SECTION 05010
MISCELLANEOUS METALS (Site)

PART – GENERAL

1.1 The provisions of the Standard Specifications for Public Works Construction (SSPWC) latest Edition, Sections 206 and 210, apply except as modified herein.

a. Scope:

Furnish materials and perform labor required to execute this work as indicated on the drawings, as specified, and as necessary to complete the Contract, including, but not limited to, these major items:

1. Shapes, sleeves, anchors, connectors, plates, backing plates, supports and fastenings required, but which are not specified in other sections.
2. Steel tube fences and gates.
3. Woven wire panels and gates.
4. Vehicle access gate and chains.
5. Channel jambs for wood gates.
6. Prime coating un-galvanized steel items.
7. Welding.

b. Related Work Specified Elsewhere:

1. Setting of items to be embedded in concrete.
2. Finish hardware for trash area wood gates - Finish Hardware, Section 08710.
3. Prefabricated metal items - Pertinent sections.

c. General Requirements:

1. Field Conditions. Verify drawing dimensions with actual field conditions. Inspect related work and adjacent surfaces. Report to the Agency Representative all conditions which prevent proper execution of this work.
2. Shop Drawings. Submit six (6) sets in accordance with Sections 01340 and 05120, showing in complete detail all information required for fabrication, finishing and installation of this work.
3. Codes. Materials and work shall conform to the governing Building Code. In case of conflict between these specifications and the Building Code, the more stringent shall govern.
4. General. Examine all drawings and specifications and include all miscellaneous metal which is specified in other sections. Provide all connections, anchors, bolts, and other fastenings as required. Do all cutting, punching, drilling and tapping required for proper assembly of the work.
5. Delivery. Insure that items to be set in concrete or masonry are delivered at the proper time.

PART 2 – EXECUTION

2.1 Steel Shapes:

Conform to ASTM A36.

2.2 Steel Pipe:
Conform to ASTM A53, Grade B.

2.3 Malleable Iron Castings:

Conform to ASTM A47.

2.4 Welding Rods:

Conform to requirements of AWS for intended use.

2.5 Galvanizing:

Conform to ASTM A123.

2.6 Bolts, Nuts, Screws:

Conform to ASTM A307, Grade A.

2.7 Steel Plate:

Conform to ASTM A283, Grade A.

2.8 Steel Tubing:

Conform to ASTM A501.

2.9 Bars, Flats, Rounds:

Conform to ASTM A36, standard grade mild steel.

2.10 Paint-Shop Prime Coat for Ferrous Metal:

"X-60 Red Bare Metal Primer," "769 Damp-Proof Red Primer," or "960 Zinc Chromate Primer," as manufactured by Rust-O-Leum Corporation, or Themec #99 Metal Primer.

2.11 Touch-up for Galvanized Surfaces:

All State #321 Galvanizing Powder (30% tin, 30% zinc, 40% lead and flux).

2.12 Miscellaneous Material:

As indicated or specified.

2.13 Shop Prime Coat:

Ferrous Metal. Properly clean and prepare for painting in compliance with the paint manufacturer's instructions and apply one shop coat of material of the type specified. Thoroughly and completely cover all exposed surfaces as well as surfaces concealed after assembly. Apply primer by rush or spray gun, as best adapted to the paint material and surface conditions. Allow primer to become dry and hard before handling. Apply second coat primer to 1 mil minimum dry coat thickness and touch up after installation and leave in proper conditions to receive finish coats.

2.14 Galvanizing:

a. Galvanize all exterior items and those interior items so specified or indicated on plans. Use the hot dip process, conforming ASTM A123. Galvanizing shall be done after fabrication.

b. Average weight of zinc coating per square foot of actual surface: Not less than 2.0 ounces, with no individual specimen showing less than 1.8 ounces. (One ounce of zinc corresponds to a coating thickness of 0.0017 inch.)

2.15 Fabrication:

a. Using skilled mechanics, form and fabricate items of work as indicated and as required to meet installation conditions. Make provisions to connect with or receive the work of other trades.

b. Unless otherwise indicated weld or bolt connections between members. Where possible, conceal connections in the finished work. Where exposed screw fastenings are required, use phillips ovalhead screws to match parent material. Fit or miter exposed joints to hairline tolerance or use welded joints. On finished surfaces, grind all welds smooth and flush with base metal.

c. Bend pipe or tubing without collapsing or deforming the walls, and so as to produce a smooth uniform curved section and maintain uniform sectional shape.

d. Where items are to be embedded in concrete or masonry, provide welded-on anchors or lugs as indicated or required.

2.16 Items Embedded in Concrete:

Provide bolts, eyebolts, dowels, anchors, plates, inserts, and other miscellaneous items that are to be installed in forms before concrete pouring, or for building into masonry, as indicated. Examine and check the drawings for the number type and location of such items.

2.17 Installation:

Install all items plumb, level and square, securely and rigidly attached to supporting construction and as detailed.

2.18 Description of Items:

a. Those items which are standard or stock design which are sufficiently detailed or described on the drawings to permit their fabrication and installation are not covered herein even though they may be included in the scope.

b. Channel jambs for wood gates, straps, anchors and plates for timbers.

2.19 Wire mesh panels and gates:

a. All galvanized and conforming material and manufacturing standards of Acorn Wire & Iron Works.

b. Fabric: 1-1/2" diamond mesh; 10-gauge.

c. Frames:

1. For toilet room enclosures in restroom building: 1-1/2" X 3/4" X 1/8" closed channel type. Clinch wire thru channels for each panel.
2. For gable end clerestory panels in restroom building and service building: 1-1/2" X 3/4" X 1/3" channels; clinch wire through channels for each panel.

d. Hardware: Provide galvanized track for horizontal sliding gate, bolts, mortise-type locks (less cylinders) and all other required operating hardware, as shown on shop drawings and details.

All steel shall be hot dipped galvanized in sections, after fabrication.

2.20 Grating & Frame:

Shall be Neenah Foundry Co. #R-4999-AX Bolted Trench Drain of cast iron, as detailed or equivalent by Campbell or McKinley. Grate type "P" with Perma-Grip surface.

2.21 Vehicle Access Gate:

Shall be of galvanized standard pipe as detailed on drawings with pipe cap ends welded on. All welds shall be ground smooth and assembly shall be hot-dip galvanized after fabrication.

2.22 Chains:

Shall be galvanized and as detailed on drawings.

2.23 Welding:

All welding shall conform to requirements of the Committee for Standard Tests for Welds of the American Welding Society. All welding shall be electric arc process. Welds exposed in finish work shall be filled out flush, ground and dressed. Welders for structural shall be certified.

2.24 Inspection of Welding:

Inspection of all welding shall be done under the direct supervision of an approved and licensed welding inspector. Steel fabricator shall notify the welding inspector prior to and shall not commence any welding without the welding inspector present. The Agency Representative shall be furnished a report by the welding inspector verifying that the welds conform to the drawings and specifications. (See Inspector of Work - Section 01420.)

END OF SECTION - 05010