



# Traffic Signal Design Manual

ORIGINATOR Director, Bureau of Traffic Operations		6-1-3
CHAPTER 6	Signal Infrastructure Design	
SECTION 1	Permanent Signals	
SUBJECT 3	Signal Poles/Standards and Foundations	

In determining the location of traffic signal poles/standards and related foundations, primary consideration must be given to the proper visibility of signal faces as described in TSDM 6-1-2. After determining the signal head placement/location for the intersection, the designer **shall** use WisMUTCD 4D.16 and engineering judgment to determine safe setback distances from the edge of traveled way for poles and foundations. Poles and standards at the side of a street with curbs must have a horizontal setback clearance of 2 feet minimum, 4' typical from the face of a vertical curb to the edge of the signal face or sign mounted on that pole (whichever extends closest to the curb). Where no curb exists, proper placement of supports is measured from the edge of the pavement. Traffic signal standards shall not have a horizontal setback greater than 12 feet from the face of a vertical curb (or edge of pavement, if there is no curb). A signal support *should* not obstruct a crosswalk.

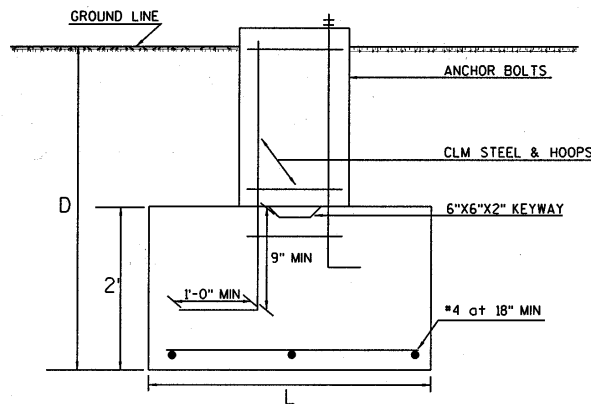
On medians, the minimum clearances listed above for signal supports **shall** be met per TEOpS 11-3-1. Poles **shall** be located such that all portions of the poles and attached equipment have clearances from overhead utilities in accordance with the requirements of the local utility and the National Electrical Safety Code (NESC).

There are five possible concrete bases available for use. (see FDM Chapter 16, Standard Detail Drawings).

- Type 1 For use with traffic signal standards, 15 feet or less.
- Type 2 For use with Pole Types 2, 3, and 4
- Type 5 For use with pole Type 5. Stand alone lighting.
- Type 10 For use with Type 9 and 10 Poles
- Type 13 For use with Type 12 and 13 Poles

The current WisDOT signal standard (pedestal) bases and transformer bases (used with Type 1, 2 or 5 bases) are breakaway. Type 9, 10, 12 & 13 Poles (used with Type 10 and Type 13 bases) are not breakaway and while allowable within the clear zone, should be placed as far back from the back of curb as can be reasonable accomplished.

Some areas *may* not allow for the installation of concrete signal bases due to utility conflicts. In these cases, a spread-footing concrete base *may* be required (see Figure 1 for a spread footing example for Type 1, 2 or 5 bases). The Regional Traffic Engineer *should* be contacted to discuss the options when bedrock or utility conflicts obstruct the concrete base depth.



TYPE 1 POLES		TYPE 2 POLES	
D = 2'	L = 5'	D = 2'	L = 6'-6"
3'	4'-6"	3'	6'-6"
4'	4'-6"	4'	6'-0"
5'	4'-0"	5'	6'-0"
6'	4'-0"	6'	6'-0"

NOTES: Based on soil pressure of 2 kips/ft<sup>2</sup>  
 See SDD 9C-2 for anchor bolt, steel reinforcement, conduit and other required details.

**Figure 1**  
 Alternate Spread Footing Detail (Type 1, 2 or 5 bases)