



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS DIVISION
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CLAY BRIGHT
COMMISSIONER

BILL LEE
GOVERNOR

TRAFFIC OPERATIONS MEMORANDUM NO. 2007

Traffic Signal Design Guidance

Effective June 18, 2021 Letting (April 7, 2021 Turn-in), the following traffic signal design guidance shall be included in traffic signal design projects unless otherwise approved in writing by the Traffic Operations Division.

For traffic signal head layouts:

- The minimum distance from the stop line to 12-inch signal faces is 50 feet.
- The maximum distance from the stop line to 12-inch signal faces is 170 feet, unless a near-side supplemental 12-inch signal face is used.

For traffic signal mast arms:

- The mast arm length shall be designed using 5-foot increments (i.e. 40 feet, 45 feet, 50 feet, 55 feet, 60 feet, etc.).
- Allow a minimum three feet from the center of the last traffic control device (traffic signal or sign) to the end of the mast arm. For street name signs, allow a minimum three feet from the edge of street name sign to the end of the mast arm.
- Mast arms that are 50 feet or longer shall include a damper plate. On mast arms with a damper plate, the last traffic control device (traffic signal or sign) shall not be located within the last seven feet of the mast arm. For street name signs, allow a minimum seven feet from the edge of street name sign to the end of the mast arm.
- Mast arms less than 60 feet shall require a 3-foot diameter foundation. Mast arms 60 feet or longer shall require a 4-foot diameter foundation.
- The maximum single mast arm length shall be 90 feet.
- The maximum twin mast arm maximum length shall be 70 feet.
- The maximum twin mast arm total maximum length of both mast arms shall be 120 feet.

- The minimum angle between twin mast arms is 90 degrees with the mast arms located at the same pole elevation. Twin mast arm angles less than 90 degrees require one of the mast arms to be located above the other mast arm on the pole.

For minimum spacing of traffic signal poles within the same area:

- Between two proposed signal poles:
4.0 x foundation diameter (e.g. 16 feet center-to-center, assuming one or both foundations is a 4-foot diameter foundation).
- Between one proposed signal pole near an abandoned signal pole foundation remaining in the ground and the existing foundation is at ground level:
1.5 x foundation diameter (e.g. 6 feet center-to-center, assuming the proposed foundation is a 4-foot diameter foundation).
- Between one proposed signal pole near an abandoned signal pole foundation remaining in the ground and the void above the existing foundation filled with self-consolidating material:
1.5 x foundation diameter (e.g. 6 feet center-to-center, assuming the proposed foundation is a 4-foot diameter foundation).
- Between one proposed signal pole near an abandoned signal pole foundation remaining in the ground and the void above the existing foundation filled with unclassified material:
3.0 x foundation diameter (e.g. 12 feet center-to-center, assuming the proposed foundation is a 4-foot diameter foundation).


[Phillip Freeze \(Dec 21, 2020 18:54 CST\)](#)

P. Brad Freeze, PE
Director
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PBF:SKB
12/14/2020