#### SECTION 07 63 00

**SHEET METAL ROOFING SPECIALTIES**

#### BASED ON DFD MASTER SPECIFICATION DATED (02/06/17)

**Note to Specifier:**

**Read the first paragraph after this statement, before proceeding.**

**Obtain and read the most current version of the DOA-DFD “Minimum Design Guidelines for Roofing and Waterproofing Systems”. Note the revision date at the title.**

This section has been written to cover most (but not all) situations that you will encounter. Depending on the requirements of your specific project, you may have to add materials, delete items, or modify what is currently written. The Division of Facilities Development expects changes and comments from you.

Recent changes in the specification are associated with the date by the title, identified by the ‘color green’. DO NOT DELETE THE DATE. Obtain the most current specification section for each project. Pay special attention to all ’Notes to Specifier’ identified in color of ‘dark red’ in italic typeface. Roof system options are also identified within [brackets] by the ‘color blue’. This language may be used or deleted as required by the scope of project. This section should be reviewed carefully as it has language for both new construction and re-roofing.

DFD Standard Roofing Details for various roof systems including HVAC and Electrical runs, curbs and support, louver, door and windows and State of Wisconsin Guarantee Forms are located on the DFD Website with the Master Roofing Specification.

part 1 – GENERAL

Scope

The work under this section includes all labor, material, equipment and related services necessary to install all roof related sheet metal. [Record documents to include digital photos].

PART 1 - GENERAL

 Scope

 Related Work

 Reference Standards

 [Guarantee]

 Quality Assurance

 Product Delivery, Storage and Handling

 Submittals - Technical and Other Documents

 Submittals – Final Documents Required Upon Completion of the Work

PART 2 - PRODUCTS

 Sheet Metal Materials

 Other Materials

PART 3 - EXECUTION

 Fabrication

 Workmanship

 Installation

 Cleaning

RELATED WORK

Applicable provisions of Division 01 shall govern work under this Section. The Contractor shall consult these provisions in detail prior to proceeding with work.

[06 10 53.01 – Miscellaneous Rough Carpentry - Roofing]

[07 53 23 - Ethylene-Propylene-Diene-Monomer Roofing]

[07 31 13 – Asphalt Shingles]

In the event that the Contractor wishes to make improvements in materials and/or techniques, or is required to make improvements by his material manufacturer in order to obtain guarantees/warranties, he shall make written request stating in full the nature of the proposed changes and stating that the changes, if approved, will be accomplished at no additional cost to contract.

**REFERENCE Standards**

AISI – American Iron and Steel Institute.

[ASTM A308 – Steel Sheet, Terne (Lead-Tin Alloy) Coated by the Hot-Dip Process.]

ASTM A653 - Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

[ASTM B32 - Solder Metal.]

[ASTM B101 – Lead-Coated Copper Sheet and Strip for Building Construction.]

[ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.]

[ASTM B370 - Copper Sheet and Strip for Building Construction.]

[ASTM C920 – Elastomeric Joint Sealants.]

ASTM D2244 – Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.

ASTM D4214 – Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.

[FS TT-S-00230C ‑ Federal Specification.]

NRCA ‑ Roofing and Waterproofing Manual.

SMACNA - Architectural Sheet Metal Manual.

**Note to Specifier:** When specifying prefinished sheet metal, include the following “Guarantee” article.

**[GUARANTEE**

**Note to Specifier:** Separate guarantee is required if this Work is not part of a re-roofing Project.

State of Wisconsin Roof System Guarantee: Provide written **five (5) year** guarantee warranting all roofing and flashing required under contract, to be watertight and free from defects in

materials or workmanship for period of time, as stipulated in guarantee form.

Contractor shall perform a minimum of two (2) roof system inspections during the term of this guarantee. The first inspection shall be approximately two (2) years after installation date on five (5) year guarantee with final inspection performed within last 6-months of five (5) year guarantee. Contact the Agency Contact to arrange for a site visit date. Agency Contact will accompany the Contractor. Submit written inspection reports, e-mailed to Owner (DFD Project Manager) and Agency Contact immediately after inspection is performed and prior to guarantee expiration.

It is recommended that the Contractor take digital photos of the finished work for their files and future reference.

A copy of the required State of Wisconsin Roof System 5-yr Guarantee form shall be bound herein located at the end of this Section and may be acquired at the following State website; doa.wi.gov/DFD

**Contractor and all sub-contractors shall review the guarantee and requirements of this Section prior to providing a quote for the Work required by this Section.]**

The Contractors Performance-Payment Bond is only required to apply to this trade section during the construction period and the first year of the guarantee period. Said Bond shall not apply to any extended guarantee period beyond the first year. Such extended guarantees are limited to the applicable Contractor and manufacturer as herein specified.

Manufacturer’s Warranty: Provide the sheet metal manufacturer’s standard **twenty (20) year** warranty stating at a minimum that the metal finish will not chalk in excess of an eight (8) rating, or fade in excess of a five (5) rating, when tested in accordance with ASTM D2244 and ASTM D4214.

The following information shall be included on all guarantee and warranty documents:

State of Wisconsin (Owner), Agency, city or township, street address where work was performed, building name, Owner Project number, Owner (DOA) building number, all roof areas involved and total sq. ft. area of all roof areas.

**QUALITY ASSURANCE**

Contractor shall be recognized by the manufacturer of the sheet metal as an “approved” or “authorized” applicator. Within the past five (5) years, the contractor shall be able to document the successful completion of a minimum of three (3) projects of similar size and scope of the work specified in this section.

Provide all equipment recommended by the manufacturer for proper installation of the materials specified.

**Note to Specifier:** Remove all of the follow in ‘blue’ if already in the roofing Section.

[Prior to the start of construction, it is required that the Contractor’s superintendent or foreman attends the preconstruction/pre-installation meeting(s).

It is the responsibility of the Contractor to obtain the services of a competent:

Electrician: For removal and reinstallation of roof curb-mounted exhaust fans and associated covers, ventilators, other electrical equipment and their associated wiring connections at the unit(s), relative to work on this project.

Plumber: To re-lead, repair and/or reset the roof drain bowls, relative to work on this project.

Remove, relocate and support gas or pressurized air piping as directed.

Mechanical Contractor] [State Agency]: For removal of belt, chain driven and/or electrical exhaust fans and associated flex connection duct runs/piping and its associated roof curb penetration.

The Contractor shall raise all existing curbs to a minimum height above the roof system of 8”.

Contractor shall notify the Agency Representative 24 hours in advance of all Electrical, Plumbing and Mechanical disconnections.]

[Lightning Protection Contractor: For removal, upgrading and certification of existing cabling, lightning rods, associated products and proper anchoring, fastening and/or adherence of all of cabling and rods and/or rod base plates. Verify that this installation does not interfere with the proper installation of the roofing metal flashing and its clip/cleat fastening point.]

[It is the responsibility of the Agency to perform inspection of the roof areas to be replaced by this project and to provide the following services:

State Agency: Existing Electrical, Plumbing and Mechanical installations and associated equipment pipe and duct runs shall be identified/verified by the State Agency as in use or be spray painted in ORANGE by the Agency if they are abandoned or shall be abandoned and shall be removed by this roofing Contractor, and verify the electrical is disconnected or conduct the disconnect prior to start of work by Contractor. Electrical conduct runs lying directly on the existing roof membrane shall be relocated by the Agency prior to start of work.]

**PRODUCT DELIVERY, STORAGE AND HANDLING**

Store all products in accordance with applicable provisions of Division 1 and Section(s) [insert appropriate Division 7 specification section number(s)] [07 31 13] [07 53 23]**.**

Stack preformed material to prevent twisting, bending or abrasion and to provide ventilation.

Prevent contact with materials during storage, which may cause discoloration, staining or damage.

**SUBMITTALS - TECHNICAL AND OTHER DOCUMENTS**

***Note to Specifier: If a roofing Section is part of the Work insert the following here and then delete all of the following language from \*\* thru \*\* except paragraphs in [blue]. “See Section 07 00 00, SUBMITTALS - TECHNICAL AND OTHER DOCUMENTS (insert proper #).***

**[\*\* At the preconstruction meeting and prior to start of work,** **submit the following for approval by Owner.**

The following information shall be included on all submitted documents:

Agency/Location/Address where work is performed obtained from the Agency Contact listed to include Building Name, Bldg. State Number, Roof Areas, DFD Project Number and total sq. ft. of all roof areas.

**Submit:** Three (3) copies of a list of all materials used on the project, identified by manufacturer's name, size, thickness, type or grade. List shall be submitted on Contractor's letterhead stationery.

**Submit:** Two (2) copies of the manufacturer’s color sample cut sheet.]

[Contractor shall submit actual samples of pre-finished sheet metal showing the exact color(s), metal type and texture(s) available for selection.]

[Contractor will be notified of any additional required submittals at the pre-construction meeting.]

**[Contractor shall maintain at least one (1) copy of the following at the project site throughout construction:**

Specifications, drawings, addenda, value enhancement, change order and all approved submittals.

Latest version of the manufacturer’s handbook including details and technical information concerning application techniques for all primary roofing system materials required by the work.

Material Safety Data Sheets (MSDS) manual for all materials used on this project.

**SUBMITTALS – FINAL DOCUMENTS REQUIRED UPON COMPLETION OF THE WORK:**

**Prior to final payment, submit the following to Owner as one (1) package including a cover page listing all documents sent:**

**RECYCLED MATERIALS:**

**Submit:** Three (3) copies of a completed Waste Management Plan to DFD for review. Include recycle business name, address, contact, and phone number where all recycled roofing material removed by this project will be delivered.

**Submit:** A final summary of the progress reports, including the percentage of recycled waste (weight or volume) to the quantity of waste that would have been otherwise land filled.

**Submit:** Recycler receipt for all deliveries showing all received product their weight and % calculation.

Material kept for reuse and delivered to the Contractors property or given away at the site by the Contractor shall be identified as well. The total sq. ft/bulk sum of all material shall be recorded and submitted. ]

**[WASTE MANIFEST:**

**Submit:** Two (2) copies of the Waste Manifest Records to DFD Project Manager if required in accordance with General Requirements Article “HAZARDOUS SUBSTANCES – ASBESTOS, LEAD AND POLYCHLORINATED BIPHENYLS (PCB’S)”.]

**[AS-BUILT DRAWING:**

**Submit:** One (1) copy of a fully dimensioned as-built roof plan showing all seam and patch locations, actual locations and sizes of roof drains, vents, fans, etc.]

**[STATE OF WISCONSIN 5 YEAR ROOF GUARANTEE:**

**Submit:** One (1) original of guarantee as required herein. (Refer to GUARANTEE article in Part 1 of this Section).]

**[MISCELLANEOUS METAL WARRANTY:**

**Submit:** One (1) original of manufacturer warranty as required by Specification Section 07 63 00).]

**[LIGHTNING PROTECTION CERTIFICATION:**

**Submit:** One (1) original document of all testing required by Specification Section 26 41 00.1).]

**[SETTLEMENT CERTIFICATE** [**AND WAGE RATE AFFIDAVIT**]:

**Submit:** One (1) copy of each document.

The following information shall be included on all submittal documents.

Agency/Location/Address where work is performed to include the Building Name, Bldg. State Number, Roof Areas, Owner Project Number and total sq. ft. of all roof areas. \*\*]

PART 2 - PRODUCTS

All products used in this installation shall be compatible with materials used in Section(s) [insert appropriate Division 7 specification section number(s)] [07 31 13] [07 53 23]**.**

**SHEET METAL MATERIALS**

Prefinished Galvanized: ASTM A653, G-90; 24 gauge galvanized steel coated with a minimum 70% Kynar (Kynar 500) flouropolymer resin of 0.9-1.1 mil total dry film thickness and primed on the reverse side a wash coat of 0.3-0.4 mil dry film thickness. Color to be chosen from the manufacturer's standard color selection at the preconstruction meeting. Texture shall be smooth.

Galvanized: ASTM A653, G-90; galvanized steel. Thickness as follows:

22 gauge galvanized steel for continuous cleats.

24 gauge for metal edge, coping, flashing, seamless-gutter/downspouts, expansion joint, pourable sealer pans, sleeves and hoods.

[Prefinished Aluminum: ASTM B209, Series 3000, Temper H-14; 0.040” [0.032”] [0.050”] pre-finished aluminum coated with a minimum 70% Kynar (Kynar 500) flouropolymer resin of 0.9-1.1 mil total dry film thickness and primed on the reverse side a wash coat of 0.3-0.4 mil dry film thickness. Color to be chosen from the manufacturer's standard color selection at the preconstruction meeting. Texture shall be smooth.

 22 gauge galvanized steel for continuous cleats.

0.040” [0.032”] for metal edge, coping, flashing, seamless-gutter/downspouts, expansion joint, pourable sealer pans, sleeves and hoods.]

**Note to Specifier:** Typically, 0.040” material is used on most State projects.]

[Stainless Steel: AISI, Type 304, No. [2B] [2D]; [26] [28] gauge stainless steel.]

[Copper: ASTM B370, Temper H00; [16] [20] oz. copper sheet.]

**Note to Specifier:**Cleats shall be formed from 20 oz. material, most other profiles from 16 oz.]

[Lead-Coated Copper: ASTM B101, Temper H00; [16] [20] oz. lead-coated copper sheet**.]**

**Note to Specifier:** Cleats shall be formed from 20 oz. material, most other profiles from 16 oz.]

[TCS: ASTM A308, Coating minimum LT40; [26] [28] gauge terne-coated stainless steel.]

**other materials**

[Vented Eave Edge: Air Vent Inc. or equal.]

Fasteners: Where not specified, size fasteners to suit conditions.

Metal to Wood, at exposed locations: #10 x 1-1/2" stainless steel screws with metal capped neoprene or PVC washers.

[Copper to Wood (concealed locations): 1-3/4" copper roofing nails.]

[*Other* Metal to Wood (concealed locations): 1-3/4" hot-dipped galvanized roofing nails.]

Metal to Metal: [#10 x 3/4" stainless steel sheet metal screws with pan or hex heads.

[Metal to Concrete or Masonry: Zinc-alloy expansion shields with hardened steel pins.]

Sealant: ASTM C920, Type S, Grade NS, Class 25, Use NT, M, G, A or O; FS TT-S-00230C, Type II, Class A; one-part polyurethane base, elastomeric joint sealing compound such as Sika Chemicals "Sikaflex 1a", Sonneborn-Contech "Sonolastic NP1" or Tremco "Vulkem 116" or “Dymonic".

[Solder: ASTM B32; 50% pig lead - 50% block tin.]

[Flux: Muriatic acid killed with zinc, or an approved brand of commercial soldering flux.]

[Rosin Paper: Unsaturated rosin sized building paper, minimum 4 lbs./square.]

[Ice Dam Flashing: W.R. Grace “Ice and Watershield” or as approved.]

Flexible Flashing: 0.045" EPDM or 0.020" vinyl.

Other products, not specifically described, but required for a complete and proper installation of the work in this section shall be selected by the Contractor subject to the approval of Owner.

part 3 - EXECUTION

Refer to the drawings included with these specifications.

Fabricate and install all material in accordance with the latest edition of SMACNA, the best-accepted practices of the industry and these specifications.

**fabrication**

Fabricate new sections as detailed. Form sections true to shape, accurate in size, square and free from distortion or defects. Do not “punch” metal at brake points.

Form all pieces in lengths of 8'-0" or 10'-0" where practical. Sections less than 3' long are unacceptable unless that section comprises the entire run.

Unless detailed otherwise, hem exposed edges on underside 1/2"; fabricate vertical faces with bottom edge formed outward 3/4" at 45 degrees and hemmed to form drip.

Outside corners shall be prefabricated such that the outside face of section is broken at corner; seam at corner is unacceptable. Miter and seam top of outside and inside corners using rivets and specified polyurethane or manufacturer recommended and approved sealant. Corner pieces shall be a minimum of 18” in length, in both directions from the corner.

[For copper*:*] Provide soldered seams at inside and outside corners [and transition between coping and expansion joint cover]. Outside corners shall be prefabricated with outside face of section broken at corner; seam at corner is unacceptable and will be cause for rejection of the work. Pieces shall be a minimum of 18” in length, in both directions from the corner.]

[For [pitch] [pourable sealer] pans and sleeves, rivet and solder seams and corners.]

**WORKMANSHIP**

Make all work weather and watertight throughout; provide allowances for material expansion and contraction.

[All valley and valley edge/fascia installations shall be recorded from deck to finish by taking digital photo’s of the installation as each product is applied over the preceding product. Digital photos shall be properly identified as to their location on the roof and sent to the DFD Project Manager electronically.]

Contractors workers shall carry a container or apron to deposit all metal cut offs, droppings or other debris created by the work. Waste shall not be dropped to the roof and ground.

Sections shall be uniform, accurately fitted so as to line up straight and true and rigidly secured in place, without kinks or buckles. Joints at corners and angles shall be smooth, tight and neatly mitered and seamed.

Unless detailed otherwise, lap all vertical joints between adjacent sections a minimum of 2".

Where metal is hooked to a continuous cleat, crimp metal to cleat along entire length.

[Soldering:

Rivet pieces prior to soldering.

Soldering shall be done with heavy soldering coppers of blunt design, properly tinned before using. Coppers shall weigh not less than 10 pounds per pair. Use of a gas torch is not allowed.

Follow manufacturer's recommendations for cleaning, tinning and soldering metal. Tin edges of copper before soldering. Wire brush all edges of lead-coated copper to a bright shine before soldering.

Soldering shall be done slowly to heat sheet metal thoroughly and to sweat solder completely through full width of seam. Whenever possible, soldering shall be done in flat position; seams on slopes shall be soldered a second time.

Clean all flux from metal after soldering is completed.]

**Installation**

[Coping:

Wood blocking shall have a solid non-flexable surface, free of voids and sloped to interior to allow coping metal a solid surface and drainage. This type of solid construction eliminates need for drive cleat at joints over 6”.

Fasteners used to secure wood blocking shall be anchored securely and be countersunk into the wood blocking to avoid damage to the membrane and metal coping fabrication.

Minimum 45-mil membrane shall be required over the wood blocking and continue down the full width of the blocking to the start of the hem, or as detailed. Seam seal membrane joints.

Securely fasten new continuous cleat @ 12" O.C.

Secure coping with specified fasteners through the center of the section only. As an alternative, sections may be secured with specified fasteners through slotted holes @ 24" O.C. Fasteners shall be located on the inside sloped or vertical face as detailed.

Fasteners on the outside face or top surface are unacceptable and will be cause for rejection of the work.

Install with 1/2" gap between adjacent sections.

Joints between adjacent sections shall be concealed with 6" exposed coverplates formed accurately to fit the profile of the installed section. Coverplates shall be hooked over the cleat, sealed with two (2) beads of sealant on both sides of the joint under the coverplate and secured through coverplate in the gap between sections.

Where coping abuts a higher wall, turn metal up a minimum of 3” and counterflash per DFD Standard Detail.]

[Counterflashing Receiver:

Install new receiver as detailed or where required.

Notch and lap joints 3" between sections.

Apply sealant at the joint between the receiver and the masonry wall where receiver is not part of a thru-wall flashing; DO NOT APPLY SEALANT between masonry and thru-wall flashings.]

[Counterflashing:

Fasten counterflashing to receiver with stainless steel sheet metal screws @ 24" O.C.

Notch and lap joints 3" between sections; bayonet joints are unacceptable. Do not fasten joints between sections.

Counterflashing shall be creased longitudinally just enough to provide a spring action that will hold bottom edge firmly against flashing.]

[Additional Counterflashing:

Provide new like metal counterflashing per DFD detail at all existing roof top units and roof hatches where none exist, unless unit will be lifted allowing membrane to be placed up and over curb and secured/adhered at the interior surface of existing and new curb blocking.]

[Expansion Joint Cover:

Fill void between nailers with fibrous glass insulation.

Install flexible flashing over the top of the curb as detailed; seam joints between pieces.

Install expansion joint cover as detailed and secure through both outside flanges with specified fasteners @ 24" O.C. through slotted holes.

Joints between adjacent sections shall be made with drive cleats or standing seams; coverplates are unacceptable.]

[Gutter: (External.)

[Fabricate new [indicate size] gutter to conform to profile of existing brackets.]

Provide [24 gauge prefinished steel] [aluminum gauge 0.032”seamless] gutter and new hangers [per manufacturer specifications.]

[Provide expansion joints as detailed where indicated on the roof plan.]

Temporarily hang gutters from fascia using roofing nails through the top of the back leg only @ 12" O.C. Install hanger straps @ 24” O.C. and secure to fascia with two stainless screws as detailed. Gutters shall have a net positive slope of 1/8" per foot between the high point and downspouts.]

[Gutter: (Internal.)

[Apply one ply of ice dam flashing in the gutter box as detailed.]

[Install one ply of rosin paper over ice dam flashing.]

Fabricate gutter sections from single sheets to conform exactly to profile of existing gutter box; new gutter shall have no longitudinal seams. [Top of gutter flange shall be formed with a 3/4” single-lock seam.]

Lap seams at joints between sections, [expansion joints] and end caps a minimum of 1-1/2” in direction of flow, rivet and solder. Rivets shall be spaced not more than 3” apart, in 2 staggered rows, ½” from each edge of lap.

[Perform all soldering activities prior to installing gutter.]

[Secure sections to deck with 2” wide by 3” long cleats with ¾” hook on one end. Hook cleats into gutter flange seam @ 24” O.C. and secure to deck with two (2) nails; fold tab over nail heads.]

[Provide expansion joints as detailed where indicated on the roof plan.]

[Downspouts:

Install downspouts and associated elbows [in locations shown on the roof plan] [at existing locations] as follows:

Downspouts shall be [3” x 5” closed] [4” x 6” closed] [open style] [3” x 5” open] [ 4” round] [5” round] [other].

Gutter outlets shall extend into downspout a minimum of 3”. Upper end of outlet tube shall be flanged ½” and riveted and [soldered] [sealed] to inside of gutter. Provide removable strainers at all outlets.

Fasten downspouts with hangers at eight (8) feet O.C. Install an additional hanger one foot from the top and bottom, and within one foot of all elbows.

Downspouts shall have elbows and splash blocks at the bottom to divert water away from the building foundation.

[Provide concrete splash blocks at bottom of each downspout]

Mount downspout a minimum of 1” off all surfaces]

[Vented Eave Edge Metal:

Install per manufacturer instructions in association with vented nail base insulation panel or custom built air-flow system, to achieve manufacturer warranty or guarantee specified.]

[Roof Edge[/Fascia Cover]:

Securely fasten new continuous cleat @ 12" O.C.

Install flexible flashing over outside edges as detailed; seam joints between pieces.

[Secure fascia cover with fasteners @ 24" O.C. located high enough to be concealed by the roof edge.]

Secure roof edge with specified fasteners through the center of the section only. As an alternative, sections may be secured with specified fasteners through slotted holes @ 24" O.C. Fasteners shall be located on the inside sloped face as detailed; fasteners on the outside face or top surface are unacceptable and will be cause for rejection of the work.

Install with 1/2" gap between adjacent sections.

Joints between adjacent sections shall be concealed with 6" exposed coverplates formed accurately to fit the profile of the installed section. Coverplates shall be hooked over the cleat, sealed with two (2) beads of sealant on both sides of the joint under the coverplate and secured through coverplate in the gap between sections. [Stagger joints between fascia cover and roof edge.]

Where roof edge abuts a higher wall, turn metal up a minimum of 3” and counterflash.]

[Roof Edge: (For asphalt/wood shingle roofs.)

Fabricate roof edge metal with a 4” minimum roof deck flange and 2” minimum fascia coverage or as required to conceal ice protection membrane lapped onto the fascia substrate.

Notch and lap joints 3" between sections.

Install sections in accordance with Section [07 31 13] [07 31 29].]

[Roof Edge: (Snap-On – For use with single ply roof, only.)

Install reinforced EPDM strip prior to the waterdam portion of the edge assembly.

Secure waterdam over outside edge as detailed and secure with specified fasteners @ 6" O.C. through horizontal and vertical faces.

Fully adhere field sheet over waterdam in accordance with Section 07 53 23.

Install concealed splice plates, snap-on fascia cover and associated hardware in accordance with the manufacturer's detailed instructions.]

[Roof Edge: (Stripped-In – For use with hot applied roofs.)

Securely fasten new continuous cleat @ 12" O.C.

Install roof edge in a bed of plastic cement (specified in Section [07 51 13] [07 51 16] and secure to nailers with two rows of fasteners @ 3" O.C., staggered.

Joints between adjacent sections shall be lapped 4”.

Apply bituminous flashing in accordance with Section [07 51 13] [07 51 16].]

[Roof Edge: (Stripped-In – For use with single ply roofs.)

Securely fasten new continuous cleat @ 12" O.C.

Install roof edge over field sheet and secure to nailers with specified fasteners @ 3" O.C.

Install with 1/2" gap between adjacent sections.

Joints between adjacent sections shall be concealed with 6" exposed coverplates formed accurately to fit the profile of the installed section. Coverplates shall be hooked over the cleat, sealed with two (2) beads of sealant on both sides of the joint under the coverplate and secured through coverplate in the gap between sections.

Apply flashing in accordance with Section [07 53 23] [07 54 19].

[Valley Metal:

Valley metal to be prefinished 22 gauge, minimum 18” wide stock.

Fabricate valley metal [with a one inch high inverted “V” down the center for open-style valleys.] [flat stock when installing “California’ closed-style valleys.]

Fasten valley metal sections along top edge only. Lap sheets a minimum of 8” and seal seams with two (2) beads of sealant. Notch ¾” lock seams on underlying sheet to facilitate laps.

Apply [ice protection membrane and] felt underlayment in accordance with Section [07 31 13] [07 31 29].

(Include For) [Metal Roof Systems Valley:

Secure sections to deck with 2” wide by 3” long cleats with ¾” hook on one end. Hook cleats into valley seam @ 24” O.C. and secure to deck with two (2) nails; fold tab over nail heads.

3/4” single-lock seams along the sides on metal roof systems.]

[Wall Flashing: (For through-wall flashings for masonry cavity walls.)

Fabricate wall flashing to conform to actual dimensions of wall and as follows:

Exposed portion of flashing, when installed, shall break surface of wall uniformly.

Concealed portion of flashing shall have a minimum 4” vertical back dam; bend between back dam and horizontal shall be slightly greater than 90 degrees. End dams shall be a minimum of 1-1/2” in height.

[Exposed portion of flashing shall have a [¾”] [1”] [hemmed] [sheared] drip.] [Exposed portion of flashing shall be bent to act as the receiver for counterflashing installation.]

Provide prefabricated continuous pieces at all internal/external corners; pieces shall be a minimum of 18” in length, in both directions from the corner.

Notch and lap joints 3" between sections. Apply a continuous bead of sealant within the lap.

Install flashings in accordance with Section(s)] (insert appropriate Division 4 specification section number(s).)

Miscellaneous Flashings:

Install appropriate flashings at all exhausts, vents and penetrations not specifically called out but required.

Remount and secure all rooftop equipment. Use threaded fasteners.

**CLEANING**

The work areas including the roof and ground below shall be inspected on a daily basis for waste/droppings.

Properly dispose of all cut offs, droppings and other debris on a daily basis to avoid damage or injury to others and/or owners property.

\*\*\* END OF SECTION \*\*\*