Elevation View @ 0 $^{\circ}$

Base line reference elev. = 0.0'

Ç Foundation

SPECIAL NOTE

The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

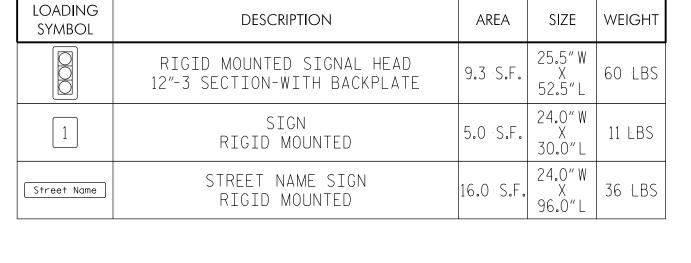
Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 5	
Baseline reference point at © Foundation @ ground level	0.0 ft.	
Elevation difference at High point of roadway surface	+2.1 ft.	
Elevation difference at Edge of travelway or face of curb	+1.1 ft.	

Terminal

Compartment @ 180°

180°--



MAST ARM LOADING SCHEDULE

ROJECT REFERENCE NO.

U-3330

| Sig. 3.4

NOTES

DESIGN REFERENCE MATERIAL

1. Design the traffic signalstructure and foundation in accordance with:

METAL POLE No. 5

- 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

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.

2. Design the traffic signal structure using the loading conditions shown in the elevation

- . 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. This requires staggering the connections. Use elevation data for each arm to determine appropriate arm connection points.
- 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) 773-2800.
- 10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signalheads over the roadway.

REVISIONS

11. The contractor is responsible for providing soilpenetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.





N/A

N/A

Metal Pole #5 US 301 Byp (S. Wesleyan Blvd)

US 64 Bus (Sunset Ave) EB Ramp Division 04 Nash County Rocky Mount PLAN DATE: November 2016 REVIEWED BY: MB Toth

025892 PREPARED BY: AM Encarnacion REVIEWED BY: INIT. DATE

1/30/2017 Melissa B. Toth SIG. INVENTORY NO. 04-1409

Mast Arm\ __ Direction 8 BOLT BASE PLATE DETAIL

POLE RADIAL ORIENTATION

See Note 6

✓ Mast Arm\ $^{-}$ Direction ackprime -Plate width BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL For 8 Bolt Base Plate