

## SECTION 05500 - METAL FABRICATIONS

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### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. All miscellaneous metalwork indicated and herein specified, including:
  - 1. Lintels.
  - 2. Steel supports for new roof openings.
  - 3. Miscellaneous fabrications and fasteners.

#### 1.2 SUBMITTALS

- A. Submit Shop Drawings showing fabrication and installation for metal fabrications.
- B. Submit design calculations, stamped by a Registered Professional Engineer, for steel stair and railing design.
- C. Submit Shop Drawings and calculations in accordance with Section 01300.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. General:
  - 1. Metals shall be free from defects impairing strength, durability, or appearance, and of best commercial quality for purposes specified. All metals shall be made of new materials.
  - 2. Metals shall be made with structural properties to sustain safety or withstand strains and stresses to which normally subjected, true to detail, clean, straight, with sharply defined profiles, curved work to true radii, and unless particularly noted, with smooth finished surfaces.
- B. Structural steel shall conform to the Standard Specification, ASTM, for "Structural Steel for Building," A-7 or A-36.
- C. Cast iron shall be made of soft gray iron.
- D. Sheet metal, Federal Specification QQ-6-636.
- E. Steel Pipe: ASTM A106, Grade B, Schedule 40.
- F. Steel Tube ASTM A500, FY = 46.
- G. Bolts: ASTM A325 or A307.
- H. Steel Bar Grating: ASTM A569.
- I. Aluminum: Shall be 6063-T5 extruded aluminum alloy (ASTM B221-54T alloy G.S. 10A-T5).
- J. Steel Pipe Railings: Shall be of black iron pipe with flush welded connections and fittings.
- K. Metal Railing Panels: Miller Wire Works (205) 592-0341, or approved equal; 1-1/2 inch 10 gauge diamond mesh, intermediate crimped; closed perimeter channels; hot dipped galvanized finish.
- L. Shop Paint: Manufacturer's standard metal protective paint.

- M. Hot-Dip Galvanizing: Provide coating for iron and steel fabrications applied by the hot-dip process, .05 -.09% nickel content, Deltagalv by Duncan Galvanizing, or approved equal. Comply with ASTM A 123 for fabricated products and ASTM A 153 for hardware. Provide thickness of galvanizing specified in referenced standards.

## 2.2 FABRICATION - GENERAL

- A. To greatest extent possible, work shall be fitted and shop-assembled ready for erection.
- B. Work shall be executed in strict accordance with Drawings, details, and approved Shop Drawings.
- C. Shop connections shall be riveted or welded, and where indicated blind riveted. Rivets, screws, and kindred fastenings shall be countersunk into exposed work and finished flush therewith.
- D. Joining of Metals: Joining and intersections of metals shall be accurately made, and tightly fitted, and made in true planes, with adequate fastenings; bolted work shall be screwed up tight and threads nicked to prevent loosening.
- E. Holes and Connections: Provide holes and connections for the work of other trades and make connections thereto, unless otherwise indicated.
- F. Welding:
  - 1. Welding and equipment shall conform to American Welding Society's Code for Welding in Building Construction, latest edition (subject to State and local laws and ordinances).
  - 2. Fabricators and welders shall be licensed operators.
  - 3. All exposed welded joints shall be ground smooth.
- G. Provide lintels sized in accordance with lintel schedule. Provide hot-dip galvanized coating on exterior lintels.

## PART 3 - EXECUTION

### 3.1 ERECTION AND INSTALLATION

- A. Work shall be made and erected square, plumb, straight, and true, accurately fitted and with tight joints and intersections. Riveted parts, where so indicated, shall be made with countersunk heads of blind rivets. Work shall be accurately reinforced and anchored in place. Exposed work shall be finished smooth, with even, close joints and neat connections, unless otherwise indicated.
- B. All metal to metal jointing of exterior work, where necessary, shall be caulked and made water and weathertight, and the work herewith shall be so warranted.
- C. Fabricator shall be responsible for locations and levels of all work of this Section, except such parts as may be delivered to others and set by them. In such cases, fabricator shall assist others in properly locating said parts.
- D. Bolts and Anchors: Provide bolts for fastening wood to metalwork, concrete and masonry. Anchor bolts for fastening metalwork and wood to concrete and masonry shall be hooked at one end.
- E. All work under this Section, except as otherwise specified, shall receive one coat shop paint before leaving Shop.
- F. All miscellaneous metals in contact with concrete or masonry at exterior walls shall have the contact surface treated with a brush coat of a bituminous based cement.

**END OF SECTION 05500**