared technical data for this project, including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements, and similar information not in standard printed form for general application to a range of similar projects.
 - 2. Product data include standard printed information on materials, products, and systems; not specially prepared for this project, other than the designation of selections from among available choices printed therein.
 - 3. Samples include both fabricated and un-fabricated physical examples of materials, products, and units of work; both as complete units and as smaller portions of units of work; either for limited visual inspection or (where indicated) for more detailed testing and analysis.
 - 4. Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work and not processed as shop drawings, product data or samples.

1.3 GENERAL SUBMITTAL REQUIREMENTS

- A. Coordination and Sequencing: Coordinate preparation and processing of submittals with performance of the work so that work will not be delayed by submittals. Coordinate and sequence different categories of submittals for same work, and for interfacing units of work, so that one will not be delayed for coordination of A/E's review with another.

- B. Preparation of Submittals: Provide permanent marking on each submittal to identify project, date, Contractor, subcontractor, submittal name and similar information to distinguish it from other submittals. Show Contractor's executed review and approval marking and provide space for Architect's/Engineer's "Action" marking. Submittals must be submitted as 1 complete package. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through Contractor's office will be returned by A/E "without action".
- C. Transmittal Form: Prepare a draft of special transmittal form for project and submit to Architect for acceptance. Provide places to indicate project, date, "To:"; "From:"; names of subcontractors, suppliers, manufacturers, required references, category and type of submittal, purpose, description, distribution record (for both transmittal and submittals), and signature of transmitter. If submitting digitally, no transmittal form required. Transmittal forms are only required for physical samples.

1.4 SPECIFIC-CATEGORY SUBMITTAL REQUIREMENTS

- A. General: Except as otherwise indicated in individual work sections, comply with requirements specified herein for each indicated category of submittal.
- B. Shop Drawings: Provide newly prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated), with name of preparer indicated (firm name). Show dimensions and note which are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards, and special coordination requirements. Do not allow shop drawing copies without appropriate final "Action" markings by Architect/Engineer to be used in connection with the work.

1. 1 digital submittal

- a. Product Data: Product data with multiple options must be identifying specific items to be used on the project. Do not send irrelevant info.
- b. Collect required data into one submittal for each unit of work or system; and mark each copy to show which choices and options are applicable to project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements. Maintain one set of product data (for each submittal) at project site, available for reference by Architect/Engineer and others.
- c. Submittals: Do not submit product data, or allow its use on the project, until compliance with requirements of contract documents has been confirmed by Contractor. Submittal is for information and record, unless otherwise indicated. Initial submittal is final submittal unless returned promptly by Architect/Engineer, marked with an "Action" which indicates an observed non-compliance Samples: Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than 3 units) where unavoidable variations must be expected and describe or identify variations between units of

each set. Provide full set of optional samples where Architect's/Engineer's selection is required. Prepare samples to match Architect's/Engineer's samples where so indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture, and "kind" by Architect/Engineer. Architect/ Engineer will not "test" samples (except as otherwise indicated) for compliance with other requirements, which are therefore the exclusive responsibility of Contractor.

2. Submittals: At Contractor's option, provide preliminary submittal of a single set of samples for Architect's/Engineer's review and "action." Otherwise, initial submittal is final submittal unless returned with "action" which requires re-submittal. Submit 1 set of samples in final submittal; one set will be returned.
3. Quality Control Set: Maintain returned final set of samples at project site, in suitable condition and available for quality control comparisons by Architect/Engineer, and by others.

1.5 INSPECTION AND TEST REPORTS

- A. Classify each as either "shop drawing" or "product data", depending upon whether report is uniquely prepared for project or a standard publication of workmanship control testing at point of production, process accordingly.

1.6 WARRANTIES

- A. Refer to "Products" section for specific general requirements on warranties, product/workmanship bonds, and maintenance agreements. In addition to copies desired for Contractor's use, furnish 2 executed copies, except furnish 2 additional (conformed) copies where required for maintenance manuals.

1.7 CLOSEOUT SUBMITTALS

- A. Refer to individual work sections and to "closeout" sections for specific requirements on submittal of closeout information, materials, tools, and similar items.
 1. Record Document Copies: Furnish one set.
 2. Maintenance/Operating Manuals: Furnish 2 bound copies.
 3. Materials and Tools: Refer to individual work sections for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical units to be submitted.
 4. General Distribution: Provide additional distribution of submittals (not included in foregoing copy submittal requirements) to subcontractors, suppliers, fabricators, installers, governing authorities, and others as necessary for proper performance of the work. Include such additional copies in transmittal to Architect/Engineer where required to receive "Action" marking before final distribution. Record distributions on transmittal forms.

1.8 ACTION ON SUBMITTALS

- A. Architect's/Engineer's Action: Where action and return is required or requested, Architect/Engineer will review each submittal, mark with "Action", and where possible return within 2 weeks of receipt. Where submittal must be held for coordination, Contractor will be so advised by A/E without delay.
- B. Action Stamp: Architect's/Engineer's action stamp, for use on submittals to be returned to Contractor, is self-explanatory as marked.

PART 2 - PRODUCTS

- A. N/A

PART 3 - EXECUTION

- A. N/A

END OF SECTION 01 33 00

SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
 - 1. Specification Section "Alternates" for products selected under an alternate.
 - 2. Specification Section "References" for applicable industry standards for products specified.
 - 3. Specification Section "Closeout Procedures" for submitting warranties for Contract closeout.
 - 4. Divisions 02 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

- A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
 - 1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
 - 2. Form: Tabulate information for each product under the following column headings:
 - a. Specification Section number and title.
 - b. Generic name used in the Contract Documents.
 - c. Proprietary name, model number, and similar designations.
 - d. Manufacturer's name and address.
 - e. Identification of items that require early submittal approval for scheduled delivery date.
 - 3. Initial Submittal: Within 14 days after date of commencement of the Work, submit initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
 - a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
 - 4. Completed List: Within 60 days after date of commencement of the Work, submit completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
 - 5. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- B. Substitution Requests: Submit each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use CSI Form 13.1A.]

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - i. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - j. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor, through Construction Manager, of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

- C. Comparable Product Requests: Submit each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor, through Construction Manager, of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
 - b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.
- D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Refer to Divisions 02 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
- B. Product Selection Procedures:
1. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
 2. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
 3. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Requested substitution does not require extensive revisions to the Contract Documents.
 - 2. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - 3. Substitution request is fully documented and properly submitted.
 - 4. Requested substitution will not adversely affect Contractor's Construction Schedule.
 - 5. Requested substitution is compatible with other portions of the Work.
 - 6. Requested substitution provides specified warranty.
 - 7. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

- A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 73 29 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
 - 1. Specification Section 02 41 19 – Selective Structure Demolition for demolition of selected portions of the building.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety. Operating elements include the following:
 1. Primary operational systems and equipment.
 2. Air or smoke barriers.
 3. Fire-suppression systems.
 4. Mechanical systems piping and ducts.
 5. Control systems.
 6. Communication systems.
 7. Conveying systems.
 8. Electrical wiring systems.
 9. Operating systems of special construction in Division 13 Sections.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
 1. Water, moisture, or vapor barriers.
 2. Membranes and flashings.
 3. Exterior curtain-wall construction.
 4. Equipment supports.
 5. Piping, ductwork, vessels, and equipment.
 6. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential

interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

- 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

- 1. In general, use hand or small power tools designed for sawing and grinding, not hammering, and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
- 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
- 3. Concrete Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
- 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
- 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
- 6. Proceed with patching after construction operations requiring cutting are complete.

- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

- 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
- 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.

4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29

SECTION 01 74 19 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Disposing of nonhazardous construction waste.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan as approved by Architect and Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

3.2 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01 74 19

01 77 00 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. Related Sections include the following:
 - 1. Specification Section 01 29 76 – Payment Procedures for requirements for Applications for Payment for Substantial and Final Completion.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. For first two subparagraphs below, see Evaluations.
 - 3. Advise Owner of pending insurance changeover requirements.
 - 4. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 5. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 6. Delete first subparagraph below if submittal of final record information is delayed until final acceptance.
 - 7. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
 - 8. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.

9. Coordinate first subparagraph below with Division 08 door hardware Sections. Revise if Owner makes final changeover or if key-control system manufacturer delivers keys directly to Owner.
 10. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 11. Complete startup testing of systems.
 12. Submit test/adjust/balance records.
 13. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 14. Advise Owner of changeover in heat and other utilities.
 15. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 16. Delete both subparagraphs below if Project does not include these items or if they are delayed until final acceptance.
 17. Complete final cleaning requirements, including touchup painting.
 18. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Specification Section 01 29 76 – Payment Procedures.
 2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report and warranty.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements.

Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.

1.6 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials.

- Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
- k. Remove labels that are not permanent.
 - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - n. Replace parts subject to unusual operating conditions.
 - o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - q. First subparagraph below describes a major work item that may be disruptive to closeout procedures.
 - r. Clean ducts, blowers, and coils if units were operated without filters during construction.
 - s. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 - t. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

SECTION 01 77 19 – CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 DATA BINDERS Generally

- A. Provide two complete sets. Provide commercial quality three ring binders with durable plastic covers. Identify project and type of data on face and side of binder. If multiple binders are required, identify as consecutively numbered volumes, identifying original documents as set number one. Provide information required by Contract Documents organized as outlined below. Include related documents under the heading to which each is most closely related.
- B. Provide introductory information:
 - 1. Cover sheet giving complete project title and number, Contractor's name, address, phone number, name of project superintendent, and related general information.
 - 2. Table of Contents identifying material in Binder and identifying missing materials to be added later or certifying completeness of Binder. Reference and bind separately any over-sized documents that cannot be neatly folded and included in this binder.
- C. Operating & Maintenance DATA BINDERS
- D. Provide Product Data as outlined below:
 - 1. Detailed Table of Contents for this part
 - 2. For each system or product: names, addresses, and telephone numbers of supplier, installer, and maintenance service company; drawing and specification reference; building location; manufacturer and model number
 - 3. Description of unit and component parts, clearly identifying the specific product or part installed. When manufacturer's cut sheets are used for product identification, plainly mark specific items included in Work and mark out items not included in Work.
 - 4. Related information required by Contract Documents, or furnished with items included in Project, that Owner may use for maintenance, operation, repair, renovation, or additions to Work.
- E. Provide Operating and Maintenance Data as outlined below for mechanical and electrical systems, equipment, and products:
 - 1. Detailed Table of Contents for this part
 - 2. Manufacturer's printed operating and maintenance instructions supplemented with drawings and text to clearly illustrate proper operation and a logical sequence of maintenance procedures.
 - 3. Servicing and lubrication schedule with list of lubricants.
 - 4. Manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - 5. As-installed control diagrams by controls manufacturer.

6. Installers' coordination drawings with as-installed color-coded piping diagrams and wiring diagrams.
7. Charts of valve tag numbers with the location and function of each valve.
8. Circuit directories of panel boards.
9. Instructions for care, with a list of manufacturer's recommended types of cleaning agents and methods.
10. List materials and parts furnished for the Owner's use.
11. Copy of the list of persons who received demonstration and training.

1.2 PROJECT DATA BINDERS

- A. Add to introductory information a complete listing of subcontractors and material suppliers, including dollar amount, company name, address, phone number, local representative, and information regarding minority-owned business status.
- B. Provide certificates and acceptance information:
 1. Detailed Table of Contents for this part
 2. Certificate of Substantial Completion
 3. Use and Occupancy Permits
 4. Certificate(s) of Inspection or letter(s) of acceptance from:
 5. Fire Marshal
 6. Department of Labor for boilers, pressure vessels, or elevators
 7. Public Health Authorities
 8. other governing authorities as apply
 9. Guarantees, warranties, bonds, certifications, maintenance agreements, and related documents
 10. Detailed Table of Contents for this part
 11. Contractor's warranty of the work
 12. Guarantees, warranties, and bonds, executed by the respective vendors, manufacturers, suppliers, and subcontractors
 13. Certifications
 14. Maintenance Agreements and service contracts
- C. Complete information for each item:
 1. Product or work item, and scope of installation
 2. Name of provider, with name of responsible principal, address, and telephone number
 3. Beginning date and duration
 4. Information about instances which might affect validity, and proper procedure in case of failure
- D. Construction Record Documents: The record copy of Contract Documents required by paragraph 3.11 of the Conditions shall be kept in good condition for submittal to Designer upon completion of construction activity. In the course of the Work, Contractor shall legibly mark these documents to record actual conditions of Work, including: location, depth, and identification of new and existing underground items, location by dimension and identification of utilities, valves, tap points, equipment, service access, test points, and related features, field

changes in dimensions and detail, changes by addenda, change orders, and construction change directives, description and details of features for maintenance, service, replacement, or expansion of the Work.

END OF SECTION 01 77 19

SECTION 01 78 36 TOTAL ROOFING SYSTEM WARRANTY

Twenty (20)

Warranty Period (Years): _____ Warranty Number _____ Date _____

Building, Campus and Address

Roofing System Manufacturer & Address

Contact _____ Phone _____ Email _____

Manufacturer Authorized Roofing Applicator

Designer _____ Contractor (if applicable) _____

The Roofing System Manufacturer, (Manufacturer) warrants to Obion County (Owner) of the above building, that subject to the Terms, Conditions, and Limitations stated in this no dollar limit (NDL) warranty, the Manufacturer will repair any leak in the Total Roofing System installed by a Manufacturer authorized roofing applicator (Roofing Contractor) for a period stated above commencing with the date of Substantial Completion. The Manufacturer will repair or replace system defects or failures.

THE TOTAL ROOFING SYSTEM COMPONENTS are defined as the following; all materials as manufactured or **authorized by the Manufacturer: including, but not limited to: membrane, flashings, counterflashings, adhesives and sealants, insulation, cover boards, fasteners, fastener plates, fastening bars, metal work, insulation adhesives, and** any other products utilized in this installation. (Strike out materials not included and add other materials included as required):

THE ROOFING CONTRACTOR CERTIFIES that the Total Roof System was installed in strict accordance with the **Manufacturer's recommendations utilizing only the Manufacturer's authorized products to install the Total Roof** System and that all products were protected while in their possession prior to installation and had no moisture or water trapped in the Total Roof System. The Roofing Contractor certifies that all necessary steps were taken to ensure that all conditions were met for the issuance of The Total Roofing System Warranty by the Manufacturer.

Roofing Contractor _____ Authorized Signature _____

Print or Type Name _____ Title _____ Date _____

THE MANUFACTURER WARRANTS that if it cannot supply a specified product for inclusion in a Total Roofing System Warranty, the Roofing Contractor must obtain prior written approval from the Manufacturer for all products not supplied by the Manufacturer to be incorporated in the Total Roofing System Warranty. The Manufacturer will issue a Total Roofing System Warranty. In addition to a final inspection of the completed installation by the Manufacturer, the Manufacturer is also entitled to supplement their final field inspection with the Roofing Contractors above certification. There will be NO exceptions or exclusions to the Total Roofing System Warranty based upon products used or **installation issues by the authorized Roofing Contractor, provided all materials installed are provided or authorized** by the Roofing System Manufacturer.

Manufacturer _____ Authorized Signature _____

Print or Type Name _____ Title _____ Date _____

ROOFING SYSTEM INFORMATION

New Roof Reroof

Warranty Number: _____

Area of roof installed (SF): _____

Date of Substantial Completion _____

Date of Warranty Expiration: _____

ROOF SYSTEM COMPONENTS- list all that apply: Type of

_____ roof deck(s)

_____ Type of metal flashing/trim/coping etc.:

_____ Type of vapor barrier:

Type of air barrier:

_____ Type and thickness of flat insulation: _____ Method of attachment:

_____ Type and slope of tapered insulation: _____ Method of attachment:

_____ Type of recovery board: _____ Method of attachment:

_____ Type of flashing: _____ Method of attachment:

_____ Membrane type & color:

MANUFACTURER'S MEMBRANE INFORMATION

List manufacturer's roll identification for **ALL** rolls of used: **If** additional space is needed, attach additional sheet

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

MANUFACTURER FINAL INSPECTION performed by:

_____ Print or Type Name & Title _____ Date _____ Signature

Designer Representative present for Final Inspection: Print

_____ or Type Name & Title

Owner Representative present for Final Inspection: (when practical) Print

_____ or Type Name & Title

TERMS, CONDITIONS, AND LIMITATIONS

Warranty Number: _____

1. Owner shall provide the Manufacturer with written notice within thirty (30) days of the discovery of any leak(s) in the roofing system.
2. The Manufacturer shall within fourteen (14) calendar days, commencing with receipt of written notice from the Owner, inspect the roofing system in the presence of the Owner's representative (when practical) and if the cause(s) of the leak(s) is found the responsibility of the Manufacturer under this warranty, promptly make or cause to be made, the repair(s) or replacements(s) necessary to return the roofing system to the condition which is watertight and to remediate moisture. All repair expenses incurred in connection herewith will be the responsibility of and borne by the Manufacturer.
3. If upon joint inspection (when practical) by the Manufacturer and the Owner's representative of the roofing system as provided in Paragraph 2, the cause(s) of any leak(s) is found not the responsibility of the Manufacturer under this warranty, the Manufacturer will immediately advise the Owner of the type and extent of repair(s) required to be made at the Owner's expense and if such repair(s) are promptly and reasonably made by the Manufacturer, or an authorized contractor of the manufacturer, this warranty will remain in effect for the unexpired portion of the warranty period; otherwise, this warranty will become null and void with respect to the area(s) or item(s) affected.
4. In the event the Manufacturer and Owner disagree as to the cause(s) and responsibility of the leak(s), then the Owner, without prejudice to any other remedy Owner may have, may make repair(s) of any leak(s) in accordance with Manufacturer recommendations if timely made available. Such action by the Owner shall not constitute a violation of this warranty. The Owner reserves the right to pursue reimbursement from the Manufacturer for all cost(s) and expense(s) of such repair(s), subject to the Manufacturer's responsibility under this warranty. If it is determined that the Manufacturer has no responsibility for the leak(s) under this warranty, the Owner will reimburse the Manufacturer for direct expenses encountered for trips requested by the Owner after the initial inspection.
5. In the event an emergency condition arises where, in the reasonable opinion of the Owner immediate repair(s) are necessary to avoid substantial damage to the building or its contents, or if the Manufacturer advises the Owner in writing of its inability, for reasons beyond its control, to inspect and repair the roofing system as necessary within fourteen (14) days of written notification from the Owner, then the Owner may make such temporary repair(s) as in the opinion of the Owner are essential and necessary and such action by the Owner shall not constitute a violation of this warranty. In these circumstances, the Manufacturer shall reimburse the Owner for all reasonable costs and expenses of such temporary repair(s) subject to the Manufacturer's responsibility under this warranty.
6. In the event the Manufacturer fails to respond to written notification of known or suspected leak(s) as provided in Paragraph 2, the Owner may, after fourteen (14) days following receipt by the Manufacturer of an additional written notice and without prejudice to any other remedy owner may have, make permanent repair(s) of any leak(s) and recover all reasonable costs and expenses of such repair(s) from the Manufacturer. The Manufacturer will, upon demand by the Owner, promptly reimburse the Owner these reasonable repair costs and expenses. Such action by the Owner shall in no way negate the responsibilities of the Manufacturer under this warranty for the unexpired portion of the warranty period.
7. Except as provided in Paragraphs 4, 5 & 6, any alterations of the roofing system after completion and acceptance including the placement of fixtures, utilities and equipment on or through the roof or additions thereto, will render this warranty null and void with respect to the area(s) or item(s) affected unless prior written authorization of such alterations of the roof system or additions thereto is given by the Manufacturer. Such authorization will not be unreasonably withheld.
8. This warranty shall not be applicable to the extent the roofing system sustains damage(s) by any of the following:
 - (a) Acts of God and natural disasters, including but not limited to lightning, hurricanes, tornadoes, and earthquakes, winds of (3 second) peak gust speeds of 72 MPH or higher (determined by the nearest US Weather Station measured at 10 meters above ground or at the given address if reliable pinpoint wind data is available for the address), hail with a diameter greater than one inch.
 - (b) Acts of negligence (whether of omission or commission), fire, accidents, or misuse, including but not limited to vandalism, civil disobedience, or acts of war, provided same are not caused by the Manufacturer and/or the Contractor.
 - (c) Failure by the Owner to use reasonable care in maintaining the roof and appurtenances, provided same caused the leak(s) or item(s) affected; or,
 - (d) For built-up and modified bitumen roofs: A roof design or specification authorized by the Owner with less than 1/8" per foot slope for drainage.
 - (e) Building design issues that affect the performance of the Total Roofing System.

Warranty Number:

9. When the roofing system has been damaged by any of the foregoing causes, repair(s) shall be at the Owner's expense and such repair(s) shall be made as provided in Paragraph 3; otherwise, this warranty will become null and void with respect to the area(s) or item(s) affected.

10. Until such time as the third year of this warranty has expired, the Manufacturer's obligations hereunder shall be joint and several with the Contractor. For the purpose of this paragraph, all of the Contractor's actions, whether of omission or commission, that are subject to this warranty are likewise the actions of the Manufacturer hereunder and shall in no way negate or reduce the responsibilities of the Manufacturer under this warranty.

11. As part of the repair of leaks, the Manufacturer shall replace roof insulation included in the this warranty that become damaged as a result of a roofing system leak, provided the roofing system leak is not excluded under the Terms, Conditions, and Limitations set forth in this warranty. The replacement of damaged roof insulation shall be limited to those boards that have lost the structural integrity necessary to support and restrain the roofing system when it is subjected to dynamic loads such as typical roof service traffic, winds up to 72 mph, hail up to one inch in diameter, and periodic accumulations of water, snow, or ice. In the event that roof insulation is damaged as a result of a roofing system leak excluded under the Terms, Conditions and Limitations set forth in this warranty, the Manufacturer will advise the Owner of the type and extent of insulation and recovery board replacement to be made at the Owner's expense. Failure by the Owner to properly make these repairs in a reasonable manner using a Manufacturer licensed applicator and within a reasonable period of time shall render this Warranty null and void in the area of the damage. Neither the Manufacturer nor the Owner shall have any obligation to replace roof insulation and recovery board if the area affected by the leak is less than fifty (50) square feet.

12. The Manufacturer certifies that it:

- (a) Manufacturers or purchases products for the purpose of designing, developing, and marketing a roofing system.
- (b) Provides recommendations, specifications, and details for roofing system materials and installation; (c) Trains and authorizes Roofing Contractors.
- (d) Provides technical assistance to Roofing Contractors; (e) Approves or prepares shop drawings; and,
- (f) Provides a technical representative employed by the Manufacturer for the final inspection, and all inspections required by this warranty.

13. During the period of this warranty, the Manufacturer, its agents, or employees, will have free access to the roof during regular business hours of the Owner for the purpose of roofing system inspections.

14. Owner shall be responsible for the costs associated with the removal and replacement, as well as any damage caused by the removal and replacement of any overburden, super strata, or overlays, that are not a part of the installed roofing system, either permanent or temporary, excluding accepted stone ballast or pavers, as necessary to expose the roofing system for inspection and/or repair.

15. Except as set within this warranty, alterations or repairs to the roofing system that are not completed in accordance with Manufacturer's published specifications, not completed by an authorized contractor, and/or where current notification procedures were not followed are not warrantied and this warranty will become null and void with respect to the area(s) or item(s) affected.

TOTAL ROOFING SYSTEM MANUFACTURER

Roofing System Manufacturer name

Authorized Signature & Date

Print or Type Name & Title

DIVISION 7
THERMAL & MOISTURE PROTECTION

SECTION 07 01 50.19 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Full tear-off of entire roof.
 - 2. Removal of base flashings.
 - 3. Removal of other items as indicated on the drawings.

1.2 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
 - 1. Include certificate that Installer is approved by warrantor of existing roofing system.
- B. Fastener pull-out test report. Include tests for concrete parapets and brick veneer.
- C. Insulation adhesive adhesion testing. Include testing for resistance to uplift by the insulation by the insulation adhesive to Tectum Concrete deck.
- D. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.
- E. Landfill Records: Indicate receipt and acceptance of demolished roofing materials and hazardous wastes, such as asbestos-containing materials, by a landfill facility licensed to accept them.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Approved by warrantor of existing roofing system to work on existing roofing and licensed to perform asbestos abatement in the state or jurisdiction where Project is located.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Reroofing Conference: Conduct conference at Project site.
 - 1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; roofing installer, including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing, including installers of roof deck, roof accessories, and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing system tear-off and replacement, including, but not limited to, the following:
 - a. Reroofing preparation, including roofing system manufacturer's written instructions.
 - b. Temporary protection requirements for existing roofing system components that are to remain, if any.
 - c. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
 - d. Construction schedule and availability of materials, installer's personnel, equipment, and facilities needed to avoid delays.
 - e. Existing roof deck conditions requiring notification of Architect.
 - f. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
 - g. Structural loading limitations of roof deck during reroofing.
 - h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
 - i. HVAC shutdown and sealing of air intakes.
 - j. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
 - k. Discovery of asbestos-containing materials.
 - l. Governing regulations and requirements for insurance and certificates if applicable.
 - m. Existing conditions that may require notification of Architect before proceeding.

1.6 FIELD CONDITIONS

- A. Existing Roofing System: EPDM roof.
- B. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations are not disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.

1. Coordinate work activities daily with Owner so Owner can place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire alarm or detection equipment if needed, and evacuate occupants from below work area.
 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Conditions existing at time of inspection for bidding are maintained by Owner as far as practical.
1. A roof moisture survey of existing roofing system is not available for Contractor's reference.
 2. The results of an analysis of test cores from existing roofing system are not available for Contractor's reference.
- F. Limit construction loads on roof for rooftop installation
- G. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
1. Remove only as much roofing in one day as can be made watertight in the same day.
- H. Hazardous Materials: It is not expected that hazardous materials, such as asbestos-containing materials, will be encountered in the Work.
1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

1.7 WARRANTY

- A. Three-Year Roof Bond and Specification Section 01 78 36 – Roof System Warranty for owner specific roof warranty requirements.

PART 2 - PRODUCTS

2.1 INFILL AND REPLACEMENT MATERIALS

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

- B. Wood blocking, curbs, and nailers are specified in Specification Section 06 10 01 – Rough Carpentry.

2.2 AUXILIARY REROOFING MATERIALS

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

PART 3 - EXECUTION

3.1 PREPARATION

- A. If it becomes necessary to shut off rooftop utilities and/or service piping, proceed only as directed by the Owner before beginning the Work. Notify Owner's maintenance personnel of any rooftop utilities that appear to be in need of repair.
- B. Test existing roof drains to verify that they are not blocked or restricted. Immediately notify Architect of any blockages or restrictions.
- C. Coordinate with Owner to shut down or re-route air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- D. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- E. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing roofing system components that are to remain.

3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Full Roof Tear-Off: Remove existing roofing and other roofing system components down to the structural deck.
 - 1. Remove roof insulation.
 - 2. Remove wood blocking, curbs, and nailers.

3. Bitumen and felts that are firmly bonded to decks are permitted to remain if felts are dry. Remove unadhered bitumen, unadhered felts, and wet felts.
4. Remove fasteners from deck. Verify fastener type and consult with Designer prior to removal.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. Verify that the substrate is visibly dry, undamaged, and free of moisture.
- C. If deck appears inadequately attached, or if the structural integrity of deck is suspect, immediately notify Designer. Do not proceed with installation until directed by Designer.

3.4 INFILL MATERIALS INSTALLATION

- A. Immediately after roof tear-off, and inspection and repair, if needed, of deck, fill in tear-off areas to match existing roofing system construction.
 1. Installation of wood blocking, curbs, and nailers is in Specification Section 06 10 01 – Rough Carpentry.

3.5 BASE FLASHING REMOVAL

- A. Remove existing base flashings. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage items that are to remain. Replace any items damaged during removal with like materials.
- C. Inspect wood blocking, curbs, and nailers for deterioration and damage. If wood blocking, curbs, or nailers have deteriorated, immediately notify Designer.

3.6 PULL-OUT AND ADHESION TESTING

- A. Perform fastener pull-out tests according to SPRI FX-1, and submit test report to Designer, roofing manufacturer, and Owner before installing new roofing system.
 1. Obtain Designer's and roofing manufacturer's approval to proceed with specified fasteners for termination strips in concrete parapets and brick veneer. Roofing manufacturer may furnish revised fastening pattern commensurate with pull-out test results.
 2. Insulation adhesive manufacturer shall provide onsite testing that demonstrates that the bond with the existing metal roof deck meets the uplift requirements in Specification Section 07 54 23 – Thermoplastic Polyolefin.

3.7 DISPOSAL

A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

1. Storage or sale of demolished items or materials on-site is not permitted.

END OF SECTION 07 01 50.19

SECTION 07 21 20 – BOARD INSULATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 01 Specification Sections apply to this section.

1.2 SUMMARY

- A. Section includes roof insulation over the properly prepared deck substrate.

1.3 REFERENCE

- A. American Society for Testing and materials (ASTM):
- B. ASTM C1289 — Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- C. Standard Test Method For Peel Or Stripping Strength Of Adhesive Bonds
- D. ASTM D2556-Standard Test Method for Apparent Viscosity Of Adhesives Having Shear-Rate-Dependent Flow Properties Using Rotational Viscometry
- E. ASTM E108-Standard Test Methods for Fire Tests Of Roof Coverings
- F. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulation.
- G. ASTM C1396 Standard Specification for Gypsum Wallboard.

1.4 SUBMITTALS

- A. Product Data: Provide manufacturer's specification data sheets for each product in accordance with Submittal Procedures 01330.
- B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type. Insulation must be compliant to complete the required manufacturer's full NDL warranty.
- C. Provide a sample of each insulation type.
- D. Shop Drawings
 - 1. Submit manufacturer's shop drawings indicating complete installation details of tapered insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
 - 2. Shop drawing shall include: Outline of roof, location of drains, complete board layout of tapered insulation components, thickness and the average "R" value for the completed insulation system.

- E. Certification
 - 1. Submit roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.
 - 2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.5 QUALITY ASSURANCE

- A. Fire Classification, ASTM E-108.
- B. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual, Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- C. Manufacturer's Certificate: Certify that the roof system is adhered properly to meet or exceed the requirements of FM 1-90.
- D. Pre-installation meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.
- C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).
- D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

PART 2 – PRODUCTS

2.1 PRODUCTS, GENERAL

- A. Refer to Division 01 Section "Common Product Requirements."
- B. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified in this section shall be provided by The Viking Products Group, or Approved equal. The products listed herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

- C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Division 0 Bidding and Division 1 Section 01340 Substitution Procedures.
1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance
 2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Design Professional, Owner or Owner's Representative.
 3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
 4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 INSULATION MATERIALS

- A. Tapered insulation on the roofing project as follows:
1. Part A:
 - a. All slope to the internal drains shall be a minimum of 1/4" per foot.
- B. Thermal Insulation Properties and Approved Insulation Boards.
1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
 - b. Attachment: Type III hot asphalt
 - c. Thickness: Minimum 2.2" base layer.
 - d. Compliances: UL, WH or FM listed under Roofing Systems
Federal Specification HH-I-1972, Class 1
 - e. Acceptable Products:
 - 1) Hunter Panels/Atlas Roofing
 - 2) Viking Products Group
 - 3) ENRGY-3; Johns Manville
 - 4) Approved Equivalent
 2. Tapered Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
 - b. Attachment: Type III hot asphalt

- c. Tapered Slope: ¼:12" or noted on drawings.
 - d. Starting Thickness: ½" minimum
 - e. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
 - f. Acceptable Products:
 - 1) Hunter Panels/Atlas Roofing
 - 2) Viking Products Group
 - 3) ENRGY 3; Johns Manville
 - 4) Approved Equivalent
3. Dens-Deck Prime Roof Board (Attached over metal deck)
- a. Qualities: Nonstructural glass mat faced, noncombustible, water-resistant treated gypsum core panel.
 - b. Board Size: Four feet by four feet (4'x4').
 - c. Thickness: One half (1/2) inch.
 - d. R-Value: .56
 - e. Compliances: UL, WH or FM listed under Roofing Systems.
4. High Density Wood Fiberboard (Installed over tapered insulation)
- a. Qualities: Non-asphaltic, primed red coating. For use as roof cover-board.
 - b. Attachment: Type III hot asphalt
 - c. Board Size: Four feet by eight feet (4'x8').
 - d. Thickness: One half (1/2) inch.
 - e. R-Value: 1.39
 - f. Compliances: UL, WH or FM listed under Roofing Systems

2.3 RELATED MATERIALS

- A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard.
- B. Protection Board: Pre-molded semi-rigid asphalt composition board one half (1/2) inch.
- C. Roof Deck Insulation Adhesive: Viking Products Group: Deck Grabber E HR - Dual-component, high rise foam adhesive as recommended by insulation manufacturer and approved by FM indicated ratings.

- 1. Tensile Strength (ASTM D412).....250 psi
- 2. Density (ASTM D1875).....8.5 lbs./gal.
- 3. Viscosity (ASTM D2556).....22,000 to 60,000 cP.
- 4. 2 `Peel Strength (ASTM D903).....17 lb/in.
- 5. 3 `Flexibility (ASTM D816).....Pass @ -70°F

PART 3 – EXECUTION

3.1 EXECUTION, GENERAL

- A. Comply with requirements of Division 01, Spec Section 01690 Execution Requirements.

3.2 INSPECTOR OF SURFACES

- A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
 1. Verify that work which penetrates roof deck has been completed.
 2. Verify that wood nailers are properly and securely installed.
 3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
 4. Do not proceed until defects are corrected.
 5. Do not apply insulation until substrate is sufficiently dry.
 6. Broom clean substrate immediately prior to application.
 7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
 8. Verify that temporary roof has been completed.

3.3 INSTALLATION

- A. Roofing Contractor shall be responsible for installation of all insulation materials.
 1. Follow insulation system component product data sheets, published general requirements and, approvals.
 2. Install all insulation system components on clean, dry, uniform and, properly prepared substrates.
 3. All insulation system boards shall be carefully installed and fitted against adjoining sheets to form tight joints.
 4. Insulation system boards that must be cut to fit shall be saw-cut or knife-cut in a straight line, not broken. Chalk lines shall be used to cut insulation components. Uneven or broken edges shall not be accepted. Remove dust and debris that develops during cutting operations.
 5. Stagger successive layers of insulation 12 in vertically and laterally to ensure board joints do not coincide with joints from the layers above and below.
 6. Crickets, saddles, and tapered edge strips shall be installed before installing Cover-boards.
 7. Install tapered insulation, saddles and crickets as required to ensure positive slope for complete roof drainage.
 8. Cover-boards shall be installed to fit tight against adjacent boards. When required by the Cover-board manufacturer, a uniform gap shall be provided

between Cover-boards using a uniform guide placed between board joints to form a gap between all boards during installation.

9. The finished insulation system surface shall be tight to, and flush with, adjacent substrates to form a satisfactory substrate to install specified roof membrane and flashings.
10. Install specified cants where required for membrane flashing transitions.
11. Manufacturer Rep must be present weekly during the install to ensure proper fastening patterns are followed per the wind uplift and provided photo evidence of such weekly.

3.4 CLEANING

- A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

3.5 CONSTRUCTION WASTE MANAGEMENT

- A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction.

END OF SECTION

SECTION 07 54 23 - THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fully adhered thermoplastic polyolefin (TPO) roofing system.
2. Tapered and Flat Roof insulation.
3. Demolition and disposal of existing roofing.
4. Sequencing of scope of work.

- B. Extent of flexible sheet roofing (FSR) is indicated on drawings and is hereby defined to include non-traffic bearing sheet membrane system intended for weather exposure as primary roofing.

1.2 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.3 PRE-INSTALLATION MEETINGS

- A. Preliminary Roofing Conference: Before starting roof replacement construction, conduct conference at Project site.

1. Meet with Owner, Designer, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, insulation Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:
 - 1. Base flashings and membrane terminations.
 - 2. Tapered insulation plan, including slopes, crickets, and thicknesses.
 - 3. Roof plan showing orientation of roof deck and orientation of roofing, fastening spacings, and patterns for mechanically fastened insulation.
 - 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
 - 5. Location and type of **all** penetrations details.
 - 6. Fastener type, length and maximum spacing (for membrane securement) for Reinforced Mechanically Fastened systems.
 - 7. **Pullout Test:** The roofing contractor shall perform pull out testing in all decking conditions. Include pullout test results and confirmation that pullout results are below the requirements identified in manufacturers "Withdrawal Resistance Criteria".

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data:
 - 1. Installer must be approved by manufacturer and fully certified to install the roof membrane by the roof manufacturer under the warranty.
 - 2. Installer must have 5 years (minimum) experience with the size, scope, and type of roof system specified herein. Contractor shall provide documentation from the installer, for review by the Owner and Designer, including a list of projects completed by the proposed installer, along with project references.
- B. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 - 1. Submit evidence of compliance with performance requirements.
- C. Product Test Reports: For components of roofing system, tests performed by manufacturer and witnessed by a qualified testing agency.
- D. Research/Evaluation Reports: For components of roofing system, from ICC-ES.
- E. Field quality-control reports. Refer to Part 3.8 – FIELD QUALITY CONTROL.
- F. Written acknowledgement of SPECIFICATION SECTION 01 78 36 – TOTAL ROOFING SYSTEM WARRANTY.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty. (Also refer to Installer note above)
- C. Contractor shall employ an independent inspection agency and/or the roofing manufacturer's technical inspector, to review progress at certain intervals. Refer to FIELD QUALITY CONTROL.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.9 FIELD CONDITIONS

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

1.10 WARRANTY

- A. Refer to SPECIFICATION SECTION 01 78 36 – TOTAL ROOFING SYSTEM WARRANTY. This Special Warranty shall include all roof penetrations, metal copings, roof insulation, flashing details and other elements within the scope of work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Roofing Manufacturers:

1. Carlisle
2. Firestone
3. GAF Materials Corp.
4. Johns Manville

B. Source Limitations: Obtain components including roof insulation, fasteners for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Roofing System Design: Tested by a qualified testing agency to resist uplift pressures at corners, perimeters, and field-of-roof zones, in accordance with project location, zone, building height (per IBC and ASCE 7). Basic Wind Speed: 72 MPH.

D. FM Global Listing: Roofing, base flashings, and component materials shall comply with requirements in FM Global 4450 or FM Global 4470 as part of a roofing system and shall be listed in FM Global's "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1A-90.
2. Hail-Resistance Rating: SH (severe hail).

E. Solar Reflectance Index: Not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

F. Energy Star Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

- G. Energy Performance: Roofing system shall have an initial solar reflectance of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.
- H. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

2.3 TPO ROOFING

- A. Reinforced TPO Sheet: ASTM D 6878, internally fabric- or scrim-reinforced, uniform, flexible TPO sheet.
 1. Thickness: 60 mils (1.5 mm), nominal.
 2. Exposed Face Color: White.
 3. ASTM testing requirements: See chart below:

PHYSICAL PROPERTY	ASTM D6878 Requirement	60-mil Std & HS
Tolerance on nominal thickness, % ASTM D751 test method	+15, -10	± 10
Thickness over scrim, in. (mm) ASTM D6878 optical method, average of 3 areas	0.012 min. (0.305)	0.024 typical (0.610)
Breaking strength, lbf (kN) ASTM D751 grab method	220 (976 N) min.	250 (1.1) min. 360 (1.6) typ.
Elongation break of reinforcement, % ASTM D751 grab method	15 min.	15 min. 25 typ.
Tearing strength, lbf (N) ASTM D751 proc. B 8 by 8 in.	55 (245) min.	55 (245) min. 130 (578) typ.
Brittleness point, °F (°C) ASTM D2137	-40 (-40) max.	-40 (-40) max. -50 (-46) typ.
Linear dimensional change, % ASTM D1204, 6 hours at 158 °F	± 1 max.	± 1 max. -0.2 typ.
Ozone resistance, no cracks 7X ASTM D1149, 100 pphm, 168 hrs	Pass	Pass
Water absorption resistance, mass % ASTM D471 top surface only 166 hours at 158 °F water	± 3.0 max.	3.0 max. 2.0 typ.
Factory seam strength, lbf /in. (kN/m) ASTM D751 grab method	66 (290) min.	66 (290) min.
Field seam strength, lbf /in. (kN/m) ASTM D1876 tested in peel	No requirement	25 (4.4) min. 60 (10.5) typ.
Water vapor permeance, Perms ASTM E96 proc. B	No requirement	0.10 max. 0.05 typ.
Puncture resistance, lbf (kN) FTM 101C, method 2031 (see supplemental section)	No requirement	300 (1.3) min. 350 (1.6) typ.
Properties after heat aging ASTM D573, 670 hrs at 240 °F Breaking strength, % retained Elongation reinf., % retained Tearing strength, % retained Weight change, %	90 min. 90 min. 60 min. ± 1.0 max.	90 min. 90 min. 60 min. ± 1.0 max.

2.4 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.
1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content:
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Single-Ply Roof Membrane Adhesives: Standard VOC level.
 - c. Single-Ply Roof Membrane Sealants: 450 g/L.
 - d. Sealant Primers for Nonporous Substrates: 250 g/L.
 - e. Sealant Primers for Porous Substrates: 775 g/L.
 - f. Other Adhesives and Sealants: 250 g/L.
 3. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Sheet Flashing: Manufacturer's standard unreinforced TPO sheet flashing, **55 mils (1.4 mm)** thick, minimum, of same color as TPO sheet.
- C. Bonding Adhesive: Manufacturer's standard.
- D. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.
- E. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick (25 mm wide by 1.3 mm thick), prepunched.
- F. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roofing to substrate, and acceptable to roofing system manufacturer.
- G. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.5 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by TPO roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Global-approved roof insulation.

B. Insulation

1. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2 felt or glass-fiber mat facer on both major surfaces. Provide ½" thick high-density polyiso coverboard conforming with Severe Hail (SH) rating.
2. Manufacturers:
 - a. Atlas Roofing Corporation.
 - b. Celotex Corporation.
 - c. Firestone Building Products Company.
 - d. GAF Materials Corporation.
 - e. RMAX.

C. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope indicated on the drawings.

D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes to ensure positive slope to drain. Min. cricket slope: ½" per foot, unless indicated otherwise.

2.6 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.

B. Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation. Refer to drawings for Deck Types. Conform to FM Global and uplift pressures required.

C. Adhered Insulation: Adhere with manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:

1. Bead-applied, low-rise, one-component, or multicomponent urethane adhesive, as accepted by the membrane manufacturer.

2.7 ASPHALT MATERIALS

A. Roofing Asphalt: ASTM D 6152, SEBS modified. (as applicable)

B. Asphalt Primer: ASTM D 41/D 41M. (as applicable)

2.8 WALKWAYS

A. Walkway Roof Pads:

1. Colors and Textures: Slip resistant texture, White, with YELLOW/CONTRASTING EDGES
2. Pads shall be 60mil reinforced TPO, adhered to roof as recommended by manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:
 - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
 - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
 - 4. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 ROOFING INSTALLATION, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Install roofing and auxiliary materials to maintain weathertightness and to not void warranty.

3.4 INSULATION INSTALLATION

- A. Coordinate installing roofing system components, so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

- C. Install tapered insulation under area of roofing to conform to slopes indicated. Provide tapered insulation where necessary to prevent ponding between roof drains. Provide crickets at curb penetrations in sloped areas to prevent build-up of water behind the curb.
- D. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches (68 mm) or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches (150 mm) in each direction.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - 1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
- G. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing, and maintaining insulation in place.
 - 2. Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing, and maintaining insulation in place.

3.5 ADHERED ROOFING INSTALLATION

- A. Adhere roofing over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing and allow to relax before retaining.
- B. Start installation of roofing in presence of roofing system manufacturer's technical personnel.
- C. Accurately align roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply to substrate and underside of roofing at rate required by manufacturer and allow to partially dry before installing roofing. Do not apply to splice area of roofing.
- E. In addition to adhering, mechanically fasten roofing securely at terminations, penetrations, and perimeter of roofing.
- F. Apply roofing with side laps shingled with slope of roof deck where possible.
- G. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roofing and sheet flashings according to manufacturer's written instructions, to ensure a watertight seam installation.
 - 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet.

2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
 3. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.
- H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roofing in place with clamping ring.

3.6 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.7 WALKWAY INSTALLATION

- A. Roof-Pad Walkways: Install walkway roof pads according to manufacturer's written instructions in locations indicated, to form walkways. Adhere to TPO roof as recommended by the manufacturer.

3.8 FIELD QUALITY CONTROL

- A. Initial and intermediate Roof Inspections: Provide the services of the roof manufacturer's technical inspector, or an independent third-party roof inspection firm, for the initial 8 hours of roof replacement work, as well as a minimum of one (1) Bi-Weekly inspection until the roof installation is completed. Provide written reports to document each site visit.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.9 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07 54 23

SECTION 07 62 00 – SHEETMETAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Extent of each type of flashing and sheet metal work is indicated on drawings and by provisions of this section.
- B. Types of work specified in this section include the following:
 - 1. Metal counter flashing; and base flashing for new ductwork, roof and wall penetrations. Provide pre-finished roof curb and flashing to existing roof, where ductwork penetrates.
- C. Roofing accessories which are installed integral with roofing membrane are specified in roofing system sections as roofing work.

1.3 SUBMITTALS:

- A. Product Data; Flashing, Sheet Metal, Accessories: Submit manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.

1.4 JOB CONDITIONS:

- A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 - PRODUCTS

2.1 FLASHING AND SHEET METAL MATERIALS:

A. PREFINISHED METAL FLASHING:

- 1. Where exposed to view:
 - a. Prefinished Steel: 24-gauge hot-dipped galvanized steel ASTM A 446-85 Grade C, G-90 coating ASTM 525-86.

b. Prefinished Galvalume: 24-gauge ASYM 792-86.

2. Finish:

- a. Finish shall be Kynar 500 fluorocarbon coating applied with a top side film thickness of 0.70 to 0.90 mil over 0.25 to 0.35 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by Kynar 500 finish supplier.
- b. Color shall be selected by the Architect from manufacturer's full range of colors
- c. Strippable coating shall be liquid applied to the top side to protect the finish during lubrication, shipping, and field handling. This strippable coating shall be removed before installation.
- d. Field protection must be provided by the contractor at the job site, so material is not exposed to weather and moisture.

2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES:

- A. Fasteners: Same metal as flashing/sheet metal or, other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- B. Bituminous Coating: FS TT-C-494 or SSPC - Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15- mil dry film thickness per coat.
- C. Mastic Sealant: Polyisobutylene; nonhardening, no skinning, non-drying, nonmigrating sealant.
- D. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet.
- E. Paper Slip Sheet: 5-lb. rosin-sized building paper.
- F. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.
- G. Elastic Flashing Filler: Closed-cell polyethylene or other soft closed-cell material recommended by elastic flashing manufacturer as filler under flashing loops to ensure movement with minimum stress on flashing sheet.
- H. Roofing Cement: ASTM D 2822, asphaltic.

2.3 FABRICATED UNITS:

- A. General Metal Fabrication: 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 instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

- B. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. For metal other than aluminum, tin edges to be seamed, form seams, and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.
- C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints).
- D. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.
- E. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.
- F. Aluminum Extrusion Units: Fabricate extruded aluminum running units with formed or extruded aluminum joint covers, for installation behind main members where possible. Fabricate mitered and welded corner units.
- G. Shop Finish, Rain Drainage: Provide Kynar 500 finish from manufacturer's full range of colors on sheet metal rain drainage units (gutters, downspouts, and similar exposed units); 1.0 mil dry film thickness.

PART 3 - EXECUTION

3.1 INSTALLATION REQUIREMENTS:

- A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof.
- B. Underlayment: Where stainless steel or aluminum is to be installed directly on cementitious or wood substrates, install a slip sheet of red rosin paper and a course of polyethylene underlayment.
- C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
- D. Install reglets to receive counterflashing in manner and by methods indicated. Where shown in concrete, furnish reglets to trades of concrete work for installation as work of Division 3

Specifications Sections. Where shown in masonry, furnish reglets to trades of masonry work, for installation as work of Division-4 sections.

- E. Install counterflashing in reglets, either by snap-in seal arrangement, or by wedging in place for anchorage and filling reglet with mastic or elastomeric sealant, as indicated and depending on degree of sealant exposure.
- F. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6". Fabricate seams at joints between units with minimum 3" overlap, to form a continuous waterproof system.

3.2 CLEANING AND PROTECTION:

- A. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.
- B. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction, to ensure that work will be without damage or deterioration, other than natural weathering, at time of substantial completion.

END OF SECTION 07 62 00

SECTION 07 71 00 – ROOF SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes the extent of work shown on the drawings.
- B. Related Sections:
 - 1. Specification Section 06 10 01 – Rough Carpentry for wood nailers, curbs, and blocking.
 - 2. Specification Section 07 92 00 – Joint Sealants for field-applied sealants between roof specialties and adjacent materials.

1.3 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), material surfaces.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof specialties. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work. Include the following:
 - 1. Details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
 - 2. Pattern of seams and layout of fasteners, cleats, clips, and other attachments.
 - 3. Details of termination points and assemblies, including fixed points.
 - 4. Details of special conditions.
- C. Samples for Initial Selection: For each type of roof specialty indicated with factory-applied color finishes.

- D. Samples for Verification: For copings and roof edges made from 12-inch (300-mm) lengths of full-size components including fasteners, cover joints, accessories, and attachments.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for copings.
- B. Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof specialties installation.

1.8 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 25 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CONCEALED METALS

- A. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.
- B. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.
- C. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation.

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
 - 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
 - 2. Fasteners for Copper Sheet: Copper, hardware bronze, or passivated Series 300 stainless steel.
 - 3. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
 - 4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
 - 5. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153/A 153M or ASTM F 2329.
- C. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane silicone polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- D. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

2.3 ROOF-EDGE SPECIALTIES

- A. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding **12 feet** and a continuous metal receiver with integral drip-edge cleat to engage fascia cover and secure single-ply roof membrane. Provide matching corner units.
 - 1. Metallic-Coated Steel Sheet Fascia Covers: Zinc-coated (galvanized) steel, nominal **0.034-inch** thickness.
 - a. Surface: Smooth, flat finish.
 - b. Finish: Three-coat fluoropolymer.
 - c. Color: As selected by Architect from manufacturer's full range.
 - 2. Corners: Factory mitered and mechanically clinched and sealed watertight.
 - 3. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
 - 4. Receiver: Galvanized-steel sheet, nominal **0.040-inch** thickness.
 - 5. Fascia Accessories: Fascia extenders with continuous hold-down cleats.
- B. Downspouts: Plain rectangular complete with mitered elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.
 - 1. Zinc-Coated Steel: Nominal **0.034-inch** thickness.

- C. Parapet Scuppers: Manufactured with closure flange trim to exterior, **4-inch**-wide wall flanges to interior, and base extending **4 inches** beyond cant or tapered strip into field of roof.
 - 1. Zinc-Coated Steel: Nominal **0.028-inch** thickness.
- D. Conductor Heads: Manufactured conductor heads, each with flanged back and stiffened top edge, and of dimensions and shape indicated, complete with outlet tube that nests into upper end of downspout.
 - 1. Zinc-Coated Steel: Nominal **0.034-inch** thickness.
- E. Zinc-Coated Steel Finish: Three-coat fluoropolymer.
 - 1. Color: As selected by Architect from manufacturer's full range.

2.4 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete roof-specialty systems.
 - 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 - 2. Provide uniform, neat seams with minimum exposure of solder and sealant.

3. Install roof specialties to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 4. Torch cutting of roof specialties is not permitted.
 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
1. Coat concealed side of roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet self-adhering, high-temperature sheet underlayment or polyethylene sheet.
 3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of 12 feet (3.6 m) with no joints within 18 inches (450 mm) of corners or intersections unless otherwise shown on Drawings.
 2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal joints with elastomeric sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for watertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm) except reduce pre-tinning where pre-tinned surface would show in completed Work. Tin edges of uncoated copper sheets using solder for copper. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

3.3 INSTALLATION

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor system to meet performance requirements.
1. Interlock face and back leg drip edges of roof edge systems into cleated anchor plates anchored to substrate at manufacturer's required spacing that meets performance requirements.
 2. Interlock face drip edges into continuous cleat anchored to substrate at manufacturer's required spacing that meets performance requirements.

3.4 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 07 71 00

SECTION 07 71 23 – GUTTERS AND DOWNSPOUTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Gutters and Downspouts.
- B. Related Accessories.

1.2 REFERENCES

- A. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- B. SMACNA - Architectural Sheet Metal Manual.

1.3 DESIGN / PERFORMANCE REQUIREMENTS

- A. Conform to applicable code for size and method of rainwater discharge.
- B. American Architectural Manufacturers Association (AAMA) Specification 1405.1 "Specification for Aluminum Rain-carrying Systems".
- C. FHA Minimum Property Standard 4900.1 for One- and Two-Family Dwellings.
- D. FHA Minimum Property Standard 4910.1 for Multi-Family Dwellings.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Manufacturer's catalog data, detail sheets, and specifications.
- C. Shop Drawings: Prepared specifically for this project; showing dimensions of metal gutters and accessories, fastening details and connections and interface with other products.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- G. Manufacturers' warranties.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
- B. Installer Qualifications: Certified and approved installer of the sheet metal roofing manufacturer.
- C. Perform Work in accordance with SMACNA Manual.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store products to prevent twisting, bending, and abrasion, and to provide ventilation. Slope stored materials to drain.
- C. During storage prevent contact with materials capable of causing discoloration, staining, or other damage.

1.7 PROJECT CONDITIONS

- A. Coordinate installation with installation of adjacent roofing, siding, and related materials.

1.8 WARRANTY

- A. Provide the Manufacturer's Limited 20-Year, pro-rated and non-transferable Warranty covering labor materials.

1.9 COORDINATION

- A. Coordinate Work with other operations and installation of floor finish materials to avoid damage to installed underlayment and membrane materials.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Englert, Inc. Or Equal

2.2 COMPONENTS

- A. Gutters: Aluminum sheet, ASTM B 209, Alloy 3105-H24. Minimum tensile strength 26,000 psi, minimum yield strength 25,000 psi or equivalent. Continuous and seamless sheet aluminum, roll formed.
 - 1. Thickness:
 - a. 0.032 inch.
 - 2. Size:
 - a. 6"

- B. Downspouts: Aluminum sheet, ASTM B 209, Alloy 3105-H24. Minimum tensile strength 26,000 psi, minimum yield strength 25,000 psi or equivalent.
 - 1. Thickness:
 - a. 0.019 inch.
 - 2. Size:
 - a. 3 inches by 4 inches.

- C. Scupper Collector Head: Aluminum sheet, ASTM B209, Alloy 3105-H24. Minimum tensile strength 26,000 psi, minimum yield strength 25,000 psi or equivalent.
 - 1. Thickness:
 - a. 0.019 inch.
 - 2. Size:
 - a. As shown on drawings.

- D. Endcaps: Aluminum sheet, ASTM B 209, Alloy 3105-H24, thickness 0.027 inch (0.69 mm).

- E. Inside and Outside Miters: Aluminum sheet, ASTM B 209, Alloy 3105-H24, thickness 0.027 inch (0.69 mm).

- F. Gutter Hangers and Anchors: Aluminum sheet, ASTM B 209, Alloy 3105-H24, thickness 0.063 inch (1.60 mm). Provide types required to suit project requirements.

- G. Downspout Anchors: Aluminum. Provide types required to suit project requirements.

- H. Elbows: Aluminum sheet, ASTM B 209, Alloy 3105-H24. Minimum tensile strength 26,000 psi, minimum yield strength 25,000 psi or equivalent.
 - 1. Thickness:
 - a. 0.019 inch (0.48 mm).
 - 2. Size: To match downspouts.
- I. Aluminum Finish: Kynar 500, two-coat system applied in a continuous baked-on process in a single operation, comprising of an acid-based primer and baked-on high performance linear polyester topcoat on exposed surfaces. Concealed surfaces finished with a polyester gold backer or wash coat.
 - 1. Color: To be selected by Architect from Manufacturers full range.
- J. Sealant: Provide as specified in Section 07 92 00.
- K. Fasteners: Same material and finish as gutters and downspouts.

2.3 FABRICATION

- A. Continuously form seamless gutters to the profiles and sizes specified.
- B. Form downspouts of profiles and sizes specified.
- C. Hem exposed edges of metal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify governing dimensions at building.
- C. Verify surfaces are ready to receive gutters and downspouts.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.

- B. Clean and repair, if necessary, any adjoining work on which this work is in any way dependent for its proper installation.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install gutters using appropriate hangers to allow normal expansion and contraction.
- C. Install gutter hangers using two 1-1/4-inch (32 mm) screw shank nails and fastened into solid lumber.
- D. All gutters shall be in continuous length for each elevation (run). No end laps are allowed.
- E. Exercise care in placing aluminum in contact with other dissimilar metals or materials that are not compatible with aluminum.
- F. Providing adequate insulation/separation wherever necessary, such as by painting or otherwise protecting when they are in contact with aluminum or when drainage from them passes over aluminum surfaces.
- G. Install sealants where indicated to clean dry surfaces only without skips or voids.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 07 71 23

SECTION 07 92 00 – JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.

1.2 SUMMARY

- A. The extent of each form and type of joint sealer is indicated on drawings and by provisions of this section.
- B. The applications for joint sealers as work of this section include the following:
 - 1. Concrete construction joints.
 - 2. Interior wall/ceiling joints.
 - 3. Gasketing of assemblies.
- C. General Performance: Except as otherwise indicated, joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product specifications, handling/installation/curing instructions, and performance tested data sheets for each elastomeric product required.
- B. Certified Tests: With product data submit certified test reports for elastomeric sealants on aged performances as specified, including hardness, stain resistance, adhesion, cohesion or tensile strength, elongation, low-temperature flexibility, compression set, modulus of elasticity, water absorption, and resistance (aging, weight loss, deterioration) to heat and exposures to ozone and ultraviolet.

1.4 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with installation of liquid sealants under unfavorable weather conditions. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer for installation.

PART 2 - PRODUCTS

A. ACCEPTABLE MANUFACTURERS:

1. General: Manufacturers listed in this article include those known to produce the indicated category of prime joint sealer material, either as a nominally pure generic product or as an equivalent-performance modification thereof or proprietary product.

B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. Manufacturers of Elastomeric Sealants (Liquid):

- a. Dow Corning Corp., Midland, MI
- b. General Electric Co., Waterford, NY
- c. W. R. Meadows, Inc., Elgin, IL
- d. Sonneborn/Contech, Inc., Minneapolis, MN
- e. Tremco, Inc., Cleveland, OH

2. Manufacturers of Non-Elastomeric Sealants/Caulks (Liquid/Tape):

- a. W. R. Meadows, Inc., Elgin, IL
- b. Sonneborn/Contech, Inc., Minneapolis, MN
- c. Tremco, Inc., Cleveland, OH

3. Manufacturers of Joint Fillers/Sealant Backers:

- a. Dow Chemical Co., Midland, MI
- b. W. R. Meadows, Inc., Elgin, IL
- c. Sonneborn/Contech, Inc., Minneapolis, MN

2.2 MATERIALS

A. General Sealer Requirements: Provide colors indicated or, if not otherwise indicated, as selected by Designer from a minimum of 100 of the manufacturer's standard colors. Select materials for compatibility with joint surfaces and other indicated exposures, and except as otherwise indicated select modulus of elasticity and hardness or grade recommended by manufacturer for each application indicated. Where exposed to foot traffic, select non tracking materials of sufficient strength and hardness to withstand stiletto heel traffic without damage or deterioration of sealer system.

B. Elastomeric Sealants:

- 1. Multi-Component Polyurethane Sealant: Except as otherwise indicated, provide manufacturer's standard, non-modified, 2-or-more-part, polyurethane-based, elastomeric sealant; complying with either ASTM C 920 Type M Class 25, or FS TT-S-00227E Class A; self-leveling grade/type where used in joints of surfaces subject to traffic, otherwise non sag grade/type.
- 2. Single-Component Polyurethane Sealant: Except as otherwise indicated, provide manufacturer's standard, non-modified, one-part, polyurethane-based, air-curing, elastomeric sealant; complying with either ASTM C 920 Type S Class 25, or FS TT-S-

- 00230C Class A; self-leveling grade/type where used in joints of surfaces subject to traffic, otherwise non sag grade/type.
3. Bituminous Modification: Where joint surfaces contain or are contaminated with bituminous materials, provide manufacturer's modified type sealant which is compatible with joint surfaces (modified with coal tar or asphalt as required).
 4. Single-Component Silicon Rubber Sealant: Except as otherwise indicated, provide manufacturer's standard, non-modified, one-part, silicone-rubber-based, air-curing, non sag, elastomeric sealant; complying with either ASTM C 920 Type S Class 25 Grade NS, or FS TT-S-001543A Class A Type Non-sag.
 5. Sanitary Interior Type: Where indicated and where applied in high-humidity or wet service, provide manufacturer's mold/mildew-resistant, acid type sealant for application to nonporous sealant bond surfaces.
- C. Non-Elastomeric Sealants and Caulking Compounds:
1. Single-Component Acrylic Sealant: Provide acrylic terpolymer, solvent-based, one-part, thermo-plastic sealant compound; solids not less than 95% acrylic; recommended by manufacturer for general use as an exposed building construction sealant.
 2. Performance Standard: Comply with either ASTM C 920 Type S Class 12-1/2 Grade NS, or FS TT-S-00230C Class B Type Non- sag.
- D. Joint Fillers, Pavement Types:
1. Bituminous and Fiber Joint Filler: Provide resilient and non-extruding type premolded bituminous-impregnated fiberboard units complying with ASTM D 1751; FS HH-F-341, Type I; or AASHTO M 213.
- E. Gaskets:
1. Hollow Neoprene Pavement Gasket: Provide hollow or compartmentalized neoprene extrusion, designed to withstand compression to 40% of normal width without extrusion from joint, and will full recovery; with heavy, durable top member, suitable for long-term exposure to severe traffic abrasion and contamination; hardness of approximately 55 Shore A; comply with ASTM D 2628.
- 2.3 MISCELLANEOUS MATERIALS:
- A. Joint Primer/Sealer: Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.
 - B. Bond Breaker Tape: Provide polyethylene tape or other plastic tape as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant. Provide self- adhesive tape where applicable.
 - C. Sealant Backer Rod: Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable nonabsorptive material as recommended by sealant manufacturer for back-up of and compatibility with sealant. Where used with hot-applied sealant, provide heat-resistant type which will not be deteriorated by sealant application temperature as indicated.

PART 3 - EXECUTION

3.1 INSPECTION:

- A. Installer must examine substrates, (joint surfaces) and conditions under which joint sealer work is to be performed and must notify Contractor of unsatisfactory conditions. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.2 JOINT PREPARATION:

- A. Clean joint surfaces immediately before installation of gaskets, sealants, or caulking compounds. Remove dirt, insecure coatings, moisture, and other substrates which could interfere with seal of gasket or bond of sealant or caulking compound. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer.
- B. Roughen vitreous and glazed joint surfaces as recommended by sealant manufacturer.
- C. Prime or seal joint surfaces where indicated, and where recommended by sealant manufacturer. Confine primer/sealer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION:

- A. Comply with manufacturer's printed instructions except where more stringent requirements are shown or specified, and except where manufacturer's technical representative directs otherwise.
- B. Set joint filler units at depth or position in joint as indicated to coordinate with other work, including installation of bond breakers, backer rods and sealants. Do not leave voids or gaps between ends of joint filler units.
- C. Install sealant backer rod for liquid-applied sealants, except where shown to be omitted or recommended to be omitted by sealant manufacturer for application indicated.
- D. Install bond breaker tape where required by manufacturer's recommendations to ensure that liquid-applied sealants will perform as intended.
- E. Employ only proven installation techniques, which will ensure that sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.

- F. Install liquid-applied sealant to depths as recommended by sealant manufacturer but within the following general limitations, measured at center (thin) section of beads; (not applicable to sealants in lapped joints):
- G. For sidewalks, pavements and similar joints sealed with elastomeric sealants and subject to traffic and other abrasion and indentation exposures, fill joints to a depth equal to 75% of joint width, but neither more than 5/8" deep nor less than 3/8" deep.
- H. For normal moving joints sealed with elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but neither more than 1/2" deep nor less than 1/4" deep.
- I. For joints sealed with non-elastomeric sealants and caulking compounds, fill joints to a depth in range of 75% to 125% of joint width.
- J. Spillage: Do not allow sealants or compounds to overflow from confines of joints, or to spill onto adjoining work, or to migrate into voids of exposed finishes. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.
- K. Do not overheat or reheat hot-applied sealants; discard (do not use).
- L. Recess exposed edges of gaskets and exposed joint fillers slightly behind adjoining surfaces, unless otherwise shown, so that compressed units will not protrude from joints.
- M. Bond ends of gaskets together with adhesive or "weld" by other means as recommended by manufacturer to ensure continuous watertight and airtight performance. Miter-cut and bond ends at corners unless molded corner units are provided.
- N. Install fire-resistant foamed-in-place filler in openings where indicated, and at thicknesses indicated. Dam bottom of vertical openings and one side of horizontal openings with temporary containment forms or, where required to achieve fire-resistance ratings, provide permanent mineral composition board forms. On horizontal penetrations, provide partial face containment forms where required for foam placement. Allow installed fillers to cure 24 hours; remove temporary forms; trim ragged edges with sharp knife; inspect and fill voids with additional filler to form uniform thickness of filler.

3.4 CURE AND PROTECTION:

- A. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability. Advise Contractor of procedures required for cure and protection of joint sealers during construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at time of substantial completion. Cure and protect sealants in a manner which will minimize increases in modulus of elasticity and other accelerated aging effects. Replace or restore sealants which are damaged or deteriorated during construction period.

END OF SECTION 07 92 00

