

ITEM 608.7ABXYN08 – BOLLARD

DESCRIPTION

This work shall consist of furnishing and installing bollards in accordance with the contract documents and as directed by the Engineer.

The bollard(s) furnished and installed under this pay item is identified in a special note entitled “*Bollards*” in the contract documents. Bollard anchoring types include the following:

Fixed – Surface Mounted

Fixed – In-Ground

Removable – with embedment sleeve

Retractable – manual (with embedment sleeve)

Retractable – automatic or semiautomatic (with pneumatic embedment sleeve)

Collapsible – with embedment sleeve

MATERIALS

General

Where appropriate, the following sections of the standards specifications shall apply:

Excavation and Embankment	203-2
Portland Cement Concrete	501-2
Wood Preservative – Waterborne	708-31
Epoxy Coated Bar Reinforcement	709-04
Timber and Lumber	713-13
Galvanized Coating and Repair Methods	719-01
Acrylic Plastic Reflectors	730-10

The materials required to satisfactorily furnish a bollard under this pay item shall be in accordance with the requirements found in the special note entitled, “*Bollards*”. This special note will include information on the bollard material, finishes, mounting/embedment hardware and concrete (if required), including reinforcement.

Galvanization:

Bolts, nuts and washers shall be galvanized in accordance with the provisions of §719-01 Galvanized Coatings and Repair Methods, Type II.

Sleeves for removable bollards shall be galvanized in accordance with the provisions of §719-01 Galvanized Coatings and Repair Methods, Type I, unless otherwise specified.

Any other galvanization types shall be as specified in the special note.

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Submittals:

The Contractor shall submit shop drawings and/or manufacturer's cut sheets/specifications for each unique bollard to be installed using this specification. The following information shall be included:

- Manufacturer's name and address
- Bollard type, name and/or catalog/reference number
- Bollard material and finish,
- Bollard dimensions (including height and outside diameter (OD) or largest width dimension), and
- Bollard anchor details including mounting/embedment type with hardware.

CONSTRUCTION DETAILS

The bollard shall be installed as recommended by the manufacturer and/or in accordance with the contract documents.

The construction methods required to satisfactorily install a bollard under this pay item shall be in accordance with the requirements found in the special note entitled, "*Bollards*".

Submittals:

The Contractor shall supply shop, installation and detail drawings that describe the construction methods necessary to install the bollard(s). At a minimum, the information shall include:

- drawings of the proposed bollard(s) and hardware
- dimensions,
- materials and finishes
- connection and anchor details, and
- installation details.

METHOD OF MEASUREMENT

This work will be measured as the number of each bollard(s) satisfactorily furnished and installed.

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BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.

Where:

<i>A = Embedment Type</i>	<i>B = Lighting</i>	<i>X = largest width dimension</i>	<i>Y = Height</i>
<i>1 = Fixed, surface mounted</i>	<i>1 = without light</i>	<i>1 = up to 75mm</i>	<i>1 = up to 300mm</i>
<i>2 = Fixed, in ground</i>	<i>2 = with light</i>	<i>2 = over 75mm to 125mm</i>	<i>2 = over 300mm to 450mm</i>
<i>3 = Removable</i>		<i>3 = over 125mm to 175mm</i>	<i>3 = over 450mm to 600mm</i>
<i>4 = Retractable – Manual</i>		<i>4 = over 175mm to 225mm</i>	<i>4 = over 600mm to 750mm</i>
<i>5 = Retractable – (Semi) Automatic</i>		<i>5 = over 225mm to 275mm</i>	<i>5 = over 750mm to 900mm</i>
<i>6 = Collapsible</i>		<i>6 = over 275mm</i>	<i>6 = over 900mm</i>

And N = a serialization pay item number for each unique bollard type