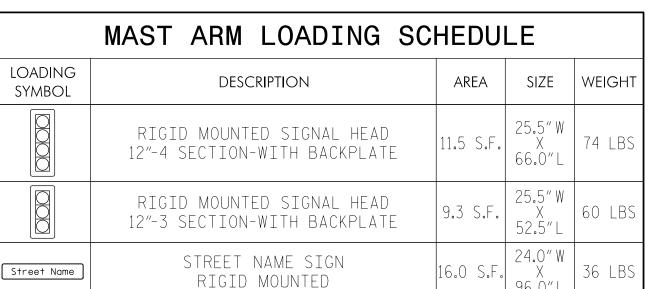
Maximum 25.6 ft.

Roadway Clearance Design Height 17 ft

Minimum 16.5 ft.

-High Point of Roadway Surface-

Sig-6.6



Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 3	Pole 4
Baseline reference point at © Foundation @ ground level	23.9 ft.	25.1 ft.
Elevation difference at High point of roadway surface	+3.2 ft.	+0.0 ft.
Elevation difference at Edge of travelway or face of curb	+2.3 ft.	+0.0 ft.

The contractor is responsible for verifying

that the mast arm attachment height (H1)

from the roadway before submitting final

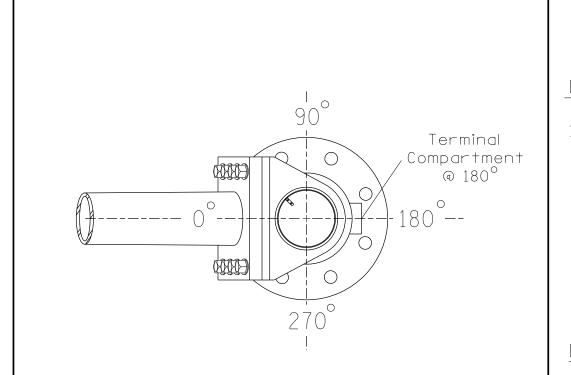
will provide the "Design Height" clearance

elevation data below which was obtained

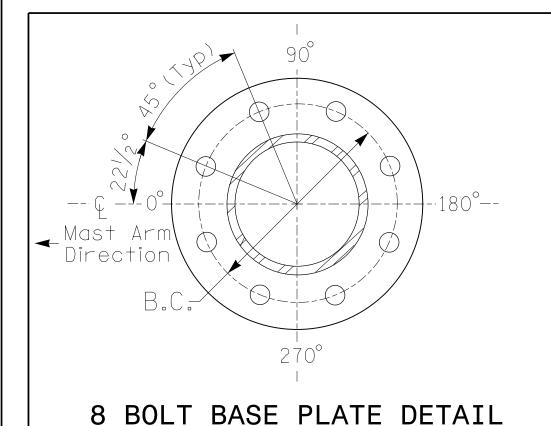
by field measurement or from available

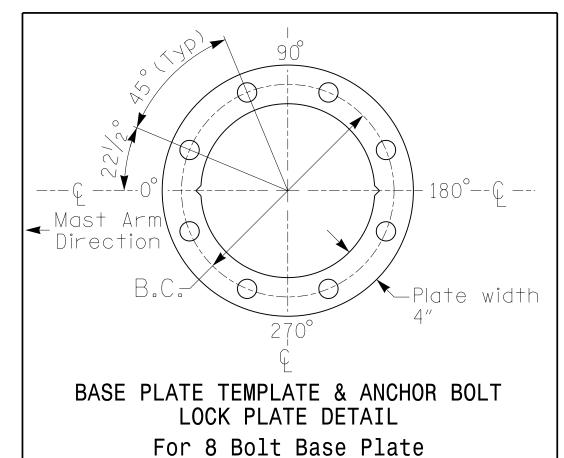
shop drawings for approval. Verify

project survey data.



POLE RADIAL ORIENTATION





See Note 6

NOTES

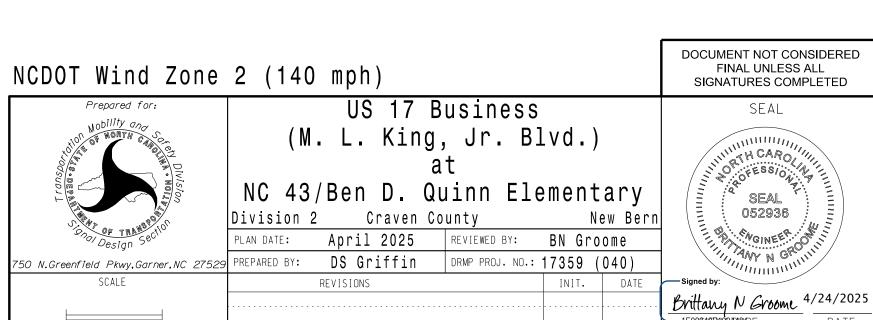
DESIGN REFERENCE MATERIAL

- 1. Design the traffic signal structure and foundation in accordance with:
- The 1st Edition 2015 AASHTO LRFD "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
- The 2024 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to
- the specifications can be found in the traffic signalproject specialprovisions.
- The 2024 NCDOT Roadway Standard Drawings.
- The traffic signalproject plans and specialprovisions.
- The NCDOT "MetalPole Standards" located at the following NCDOT website: https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

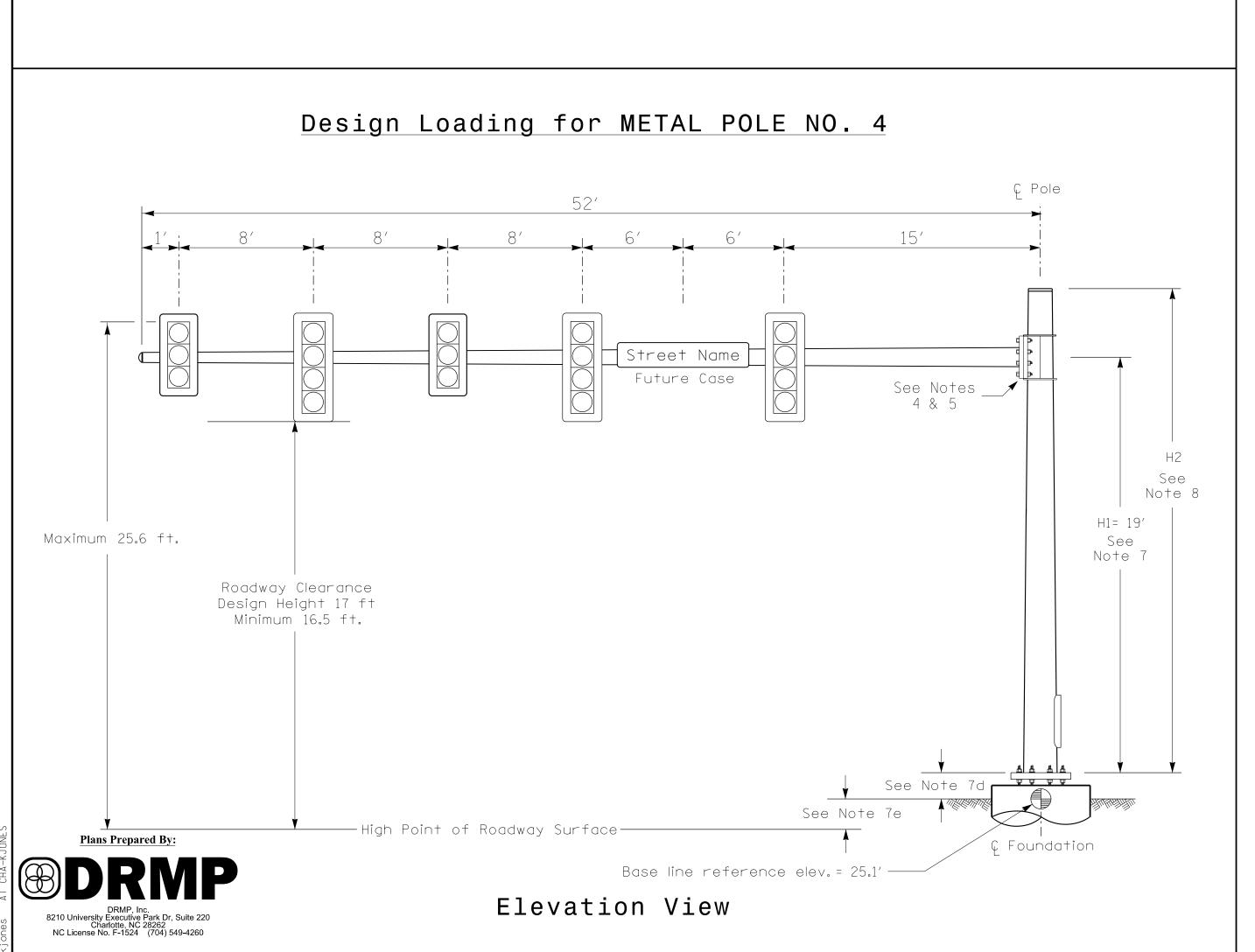
DESIGN REQUIREMENTS

N/A

- 2. Design the traffic signalstructure 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 signalplans for the actualloads that will be applied at the time of the installation.
- 3. Design all signal supports using force ratios that do not exceed 0.9.
- 4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
- 5. 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
- 6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- 7. The mast arm attachment height (H1) shown is based on the following design assumptions: a. Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
- b. Signalheads 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 leveland the high point of the roadway. 8. The pole manufacturer will determine the total height (H2) of each pole using the greater of
- the following: Mast arm attachment height (H1) plus 2 feet, or
- H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- 9. 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) 814-5000.
- 10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signalheads over the roadway.
- 11. The contractor is responsible for providing soilpenetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.



SIG. INVENTORY NO. 02-0629



Elevation View

Design Loading for METAL POLE NO. 3

Street Name

Future Case

C Pole

Н2 See Note 8

H1= 23'

See Note 7

26′

See Notes_

See Note 7d

Foundation

See Note 7e

Base line reference elev. = 23.9°

4 & 5