SECTION 057300 ORNAMENTAL ALUMINUM PICKET RAILINGS

PART 1 – GENERAL

1.1 SECTION INCLUDES

This section includes furnishing and installing all aluminum handrail systems as indicated on drawings.

A. Ornamental Aluminum Railing (M-200 / M-300 / M-400 SERIES)

1.2 RELATED SECTIONS

A. Section 03 30 00 – Cast-in-Place Concrete: Furnishing of sleeves cast in concrete.

B. Section 05 50 00 - Metal Fabrications

C. Section 05 51 00 - Metal Stairs: Handrails other than those specified in this section

B. Section 05 52 13 - Pipe and Tube Railings

C. Section 06 10 00 - Rough Carpentry: Placement of blocking.

1.3 REFERENCES

A. AAMA 2604 - Performance Requirements and Test Procedures for High-Performance Organic Coatings on Aluminum Extrusions and Panels

B. ANSI A1264.1 - Safety Requirements for Workplace Floor and Wall Openings, Stairs, and Railing Systems.

C. ASTM E 935-00(2006) – Standard Test Methods for Permanent Metal Railing Systems and Rails for Buildings.

D. ASTM E985-00(2006) – Standard Specification for Permanent Metal Railing Systems and Rails for Buildings.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Comply with requirements of building authorities having jurisdiction in Project location and the following:

1. Handrail Standard: ANSI A1264.1
2. Occupational Safety and Health Administration – 29 CFR 1910.23 – Guarding floor and wall openings.
3. Railings at stairs with more than 3 risers shall be designed with an ADA-compliant handrail.

B. Design loads: Design, fabricate, and install handrails, guardrails, and railing systems to withstand, when tested per ASTM E935, loadings required by applicable building and safety codes but not less than the following:
   1. Handrail and Top Rails: Concentrated and uniform loading need not be applied simultaneously.
      a. Uniform load: 50 pounds per foot (74.3 kg/m) applied at the top in any direction.
      b. Concentrated load: 200 pounds (90.6 kg) applied at the top in any direction.
   2. Infill: Infill load and other loads need not be applied simultaneously.
      a. Concentrated load: 50 pounds (22.65 kg) applied horizontally on any area of 1 square foot (0.093 square meters)

C. Corrosion Control: Prevent electrolytic reaction between dissimilar metals and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

D. Provide ADA-compliant handrail, including mounting brackets, elbows, transitions, wall brackets, and other appurtenances necessary for a complete installation complying with requirements of authorities having jurisdiction.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 – Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used.

C. Shop Drawings: Submit shop drawings for fabrication and installation of ornamental metalwork. Include plans, elevations, and detail sections. Indicate materials, methods, finishes, and types of joinery, fasteners, anchorages, and accessory items.

D. Load tests / Calculations: Provided upon request & agreement.

E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

F. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic cleaning and maintenance of all components.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Years of documented experience producing systems specified in this section.

B. Installers Qualifications: Years of documented experience installing systems specified in this section.

C. Aluminum railings meet federal safety requirements as determined by an independent test laboratory. Test results available upon request.

D. Mock-Up: Mock-up for evaluation of surface preparation techniques and application workmanship available upon request.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver product to project site in good condition and packaged properly for protection of normal shipping conditions.

B. Packaged railing system should be inspected upon delivery for any apparent damages caused by shipping before acceptance of product.

C. Store components in a clean, dry location away from uncured concrete, masonry, and other elements that may cause damage.

D. Handling of product on project site should be kept to a minimum to avoid possible damage to finish and material.

1.8 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.9 PROJECT CONDITIONS

A. Field Measurements: Take measurements of actual dimensions where necessary for proper fit. Indicate measurements on shop drawings.

1.10 WARRANTY

A. Provide with manufacturer’s limited lifetime warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:
   1. Alumina Railing Products, Inc.
      8301 Strimple Road
      Cleves, Ohio 45002
      Phone: (513) 353-1116
      Fax: (513) 353-2116
      Website: www.aluminarailing.com
      Email: info@aluminrailing.com

2.2 MATERIALS

A. Extrusions: Extruded aluminum to be 6063-T5 or T6 aluminum alloy.

B. Fasteners: All fasteners to be galvanized or stainless steel.

2.3 FINISHES

A. AAMA 2604 Standard Powder Coating (1.5 – 2 mil coverage)
   1. Standard Colors: Coastal White, Anodized Silver, Silverstorm, Westchester Gray, Linen, Overcast, Sandstone, Paleo Bone, Bronze, Satin Black, Forest Green, and Revolutionary.
   2. Custom colors available per special order.

2.4 FABRICATION

A. Tolerances: Verify dimensions on site prior to shop fabrication for proper Connection to building structure or substrate.

B. All aluminum railing systems to be fabricated and assembled to approved design specification requirements, including post and picket spacing, but not less than the structural requirements to support load and building codes.

C. Fasteners and welds to be concealed as much as design will allow.

D. Field splices to be minimized as much as possible and components clearly marked for site assembly.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared. Fully review the supporting structure and substrate to verify a structurally sound base for anchoring railing system.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Ensure that adjacent surfaces, structures, and finishes are protected from Damage by construction activities of this section.

C. Use wood blocks and padding to prevent damage to railing members and fittings during erection.

D. Review architectural or shop drawings for installation instructions.

3.3 INSTALLATION

A. Adjust, level, and securely install railing system as specified in instructions and drawings.
B. Separate aluminum that may contact other metals, masonry, or concrete by means of asphaltic paint or other approved materials and methods.
C. Railing system can be base or side mounted to wood, concrete, or other stable surface using approved anchorage devices and fasteners where necessary into and through holes of post or post boot.
D. Railing system can be embedded or core drilled using non-shrink non-metallic grout in posthole leaving ½ inch (13mm) below exposed surface. Fill remaining portion of cored hole with waterproof sealant tapered away from p post.

3.4 ERECTION TOLERANCES

A. Install railings plumb and level.
   1. Maximum variation from plumb: ¼ inch (6.0 mm).
   2. Maximum misalignment from true position: ¼ inch (6.0 mm).
   3. Maximum misalignment between adjacent separated members: 1/8 inch (3.0 mm).

3.5 CLEANING

A. Remove dust or other foreign matter from component surfaces; clean finishes in accordance with AAMA 609 and AAMA 610-02.
B. Wash railing as needed with clean water and soap, rinse with water.
C. Do not use acidic solutions, harsh abrasives, or cleaners containing abrasive materials.

3.6 PROTECTION

A. General contractor or owner shall be responsible for maintaining and protecting railing system until completion of project.

End of Section