

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

SPECIAL PROVISION

SECTION 644 – BOLLARDS

644.1 General Description

This work consists of the construction and installation of bollards. The bollards will be constructed of steel pipe walls, concrete footing, rebar installation and a sand cushion.

Install structures according to the Specifications and the details shown on the Plans, or as directed by the Engineer.

644.1.01 Definitions

General Provisions 101 through 150.

644.1.02 Related References

A. Standard Specifications

Section 207 – Excavation and Backfill for Minor Structures

Section 500 – Concrete Structures

Section 511 – Reinforcement Steel

Section 535 – Painting Structures

Section 813 – Pond Sand

Section 844 – Steel Pipe

Section 870 - Paint

B. Referenced Documents

General Provisions 101 through 150

644.1.03 Submittals

General Provisions 101 through 150

644.2 Materials

A. Steel Pipe

Ensure that steel pipe meets the specifications on the Plans and in Section 844 of the specifications.

B. Concrete

Concrete used in construction of bollard to meet specifications in Section 500 of the Standard Specifications and shall be Class "A".

C. Sand

Ensure sand used meets specifications in Section 813 – Pond Sand.

644.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150

644.3 Construction Requirements

644.3.01 Personnel

General Provisions 101 through 150

644.3.02 Equipment

General Provisions 101 through 150

644.3.03 Preparation

General Provisions 101 through 150

644.3.04 Fabrication

General Provisions 101 through 150.

644.3.05 Construction

Construction of bollard should proceed as follows:

1. Excavate a 24" diameter hole from the top of the finished grade down 4'-3".
2. Insert hollow steel pipe into the previously excavated hole such that the bottom of the pipe is 3" from the bottom of the hole. This pipe will have had a 12" long piece of #4 rebar inserted through the walls of the pipe, 4" from the bottom of the pipe. Ensure pipe is placed vertically and maintains a vertical position throughout construction.
3. Fill hole to within 7" of finished grade with Class "A" Concrete and allow to cure.
4. Lightly tamp 2" of sand onto the cured concrete and construct sidewalk on top of the bollard footing. Sidewalk construction will be paid for separately.
5. Fill steel pipe with Class "A" Concrete to the top and smooth concrete to form a cap.

644.4 Measurement

Bollards are measured for payment by the number in place completed and accepted. Sidewalk surrounding completed bollard will be measured and paid for separately.

644.5 Payment

Bollards measure: Payment will be paid for per each. Payment is full compensation for furnishing and erecting the item complete in place according to the Plans and Specifications, and for providing materials and concrete, excavating, backfilling, and disposal of surplus materials

Payment will be made under

Item No. 644	Bollards	Per Each
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