



FREDERICK COUNTY GOVERNMENT

Jan H. Gardner
County Executive

DIVISION OF FINANCE
Department of Procurement & Contracting

Lori L. Depies, CPA, Division Director
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May 15, 2018

IFB No. 18-363-CP

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Addendum No. 3

This addendum contains revisions, clarifications, and information pertinent to the IFB for the referenced project and shall supplement, amend, and become part of the IFB for the title project and contract. All bids shall be based on this Addendum, in accordance with the IFB documents.

Acknowledgment of this addendum shall be submitted with the bid, including addendum number and date. Failure to acknowledge addendum may subject the contractor to disqualification.

Bids are due May 22, 2018 before 2:00 PM EST.

CLARIFICATIONS:

1. Per note on Sheet I000, Drawing 4-I000 FF&E Plan, furniture, including stacks, will be contracted separately. Contractor to coordinate as required.
2. Roof Note No. 3 on Sheet S2.1, Roof Framing Plan, states that PWT denotes prefabricated FRT wood trusses.
3. Refer to Sheet S4.2, Shear Wall Details, for required shear wall dimensions and blocking truss requirements.
4. Fluid-applied air barrier shall be non-permeable as specified.
5. Refer to Sheet C-5 for location of 3" water meter and water vault.
6. The contractor is to install the housekeeping pads.
7. Air balancing and duct cleaning will be the responsibility of the owner.

CHANGES TO THE PROJECT MANUAL:

- 1) Section 051200 – Structural Steel Framing
 - a) Delete 2.8, A, 4.
- 2) Section 061753 – Shop-Fabricated Wood Trusses
 - a) Delete section in its entirety and replace with new attached section dated 14 May 2018.
- 3) Section 062023 – Interior Finish Carpentry
 - a) Delete section in its entirety and replace with new attached section dated 14 May 2018.
- 4) Section 072500 – Weather Barriers
 - a) Delete section in its entirety.
 - b) Delete section from Table of Contents.
- 5) Section 073113 – Asphalt Shingles
 - a) 1.5 Warranty
 - i) Add the following:

“B. Roofing Installer's Warranty: Installer agrees to repair or replace components of asphalt-shingle roofing that fail in materials or workmanship within specified warranty period.

(1) Warranty Period: Two years from date of Substantial Completion”.
- 6) Section 074113.16 – Standing-Seam Metal Roof Panels
 - a) 2.2 Standing-Seam Metal Roof Panels
 - i) B, 1, a- Nominal Thickness: Delete “.028 inch” and replace with “.020 inch (24 gauge)”.
- 7) Section 074113.16 – Standing-Seam Metal Roof Panels
 - a) Delete 2.4, D and replace with the following: “Gutters and Downspouts: See Section 076200, Sheet Metal Flashing and Trim”.
- 8) Section 076200 – Sheet Metal Flashing and Trim
 - a) Delete section in its entirety and replace with new attached section dated 14 May 2018.
- 9) Section 084113 – Aluminum-Framed Entrances and Storefronts
 - a) 2.3 Entrance Door System
 - i) Basis-of-Design Product: Delete “Kawneer Tuffline 500” and replace with “Kawneer Insulclad 360”.
- 10) Section 084113 – Aluminum-Framed Entrances and Storefronts
 - a) Addendum 2, Changes to Project Manual, No. 5:
 - i) Delete reference “2.8, B, 1” and replace with “2.8, A, 1”.
- 11) Section 085113 – Aluminum Windows
 - a) Addendum 2, Changes to Project Manual, No. 6:

- i) Delete reference "2.5, A, 1" and replace with "2.5, B, 1".
- 12) Section 102113 – Toilet Compartments
- a) Delete 1.1, A, 1 and replace with the following: "Solid-polymer toilet compartments configured as toilet enclosures and urinal screens".
- 13) Section 220499 – Plumbing Scope
- a) 1.2 Description of Work
 - i) Delete A, 7 and replace with the following: "Owner to provide wet fire protection system design and installation under a separate contract. Contractor to provide the flange connection for the fire protection system and coordinate as required, including type and location of flange".
- 14) Section 220500 – Basic Plumbing Materials and Methods
- a) 1.2 Plumbing Work
 - i) Delete B and replace with the following: "Owner to provide wet fire protection system design and installation under a separate contract. Contractor to provide the flange connection for the fire protection system and coordinate as required, including type and location of flange".

CHANGES TO THE DRAWINGS:

1. Sheet C-2 – Typical Sections, Notes and Details
Dumpster Enclosure Details- Delete the single note and replace with the following:
"General Notes:
 1. Dumpster enclosure shall be 24'-0" x 12'-0" (inside dimensions) as required by Frederick County and as indicated on Sheet C-5, with an overall height of 7'-0".
 2. Enclosure shall be constructed of pressure-treated wood materials, including 6x6 posts, 2x framing and cross-bracing, and 3/4" plywood sheathing as required for a structurally stable enclosure.
 3. All required fasteners and connectors shall be hot-dipped galvanized.
 4. Provide concrete post footings as required to support/stabilize structure.
 5. Exterior finish shall be horizontal fiber cement siding with 1x fiber cement trim, including skirt board, cap/frieze boards and corner boards, to match the main library finish and appearance.
 6. Elevate skirt board (bottom trim) 6" above finished grade.
 7. Paint all interior/exterior exposed wood with a high-performance coating.
 8. Provide swinging gates as shown (dimensionally stable) with required heavy-duty, rust-free, stainless steel gate hardware components, to include extended strap hinges, cane/drop bolts (at each gate), and slide bolt gate latch (padlock ready).
 9. Contractor to submit shop drawings, including structural analysis, for review and approval".

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2. Sheet C-11 – Stormwater Management Plan
Add the following general note to the sheet: "Mulching Note: Wherever continuous landscaping occurs, including all shrub beds, continuous mulch beds shall be provided. Individual mulch rings (6'-0" diameter) shall be provided around individual trees when not part of a continuous shrub bed. All stormwater areas shall be mulched in accordance with Details on Sheet C-12. Refer to Specification 329200 for mulch material".
3. Sheet C-13 – Landscape Plan
Add the following general note to the sheet: "Mulching Note: Wherever continuous landscaping occurs, including all shrub beds, continuous mulch beds shall be provided. Individual mulch rings (6'-0" diameter) shall be provided around individual trees when not part of a continuous shrub bed. All stormwater areas shall be mulched in accordance with Details on Sheet C-12. Refer to Specification 329200 for mulch material".
4. Sheet A100 – Floor Plans
Drawing 1-A100, Floor Plan: Delete listed reference to Recessed Display Case (in Vestibule 100) and replace with "(See 4-A800)".
5. Sheet A300 – Door Schedule
Details 4-A300, Jamb, Head and Sill Details: Delete "Wood Casing" (both graphically and notes) in J-2 and H-2 details.
6. Sheet A400 – Exterior Elevations
Add the following to General Notes:
"2. Provide 6" half-round gutters with 4" round downspouts. Refer to specs".
7. Sheet A400 – Exterior Elevations
Detail 7-A400, Trolley House- Front Elevation: Delete note on left side regarding aluminum wrapped trim and replace with the following: "Aluminum wrapped trim to match siding".
8. Sheet A401 – Building Sections
Add the following to General Notes:
"4. Provide 6" half-round gutters with 4" round downspouts. Refer to specs".
9. Sheet A401 – Building Sections
Detail 12-A401, Building Section: Add a horizontal dimension of 5'-7" from exterior wall (at Men 106) to front of shed dormer framing (with louver).
10. Sheet A500 – Wall Sections
Details 1/4-A500, Wall Section: Add a vertical truss heel dimension of 1'-6", typical, from truss bearing to top of top chord at exterior line of bearing wall".

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11. Sheet A501 – Wall Sections
Details 1/2-A501, Wall Section: For all notes describing aluminum wrapped components, delete “to match storefront” and replace with “to match siding”.
12. Sheet A501 – Wall Sections
Detail 2-A501, Wall Section: Delete the perforated vertical panel notes and replace with the following: “Perforated vertical corrugated metal panels with associated trim as required over 3/16” thick black sound-absorbing acoustical fabric with Class A finish rating (Crosspoint, or equal) on horizontal metal furring as required (minimum 24” O.C.)”.
13. Sheet A503 – Wall Sections
Detail 2-A503, Wall Section: Add a vertical truss heel dimension of 1’-6” from truss bearing to top of top chord at exterior line of tube steel post (dashed).
14. Sheet A503 – Wall Sections
Detail 4-A503, Wall Section: Add a vertical truss heel dimension of 2’-1” from truss bearing to top of top chord at exterior line of bearing wall (window seat in Children’s Area).
15. Sheet A503 – Wall Sections
Detail 4-A503, Wall Section: Delete gypsum wall board bulkhead note and replace with the following: “Gypsum wall board bulkhead, extend 4” beyond surface of adjacent wall. Refer to Detail 3-A506 for similar condition and Interior Elevation A on Drawing 2-A800”.
16. Sheet A504 – Wall Sections
Detail 4-A504, Wall Section: Delete roofing note. Does not apply to this application.
17. Sheet A505 – Wall Sections
Details 1/2/3/4-A505, Wall Section: For all notes describing aluminum wrapped components, delete “to match storefront” and replace with “to match siding”.
18. Sheet A506 – Wall Sections
Detail 4-A506, Wall Section: Delete the perforated vertical panel note and replace with the following: “Perforated vertical corrugated metal panels with associated trim as required over 3/16” thick black sound-absorbing acoustical fabric with Class A finish rating (Crosspoint, or equal) on horizontal metal furring as required (minimum 24” O.C.)”.
19. Sheet A506 – Wall Sections
Detail 4-A506, Wall Section: For all notes describing aluminum wrapped components, delete “to match storefront” and replace with “to match siding”.
20. Sheet A507 – Wall Sections

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Detail 1-A507, Wall Section: For all notes describing aluminum wrapped components, delete "to match storefront" and replace with "to match siding".

21. Sheet A507 – Wall Sections

Detail 2-A507, Wall Section: Add a vertical dimension of 4'-8" from top of top chord of truss system to top of dormer roof bearing at front dormer wall (with louver).

22. Sheet A600 – Details

Details 2/4-A600, Column Details- Delete "1X wood base" notes and replace with "1X4 (actual height) wood base, typ. Painted or stained".

23. Sheet A600 – Details

Details 9/11-A600, Plan Detail- Exterior/Interior Book Drop: Delete "wall trim" notes and replace with "1X4 wood trim, painted to match wall color".

24. Sheet A600 – Details

Details 10/12-A600, Section Detail- Exterior/Interior Book Drop: Delete "wall trim" notes and replace with "1X4 wood trim, painted to match wall color".

25. Sheet A600 – Detail 15/16-A600, Fire Extinguisher Cabinet (Plan View)/(Elevation): Delete chair rail notes. Not applicable.

26. Sheet A700 – Enlarged Plans

Drawing 1A-A700, Enlarged Floor Plan: Delete graphic representation (shaped of TA-6) from accessible stall in Men 106.

27. Sheet A800 – Interior Elevations and Casework Details

Detail 2-A800, Interior Elevation, A- Add the following note: "Column trim shall be 1X4 (actual height) wood trim, painted or stained. Base and cap trim typical at all exposed columns".

28. Sheet A800 – Interior Elevations and Casework Details

Details 12/13/14-A800, Desk 108- Delete "wood base" notes and replace with "1X wood base to match casework finish".

29. Sheet I000 – Finish Schedule and Finish Plans

Drawing 4-I000, FF&E Plan: Add "N.I.C." (not in contract) to microwave shown in Receiving/Work 111. Owner shall provide.

30. Sheet S1.1 – Footing and Foundation

Foundation Plan- Add a dimension of 3'-0" from the shearwall (front wall) to the offset of the vestibule foundation.

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31. Sheet S2.1 – Roof Framing Plan
Roof Notes- Note 1: Delete 19/32" and replace with 3/4".
32. Sheet S3.1 – Sections
Detail 2-S3.1: Graphically extend exterior, non-load bearing wall to the underside of the roof deck and shift end truss (and required clips) to inside of exterior wall as shown in architectural drawings.
33. Sheet S5.1 – General Notes
Division 6- Structural Wood Products (last paragraph): Delete 19/32" and replace with 3/4".
34. Sheet P001 – Plumbing Symbols, Abbreviations and
Notes Plumbing/Piping General Notes- Delete Note
16.
35. Sheet P701 – Plumbing Details and Schedule
Deleted illegible sheet number and replace with "P701".

ATTACHMENTS:

- Attachment 1 – Specification Sections 061753, 062023, & 076200.

END OF ADDENDUM

Except as noted herein, all terms and conditions of the document referenced, as heretofore changed, remain unchanged and in full force and effect.



Bruce Johnson
Project Manager IV

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Attachment 1

Specification Sections 061753, 062023, & 076200

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

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

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Distinguish between shop- and field-assembled work.
3. Include identification of finish for each item.
4. Include pattern of seams and details of termination points, expansion joints and expansion-joint covers, direction of expansion, roof-penetration flashing, and connections to adjoining work.

C. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications:** Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

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1. For copings and roof edge flashings that are SPRI ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.

1.6 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, dead soft, fully annealed; 2D (dull, cold rolled) finish.
- C. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet according to ASTM A 653/A 653M, G90 (Z275) coating designation; prepainted by coil-coating process to comply with ASTM A 755/A 755M.
 1. Exposed Coil-Coated Finish:
 - a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Color: As selected by Architect from manufacturer's full range.

2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum **30 mils (0.76 mm)** thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.
 1. Thermal Stability: ASTM D 1970; stable after testing at **240 deg F (116 deg C)** or higher.
 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus **20 deg F (29 deg C)** or lower.
- B. Slip Sheet: Rosin-sized building paper, **3 lb/100 sq. ft. (0.16 kg/sq. m)** minimum.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item 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 or manufactured item.
 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. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - 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 Stainless-Steel Sheet: Series 300 stainless steel.
 3. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.
- C. Solder:
 1. For Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, 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.

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- E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.
- I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 MANUFACTURED REGLETS

- A. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated and with interlocking counterflashing on exterior face, of same metal as reglet.
 - 1. Material: Stainless steel, 0.019 inch (0.48 mm) thick.
 - 2. Finish: Mill.

2.6 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 1. Obtain field measurements for accurate fit before shop fabrication.
 - 2. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 - 3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- C. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

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- E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.
- 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.

2.7 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Gutters: Manufactured in uniform section lengths not exceeding **12 feet**, with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least **1 inch** above front edge. Furnish flat-stock gutter straps, gutter brackets, expansion joints, and expansion-joint covers fabricated from same metal as gutters.
 - 1. Aluminum Sheet: **0.050 inch (1.02 mm)** thick.
 - 2. Gutter Profile: 6" half-round.
 - 3. Gutter Supports: Gutter brackets with finish matching the gutters.
 - 4. Expansion Joints: Butt type with cover plate.
 - 5. Accessories: Wire-ball downspout strainer.
- B. Downspouts: 4" round downspouts complete with machine-crimped elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.
 - 1. Formed Aluminum: **0.040 inch** thick.

2.8 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing (Gravel Stop): Fabricate in minimum **96-inch- (2400-mm-)** long, but not exceeding **12-foot- (3.6-m-)** long sections. Furnish with **6-inch- (150-mm-)** wide, joint cover plates.
 - 1. Fabricate from the Following Materials:
 - a. Galvanized Steel: **0.028 inch (0.71 mm)** thick.
- B. Copings: Fabricate in minimum **96-inch- (2400-mm-)** long, but not exceeding **12-foot- (3.6-m-)** long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and interior leg. Miter corners, fasten and seal watertight.
 - 1. Fabricate from the Following Materials:
 - a. Galvanized Steel: **0.040 inch (1.02 mm)** thick.
- C. Base Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: **0.019 inch (0.48 mm)** thick.
- D. Counterflashing and Flashing Receivers: Fabricate from the following materials:
 - 1. Stainless Steel: **0.019 inch (0.48 mm)** thick.

2.9 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.016 inch (0.40 mm) thick.
- B. Valley Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.019 inch (0.48 mm) thick.
- C. Drip Edges: Fabricate from the following materials:
 - 1. Stainless Steel: 0.016 inch (0.40 mm) thick.
- D. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.016 inch (0.40 mm) thick.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches (50 mm).
- B. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturers' written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.
- C. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer 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 and edges 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. Use fasteners, solder, 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, levels, and slopes. 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. Attach each cleat with at least two fasteners. Bend tabs over fasteners.

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4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
 5. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Coat concealed side of stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of **10 feet (3 m)** with no joints within **24 inches (600 mm)** of corner or intersection.
1. Form expansion joints of intermeshing hooked flanges, not less than **1 inch (25 mm)** deep, filled with sealant concealed within joints.
 2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or 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. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of **1-1/2 inches (38 mm)**; however, reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder metallic-coated steel sheet.
 2. Do not use torches for soldering.
 3. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
 4. Stainless-Steel Soldering: Tin edges of uncoated sheets, using solder 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.
 5. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.
- H. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.3 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

- A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Gutters: Join and seal gutter lengths. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than **24 inches (610 mm)** apart. Attach ends with rivets and seal with sealant to make watertight. Slope to downspouts.
 - 1. Install gutter with expansion joints at locations indicated but not exceeding **50 feet (15.2 m)** apart. Install expansion-joint caps.
- C. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and **1 inch (25 mm)** away from walls; locate fasteners at top and bottom and at approximately **60 inches (1500 mm)** o.c.
 - 1. Connect downspouts to underground drainage system indicated, unless otherwise noted.

3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate.
- C. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.
- D. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of **4 inches (100 mm)** over base flashing. Install stainless-steel draw band and tighten.
- E. 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 minimum of **4 inches (100 mm)**.
- F. 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 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of

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wall flashing with installation of wall-opening components such as windows, doors, and louvers.

- B. Through-Wall Flashing: Installation of through-wall flashing is specified in Section 042000 "Unit Masonry."
- C. Reglets: Installation of reglets is specified in Section 042000 "Unit Masonry."
- D. Opening Flashings in Frame Construction: Install continuous head, sill, and similar flashings to extend 4 inches (100 mm) beyond wall openings.

3.6 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.
- C. Clean off excess sealants.
- D. 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 062023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior trim.
 - 2. Interior plywood.

1.2 DEFINITIONS

- A. MDO: Plywood with a medium-density overlay on the face.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
- B. Samples: For each exposed product and for each color and texture specified.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's (ALSC) Board of Review. Grade lumber by an agency certified by the ALSC's Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.
- B. Softwood Plywood: DOC PS 1.
- C. Hardboard: ANSI A135.4.

2.2 INTERIOR TRIM

- A. Hardwood Lumber Trim for Transparent Finish (Stain or Clear Finish):
 - 1. Species and Grade: Red oak
 - 2. Maximum Moisture Content: 10 percent.

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3. Finger Jointing: Not allowed.
4. Veneered Material: Allowed.
5. Face Surface: Surfaced (smooth).
6. Matching: Selected for compatible grain and color.
7. Finish: Stain and protective coating.

B. Lumber Trim for Opaque Finish (Painted Finish):

1. Species and Grade: Eastern white pine; NeLMA or NLGA D Select.
2. Species and Grade: Idaho white, lodgepole, ponderosa, radiata, or sugar pine; NLGA or WWPA D Select (Quality).
3. Species and Grade: Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine; NeLMA, NLGA, or WWPA D Select (Quality).
4. Species and Grade: White woods; WWPA D Select.
5. Species and Grade: Douglas fir-larch or Douglas fir south; NLGA, WCLIB, or WWPA Superior or C & Btr finish.
6. Species and Grade: Spruce-pine-fir; NeLMA, NLGA, WCLIB, or WWPA 1 Common.
7. Maximum Moisture Content: 19 percent.
8. Finger Jointing: Not allowed.
9. Face Surface: Surfaced (smooth).
10. Finish: Paint

2.3 PLYWOOD PANELS

A. Hardwood Veneer Plywood: Hardwood Plywood Panels (Stain or Clear Finish).

1. Face Veneer Species and Cut: Plain-sliced white maple.
2. Grade: Custom.
3. Veneer Matching: Book match.
4. Construction: Veneer core.
5. Finish: Paint or stain and protective coating, as selected by Architect.

2.4 MISCELLANEOUS MATERIALS

- A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.
- B. Low-Emitting Materials: Adhesives shall comply with testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.
- D. Paneling Adhesive: Comply with paneling manufacturer's written instructions for adhesives.
- E. Multipurpose Construction Adhesive: Formulation, complying with ASTM D 3498, that is recommended for indicated use by adhesive manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.
- B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION, GENERAL

- A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials.
 - 1. Use concealed shims where necessary for alignment.
 - 2. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
 - 3. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
 - 4. Install to tolerance of **1/8 inch in 96 inches (3 mm in 2438 mm)** for level and plumb. Install adjoining interior finish carpentry with **1/32-inch (0.8-mm)** maximum offset for flush installation and **1/16-inch (1.5-mm)** maximum offset for reveal installation.
 - 5. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

3.3 STANDING AND RUNNING TRIM INSTALLATION

- A. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available.
 - 1. Do not use pieces less than **24 inches (610 mm)** long, except where necessary.
 - 2. Stagger joints in adjacent and related standing and running trim.
 - 3. Cope at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.
 - 4. Use scarf joints for end-to-end joints.
 - 5. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.
 - 6. Match color and grain pattern of trim for transparent finish (stain or clear finish) across joints.
 - 7. Install trim after gypsum-board joint finishing operations are completed.
 - 8. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting.
 - 9. Fasten to prevent movement or warping.
 - 10. Countersink fastener heads on exposed carpentry work and fill holes.
 - 11. Paint or stain as directed by Architect.
- B. Hardboard Plywood Panels:

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1. Leave 1/4-inch (6-mm) gap to be covered with trim at top, bottom, and openings.
2. Butt adjacent panels with moderate contact.
3. Use fasteners with prefinished heads matching paneling color.
4. Wood Stud or Furring Substrate: Install with 1-inch (25-mm) annular-ring shank hardboard nails.
5. Plaster or Gypsum-Board Substrate: Install with 1-5/8-inch (41-mm) annular-ring shank hardboard nails.
6. Nailing: Space nails 4 inches (100 mm) o.c. at panel perimeter and 8 inches (200 mm) o.c. at intermediate supports unless otherwise required by manufacturer.
7. Paint or stain as directed by Architect.

END OF SECTION 062023

SECTION 061753 - SHOP-FABRICATED WOOD TRUSSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood roof trusses.
2. Wood girder trusses.

1.2 ALLOWANCES

- A. Provide wood truss bracing under the Metal-Plate-Connected Truss Bracing Allowance as specified in Section 012100 "Allowances."**

1.3 ACTION SUBMITTALS

- A. Product Data:** For metal-plate connectors, metal truss accessories, and fasteners.

- B. Shop Drawings:** Show fabrication and installation details for trusses.

1. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.
2. Indicate sizes, stress grades, and species of lumber.
3. Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.
4. Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.
5. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
6. Show splice details and bearing details.

- C. Delegated-Design Submittal for shop drawings and calculations:** For metal-plate-connected wood trusses indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation. Professional engineer to submit a certificate of proof of professional liability insurance.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates:** For metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.

- B. Evaluation Reports:** For the following, from ICC-ES:

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1. Metal-plate connectors.
2. Metal truss accessories.

1.5 QUALITY ASSURANCE

- A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.
 1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
 2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
- B. Fabricator Qualifications: Shop that participates in a recognized quality-assurance program.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle and store trusses to comply with recommendations in SBCA BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal-plate-connected wood trusses.
- B. Structural Performance: Metal-plate-connected wood trusses shall be capable of withstanding design loads within limits and under conditions indicated. Comply with requirements in TPI 1.
- C. Comply with applicable requirements and recommendations of TPI 1, TPI DSB, and SBCA BCSI.
- D. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."

2.2 DIMENSION LUMBER

- A. Lumber: DOC PS 20 and applicable rules of any rules-writing agency certified by the American Lumber Standard Committee (ALSC) Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 1. Provide dry lumber with 19 percent maximum moisture content at time of dressing.
- B. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Section 061000 "Rough Carpentry."

2.3 FIRE-RETARDANT-TREATED WOOD

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products according to test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
 - 1. Use treatment that does not promote corrosion of metal fasteners.
 - 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
 - 3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use for interior locations where exterior type is not indicated.
 - 4. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D 5664, and design value adjustment factors shall be calculated according to ASTM D 6841.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

2.4 METAL CONNECTOR PLATES

- A. General: Fabricate connector plates to comply with TPI 1.
- B. Hot-Dip Galvanized-Steel Sheet: ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 (Z180) coating designation; and not less than 0.036 inch (0.9 mm) thick.

2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Provide fasteners for use with metal framing anchors that comply with written recommendations of metal framing manufacturer.
 - 2. Where trusses are 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, and Staples: ASTM F 1667.

2.6 METAL FRAMING ANCHORS AND ACCESSORIES

- A. Allowable design loads, as published by manufacturer, shall comply with or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, **G60 (Z180)** coating designation.

2.7 FABRICATION

- A. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly, with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.
 - 1. Fabricate wood trusses within manufacturing tolerances in TPI 1.
- B. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install wood trusses only after supporting construction is in place and is braced and secured.
- B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.
- C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
- D. Install and brace trusses according to TPI recommendations and as indicated.
- E. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.
- F. Securely connect each truss ply required for forming built-up girder trusses.
- G. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.
 - 1. Install bracing to comply with Section 061000 "Rough Carpentry."
 - 2. Install and fasten strongback bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.
- H. Install wood trusses within installation tolerances in TPI 1.

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- I. Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.
- J. Replace wood trusses that are damaged or do not comply with requirements.

END OF SECTION 061753