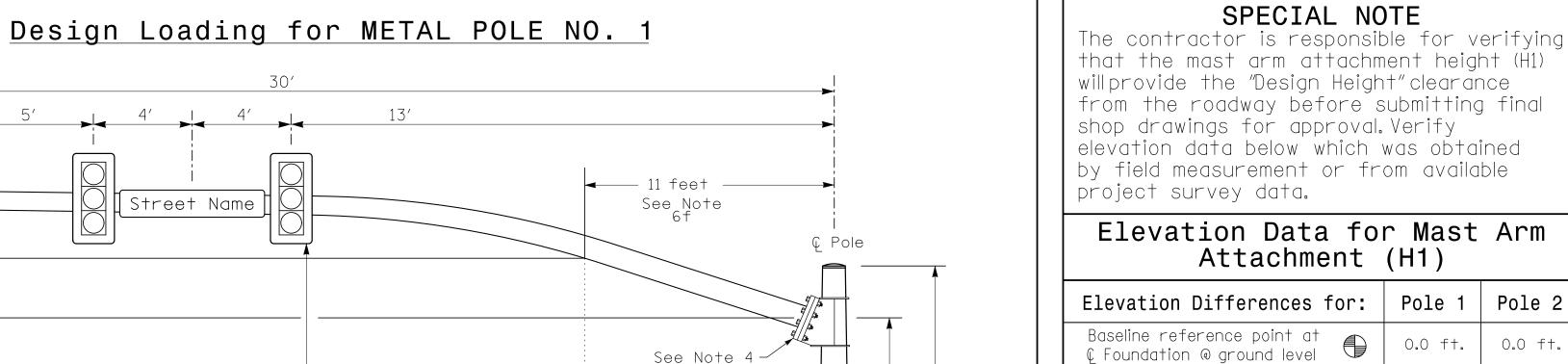
Maximum

25.6 ft.



H2

See Note

H2

See Note 7

H1= 14.0′

See Note 6

H1= 14.4′

See Note 6

See Note

Terminal Compartment @ 180°

+0.3 ft.

+0.3 ft.

+0.5 ft.

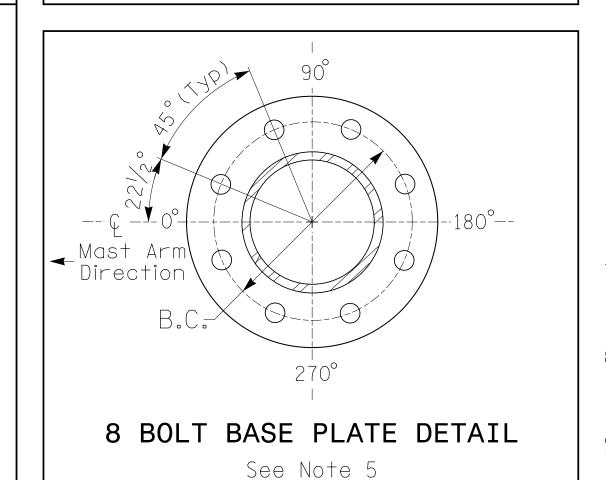
+0.2 ft.

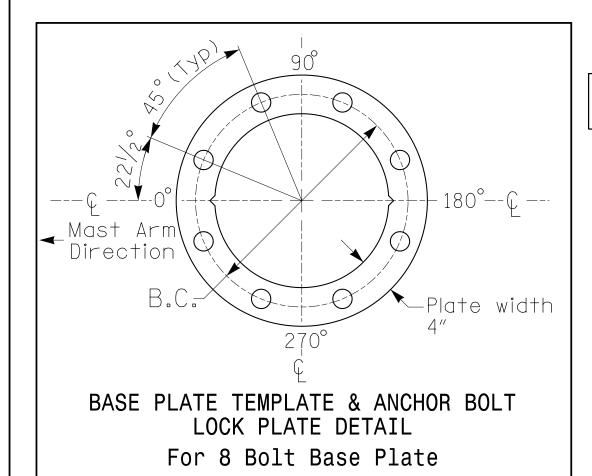
Elevation difference at High point of roadway surface

Elevation difference at

Edge of travelway or face of curb

POLE RADIAL ORIENTATION





MAST ARM LOADING SCHEDULE LOADING SIZE WEIGHT DESCRIPTION AREA SYMBOL RIGID MOUNTED SIGNAL HEAD 11.5 S.F. 74 LBS 12"-4 SECTION-WITH BACKPLATE RIGID MOUNTED SIGNAL HEAD 9.3 S.F. 60 LBS 12"-3 SECTION-WITH BACKPLATE 52**.**5″L 7.5 S.F. 14 LBS RIGID MOUNTED 36.0"L STREET NAME SIGN 16.0 S.F. X 36 LBS 96.0"L Street Name RIGID MOUNTED

<u>NOTES</u>

DESIGN REFERENCE MATERIAL

- . Design the traffic signal structure and foundation in accordance with:
- The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
- The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
- The 2018 NCDOT Roadway Standard Drawings.
- The traffic signal project plans and special provisions.
- The NCDOT "Metal Pole Standards" located at the following NCDOT website:
- https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

DESIGN REQUIREMENTS

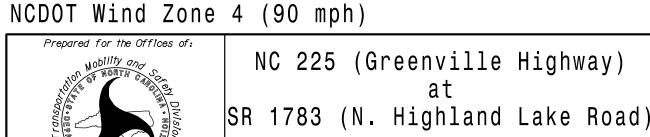
- 2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
- 3. Design all signal supports using stress ratios that do not exceed 0.9.
- 4. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design
- requirements. 5. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- 6. The mast arm attachment height (H1) shown is based on the following design assumptions:
- a. Nominal vertical rise in mast arm is 5 feet as measured from the centerline of the arm base to the centerline of the free end of the arm.
- b. Signal heads are rigidly mounted and vertically centered on the mast arm.
- c. The roadway clearance height for design is as shown in the elevation views.
- d. The top of the pole base plate is 0.75 feet above the ground elevation.
- e. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
- f. Provide horizontal distance from the proposed centerline of the foundation to the edge of travelway. Refer to the Elevation Data Chart for elevation difference between the proposed foundation ground level and the edge of travelway. This information is necessary to ensure that the roadway clearance is maintained at the edge of the travelway and to aid in the camber design of the arm.
- 7. The pole manufacturer will determine the total height (H2) of each pole using the greater of the followina:
- Mast arm attachment height (H1) plus 2 feet, or

<u>N/A</u>

- H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- 8. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 773-2800.
- 9. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- 10. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

All metalpoles and arms shall be BROWN in color as specified in the project special provisions.

This plan supersedes the plan signed and sealed on 11/19/2019.



Division 14 Henderson County East Flat Rock June 2019 REVIEWED BY: J. Trueblood

50 N.Greenfield Pkwv,Garner,NC 27529 PREPARED BY: A. Wiseman REVIEWED BY: J. Carroll REVISIONS INIT. DATE

SEAL

SIG. INVENTORY NO.

14-1021

STV 100 Jears

STV Engineers, Inc. 900 West Trade St., Suite 715 Charlotte, NC 28202 (704) 372-1885

NC License Number F-0991

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

See Note High Point of Roadway Surface — C Foundation Edge of travelway or face of curb Base line reference elev. = 0.0' **Elevation View** Design Loading for METAL POLE NO. 2 14′ 13 feet See Note Street Name 5' Rise See Note 4 Maximum 25.6 ft. Roadway Clearance Design Height 17 ft. Minimum 16.5 ft. See Note · High Point of Roadway Surface -Foundation Edge of travelway or face of curb

Street Name

Roadway Clearance

Design Height 17 ft.

Minimum 16.5 ft.

Base line reference elev. = 0.0' **Elevation View**