

DATE: December 7, 2021
TO: Paul Zachary, Engineering Services Department Director
FROM: Henry Som de Cerff, Design Manager
SUBJECT: Standards and Specifications for Section 603 – Signal Pole Footings
Approved by Committee: August 10, 2021

The Specification Review Committee recommends and asks the Engineering Services Department Director to approve the following:

1. Modify Section 603 – Signal Pole Footings

Please call me at (918) 596-7355 if you have any questions.

Thank you.

APPROVED:


Paul Zachary, Director

12.28.21
Date

Cc: Engineering Services Department Specification Review Committee

DIVISION VI

TRAFFIC SPECIFICATIONS – MATERIALS

PART 603 – SIGNAL POLE FOOTINGS

603.1 DESCRIPTION

- 603.1.1 This work shall consist of furnishing materials and installing concrete footings for traffic control devices in accordance with these specifications and in reasonably close conformity with the locations and dimensions shown on the Plans or established by the Traffic Engineer.

603.2 MATERIALS

- 603.2.1 Materials used shall meet the requirements specified in the following City of Tulsa Standards and Specifications, ODOT Standards and Specifications, Section 700-Materials and AASHTO Specifications:

Portland Cement Concrete, Class A	ODOT 701
Reinforcing Steel	ODOT 723
Electrical Conduit	COT 602
Anchor Bolts and Nuts	AASHTO M 183
Galvanizing (Bolts, Nuts, & Washers)	AASHTO M 232

603.3 CONSTRUCTION METHODS

- 603.3.1 Footings: Construct concrete footings in accordance with ODOT Section 509 so that they rest on firm ground with the top of the footing level, to minimize the amount of shimming required later. Construct them in locations as shown on the Plans and to the grade established by the Traffic Engineer. If an obstruction prevents the construction of a footing at the planned location, construct it at a location approved by the Traffic Engineer prior to drilling. Construction methods or materials designed to extend the length of the base to meet height requirements shall not be accepted. The H-frame and template shall be left in place a minimum of eight hours. Once the H-frame and template are removed the concrete shall be finished with a stone.
- 603.3.2 Anchor Bolts: Use anchor bolts of the size and quantity specified in City of Tulsa Standards 617 and 618. Locate them accurately and securely in the footing by means of a template. Anchor bolts shall be square or centered as called for in the design and plumb. Anchor bolts shall be placed into the concrete base per the design shown in City of Tulsa Standard Drawing 603. Construction methods and hardware designed to

extend the manufactured length of the anchor bolts shall not be accepted. Anchor bolts shall extend out of the base to ensure that the anchor extends the full depth of the base nuts.

NOTE: Do not weld on any portion on the body of the anchor bolt.

603.3.3 Conduits: When conduit must be installed as part of the footing, it shall be of the quantity, size and type shown on the Plans. The conduit required in the footing will be paid for in the cost of other materials in the footing. Conduits installed in poured signal bases shall be plumb and centered in the base pour. Conduit height above the finished base shall be 4" to 6" for a mast arm base and 2" for a pedestal base. Stub-outs for pedestal footings shall be 2" conduit.

603.3.4 Ground Rod: Copper clad ground rod is required (Copperweld or approved equal); it shall be of size shown in the Plans. Ground rods installed in poured signal bases shall be plumb and centered in the base pour. Ground rods shall be extended 8' into the soil. Ground rod height above the finished base shall be 4" to 6" for mast arm signal pole bases and 2" for pedestal signal pole bases.

603.3.5 Poles, Posts, or Breakaway Bases:

A) Do not erect poles, posts, or breakaway bases until the foundation reaches 100% of the required 28-day compressive strength and has set at least 72 hours unless they are required to be set directly into the footing. After the footing has been completed, restore the surrounding area to an acceptable appearance.

B) All mast arms installed shall be aligned as shown on the plans or installed parallel or perpendicular to the axis of the intersection. If the mast arm is more than 2° out of alignment due to the placement of the anchors in the base, the base shall be replaced at the contractor's expense.

603.3.6 Bases poured in sidewalk shall be flush with the sidewalk grade. Bases poured outside of sidewalks shall not extend any further than 4" above the finished grade of the surrounding area. Bases below finished grade shall not be accepted.

603.3.7 The Traffic Engineer shall inspect the ground rods, conduit, reinforcing steel and proper alignment of anchor bolts for proper placement and approve the installation prior to pouring concrete. At the Traffic Engineer's discretion, concrete testing may be required for pole bases.

603.4 METHOD OF MEASUREMENT

Reinforced concrete footings of various sizes and shapes will be measured by the each. The footing unit shall include concrete, reinforcing steel, anchor bolts, nuts, washers, ground rod, conduit, all labor, tools, equipment, excavation, backfilling, and incidental work necessary to construct the footing as shown on the Plans.

603.5 BASIS OF PAYMENT

Accepted reinforced concrete footings, measured as provided above, will be paid for at the contract unit price as follows:

A) Signal Footing.....EACH

Such payment shall be full compensation for finishing all materials, equipment, labor, and incidentals to complete the work as specified.