LOAD CASE 4 – HEAVY LOADING

PROJECT REFERENCE NO.	SHEET NO.
R-2813C	Sig.53 dwg.MP6

FOUNDATION SELECTION TABLE

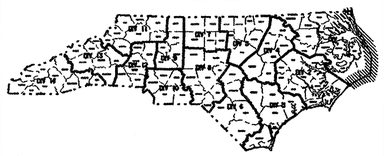
48" Diameter Drilled Pier Length (L) - Feet

CONCRETE VOLUME (cubic yards)=.465xL

Denotes Wing Wall Required SEE NOTE 37.

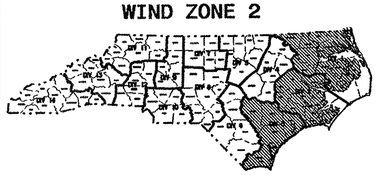
USE TYPE-2 WING WALL. FOR DETAILS, SEE DRAWING NO. MP-11.

WIND ZONE 1



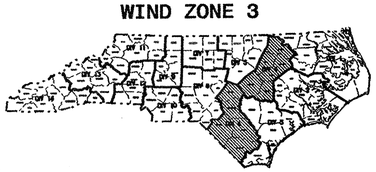
MAST ARM NUMBER	SOIL TYPES						
	Clay				Sand		
	Medium N-Value 4-8	Stiff N-Value 9-15	Very Stiff N-Value 16-30	Hard N-Value >30	Loose N-Value 4-10	Medium N-Value 11-30	Dense N-Value >30
LC4-50	16.5	11.0	9.0	9.0	15.5	13.0	11.5
LC4-65	19.5	12.5	10.0	9.0	17.0	15.0	13.0
LC4-75	20.0	14.0	12.0	9.0	17.5	15.5	13.5

WIND ZONE 2



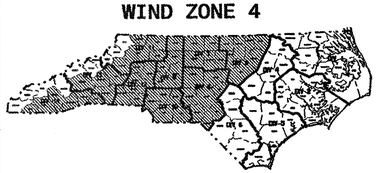
MAST ARM NUMBER	SOIL TYPES						
	Clay				Sand		
	Medium N-Value 4-8	Stiff N-Value 9-15	Very Stiff N-Value 16-30	Hard N-Value >30	Loose N-Value 4-10	Medium N-Value 11-30	Dense N-Value >30
LC4-50	16.5	11.0	9.0	9.0	15.5	13.0	11.5
LC4-65	19.5	12.5	10.0	9.0	17.0	15.0	13.0
LC4-75	20.0	14.0	12.0	9.0	17.5	15.5	13.5

WIND ZONE 3



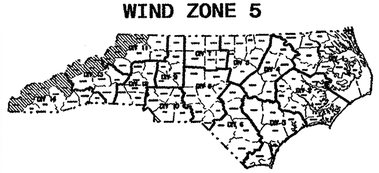
MAST ARM NUMBER	SOIL TYPES						
	Clay				Sand		
	Medium N-Value 4-8	Stiff N-Value 9-15	Very Stiff N-Value 16-30	Hard N-Value >30	Loose N-Value 4-10	Medium N-Value 11-30	Dense N-Value >30
LC4-50	14.5	10.0	9.0	9.0	13.5	12.0	10.5
LC4-65	16.5	11.0	9.0	9.0	15.5	13.0	11.5
LC4-75	18.0	12.0	9.5	9.0	16.0	14.0	12.5

WIND ZONE 4



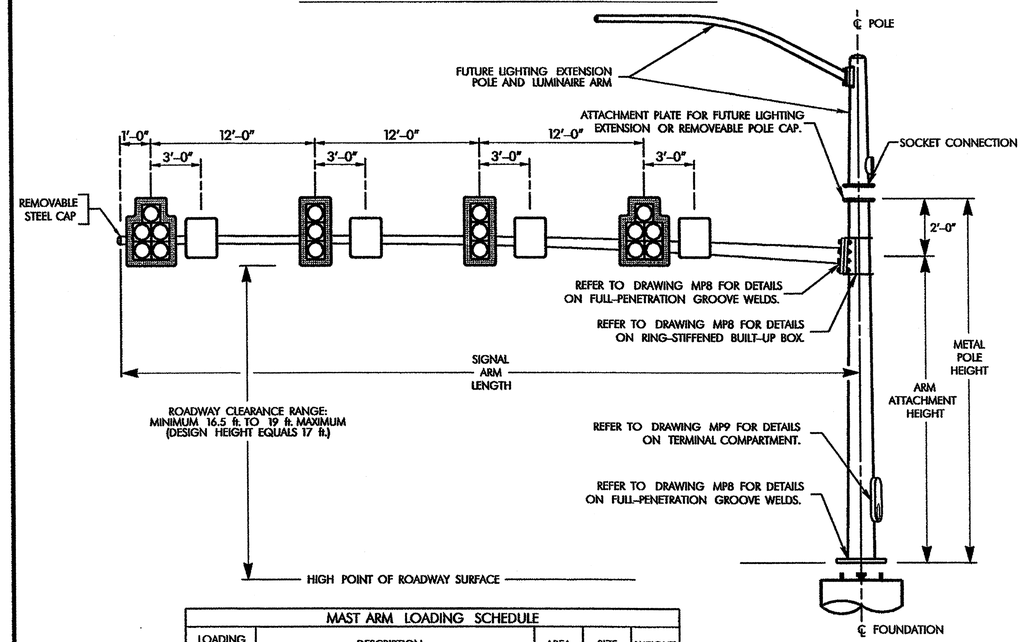
MAST ARM NUMBER	SOIL TYPES						
	Clay				Sand		
	Medium N-Value 4-8	Stiff N-Value 9-15	Very Stiff N-Value 16-30	Hard N-Value >30	Loose N-Value 4-10	Medium N-Value 11-30	Dense N-Value >30
LC4-50	12.5	9.0	9.0	9.0	12.0	10.5	9.0
LC4-65	15.0	10.5	9.0	9.0	14.0	12.5	11.0
LC4-75	16.5	11.0	9.0	9.0	15.0	13.5	11.5

WIND ZONE 5



MAST ARM NUMBER	SOIL TYPES						
	Clay				Sand		
	Medium N-Value 4-8	Stiff N-Value 9-15	Very Stiff N-Value 16-30	Hard N-Value >30	Loose N-Value 4-10	Medium N-Value 11-30	Dense N-Value >30
LC4-50	14.5	10.0	9.0	9.0	13.5	12.0	10.5
LC4-65	16.5	11.0	9.0	9.0	15.5	13.0	11.5
LC4-75	18.0	13.0	11.0	9.0	16.0	14.0	12.5

POLE LOADING DETAILS



SIGNAL POLE WITH PROVISION FOR LIGHTING EXTENSION

MAST ARM LOADING SCHEDULE				
LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	SIGNAL HEAD 12"-5 SECTION-WITH BACKPLATE AND ASTRO-BRAC	16.3 S.F.	42.0" W X 56.0" L	103 LBS
	SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE AND ASTRO-BRAC	9.3 S.F.	25.5" W X 52.5" L	60 LBS
	SIGN RIGID MOUNTED WITH ASTRO-SIGN-BRAC	5.0 S.F.	24.0" W X 30.0" L	11 LBS

SIGNAL MAST ARM DATA											MIN. POLE DATA	
MAST ARM NUMBER	SIGNAL ARM LENGTH	MINIMUM ARM BASE DIAMETER	MINIMUM ARM WALL THICKNESS	MAST ARM ATT. PLATE SIZE		ATT. PLATE BOLT SPACING		ATT. PLATE TO FLANGE PLATE ATTACHMENT BOLT SIZE	MAST ARM ATT. PLATE THICKNESS	FLANGE PLATE THICKNESS	POLE BASE DIAMETER	POLE WALL THICKNESS "T"
				W	H	A	B					
LC4-50	50'-0"	16"	.3125"	26"	34"	20"	27"	1.5"x 7"	2"	2"	20"	.3125"
LC4-65	65'-0"	20"	.3125"	30"	34"	24"	27"	1.5"x 7"	2"	2"	24"	.3125"
LC4-75	75'-0"	24"	.3125"	34"	34"	28"	27"	1.5"x 7"	2"	2"	28"	.3125"

POLE BASE PLATE AND ANCHOR BOLT DATA				
SIGNAL POLE HEIGHT	MAX. BASE PLATE DIAMETER "D"	MAX. BASE PLATE BOLT CIRCLE "BC"	BASE PLATE THICKNESS	ANCHOR BOLT SIZE (8 PER POLE)
22'-0"	42"	35"	2½"	2"x 66"
24'-0"	42"	35"	2½"	2"x 66"
26'-0"	42"	35"	2½"	2"x 66"

REFER TO DRAWING MP8 AND MP9 FOR DETAILS ON POLE AND ARM FABRICATION.

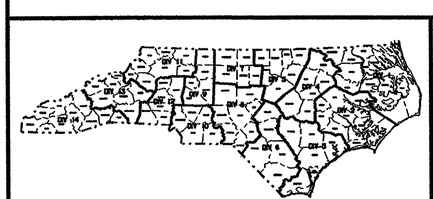
MAST ARM AND POLE IDENTIFICATION LEGEND

MAST ARMS AND METAL POLES SELECTED FOR USE FROM THESE STANDARDS SHOULD BE IDENTIFIED USING THE FOLLOWIING ALPHA NUMERIC IDENTIFICATION NUMBER:

LCX-XX-XX

Load Case Number (1 THRU 5) — Pole Height — Mast Arm length

METAL POLES WITH MAST ARMS



Prepared in the Offices of: Traffic Engineering and Safety Systems Branch, Transportation Mobility and Safety Division, Structure and Geotechnical Section, Department of Transportation

122 N. McDowell St., Raleigh, NC 27603

SCALE: NONE

POLE LOADING DETAILS AND FOUNDATION SELECTION TABLES FOR LOAD CASE 4

PLAN DATE: APRIL 2003	REVIEWED BY: D.C. SARKAR
PREPARED BY: C.F. ANDREWS	REVIEWED BY: R.E. MULLINAX

REVISIONS	INIT.	DATE

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 028094 ENGINEER DEBESH C. SARKAR

SIGNATURE D. Sarkar DATE 6.3.03

SIG. INVENTORY NO.

03-JUN-2003 09:25
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andrews