

## SECTION 057300

### DECORATIVE METAL RAILINGS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Aluminum decorative metal railings at the monumental stairs.
- B. Related Requirements:
  - 1. Section 055213 "Pipe and Tube Railings" for nonornamental railings fabricated from pipes and tubes.
  - 2. Section 057100 "Decorative Metal Stairs."

##### 1.2 COORDINATION AND SCHEDULING

- A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver items to Project site in time for installation.
- B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not meet structural performance requirements.

##### 1.3 ACTION SUBMITTALS

- A. Product Data:
  - 1. Manufacturer's product lines of decorative metal railings assembled from standard components.
  - 2. Vertical picket infill panels.
  - 3. Fasteners.
  - 4. Post-installed anchors.
  - 5. Finishes.
- B. Shop Drawings: Include plans, elevations, sections, and attachment details.
- C. Sustainable Design Submittals:
  - 1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
- D. Finish Samples for Initial Selection: For products involving selection of color, texture, or design.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: The manufacturer of railing system or a qualified installation firm that is approved, authorized, or licensed by railing system manufacturer to install manufacturer's products.

#### 1.5 MOCKUPS

- A. Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
  - 1. Build mockups as full-height assembly.

#### 1.6 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.

### PART 2 PRODUCTS

#### 2.1 SOURCE LIMITATIONS

- A. Obtain decorative metal railing systems from single source from single manufacturer. Systems must be designed, engineered, and fabricated by manufacturer of railing system.

#### 2.2 MANUFACTURERS

- A. Interior Aluminum Decorative Metal Railings:
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide VIVA Railings, LLC (info@vivarailings, 972-353-8482); SLAT Picket Railing System or comparable product by one of the following:
    - a. All Fab Railings & Metalworks.
    - b. American Security & Gate Company.
    - c. US Glass Fence.
- B. Exterior Aluminum Decorative Metal Railings.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide VIVA Railings, LLC; STRUC PANEL Railing System or comparable product by one of the following:
    - a. All Fab Railings & Metalworks.
    - b. American Security & Gate Company.
    - c. US Glass Fence.
- C. Product Options: Drawings indicate size, profiles, and dimensional requirements of railings and are based on the specific system indicated. See Section 016000 "Product Requirements."
  - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory

data to Architect for review.

- D. Structural Performance: Decorative metal railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
1. Handrails and Top Rails of Guards:
    - a. Uniform load of 50 lbf/ft. (0.73 kN/m) applied in any direction.
    - b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
    - c. Uniform and concentrated loads need not be assumed to act concurrently.
  2. Infill of Guards:
    - a. Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
    - b. Infill load and other loads need not be assumed to act concurrently.

### 2.3 METALS

- A. Pickets & Top Rail: Extruded Bars and Shape per ASTM B221 (ASTM B221M), Alloy 6063-T5/T52.
- B. Handrail: Tubular stainless steel pipe with round cross-section shape.
- C. Laser-Cut "Structural" Panels: Aluminum sheet, with [pattern design as selected from VIVA Railings' Library] [custom pattern in accordance with Architect's design] with folded structural edges on all sides.
1. Aluminum Sheet: AA5052-H32 alloy and temper; thickness per engineering requirements, delegated design by manufacturer.
  2. Pattern: Architect to select from manufacturer's full range of patterns and finishes.

### 2.4 FABRICATION

- A. General: Fabricate decorative metal railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Form work true to line and level with accurate angles and surfaces.
- C. Fabricate connections that will be exposed to weather in a manner to exclude water.
1. Provide weep holes where water may accumulate.
  2. Locate weep holes in inconspicuous locations.
- D. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- E. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings.
1. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
  2. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.

## 2.5 STAINLESS STEEL FINISHES

- A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
- B. Stainless Steel Finishes:
  - 1. Handrail: Powder-coat; Custom color match to Architect's sample.

## 2.6 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
  - 1. Top and Bottom Rail: Custom color match to Architect's sample.
  - 2. Aluminum Pickets: Custom color match to Architect's sample.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Installation Tolerances: Structural steel and concrete slabs to be within 1/8 inch (3 mm) in 10 ft. (3.048 m) horizontally and 1/8 inch (3 mm) vertically. Correct out-of-tolerance conditions to meet railing manufacturer's requirements.

### 3.2 INSTALLATION, GENERAL

- A. Comply with Drawings and manufacturer's written instructions for installing glazed decorative metal railings, accessories, and other components.
- B. Perform cutting, drilling, and fitting required for installing railings.
  - 1. Fit exposed connections together to form tight, hairline joints.
  - 2. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
  - 3. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
- C. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

### 3.3 METAL RAILING CONNECTIONS

- A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws, using plastic cement filler colored to match finish of railings.

### 3.4 INSTALLATION OF METAL RAILING

- A. Metal Railings and Guards: Install assembly to comply with railing manufacturer's written instructions and with requirements in other Part 3 articles.

### 3.5 CLEANING

- A. Clean stainless steel by washing thoroughly with clean water and soap, rinsing with clean water, and wiping dry.

### 3.6 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Final Acceptance.
- B. Restore finishes damaged during installation and construction period, so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

**END OF SECTION**

