SECTION 077200 - ROOF ACCESSORIES

1. GENERAL
   * + 1. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
      1. SUMMARY
         1. Section Includes:

Roof hatches.

Security Roof Hatch.

Heat and smoke vents.

Ventilator Grease Guards.

* + - 1. COORDINATION
         1. Coordinate layout and installation of roof accessories with [**roofing membrane and base flashing and** ]interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
         2. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.
      2. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of roof accessory.

Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

Delete subparagraph below if emergency electric release devices for heat and smoke roof vents are not included in Part 2 of this section.

Emergency Electric Release Devices:

Electrical rating (volts, amperes) including time period volts and amperes must be applied to cause release device to operate.

Data proving that each release device is suitable for its proposed application.

Retain "Shop Drawings" paragraph below for work that involves custom fabrication, stock sizes, and standard installation methods are required, or if manufacturer's Product Data are inadequate.

* + - * 1. Shop Drawings: For roof accessories.

Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.

Retain "Delegated-Design Submittal" paragraph below if design services have been delegated to Contractor.

* + - * 1. Delegated-Design Submittal: For equipment supports indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

Detail mounting, securing, and flashing of roof-mounted items to roof structure. Indicate coordinating requirements with roof membrane system.

Wind-Restraint Details: Detail fabrication and attachment of wind restraints. Show anchorage details and indicate quantity, diameter, and depth of penetration of anchors.

Retain "Coordination Drawings" paragraph below if Drawings do not include detailed plans or if Project involves unusual coordination requirements; revise to suit Project.

* + - * 1. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:

Size and location of roof accessories specified in this Section.

Method of attaching roof accessories to roof or building structure.

Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.

Required clearances.

* + - * 1. Contract Closeout Submittals:

Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

Grease Guard Maintenance: Turn over to the Facility grease guard manufacturer’s printed maintenance requirements.

Delete “Maintenance Material Submittals” if emergency electric release devices for heat and smoke roof vents are not included in Part 2 of this section.

* + - * 1. Maintenance Material Submittals:

Spare Parts:

For each heat and smoke roof vent so equipped, furnish 3 spare 160 degrees fusible links.

1. PRODUCTS
   * + 1. PERFORMANCE REQUIREMENTS
          1. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
       2. ROOF HATCHES
          1. Roof Hatches: Metal roof-hatch units with lids and insulated double-walled curbs, welded or mechanically fastened and sealed corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing,[ **straight sides,] [ integral metal cant,] [ stepped integral metal cant raised the thickness of roof insulation**,] and integrally formed deck-mounting flange at perimeter bottom.

Retain one of two "Type and Size" paragraphs below if type and size are not indicated on Drawings; for more than one type or size, indicate locations on Drawings or by inserts. Retain first paragraph for single-leaf roof hatch typically used for personnel and small equipment access via fixed ladder, ship's ladder, or service stair; retain second paragraph for double-leaf roof hatch typically used for equipment access. Options are most manufacturers' stock sizes.

* + - * 1. Type and Size: Single-leaf lid, [**30 by 36 inches] [36 by 36 inches] [30 by 54 inches] [30 by 96 inches] <Insert dimensions**>.
        2. Type and Size: Double-leaf lid, [**72 by 96 inches] <Insert dimensions**>.

Verify load requirements with authorities having jurisdiction.

* + - * 1. Loads: Minimum [**40-lbf/sq. ft.] <Insert value**> external live load and [**20-lbf/sq. ft.] <Insert value**> internal uplift load.

Retain one of three "Hatch Material" paragraphs below. If Project requires more than one material or finish, indicate locations on Drawings or by inserts.

* + - * 1. Hatch Material: Zinc-coated (galvanized) steel sheet.

Thickness: 0.079 inch.

Finish: Mill-Phosphatized Finish

* + - * 1. Hatch Material: Aluminum sheet.

Thickness: 0.091 inch.

Finish: Mill.

* + - * 1. Construction:

Insulation: 1-inch-thick, glass-fiber board.

R-Value: 4.3 according to ASTM C1363.

Retain "Nailer" subparagraph below if roofing membrane termination requires use of wood nailer.

Nailer: Factory-installed wood nailer continuous around hatch perimeter.

Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.

Curb Liner: Manufacturer's standard, of same material and finish as metal curb.

On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.

Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.

Sloping Roofs: Where slope or roof deck exceeds 1:48, fabricate curb with perimeter curb height that is tapered to accommodate roof slope so that top surfaces of perimeter curb are level. Equip hatch with water diverter or cricket on side that obstructs water flow.

Retain stainless steel hardware for “Hardware” for a more corrosive environment.

* + - * 1. Hardware: Spring operators, hold-open arm, galvanized[**stainless**] steel spring latch with turn handles, galvanized[**stainless**] steel butt- or pintle-type hinge system, and padlock hasps inside and outside.

Retain one or both subparagraphs below to suit Project.

Provide two-point latch on lids larger than 84 inches.

Provide remote-control operation.

Retain one or both "Safety Railing System" and "Ladder-Assist Post" paragraphs below; revise to suit Project. If retaining both paragraphs, indicate location of each on Drawings or by inserts. Consult authorities having jurisdiction for their requirements.

* + - * 1. Safety Railing System: Roof-hatch manufacturer's standard system including rails, clamps, fasteners, safety barrier at railing opening, and accessories required for a complete installation; attached to roof hatch and complying with 29 CFR 1910.23 requirements and authorities having jurisdiction.

Retain "Height" subparagraph below if railing system is not fully detailed on Drawings. Option is based on OSHA fall protection requirements; revise to suit Project.

Height: [**42 inches**] above finished roof deck.

Dimensions in "Posts and Rails" and "Flat Bar" subparagraphs below are typical; other diameters and thicknesses may be specified; revise to suit Project.

Posts and Rails: Galvanized-steel pipe, 1-1/4 inches in diameter or galvanized-steel tube, 1-5/8 inches in diameter.

Flat Bar: Galvanized steel, 2 inches high by 3/8 inch thick.

Retain "Maximum Opening Size" subparagraph below if railing system is not fully detailed on Drawings. Requirement is based on BCNYS for required guards; revise to suit Project.

Maximum Opening Size: System constructed to prevent passage of a sphere 21 inches in diameter.

Retain "Chain Passway Barrier" or "Self-Latching Gate" subparagraph below if railing system is not fully detailed on Drawings. Some authorities having jurisdiction do not permit chain passway barrier.

Chain Passway Barrier: Galvanized proof coil chain with quick link on fixed end.

Self-Latching Gate: Fabricated of same materials and rail spacing as safety railing system. Provide manufacturer's standard hinges and self-latching mechanism.

Post and Rail Tops and Ends: Weather resistant, closed or plugged with prefabricated end fittings.

Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing members.

Fabricate joints exposed to weather to be watertight.

Fasteners: Manufacturer's standard, finished to match railing system.

Finish: [**Manufacturer's standard] <Insert finish**>.

Color: [**As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from manufacturer's full range] <Insert color**>.

* + - * 1. Ladder-Assist Post: Roof-hatch manufacturer's standard device for attachment to roof-access ladder.

Operation: Post locks in place on full extension; release mechanism returns post to closed position.

Option in "Height" subparagraph below is typical height.

Height: [**42 inches] <Insert dimension**> above finished roof deck.

Material: [**Steel tube] [Stainless steel] [Aluminum**].

Option in "Post" subparagraph below is an example only; revise to suit Project.

Post: [**1-5/8-inch-] <Insert dimension**> diameter pipe.

Finish: [**Manufacturer's standard baked enamel or powder coat] <Insert finish**>.

Color: [**As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from manufacturer's full range] <Insert color**>.

Use “Security Roof Hatches” for Department Of Correctional Services (And Some Office Of Children And Family Services) projects.

* + - 1. SECURITY ROOF HATCHES
         1. Security Roof Hatches: Metal roof-hatch units with lids and insulated [single] [double]-walled curbs, welded or mechanically fastened and sealed corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing,[ **straight sides,] [ integral metal cant,] [ stepped integral metal cant raised the thickness of roof insulation**,] and integrally formed deck-mounting flange at perimeter bottom.

Products: Subject to compliance with requirements, provide the following:

BILCO Company (The); SECURITY SERIES.

Approved equivalent.

Retain one of two "Type and Size" paragraphs below if type and size are not indicated on Drawings; for more than one type or size, indicate locations on Drawings or by inserts. Retain first paragraph for single-leaf roof hatch typically used for personnel and small equipment access via fixed ladder, ship's ladder, or service stair; retain second paragraph for double-leaf roof hatch typically used for equipment access. Options are most manufacturers' stock sizes.

* + - * 1. Type and Size: Single-leaf lid, [**30 by 36 inches] [36 by 36 inches] [30 by 54 inches] [30 by 96 inches] <Insert dimensions**>.
        2. Type and Size: Double-leaf lid, [**72 by 96 inches] <Insert dimensions**>.

Verify load requirements with authorities having jurisdiction.

* + - * 1. Loads: Minimum [**40-lbf/sq. ft.] <Insert value> external live load and [20-lbf/sq. ft.] <Insert value**> internal uplift load.

Dome Glazing: Minimum [**40-lbf/sq. ft.] <Insert value> external live load and [20-lbf/sq. ft.] <Insert value**> internal uplift load.

* + - * 1. Hatch Material: Zinc-coated (galvanized) steel sheet.

Thickness: Manufacturer's standard thickness for hatch size indicated.

Finish: Factory finished with manufacturer’s standard finish paint.

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

* + - * 1. Construction:

Insulation: 1-inch-thick, glass-fiber board.

R-Value: 4.3 according to ASTM C1363.

Retain "Nailer" subparagraph below if roofing membrane termination requires use of wood nailer.

Nailer: Factory-installed wood nailer continuous around hatch perimeter.

Hatch Lid: Glazed, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.

Curb Liner: Manufacturer's standard, of same material and finish as metal curb.

On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.

Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.

Sloping Roofs: Where slope or roof deck exceeds 1:48, fabricate curb with perimeter curb height that is tapered to accommodate roof slope so that top surfaces of perimeter curb are level. Equip hatch with water diverter or cricket on side that obstructs water flow.

* + - * 1. Hatch-Lid Glazing: polycarbonate glazing of thickness capable of resisting indicated loads.

Product: Lexgard 500 MPC Laminate by Insulgard Security Products; or equal.

Use one of the next 2 subparagraphs, consult hardware specifications writer before editing. If Section 111901 is not required for other detention equipment include first detention deadlock subparagraph below and delete second detention deadlock subparagraph below. If Section 111901 is required for other detention equipment delete first detention deadlock subparagraph below and include second detention deadlock subparagraph below and include detention (prison) deadlock requirements in Section 111901.

* + - * 1. Detention Deadlock:

Folger Adam’s No. 76 or Southern Steel’s No. 1070-2 x galvanized case x P mounting with escutcheon x US32D, or equal.

Cover Plug: Bilco’s weather tight x special threaded plug with handle, or equal.

Consult hardware specifications writer and edit keying subparagraph below if keying is to match other security roof hatches at the Facility.

Keying: Key deadlock different from key changes previously used at this Facility. Record key changes, to avoid future unintended duplication. Key security roof hatch individually and furnish 7 keys total. Furnish extended shank keys as required.

Detention Deadlock: As specified in Section 111901.

* + - 1. HEAT AND SMOKE VENTS

Retain "Hatch-Type Heat and Smoke Vents" paragraph below if required for Project. Coordinate fusible link rating with rating for automated sprinkler system heads.

Section 774.8 of the NYS Uniform Fire Prevention and Building Code states where automatic vents are required.

Delete UL listing requirement in paragraph below if emergency electric release device is required. If special sizes or single leaf vents are required delete UL listing requirement and modify paragraph and subparagraphs below as required.

* + - * 1. Hatch-Type Heat and Smoke Vents: Manufacturer's standard, with [**single] [double**]-walled insulated curbs, welded or mechanically fastened and sealed corner joints, integral condensation gutter, and cap flashing. Fabricate with insulated double-walled lid and continuous weathertight perimeter lid gaskets, and equip with automatic self-lifting mechanisms and UL-listed [**fusible links rated at 160 deg F**].

Section 1060.9 of the NYS Uniform Fire Prevention and Building Code states how automatic vents are to be released for automatic operation.

Manual operation shall not disturb fusible link device.

Coordinate subparagraphs below with Electrical Designer or delete if not applicable.

Emergency Electric Release Devices:

Operation: Fire alarm system applies power to the emergency electric release device to cause vent to open. Release device does not rely on electric power to keep vent closed.

Type: Electrically operated (fusible link release device may be integrated with electric release device when UL approved):

Resettable Electric Bi-Metallic: PHL Inc.’s “The McCabe Link”, or equal.

Resettable Electric Actuator (Solenoid): Bilco Co.’s Thermolatch, or equal.

Electrical Parameters: 24V dc, maximum 2.5 amperes.

Omit last 5 words in subparagraph below if combined single contract.

The fire alarm system requires its secondary power system (batteries) to have sufficient capacity to cause the vents to open at the end of a specified time period. The power supplies are sized to accommodate a maximum of 2.5 amperes at 24V DC for one minute for each electric release device. Pay additional cost due to necessary increase in power supply capacity provided under the Electric Contract.

Vent Open Switch: Indicates when vent is open when switch is wired to a control panel.

Retain one of two "Type and Size" subparagraphs below if type and size are not indicated on Drawings; for more than one type or size, indicate locations on Drawings or by inserts. Retain first subparagraph for single-leaf hatch; retain second subparagraph for double-leaf hatch. Options are most manufacturers' stock sizes.

Type and Size: Single-leaf lid, [**size as indicated on Drawings] [30 by 36 inches] [30 by 54 inches] [30 by 96 inches] <Insert dimensions**>.

Type and Size: Double-leaf lid, [**72 by 96 inches] <Insert dimensions**>.

Verify load requirements with authorities having jurisdiction.

Loads: Minimum [**40-lbf/sq. ft.] <Insert value**> external live load and [**30-lbf/sq. ft.] <Insert value**> internal uplift load.

Retain first subparagraph below if required. The industry offers UL approval with values in option. If roof-load criteria are greater, consult manufacturer regarding UL approval and manual resetting requirements.

When release is actuated, lid shall open against [**10-lbf/sq. ft.] <Insert value**> snow or wind load and lock in position.

Retain "Hatch-Lid Glazing" subparagraph below if hatch lid is glazed.

Hatch-Lid Glazing: Minimum [**40-lbf/sq. ft.] <Insert value**> external live load and [**20-lbf/sq. ft.] <Insert value**> internal uplift load.

Revise one or more options in "Heat and Smoke Vent Standard" subparagraph below if required by authorities having jurisdiction or for insurance purposes. Compliance with UL 793 is requirement of BCNYS.

Heat and Smoke Vent Standard: Provide units that have been tested and listed to comply with UL 793 [**and] [are FM Approved**].

Retain one of two "Curb, Framing, and Lid Material" subparagraphs below. If retaining more than one material or finish, indicate location of each on Drawings or by inserts.

Curb, Framing, and Lid Material: Zinc-coated (galvanized) steel sheet.

Thickness: 0.079 inch.

Finish: Mill-Phosphatized Finish

Curb, Framing, and Lid Material: Aluminum sheet.

Thickness: 0.091 inch.

Finish: Mill.

Construction:

Insulation: 1-inch-thick, glass-fiber board.

R-Value: 4.3 according to ASTM C1363.

Retain "Nailer" subparagraph if roofing membrane termination requires use of wood nailer.

Nailer: Factory-installed wood nailer continuous around hatch perimeter.

Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.

Exterior Curb Liner: Manufacturer's standard, of same material and finish as metal curb.

Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.

Sloping Roofs: Where slope or roof deck exceeds 1:48, fabricate curb with perimeter curb height that is tapered to accommodate roof slope so that top surfaces of perimeter curb are level. Equip hatch with water diverter or cricket on side that obstructs water flow.

Hardware: Manufacturer's standard corrosion resistant; with hinges, hold-open devices, and independent manual-release devices for inside and outside operation of lids.

* + - 1. GREASE GUARDS

On EPDM roofs, grease guards are required around ventilators exhausting kitchen exhaust hoods.

* + - * 1. Grease containment system consisting of an extruded anodized aluminum frame and 3-inch thick, 3 layer absorbent filter, deflection cap flanges, and miscellaneous accessories, sized 48 inches larger than the exhaust curb;

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Facilitec Corporation.

Approved equivalent.

* + - 1. METAL MATERIALS
         1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653, G90 coating designation and mill phosphatized for field painting where indicated.

Mill-Phosphatized Finish: Manufacturer's standard for field painting.

* + - * 1. Aluminum Sheet: ASTM B209, manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.

Mill Finish: As manufactured.

* + - * 1. Aluminum Extrusions and Tubes: ASTM B221, manufacturer's standard alloy and temper for type of use, finished to match assembly where used; otherwise mill finished.
        2. Stainless Steel Sheet and Shapes: ASTM A240 or ASTM A666, Type 304.
        3. Steel Shapes: ASTM A36, hot-dip galvanized according to ASTM A123 unless otherwise indicated.

Retain three paragraphs below if requiring ladder safety railings or assist posts for roof hatches.

* + - * 1. Steel Tube: ASTM A500, round tube.
        2. Galvanized-Steel Tube: ASTM A500, round tube, hot-dip galvanized according to ASTM A123.
        3. Steel Pipe: ASTM A53, galvanized.
      1. MISCELLANEOUS MATERIALS
         1. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
         2. Polycarbonate Glazing: Thermoformable, monolithic polycarbonate sheets manufactured by extrusion process, burglar-resistance rated according to UL 972 with an average impact strength of 12 to 16 ft-lbf/in. of width when tested according to ASTM D256, Method A (Izod).
         3. Glass-Fiber Board Insulation: ASTM C726, nominal density of 3 lb/cu. ft., thermal resistivity of 4.3 deg F x h x sq. ft./Btu x in. at 75 deg F, thickness as indicated.

Refer to Section 061000 "Rough Carpentry" for information about waterborne preservatives.

* + - * 1. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction,[ **containing no arsenic or chromium**,] and complying with AWPA C2; not less than 1-1/2 inches thick.
        2. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187.
        3. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:

Fasteners for Zinc-Coated or Aluminum-Zinc Alloy-Coated Steel: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A153 or ASTM F2329.

Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

* + - * 1. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
        2. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
        3. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
        4. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
      1. GENERAL FINISH REQUIREMENTS
         1. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
         2. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
          2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
          3. Verify dimensions of roof openings for roof accessories.
          4. Proceed with installation only after unsatisfactory conditions have been corrected.
       2. INSTALLATION
          1. Install roof accessories according to manufacturer's written instructions.

Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.

Anchor roof accessories securely in place so they are capable of resisting indicated loads.

Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.

Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.

On sloping surfaces, integrate mounting flanges with roofing elements to properly shed water.

* + - * 1. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

Coat concealed side of uncoated aluminum roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.

Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.

* + - * 1. Roof-Hatch Installation:

Verify that roof hatch operates properly. Clean, lubricate, and adjust operating mechanism and hardware.

Retain applicable subparagraphs.

Attach safety railing system to roof-hatch curb.

Attach ladder-assist post according to manufacturer's written instructions.

* + - * 1. Heat and Smoke Vent Installation:

Install heat and smoke vent so top perimeter surfaces are level.

Include article below only if smoke and heat roof vents are specified in Part 2 of this section.

Install and test heat and smoke vents and their components for proper operation according to NFPA 204.

Provide a replacement fusible link after approved test.

Delete subparagraph below if not applicable.

Reset each smoke and heat roof vent which is equipped with an emergency electric release device immediately after system acceptance test is performed by the contractor providing the fire alarm system.

* + - * 1. Grease Guard Installation:

Retain applicable subparagraphs.

Cover EPDM curb flashing with 0.030 inch aluminum sheet flashing before installing grease guard.

Install grease guards prior to installation of stone ballast.

Install grease guards in accordance with the manufacturer’s printed instructions, and the membrane manufacturer’s recommendations.

* + - * 1. Seal joints with [**elastomeric] [or] [butyl**] sealant as required by roof accessory manufacturer.
      1. REPAIR AND CLEANING

Retain "Galvanized Surfaces" paragraph below for galvanized-steel surfaces.

* + - * 1. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A780.

Retain first paragraph below for primed surfaces.

* + - * 1. Clean exposed surfaces according to manufacturer's written instructions.
        2. Clean off excess sealants.
        3. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200