

Addendum No. 2

**For Project No. ENG2402842101
NERO ROOF REPLACEMENT PROJECT
Northeast Regional Office – Fish and Wildlife
Whitley County**

ISSUED FROM: Engineering Division Dept. Natural Resources

ISSUE DATE: January 23, 2025

BID DATE: February 4, 2025

FOR AGENCY: Department of Natural Resources

The information contained in this Addendum shall become a part of the basic plans and specifications the same as if original incorporated therein. The original plans and specifications shall remain in their entirety, except as modified by this Addendum. The items herein shall supersede information in the specifications and on the plans.

ITEM No. 1: GENERAL

- A. Attached revisions to the specifications.

ITEM No. 2: SPECIFICATIONS

- A. ADD - SECTION 01 23 00 – ALTERNATES
 - 1. ADD – Alternate #1 – Membrane Change
- B. REVISE - SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING
 - 1. Part 1 - General: Added 1.5 Quality Assurance Section
 - 2. Part 2 - Products:
 - a. Revised 2.2C Approved Manufacturer's and Products
 - b. Revised 2.4B Approved Manufacturer's

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. The bids for the alternates described herein are required to obtain information necessary for setting the scope of the project in its entirety.
- B. Add Alternates herein described are not to be included in the Base Bid Scope of Work.
- C. Deduct Alternates herein described are to be included in the Base Bid Scope of Work and deducted from the project as described.
- D. Bidder shall provide a response to each alternate specified. The response must indicate the amount to ADD to the Base Bid, DEDUCT from the Base Bid or that there is NO CHANGE. Substitution of materials or methods of work other than as called for in the documents, i.e. "voluntary alternates" shall be cause for rejections of bid as non-conforming. Refer to Page 2, DAPW 13 and Article 12(D), Instructions to Bidders, DAPW 29 or DAPW 30.
- E. All Requirements of the specification shall govern the work of this section. This section describes the changes to be made under each alternate.

1.03 ALTERNATES:

- A. Alternate Number 1: Membrane Change
 - 1. Provide 0.080 PVC roofing membrane in lieu of 0.060 PVC roofing membrane.
 - 2. Provide 30-year NDL warranty in lieu of 20-year NDL warranty.

1.03 CONTRACT AWARD:

- A. Contract award shall be based on the Base Bid or combination of the Base Bid and Alternate(s) chosen to be accepted by the State.

END OF SECTION

SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. **Adhered** polyvinyl chloride (PVC) roofing system.
2. Accessory roofing materials.
3. Roof insulation.
4. Insulation accessories and cover board.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **Project site**.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Metal samples for color selection
- C. Sample System Warranty documentation
- D. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.
- E. Upon completion of the installed work, submit copies of the manufacturer's final inspection to Owner prior to the issuance of the manufacturer's warranty.
- F. Maintenance Data

1.4 WARRANTY

1. Roof system warranty shall be rated for wind speeds up to 90 mph for life of roof.
2. Special Warranty: Manufacturer's warranty without monetary limitation (NDL), in which manufacturer agrees to repair or replace components of roofing system that fail in materials and/ or workmanship that result in leaks within specified warranty period. Contractor shall follow manufacturer's required installation instructions for the NDL warranty.
3. Special warranty includes membrane, flashings, roof insulation, repaired gypsum deck, and other components of roofing system.
4. Warranty Period: 20 years from date of Substantial Completion.
5. Coordinate and obtain inspections by manufacturer's product and technical representatives as needed to meet warranty requirements.

6. Submit manufacturers fully executed 20-year NDL warranty paperwork to Owner.

1.5 Quality Assurance

- A. Manufacturer / Single Source Responsibility: Obtain primary flexible sheet roofing from a single manufacturer.
- B. As approved by manufacturer of primary materials, provide secondary materials from a single manufacturer for each different product required.
- C. Roofing manufacturer's warranty shall be inclusive of all materials incorporated into the roofing system, whether manufactured by the roofing manufacturer or purchased from another source.
- D. Installer (applicator) A firm with not less than 10 years of successful experience in installation of roofing systems similar to those required for this project and which is named in writing as being acceptable to the manufacturer of the primary roofing materials.
- E. Work associated with flexible sheet roofing, including (but not limited to), insulation, flashing and counterflashing, expansion joints, flexible sheet joint sealers, and metal copings is to be performed by Installer of flexible sheet roofing.
- F. Applicator shall be approved by manufacturer in the form of an affidavit certifying approval.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Accelerated Weathering: Roof membrane to withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
- B. Impact Resistance: Roof membrane to resist impact damage when tested according to ASTM D3746, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- C. Material Compatibility: Roofing materials to be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- D. Wind Uplift Resistance: Design roofing system to resist wind uplift pressures when tested according to FM Approvals 4474, UL 580, or UL 1897:

2.2 POLYVINYL CHLORIDE (PVC) ROOFING

- A. Provide 60-mil, fully-adhered, white, single-ply, reinforced, thermoplastic roof membrane system per manufacturer's standard specifications and details, modified as needed to suit existing conditions. Provide all primers, adhesives, insulation, mechanical fasteners, metal and membrane flashings (at walls, roof curbs, pipe penetrations, roof drain assemblies), cants,

crickets, and related accessories as needed for proper installation, drainage, and to achieve specified warranty.

- B. Prior to beginning work, inspect and clean roof drains. Submit inspection report confirming functionality and identification of any issues and recommendations to DNR Engineering (and Property Manager).
- C. Approved Manufacturer's and Products: Subject to compliance with the technical specifications, provide one of the following roofing membrane systems.
 - 1. Sarnafil – 0.060 G410 Roofing Membrane (Basis of Design)
 - 2. Carlisle SynTec – 0.060 Sure-Flex PVC Roofing Membrane
 - 3. Elevate – 0.060 Max PVC Roofing Membrane
 - 4. Duro-Last – 0.060 Duro-Last PVC Roofing Membrane
 - 5. Mule-Hide – 0.060 Sure-Flex PVC Membrane
 - 6. Fibertite – 0.060 Fibertite SM
 - 7. GAF – 0.060 Everguard PVC Smooth

2.3 ACCESSORY ROOFING MATERIALS

- A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Bonding Adhesive: Manufacturer's standard.
- E. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately **1 by 1/8 inch (25 by 3 mm)** thick; with anchors.
- F. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.
- G. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.4 ROOF INSULATION

- A. Polyisocyanurate Board Insulation: ASTM C1289, **Type II, Class 1, Grade 2**, glass-fiber mat facer on both major surfaces.
- B. Approved Manufacturers:
 - 1. As acceptable to roofing membrane manufacturer for a fully warrantied roof system.
 - 2. Size: **48 by 96 inches**.
 - 3. Thickness:

- a. Base Layer: **2 inches**.
 - b. Upper Layer: **2 inches**.
- C. Tapered Insulation: Provide factory-tapered insulation boards.
1. Material: **Match roof insulation**.
 2. Minimum Thickness: **1/4 inch**.
 3. Slope:
 - a. Saddles and Crickets: As needed to provide positive drainage to roof drains

2.5 INSULATION ACCESSORIES AND COVER BOARD

- A. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate. Insulation to be fully adhered in place and compatible with system warranty requirements. Supplement with mechanical fasteners of appropriate type only if required.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation[**and cover boards**] to substrate, and acceptable to roofing system manufacturer.
- C. HD Polyisocyanurate Insulation Cover Board: ASTM C1289 Type II, Class 4, Grade 1, **1/2 inch (13 mm)** thick, having a minimum compressive strength of **80 psi (551 kPa)**.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

3.2 PREPARATION

- A. Contractor shall inspect and perform all necessary pull tests to determine structural integrity of existing gypsum decking and fastening requirements to achieve specified warranty requirements after membrane removal. Report results to DNR Engineering (nsmothers@dnr.in.gov) and Property Manager.
- B. Repairs to the existing gypsum decking shall utilize Remediation Allowance funds.

3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.4 INSTALLATION OF INSULATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Existing Deck:
 - 1. Install base layer of insulation with **joints staggered not less than 24 inches (610 mm) in adjacent rows.**
 - a. Make joints between adjacent insulation boards not more than **1/4 inch (6 mm)** in width.
 - b. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus **24 inches (610 mm).**
 - 1) Trim insulation so that water flow is unrestricted.
 - c. Fill gaps exceeding **1/4 inch (6 mm)** with insulation.
 - d. Cut and fit insulation within **1/4 inch (6 mm)** of nailers, projections, and penetrations.
 - e. Adhere base layer of insulation to roof deck according to manufacturer's standards.
 - 2. Install upper layers of insulation **and tapered insulation** with joints of each layer offset not less than **12 inches (305 mm)** from previous layer of insulation.
 - a. Install with long joints continuous and with end joints staggered not less than **12 inches (305 mm)** in adjacent rows.
 - b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - c. Make joints between adjacent insulation boards not more than **1/4 inch (6 mm)** in width.
 - d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus **24 inches (610 mm).**
 - 1) Trim insulation so that water flow is unrestricted.
 - e. Fill gaps exceeding **1/4 inch (6 mm)** with insulation.
 - f. Cut and fit insulation within **1/4 inch (6 mm)** of nailers, projections, and penetrations.

3.5 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of **6 inches (150 mm)** in each direction.
 - 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.

2. At internal roof drains, conform to slope of drain sump.
 - a. Trim cover board so that water flow is unrestricted.
3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to manufacturer's standards and as required to maintain roofing warranties.

3.6 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Applicator shall verify that the work done under related sections meets the following conditions:
 1. Roof drains and scuppers have been installed properly, or reconditioned, or replaced.
 2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
 3. All surfaces are smooth and free of dirt, debris and incompatible materials.
 4. All roof surfaces shall be free of water, ice and snow.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. PREPARATION
 1. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's most current requirements. Remove sharp projections.
 2. Prevent materials from entering and clogging roof drains and flashings and from spilling or migrating onto surfaces of other construction.
- D. ROOFING INSTALLATION, GENERAL
 1. Install roofing system according to product manufacturer's most current requirements including but not limited to roofing applicator handbook, product data sheets, specifications, and or relevant technical bulletins.
 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of each workday. Remove and discard temporary seals before beginning work on adjoining roofing.
 3. For tie-in with existing roofing, install roofing and auxiliary materials to maintain weather tightness of transitions.

3.7 INSTALLATION OF BASE FLASHING

- A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8 FIELD QUALITY CONTROL

- A. Arrange for roofing system manufacturer's technical personnel to inspect roofing installation upon completion.
- B. Repair or remove and replace components of roofing system that do not comply with specified requirements.
- C. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements

3.9 PROTECTING AND CLEANING

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

END OF SECTION 075419