SECTION 05517 – ALTERNATING TREAD STEEL STAIRS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this Section.

1.2 SUMMARY

A. Provide all material, labor, equipment and services and perform all operations necessary or required for the work of this section, in accordance with the Drawings and Specifications, and including fabrication and installation of Alternating Tread Steel Stairs.

B. Related work specified elsewhere includes but is not limited to:
   1. Division 5 section “Metal Stairs” for steel stairs and steel stairs with concrete filled treads.
   2. Division 5 section “Metal Fabrications” for ships ladders.

1.3 PERFORMANCE REQUIREMENTS

A. Stair Treads: shall be capable of withstanding a single concentrated 1000 pound load without permanent deformation.

B. Handrail: shall be capable of withstanding a single concentrated load of 200 pounds or a uniform load of 50 pounds per linear foot applied in any direction at any point on the rail.

1.4 CONSTRUCTION REQUIREMENTS

A. Landings, Treads, and Mounting Base: shall be stamped and formed from single piece material. Stock shapes, hand forming, or welded remnants shall not be permitted. All stamped parts shall have integrally formed rigidizing bends and shall be spot welded to stringers of like material.

B. Welds: shall be a minimum of 6 welds per tread, and 12 welds each on the landing and footing. Each weld shall be quality controlled and be capable of withstanding a minimum of 2800 labs in shear.

C. Pedestrian Surfaces: shall be punched through with upset non-skid openings.

D. Riser Spacing shall be equally spaced to within 3/16” for adjacent risers and to within 3/8” for any two non-adjacent risers on a stair.

E. Handrails shall be contoured for body guidance and underarm support and shall be attached to the outside stringers and landings by bolting. Provide optional parapet style handrail configuration.

F. Landing Reinforcement shall be with minimum .20" steel formed angle notched and punched and factory welded to the landing at the points of a handrail attachment.

G. Rubber Foot Divider shall be affixed to the central portion of the landing. A rubber bumper strip shall be attached or will be provided for filed attaching to the central stringer.

1.5 DIMENSIONS

A. Stair Angle 56 degrees from horizontal.

B. Vertical Drop: the change in elevation, as shown in the drawings, between the upper finished floor surface where the top landing will be attached and the lower finished floor surface where the base of the stair will be secured.

1.6 SUBMITTALS

A. Dimensional Prints shall be submitted for approval prior to fabrication.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Carbon Steel:
   1. Treads: 13 Gauge 1010/15 HRPO per ASTM A569.
   2. Landing & Foot Stampings: 11 Gauge 1010/15 per ASTM A569.
   3. Stringers:
      a. 2" x 1 ¾" x 11 Gauge 1010/15 per ASTM A569 for 56 degree stairs under 10 vertical feet.
      b. 3" x 1 ¾" x 11 Gauge 1010/15 for 56 degree stairs over 10 vertical feet.
   4. Handrails: 1 ½" OD x 0.083" 1010/15 CS per ASTM A569 cold drawn, fully annealed tube per ASTM 513.

B. Miscellaneous Material:
   1. Rubber Spine: Hollow neoprene
   2. Rubber Foot Divider: Solid neoprene

C. Basis of Design Product: Lapeyre stair as manufactured by FS Industries Engineered Steel Products, P.O. Box 72659 Providence, RI 02907 (ph. 800-421-0314).

2.2 FINISHES

A. Carbon Steel:
   1. Safety Yellow Paint: Powder Coat Baked Enamel.

2.3 FABRICATION

A. General: Fabricate alternating tread steel stairs to conform with performance and construction requirements and in accordance with approved shop drawings or dimensional prints. Fabricate and shop-assemble to greatest extent possible.

B. Carbon Steel: gas metal arc welded with treads spot welded to stringers and bolt-on handrails with included bolts using the specified materials.

PART 3 - EXECUTION

3.1 PREPARATIONS

A. Coordination: Coordinate start and installation of steel alternating treads with all other related and adjacent work. Installation shall not start until the construction has progressed to the point that weather conditions and remaining construction operations will not damage stair installation.

B. Verification: Verify that dimensions and angle are correct and that substrate is in proper condition for stair installation. Do not proceed to install until all necessary corrections have been made.

3.2 INSTALLATION

A. If bumper has not been installed at the factory, install the self adhesive bumper.

B. Prepare mounting holes.

C. Position stair with top tread at same elevation as roof surface.

D. Secure stair with not less than 2 bolts or studs at tope and with not less than 2 at bottom of stair.

E. Touch up with matching paint any chipped or abraded damage to factory finish.

3.3 CLEAN

A. Leave work area clean and free of debris.

END OF SECTION 05517