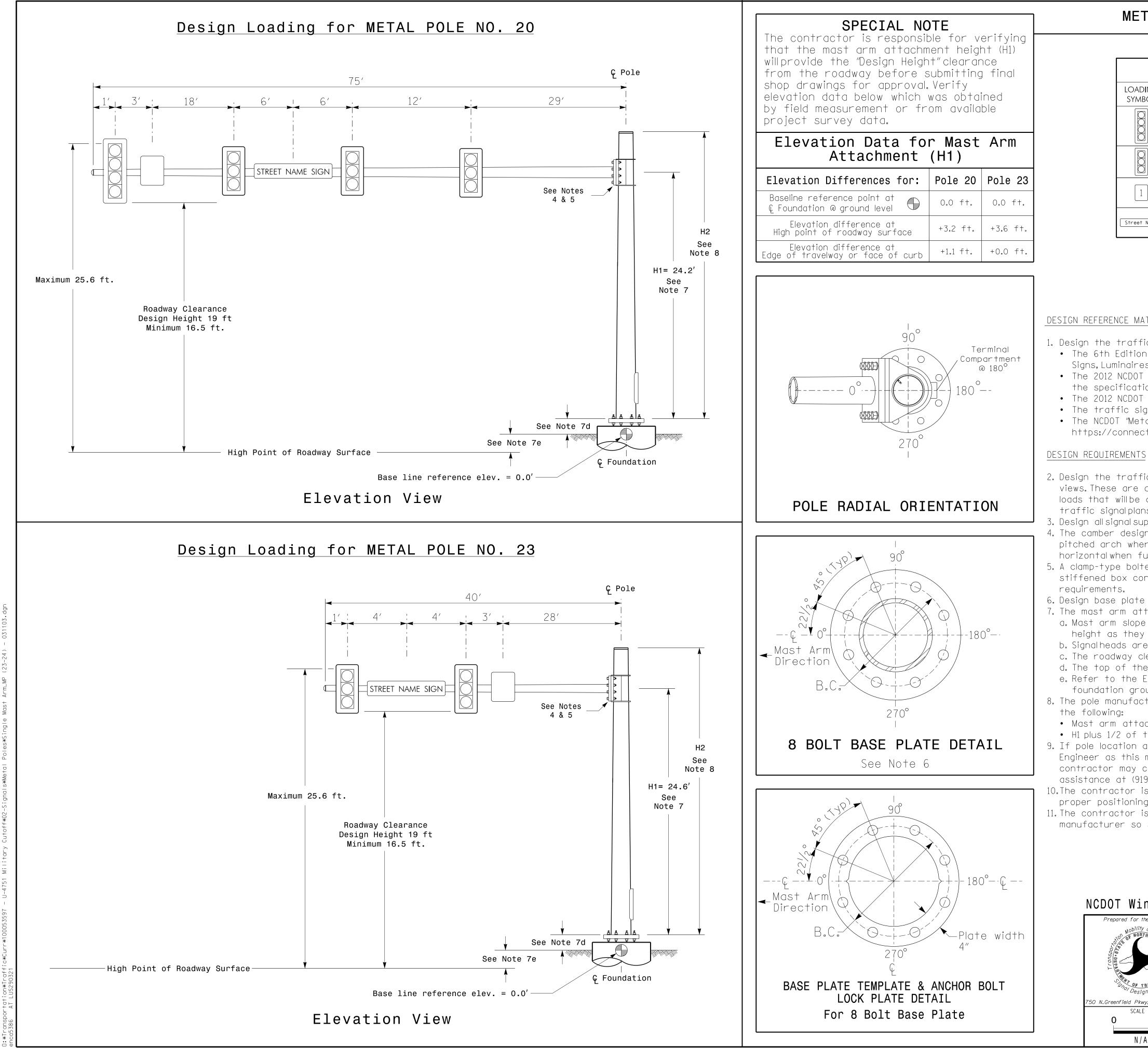
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| ΜΕΤΔΙ | PRI | PROJECT REFERENCE NO. | | SHEET NO. | | | | | |
|---------------------------|---|-----------------------|-----------------------|-----------|--|------|------|--|--|
| METAL POLE No. 20 AND 23 | | | | U - 4751 | | Sig. | 12.5 | | |
| | | | | | | | | | |
| | | | | | | | | | |
| MAST ARM LOADING SCHEDULE | | | | | | | | | |
| loading symbol | DESCRIPTION | AREA | SIZE | WEIGHT | | | | | |
| | RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE | 11.5 · S.F. | 25.5″W X 66.0″L | 74 LBS | | | | | |

25.5″W

52.5″L

24.0″W

16.0 S.F. X 36 LBS

60 LBS

11 LBS

9.3 S.F. X

5.0 S.F. 24.0″W X 30.0″L

NOTES

DESIGN REFERENCE MATERIAL

1

Street Name

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

RIGID MOUNTED SIGNAL HEAD

12"-3 SECTION-WITH BACKPLATE

SIGN

RIGID MOUNTED

STREET NAME SIGN

RIGID MOUNTED

• 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 2012 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions. • 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

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 signal plans for the actual loads that will be applied at the time of the installation. 3. Design allsignalsupports 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

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

• 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.

| | | UNLESS ALL SIG | T CONSIDERED FINAL NATURES COMPLETED | | |
|---|---------------------------------|---|---|--|--|
| DOT Wind Zone | 2 (130 mph) | KINS 1616 EAST RALEIGH, (919) 876 | MILLBROOK ROAD, SUITE 160 NORTH CAROLINA 27609 -6888 NCBEES #F-0326 | | |
| Prepared for the Offices of: | Northbound | SR 1409 | SEAL | | |
| Mobility and Sole MORTH Sole UNISION | (Military Cut at Lendire | SEAL 025892 | | | |
| | Division 03 New Hanover Cou | | | | |
| Design Section | PLAN DATE: April 2017 REV | IEWED BY: MB Toth | Z ANGINEER AND LINE | | |
| I.Greenfield Pkwy,Garner,NC 27529 | PREPARED BY: AM Encarnacion REV | IEWED BY: | The SA Benninnen | | |
| SCALE | REVISIONS | INIT. DATE | DocuSigned by: | | |
| 0 N/A | ļ | | Melissa B. Toth 6/6/2017 | | |
| | | | | | |
| N / A | t | | SIG. INVENTORY NO. 03-1103 | | |