

SECTION 05 50 00
METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Bollards.
- B. Requirement:
 - 1. Furnish all materials, labor and equipment required to provide all metal fabrications not specifically included in other sections, complete and in accordance with the requirements of the contract documents.
- C. Related Requirements:
 - 1. Section 09 91 00 - Paint and Protective Coatings.

1.2 REFERENCE STANDARDS

- A. ACI 318 – Building Code Requirements for Structural Concrete.
- B. AISC348 – The 2009 RCSC Specification for Structural Joints.
- C. ASTM A53 – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- D. AWS D1.1 – Structural Welding Code – Steel.
- E. AWS D1.2 – Structural Welding Code – Aluminum.
- F. NOMMA Guideline 1 – Joint Finishes.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittals.
- B. Material certifications shall be submitted along with any shop drawings for metal products and fabrications required by other sections of the specifications.
- C. Qualifications Statement:
 - 1. Submit qualifications for licensed professional.
 - 2. AWS certified welding qualifications.

1.4 QUALITY ASSURANCE

- A. The Owner may engage in third part testing to test any materials for conformance with the specification.

- B. The Owner may engage in third party testing to perform testing of welded connections.
- C. All steel welding shall be performed by welders certified in accordance with AWS D1.1 and AWS D1.2.
- D. Finish joints according to NOMMA Guideline 1.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 – Product Requirements.
- B. Inspection: Accept metal fabrications on-site in labeled shipments. Inspect for damage.
- C. All unidentified steel will be rejected and shall be removed from the site and replaced by the contractor at no additional cost to the Owner.
- D. Protect metal fabrications from damage by exposure to weather or by ground contact.

1.6 EXISTING CONDITIONS

- A. Verify field measurements prior to fabrication. Indicate field measurements on Shop Drawings.

PART 2 PRODUCTS

2.1 BOLLARDS

- A. Bollards shall be 6-inch diameter schedule 40 galvanized steel pipe in accordance with ASTM A53.
- B. Bollards shall be concrete filled and crowned as detailed in drawings with a minimum compressive strength of 3,000 psi.
- C. All anchors shall be concealed as indicated on Drawings.

2.2 FABRICATION

- A. All measurements and dimensions shall be based on field conditions and shall be verified by the contractor prior to fabrication.
- B. All fabricated work shall be shop fitted together as much as practicable, and delivered to the field, complete and ready for erection. All miscellaneous items such as stiffeners, fillets, connections, brackets, and other details necessary for a complete installation shall be provided.
- C. All work shall be fabricated and installed in a manner that will provide for expansion and contraction, prevent shearing of bolts, screws, and other fastenings, ensure rigidity, and provide a close fit of sections.

- D. Finished members shall conform to the lines, angles, and curves shown on the Drawings and shall be free from distortions of any kind.
- E. All cuts shall be neat and accurate, with parts exposed to view neatly finished. Flame cutting is allowed only when performed utilizing a machine.
- F. All shop connections shall be welded unless otherwise indicated on the Drawings or specified herein. Bolts and welds shall conform to this Section. All fastenings shall be concealed where practicable.
- G. Fabricated items shall be shop painted when specified in Section 09 91 00 – Painting and Protective Coatings.
- H. Continuously seal joined members by continuous welds.
- I. 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.
- J. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- K. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements.
- B. Verify that field conditions are acceptable and are ready to receive Work.

3.2 PREPARATION

- A. Section 01 70 00 - Execution and Closeout Requirements.
- B. Clean and strip where site welding is required.
- C. Supply steel items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.

3.3 INSTALLATION

- A. Install items plumb and level, accurately fitted, and free from distortion or defects.
- B. Make provisions for erection stresses. Install temporary bracing to maintain alignment until permanent bracing and attachments are installed.

- C. Field-weld components indicated on Drawings
- D. Perform field welding according to AWS D1.1 and D1.2.
- E. Obtain approval of Architect/Engineer prior to site cutting or field adjustments.

3.4 FIELD QUALITY CONTROL

- A. Section 01 70 00, Execution and Closeout Requirements.
- B. Welding: Inspect welds according to AWS D1.1 and D1.2.
- C. Replace damaged or improperly functioning hardware.
- D. After erection, touch up welds, abrasions, and damaged finishes with prime paint or galvanizing repair paint to match shop finishes.
- E. Touch up factory-applied finishes according to manufacturer-recommended procedures.

3.5 ADJUSTING

- A. Section 01 70 00 - Execution and Closeout Requirements.
- B. Adjust operating hardware and lubricate as necessary for smooth operation.

END OF SECTION