

PART I – GENERAL**WORK SPECIFIED HEREIN**

All labor, materials, equipment and services necessary to fabricate and erect all structural steel as indicated or specified including, but not limited to:

- All structural steel including columns, beams, girders, column base and cap plates, joist and beam bearing plates, angles and channels.
- Framing for all openings in metal deck.
- Connection angles, bolts and electrodes for welding work.
- Framing and support for roof top units.
- Shop painting.
- Shop drawings.
- Furnishing of anchor bolts and anchor plates to be embedded in concrete or masonry.
- Connections for steel joist girders and steel joists to each other and to structural steel.
- All other items required to make the work of this section complete.

SUBSTITUTIONS

In accordance with Section 01600.

QUALITY ASSURANCE

- Provide Special Inspections for structural steel as shown on the drawings and as required by the Building Official. See Section 01400 for payment provisions for testing.
 - Welders shall be duly qualified (test passed in the preceding 12 months) in the position in which they are to weld and the qualifications and specifications for workmanship shall comply with the AWS requirements.
- Unless otherwise shown or specified, structural steel work shall conform to the following standards:
 - American Institute of Steel Construction
 1. Specifications for Structural Steel Buildings, 2022.
 2. Code of Standard Practice, 2022.
 - American Welding Society: Structural Welding Code – Steel, AWS D1.1- 08.

SUBMITTALS

The contractor shall prepare all shop drawings, product literature, etc. as required to properly coordinate and construct the project, and as per the requirements of the Project Manual.

Submit the following items for review by the Professional of Record in accordance with Section 01300, Submittals.

1. Submit structural steel shop drawings. Include complete details and schedules for fabrication and assembly of structural steel members, procedures and diagrams. Include details of cuts, connections, camber, holes and other pertinent data. Indicate welds by standard AWS symbols and show size length and type of each weld. Furnish erection drawings referencing erection marks to shop detail drawing numbers. Provide setting drawings, templates and directions for

installation of anchor bolts, embedded plates and other anchorages to be installed by others.

PRODUCT DELIVERY, STORAGE AND HANDLING

Exercise care during unloading, storage and erection to avoid damage. Dumping on the ground is not permitted. Material stored at the site shall be supported completely free of the ground and covered to avoid damage from the elements.

PART II – PRODUCTS**MATERIALS**

Unless noted otherwise, structural steel shall conform to the grades as specified on the Drawings.

PART III – EXECUTION**FABRICATION**

- Make connections as indicated or detailed, on the drawings and the approved shop and erection drawings. All exposed steel shall have smooth, clean surfaces with no identifying trade marks, names, etc., exposed to view. Leave in condition for finish painting.
- Clean all steel work by wire brushing, or by other means selected by the fabricator, of loose mill scale, loose rust, accessible weld slag or, flux deposit, dirt and other foreign matter. Remove oil and grease deposits by solvent. After cleaning, give all steel work one coat of metal primer. Apply primer thoroughly and evenly to dry surfaces, by brush, spray, roller coating, flow coating or dipping at the selection of the fabricator to achieve a minimum thickness of 1.0 mils.
- Bolts shall have proper length shanks with no bearing on threaded portions.
- Make all welds by the electric-arc process. Grind all exposed welds smooth.
- Splicing of material will not be permitted except as shown of the structural drawings.

SITE INSPECTION

Verify all anchor bolt locations, grouting and elevation of base and setting plates and other material set by other trades, etc., before commencing work. Notify the Professional of Record of any work set by others if out of tolerances specified, and do not erect any material upon such work until it has been corrected satisfactorily. Starting work implies acceptance of the work of other trades affecting erection of the structural frame. Final results are the entire responsibility of the Contractor.

ERECTION

- The steel structure is a non-self-supporting steel frame and is dependent upon diaphragm action of the metal roof deck and attachment to the masonry walls for stability and for resistance to wind and seismic forces. Provide all temporary supports required for stability and for resistance to wind and seismic forces until these elements are complete and are capable of providing this support.

- Erect material plumb and level and maintain this condition to completion. Connect members temporarily and align completely before making permanent connections. Temporary conditions shall consist of bolts in no less than one-third of the holes and in no case less than 3 bolts in any single connection. Surfaces in contact shall be thoroughly clean when assembled. Provide necessary temporary bracing and guying to align the structure properly for permanent connections, and safely resist all erection, dead load and wind stress. Take particular care to have the work plumb and level (maximum tolerance 1 to 500 for interior members, 1 to 1000 for exterior members) before making permanent connections. Remove bracing and guys only after permanent alignment and assembly and structure is capable of completely sustaining design and temporary construction loads.
- Fair-up holes with pins to align holes before bolting. Ream unfair holes to obtain alignment or drill new holes. Enlargement of holes with drift pins or burning of new holes is not permitted. Draw bolts up tight after members are aligned and leveled.
- Weld by shielded arc method per AWS standard code for arc and gas welding in building construction. Refer to shop drawings for weld size and dimensions. Close all joints exposed to weathering with continuous 1/8" weather welds. Grind smooth all exposed welds, but grinding shall not reduce weld strength or required cross section. Protect all finish material from damage due to welding. Remove unsatisfactory welds by chipping or arc air method.
- Spot paint all abrasions, field bolts and field welds with same paint used for shop coat. Remove all temporary guys, bracing and bracing clips and grind flush all burrs remaining, before painting. Remove all welding slag, spatter, rust and burnt paint and wire brush clean all welds before touch-up.

END OF SECTION