

SECTION 32 31 20**BOLLARDS****PART 1 GENERAL****1.1 SECTION INCLUDES**

Steel bollards.

1.2 REFERENCES

- A. ASTM A 36 - Carbon Structural Steel.
- B. ASTM A 53 - Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- C. ASTM A 500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
- D. ASTM A 570 - Steel, Sheet and Strip, Carbon, Hot-Rolled, Structural Quality.

1.3 SUBMITTALS

- A. Comply with 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Product Data: Submit manufacturer's product data, including installation instructions.
- C. Shop Drawings: Submit manufacturer's shop drawings, indicating materials, dimensions, tolerances, welding, fasteners, hardware, mounting, finish, and accessories.
- D. Samples: Submit manufacturer's standard color samples.
- E. Warranty: Submit manufacturer's standard warranty.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, manufacturer, and location of installation.
- B. Storage: Store materials in a clean, dry area indoors in accordance with manufacturer's instructions. Keep temporary protective coverings in place.
- C. Handling: Protect materials and finish from damage during handling and installation

PART 2 - PRODUCTS**2.1 MATERIALS**

Carbon Steel Pipe: ASTM A 53, Schedule 40.

2.2 STEEL BOLLARDS

- A. General:

1. Fabrication: 8-inch ID, 0.625-inch wall, Schedule 40 steel pipe.
2. Height: Security - 36 inches, and Decorative Security - 42 inches.
3. Top: Domed.
4. Mounting: Embedded and Removable embedded, pad lockable.
5. Finish: Polyester powder coated.
6. Accessories:
 - a. Pad lockable hole covers for removable bollards.
 - b. Sleeves: Domed high-density polyethylene sleeves for bollards without eyelets.
7. Color: Black and Yellow. Color indicated on the Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

Examine surfaces to receive site furnishings. Notify Architect of conditions that would adversely affect installation or subsequent utilization of site furnishings. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 SURFACE PREPARATION

Ensure surfaces to receive site furnishings are clean, flat, and level.

3.3 INSTALLATION

- A. Install Bollards in accordance with manufacturer's instructions at locations indicated on the drawings.
- B. Install Bollards level, plumb, square, accurately aligned, correctly located, and without warp.
- C. Embedded Mounting: Embed Bollards by direct burying in accordance with manufacturer's instructions.
- D. Use hardware and fasteners in accordance with manufacturer's instructions.
- E. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
- F. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

3.4 CLEANING

- A. Clean Bollards in accordance with manufacturer's instructions.
- B. Remove temporary protective coverings.

- C. Do not use harsh cleaning materials or methods that would damage finish.

3.5 PROTECTION

- A. Protect installed site furnishings from damage during construction.

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