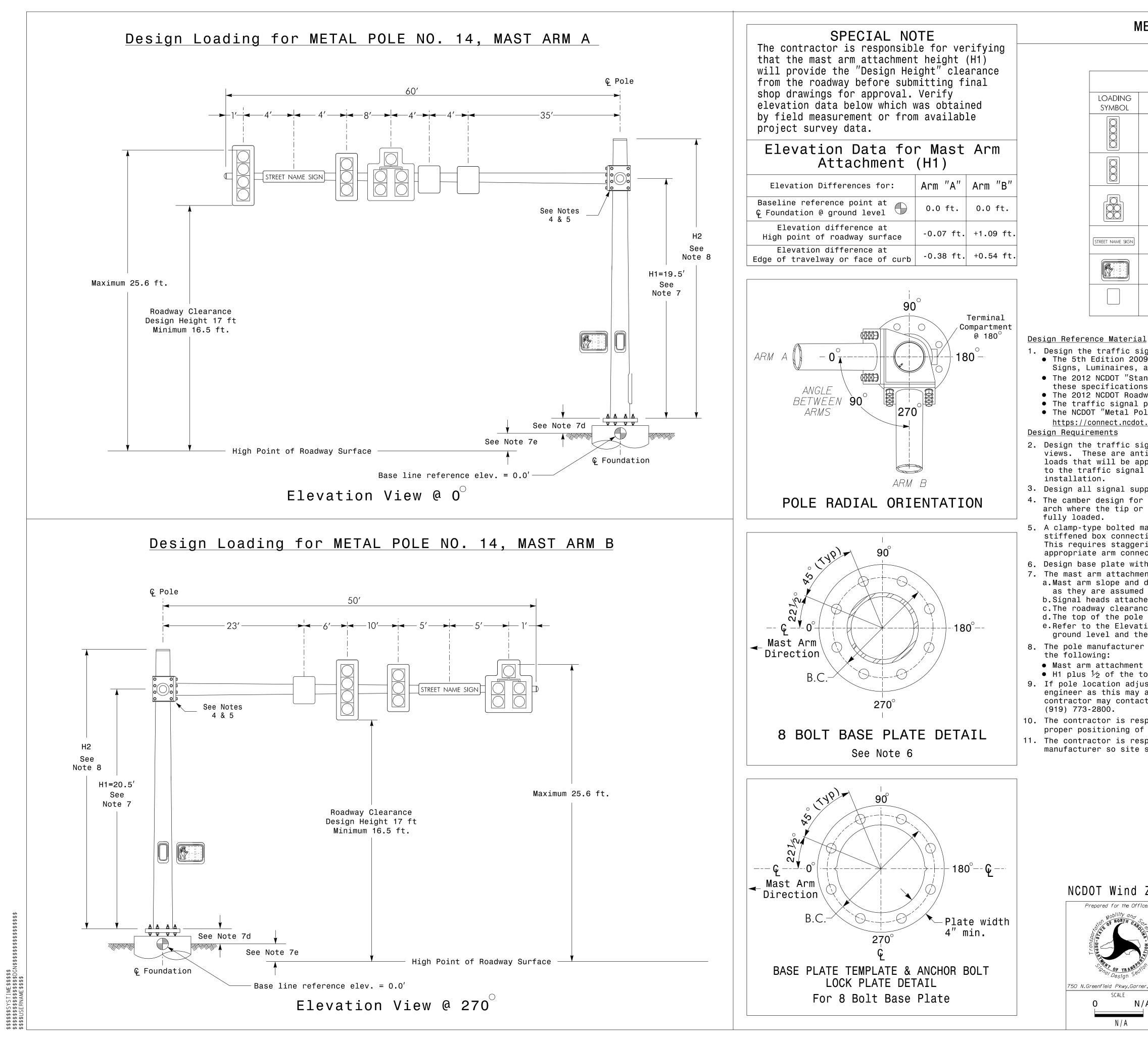
DocuSign Envelope ID: 2B82073C-8CA6-44D2-96FA-5BE27AB92A1C



Ν	METAL POLE No. 14	PROJEC	T REFERENCE NO.	SHE	ET NO.							
			U-3308									
MAST ARM LOADING SCHEDULE												
loading symbol	DESCRIPTION	AREA	SIZE	WEIGHT								
0000	SIGNAL HEAD 12″–4 SECTION WITH 8″ BACKPLATE RIGID MOUNTED	15.8 S.F.	31.5″ W X 72.0″ L	78 LBS								
000	SIGNAL HEAD 12″–3 SECTION WITH 8″ BACKPLATE RIGID MOUNTED	12.8 S.F.	31.5″ W X 58.5″ L	63 LBS								
	SIGNAL HEAD 12″–5 SECTION WITH 8″ BACKPLATE RIGID MOUNTED	20.7 S.F.	48.0" W X 62.0" L	107 LBS								
STREET NAME SIGN	street name sign Rigid mounted	12.0 S.F.	18.0" W X 96.0" L	27 LBS								
	pedestrian signal head With Mounting Hardware	2.2 S.F.	18.5″ W X 17.0″ L	21 LBS								
	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS								

NOTES

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 these 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 "Metal Pole Standards" located at the following NCDOT website: <u>https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx</u>

0

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

3. Design all signal supports using stress ratios that do not exceed 0.9. 4. The camber design for 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

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.Signal heads attached to the mast arm are rigid mounted and vertically centered on the arm. c. The roadway clearance height for design is as shown in the elevation views. d. The top of the pole base plate is .75 feet above the ground elevation.

e Refer to the Elevation Data chart for elevation differences between the proposed foundation ground level and the high point on the roadway.

8. The pole manufacturer will determine the total height (H2) of the pole using the greater of

• Mast arm attachment height (H1) plus 2 feet, or

• H1 plus $\frac{1}{2}$ 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 Structural Engineer for assistance at

10. The contractor is responsible for verifying that the mast arm lengths shown will allow proper positioning of the signal heads over the roadway. 11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.



OT Wind Zone	4 (90	mph)					
repared for the Offices of:						SEAL	
Mobility and Nor NORTH CAROLINISION	NC 55 (North Alston Avenue) at NC 98 (Holloway Street)					SEAL	
	Division 5	5 Durham Co	unty		Durham	28430	FL 1111
On Design Section	PLAN DATE:	December 2014	REVIEWED BY: J	Hochan	adel	FF AN GINEE	
reenfield Pkwy,Garner,NC 27529	PREPARED BY:	M Copple	REVIEWED BY:			P. HOCH	× · · · ·
SCALE		REVISIONS		INIT.	DATE	DocuSigned by:	
0 N/A						Mmp Der	4/02/15
							DATE
N / A						SIG. INVENTORY NO.	05-1027