

## SECTION 636 CONCRETE SIGN SUPPORTS

### 636.1 Description

- (1) This section describes constructing concrete footings for supporting structural steel sign supports or sign bridges. Structural steel sign supports and sign bridges are described in section 641.

### 636.2 Materials

- (1) Use materials conforming to the following requirements:
  - Concrete ..... section 501
  - Steel reinforcement..... section 505
- (2) Furnish grade A, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to 501.2.

### 636.3 Construction

#### 636.3.1 General

- (1) Construct according to those methods specified for culverts and retaining walls in section 504 and as specified below.
- (2) Except as provided otherwise, construct concrete footings for structural steel sign supports and sign bridges according to the dimensions and at the locations the plans show.
- (3) The contractor shall locate the footing so that after properly erecting the sign support or sign bridge and after installing the sign or signs they are at the position, elevation, and orientation the plans, and specifications specify, or as the engineer directs.
- (4) If the contract requires, install a 5/8-inch (16 mm) by 10 foot (3 m) copper clad ground rod at the sign support. Install the rod next to the support or as the engineer directs.

#### 636.3.2 Excavation

- (1) Before beginning any excavation, locate all existing underground cable, utility, or drainage structures in the vicinity and conduct operations to avoid damaging them.
- (2) Excavate the footing to the required depth and as close to the neat lines as possible, with minimal disturbance to adjacent soil.

#### 636.3.3 Placing Concrete

- (1) Place the concrete for the footing in the excavation, against the soil without forming, except as specified otherwise below.
- (2) Place concrete to the initial height the plans show. Only form the portion of the sign bridge footing that extends above the ground.
- (3) If steel reinforcement is required, secure it in place before placing the concrete.
- (4) Set and secure the anchor bolts and post stubs at their proper location until the concrete hardens.
- (5) Construct the footing shafts to extend above the finished ground elevation a maximum of one inch (25 mm) according to plan details. Line the upper 18 inches (450 mm) of the shaft with a disposable casing to ensure a concrete shaft of uniform diameter. For the upper surface, provide a level plane finished true to grade.
- (6) If the engineer determines that the possibility of cave-ins, or soil displacement from the walls exists, or if necessary to shut off seepage water, then line the remaining depth of the footing shaft with a suitable casing. Ensure casings are of ample strength to withstand handling stresses, concrete pressure, and the pressure of surrounding soil materials. If removing the casings, withdraw them while placing the footing concrete or immediately following concrete operations. If removing the casing during the concrete operation, place at least 2 feet (600 mm) of concrete before starting to pull the casing, and maintain a head of concrete of from one to 2 feet (300 mm to 600 mm) during the pulling operation. Take care when pulling the casing to prevent moving the stub posts or anchor bolts, reinforcement steel, and upper casing, and to prevent any appreciable amount of soil from mixing with the concrete.
- (7) If required, cast the electrical conduit in the footing according to the plan details.

#### 636.3.4 (Vacant)

#### 636.3.5 Clean-Up

- (1) After completing work and before acceptance, remove and dispose of all excess excavation and surplus or discarded materials, and restore all work or property damaged during operations.

**636.4 Measurement**

**636.4.1 Concrete**

- (1) The department will measure Sign Supports Concrete Masonry by the cubic yard acceptably completed. The department will base measurement on the dimensions the plans show or that the engineer orders in writing. The department will not measure concrete placed outside the designated dimensions.

**636.4.2 Steel Reinforcement**

- (1) The department will measure the Sign Supports Steel bid items by the pound acceptably completed. The department will compute the weight as specified for bar steel reinforcement under 505.4.

**636.5 Payment**

**636.5.1 General**

- (1) The department will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
636.0100	Sign Supports Concrete Masonry	CY
636.0500	Sign Supports Steel Reinforcement	LB
636.1000	Sign Supports Steel Reinforcement HS	LB
636.1500	Sign Supports Steel Coated Reinforcement HS	LB

**636.5.2 Concrete**

- (1) Payment for Sign Supports Concrete Masonry is full compensation for providing, transporting, placing and curing the concrete; for providing and removing casing if applicable; for providing required ground rods; for all required excavating; for placing post stubs or anchor bolts, and for providing and placing electrical conduit if required; for cleaning-up, repairing damage, and for disposing of excavation and surplus materials.
- (2) Payment does not include compensation for concrete placed outside the neat lines of the footing.

**636.5.3 Steel Reinforcement**

- (1) Payment for the Sign Supports Steel bid items is full compensation for providing all material complete in place.