PART 1 GENERAL

1.1 SECTION INCLUDES:

A. Steel stair frame of structural sections with closed risers.
B. Pan to receive concrete fill stair treads and landings.
C. Integral balusters and aluminum hand railing.
D. Aluminum hand railing on walls.

1.2 REFERENCES

B. ASCE 7-98 - American Society of Civil Engineers, Wind loads (Chapter 6 only)
C. ASTM A36 - Structural Steel.
D. ASTM A53 - Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe.
E. ASTM A123 - Zinc (Hot-Galvanized) Coatings on Products Fabricated From Rolled, Pressed and Forged Steel Shapes, Plates, Bars and Strip.
F. ASTM A283 - Low and Intermediate Strength Carbon Steel Plates.
G. ASTM A446 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip process, Physical (Structural) Quality.
H. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
I. ASTM A501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
J. ASTM E935 - Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings
K. ASTM E985 - Permanent Metal Railing Systems and Rails for Buildings.
L. AWS A2.0 - Standard Welding Symbols.
M. AWS D1.1 - Structural Welding Code.
N. NAAMM - Metal Stairs Manual.
O. NAAMM - Metal Bar Grating Manual.
P. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.

1.3 DESIGN REQUIREMENTS

A. Florida Building Code.
B. Design stair assembly in accordance with ASCE 7-98.
C. Design handrails to support a 200-pound load applied at any point and in any direction. Design shall include support for 50 pounds per lineal foot load applied in any direction.

1.4 SUBMITTALS FOR REVIEW

A. Section 01300 - Submittals: Procedures for submittals.
B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
C. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.
1.5 QUALITY ASSURANCE

A. Prepare work in accordance with ASTM E985.
B. Prepare Shop Drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of Florida.
C. Welders' Certificates: Submit under provisions of Section 01300, certifying welders employed on the Work, verifying AWS qualification within the previous 12 months.

PART 2 PRODUCTS

2.1 MATERIALS

A. Steel Sections: ASTM A36.
B. Steel Tubing: ASTM A500, Grade B.
C. Plates: ASTM A283.
E. Sheet Steel: ASTM A446, Grade B Structural Quality with 0.25 oz/sq ft galvanized coating.
F. Bolts, Nuts, and Washers: ASTM A325 or A307 galvanized to ASTM A153 for galvanized components.
G. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; consistent with design of stair structure.
H. Welding Materials: AWS D1.1; type required for welded materials.
I. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.
J. Touch-Up Primer for Galvanized Surfaces: SSPC 20 Type I Inorganic zinc rich.

2.2 COMPONENTS

B. Concrete for Treads and Landings: Portland Cement Type I, 3000 psi 28 day strength, with a 2" to 3" slump.

2.3 FABRICATION - GENERAL

A. Fit and shop assemble components in largest practical sections for delivery to site.
B. Fabricate components with joints tightly fitted and secured.
C. Continuously seal jointed pieces by continuous welds.
D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
F. Supply components required for anchorage of fabrications of same material and finish as fabrication, except where specifically noted otherwise.
G. Accurately form components required for anchorage of stairs, landings and railings to each other and to building structure.

2.4 FABRICATION - PAN STAIRS AND LANDINGS

A. Fabricate stairs and landings with closed risers and treads of metal pan construction, ready to receive concrete.
B. Prime paint components.
2.5 FABRICATION - UNIT STAIR TOWERS

A. Fabricate self-supporting steel stair towers with formed treads and risers; steel channel stringers; landing platforms; sectioned for transport; corner structural support members designed to support full weight of complete stair tower plus design live load; with aluminum railings, newel posts, and balusters.

B. Fabricate stair towers to height not exceeding 40' for transportation purposes; designed for stacking to height of building as a self-supporting structure.

2.6 FINISHES

A. Prepare surfaces to be primed in accordance with SSPC SP 2.

B. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

C. Do not prime surfaces in direct contact with concrete or where field welding is required.

D. Prime paint items with one coat.

E. Galvanized items to minimum 1.25-oz/sq ft zinc coating in accordance with ASTM A123.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply items required to be cast into concrete and embedded in masonry with setting templates.

3.3 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide anchors, plates, angles, hangers and struts required for connecting stairs to structure.

C. Allow for erection loads and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

D. Field weld components indicated on shop drawings. Perform field welding in accordance with AWS D1.1.

E. Field bolt and weld to match shop bolting and welding. Conceal bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

F. Mechanically fasten joints butted tight, flush, and hairline. Grind welds smooth and flush.

G. Obtain approval prior to site cutting or making adjustments not scheduled.

H. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.

3.4 ERECTION TOLERANCES

A. Maximum Variation From Plumb: ¼" per story, non-cumulative.

B. Maximum Offset From True Alignment: ¼".

END OF SECTION