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**Oakhurst Dairy – New Milk Cooler****SECTION 07620 – SHEET METAL FLASHING AND TRIM****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. This Section includes sheet metal flashing and trim in the following categories:
  1. Scuppers and downspouts.
  2. Exposed trim, gravel stops, and fascia.
  3. Metal flashing.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  1. Division 13 Section 13065 - "Single-Ply roofing for Cold Storage".
  2. Division 7 Section 7920 - "Sealants."

**1.3 PERFORMANCE REQUIREMENTS**

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing.
- B. Fabricate and install flashings at roof edges to comply with recommendations of FM Loss Prevention Data Sheet 1-49 for the following wind zone:
  1. Wind Zone 1: Wind pressures of 21 to 30 psf.

**1.4 PROJECT CONDITIONS**

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

**PART 2 - PRODUCTS****2.1 METALS**

- A. Coil-Coated Galvanized Steel Sheet: Zinc-coated, commercial-quality steel sheet conforming to ASTM A 755, G 90 coating designation, coil coated with high-performance fluoropolymer coating as specified in "Coil-Coated Galvanized Steel Sheet Finish" Article; not less than 0.0336 inch thick, unless otherwise indicated.

**2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES**

- A. Solder: ASTM B 32, Grade Sn50, used with rosin flux.
- B. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.

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- C. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for joint sealants as specified in Division 7 Section "Joint Sealants."
- D. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.
- E. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.
- F. Scupper Screen: 1/4-inch hardware cloth installed in sheet metal frames. Fabricate screen and frame of same basic material as scuppers and downspouts.

**2.3 FABRICATION, GENERAL**

- A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.
- B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Form exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.
- D. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- E. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- F. Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.
- G. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
- H. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
  - 1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

**2.4 SHEET METAL FABRICATIONS**

- A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.

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- B. Downspouts: Fabricate from the following material:
  - 1. Coil-Coated Galvanized Steel: 0.0217 inch thick.
- C. Scuppers: Fabricate from the following material:
  - 1. Coil-Coated Galvanized Steel: 0.0276 inch thick.
- D. Exposed Trim, Coping Gravel Stops, and Fasciae: Fabricate from the following material:
  - 1. Coil-Coated Galvanized Steel: 0.0276 inch thick.
- E. Counterflashing: Fabricate from the following material:
  - 1. Coil-Coated Galvanized Steel: 0.0217 inch thick.
- F. Roof-Penetration Pocket: Fabricate from the following material:
  - 1. Stainless Steel: 0.0187 inch thick.

**2.5 COIL-COATED GALVANIZED STEEL SHEET FINISH**

- A. High-Performance Organic Coating Finish: Apply the following system by coil-coating process on galvanized steel sheet as recommended by coating manufacturers and applicator.
  - 1. Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 605.2.
    - a) Color and Gloss: Color must match exactly the color of the adjacent wall or wall panels, unless the Owner selects a contrasting color for specific trim locations.
    - b) Resin Manufacturers: Subject to compliance with requirements, provide fluoropolymer coating systems containing resins produced by one of the following manufacturers:
      - 1) Elf Atochem North America, Inc. (Kynar 500)
  - 2. Coil-Coated Steel Sheet Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

**PART 3 - EXECUTION****3.1 EXAMINATION**

- A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

**3.2 INSTALLATION**

- A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.

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- B. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Roof-Edge Flashings: Secure metal flashings at roof edges according to FM Loss Prevention Data Sheet 1-49 for specified wind zone.
- D. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- E. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches, except where pretinned surface would show in finished Work.
  - 1. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
- F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
  - 1. Use joint adhesive for nonmoving joints specified not to be soldered.
- G. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- H. Separations: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
  - 1. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.
  - 2. Bed flanges of Work in a thick coat of roofing cement where required for waterproof performance.
- I. Counterflashings: Coordinate installation of counterflashings with installation of assemblies to be protected by counterflashing. Install as detailed. Secure in a waterproof manner by means of sealant. Lap counterflashing joints a minimum of 2 inches and bed with sealant.
- J. Roof-Drainage System: Install drainage items fabricated from sheet metal, with straps, adhesives, and anchors recommended by SMACNA's Manual or the item manufacturer, to drain roof in the most efficient manner. Coordinate roof-drain flashing installation with roof-drainage system installation. Coordinate flashing and sheet metal items for steep-sloped roofs with roofing installation.
- K. Install scupper screens on scuppers with noncorrosive fasteners, arranged as hinged units to swing open for cleaning scuppers.

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**3.3 CLEANING AND PROTECTION**

- A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
- B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION 13066