SECTION 07 05 44

CLADDING SUPPORT SYSTEMS & COMPONENTS

PART 1 GENERAL

* 1. GENERAL REQUIREMENTS
		1. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.
	2. SECTION INCLUDES
		1. Engineered, concealed aluminum rainscreen and/or cladding support systems framing assembly.
		2. Accessories including anchors and attachments.

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Indicate appropriate related & remove none related sub-sections, as necessary.*

* 1. Related Specification Sections:
		+ 1. Unit Masonry Panels - Section 04 25 00
			2. Stone Composite Panels - Section 04 42 00
			3. Cold-Formed Metal Framing - Section 05 40 00
			4. Rough Carpentry – Section 061000 for in wall blocking as needed.
			5. Stone Composite Wall Panels - Section 07 42 43
			6. Mineral Board Insulation - Section 07 21 13
			7. Blanket Insulation - Section 07 21 16
			8. Fluid-Applied Membrane Air Barriers - Section 07 27 26
			9. Metal Wall Panels - Section 07 42 13
			10. Composite Wall Panels - Section 07 42 43
			11. Fiber Reinforced Concrete Wall Panels - Section 07 42 47
			12. Sheet Metal Flashing and Trim - Section 07 62 00
			13. Joint Sealants - Section 07 92 00
			14. Aluminum-framed entrances and Storefronts - Section 08 41 13
			15. Glass and Glazing - Section 08 80 00
			16. Louvers - Section 08 90 00
	2. SYSTEM DESCRIPTION
		1. Extruded Aluminum concealed support structure for cladding attachment systems of various types. Cladding attachment assembly: for aluminum substructure and attachment system components with all accessories necessary for a complete sub-framing wall system. Furnish fastenings and flashings as required to complete the concealed cladding attachment system.
	3. PERFORMANCE CRITERIA
		1. Performance Requirements: Provide components that have been manufactured, fabricated and installed to maintain performance criteria stated by Manufacturer, without defects, damage or failure.
		2. Structural Design: Design calculations certified by a registered professional engineer licensed in the State of \_\_\_\_\_\_\_ shall be submitted to verify load carrying capability of cladding system using performance requirements and design criteria as indicated. Cladding attachment system shall be capable of resisting a minimum positive and negative wind load per ASCE-7 or building code, whichever is greater.
		3. Design and Structural Properties: Conform to provisions of the most current IBC (International Building Code and/or the building code requirements of any other AHJ where the project is being built)
		4. Deflection Limits: Cladding support structure system components shall be designed in accordance with the Manufacturer’s recommended maximum deflection when tested under positive and negative design wind gust loads and shall withstand wind gust loads with horizontal deflections no greater than the Manufacturer’s allowable span, based on current wind load tables.
		5. Design and install aluminum support structure to accommodate expected construction tolerances and misalignment, deflection of building structural components, and openings in the building enclosure as designed.
	4. SUBIMTTALS
		1. Product Data: For each component indicated. Include Manufacturer’s written installation instructions, including recommendations for evaluating, preparing, and treating substrate, technical data, material descriptions, and finishes.
		2. Shop Drawings: Show fabrication and installation layouts of cladding panel, details of aluminum support structure attachment and wall structure conditions, anchorages for aluminum support structure, attachment system for cladding, allowances for thermal expansion, trim, closures, flashings, corner conditions, and accessories as required or specified by the architect, and all special job specific details.
		3. Samples: Submit selection and verification samples for finishes, colors, and textures of cladding attachment component material. If special fastening is selected by architect provide color matched fastener for each panel color specified.
		4. Manufacturer’s Instructions: Manufacturer’s installation instructions.
		5. Closeout Submittals: Submit the following:
			1. Warranty: Warranty documents specified herein.
	5. QUALITY ASSURANCE
		1. Installer Qualifications: Installer shall be approved by the architect and have a minimum of five (5) years of experience in performing work of similar type and scope.
		2. Fabricator Qualifications: A shop that employs skilled workers who custom fabricate cladding attachment systems to those specified herein and is approved by the architect. If shop drawings are required for the project the shop drawings are to be drawn and coordinated by the approved fabrication company.
		3. Source Limitations: Obtain cladding attachment system and all auxiliary materials from a single source Manufacturer who has a minimum of 10 years of experience in the manufacturing of exterior grade metals. All metals to be supplied and or manufactured by a single manufacturer.

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Indicate appropriate related & remove none related sub-sections, as necessary.*

* 1. MOCK-UP
		1. Before construction of the exterior envelope, construct a mock-up to verify selections made under approved submittals and to demonstrate typical joints, finish, texture, tolerances, attachments to building structure, methods of installation, connections to adjacent building enclosure materials, and standard and quality of workmanship. Build mock-up to comply with the following requirements using materials indicated for completion of the Work:
		2. Mock-up shall be a minimum of \_\_\_\_square feet and shall demonstrate substrate surface preparation, air barrier membrane joint and crack treatment, cladding attachment, penetration sealing, connection to window and other adjacent building envelope materials, attachment method to wall substrate, and standard of workmanship.
		3. Demonstrate continuity, air, and water tightness of air and water barrier and installation and attachment of continuous exterior insulation.
		4. [Optional] Provide in-situ mockup testing according to the Project requirements as specified herein by an independent testing agency approved and certified to perform such testing.
		5. If Architect determines that the field constructed mock-up does not meet Project requirements, reinstall mock-up until approved.
		6. Retain and maintain the approved field mockup during construction in an undisturbed condition as a standard for judging the completed exterior panel system. At the architect’s discretion, the mock-up may be part of the completed Work.
	2. DELIVERY, STORAGE AND HANDLING
		1. Delivery: Deliver materials in Manufacturer's original, unopened, undamaged containers with identification labels intact.
		2. Storage and Protection: Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by Manufacturer. Comply with Manufacturer’s written handling and storage guidelines.
	3. PROJECT CONDITIONS
		1. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.
	4. WARRANTY
		1. Submit Installer’s standard warranty covering defects in material or manufacturing quality, including corrosion warranty.
		2. Warranty is only available when cladding attachment systems are installed and fabricated by an installation contractor that has been approved by the Manufacturer and has followed the recommended guidelines of the Manufacturer and has been signed and dated by the appropriate parties listed on the warranty registration form.
1. PRODUCTS
	1. MANUFACTURERS
		1. Basis of Design: Provide Horizontal Concealed Fastener Clip/Rail System as manufactured by Monarch Metal Fabrication, 1700 Ocean Avenue, Suite 2, Ronkonkoma, NY 11779 . Please contact Sales at (631) 750-3000 or email:info@monarchmetal.com. A list of local fabricators or installers that comply with this specification section may be requested from the above contact.
		2. Substitution Requests: As specified by Division 01.
	2. SUPPORT STRUCTURE
		* 1. Gauge, Configuration, Dimensions, and Spacing: Minimum gauge and as required to conform to design criteria for each assembly.
			2. All Wall Bracket and “L” Rail material: Alloy – 6061-T6 aluminum appropriate for cladding support system and its construction.
			3. Auxiliary component material: Alloy aluminum appropriate for cladding support system components and its construction.

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Choose appropriate to your project the applicable Extruded Aluminum Sub-Framing and remove the appropriate sub-sections, as necessary. Please note the attention to each sub-section choice and remove non-used portions for clarity.*

* 1. EXTRUDED ALUMINUM SUB-FRAMING
		+ 1. Sub-framing attachment: Type using thermally isolated wall bracket as indicated on the architectural drawings.
			2. Extruded Sub-Framing: 6061-T6 [or Custom Alloy] aluminum alloy [Choose 1] which may be [mill] finish [black} or powder coated [custom color] for the type of use indicated on the project Drawings. [Choose mill, black or custom color]
				1. Adjustable Vertical [V] or Horizontal [H] Wall Bracket and Rail: Projection off of wall [VWB]or [HWB] -02, -03, -04 or -05] [Choose 1] 2” Wall Bracket and Rail applications have a 1” variable range. Wall Bracket and Rail applications greater than 2” have a maximum of 1 1/2” variable range. {Example: VWB-04 or HWB-02}
				2. Hat Channel: [Galvanized Steel][Aluminum][Stainless Steel] [Choose 1], Vented [V] or Non-Vented[NV] [Choose 1110-001 or FMAX-HAT-144-BK [Choose 1] at a depth of [1/2”, 3/4”, 1”][Choose 1 or Custom Size] {Example: Stainless Steel Hat Channel - 2” depth}
				3. “J” Channel: [Galvanized Steel][Aluminum][Stainless Steel] [Choose 1], Vented [V] or Non-Vented[NV] [Choose 1110-001 J or FMAX-J-144-BK [Choose 1] at a depth of [1/2”, 3/4”, 1”][Choose 1 or Custom Size] {Custom Example: Galvanized J Channel 1 1/2” depth}
				4. Z-girts: [Galvanized Steel][Aluminum][Stainless Steel] [Choose 1], Vented [V] or Non-Vented[NV] [Choose 1] at a height of [Choose Height] [1/2” to 6” in 1/2" increments] with [1”][1 1/2"] legs [Choose 1] {Example: Stainless Steel, V, 4 1/2" w/ 1 1/2" legs}
			3. Fasteners: as indicated on the engineering Shop Drawings.

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Choose appropriate to your project the applicable Concealed Fastener Clip and Rail System and remove the appropriate sub-sections, as necessary. Please note the attention to each sub-section choice and remove non-used portions for clarity.*

* 1. CONCEALED FASTENER CLIP AND RAIL SYSTEM [Choose 1 or more system based on project needs]
		+ 1. MFSTR-LW1250 System
				1. Generally used with panels that weigh 1-8 pounds per square foot maximum.
				2. [HPL/phenolic] [GFRC] [fiber cement] cladding panel make up. [Choose 1]
			2. MFSTR-UCRAIL System
				1. Generally used with panels weighing more than 6 pounds per square foot.
				2. To be used with Keil anchors.
				3. [Stone] [GFRC] [Concrete][fiber cement] cladding panel make up. [Choose 1]
				4. [Isolation Gasket Applied] or [No Isolation Gasket Applied][Choose 1]
			3. TS200 System
				1. Generally used with panels that weigh 1-8 pounds per square foot maximum.
				2. [HPL/phenolic] [GFRC] [fiber cement] cladding panel make up. [Choose 1]
			4. MFSTR-1125 System
				1. Generally used with panels weighing more than 8 pounds per square foot.
				2. Anchors & Hardware leave a flat surface at the back of the panel for mounting.
				3. [Stone][Concrete] [GFRC//Thick] [fiber cement//Thick] cladding panel make up. [Choose 1]
			5. MFSTR-SSXCLAD
				1. Generally used with panels weighing more than 8 pounds per square foot.
				2. Anchors & Hardware leave a flat surface at the back of the panel for mounting.
				3. Used when Stainless Steel is required.
				4. [Steel] [Stone][Concrete] [GFRC//Thick] [fiber cement//Thick] cladding panel make up. [Choose 1]
			6. MFSTR-DNRAIL System
				1. Generally used with lightweight honeycomb panels.
				2. Utilizes Deform Nuts designed for insertion into honeycomb panels**.**

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Choose appropriate to your project the applicable Connectors and Anchors and remove the appropriate sub-sections, as necessary. Please note the attention to each sub-section choice and remove non-used portions for clarity.*

* 1. CONNECTORS AND ANCHORS
		1. Connectors used with Cold-Formed Steel Framing Members: Conform to engineered Shop Drawings.
		2. Screw Fasteners: Stainless steel as instructed by manufacturer.
			1. Thermoset Polyester coating that exhibits 1,000 hours of salt spray beyond stainless steel anti-corrosiveness.
			2. Minimum No. 14 self-drill hex-head screw fastener to be used to attach horizontal rail to vertical rail.
			3. Steel Studs:
				1. Self-drill hex-head TEK screw fasteners of sufficient length
				2. Minimum three threads must penetrate steel stud members.
		3. Concrete and Masonry Wall Anchors: Mechanical and Adhesive anchors, bolts, nuts, and washers suited to use and as required for transference of design loads.
			1. Mechanical Anchors: Expansion type, conforming to Conform to engineered Shop Drawings.
			2. Adhesive Anchors: Torque Controlled, conforming to engineered Shop Drawings.
	2. ACCESSORIES
		1. Bracing, Furring, Bridging, Plates, Gussets, and Clips: Formed sheet steel or fiberglass, thickness as necessary to meet structural requirements for special conditions encountered and conforming to engineered Shop Drawings.
		2. Galvanic Protection: Utilize tapes and other methods as necessary to separate and prevent contact between dissimilar metals.
1. EXECUTION
	1. EXAMINATION
		1. Verify conditions ready to receive work of this Section before beginning.
		2. Backup Wall: Verify level and plumb, free of defects, and conforming to tolerances suitable for installation of subsequent work.
		3. Weather Resistive Barrier: Verify complete, cured, and conforming to Manufacturer’s instructions. Verify fenestrations, transitions, discontinuities, and sills and ledgers flashed and sealed to move moisture to exterior of building as part of air barrier system.
	2. PREPARATION
		1. Review areas of potential interference and conflicts, and coordinate layout and support provisions for interfacing work.
		2. Adjust and perform work as necessary for plumb and true alignments.
	3. INSTALLATION
		1. Conform to Manufacturer's instructions and provisions of Contract Documents.
		2. Erect Thermally Isolated Wall Bracket and L-Rail for Exposed Fastened cladding attachment or component assembly to be level, plumb, and in alignment with building features including corners, off-sets, and fenestrations and in accordance with approved submittals and Shop Drawings.
	4. ERECTION TOLERANCES
		1. Maximum Framing Member Variation from True Position: 1/8”.
		2. Maximum Framing Member Variation from Plane:
			1. Individual Framing Members: Do not exceed 1/8” in 10’-0”.
			2. Accumulative Over-all Variation for Wall and Floor System: Do not exceed 1/8”.
	5. FIELD QUALITY CONTROL
		1. Manufacturer’s Field Technical Service: Make intermittent and final inspection to verify installation in conformance to Manufacturer instructions and suitable as framing assembly for subsequent metal panels, acrylic plastering, and other cladding installations and conforms to the engineered Shop Drawings.

END OF SECTION 07 05 43