SECTION 05721 - ORNAMENTAL RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Post-supported railings with glass infill.

1.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails:

a. Uniform load of 50 lbf/ ft. applied in any direction.
b. Concentrated load of 200 lbf applied in any direction.
c. Uniform and concentrated loads need not be assumed to act concurrently.

2. Top Rails of Guards:

a. Uniform load of 50 lbf/ ft. applied in any direction.
b. Concentrated load of 200 lbf applied in any direction.
c. Uniform and concentrated loads need not be assumed to act concurrently.

3. Infill of Guards:

a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft..
b. Uniform load of 25 lbf/sq. ft. applied horizontally.
c. Infill load and other loads need not be assumed to act concurrently.

B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.3 SUBMITTALS

A. Product Data: For railings assembled from standard components, grout, anchoring cement, and paint products.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other Work.

C. Samples: For each exposed finish required.

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, according to ASTM E 894 and ASTM E 935.

1.4 QUALITY ASSURANCE

A. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Stainless-Steel Ornamental Railings:

a. Inox Stainless Steel Railing System; Heni, Inc.

2.2 METALS

A. Stainless Steel:

1. Tubing: ASTM A 554, Grade MT 304.
2. Pipe: ASTM A 312/A 312M, Grade TP 304.
3. Castings: ASTM A 743/A 743M, Grade CF 8 or CF 20.
4. Plate and Sheet: ASTM A 666, Type 304.
5. Post: Stainless Steel AISI 303/304 No. 6 flat finish fabricated of 2 flat bar stock 2” x 1/4” with stainless steel base and fasteners. Manufacturer’s standard.
6. Clamps and End Blocks: Stainless steel AISI 303/304 No. 6 flat finish. Provide vertically sliding clamps. Provide end blocks for top of post for railing attachment. Manufacturer’s standard.

2.3 GLASS AND GLAZING MATERIALS

A. Tempered Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated), Type 1 (transparent flat glass), Quality-Q3. Provide products that have been tested for surface and edge compression according to ASTM C 1048 and for impact strength according to 16 CFR 1201 for Category II materials.

1. Clear Glass: Class 1 (clear).
2. Tinted Glass: Class 2 (tinted), manufacturer's standard solar seal 508-238-0112. Satin finish with light sand blast one side.
3. Thickness for Glass Infill Panels: As required by structural loads, but not less than 12.0 mm.

B. Glazing Gasket and Accessories: Provide glazing gasket, setting blocks, shims, and related accessories as recommended or supplied by railing manufacturer.

2.4 MISCELLANEOUS MATERIALS

A. Fasteners: Provide concealed fasteners, unless exposed fasteners are unavoidable.

1. Stainless-Steel Components: Type 304 stainless-steel fasteners.

B. Anchors: Provide chemical or torque-controlled expansion anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488.

C. Wood Top Rails: Engineered wood tube 1-9/16" diameter, 3 ply poplar with cherry stain.

D. Grout and Anchoring Cement: Factory-packaged, nonshrink, nonmetallic grout complying with ASTM C 1107, or water-resistant, nonshrink, anchoring cement; recommended by manufacturer for exterior use.

2.5 FABRICATION

A. General: Fabricate railings to comply with design, dimensions, and details indicated, but not less than that required to support structural loads.

B. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings.

C. Form changes in direction by inserting prefabricated elbow fittings.

D. Form curves by bending in jigs to produce uniform curvature; maintain cross section of member throughout bend without cracking or otherwise deforming exposed surfaces.

E. Close exposed ends of hollow railing members with prefabricated end fittings.

F. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated.

G. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.

2.6 FINISHES

A. Stainless Steel:

1. Dull Satin Finish: No. 6.
2. Protect mechanical finishes with removable protective covering.
3. Meet NAAMM's recommendations.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation.

1. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
2. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

B. Anchor posts to in place construction as indicated using fittings designed and engineered for this purpose.

C. Attach handrails to wall with wall brackets.

D. Post Supported Glass Railings: Install in accordance with manufacturer's written instructions and approved shop drawings. Do not alter glass panels as part of field installation. Clean all components after completed installation.

END OF SECTION 05721