

ADDENDUM

Project: Science Building Research Wing Expansion

Project No. 03049

Owner: University of Southern Maine
Portland, Maine

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Addendum: No. 4

Date: May 12, 2004

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated February 20, 2004, Addendum No. 1 dated April 28, 2004, Addendum No. 2 dated April 29, 2004, and Addendum No. 3 dated May 5, 2004. Portions of the Bidding and Contract Documents not altered by this addendum remain in full force.

Acknowledge receipt of this addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

CHANGES TO SPECIFICATIONS

Table of Contents: Replace with revised Table of Contents dated May 12, 2004.

07530, EPDM Roofing

1. 1.02 A: Add subparagraph 3, as follows:
 3. Cutting, patching and flashing around vertical supports for rooftop acoustical screens.
2. 1.02 B: After the word "Exhaust," insert "and Alternate No. 8, "Rooftop Acoustical Screens." After "01230" insert "(as amended)."

07722, Elevator Shaft Vents:

1. Add this Specification section to the Project Manual.

13080, Rooftop Acoustical Screens

1. Add this Specification section to the Project Manual.

CHANGES TO DRAWINGS

Substitute the following revised drawing sheets:

- | | | | | |
|----|-------|---------------------|------------|--------------|
| 1. | A 1.4 | Fourth Floor Plan | Revision 1 | May 12, 2004 |
| 2. | A 2.1 | Exterior Elevations | Revision 1 | May 12, 2004 |
| 3. | A 2.2 | Exterior Elevations | Revision 1 | May 12, 2004 |

Insert the following new drawing sheet:

- | | | | | |
|----|-------|----------------------------------|------------|--------------|
| 1. | A 4.6 | Roof Screen Sections and Details | Revision 0 | May 12, 2004 |
|----|-------|----------------------------------|------------|--------------|

END OF ADDENDUM

UNIVERSITY OF SOUTHERN MAINE, PORTLAND CAMPUS
SCIENCE BUILDING RESEARCH WING EXPANSION

TABLE OF CONTENTS

Bidding Requirements

00030	NOTICE TO CONTRACTORS	2
00100	INSTRUCTIONS TO BIDDERS	2
00120	SUPPLEMENTAL INSTRUCTIONS TO BIDDERS	2
00121	MAINE CONSTRUCTION BID DEPOSITORY GENERAL CONDITIONS AND REGULATIONS	3
00300	PROPOSAL FORM (LONG FORM)	2
00310	PROPOSAL FORM FOR SUBCONTRACTORS	1
00410	FORM OF BID BOND	1
00415	FORM OF SUBCONTRACTORS' BID BOND	1

Contracting Requirements

00500	CONTRACT AGREEMENT (LONG FORM)	2
00610	CONTRACT PERFORMANCE BOND	1
00620	CONTRACT PAYMENT BOND	1
00700	GENERAL CONDITIONS (LONG FORM)	17
00800	SUPPLEMENTARY CONDITIONS	5
00830	WAGE DETERMINATION	1
00840	CONTRACTOR'S EXEMPT PURCHASE CERTIFICATE	1
00850	CONTRACTOR'S PAYMENT REQUISITION AND CERTIFICATION	1
00860	CONTRACT CHANGE ORDER FORM	1
00870	WAIVER OF LIEN FORM	1
00890	LIST OF DRAWINGS	1

Specifications

Division 1 - General Requirements

01100	SUMMARY OF THE WORK
01230	ALTERNATES
01250	CONTRACT MODIFICATION PROCEDURES
01290	PAYMENT PROCEDURES
01310	PROJECT MANAGEMENT AND COORDINATION
01320	CONSTRUCTION PROGRESS DOCUMENTATION
01330	SUBMITTAL PROCEDURES
01400	QUALITY REQUIREMENTS
01450	INTEGRATED DELIVERABLES AND TESTING PLAN (IDAT)
01500	TEMPORARY FACILITIES AND CONTROLS
01600	PRODUCT REQUIREMENTS
01700	EXECUTION REQUIREMENTS
01731	CUTTING AND PATCHING
01732	SELECTIVE DEMOLITION
01770	CLOSEOUT PROCEDURES AND SUBMITTALS

Division 2 - Sitework

NOT APPLICABLE TO THIS PROJECT.

Division 3 - Concrete

03310 CAST-IN-PLACE CONCRETE

Division 4 - Masonry

04810 BRICK VENEER MASONRY
04812 THIN BRICK VENEER SYSTEM

Division 5 - Metals

05120 STRUCTURAL STEEL
05310 STEEL DECK
05410 COLD-FORMED METAL FRAMING
05500 METAL FABRICATIONS
05510 METAL STAIRS
05810 ARCHITECTURAL JOINT SYSTEMS

Division 6 - Wood and Plastics

06100 ROUGH CARPENTRY

Division 7 - Thermal and Moisture Protection

07210 BUILDING INSULATION
07240 EXTERIOR INSULATION AND FINISH SYSTEM
07270 AIR BARRIER
07530 EPDM MEMBRANE ROOFING
07540 THERMOPLASTIC POLYOLIFIN (TPO) MEMBRANE ROOFING
07720 ROOF ACCESSORIES AND SHEET METAL FLASHING
07722 ELEVATOR SHAFT VENT
07810 SPRAY APPLIED FIREPROOFING
07840 FIRESTOP SYSTEMS
07920 JOINT SEALANTS

Division 8 - Doors and Windows

08110 STEEL DOORS AND FRAMES
08210 WOOD DOORS
08520 ALUMINUM WINDOWS
08710 DOOR HARDWARE
08800 GLAZING
08910 GLAZED ALUMINUM CURTAIN WALL

Division 9 - Finishes

09250 GYPSUM BOARD ASSEMBLIES
09255 GYPSUM BOARD SHEATHING
09310 CERAMIC TILE
09510 ACOUSTICAL PANEL CEILINGS
09650 RESILIENT FLOORING AND BASE
09900 PAINTING

Division 10 - Specialties

10520 PORTABLE FIRE EXTINGUISHERS

Division 11 - Equipment

11014 FALL ARREST EQUIPMENT

Division 12 - Furnishings

NOT APPLICABLE TO THIS PROJECT

Division 13 - Special Construction

13080 ROOFTOP ACOUSTICAL SCREENS
13850 EXISTING FIRE ALARM SYSTEM MODIFICATIONS
13910 BASIC FIRE PROTECTION MATERIALS AND METHODS
13935 SPRINKLER AND STANDPIPE SYSTEMS

Division 14 - Conveying Systems

14240 HYDRAULIC ELEVATOR

Division 15 - Mechanical

15050 BASIC MECHANICAL MATERIALS AND METHODS
15060 HANGERS AND SUPPORTS
15070 VIBRATION CONTROL AND SEISMIC RESTRAINTS
15075 MECHANICAL IDENTIFICATION
15080 MECHANICAL INSULATION
15110 VALVES
15140 PLUMBING PIPING AND SPECIALTIES
15180 HVAC PIPING
15241 POLYPROPYLENE PIPING SYSTEMS
15626 AIR COOLED ROTARY SCREW CHILLERS – FUTURE/NOT IN CONTRACT
15720 AIR HANDLING UNITS – FUTURE/NOT IN CONTRACT
15764 UNIT HEATERS
15810 DUCTWORK
15820 DUCT ACCESSORIES
15830 FANS
15834 HIGH PLUME DILUTION FANS
15910 CONTROL SYSTEMS
15950 TESTING, ADJUSTING, AND BALANCING

Division 16 - Electrical

16050 BASIC ELECTRICAL MATERIALS AND METHODS
16060 GROUNDING
16070 HANGERS AND SUPPORTS
16075 ELECTRICAL IDENTIFICATION
16090 ELECTRICAL SELECTIVE DEMOLITION
16120 CONDUCTORS
16130 RACEWAYS
16135 BOXES
16140 WIRING DEVICES

Division 16 – Electrical (continued)

16410	DISCONNECT SWITCHES
16420	MOTOR STARTERS
16441	PANELBOARDS
16490	FUSES
16500	LIGHTING

END OF INDEX

SECTION 07722
ELEVATOR VENT

PART 1 - GENERAL

1.01 PROVISIONS INCLUDED

- A. The general provision of the Contract, including General and Supplementary Conditions and Division 1 General Requirements, apply to work specified in this Section.

1.02 SUMMARY

- A. This Section includes hatch-type heat-and-smoke vent on louvered curb for ventilation of elevator shafts.
- B. Related Work Specified in Other Sections:
 - 1. Membrane flashing at vent curb: Section 07540, Thermoplastic Polyolefin (TPO) Membrane Roofing.

1.03 SUBMITTALS

- A. Product Data: Manufacturer's detailed technical product data, showing details of construction, and installation instructions.
- B. Shop Drawings: Fully dimensioned plans, elevations, sections, details of components, and attachments to other units of Work.

1.04 QUALITY ASSURANCE

- A. Standards: Comply with the following:
 - 1. SMACNA "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap-flashing to coordinate with type of roofing indicated.
 - 2. NRCA "Roofing and Waterproofing Manual" details for installation of units.
 - 3. NFPA 204M for smoke-and-heat vent design constraints, operation, and location.

PART 2 - PRODUCTS

2.01 ELEVATOR VENTS

- A. Manufacturers: Subject to compliance with requirements, furnish products by Bilco Co., Dur-Red Products, or Milcor, Inc. Louver need not be by the same manufacturer:
- B. Description: Furnish assembly consisting of heat-and-smoke vent mounted on louvered curb, meeting Code requirements for venting of elevators by providing permanently open area in combination with vent which is automatically opened by fusible link in a the event of a fire.
- C. Heat and Smoke Vent: Fabricate units to withstand 40-lbf per sq. ft. external loading and 20-lbf per sq. ft. internal loading pressure.
 - 1. Material: Zinc-coated steel sheets.

2. Type and Size: Single-leaf; 3'-0" wide x 2'-6" long.
3. Lid: Double-wall construction with 0.0785 inch (1.9 mm) thick zinc-coated steel cover, 1 inch thick mineral fiber insulation, and 0.0336 inch (0.8 mm) zinc-coated steel liner.
4. Hardware: Synthetic rubber gasket; corrosion-resistant or hot-dip galvanized hardware including pintle hinges, hold-open devices, and release mechanisms described below.
5. Finish: Paint bond and red oxide primer, prepared for field painting.

D. Release Mechanisms:

1. Fusible Link: 165°F fusible link which releases latch. Design latch so that it can be easily reset after a test or fire, and so that the covers cannot be latched closed unless the mechanism has been reset. Furnish with replacement link for installation after testing.
2. Lifting Mechanism: Spring-lever with hydraulic shock absorber dampers; mounted inside the hatch.
3. Also provide means for manually releasing the hatch from the inside and the outside without disturbing the fusible link.

E. Curb: 14 gauge (1.9 mm) zinc-coated steel; with 1-1/2 inch insulation, cant strips and cap flashing (roofing counterflashing), with welded or sealed mechanical corner joints; with 3-1/2 inch (88.9 mm) or wider roof flange.

1. Height: 12 inches (304.8 mm) high, designed to accept louver within the height of the curb.
2. Mounting: On shaft wall extension. See Drawings A3.1.

F. Louvers: Extruded aluminum fixed blade louver, stormproof blade profile, 1.5 inch deep, with extended flange and insect screen.

1. Louver Free Area based on 4' x 4' Unit: 6.68 square feet, or 42%.
2. Blade and Frame Metal Thickness: 0.063 inch (1.60 mm) thick.
3. Air Velocity at Beginning of Water Penetration: 400 FPM (122 m/min)
4. Metal Finish: Mill finish.
5. Louver Size: 3 louvers, each 22" wide by 6" inches high, installed into the front and sides of the curb.

G. Insect Screens: 14-by-18 mesh with 0.0123-inch-diameter anodized aluminum wire in removable aluminum frames with vinyl spline inserts for screen replacement. Provide insect screen behind each section of louver.

H. Acceptable Product: Bilco Type S-20SV modified to meet specifications, with built-in louver.

2.03 ACCESSORY MATERIALS

- A. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.

- B. Bituminous Coating: SSPC-Paint 12, solvent-type bituminous mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coating.
- C. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- D. Elastomeric Sealant: Generic type recommended by unit manufacturer that is compatible with joint surfaces; ASTM C 920, Type S, Grade NS, Class 25, and Uses NT, G, and, A.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: Comply with manufacturer's instructions and recommendations. Coordinate with installation of roof deck and other substrates to receive accessory units, vapor barriers, roof insulation, roofing and flashing, as required, to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight, except for louver free-area. Anchor units securely to supporting structural substrates, adequate to withstand lateral and thermal stresses, as well as inward and outward loading pressures.
 - 1. Except as otherwise indicated, install roof accessory items according to construction details of NRCA "Roofing and Waterproofing Manual."
- B. Isolation: Where metal surfaces of units are to be installed in contact with incompatible metal or corrosive substrates, including wood, apply bituminous coating on concealed metal surfaces, or provide other permanent separation.
- C. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal.
- D. Cap Flashing: Where cap flashing is required as component of accessory, install to provide adequate waterproof overlap with roofing or roof flashing (as counterflashing). Seal with thick bead of mastic sealant, except where overlap is indicated to be left open for ventilation.

3.02 FIELD TESTING AND ADJUSTMENT

- A. Elevator Vents: Locate, install, and test according to NFPA 204M. Test for proper installation by fusing the link, and then replace with new link. Clean and lubricate joints and hardware. Adjust for proper operation and latching.

3.03 CLEANING AND PROTECTION

- A. Clean exposed metal and plastic surfaces according to manufacturer's instructions. Touch up damaged metal coatings.

END OF SECTION 07722

SECTION 013080
ROOFTOP ACOUSTICAL SCREENS

PART 1 - GENERAL

1.01 PROVISIONS INCLUDED

- A. The general provisions of the Contract, including General and Supplementary Conditions and Division 1 - General Requirements, apply to work specified in this Section.

1.02 SUMMARY

- A. This Section specifies roof screens, mounted on existing roof, including the following types of work:
 - 1. Sound absorbing panels.
 - 2. Non-acoustical screen panels.
 - 3. Supporting structure and bracing tied to building structure.
 - 4. Subgirts for attachment of panels.
- B. Alternates: Work of this Section is Alternate No. 8. Refer to Section 01230 for description of Alternates and administrative requirements applicable to Alternates.
- C. Related Work Specified in Other Sections:
 - 1. Cutting and patching roofing; flashing around supports: Section 07530.
 - 2. Field painting of supports and braces: Section 09900

1.03 DESIGN REQUIREMENTS

- A. Structural Design: Design, engineer, and fabricate the roof screen system to withstand structural loads in accordance with provisions of Maine Building Code/BOCA "National Building Code" 1999 edition, and as follows:
 - 1. Dead Loads: Weights of materials and construction.
 - 2. Wind Loads on Vertical Elements (Acting Normal to the Surface): 25 psf minimum, and 38 psf at salient corners, per Section 1609.8.
- B. Acoustical Requirements: Design and fabricate acoustical panels with the following properties:
 - 1. Sound Transmission Coefficient (STC): STC = 25 or higher. (Roof perimeter acoustical screen panels only.)
 - 2. Noise Reduction Coefficient: NRC 0.90 or higher. (Both roof perimeter and wall-mounted screens.)

1.04 SUBMITTALS

- A. **Product Data:** Submit product data for products used in fabrication of the metal roof screen system fabrications. Submit manufacturer's specifications and installation instructions for all components of the roof screen system, complete with the manufacturer's printed installation instructions. Indicate by copy of transmittal letter that the installer(s) of the item(s) have been provided a copy of the instructions.
- B. **Submit shop and erection drawings for metal roof screen system fabrications. Drawings shall include:**
 - 1. Location of roof screens.
 - 2. **Field Measurements:** Before starting work, verify measurements, lines, grades, elevations, locations and details of existing roof conditions and be responsible for correctness, conformity, accuracy, and execution of metal roof screen system work to conform to actual conditions.
 - 3. Drawings detailing fabrication and erection of each metal roof screen system required or inferred.
 - 4. Include plans, elevations, sections, and details of metal roof screen system and their connections.
 - 5. Show anchorage and accessory items.
 - 6. Clearly identify deviations, if any, from the Contract Documents. Such deviations are subject to the Architect's approval.
- C. **Calculations:** Submit structural computations, material properties, and other information needed for structural analysis that has been signed and sealed by a Professional Engineer registered in the State of Maine and experienced in providing structural engineering design for roof screen systems similar to the system required for this project.
- D. **Acoustical Test Reports:** Submit test reports from acoustical testing laboratory showing that the assemblies provide the specified STC and NRC values.

1.05 QUALITY ASSURANCE

- A. **Installer Qualifications:** Arrange for installation of metal roof screen system by firm experienced in the installation of roof screen systems similar in material, design, and extent to that indicated for this Project.
- B. **Engineer Qualifications:** Professional engineer licensed to practice in the state of Massachusetts, and experienced in providing engineering services of the kind indicated that have resulted in the successful installation of metal roof screen system fabrications similar in material, design, and extent to that indicated for this Project.
- C. **Coordinate Work of this Section with roofing work specified in Section 07530, so that base supports are properly flashed.**

- D. Mock-Ups: Provide the following mock-ups, in accordance with Section 01400 requirements for mock-ups, and with the following requirements, using the actual materials proposed for use on this Project.
1. Visual appearance Mock-Up of screen panels: Provide a full size mock-up of roof screen panel assembly for Architect's. Make mock-up full height of screen assembly and five feet wide, incorporating a vertical reveal joint. Place the mock-up on the roof at a location designated by the Architect, so that it can be viewed from the ground. This mock-up does not need to include the specified support system except for sub-girts.
 2. Installation Mock-Up: Install two adjacent braces and the subgirts and panels between them, including base flashing, coping and reveals, for Architect's review of details of the installation and workmanship. Leave one tube support exposed and patch and flash roofing around the other. Adjust details of materials and workmanship until the mock-up is accepted by the Architect. This mock-up, when accepted, may be left in place as part of the finished work.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Package components for protection during transportation and handling. Handle to prevent deformation and damage. Unload, store, and erect metal wall panels in a manner to prevent bending, warping, twisting, and surface damage.
- B. If materials are going to be stored on site for any period of time, store the steel base supports on raised pallets and cover with breathable plastic or tarps to prevent surface rust. The remaining fittings, bundles of tubing, hat sections and other miscellaneous items can also be uncovered, but make sure the load is raised at one end to allow water to run off if it gets wet.
- C. Panels: Stack metal wall panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal wall panels to ensure dryness, with positive slope for drainage of water. Do not store metal wall panels in contact with other materials that might cause staining, denting, or other surface damage.
1. Protect strippable protective covering on metal wall panels from exposure to sunlight and high humidity, except to extent necessary for period of metal wall panel installation.
- D. Support System: Deliver and store tubing and hat sections in bundles held together with metal bands; pack and ship fittings and hardware in wood crates. Use either a fork lift or crane to unload. Do not lift the bundles by the metal bands. Comply with system manufacturer's recommendations for hoisting.
1. When setting the load on the roof, spread the bundles and crates out as much as possible to avoid overloading the roof structure. Place the material directly over major supports such as beams or trusses. After tubing is unbundled, take care to prevent it from rolling down the roof slope.

PART 2 - PRODUCTS

2.01 METAL PANELS

- A. Manufacturer and Product: Centria "IW-10A" and "IW-40A" are the Basis of Specification and Drawings; products by other manufacturers meeting specifications will be acceptable.
- B. Steel Face Panels: Flat-face, unperforated steel panels 12" wide by 1-1/2" deep, formed with interlocking edges for installation with concealed fasteners. Face may be lightly embossed, but vee-grooves or ribs will not be acceptable.
 - 1. Material: 0.0428 inch thick (18 gauge) G90 zinc-coated (galvanized steel).
- C. Aluminum Liner Panels: Flat face, perforated aluminum panels, 24" wide by 1-3/8" deep, formed with interlocking edges for installation with concealed fasteners. Panels may be formed with intermediate ribs or vee-grooves for stiffening.
 - 1. Material: 0.040 inch thick aluminum.
 - 2. Perforations: 10% free area.
- D. Accessories:
 - 1. Subgirts: For attaching face panels to liner panels, provide hat-shaped steel subgirts, 1/2 inch deep, fabricated from 0.052 inch thick (16 gauge) hot-dip G90 galvanized steel.
 - 2. Base Flashing: 0.0428 inch thick G90 galvanized steel.
 - 3. Coping: 0.0428 inch thick G90 galvanized steel.
- E. Fasteners (for securing panels to subgirts): Non-corroding material compatible with the panels; type as recommended by panel manufacturer to suit project conditions, metal thickness, support materials and thickness, and wind loads.
- F. Metal Finishes:
 - 1. Finish exposed-to-view faces of panels (including face exposed toward the building exterior and face visible to a person standing on the roof) and trim with polyvinylidene coating system containing at least 70% "Kynar 500" or "Hylar 5000" resin; Centria "Fluorofinish" or equal.
 - a. Color: Match Centria's #971, "Chromium Gray."
 - 2. Finish concealed faces of panels with panel manufacturer's standard concealed side finish.

2.02 ACOUSTICAL INSULATION

- A. Sound Insulation: Glass fiber batt or blanket insulation, 1.65 pcf density, 1-1/2 thick, encapsulated in polyethylene film, suitable for exterior exposure under conditions indicated for this Project, and meeting the NRC performance requirements specified in Part 1 of this section.

2.03 SUPPORT STRUCTURE AND BRACING

- A. General: Provide a manufactured roof screen support system designed for bolted attachment to concrete roof deck and coordinated installation with roofing system in a manner which prevents water leaks around the base supports.
- B. Basis of Specification: "RoofScreen" System as produced by the RoofScreen Manufacturing Co., 347 Coral Street, Santa Cruz, CA., 95060, (866) 766-3727.
- C. Base Supports: Hot-rolled steel. Fabricate base supports by fully-welding tubular steel upright to flat base plate.
- D. Base Caps: Hot-rolled steel. Fabricate base cap components with precision smooth, laser-cut edges and fully welded, watertight joints.
- E. Connector Fittings: Fabricated from ASTM A-366, cold rolled steel.
- F. Tubing: 2-1/2" outer diameter round, galvanized steel tubing having a minimum wall thickness of 0.060 (16 ga.), and of the length indicated on the Drawings. Provide larger diameter or thicker wall tubing if required by the structural design.
- G. Girts (Hat Sections): In accordance with the Cold Formed Steel Design Manual Published by the American Iron and Steel Institute (AISI).
- H. Hardware: Provide all miscellaneous fittings, connectors and fasteners, including, but not limited to: Base caps, base connectors, field connectors, end connectors, hat sections, hat splices, corner splices, friction rings, stop rings, gate catch weldments, gate latch weldments, and miscellaneous fasteners.
 - 1. Miscellaneous Fasteners: Stainless steel.
- I. Exposed Metal Finishes:
 - 1. Tubing and Hat Sections: Zinc plate; material shall conform to ASTM-B633, FE-ZN5, type 1 clear.
 - 2. All Exposed Steel fittings: Powder Coat Finish; Dupont Bike Black T6IC Polyester #PFB603S9.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. In the company of the installer, inspect the substrates to which the roof screen is to be anchored, adjacent work, and conditions under which the roof screen is to be installed. Do not proceed with the installation until conditions detrimental to the performance or appearance of the roof screens have been corrected.
- B. Prior to beginning work, thoroughly review the manufacturer's printed instructions.

3.02 INSTALLATION OF SUPPORTS AND BRACING

- A. Measure and layout the extent of the roof screen system on the roof surface. Locate features such as gate openings and where base supports are to be installed.
- B. Where possible, based upon the field measured dimensions, shop cut the tubing to the required lengths prior to delivery to the jobsite.
- C. Begin installation of base supports. Install using attachment method as indicated on the approved Shop Drawings in straight and consistent lines. After completion of installation of all base supports, complete with lead flashing boot and base cap, notify the Contractor and the Roofer. After the completion of roofing work, resume and complete the work of this Section.
- D. Install framing members (tubes, horizontal, vertical and diagonal), base connectors, field connectors, end connectors, etc.) in accordance with the manufacturer's printed instructions. At gate openings, pay particular attention to the special requirements specified by the manufacturer.
- E. Install the upper hat section in place and attach it to the vertical tube frame with Tek screws. Use two Tek screws per frame. Make sure to keep the frames plumb before installing the screws. Install remaining rows of hat sections using the same methods.

3.03 PANELS

- A. General: Install metal panels in accordance with panel manufacturer's printed instructions and with the approved Shop Drawings. Install panels plumb, parallel to the roof edge, and with top edge straight and true to the (sloped) line shown on Drawings.
 - 1. Installation Tolerances: Shim and align metal wall panel units within installed tolerance of 1/4 inch in 20 feet, nonaccumulative, on level, plumb, and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- B. Install base flashing to provide support and complete secondary drainage system, draining to the exterior at horizontal joints. Attach the base flashing to the lower hat section, and level it to establish the elevation of the bottom of the screens.
- C. Acoustical Screens: Where liner panels or acoustical screen installation is indicated, install screen system as follows:
 - 1. Attach the aluminum liner panels to the hat sections using concealed fasteners.
 - 2. Place encapsulated insulation inside the liner panels and hold in place in accordance with panel manufacturer's recommended details and with the approved shop drawings.
 - 3. Attach the subgirts to the outer face of the liner panels.
 - 4. Attach the steel face panels to the subgirts.
- D. Non-Acoustical Screens: Attach the face panels directly to the hat sections using concealed fasteners.

- E. Trim: Install corner angles, coping, reveal trim and other accessories for a complete and continuous screen installation, without gaps.

3.05 CLEANING AND PROTECTION

- A. Remove metal scraps, screws, and other debris resulting from the Work of this Section from the roof and from the jobsite.
- B. Clean surfaces of roof screen system as required to prevent deterioration and uneven weathering.

END OF SECTION 13080