



Invitation to Quote

Date: August 14, 2019

Project: Wayne Branch Library
Roof Replacement Project
198 South Girls School Road
Indianapolis, IN 46231

Invited Vendors:

- 3D Professional Contracting
- AAA Roofing
- Act Development
- Amos Exteriors
- Blackmore and Buckner Roofing
- Commercial Construction Solutions Inc
- Complete Construction Solutions LLC
- H&H Construction and Services LLC
- Heldman Exteriors
- Horning Roofing and Sheet Metal
- Indy Commercial Roofing Company
- J.A. Bonilla, Inc.
- JMH Roofing Co, Inc
- O&D Bonilla Framing LLC
- Smither Roofing
- Superior Roofing Services
- Supreme Remodeling Services, Inc
- The Carpenter's Son
- Vanzzini Roofing

I. Invitation:

This Invitation to Quote ("ITQ") is offered to known Vendors for a lump-sum quote for the project listed above ("Project").

Quotes will be received by The Indianapolis Public Library at the

Library Services Center
2450 North Meridian Street
Indianapolis, IN 46208
Until 11:00 a.m. local time
September 5, 2019

The received Quotes will be opened publically and read aloud at this time. Quotes received after this time will not be considered. Quotes may not be submitted by fax or e-mail.

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The Quote may be held by the Indianapolis Public Library ("IndyPL") for a period not to exceed sixty (60) days before awarding contract. IndyPL reserves the right to reject any or all Quotes, and the right to waive any irregularities in the process.

IndyPL shall award the Project to the lowest, responsible, and responsive Vendor pursuant to Indiana Code § 36-1-12-4.7.

The term Vendor ("Vendor") denotes those firms submitting a Quote in response to this ITQ. The term Contractor ("Contractor") is used to define the firm or firms selected to complete the Project described in this ITQ.

II. Attachments:

Attachment A	E-Verify Affidavit.
Attachment B	Draft Agreement A105 Owner–Contractor with modifications.
Attachment C	Drawings prepared by R&B Architects, dated August 12, 2019: Cover Sheet G1 Site Access Plan AD1 Roof Demolition Plan A1 Roof Plan A2 Roof Details A3 Exterior Elevations

NOTE: Due to file size, Attachment C Drawings will be emailed directly to Vendors upon request.

Attachment D	Technical Specifications prepared by R&B Architects, dated August 12, 2019: Section 012200 – Unit Prices Section 061000 – Rough Carpentry Section 061600 – Sheathing Section 070150.19 – Preparation for Reroofing Section 072100 – Building Insulation Section 073113 – Asphalt Shingles Section 076200 – Sheet Metal Flashing and Trim Section 079200 – Joint Sealants
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III. Project Schedule:

August 14, 2019	Invitation to Quote distributed to invited Vendors via email.
August 28, 2019	5:00 p.m. deadline for questions from invited Vendors.
August 30, 2019	Noon, IndyPL responses to questions distributed to invited Vendors.
September 5, 2019	Quotes due at the time and location noted above.
September 10, 2019	Present Quotes to Board Facilities Committee.
September 23, 2019	Board takes action to award contract.
September 24, 2019	Target date to issue Notice of Intent to Award Contract.

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October 11, 2019 Target date to Execute Agreement.
November 4, 2019 Target date for beginning work.
November 22, 2019 Target substantial completion date.

IV. Project Scope and General Description:

1. The project will be to remove and replace the existing asphalt shingles.
2. The color shall be selected from the manufacturer's standard line.
3. The existing gutters, soffit, fascia, and rake boards are to remain.
4. The existing building was re-roofed in 1999.
5. All new work shall meet all manufacturer's recommendations and requirements to achieve the specified manufacturer's warranty.
6. Vendor shall provide a 2-year labor and installation warranty.
7. Contractor shall take all measures necessary and prudent to ensure the facility remains weather-tight during the entire Project.
8. Provide sealant at all joints as required to by the manufacturer to achieve a weather-tight enclosure.

V. Notes:

1. Provide all materials, accessories, and equipment required for the Project.
2. Parking will be available for the Contractor's use.
3. On-site power and water will be available for the Contractor's use.
4. Contractor may not use the Project site public restrooms during regular library open service hours.
5. Remove all debris off the work site daily. Use of IndyPL's dumpster is not allowed. Space in the parking lot well be available for a Contractor provided dumpster.
6. Provide record documents for the new work.
7. The Project is to occur so as to not significantly disrupt Branch activities. The Contractor shall closely schedule the Project with Facilities and Branch staff.
8. The Contractor shall work closely with Branch and Facilities staff for access to the Project Site to ensure the site is always safe and secure for staff and patrons.
9. IndyPL, as a Municipal Corporation, is Indiana State Sales tax-exempt and will provide the tax exempt certificate and supporting documentation upon Notice of Intent to Award a Contract.
10. The Contractor shall be responsible for the security of all their equipment, supplies, and construction materials during the Project.
11. The Contractor is to provide all necessary protection for adjacent surfaces and materials.

VI. Questions and Site Visits:

1. To ensure consistency of the process, invited Vendors shall direct all questions concerning the Invitation to Quote via e-mail to Mike Coghlan at mcoghlan@indypl.org.
2. All questions shall be received by the deadline noted above. IndyPL responses will be shared with all invited Vendors via e-mail by the deadline noted above.

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3. The Project Site is available for Vendor visits and inspections prior to submitting a quote.

VII. Form of the Quote:

1. Submit on Company letterhead a Lump-Sum Quote for the Project.
2. Include in the Quote an acknowledgement of the receipt of any IndyPL issued addenda used in the preparation of the Quote.
3. Include unit prices for plywood sheet and roof insulation per the specifications.
4. List in the Quote the manufacturer of the asphalt shingles to be used in the performance of the Work.
5. Include in the Quote any comments on the attached draft AIA Document A105-2007 Owner – Contractor Agreement, as modified.
6. Include in the Quote a statement regarding the proposed Project Schedule.
7. Submit a notarized version of the E-Verify Affidavit.
8. Provide 1 original and 1 copy of the Quote for use by IndyPL.
9. Address the Quote to the attention of Mike Coghlan, Facilities Projects Manager.
10. Deliver the Quote by the time and at the location noted above.

VIII. Vendor Requirements:

1. The Contractor must agree to enroll in and participate in the E-Verify Program as required by Indiana Code 22-5-1.7-3 during the hiring process for all employees hired after the date of the Agreement. The Contractor must agree to require its subcontractors who may perform work under the Agreement to certify to the Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. The Contractor must agree to maintain this certification throughout the duration of the term of a contract with a subcontractor. IndyPL may terminate a resulting Agreement for default if the Contractor fails to cure a breach of these E-Verify provisions no later than thirty (30) days after being notified by IndyPL of such breach. As a condition to submitting a Quote and to entering into an Agreement, the Contractor must execute the E-Verify Affidavit, which shall be an exhibit to the Agreement. As part of the Quote, the Vendor shall execute the E-Verify Affidavit which is included as Attachment A.
2. By submission of a Quote, an invited Vendor certifies that:
 - a. The invited Vendor has not paid or agreed to pay any fee or commission, or any other item of value contingent on the award of a contract to any employee, official or current contracting consultant of IndyPL.
 - b. No person or selling agent has been employed or retained to solicit or secure the work upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee.
 - c. Pursuant to Indiana Code § 5-22-16.5-8(b), the invited Vendor is not engaged in any investment activities in Iran.

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3. IndyPL may, by written notice to the Vendor, terminate the right of the Vendor to proceed under the agreement upon one (1) calendar day notice, if it is found that gratuities in the form of entertainment, gifts or otherwise were offered or given by the Vendor, or any agency or representative of the Vendor, to any officer or employee of IndyPL with a view toward securing or amending, or the making of any determinations with respect to the performance of such contract; provided that the existence of facts upon which IndyPL makes such findings shall be an issue and may be reviewed in any court of law. In the event of such termination, IndyPL shall be entitled to pursue the same remedies against the Vendor as IndyPL could pursue in the event of default by the Vendor.
4. For breach or violation of this these certifications, IndyPL shall have the right to annul the contract without liability.
5. All materials submitted in response to this ITQ become the property of IndyPL and shall be subject to disclosure under the Indiana Public Records Act, IC 5-14-3 et seq. ("IPRA"). After the contract award, the entire Quote may be viewed and copied by any member of the public, including news agencies and competitors. Vendors claiming a statutory exception from disclosure under the IRPA of information included in its Quote must:
 - a. Place all documents they consider confidential (including the requisite number of copies) in a sealed envelope clearly marked "Confidential" with the Vendor Name, IndyPL Point of Contact Name, and the ITQ Title.
 - b. Indicate in the transmittal letter for the Quote that confidential information or materials are included in the submission along with a general description of the information for which confidential treatment is sought.
 - c. Indicate in the transmittal letter which statutory exception(s) provision of the IRPA applies to each listed confidential material item.
 - d. Provide a redacted version of the Quote section to properly identify (and black-out) those sections of the Quote for which Vendor claims an exception from disclosure under the IRPA.

IndyPL reserves the right to make determinations of confidentiality upon consultation with legal counsel. If IndyPL does not agree with the claim that the information designated is confidential under one of the cited disclosure exceptions to the IRPA, it may either discuss its interpretation of the allowable exceptions with the Vendor or reject the Quote. If agreement can be reached on the nature of the requested confidential materials, the Quote will be considered. If agreement cannot be reached, IndyPL will remove the Quote from consideration for award and return the entire "Confidential" package to the Vendor. The rest of the Quote and other supporting documentation will not be returned to Vendor and remain part of the ITQ file. IndyPL will not consider prices, fees, or wage rates to be confidential information. By submission of its Quote a Vendor acknowledges that IndyPL is required to make disclosures as required by law, and nothing herein shall obligate IndyPL to defend a Vendor

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- designation of its Quote or portions thereof as confidential and excepted from disclosure. IndyPL shall not be liable for disclosures required by law.
6. The Contractor shall secure and maintain insurance policies per the Draft Agreement included as Attachment B. A certificate of insurance indicating compliance with these requirements shall be submitted prior to commencing the Project.
 7. IndyPL is committed to providing an equal opportunity for participation of Minority, Women, or Veteran Owned Business ("XBE") firms in all IndyPL business. IndyPL extends to each individual, firm, vendor, supplier, Contractor and subcontractor an equal opportunity to compete for IndyPL business and strongly encourages voluntary utilization of entities to reflect both industry and community ethnic composition.
 8. It is the desire of IndyPL to measure participation of XBE firms in the procurement of goods and supplies, in the retention of professional services, and in the construction and renovation of facilities. Vendors, who meet the City of Indianapolis or State of Indiana criteria of XBE firms or similar requirements for out-of-state firms or business organizations, should indicate the appropriate certification and include a copy of such certification(s) in its Quote.
 9. Any Contractor in performing work under an Agreement resulting from this ITQ shall not discriminate against any worker, employee or applicant because of race, creed, color, religion, gender, national origin, age, disability or veteran status, nor otherwise commit an unfair employment practice. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are dealt with during employment, without regard to their race, creed, color, religion, gender, national origin, age, disability or veteran status.
 10. News releases pertaining to this ITQ or the Project shall not be made without written prior approval of IndyPL.
 11. The Contractor shall provide documentation to IndyPL evidencing all necessary licenses required to perform the work prior to the awarding of the contract.
 12. The Contractor shall secure all necessary permits required to perform the work prior to beginning the Project.
 13. The Contractor shall be required to participate in the IndyPL Electronic Fund Transfer ("EFT") invoice payment program for the electronic transfer of funds directly to the Contractor's designated banking account for payment of approved invoices.

ATTACHMENT A
E-Verify Affidavit
Wayne Branch Roof Replacement Project

Pursuant to Indiana Code 22-5-1.7-11, the Contractor entering into a contract with the Indianapolis-Marion County Public IndyPL is required to enroll in and verify the work eligibility status of all its newly hired employees through the E-Verify program. The Contractor is not required to verify the work eligibility status of all its newly hired employees through the E-Verify program if E-Verify no longer exists.

1. Contractor affirms that Contractor does not knowingly employ an unauthorized alien.
2. Contractor affirms under the penalties of perjury that it has enrolled and is participating in the E-Verify program. Contractor is not required to participate should the E-Verify program cease to exist.
3. Contractor agrees to provide documentation demonstrating that Contractor has enrolled and is participating in the E-Verify program.
4. Library may terminate for default if Contractor fails to cure a breach of this provision no later than thirty (30) days after being notified.

I affirm, under the penalties for perjury, that the foregoing representations are true.

(Vendor)

By: _____
(Written Signature)

(Printed Name)

(Title)

Important – Notary Signature and Seal Required on this Page.

STATE OF _____

Seal:

COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____ 20____.

My commission expires: _____

(Written Signature)

Residing in _____ County, State of _____.

DRAFT AIA® Document A105™ – 2007

Standard Form of Agreement Between Owner and Contractor for a Residential or Small Commercial Project

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Indianapolis-Marion County Public Library
2450 North Meridian Street
Indianapolis, Indiana 46208

and the Contractor:
(Name, legal status, address and other information)

«TBD »
« »
« »

for the following Project:
(Name, location and detailed description)

Wayne Branch Library Roof Replacement Project
198 South Girls School Road
Indianapolis, IN 46231

The Architect:
(Name, legal status, address and other information)
Not Applicable.

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

State or local law may impose requirements on contracts for home improvements. If this document will be used for Work on the Owner's residence, the Owner should consult local authorities or an attorney to verify requirements applicable to this Agreement.

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ARTICLE 1 THE CONTRACT DOCUMENTS

§ 1.1 The Contractor shall complete the Work described in the Contract Documents for the Project. The Contract Documents consist of

- .1 this Agreement signed by the Owner and Contractor;
- .2 ITQ issued by the Owner and dated [REDACTED], including all attachments;
- .3 the Addendum [REDACTED], dated [REDACTED];
- .4 Contractors Quote, including all attachments, dated [REDACTED]; and
- .5 written orders for changes in the Work issued after execution of this Agreement.

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

The number of calendar days available to the Contractor to substantially complete the Work is the Contract Time. The date of commencement of the Work shall be the date of this Agreement unless otherwise indicated below. The Contractor shall substantially complete the Work, no later than [REDACTED], subject to adjustment as provided in Article 10 and Article 11.

ARTICLE 3 CONTRACT SUM

§ 3.1 Subject to additions and deductions in accordance with Article 10, the Contract Sum, including Alternates, if any, is: [REDACTED]

(\$)

§ 3.2 For purposes of payment, the Contract Sum includes the following values related to portions of the Work:

TBD

§ 3.3 Unit prices, if any, are as follows: ??????????.

§ 3.4 Allowances included in the Contract Sum, if any, are as follows: ??????????.

§ 3.5 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and hereby accepted by the Owner: TBD

§ 3.6 The Contract Sum shall include all items and services necessary for the proper execution and completion of the Work.

ARTICLE 4 PAYMENT

§ 4.1 Based on Contractor's Applications for Payment approved by Owner, the Owner shall pay the Contractor, in accordance with Article 12, as follows:

§ 4.1.1 TBD

§ 4.1.3 Owner shall pay the remaining balance of the Contract Sum after final completion and acceptance of the Work.

§ 4.1.4 Provided that an Application for Payment is received by Owner not later than the 1st day of a month, the Owner shall make payment of the certified amount, less retainage equal to zero percent (0%) of said certified amount, to the Contractor not later than the 28th day of the same month. If an Application for Payment is received by Owner after the application date fixed above, payment, less zero percent (0%) retainage shall be made by the Owner not later than Thirty (30) days after Owner approves the Application for Payment.

ARTICLE 5 INSURANCE

§ 5.1 The Contractor shall provide Contractor's general liability and other insurance as follows:
Contractor shall secure, pay for and maintain the following insurance policies in full force and effect throughout the term of the Agreement, which policies shall protect against any loss or claim arising from or relating to this Agreement, Contractor's activities or presence at the Facilities, and any negligent act or omission of Contractor or its employees and/or agents or subcontractors in connection with the Services provided under this Agreement, and shall cover the contractual indemnification liability assumed by Contractor pursuant to this Agreement:

(A) Commercial General Liability Insurance with limits of not less than Two Million Dollars (\$2,000,000) per occurrence for bodily injury and property damage, Two Million Dollars (\$2,000,000) per occurrence for products and completed operations liability, Two Million Dollars (\$2,000,000) fire damage, and Two Million Dollars (\$2,000,000) general aggregate. The policy shall be written on an occurrence basis. The policy shall also not have exclusions for any of Contractor's activities at the Facilities. Any deductible shall be at Contractor's cost;

(B) Workers' Compensation insurance, affording coverage in excess of the applicable state laws covering all of Contractor's employees, and Employer's Liability coverage in accordance with the applicable state laws but no less than One Million Dollars (\$1,000,000);

(C) Property Insurance coverage for all tools, materials, equipment and other items owned, borrowed or leased by Contractor shall be Contractor's responsibility. Owner shall not be responsible for such tools, materials, equipment and other items owned, borrowed or leased by Contractor. Owner shall not be responsible for equipment and materials to be installed at the Facilities by Contractor until such time that the equipment or materials are installed by Contractor and such installation is deemed substantially

complete;

(D) Automobile Liability insurance with a limit of not less than Two Million Dollars (\$2,000,000) combined single limit and covering for all owned, non-owned and hired vehicles and insuring, at a minimum, against loss, damage or liability for bodily injury, death and property damage;

(E) Umbrella Liability insurance at not less than Five Million Dollars (\$5,000,000) limit for each occurrence providing for excess coverage over the limits and coverage's prescribed above in clauses (A), (B) and (D) above, which such policy shall be written on an occurrence basis; and

(F) All insurance policies addressed in clauses (A), (C), (D) and (E) above shall be endorsed to name the following as additional insureds:

Indianapolis-Marion County Public Library and its trustees, directors, officers, employees, volunteers, representatives, agents, contractors, licensees and successors.

All insurance policies required hereunder (i) shall be endorsed to state that the insurance is primary and not contributive to any other insurance available to Owner, (ii) shall provide for a waiver of rights of subrogation against the additional insured's on the part of the insurance carriers, (iii) shall be written with insurance companies licensed to do business in the State of Indiana and rated no lower than A- in the most current edition of A.M. Best's Property-Casualty Key Rating Guide, and (iv) shall provide for no less than thirty (30) days advance written notice to Owner prior to cancellation, non-renewal or material modification.

Contractor shall deliver to Owner, prior to providing the Services under this Agreement, Certificates of Insurance confirming the existence or issuance of all insurance policies required to be carried hereunder ("Certificates of Insurance"). If any such policy is not obtained, or if all Certificates of Insurance are not delivered to Owner by the aforementioned time, or if any of such policies are canceled, Owner shall have the right to terminate this Agreement immediately and/or deny Contractor access to the Facilities.

These insurance provisions are minimum requirements and shall not relieve Contractor of its indemnity, defense and hold harmless obligations.

If Contractor's insurance contains a deductible (or self-insured retention amount), Contractor shall disclose the amount, and be responsible for payment of any claim equal to or less than the deductible (or self-insured retention amount). Owner reserves the right to reject insurance policies with a deductible (or self-insured retention amount) in excess of \$15,000 for which adequate financial strength of the Contractor cannot be demonstrated to the satisfaction of Owner.

§ 5.2 The Owner shall provide property insurance to cover the value of the Owner's property, including any Work provided under this Agreement. The Contractor is entitled to receive an increase in the Contract Sum equal to the insurance proceeds related to a loss for damage to the Work covered by the Owner's property insurance.

§ 5.3 The Contractor shall obtain an endorsement to its general liability insurance policy to cover the Contractor's obligations under Section 8.12.

§ 5.4 Each party shall provide certificates of insurance showing their respective coverages prior to commencement of the Work.

§ 5.5 Unless specifically precluded by the Owner's property insurance policy, the Owner and Contractor waive all rights against each other and any of their subcontractors, suppliers, agents and employees, each of the other, for damages caused by fire or other causes of loss to the extent covered by property insurance or other insurance applicable to the Work.

§ 5.6 These insurance requirements are intended to satisfy the minimum insurance requirements required by Ind. Code § 5-16-13-10.

ARTICLE 6 GENERAL PROVISIONS

§ 6.1 THE CONTRACT

The Contract represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a written modification in accordance with Article 10.

§ 6.2 THE WORK

The term "Work" means the construction and services required by the Contract Documents, and includes all other labor, materials, equipment and services provided, or to be provided, by the Contractor to fulfill the Contractor's obligations.

§ 6.3 INTENT

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all.

ARTICLE 7 OWNER

§ 7.1 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 7.1.1 If requested by the Contractor in writing prior to Contractor commencing the Work required hereunder, and the Contractor has no other reasonably practicable way of obtaining the information, the Owner shall furnish surveys reasonably necessary for Contractor to complete the Work required by the Contract Documents, as well as a legal description of the site. Contractor shall be liable to Owner for any and all costs incurred by Owner in providing such surveys and information.

§ 7.1.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, the Owner shall obtain and pay for other necessary approvals, easements, assessments and charges.

§ 7.2 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work which is not in accordance with the Contract Documents, the Owner may direct the Contractor in writing to stop the Work until the correction is made.

§ 7.3 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies, correct such deficiencies. In such case, the Contract Sum shall be adjusted to deduct the cost of correction from payments due the Contractor.

§ 7.4 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 7.4.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project.

§ 7.4.2 The Contractor shall coordinate and cooperate with the Owner's own forces and separate contractors employed by the Owner.

§ 7.4.3 Costs caused by delays or by improperly timed activities or defective construction which result from the action or inaction of Contractor shall be borne by the Contractor. The Owner shall not be liable to the Contractor and/or any Subcontractor for claims or damages of any nature caused by or arising out of delays. Contractor's sole remedy against Owner for delays shall be the allowance of additional time for completion of the Work.

§ 7.5 OWNER'S DETERMINATION THAT CONTRACTOR IS NOT RESPONSIBLE

If Owner makes a determination that Contractor or any lower tier contractor has violated §§ 8.3, 8.4, 8.13, or 8.14 of this agreement, pursuant to Ind. Code § 5-16-13-15 (b)(2) the Owner shall find that the Contractor is not responsible and shall determine for how long a period the Contractor was not responsible. In determining the length of time the Contractor was not responsible, the Owner shall take into consideration the severity of the violation.

ARTICLE 8 CONTRACTOR

§ 8.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 8.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 8.1.2 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner. Before commencing activities, the Contractor shall (1) take field measurements and verify field conditions; (2) carefully compare this and other information known to the Contractor with the Contract Documents; and (3) promptly report errors, inconsistencies or omissions discovered to the Owner.

§ 8.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's information a Contractor's construction schedule for the Work.

§ 8.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 8.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the Work.

§ 8.3.2 The Contractor represents and confirms it is a Tier 1 Contractor as defined by Ind. Code § 5-16-13-4 (1). The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner the names of subcontractors (defined as Tier 2 contractors, Tier 3 contractors, or Lower tier contractors accordingly as defined by Ind. Code § 5-16-13-4 (2)-(4)) or suppliers for each portion of the Work. The Contractor shall not contract with any Tier 2 contractor, Tier 3 contractor, or Lower tier contractor or supplier to whom the Owner has made a timely and reasonable objection.

§ 8.3.3 Pursuant to Ind. Code § 5-16-13-9 the Contractor shall contribute to the project at least 15% of the total contract price as determined at the time of the award of contract. The Contractor may contribute in work performed by the Contractor's employees, materials supplied by the Contractor, services supplied by the Contractor's employees, or any combination of the above-mentioned contributions.

§ 8.4 LABOR AND MATERIALS; EMPLOYMENT REQUIREMENTS

§ 8.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work.

§ 8.4.2 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 8.4.3 Pursuant to Ind. Code § 5-16-13-11(1) The Contractor affirms under penalties of perjury that Contractor does not knowingly employ an unauthorized alien.

The Contractor shall enroll in and verify the work eligibility status of all his/her/its newly hired employees through the E-Verify program as defined in IC 22-5-1.7-11. Contractor is not required to verify the work eligibility status of all newly hired employees of Contractor through the E-Verify program if the E-Verify program no longer exists. Additionally, the Contractor is not required to participate if Contractor is self-employed and does not employ any employees.

Contractor shall not knowingly employ or contract with an unauthorized alien, as that term is defined in 8 U.S.C. § 1324a(h)(3). Contractor shall not retain an employee or contract with a person that Contractor subsequently learns is an unauthorized alien.

Contractor shall require his/her/its subcontractors, who perform work under this contract, to certify to Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. Contractor agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor.

Prior to commencement of Work, Contractor shall provide Owner the E-Verify case verification number for each individual required to be verified pursuant to Ind. Code § 22-5-1.7.

Owner may terminate the Agreement for default if Contractor fails to cure a breach of this Section 8.4.3 no later than thirty (30) days after being notified by Owner of such breach.

§ 8.4.4 Contractor shall not pay cash to any individual employed by the Contractor for work done by the individual on the Work.

§ 8.4.5 Contractor shall be in compliance with and shall require any lower tier contractor to comply with the Fair Labor Standards Act of 1938, as amended.

§ 8.4.6 The Contractor shall and shall require any lower tier contractor to keep the payroll and related records ("payroll records") of the Contractor and any other tier of contractor for a period of three years after completion of the Work. The payroll records shall be available for inspection by the Indiana Department of Workforce Development at any time during this retention period.

§ 8.4.7 Contractor shall and shall require any lower tier contractors to be in compliance with all laws and regulations for workers compensation, workers occupational disease compensation and unemployment compensation as required by Ind. Code § 5-16-13-11 (4) and (5).

§ 8.4.8 Contractor shall and shall require any lower tier contractors to be in compliance with all laws and regulations for drug testing, including without limitation, Ind. Code § 4-13-18-1 through Ind. Code § 4-13-18-7, as required by Ind. Code § 5-16-13-11 (6).

§ 8.4.9 The Contractor shall and shall require any Tier 2 contractors to comply with the provisions of Ind. Code § 5-16-13-12 regarding access by employees to training or apprenticeship programs.

§ 8.5 WARRANTY

The Contractor warrants to the Owner that: (1) materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents; (2) the Work will be free from defects not inherent in the quality required or permitted; (3) Contractor shall comply with all requirements, specifications, directives and material handling and installation requirements of any and all material suppliers providing materials, systems and/or components for use in the Work, including all technical specifications, product guides, installation instructions and the like; (4) for a minimum of **two years** from the date of final completion and acceptance by the Owner of the Work, all labor and material shall be free of defects in workmanship and installation; (5) for a minimum of two years (or longer as provided by the applicable manufacturers) the materials, components and /or systems included in the Work shall be free from any and all defects, including defects in the installed product for manufacturing; and (6) the Work will conform to the requirements of the Contract Documents.

§ 8.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes that are legally required when the Contract is executed.

§ 8.7 PERMITS, FEES AND NOTICES

§ 8.7.1 The Contractor shall obtain all construction/improvement permits and other permits, approvals, licenses and inspections necessary for proper execution and completion of the Work. Owner shall pay for any and all filing fees associated therewith.

§ 8.7.2 The Contractor shall comply with and give notices required by agencies having jurisdiction over the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs. The Contractor shall promptly notify Owner in writing of any known inconsistencies in the Contract Documents with such governmental laws, rules and regulations.

§ 8.8 SUBMITTALS

The Contractor shall promptly review, approve in writing and submit to Owner Shop Drawings, Product Data,

Samples and similar submittals required by the Contract Documents. Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 8.9 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, the Contract Documents and the Owner.

§ 8.10 CUTTING AND PATCHING

The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

§ 8.11 CLEANING UP

The Contractor shall keep the premises and surrounding area free from accumulation of debris and trash related to the Work. At the completion of the Work, the Contractor shall remove its tools, construction equipment, machinery and surplus material; and shall properly dispose of waste materials.

§ 8.12 INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Owner's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

§ 8.13 MISCLASSIFICATION

The Contractor shall not misclassify workers employed by the Contractor. If Owner suspects misclassification of one or more workers employed by Contractor or by any lower tier contractor, the Owner may request, pursuant to Ind. Code § 5-16-13-14, that the Indiana Department of Workforce Development investigate the suspected worker misclassification. The Indiana Department of Workforce Development may refer the matter to the appropriate agency or official upon a finding that worker misclassification has occurred based on a review of information and/or records submitted to the Department by the Owner.

§ 8.14 STATUTORY VIOLATIONS

§ 8.14.1 The Owner is required to report pursuant to Ind. Code § 5-16-13-15 (b) (1) the following suspected statutory violations by the Contractor or any lower tier contractor to the appropriate agency: 1) Suspected violations by the Contractor of the E-Verify provisions of this contract shall be reported to the Indiana Department of Labor, 2) Suspected violations of the state minimum wage law or the Fair Labor Standards Act of 1938, as amended, shall be reported to the Indiana Department of Labor, 3) Suspected violations by the Contractor or lower tier contractors of the worker's compensation or occupational diseases statutes shall be reported to the Worker's Compensation Board of Indiana; and 4) Suspected violations by the Contractor or lower tier contractors of the unemployment insurance statutes shall be reported to the Indiana Department of Workforce Development.

§ 8.14.2 For violations other than those listed in **§ 8.14.1** above, the Owner shall notify the Contractor of any suspected violations or breaches of state law as required by Ind. Code § 5-16-13-15 (b)(2). The notification shall be signed by the chief executive officer of the Owner and shall be sent by a method that enables the Owner to verify receipt of the notice. The Contractor shall have 30 days after notice is received to remedy the violation or breach. The Contractor may continue work during the 30-day remedy period.

ARTICLE 9 ARCHITECT NOT APPLICABLE.

ARTICLE 10 CHANGES IN THE WORK

§ 10.1 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly in writing.

§ 10.2 The Owner will have authority to order minor changes in the Work not involving changes in the Contract Sum or the Contract Time and not inconsistent with the intent of the Contract Documents. Such orders shall be binding on the Owner and Contractor. The Contractor shall carry out such orders promptly.

ARTICLE 11 TIME

§ 11.1 Time limits stated in the Contract Documents are of the essence of the Contract.

§ 11.2 If the Contractor is delayed at any time in progress of the Work by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be subject to equitable adjustment.

ARTICLE 12 PAYMENTS AND COMPLETION

§ 12.1 CONTRACT SUM

The Contract Sum stated in the Agreement, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 12.2 APPLICATIONS FOR PAYMENT

§ 12.2.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Owner an itemized Application for Payment for Work completed in accordance with the values, if any, stated in the Agreement. Such Application shall be supported by data substantiating the Contractor's right to payment as the Owner may reasonably require. Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 12.2.2 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and clear of liens, claims, security interests or other encumbrances adverse to the Owner's interests, and Contractor shall, as a condition precedent to Owner's obligation to make any payment to Contractor, tender to Owner written and signed, verified partial waivers of all liens and claims with each application for payment, executed by Contractor and Contractor's subcontractors and material suppliers on the form provided by Owner.

§ 12.3 CERTIFICATES FOR PAYMENT

The Owner will, within seven days after receipt of the Contractor's Application for Payment, either issue a Certificate for Payment for such amount as Owner determines is properly due, or notify the Contractor of the Owner's reasons for withholding approval in whole or in part.

§ 12.4 PROGRESS PAYMENTS

§ 12.4.1 After Owner has issued a Certificate for Payment, payment shall be made in the manner provided in the Contract Documents; provided, however, that Owner may tender payment to Contractor without issuing a Certificate for Payment and such tender of payment shall not eliminate Contractor's obligation to submit Applications for Payment for future payment requests as provided in paragraphs 12.2.1 and 12.2.2.

§ 12.4.2 The Contractor shall promptly pay each subcontractor and supplier.

§ 12.4.3 The Owner shall not have responsibility for payments to a subcontractor or supplier.

§ 12.4.4 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the requirements of the Contract Documents.

§ 12.5 SUBSTANTIAL COMPLETION

§ 12.5.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

§ 12.5.2 When the Work or designated portion thereof is substantially complete, the Owner will make an inspection to determine whether the Work is substantially complete. When the Owner determines that the Work is substantially complete it shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion

of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 12.6 FINAL COMPLETION AND FINAL PAYMENT

§ 12.6.1 Upon receipt of a final Application for Payment, Owner will inspect the Work. When the Owner finds the Work acceptable and the Contract fully performed, it will promptly issue a final Certificate for Payment.

§ 12.6.2 Final payment, including release and payment of all retainage as provided in Article 4 above, shall not become due until the Contractor submits to the Owner releases and waivers of liens, and data establishing payment or satisfaction of obligations, such as receipts, claims, security interests or encumbrances arising out of the Contract.

§ 12.6.3 Acceptance of final payment by the Contractor, a subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 13 PROTECTION OF PERSONS AND PROPERTY

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs, including all those required by law in connection with performance of the Contract. The Contractor shall take reasonable precautions to prevent damage, injury or loss to employees on the Work, the Work and materials and equipment to be incorporated therein, and other property at the site or adjacent thereto. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, or by anyone for whose acts the Contractor may be liable.

ARTICLE 14 CORRECTION OF WORK

§ 14.1 The Contractor shall promptly correct Work rejected by Owner as failing to conform to the requirements of the Contract Documents. The Contractor shall bear the cost of correcting such rejected Work, including the costs of uncovering, replacement and additional testing.

§ 14.2 In addition to the Contractor's other obligations including warranties under the Contract, the Contractor shall, for a period of one year after Substantial Completion, correct work not conforming to the requirements of the Contract Documents.

§ 14.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 7.3.

ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 ASSIGNMENT OF CONTRACT

Neither party to the Contract shall assign the Contract as a whole without written consent of the other.

§ 15.2 TESTS AND INSPECTIONS

§ 15.2.1 At the appropriate times, the Contractor shall arrange and bear cost of tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities.

§ 15.2.2 If the Owner requires additional testing, the Contractor shall perform those tests.

§ 15.3 GOVERNING LAW

The Contract shall be governed by the law of the State of Indiana.

ARTICLE 16 TERMINATION OF THE CONTRACT

§ 16.1 TERMINATION BY THE CONTRACTOR

If the Owner, without justification, fails to make payment as provided in Section 12.4.1, the Contractor may, upon thirty (30) days' written notice to the Owner, terminate the Contract and recover from the Owner payment for Work executed through the date of such termination.

§ 16.2 TERMINATION BY THE OWNER FOR CAUSE

§ 16.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to subcontractors for materials or labor in accordance with the respective

- agreements between the Contractor and the subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 is otherwise guilty of substantial breach of a provision of the Contract Documents.

§ 16.2.2 When any of the above reasons exist, the Owner, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may

- .1 take possession of the site and of all materials thereon owned by the Contractor, and
- .2 finish the Work by whatever reasonable method the Owner may deem expedient.

§ 16.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 16.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 16.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract.

§ 16.2.5 Nothing contained in this Agreement shall limit in any manner any and all rights or remedies otherwise available to Owner by reason of a default by Contractor under this Agreement, including, without limitation, the right to seek full reimbursement from Contractor for all costs and expenses incurred or to be incurred by Owner by reason of Contractor's default hereunder and which Owner would not have otherwise incurred if Contractor had not defaulted hereunder. Contractor shall not under any circumstances be compensated for lost anticipated profits or costs resulting from the termination.

§ 16.3 TERMINATION BY THE OWNER FOR CONVENIENCE

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed through the date of such termination.

ARTICLE 17 OTHER TERMS AND CONDITIONS

§ 17.1 **Equal Opportunity.** The Contractor and the Contractor's Subcontractors shall not discriminate against an employee or applicant for employment because of race, religion, color, sex or national origin. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

§ 17.2 **Investment Verification Requirements Of Ind. Code § 5-22-16.5-13.** Pursuant to Ind. Code § 5-22-16.5-13(b), Contractor certifies that Contractor is not engaged in any investment activities in Iran.

§ 17.3 **Records.** Contractor shall maintain complete and accurate records of all documents associated with providing the Services under this Agreement. All such records shall be available for inspection and audit by Owner, its designee, or the Indiana State Board of Accounts. Failure to maintain accurate records and valid licenses, registrations, certifications, or insurance shall constitute breach of this Agreement and may result in termination of the Agreement.

§ 17.4 **Laws, Rules, and Regulations.** In performing the Work, Contractor warrants that it has knowledge of, understands, and shall comply with all applicable federal, state, and local laws and regulations, including without limitation, those laws and regulations relating to public works, environment, health, safety, and welfare, discrimination in employment, conflicts of interest, and accounting records and requirements. SHOULD ANY APPLICABLE LAW OR REGULATION CHANGE DURING THE TERM OF THIS AGREEMENT, CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE VERSION OF SUCH LAW OR REGULATION IN FORCE AT THE TIME THE SERVICES ARE PROVIDED UNDER THIS AGREEMENT.

§ 17.5 **Permits and Licenses.** Contractor and any of its approved sub-contractors shall obtain and keep in effect all permits, licenses, registrations, insurance certificates, and other certificates or approvals required for every aspect of the

Work performed under this Agreement. At the request of Owner, Contractor shall provide Owner with copies of all licenses, permits, registrations, insurance certificates, and other certificates and approvals related to performing the Work described under this Agreement. Contractor and any of its employees and subcontractors will comply with all applicable licensing standards, certification standards, accrediting standards and any other laws or regulations governing the Work to be provided by Contractor pursuant to this Agreement. Owner shall not be required to reimburse Contractor for any services performed when Contractor or its employees, contractors or subcontractors are not in compliance with such applicable standards, laws or regulations. Contractor shall give Owner immediate verbal and written notice of any revocation or cancellation of any required license, permit, registration, and insurance certificate or approval. If the Contractor is a foreign (out-of-state) entity, it shall be required to furnish a certificate from the Secretary of State of Indiana showing that the entity is registered and authorized to transact business in the State of Indiana.

§17.6 Records; Audit. Contractor shall maintain books, records, documents, and other evidence directly pertinent to performance of the Work under this Agreement in accordance with generally accepted accounting principles and practices consistently applied. Contractor shall also maintain the financial information and data used by Contractor in the submission or preparation of any cost submission, statement or summary submitted to Owner or any funding agency. Owner shall, until the expiration of three (3) years after final payment under this Agreement, have access to and the right to examine, inspect, audit, and copy directly pertinent books, documents, papers and records of Contractor involving any transaction related to this Agreement. The periods of access and examination as described herein shall continue until any disputes, claims, or litigation arising out of the performance of this Agreement has been resolved.

§17.7 Non-Appropriation. Notwithstanding any other provision of this Agreement, if funds for the continued fulfillment of this Agreement by Owner are at any time insufficient or not forthcoming through failure of any entity to appropriate funds or otherwise, then Owner shall have the right to terminate this Agreement without penalty by giving written notice documenting the lack of funding.

§ 17.8 Right to Direct Suspension of Work. Owner may, at any time and for any reason, direct Contractor to delay or suspend the Work under this Agreement for a period of time. Such direction shall specify the period during which the Work is to be stopped. If Owner directs Contractor to delay or suspend the Work for a reason other than necessity arising by reason of any act or omission of Contractor or Contractors subcontractors or material suppliers, or any of their respective agents or employees, Contractor shall be entitled only to payment of that portion of total compensation that therefore has not been paid to Contractor to the date of such suspension on account of the Work actually and satisfactorily performed by it prior to such delay or suspension. Contractor shall resume the Work upon the date specified in such direction or upon such other date as Owner may thereafter specify upon reasonable notice to Contractor.

§ 17.9 Limitation of Liability.

§ 17.9.1 Owner shall not, under any circumstances, be liable for any damages (whether foreseen, unforeseen, actual, consequential, or otherwise) suffered by the Contractor, its agents, or subcontractors (or anyone else for whom the Contractor may be liable) arising from or in connection with any injury or damage suffered while on or around the specific project site or any portion thereof.

§ 17.9.2 Notwithstanding anything to the contrary contained elsewhere in this Agreement, in no event shall the Contractor or any subcontractors or material suppliers claim or receive any consequential or other special damages, or lost profits on account of any claim submitted in connection with this Agreement, including, without limitation, expenses arising from Owner's performance or nonperformance of the terms of this Agreement, or otherwise, or claim damages for delay for any reason, for which the exclusive and sole remedy shall be an extension of the time for completion of the services, if such is warranted and permitted by Owner.

§ 17.10 Mechanics Liens. Contractor will pay when due all claims for services, material or labor incurred at Contractor's request in the performance of this Contract. To the fullest extent permitted by law, Contractor will indemnify, defend and hold harmless owner and the Project from and against any and all mechanics' liens or stop notices of any kind or character whatsoever that may be recorded, filed or served with respect to the Project by Contractor or Contractor's Subcontractors or material suppliers arising out of or in any manner connected with the performance of this Contract or any subcontract made pursuant to or in connection with the performance of this Contract. Contractor will, at its own expense, defend any and all actions based upon such mechanics' liens or stop notices and will pay all charges of attorneys and all costs and other expenses arising therefrom. If Contractor fails to defend any such action to Owner is a party, Owner may defend itself with counsel of its choice, and Contractor will indemnify Owner from and against all

costs and fees incurred by Owner in such action. If any such lien or stop notice is recorded or served with respect to the Project or Contractor's Subcontractors or material suppliers arising out of or in any manner connected with the performance of this Contract, Contractor will, at its sole cost and expense, immediately record or file, or cause to be recorded or filed, in the office of the appropriate public official in which such lien or stop notice was recorded, or with person(s) on whom such notice was served, a bond executed by a good and sufficient surety, and approved by Owner, in a sum equal to two (2) times the amount of such lien or stop notice, which bond will guarantee the payment of any amounts that Contractor's subcontractors or material suppliers may recover on the lien or stop notice together with any attorneys' fees and costs of suit in the action, if any, that such Subcontractors or material suppliers may recover therein.

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*

M. Jacqueline Nytes ,Chief Executive Officer
(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

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. Section includes administrative and procedural requirements governing unit prices.
- B. Related Sections:

- 1. Bid Form
- 2.

1.3 DEFINITIONS

- A. Unit price is an amount proposed by the Bidder, stated on the Bid Form, a price per unit of measurement for materials, equipment, or services added to or deducted from the Contract Sum by appropriate modification, if the estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.
- E. Unit Prices apply only to changes in the Work requested through a Construction Change Order or Change Directive and not for work to be included in the Base Bid or alternates.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price 1: Roof Sheathing Replacement.

1. Description: Remove and replace one sheet of roof sheathing.
2. **Unit of Measure: 4' x 8' (four feet by eight feet)**

B. Unit Price 2: Thermal Roof Insulation Replacement.

1. Description: Remove and replace thermal roof insulation.
2. **Unit of Measure: 4' x 8' (four feet by eight feet)**

END OF SECTION 01 22 00

SECTION 06 10 00 – ROUGH CARPENTRY

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. The extent of rough carpentry is indicated on the Drawings.
- B. Related Sections include the following:
 - 1. Wood blocking & nailers.
 - 2. Roof deck.

1.3 DEFINITIONS

1.4 SUBMITTALS

- A. Product Data: For each type of process & factory-fabricated product. Indicate component materials & dimensions & include construction & application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer & certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained & chemical treatment manufacturer's written instructions for handling, storing, installing & finishing treated material.
 - 2. Include data for fire-retardant treatment from chemical treatment manufacturer & certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials, both before & after exposure to elevated temperatures when tested according to ASTM D 5516 & ASTM D 5664.
- B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species & grade selected for each use & design values approved by the American Lumber Standards Committee Board of Review.

1.5 DELIVERY, STORAGE & HANDLING

- A. Stack lumber, plywood & other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks & under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. All wood shall comply with the requirement of the 1991 Edition of the National Design Specification for Wood Construction including the 1991 Supplement.
- B. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.
 - 4. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.
- C. Wood Structural Panels:
 - 1. Plywood: Either DOC PS 1 or DOC PS 2, unless otherwise indicated.
 - 2. Thickness: As needed to comply with requirements specified but not less than thickness indicated.
 - 3. Comply with "Code Plus" provisions in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial."
 - 4. Factory mark panels according to indicated standard.

2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, provide materials that comply with performance requirements in AWPAC20 (lumber) & AWPAC27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing & inspecting agency acceptable to authorities having jurisdiction.
 - 1. Use treatment for which chemical manufacturer publishes physical properties of treated wood after exposure to elevated temperatures, when tested by a qualified independent testing agency according to ASTM D 5664, for lumber & ASTM D 5516, for plywood.
 - 2. Use treatment that does not promote corrosion of metal fasteners.
 - 3. Use Interior Type A High Temperature (HT), unless otherwise indicated.
- B. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
- C. Application: Fire treat plywood backing panels & elsewhere as indicated on Drawings

2.3 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Cants.
 - 3. Nailers.

- B. For items of dimension lumber size, provide Standard, Stud, or No. 3 grade lumber with 19 percent maximum moisture content & the following species:
 - 1. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.

2.4 FASTENERS

- A. General: Provide fasteners of size & type indicated that comply with requirements specified in this Article for material & manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads & Staples: ASTM F 1667.
- C. Power-Driven Fasteners: CABO NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads & reamer wings, length as recommended by screw manufacturer for material being fastened.
- F. Lag Bolts: ASME B18.2.1.
- G. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts & flat washers where indicated.
- H. Expansion Anchors: Anchor bolt & sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies & equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing & inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Stainless steel with bolts & nuts complying with ASTM F 593 & ASTM F 594, Alloy Group 1 or 2.

2.5 METAL FRAMING ANCHORS

- A. General: Provide framing anchors made from metal indicated, of structural capacity, type & size indicated.
- B. Hold-Downs: Brackets for bolting to wall studs & securing to foundation walls with anchor bolts or to other hold-downs with threaded rods & designed with first of two bolts placed seven bolt diameters from reinforced base.

2.6 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch (25-mm) nominal thickness, compressible to 1/32-inch (0.8-mm) selected from manufacturer's standard widths to suit width of sill members indicated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut & fitted. Fit rough carpentry to other construction; scribe & cope as needed for accurate fit. Locate nailers, blocking & similar supports to comply with requirements for attaching other construction.
- B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Apply field treatment complying with AWPAC M4 to cut surfaces of preservative-treated lumber & plywood.
- D. Securely attach rough carpentry work to substrate by anchoring & fastening as indicated, complying with the following:
 - 1. CABO NER-272 for power-driven fasteners.
 - 2. Published requirements of metal framing anchor manufacturer.
 - 3. Table 602.3(1), "Fastener Schedule for Structural Members," and Table 602.3(2), "Alternate Attachments," in the International One- and Two-Family Dwelling Code.
- E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; pre-drill as required.

3.2 WOOD BLOCKING & NAILER INSTALLATION

- A. Install where indicated & where required for attaching other Work. Form to shapes indicated & cut as required for true line & level of attached work. Coordinate locations with other Work involved.
- B. Attach items to substrates to support applied loading. Recess bolts & nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

END OF SECTION 06 10 00

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Roof sheathing.

1.2 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements.
- B. Research/Evaluation Reports: For the following:
 - 1. Fire-retardant-treated plywood.

1.3 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For assemblies with fire-resistance ratings, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.
- B. Forest Certification: For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship":
 - 1. Plywood.
 - 2. Oriented strand board.
 - 3. Particleboard underlayment.
 - 4. Hardboard underlayment.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Stack plywood and other panels flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 FIRE-RETARDANT-TREATED PLYWOOD

- A. General: Comply with performance requirements in AWP C27.
 - 1. Use Exterior type for exterior locations and where indicated.
 - 2. Use Interior Type A, High Temperature (HT) for roof sheathing and where indicated.
 - 3. Use Interior Type A, unless otherwise indicated.
- B. Kiln-dry material after treatment to a maximum moisture content of 15 percent.
- C. Identify fire-retardant-treated plywood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
- D. Application: Treat all plywood, unless otherwise indicated.

2.2 ROOF SHEATHING

- A. Plywood Roof Sheathing: Exposure 1, Structural I sheathing.
- B. Oriented-Strand-Board Roof Sheathing: Exposure 1, Structural I sheathing.
- C. Thickness: 5/8"

2.3 FASTENERS

- A. General: Provide fasteners of size and type indicated.
 - 1. For wall and roof sheathing panels, provide fasteners with corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Securely attach to substrate by fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."
 - 3. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in ICBO's "Uniform Building Code."
 - 4. Table 2305.2, "Fastening Schedule," in BOCA's "BOCA National Building Code."
 - 5. Table 2306.1, "Fastening Schedule," in SBCCI's "Standard Building Code."

6. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's "International Residential Code for One- and Two-Family Dwellings."
 7. Table 602.3(1), "Fastener Schedule for Structural Members," and Table 602.3(2), "Alternate Attachments," in ICC's "International One- and Two-Family Dwelling Code."
- B. Coordinate sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that exclude exterior moisture.
- C. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

3.2 WOOD STRUCTURAL PANEL INSTALLATION

- A. General: Comply with applicable recommendations in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial."
1. Comply with "Code Plus" installation provisions in guide referenced in paragraph above.
- B. Fastening Methods: Fasten panels as indicated below:
1. Wall and Roof Sheathing:
 - a. **Nail** to wood framing.
 - b. Screw to cold-formed metal framing.

END OF SECTION 061600

SECTION 070150.19 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Roof tear-off.
2. Partial roof tear-off.
3. Roof re-cover preparation.
4. Removal of base flashings.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Temporary Roofing: Include Product Data and description of temporary roofing system. If temporary roof will remain in place, submit surface preparation requirements needed to receive permanent roof, and submit a letter from roofing membrane manufacturer stating acceptance of the temporary membrane and that its inclusion will not adversely affect the roofing system's resistance to fire and wind.
- C. 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.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of new membrane roofing system.
- B. Reroofing Conference: Conduct conference at Indy Pub PL Wayne Library.

1.4 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be 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 or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below the work area.
 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated before proceeding with work over the impaired deck area.

- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. Limit construction loads on roof to rooftop equipment wheel loads and for uniformly distributed loads.
- D. 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.

PART 2 - PRODUCTS

2.1 AUXILIARY REROOFING MATERIALS

- A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of existing and new membrane roofing system.
- B. Base Sheet Fasteners: Capped head, factory-coated steel fasteners, listed in FM Approval's "Approval Guide."

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate with Owner to shut down 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.
- B. Maintain roof gutters and downspouts in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof gutters and conductors. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
- C. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day.
- B. **Partial** Roof Tear-Off: Remove existing roofing and other roofing system components down to the deck.
 - 1. Remove asphalt, shingles and underlayment.
 - 2. Remove fasteners from deck.
 - 3. Remove formed flashings as needed and protect for re-use.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

3.4 TEMPORARY ROOFING MEMBRANE

- A. Install approved temporary roofing membrane over area to be reroofed.
- B. Remove temporary roofing membrane before installing new roofing membrane.

3.5 ROOF RE-COVER PREPARATION

- A. Remove blisters, ridges, buckles, and other substrate irregularities from existing roofing membrane that inhibit new recover boards from conforming to substrate.
 - 1. Broom clean existing substrate.
 - 2. Coordinate with Owner's inspector to schedule times for tests and inspections before proceeding with installation of recover boards.
 - 3. Verify that existing substrate is dry before proceeding with installation of underlayment.
 - 4. Remove materials that are wet or damp.
 - 5. Provide additional uplift securement for existing roofing system with new screws and plates applied to each roof zone at the following densities:

3.6 EXISTING BASE FLASHINGS

- A. Remove existing base flashings around parapets, curbs, walls, and penetrations.
 - 1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish.

3.7 DISPOSAL

- A. Collect and place demolished materials in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19

SECTION 07 21 00 – BUILDING INSULATION

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. This Section includes the following:
 - 1. Concealed building insulation.

1.3 DEFINITIONS

1.4 SUBMITTALS

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

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of building insulation through one source.
- B. Fire-Test-Response Characteristics: Provide insulation & related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing & inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing & inspecting agency.
 - 1. Surface-Burning Characteristics: ASTM E 84.
 - 2. Fire-Resistance Ratings: ASTM E 119.
 - 3. Combustion Characteristics: ASTM E 136.

1.6 DELIVERY, STORAGE & HANDLING

- A. Protect insulation materials from physical damage & from deterioration by moisture, soiling & other sources. Store inside & in a dry location. Comply with manufacturer's written instructions for handling, storing & protecting during installation.
- B. Protect plastic insulation as follows:
 - 1. Do not expose to sunlight, except to extent necessary for period of installation & concealment.
 - 2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.

3. Complete installation & concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. Extruded-Polystyrene Board Insulation:
 - a. Dow Chemical Company.
 - b. Owens Corning.
 - c. Tenneco Building Products.

2.2 INSULATING MATERIALS

- A. General: Provide insulating materials that comply with requirements & with referenced standards.
 1. Preformed Units: Sizes to fit applications indicated; selected from manufacturer's standard thicknesses, widths & lengths.
- B. Extruded-Polystyrene Board Insulation: ASTM C 578, of type & density indicated below, with maximum flame-spread & smoke-developed indices of 75 and 450, respectively:
 1. Type IV, 1.60 lb/cu. ft., unless otherwise indicated.
- C. Foil-Faced, Glass-Fiber Board Insulation: ASTM C 612, Type IA or Types IA and IB; faced on one side with foil-scrim-kraft or foil-scrim-polyethylene vapor retarder, with maximum flame-spread & smoke-developed indices of 25 and 50, respectively & of the following properties:
 1. Nominal density of 2.25 lb/cu. ft., thermal resistivity of 4.3 deg F x h x sq. ft./Btu x in. at 75 deg F.

2.3 AUXILIARY INSULATING MATERIALS

- A. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates indicated without damaging insulation & substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates & conditions, with Installer present, for compliance with requirements for Sections in which substrates & related Work are specified & other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulations or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

3.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products & application indicated.
- B. Install insulation that is undamaged, dry & unsoiled & that has not been left exposed at any time to ice & snow.
- C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut & fit tightly around obstructions & fill voids with insulation. Remove projections that interfere with placement.
- D. Water-Piping Coordination: If water piping is located on inside of insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation & insulation encapsulates piping.
- E. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF PERIMETER & UNDER-SLAB INSULATION

- A. On vertical surfaces, set units in adhesive applied according to manufacturer's written instructions. Use adhesive recommended by insulation manufacturer.
 - 1. If not indicated, extend insulation a minimum of 24-inches (610-mm) below exterior grade line.
- B. Protect below-grade insulation on vertical surfaces from damage during backfilling by applying protection board. Set in adhesive according to insulation manufacturer's written instructions.
- C. Protect top surface of horizontal insulation from damage during concrete work by applying protection board.

3.5 INSTALLATION OF GENERAL BUILDING INSULATION

- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement & support of units.
- B. Seal joints between closed-cell (non-breathing) insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.
- C. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

1. Tape joints & ruptures in vapor retarder & seal each continuous area of insulation to surrounding construction to ensure airtight installation.

3.6 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse & other causes. Provide temporary coverings or enclosures where insulation is subject to abuse & cannot be concealed & protected by permanent construction immediately after installation.

END OF SECTION 07 21 00

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Asphalt shingles.
2. Underlayment.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each exposed product and for each color and blend specified.
- C. Product test reports.
- D. Research/evaluation reports.
- E. Maintenance data.
- F. Warranties: Sample of special warranties.

1.3 QUALITY ASSURANCE

- A. Fire-Resistance Characteristics: Where indicated, provide asphalt shingles and related roofing materials identical to those of assemblies tested for fire resistance per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.
- B. Preinstallation Conference: Conduct conference at Project site.

1.4 WARRANTY

- A. Special Warranty: Standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period.
1. Material Warranty Period: 25 years from date of Substantial Completion, prorated, with first three years nonprorated.
 2. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, Owens Corning Bakridge or comparable product by one of the following:
 - a. Atlas Roofing Corporation.
 - b. CertainTeed Corporation.
 - c. Elk Premium Building Products, Inc.; an ElkCorp company.
 - d. Emco Building Products Corp.
 - e. GAF Materials Corporation.
 - f. IKO.
 - g. Malarkey Roofing Products.
 - h. Owens Corning.
 - i. PABCO Roofing Products.
 - j. TAMKO Roofing Products, Inc.
 - 3. Butt Edge: Straight cut.
 - 4. Strip Size: Manufacturer's standard.
 - 5. Algae Resistance: Granules treated to resist algae discoloration.
 - 6. Color and Blends As selected by Architect from manufacturer's full range.
- B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

2.2 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226 or ASTM D 4869, Type I, asphalt-saturated organic felts, nonperforated.
- B. Self-Adhering Sheet Underlayment, Granular Surfaced: ASTM D 1970, minimum of **55-mil-(1.4-mm-)** thick sheet; glass-fiber-mat-reinforced, SBS-modified asphalt; mineral-granule surfaced; with release paper backing; cold applied.

2.3 RIDGE VENTS

- A. Rigid Ridge Vent: Manufacturer's standard, rigid section high-density polypropylene or other UV-stabilized plastic ridge vent with nonwoven geotextile filter strips and external deflector baffles; for use under ridge shingles.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Air Vent, Inc.; a Gibraltar Industries company.
 - b. Cor-A-Vent, Inc.
 - c. GAF Materials Corporation.
 - d. Lomanco, Inc.
 - e. Mid-America Building Products.
 - f. Obdyke, Benjamin Incorporated.
 - g. Owens Corning.
 - h. RGM Products, Inc.
 - i. Trimline Building Products.
3. Minimum Net Free Area: 12 sq in per linear foot.
4. Width: 11".
5. Thickness: 1/2".

2.4 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.
- B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum ~~0.120-inch-~~ (3-mm-) diameter, [barbed] shank, sharp-pointed, with a minimum ~~3/8-inch-~~ (9.5-mm-) diameter flat head and of sufficient length to penetrate ~~3/4 inch~~ (19 mm) into solid wood decking or extend at least ~~1/8 inch~~ (3 mm) through OSB or plywood sheathing.
 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- C. Felt Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, ~~1-inch~~ (25-mm) minimum diameter.

2.5 METAL FLASHING AND TRIM

- A. General: Comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."
 1. Sheet Metal Aluminum, mill finished.
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

- A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.
- B. Single-Layer Felt Underlayment: Install on roof deck parallel with and starting at the eaves. Lap sides a minimum of **2 inches (50 mm)** over underlying course. Lap ends a minimum of **4 inches (100 mm)**. Stagger end laps between succeeding courses at least **72 inches (1830 mm)**. Fasten with felt underlayment nails.
 - 1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering sheet underlayment not less than **3 inches (75 mm)** in direction to shed water. Lap ends of felt not less than **6 inches (150 mm)** over self-adhering sheet underlayment.
 - 2. Install fasteners at no more than **36 inch (900 mm)** o.c.
- C. Self-Adhering Sheet Underlayment: Install, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated on Drawings, lapped in direction to shed water. Lap sides not less than **3-1/2 inches (89 mm)**. Lap ends not less than **6 inches (150 mm)** staggered **24 inches (600 mm)** between courses. Roll laps with roller. Cover underlayment within seven days.

3.2 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."
 - 1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

3.3 ASPHALT SHINGLE INSTALLATION

- A. General: Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip with tabs removed at least **7 inches (175 mm)** wide with self-sealing strip face up at roof edge.
 - 1. Extend asphalt shingles **3/4 inch (19 mm)** over fasciae at eaves and rakes.
 - 2. Install starter strip along rake edge.
- C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

- D. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- E. Install asphalt shingles by single-strip column or racking method, maintaining uniform exposure. Install full-length first course followed by cut second course, repeating alternating pattern in succeeding courses.
- F. Fasten asphalt shingle strips with a minimum of four roofing nails located according to manufacturer's written instructions.
 - 1. Where roof slope exceeds 20:12, seal asphalt shingles with asphalt roofing cement spots after fastening with additional roofing nails.
 - 2. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.
 - 3. When ambient temperature during installation is below 50 deg F (10 deg C), seal asphalt shingles with asphalt roofing cement spots.
- G. Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.
- H. Ridge and Hip Cap Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.
 - 1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

END OF SECTION 073113

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manufactured reglets and counterflashing.
2. Formed roof drainage sheet metal fabrications.
3. Formed low-slope roof sheet metal fabrications.
4. Formed steep-slope roof sheet metal fabrications.
5. Formed wall sheet metal fabrications.

1.2 SUBMITTALS

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

B. Shop Drawings: Show installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.

1. Include details for forming, joining, supporting, and securing sheet metal flashing and trim, including pattern of seams, termination points, fixed points, expansion joints, expansion-joint covers, edge conditions, special conditions, and connections to adjoining work.

C. Samples: For each exposed product and for each finish specified.

D. Maintenance data.

E. Warranty: Sample of special warranty.

1.3 QUALITY ASSURANCE

A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

B. Preinstallation Conference: Conduct conference at Project site.

1.4 WARRANTY

A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.
- B. Aluminum Sheet: **ASTM B 209 (ASTM B 209M)**, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
 - 1. As-Milled Finish: One-side bright mill finish.
 - 2. Exposed Coil-Coated Finishes:
 - a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat.
 - 3. Color: Matching existing

2.2 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum **30 to 40 mils (0.76 to 1.0 mm)** thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
 - 1. Thermal Stability: ASTM D 1970; stable after testing at **240 deg F (116 deg C)**.
 - 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus **20 deg F (29 deg C)**.

2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

- c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
- 2. Fasteners for Copper Sheet: Copper, hardware bronze or Series 300 stainless steel.
- 3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- 4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
- 5. Fasteners for Aluminum-Zinc Alloy-Coated Steel Sheet: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329 or Series 300 stainless steel.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape **1/2 inch (13 mm)** wide and **1/8 inch (3 mm)** thick.
- D. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.4 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
 - 1. Obtain field measurements for accurate fit before shop fabrication.
 - 2. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 - 3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.
- B. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.
- C. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than **1 inch (25 mm)** deep, filled with butyl sealant concealed within joints.
- D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- E. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- F. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

- G. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

2.5 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum ~~96-inch-~~ (2400-mm-) long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters.
 - 1. Accessories: Continuous removable leaf screen with sheet metal frame and hardware cloth screen.
- B. Downspouts: Fabricate rectangular downspouts complete with mitered elbows. Furnish with metal hangers, from same material as downspouts, and anchors.
 - 1. Hanger Style: Match existing.
 - 2. Fabricate from the following materials:

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof-Edge Flashing and Fascia Cap: Fabricate in minimum ~~96-inch-~~ (2400-mm-) long, but not exceeding ~~10-foot-~~ (3-m-) long, sections. Furnish with ~~6-inch-~~ (150-mm-) wide, joint cover plates. Fabricate from the following materials:

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than ~~6 inches~~ (150 mm) staggered ~~24 inches~~ (600 mm) between courses. Overlap side edges not less than ~~3-1/2 inches~~ (90 mm). Roll laps with roller. Cover underlayment within 14 days.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement so that completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 3. Space cleats not more than **12 inches (300 mm)** apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
 4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
 5. Install sealant tape where indicated.
 6. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
1. Coat back side of uncoated aluminum sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of **10 feet (3 m)** with no joints allowed within **24 inches (600 mm)** of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than **1 inch (25 mm)** deep, filled with sealant concealed within joints.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate wood sheathing not less than **1-1/4 inches (32 mm)** for nails and not less than **3/4 inch (19 mm)** for wood screws
- E. Seal joints as shown and as required for watertight construction.
- F. 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.
1. Do not solder aluminum sheet.
 2. 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. Stainless-Steel Soldering: Tin edges of uncoated sheets using solder recommended for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.
 4. Copper Soldering: Tin edges of uncoated copper sheets using solder for copper.
- G. Rivets: Rivet joints in uncoated aluminum where indicated and where necessary for strength.

3.3 ROOF DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- B. Hanging Gutters: Join sections with riveted and soldered joints or with lapped joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored gutter brackets spaced not more than **36 inches (900 mm)** apart. Provide end closures and seal watertight with sealant. Slope to downspouts.
 - 1. Install gutter with expansion joints at locations indicated, but not exceeding, **50 feet (15.24 m)** apart. Install expansion-joint caps.
 - 2. Install continuous gutter screens on gutters with noncorrosive fasteners, removable for cleaning gutters.
- C. Downspouts: Join sections with **1-1/2-inch (38-mm)** telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately **60 inches (1500 mm)** o.c. in between.
- D. Splash Pans: Install where downspouts discharge on low-slope roofs. Set in adhesive material compatible with the roofing.

3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual" and as indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered **3-inch (75-mm)** centers.
- C. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of **4 inches (100 mm)** over base flashing. Install stainless-steel draw band and tighten.
- D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing **4 inches (100 mm)** over base flashing. Lap counterflashing joints a minimum of **4 inches (100 mm)** and bed with sealant.
- E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.5 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
4. Preformed joint sealants.
5. Acoustical joint sealants.

1.2 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers eight samples of materials that will contact or affect joint sealants. Use ASTM C 1087 manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
- B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. LEED Submittal:
1. Product Data for Credit EQ 4.1: For sealants and sealant primers used inside the weatherproofing system, including printed statement of VOC content.
- C. Samples: For each kind and color of joint sealant required.
- D. Joint-Sealant Schedule: Include the following information:
1. Joint-sealant application, joint location, and designation.
 2. Joint-sealant manufacturer and product name.
 3. Joint-sealant formulation.
 4. Joint-sealant color.
- E. Product test reports.

- F. Preconstruction compatibility and adhesion test reports.
- G. Preconstruction field-adhesion test reports.
- H. Field-adhesion test reports.
- I. Warranties.

1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.
- B. Preinstallation Conference: Conduct conference at Project site.

1.5 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):
 - 1. Architectural Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
 - 1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone

testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

- C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- D. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

2.2 URETHANE JOINT SEALANTS

- A. Urethane Joint Sealant: ASTM C 920.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:
 - a. BASF Building Systems.
 - b. Bostik, Inc.
 - c. Lymtal, International, Inc.
 - d. May National Associates, Inc.
 - e. Pacific Polymers International, Inc.
 - f. Pecora Corporation.
 - g. Polymeric Systems, Inc.
 - h. Schnee-Morehead, Inc.
 - i. Sika Corporation; Construction Products Division.
 - j. Tremco Incorporated.
 - 3. Type: Single component (S) or multicomponent (M).
 - 4. Grade: Pourable (P) or nonsag (NS).
 - 5. Class: 100/50.
 - 6. Uses Related to Exposure: Nontraffic (NT).

2.3 JOINT SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C 1330, **Type C (closed-cell material with a surface skin)**, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.4 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
 - 1. Remove laitance and form-release agents from concrete.
 - 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
- F. Acoustical Sealant Installation: Comply with ASTM C 919 and with manufacturer's written recommendations.
- G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.3 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 - 1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform [10] <Insert number> tests for the first [1000 feet (300 m)] <Insert dimension> of joint length for each kind of sealant and joint substrate.
 - b. Perform 1 test for each [1000 feet (300 m)] <Insert dimension> of joint length thereafter or 1 test per each floor per elevation.
 - 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
- B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.4 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces[<JS-#>].
1. Joint Locations:
 - a. Joints in exterior insulation and finish systems.
 - b. Joints between metal panels.
 - c. Joints between different materials listed above.
 2. Joint Sealant: Urethane.
 3. Joint-Sealant Color: **As selected by Architect from manufacturer's full range of colors.**

END OF SECTION 079200