16.0 S.F. X 36 LBS 96.0"L

MAST ARM LOADING SCHEDULE LOADING DESCRIPTION AREA | SIZE | WEIGHT SYMBOL RIGID MOUNTED SIGNAL HEAD 11.5 S.F. X 66.0"L 74 LBS 12"-4 SECTION-WITH BACKPLATE RIGID MOUNTED SIGNAL HEAD 9.3 S.F. X 60 LBS 12"-3 SECTION-WITH BACKPLATE 52.Ŝ″L 18.5″W PEDESTRIAN SIGNAL HEAD 2.2 S.F. X 17.0"L 21 LBS WITH MOUNTING HARDWARE 7.5 S.F. 30.0" W 14 LBS | 36.0" L SIGN

RIGID MOUNTED

STREET NAME SIGN

RIGID MOUNTED

NOTES

DESIGN REFERENCE MATERIAL

Street Name

- 1. Design the traffic signal structure and foundation in accordance with:
- The 5th Edition 2009 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
- The 2012 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signalproject specialprovisions.
- The 2012 NCDOT Roadway Standard Drawings.
- The traffic signal project plans and special provisions.
- The NCDOT "MetalPole Standards" located at the following NCDOT website:
- https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

DESIGN REQUIREMENTS

- 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 stress 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 requirements.
- 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 SignalDesign Section Senior StructuralEngineer for assistance at (919) 773-2800.
- 10.The contractor is responsible for verifying that the mast arm length shown willallow 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.

All metalpoles and arms should be black in color as specified in the project special provisions.

1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326 NCDOT Wind Zone 2 (130 mph

N/A

US 17 Business (Market Street) Wilmington Avenue Wilmington Avenue Extension PLAN DATE: June 2014 REVIEWED BY:

Division 03 New Hanover County Wilmington LM Moon MB Toth PREPARED BY: AM Encarnacion | REVIEWED BY: 750 N. Greenfield Pkwy, Garner, NC 27529 REVISIONS INIT. DATE

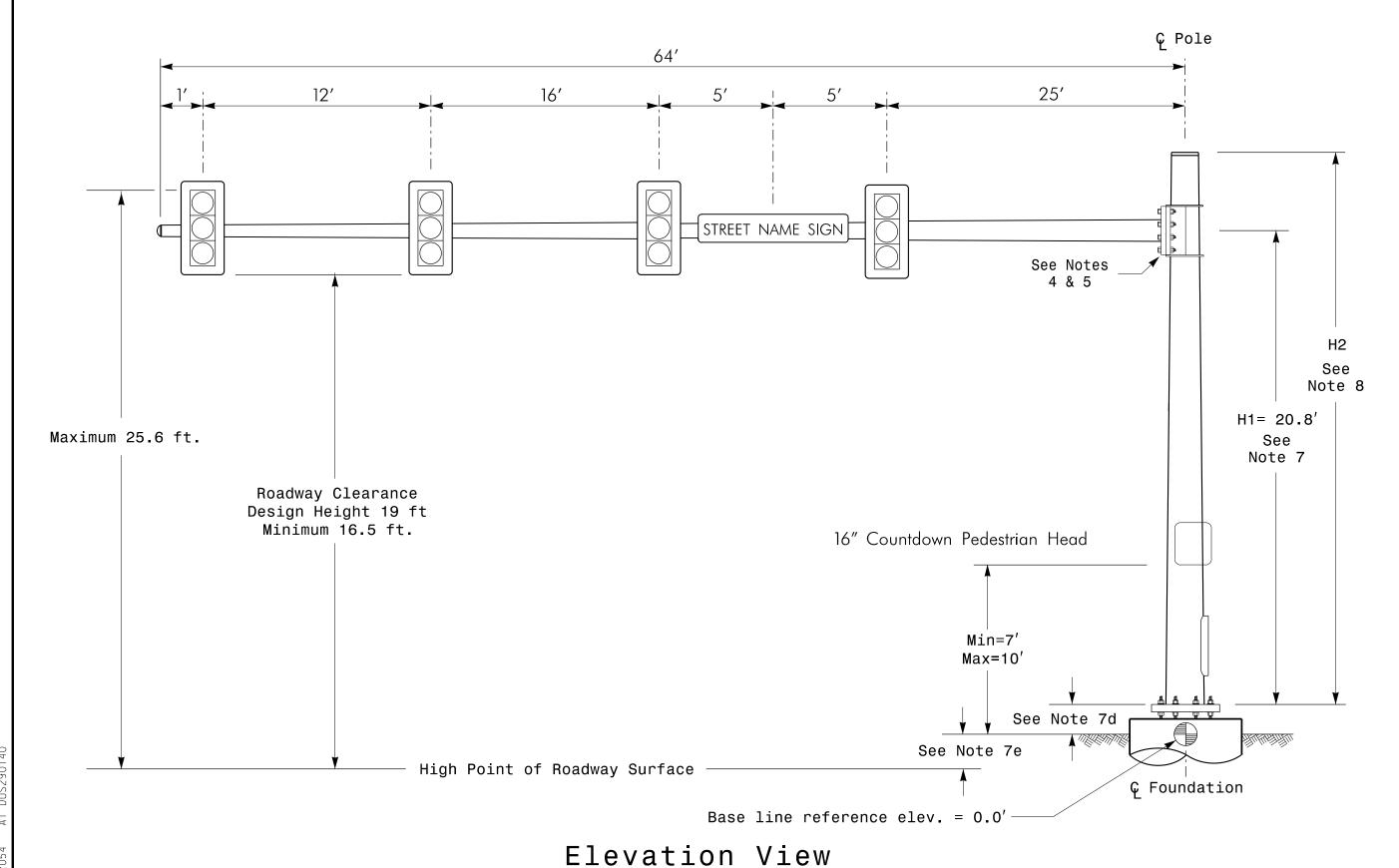
Melissa B. Toth

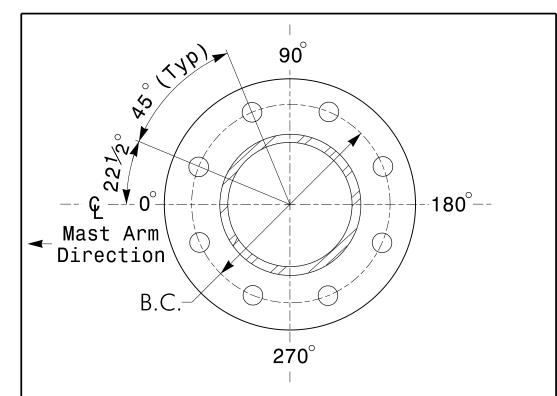
12/19/2014 SIG. INVENTORY NO. 03-1081

Design Loading for METAL POLE NO. 25 Ç Pole 15′ STREET NAME SIGN See Notes 4 & 5 H2 See Note 8 H1= 21.4'Maximum 25.6 ft See Note 7 Roadway Clearance Design Height 19 ft Minimum 16.5 ft See Note 7d High Point of Roadway Surface Ç Foundation

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

Design Loading for METAL POLE NO. 26





POLE RADIAL ORIENTATION

SPECIAL NOTE

The contractor is responsible for verifying

Elevation Data for Mast Arm

Attachment (H1)

Pole 25 | Pole 26

0.1 ft. | -0.8 ft.

Terminal

Compartment

 $^{
m Q}$ 180 $^{\circ}$

- 180[¯]--

0.0 ft.

-0.2 ft.

0.0 ft.

0.4 ft.

that the mast arm attachment height (H1) will provide the "Design Height" clearance

from the roadway before submitting final

elevation data below which was obtained

by field measurement or from available

shop drawings for approval. Verify

project survey data.

Elevation Differences for:

Baseline reference point at

Elevation difference at

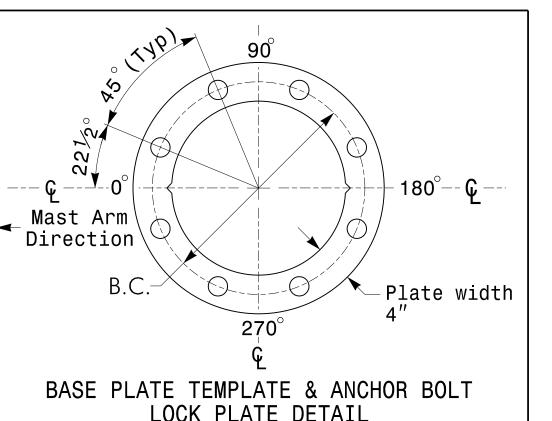
High point of roadway surface

Elevation difference at

Edge of travelway or face of curb

Ç Foundation @ ground level

8 BOLT BASE PLATE DETAIL See Note 6



LOCK PLATE DETAIL For 8 Bolt Base Plate