

ADDENDUM NO. 3

December 4, 2018

FOR

Williston Regional Water Treatment Plant Pretreatment – Part 3

FOR

Western Area Water Supply Authority
Williston, North Dakota

July 2018



This Addendum No. 3 forms a part of the Contract Documents and modifies the original Bidding Documents as noted within this Addendum. All provisions of the Contract Documents not in conflict with this Addendum shall remain in full force. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This addendum consists of two (2) pages and five (5) attachments.

Changes to the Specifications:

- 1) Section 00030 Ad For Bids, **Add the following paragraphs:** “Bidders on this work will be required to comply with Title 40 CFR Part 33 – Participation by Disadvantaged Business Enterprises in the United States Environmental Protection Agency Programs. The requirements for bidders and contractors under this regulation concern utilization of Minority Business Enterprises (MBE), Women’s Business Enterprise (WBE), and Small Business Enterprises (SBE) and are explained in the specifications.

The goal for MBE is 1.2% of the total dollar value of the project. The goal for WBE is 4.4% of the total dollar value of the project.”

- 2) **Delete page 1 of** Section 00734 SRF Requirements and **Replace** with Revised Section 00734 SRF Requirements Page 1 attached.
- 3) **Insert attached American Iron and Steel (AIS) Requirements** at end of Section 00734 SRF Requirements
- 4) **Add attached Section 06 16 00 “Sheathing” in its entirety.**
- 5) **Add attached Section 07 24 16 “EIFS Class PM” in its entirety**
- 6) **Add attached Section 08 33 13 “Sectional Overhead Doors” in its entirety**
- 7) **Section 15860 Centrifugal Fans; paragraph 2.01 In-Line Fans : Add Captive Air**
- 8) **Section 15870 Power Ventilators; paragraph 2.01 Propeller Wall Fans : Add Captive Air**
- 9) **Section 16950 – Instrumentation and Control System Devices: 2.03 D. Add Siemens as a prior approved Manufacturer Model Equivalent.**

Changes to the Drawings:

- 1) **Drawing P15 Construction Note 3; Add the following:** Pump shall be a Warman model CAH 4x3, gland sealed, closed metal impellor, high chrome lined pump with V-belt 60 hp premium efficiency motor, base plate and guard to deliver 500 gpm at 208 feet of head. No Equals.
- 2) **Drawing P11, Process Improvement Note 4; Add the following:** Pump shall be Warman model CAH 3 x 2 gland sealed, closed metal impellor, high rubber lined pump with v-belt 3 hp premium efficiency motor, base plate and guard to deliver 200 gpm at 12 feet of head. No Equals
- 3) **E21 Fixture Schedule:**

Add 'Metalux Equivalent' as a approved manufacturer for fixture type A, AE, B, and BE.

Add 'AZZ/RAL Equivalent' as a approved manufacturer for fixture type C.

Delete Fixture Type F.

Add 'LumOutdoor Equivalent' as an approved manufacturer for fixture type

END OF ADDENDUM NO. 3

SRF SPECIFICATION INSERT

EQUAL EMPLOYMENT OPPORTUNITY and AFFIRMATIVE ACTION REQUIREMENTS on FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offerer's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation in each trade - 1.2%
Goals for female participation in each trade - 4.4%

These goals are applicable to all the contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number for the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is Williston, Williams County, ND.

This notice shall be included in, and shall be a part of, all solicitations for offers and bids on all federal and federally assisted construction contracts or subcontracts.

EQUAL OPPORTUNITY CLAUSES

The Equal Opportunity Clause published at 41 CFR Part 60-1.4(b) is required to be included in, and is part of, all nonexempt federally assisted construction contracts and subcontracts. The Equal Opportunity Clause shall be considered to be a part of every contract and subcontract required by the regulations in this part to include such a clause whether or not it is physically incorporated in such contracts.

In addition to the clauses described above, all federal contracting officers, all applicants, and all non-construction contractors, as applicable, shall include the specifications set forth in this section in all federal and federally assisted construction contracts in excess of \$10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part and in construction subcontracts in excess of \$10,000 necessary in whole or in part to the performance of nonconstruction Federal contracts and subcontracts covered under the Executive Order.

AMERICAN IRON AND STEEL (AIS) REQUIREMENTS

The Contractor acknowledges that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel,” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

One of the following certification forms should be used as documentation of compliance with the AIS requirements.

Sample Certification for AIS

The following information is provided as a sample letter of certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXXXXXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxxx
2. Xxxx
3. Xxxx

Such process took place at the following location:

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

Sample Step Certification for AIS

The following information is provided as a sample letter of **step** certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx
2. Xxx
3. Xxx

Such process took place at the following location:

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

SECTION 06 16 00

SHEATHING

PART 1 – GENERAL:

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section included the following:
 - 1. Wall sheathing.
 - 2. Roof sheathing.
 - 3. Building wrap.
 - 4. Sheathing joint-and-penetration panels.

- B. Related Sections include the following:
 - 1. Section 05 12 00 -Structural Steel
 - 2. Section 05 31 00 – Steel Deck
 - 3. Section 05 50 00 – Metal Fabrications.
 - 4. Section 06 10 00 – Rough Carpentry – for plywood backing panels.
 - 5. Section 04 20 00 – Unit Masonry.

1.3 SUBMITTALS:

- A. Product Data: For each type of process and factory-fabricated project, indicate component materials, and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. Include data for fire-retardant treatment from chemical treatment manufacture and certification by treating plant that treated plywood complies with requirements. Include physical properties of treated materials.
 - 3. For fire-retardant treatments specified to be High-Temperature, (HT) type, include physical properties of treated plywood both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5516.
 - 4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project Site.
 - 5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
 - 6. For building wrap, include data on air-/moisture-infiltration protection based on testing according to referenced standards.
 - 7. Provide evidence of compliance with code requirements.

8. Manufacturer shall certify that panels have been tested in accordance with ASTM E-72, ASTM E-119, and another applicable test.
9. Manufacturer shall supply a hard copy product certificate showing compliance to 3rd Party Quality Control program.
10. Provide Data Sheets regarding panel material components.

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.
- B. All panels shall be stored in a protected area and supported to be protection from the ground.
- C. Prior to installation, panels shall be covered and protected from exposure to sunlight and moisture.

1.5 QUALITY ASSURANCE:

- A. Each panel shall be labeled indicating the maintenance of in-plant Quality Control / 3rd Party Inspection Service in compliance with national codes.
- B. Provide evidence of 3rd Party Inspection and labeling of all EPS used in the manufacturing of the SIPs, Flame, Physical, and Thermal properties will be covered by the EPS manufactures Quality Control and Listing programs.

PART 2 – PRODUCTS:

2.1 WOOD PANEL PRODUCTS, GENERAL:

- A. Plywood: Either DOC PS 1 or DOC PS 2, unless otherwise indicated.
- B. Orientated Strand Board: DOC PS 2.
- C. Thickness: As needed to comply with requirements specified, but not less that thickness indicated.
- D. Factor mark panels to indicate compliance with applicable standard.

2.2 PRESERVATIVE-TREATED PLYWOOD:

- A. Preservative Treatment by Pressure Process: AWPA C9.

- B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.
- C. Application: Treat items indicated on Drawings and plywood in contact with masonry or concrete or used with roofing, flashing, vapor barriers, and waterproofing.

2.3 SHEATHING, (Roof, Floor, and Wall):

- A. Exterior Wall Sheathing: 7/16" minimum DensGlass ® Sheathing by Georgia Pacific Building Products and/or 7/16" APA Rated Exposure 1, 24/16 Span Rating Plywood, or approved equal.
- B. Roof Sheathing: 19/32" APA Rated, Exposure 1, 40/20 Span Rating Plywood Sheathing.
- C. Floor Sheathing: 3/4" APA Rated Sturd-I-Floor Tongue & Grooved, exposure 1, 48/24 Span Rating.
 - 1. Stagger end joints.
 - 2. Screw and glue all joints unless otherwise noted.

2.4 FASTENERS:

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening Wood Structural Panels to Cold Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturers for material being fastened.
 - 1. For wall and roof sheathing panels, provide screws with organic polymer or other corrosion protective coating having a salt spray resistance of more than 800 hours according to ASTM B 117.
- F. Screws for Fastening Gypsum Sheathing to Cold Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing board to be attached, with organic polymer or other corrosion protective coating having a salt spray resistance of more than 800 hours according to ASTM B 117.
 - 1. For steel framing, less than 0.329-inch-thick, attach sheathing to comply with ASTM C 1002.

2. For steel framing from 0.033 to 0.112 inches thick, attached sheathing to comply with ASTM C 954.
- G. Screws for Fastening Orientated Strand Board Surfaced, Polyisocyanurate Foam Sheathing to Metal Roof Deck: Steel drill screws, in type and length recommended by sheathing manufacturer for thickness of sheathing board to be attached, with organic polymer or other corrosion protective coating having a salt spray resistance of more than 800 hours according to ASTM B 117. Provide washers or plates if recommended by sheathing manufacturer.

2.5 WEATHER BARRIER:

- A. Building Paper: ASTM D 226, Type 1.
- B. Building Wrap: ASTM E 1677, Type 1 air retarders; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 83; UV stabilized, and acceptable to authorities having jurisdiction.
1. Available Products: Subject to compliance with requirements, provide products of one of the following or approved equal:
 - a. DuPont (E. I. du Pont de Nemours and Company).
 - b. Tyvek Commercial Wrap.
 2. Water-Vapor Permeance: Not less than 160 g through 1 sq. m of surface in 24 hours per ASTM E 96, Desiccant Method, (Procedure A).
 3. Allowable UV Exposure Time: Not less than four months.
 4. Air Penetration Resistance: ASTM E 1677 Type 1.
 5. Drainage: ICC_ES AC 24 Section 6.1.1, Pass.
- C. Building-Wrap Tape: Pressure-sensitive plastic tape recommended by building-wrap manufacturer for sealing joints and penetrations in building wrap.

2.6 SHEATHING JOINT AND PENETRATION TREATMENT MATERIALS:

- A. Sealant for Paperless-Surfaced Gypsum Sheathing Board: Elastomeric, medium-modulus, neutral-curing silicone joint sealant compatible with joint substrates formed by gypsum sheathing and other materials, recommended by sheathing manufacturer for application indicated, and complying with requirements for elastomeric sealants specified in Division 07 Section "Joint Sealants".
- B. Sealant for Paperless-Surfaced Gypsum Sheathing Board: Silicone emulsion sealant complying with ASTM C 834, compatible with sheathing tape and sheathing, and recommended by tape and sheathing manufacturers for use with glass-fiber sheathing tape and for covering exposed fasteners.

2.7 MISCELLANEOUS MATERIALS:

- A. Adhesives for Field Gluing Panels to Framing: Formulation complying with APA AFG-01 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.
 - 1. Use adhesives that have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D, (EPA Method 24).
- B. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than 0.025 inch.
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Products: Subject to compliance with requirement, provide one of the following:
 - I. Carlisle Coatings & Waterproofing; CCW-705-TWF, Thru-wall Flashing.
 - II. Grace Construction Products, a unit of W. R. Grace & Co. – Conn.
 - III. MFM Building Products Corp.; Window Wrap.
 - IV. Polyguard Products, Inc.; Polyguard 300.
 - V. Protecto Wrap Company.
- C. Primer for Flexible Flashing: Product recommended by manufacturer of flexible flashing for substrate.

PART 3 – EXECUTION:

3.1 INSTALLATION, GENERAL:

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- B. Cut panels a penetrations, edges, and other obstructions of work; fit tightly against abutting construction, unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. 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” unless otherwise noted on Structural Drawings.
 - 3. Follow installation instructions on drawings when they exceed requirements noted above.
- D. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not full penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.

- E. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Do not bridge expansion joints; cut and space edges of panels to match spacing of structural support elements.
- G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.1 WOOD STRUCTURAL PANEL INSTALLATION:

- A. General: Comply with applicable recommendations in APA Form No. E30S, "Engineered Wood Construction Guide", for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
 - 1. Wall and Roof Sheathing:
 - a. Nail or screw to wood framing. Apply a continuous bead of glue to framing members at edges of floor sheathing panels.
 - b. Screw to cold-formed metal framing.
 - c. Space panels 1/8 inch apart at edges and ends.

3.2 WEATHER BARRIER:

- A. General: Cover sheathing with weather-resistant sheathing paper as follows:
 - 1. Cut back barrier 1/2 inch on each side of the break in supporting members at expansion- or control-joint locations.
 - 2. Apply barrier to cover vertical flashing with a minimum 4-inch overlap, unless otherwise indicated.
- B. Building Wrap: Comply with manufacturer's written instructions.
 - 1. Seal seams, edges, fasteners, and penetrations with tape.
 - 2. Extend into jambs of openings and seal corners with tape.
 - 3. Install double layers at unit masonry.

3.3 SHEATHING JOINT AND PENETRATION TREATMENT:

- A. Seal sheathing joints according to sheathing manufacturer's written instructions.
 - 1. Apply elastomeric sealant to joints and fasteners and trowel flat. Apply sufficient quantity of sealant to completely cover joints and fasteners after troweling. Seal other penetrations and openings.

3.4 FLEXIBLE FLASHING INSTALLATION:

- A. Apply flexible flashing where indicated to comply with manufacturer's written instructions.

1. Prime substrates as recommended by flashing manufacturer.
2. Lap seams and junctures with other materials at least 4 inches, except that at flashing flanges of other construction, laps need not exceed flange width.
3. Lap flashing over weather-resistant building paper at bottom and sides of openings.
4. Lap weather-resistant building paper over flashing at heads of openings.
5. After flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.

3.5 PROTECTION:

- A. Paperless Surfaced Gypsum Sheathing: Protect sheathing by covering exposed exterior surface of sheathing with weather-resistant sheathing paper securely fastened to framing. Apply covering immediately after sheathing is installed.
- B. When storing panels do not allow them to come into ground contact. Stored panels must remain dry. Do not allow panels to be stored in an unsupported manner. Improper storage may cause tolerance problems in the field.
- C. Roof panels must be fully protected from weather by roofing materials to provide temporary protection at the end of the day or when rain or snow is imminent.
- D. Remove and replace insulated wall and roof panels, which have become excessively wet or damaged before proceeding with installation of additional panels or other work.

END OF SECTION

SECTION 07 24 16

EXTERIOR INSULATION AND FINISH SYSTEMS - CLASS PM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes exterior insulation finish systems with applications over rigid insulation.
- B. Related Sections:
 - 1. Section 06 60 00 - Rough Carpentry - for gypsum sheathing and wood framing behind system.
 - 2. Section 07 92 00 – Joint Sealants - for requirements specified by reference in this section for sealing joints in system with elastomeric joint sealants.

1.3 DEFINITIONS:

- A. Exterior insulation and finish systems refer to exterior assemblies composed of an inner layer of board insulation and an outer layer composed of a glass-fiber-mesh-reinforced base coat applied directly to board insulation and a textured protective finish coat. These assemblies are applied to supporting substrates of construction indicated.
- B. Designation PM for class of exterior insulation and finish systems specified in this section is based on the classification developed by the Exterior Insulation Manufacturers Association (EIMA).
- C. System in this section refers to Class PM exterior insulation and finish systems (PM-Polymer Modified).
- D. System manufacturer refers to the manufacturer of exterior insulation and finish systems.
- E. Thermal resistivity of the insulation board is designated by an r-value that represents the reciprocal of thermal conductivity (k-value). Thermal conductivity is the rate of heat flow through a homogenous material exactly 1 inch thick. Thermal resistivity (r-value) is expressed by the temperature difference between the two exposed faces required to cause one BTU to flow through 1 square foot per hour at mean temperatures indicated.

1.4 SYSTEM DESCRIPTION:

- A. Provide system complying with the following performance requirements:
 - 1. Bond Integrity: Free from bond failure within system components or between system and supporting wall construction, resulting from exposure to fire, wind loads, weather, or other in-service conditions.

2. Weathertightness: Resistant to water penetration from exterior into system and assemblies behind it or through them into interior of building that results in deterioration of thermal-insulating effectiveness or other degradation of system and assemblies behind system including substrates, supporting wall construction, and interior finish.
3. Fire Performance Characteristics: Provide materials and construction that are identical to those tested for the following fire performance characteristics, per test method indicated below, by UL or other testing and inspecting agencies acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting organization.
 - a. Flame Spread of Insulation Board and Finish Coats: 25 or less when tested individually per ASTM E 84.

1.5 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each component of exterior insulation and finish systems.
- C. Samples for initial selection purposes in form of manufacturer's standard color charts and small-scale samples indicating available textural choices.
 1. Submit sealant manufacturer's standard bead samples consisting of strips of actual products showing full range of colors available.
 2. Incorporate within each sample a typical control joint filled with sealant of color indicated or selected.
- D. Qualification data for firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of Architects and Owners, plus other information specified.
- E. Installer certificates signed by manufacturer certifying that Installers comply with requirements under "Quality Assurance" Article.
- F. Sealant compatibility and test report from sealant manufacturer certifying that materials forming joint substrates of system have been tested for compatibility and adhesion with joint sealants; include sealant manufacturer's interpretation of results relative to sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.
- G. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction which evidence system's compliance with building code in effect for Project.

1.6 QUALITY ASSURANCE:

- A. Manufacturer Qualifications: Engage a firm experienced in manufacturing systems that are similar to those indicated for this Project and that have a record of successful in-service performance.
- B. Installer Qualifications: Engage an experienced Installer who has completed systems

similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.

- C. Installer Qualifications: Engage an experienced Installer who is certified in writing by system manufacturer as qualified to install manufacturer's system.
- D. Single-Source Responsibility: Obtain materials for system from either a single manufacturer or manufacturers approved by the system manufacturer as compatible with other system components.

1.7 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver products in original, unopened packages with manufacturer's labels identifying products legible and intact.
- B. Store materials inside and under cover; keep them dry and protected from the weather, direct sunlight, surface contamination, aging, corrosion, damaging temperatures, damage from construction traffic, and other causes.
- C. Stack insulation board flat and off the ground.

1.8 PROJECT CONDITIONS:

- A. Environmental Conditions: Do not install system when ambient outdoor temperatures are 40 deg F (4 deg C) and falling unless temporary protection and heat are provided to maintain ambient temperatures above 40 deg F (4 deg C) during installation of wet materials and until they have dried thoroughly and become weather resistant, but for not less than 24 hours after installation.

1.9 SEQUENCING AND SCHEDULING:

- A. Sequence installation of system with related work specified in other sections to ensure that wall assemblies, including flashing, trim, and joint sealers, are protected against damage from weather, aging, corrosion, and other causes.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Manufacturers: Subject to compliance with requirements, provide Class PM system of one of the following or approved equal:
 1. Dryvit Systems, Inc.
 2. Insul/Crete Co., Inc.
 3. ISPO USA, Inc.
 4. Parex
 5. Pleko Products, Inc.
 6. Senergy Inc.
 7. Simplex Div., Anthony Industries, Inc.
 8. STO Industries, Inc.
 9. Thoro System Products.

10. Vitricon Div., Polymer Plastics Corp.

2.2 MATERIALS:

- A. EIFS Performance: Comply with ASTM E 2568 and the following:
1. Weathertightness: Resistant to uncontrolled water penetration from exterior, with a means to drain water entering EIFS to the exterior.
 2. System Fire Performance: Fire-resistance rating of wall assembly.
 3. Structural Performance: EIFS assembly and components shall comply with ICC-ES AC219 when tested according to ASTM E 2568.
 - a. Wind Loads: Uniform pressure as indicated on Drawings.
 4. Impact Performance: ASTM E 2568, Medium impact resistance.
 5. Bond Integrity: Free from bond failure within EIFS components or between EIFS and substrates, resulting from exposure to fire, wind loads, weather, or other in-service conditions.
 6. Abrasion Resistance of Finish Coat: Sample consisting of 1-inch- (25.4-mm-) thick EIFS mounted on 1/2-inch- (12.7-mm-) thick gypsum board; cured for a minimum of 28 days and shows no cracking, checking, or loss of film integrity after exposure to 528 quarts (500 L) of sand when tested according to ASTM D 968, Method A.
 7. Mildew Resistance of Finish Coat: Sample applied to 2-by-2-inch (50.8-by-50.8-mm) clean glass substrate; cured for 28 days and shows no growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274.
- B. Compatibility: Provide board insulation, reinforcing fabric, base and finish coat materials, mechanical anchors, and accessories that are compatible with one another and approved for use by system manufacturer.
1. Provide selection made by Architect from manufacturer's full range of standard colors and textures available for type of finish coat indicated.
- B. Molded, Rigid Cellular Polystyrene Board Insulation: Rigid, cellular thermal insulation with closed cells and integral high-density skin, formed by the expansion of polystyrene base resin in an extrusion process to comply with ASTM C 578 for Type IV; with 1.6 pcf minimum density and 5-year aged r-value of 5.4 and 5 at 40 and 75 deg F (4.4 and 23.9 deg C); approved by system manufacturer for material qualities including corner squareness and other dimensional tolerances; in manufacturer's standard lengths and widths; thickness as indicated.
- C. Reinforcing Fabric: Balanced, alkali-resistant open-weave glass fiber fabric treated for compatibility with other system materials, made from continuous multi-end strands with tensile strength of not less than 120 lbs. and 140 lbs. in warp and fill directions, respectively, per ASTM D 1682 and complying with ASTM D 578, ASTM 2098, and of the following minimum weight:
1. Min. 20 oz. per sq. yd. base layer.
 2. Min. 5 oz. Per sq. yd. reinforcing mesh over base layer.
- D. Base Coat Materials: System manufacturer's standard mixture complying with the

following requirements for material composition and method of combining materials:

1. Job-mixed formulation of Portland cement complying with ASTM C 150, Type I, natural color; clean, washed, silica sand complying with ASTM C 897 and system manufacturer's requirements; alkali-resistant chopped glass fibers; and polymer emulsion admixture for base coat use.
 2. Factory-mixed formulation of Portland cement complying with ASTM C 150, Type I, natural color; natural sand aggregate complying with ASTM C 897; alkaline-resistant chopped glass fibers; polymer admixture for finish coat use.
 3. Either job-mixed or factory-mixed formulation indicated above.
- E. Acrylic-Based Finish Coat: System manufacturer's standard factory-mixed formulation of acrylic emulsion, colorfast mineral pigments, and fine aggregates.
1. Finished Surface shall have a Quarzputz finish or equal.
- F. Water: Clean and potable.
- G. Mechanical Fasteners: System manufacturer's standard corrosion-resistant fastener assemblies, complete with system manufacturer's standard washer attachments, selected for properties of pullout, tensile, and shear strength required to resist design loads of application indicated, capable of pulling fastener head below surface of insulation board, and of the following description:
1. For attachment to steel studs from 0.033 to 0.112 inch (0.84 to 2.84 mm) in thickness, provide steel drill screws complying with ASTM C 954.
 2. For attachment to light-gage steel framing members not less than 0.0179 inch (0.45 mm) in thickness, provide steel drill screws complying with ASTM C 1002.
 3. For attachment to wood framing members and plywood sheathing, provide steel drill screws complying with ASTM C 1002, Type W.
- H. Trim Accessories: Material as indicated below and type as designated or required to suit conditions indicated and comply with system manufacturer's requirements; manufactured from zinc alloy; coordinate depth of accessories with thickness of base and finish coats required.
1. Control Joints: Prefabricated, one-piece type manufactured with expanded metal flanges, formed to provide double keying action with protective coating, extending only to face of insulation; with removable tape on plaster face and 1/4-inch joint sightline and bellows configuration as indicated below:
 - a. Shallow Configuration: Bellows extends to face of insulation only.
 - b. Product: Subject to compliance with requirements, provide "Keene Insuljoint I SV" by Penn Metal Div., Keene Corp.
 2. Deep Configuration: Bellows extends beyond finish coat to a depth of 3/4-inch past face of flanges.
 - a. Product: Subject to compliance with requirements, provide "Keene Insuljoint I DV" by Penn Metal Div., Keene Corp.
 3. Corner Bead: Prefabricated small-nosed corner bead with expanded metal flanges extending minimum of 2-7/8 inches from corner.
 - a. Product: Subject to compliance with requirements, provide "Keene 1-X Corner Bead" by Penn Metal Div., Keene Corp.
 4. Casing Bead: Prefabricated one-piece type for attachment to surface of insulation or behind insulation, of depth required to suit thickness of coating, and where attached behind insulation, thickness of insulation as well.
 - a. Product: Subject to compliance with requirements, provide "Keene Stop

Bead" by Penn Metal Div., Keene Corp.

5. Drainage strip.
6. Flexible Membrane Flashing: Cold-applied, self-adhering, self-healing, rubberized-asphalt and polyethylene-film composite sheet or tape and primer; EIFS manufacturer's standard or product recommended in writing by EIFS manufacturer.

2.3 ELASTOMERIC SEALANTS:

- A. Sealant Product: Provide manufacturer's standard chemically curing, elastomeric sealant that is listed and recommended by system manufacturer for use indicated, is compatible with joint fillers, joint substrates, and other related materials, and complies with requirements of Division 7 Section "Joint Sealers" for products corresponding to description indicated below.
- B. Sealant Color: Provide color of exposed sealants to comply with the following requirement:
 1. Provide color selected by Architect from manufacturer's standard colors.

2.4 MIXING:

- A. General: Comply with system manufacturer's requirements for combining and mixing materials. Do not introduce admixtures, water, or other materials except as approved by system manufacturer. Mix materials in clean containers. Use materials within time period specified by system manufacturer or discard.

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examine substrates, with Installer present, to determine if they are in satisfactory condition for installation of system. Do not proceed with installation of system until unsatisfactory conditions have been corrected.

3.2 PREPARATION:

- A. Protect contiguous work from moisture deterioration and soiling resulting from application of systems. Provide temporary covering and other protection needed to prevent spattering of exterior finish coatings on other work.
- B. Protect system, substrates, and wall construction behind them from inclement weather during installation. Prevent infiltration of moisture behind system and deterioration of substrates.
 1. Apply surface sealer over substrates where required by system manufacturer for improving adhesion.

3.3 INSTALLATION:

- A. General: Comply with system manufacturer's current published instructions for installation of system as applicable to each type of substrate indicated.

- B. Mechanically attach insulation to substrate by method complying with system manufacturer's current requirements. Initially install approximately 50 percent of the total number of fasteners required prior to application of reinforcing fabric. Install remainder after application of reinforcing fabric.
1. Secure mechanical fasteners to framing members behind sheathed substrates so that they penetrate framing members 5/8 inch or more and recess flush with exterior surface of insulation board.
 2. Apply boards over dry substrates in courses with long edges oriented horizontally; begin first course from a level base line and work upwards.
 3. Stagger vertical joints in successive courses to produce running bond pattern.
 - a. Offset joints of insulation from joints in sheathing.
 4. Interlock ends at internal and external corners.
 5. Abut boards tightly at joints within and between each course to produce flush, continuously even surfaces without gaps or raised edges between insulation boards. If gaps occur, fill with insulation cut to fit gaps exactly; insert without use of adhesive.
 6. Rasp or sand flush entire surface of insulation to remove irregularities projecting more than 1/16 inch from surface of insulation and yellowed areas due to sun exposure; do not create depressions deeper than 1/16 inch.
 7. Cut insulation to fit openings, corners, and projections precisely and to produce edges and shapes conforming to details indicated.
 8. Interrupt insulation where expansion joints are indicated or required by system manufacturer.
 9. Coordinate flashing installation with installation of insulation to produce a wall system that does not allow water to penetrate behind protective coating.
- C. Install expansion joints at locations indicated and as follows:
1. Where expansion or control joints occur in surface of construction directly behind insulation.
 2. Where system abuts dissimilar materials.
 3. Form joints for sealant application by leaving gaps of width needed between adjoining insulation edges as well as between insulation edges and dissimilar adjoining surfaces projecting through insulation that produce joint widths indicated after encapsulation of joint substrates with base coat, reinforcing fabric, and finish coat.
- D. Install control joints at locations indicated or, if not indicated, at locations complying with the following criteria and approved by Architect:
1. Where distance between control joints exceeds 12'-0" in any direction or area within panels covered with protective coating exceeds 144 sq. ft.
 2. Where area within panels produces a width to length ratio of 2-1/2 to 1.
 3. Where panels formed by system change in size. Extend joints full width or height of protective coating.
 4. Above and below door and window openings.
- E. Install trim accessories at locations indicated. Mechanically fasten accessories to framing members.
- F. Treat exposed edges of insulation to comply with system manufacturer's directions.

- G. Cover insulation with reinforcing fabric and attach through insulation into substrate by installing remainder of fasteners.
- H. Trowel-apply base coat over and into reinforcing fabric in thickness specified by system manufacturer to produce a flush, uniform surface with fabric fully embedded and prepared to receive finish coat.
- I. Apply acrylic finish coat over cured base coat in thickness specified by system manufacturer to produce a uniform finish of texture and color matching approved sample.

3.4 INSTALLATION OF JOINT SEALANTS:

- A. Prepare joints and apply sealants, of type and at locations indicated, to comply with applicable requirements of Division 7 Section "Joint Sealers" and with "EIMA Joint Sealant Specification for Exterior Insulation and Finish Systems."

3.5 CLEANING AND PROTECTION:

- A. Remove temporary covering and protection of other work. Promptly remove protective coatings from window and door frames and any other surfaces outside areas indicated to receive protective coating.
- B. Provide final protection and maintain conditions in a manner acceptable to Installer and system manufacturer that ensures systems being without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 08 33 13

SECTIONAL OVERHEAD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes electrically operated sectional overhead doors.
- B. Related Requirements:
 - 1. Section 05 50 00 Metal Fabrications
 - 2. Section 06 10 00 – Rough Carpentry
 - 3. Section 09 90 00 – Painting
 - 4. Provision of power to electric operators is specified in Division 26 Electrical sections.

1.3 SUBMITTALS:

- A. Product Data: Submit manufacturer's product data, rough-in diagrams, and installation instructions for each type and size of overhead door. Include manufacturer's operating instructions and maintenance data.
- B. Shop Drawings: Submit shop drawings for each installation and for special components which are not fully dimensioned or detailed in manufacturer's product data.
 - 1. Include plans, elevations, sections and mounting details.
 - 2. Include details of equipment assemblies. Indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.

1.4 QUALITY ASSURANCE:

- A. Provide each sectional overhead door as a complete unit produced by one manufacturer, including frames, sections, brackets, guides, tracks, counterbalance mechanisms, hardware, operators and installation accessories, to suit openings and head room allowable.
- B. Furnish sectional overhead door units by one manufacturer for entire project.
- C. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry for installation of units. Provide setting drawings, templates, and directions for installation of anchorage devices. Coordinate delivery with other work to avoid delay.

1.5 WARRANTY:

- A. Warranty: Manufacturer agrees to repair or replace components of sectional

doors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to the following:
 - a. Structural failures including, but not limited to, excessive deflection.
 - b. Failure of components or operators before reaching required number of operation cycles.
 - c. Faulty operation of hardware.
 - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use; rust through.
 - e. Delamination of exterior or interior facing materials.
2. Warranty Period: Twenty-year limited warranty from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 DOOR ASSEMBLY:

- A. Insulated Steel Sectional Door: Sectional door formed with hinged sections and fabricated according to DASMA 102 unless otherwise indicated.
 1. Manufacturer: Subject to compliance with requirements, provide products of one of the following or approved equal:
 - a. Raynor Manufacturing Co.
 - c. Midland Garage Door Mfg. Co.
 - d. Approved Equal. (Overhead Door is NOT accepted).
 2. Basis of Design: Midland Door Company 3" Energy Saver Series.

2.2 INSULATED STEEL SECTIONAL OVERHEAD DOORS:

- A. Construct door sections from galvanized structural quality carbon steel sheets complying with ASTM A 446, Grade A, or ASTM A 526, with a minimum yield strength of 33,000 psi, and a minimum G90 zinc coating complying with ASTM A 525.
 1. Section Thickness: 3 inches
 2. Exterior-Face, Flush Steel Sheet Thickness: 20-gage; Center and end stiles: 16-gage.
 3. Insulation: Insulate inner core of steel sections with manufacturer's standard polystyrene or polyurethane foam type insulation.
 4. Thermal Value: R-value 17.05.
 5. Interior Facing Material: Vinyl-faced, galvanized steel sheet
 6. Fabricate sections from a single sheet to provide units not more than 24" high, and 3" thick. Roll horizontal meeting edges to a continuous interlocking, shiplap, rabbeted, tongue-in-groove or keyed weather seal, with a continuous reinforcing flange return.
 7. Enclose open section with 16-gage galvanized steel channel end stiles welded in place. Provide intermediate stiles, cut to door section profile, space at not more than 48" o.c. and welded in place.
 8. Reinforce bottom section with a continuous channel or angle conforming to bottom section profile.
 9. Reinforce sections with continuous horizontal and diagonal reinforcing, as required by door width and design wind loading. Provide galvanized steel bars, struts, trusses, or strip steel, formed to depth, and bolted or welded in place.

10. Provide reinforcement for hardware attachment.
 11. Fabricate sections so finished door assembly is rigid and aligned, with tight hairline joints and free of warp, twist and deformation.
 12. PVC thermal break and bulb seal between sections.
 13. enclose insulation with manufacturer's standard steel sheet secured to door panel.
 14. High-Usage Package: Provide with optional high-usage package with high cycle springs.
- B. Finish door sections as follows:
1. Apply manufacturer's standard prime and finish coats, applied to interior and exterior door faces.

2.3 TRACKS, SUPPORTS, AND ACCESSORIES:

- A. Tracks: Provide manufacturer's standard galvanized steel track system, sized for door size and weight, and designed for clearances shown. Provide complete track assembly including brackets, bracing and reinforcing for rigid support of ball bearing roller guides, for required door type and size. Slot vertical sections of track at 2" o.c. for door drop safety device. Slope tracks at proper angle from vertical, or otherwise design to ensure tight closure at jambs when door unit is closed. Weld or bolt to track supports. Track to be as close to roof structure as possible.
1. At overhead crane, use extra clearance track at 16'-0"x16'-0" overhead doors, providing minimum 12" clear of crane.
 2. At 10'-0" overhead door, use vertical lift track and operator.
- B. Track Reinforcement and Supports: Provide galvanized steel track reinforcement and support members. Secure, reinforce and support tracks as required for size and weight of door to provide strength and rigidity, and to ensure against sag, sway, and detrimental vibration during opening and closing of doors.
1. Support and attach tracks to opening jambs with continuous angle welded to tracks and attached to wall. Support horizontal (ceiling tracks) with continuous angle welded to track and supported by laterally-braced attachments to overhead structural members at curve and end of tracks.
- C. Weather Seals: Provide a continuous rubber, neoprene, or flexible vinyl adjustable weatherstrip gasket at top of each overhead door and a compressible astragal on door bottom.
1. In addition, provide continuous flexible brush type door seals at door jamb and head edges for a fully weather-tight installation.
- D. Vision Panels: Furnish clear insulating glass vision panels in arrangement shown on Drawings (full vision; long panel). Set glass in rubber or neoprene channel glazing strips.
1. Glazing to be 1/2 inch, (12.5mm), tempered insulating glass in steel sash frames.

2.4 HARDWARE:

- A. Provide heavy-duty, rust-resistant hardware, with galvanized or cadmium-plated or stainless-steel fasteners, to suit type of door.
- B. Hinges: Provide heavy steel hinges at each end stile and at each intermediate stile, per

manufacturer's recommendations for size of door. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is not possible. Provide double-end hinges, where required, for doors exceeding 16'-0" in width, unless otherwise recommended by door manufacturer.

- C. Rollers: Provide heavy-duty rollers, with steel ball bearings in case-hardened steel races, mounted with varying projections to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Provide roller tires to suit size of track (3" diameter for 3" track; 2" diameter for 2" track) and as follows:
 - 1. Case-hardened steel tires, for normal installations.

2.5 COUNTERBALANCING MECHANISMS:

- A. Torsion Spring: Hang door assembly for operation by torsion spring counterbalance mechanism, consisting of adjustable tension tempered steel torsion springs mounted on a case-hardened steel shaft, and connected to door with galvanized aircraft type lift cable.
- B. Provide cast aluminum or grey iron casting cable drums, grooved to receive cable. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of shaft with one additional mid-point bracket for shafts up to 16' long and 2 additional brackets at 1/3-points to support shafts over 16' long, unless closer spacing recommended by door manufacturer.
- C. Include a spring-loaded steel or bronze cam mounted to bottom door roller assembly on each side, designed to stop door automatically if either cable breaks. Provide either a compression spring or leaf spring bumper installed at end of each horizontal track to cushion door at end of opening operation.

2.6 ELECTRIC DOOR OPERATORS:

- A. Furnish electric door operator assembly of size and capacity recommended and provided by door manufacturer; complete with electric motor and factory-rewired motor controls, gear reduction unit, solenoid operated brake, clutch, remote control stations and control devices.
- B. Provide hand-operated disconnect or mechanism for automatically engaging sprocket chain operator and releasing brake for emergency manual operation. Include interlock device to automatically prevent motor from operating when emergency sprocket is engaged.
- C. Design operator so that motor may be removed without disturbing limit-switch adjustment and without affecting emergency auxiliary operator.
- D. Chain Hoist: Provide manually operated chain hoist with each overhead door operator. Furnish and install safety interlock switch.
- E. Door Operator Type: Unit consisting of electric motor, gears, pulleys, belts, sprockets, chains and controls needed to operate door.

1. Provide Roller Chain Drive operator and power unit with floor operated disconnect for manual operation. Furnish heavy-duty worm gear drive running in oil with additional reduction by chain and sprockets.
 - a. Overhead Door: RHX, Heavy Duty Commercial Operator, ¾ HP, 115v, single phase.
 - i. Provide 2 remote controls per overhead door to be provided.

- F. Electric Motors: Minimum size large enough to start, accelerate and operate door in either direction from any position, at a speed not less than 8 inches/second and not more than 12 inches/second without exceeding nameplate ratings or service factor.
 1. Coordinate wiring requirements and current characteristics of motors with building electrical system.

- G. Control Station: Three-button control station in fixed location with momentary contact push button controls labeled "open", "close" and "stop".
 1. Interior-Mounted Units: Full-guarded, surface mounted, heavy duty type with general purpose NEMA ICS 6, Type I enclosure.

- H. Obstruction Detection Device: External entrapment protection consisting of indicated automatic safety sensor capable of protecting full width of door opening. Activation of device immediately stops and reverses downward door travel.
 1. Photoelectric Sensor: Manufacturer's standard system meeting UL 325/2010; designed to detect an obstruction in door opening without contact between door and obstruction.
 - a. Self-Monitoring Type: Designed to interface with door operator control circuit to detect to or disconnection of sensing device. When self-monitoring feature is activated, door closes only with sustained pressure on close button.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Install door, track, and operating equipment complete with necessary hardware, jamb and head mold stops, anchors, inserts, hangers, and equipment supports in accordance with final shop drawings, manufacturer's instructions and as herein specified.

- B. Fasten vertical track assembly to framing at not less than 24" o.c. Hang horizontal track from structural overhead framing with angle or channel hangers, welded and bolt-fastened in place. Provide sway bracing, diagonal bracing, and reinforcing as required for rigid installation of track and door operating equipment.

- C. Upon completion of installation, including work by other trades, lubricate, test and adjust doors to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.

END OF SECTION