SECTION  – sheet metal flashing and trim

1. General
   1. SUMMARY
      1. Furnish labour, materials, and other services to complete the fabrication and installation of:
         1. Cap and base flashing; curb flashings,
         2. Roof edge flashing,
         3. Flashing at intersection of roof with vertical surfaces,
         4. Break metal flashings where shown,
         5. Prefinished flashings where indicated,
         6. Any other flashing as indicated on the drawings or as required, including all materials and fitments required for the operation of any unit furnished, in the manner, direction and performance shown on the shop drawings and specified herein.
      2. Furnish, complete, all materials which shall be installed by other trades as specified and/or shown on the Drawings including:
         1. Furnish to Section 04 20 00 – Unit masonry, all metal flashings and counter flashings which are to be built into masonry work.
      3. Related Requirements:
         1. Section 04 20 00 – Unit Masonry.
         2. Section 05 40 00 – Cold-Formed Metal Framing.
         3. Section 05 50 00 – Metal Fabrications.
         4. Section 06 10 00 – Rough Carpentry.
         5. Section 07 42 13.16 – Metal Plate Wall Panels.
         6. Section 07 42 13.19 – Insulated Metal Wall Panels.
         7. Section 07 52 16 – SBS Modified Bituminous Membrane Roofing.
         8. Section 07 54 23 – Thermoplastic Olefin Roofing (TPO).
         9. Section 07 92 00 – Joint Sealants.
   2. reference standards
      1. American Society for Testing and Materials (ASTM):
         1. ASTM A 653/A 653M-11, Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot Dip Process.
      2. Canadian General Standards Board (CGSB):
         1. CAN/CGSB-1.108-M89, Bituminous Solvent Type Paint.
         2. CAN/CGSB-1.181-99, Ready Organic Zinc-Rich Coating.
         3. CAN/CGSB-19.24-M90, Multicomponent, Chemical-Curing Sealing Compound.
      3. Canadian Roofing Contractors Association:
         1. CRCA Specifications Manual.
   3. SUBMITTALS
      1. Provide submittals specified and as required to assess conformance with the Contract Documents, in accordance with Section 01 33 00 – Submittal Procedures.
      2. Submit shop drawings indicating material, thickness, and finish.
      3. Submit duplicate 4 sq.in. samples of each type of sheet metal material, colour, and finish for review by Consultant prior to fabrication.
   4. quality assurance
      1. Fabricator and tradesmen executing the work of this Section shall have had a minimum five (5) years continuous Canadian experience in successful manufacture and installation of Work of type and quality shown and specified. Submit proof of experience upon Consultant's request.
      2. Erection of metal flashing systems shall be by workmen especially trained and experienced in this type of work. Have a senior, qualified representative at the job site to direct the work of this Section at all times.
   5. delivery, storage, and handling
      1. Store materials flat at site under protection to prevent staining from the work of other trades or from collection of water on material and secured against wind damage.
      2. Carefully store preformed sheet metal work in such a manner as to prevent twisting, bending, and rubbing.
      3. Protect sheet metal work from corrosive materials and dissimilar metals.
   6. warranty
      1. Warrant the work of this Section against defects in materials and workmanship in accordance with General Conditions, but for a period of two (2) years. Agree to promptly make good defects which become evident during warranty period without cost to the Owner.
      2. Without restricting the generality of the Warranty, defects shall include deformation, buckling, leakage, weather tightness, failure of anchors and fastenings, failure of paint coating and sealants.
      3. Promptly make good defects and/or failures in the work of this Section upon written notification by the Owner that such exist. Remedy shall include labour, materials, equipment, and services required to make good defective work, and to replace components and finishes and Owner's property damaged or disturbed in the course of remedying defects.
2. Products
   1. materials
      1. Sheet Metal Materials: Prefinished galvanized sheet steel to ASTM A 653/A 653M-11 Grade A with G90 designation zinc coating to ASTM A 653/A 653M-11, factory precoated with Series 8000 paint finish, minimum 26 gauge.
      2. Hold-down, fastener clips - 20 ga. galv. steel sheet as above, unpainted.
      3. Nails, bolts screws and rivets: Material - galvanized steel, stainless steel or same metal as material to be fastened. Type - to approved samples.
      4. Bituminous Paint: Conforming to CAN/CGSB-1.108-M, Type 2.
      5. Field Touch-Up Paint: Zinc rich anti-corrosion primer, conforming to CAN/CGSB-1.181-92, 'Galvafroid, Grade SB' by W.R. Meadows of Canada Limited and top coating of type and colour to match finish sheet.
      6. Underlay for metal flashing: Asphalt laminated 3.6 to 4.5 kg kraft paper.
      7. Sealant: Multi-component, chemical curing epoxidized polyurethane type sealant conforming to CAN/CGSB-19.24-M90, 'DYmeric 240' by Tremco (Canada) Ltd. or approved equal. Colour as selected later by Consultant. Provide primers, bond breakers and cleaning agents as recommended by the sealant manufacturer.
      8. All other materials not specifically described but required for a complete and proper installation of the work of this Section shall be new first quality of their respective kinds and subject to the approval of the Consultant.
   2. fabrication
      1. Fabricate metal flashings and other sheet metal work to applicable CRCA 'FL' series specifications and as detailed.
      2. Form flashings, counter flashings, scuppers, and copings as required to suit each condition. Use prefinished sheet steel in all locations. Form pieces in 8'-0" maximum lengths. Make allowance for expansion at joints.
      3. Fabricate sheet metal components with lines, arises and angles sharp and true and plane surfaces free from objectionable wave, warp, or buckle.
      4. Mitre and seal corners with sealant. Form drip edging at 45 deg angle, secure with a continuous 20 ga. hold-down clip.
      5. Exposed edges of sheet metal shall be folded back to form a 1/2" wide hem on the side concealed from view. Prefabricate corner pieces for flashings and copings. The workmanship and methods employed for forming, anchoring, cleating and the provision for expansion and contraction of sheet metal work shall be to the approval of the Consultant.
      6. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
      7. Fabricate scuppers and overflow scuppers to applicable CRCA 'FL' Series details and as detailed.
      8. Apply two coats of bituminous paint to metal surfaces to be in contact with masonry, concrete, mortar, or dissimilar metals.
   3. finishes
      1. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
      2. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
      3. Steel Finish:
         1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (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. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).
            1. Colour: [As indicated in Section 09 06 05 Product and Finish Schedule.] [As selected by the Consultant from the Manufacturers full colour range. Allow for three (3) colours in Base Bid.]
3. Execution
   1. examination
      1. Inspect substrate surfaces on which the work of this Section is erected for any irregularities detrimental to the application and performance of the Work. Confirm conditions satisfactory before proceeding. Report to Consultant in writing, defects of work prepared by other trades and unsatisfactory site conditions. Commencement of work implies acceptance of surfaces and conditions.
   2. INSTALLATION
      1. Metal flashing shall be in compliance with best sheet metal trade practice and shall in no way be contrary to sheet metal practice that will qualify for the Guarantee Certificate specified. Install with "S" lock expansion joints or standing seams incorporated on end of flashing length and all joints sealed with mastic.
      2. Provide continuous starter strips to present true, non-waving leading edge. Provide clips and anchor to backup in an approved manner to provide rigid, secure installation. Conceal fastenings in completed flashing. Lap, lock, and seal all seams.
      3. Provide underlay under sheet metal. Secure in place and lap joints 100mm (4").
      4. Install sheet metal flashings, cap flashings and copings as indicated on drawings using flat lock seams. Make joints to permit thermal movement. Make surfaces free from buckling, warp, wave, dents, oil canning or other defects. Make corners square and surfaces straight and in true planes. Equally space joints in cap flashings to suit wall panel module. Space seams not farther apart than 2439mm (8').
      5. All sheet and strip flashing to be held in place by 14-gauge galvanized iron clips of a size and type to be determined by the construction requirements, except where specifically detailed on the drawings.
      6. Caulk flashing at cap flashing with sealant.
      7. Lock end joints and caulk with sealant.
      8. Use rubber-asphalt sealing compound for joints between sheet metal and bitumen.
      9. Supply rigid flashing, copings and sheet metal back-up to other trades where required to be built into other work at doors, windows, block openings, curbs and where shown on drawings.
      10. Take careful note of fans, vents, etc., on mechanical drawings to determine whether flashing and counter flashing is required or whether units are self-counter flashing.
      11. Caulking shall be installed as per written manufacturer's recommendations.
      12. Exposed fastenings will be permitted where indicated or where concealed fastening is not possible. Obtain Consultant's approval of exposed fastenings and methods of making same.
      13. If exposed screws or bolts are used, use cupped neoprene washers.
      14. Install scupper drains and overflow scupper drains as indicated on drawings, in strict accordance with CRCA manual.
   3. cleaning
      1. Remove, as the work progresses, all excess or foreign material which would set up or become difficult to remove from finished surfaces.
      2. Do all final cleaning upon completion of the Work of this Section. Leave building and Work in condition to meet the approval of the Consultant.
      3. Remove excess sealant by the moderate use of mineral spirits or other solvent acceptable by the sealant manufacturer.

END OF SECTION