

Section 636 Concrete Sign Supports

636.1 Description

- (1) This section describes constructing drilled shaft concrete footings for structural steel sign supports constructed under [635](#) and for sign bridges and overhead sign supports constructed under [641](#).

636.2 Materials

- (1) Use materials conforming to the following requirements:

Concrete.....	501
Steel reinforcement.....	505

- (2) Furnish grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to [501](#) as modified in [716](#). Provide QMP for class II ancillary concrete as specified in [716](#).

636.3 Construction

636.3.1 General

- (1) Construct drilled shaft footings and associated wings as specified for footings in [502.3](#). Cure exposed portions of concrete footings as specified in [502.3.8.1](#). Wait until the concrete has attained 3500 psi compressive strength or 7 equivalent days as specified in [502.3.10](#) before erecting any portion of the structure on the footing.
- (2) 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.
- (3) If the contract requires, install a 5/8-inch by 10-foot 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 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 diameter 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. 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 rod assemblies and post stubs at their proper location until the concrete hardens. Protect anchor rod threads above the top of the foundation level from concrete splash.

Revise 636.3.3(5) to require removal of disposable casing before backfilling shaft footings.

- (5) Construct drilled shafts to extend above the finished ground elevation according to plan details. **Do not place construction joints without the engineer's written approval.** Line the upper 18 inches with a disposable casing to ensure a uniform diameter. **Remove the disposable casing before backfilling.** For the upper surface, provide a level plane finished true to grade.
- (6) If the engineer determines 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 of concrete before starting to pull the casing, and maintain a head of concrete of from one to 2 feet during the pulling operation. Take care when pulling the casing to prevent moving the stub posts or anchor rod assembly, reinforcement steel, and upper casing, and to prevent any appreciable quantity 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 excess excavation and surplus or discarded materials, and restore 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

- (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

- (2) Payment for Sign Supports Concrete Masonry is full compensation for providing concrete; for providing and removing casing; for providing required ground rods; for excavating and backfilling; for placing post stubs or anchor rods; for providing electrical conduit; for cleaning-up, repairing damage, and for disposing of excavation and surplus materials.
- (3) Payment for the Sign Supports Steel bid items is full compensation for providing sign supports.