

SECTION 055000
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A Shop fabricated steel items.

1.02 REFERENCE STANDARDS

- A ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- B ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2022.
- C ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- D ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates 2018.
- E ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength 2021.
- F AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination 2020.
- G AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2022).
- H AWS D1.2/D1.2M - Structural Welding Code - Aluminum 2014, with Errata (2020).
- I SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer 2004.
- J SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.
- K SSPC-SP 2 - Hand Tool Cleaning 2018.

1.03 SUBMITTALS

- A Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
 - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

1.04 QUALITY ASSURANCE

- A Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.2/D1.2M and dated no more than 12 months before start of scheduled welding work.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

- A Steel Sections: ASTM A36/A36M.
- B Plates: ASTM A283/A283M.
- C Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
- D Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.
- E Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.
- F Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

- G Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- H Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

- A Fit and shop assemble items in largest practical sections, for delivery to site.
- B Fabricate items with joints tightly fitted and secured.
- C 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.
- D Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- E Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS

- A Bollards: Steel pipe, concrete filled, crowned cap, as detailed; prime paint finish.
- B Door Frames for Overhead Door Openings: Channel sections; prime paint finish.

2.04 FINISHES - STEEL

- A Prime paint steel items.
 - 1. Exceptions: Galvanize items to be embedded in concrete and items to be embedded in masonry.
- B Prepare surfaces to be primed in accordance with SSPC-SP2.
- C Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- D Prime Painting: One coat.
- E Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 PREPARATION

- A Clean and strip primed steel items to bare metal where site welding is required.
- B Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

- A Install items plumb and level, accurately fitted, free from distortion or defects.
- B Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C Obtain approval prior to site cutting or making adjustments not scheduled.

END OF SECTION