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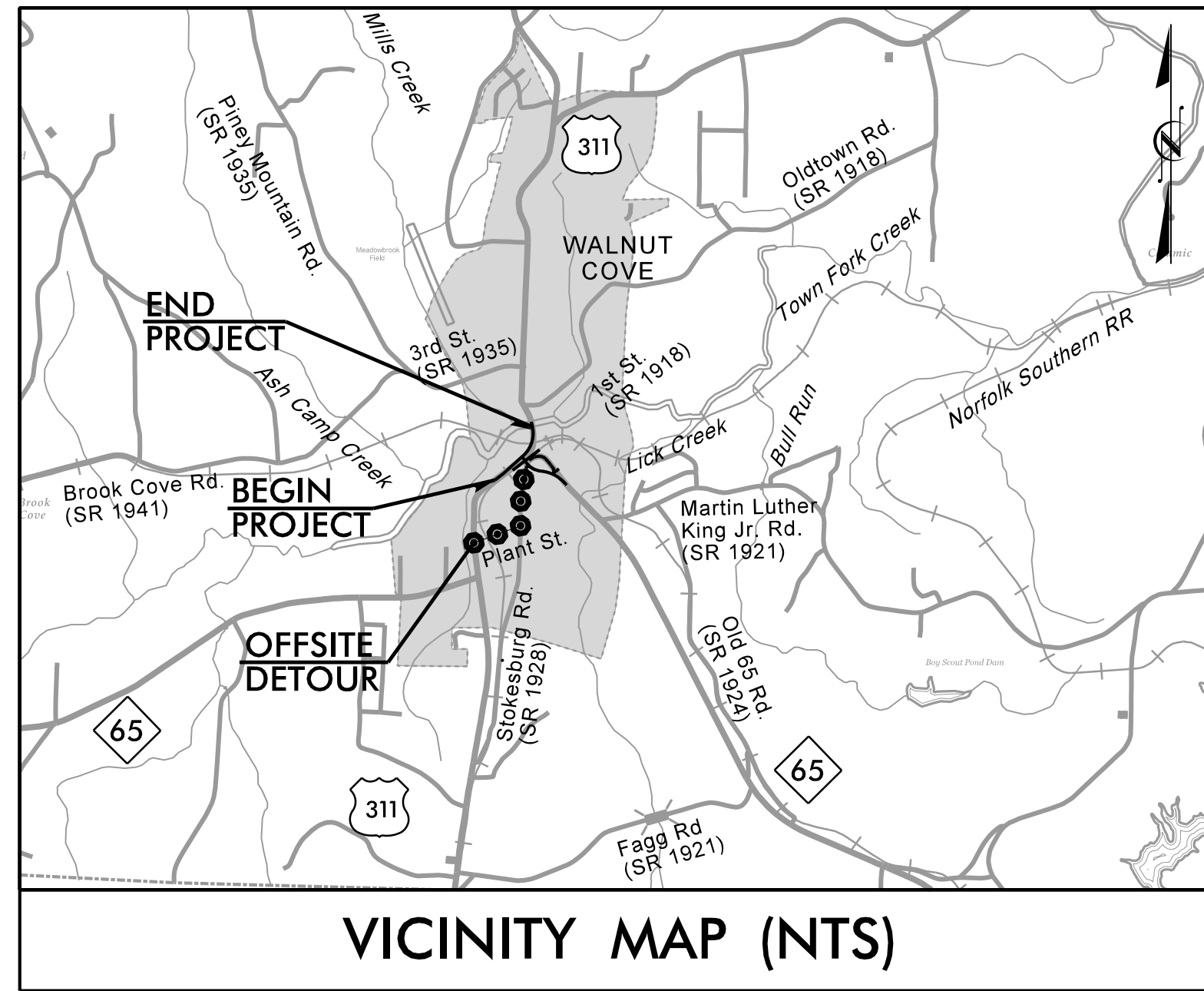
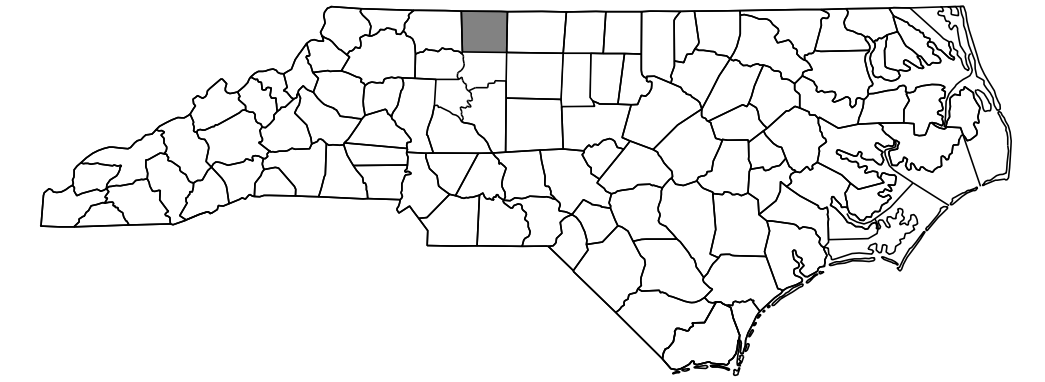
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STOKES COUNTY

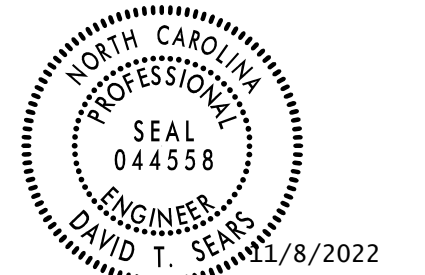
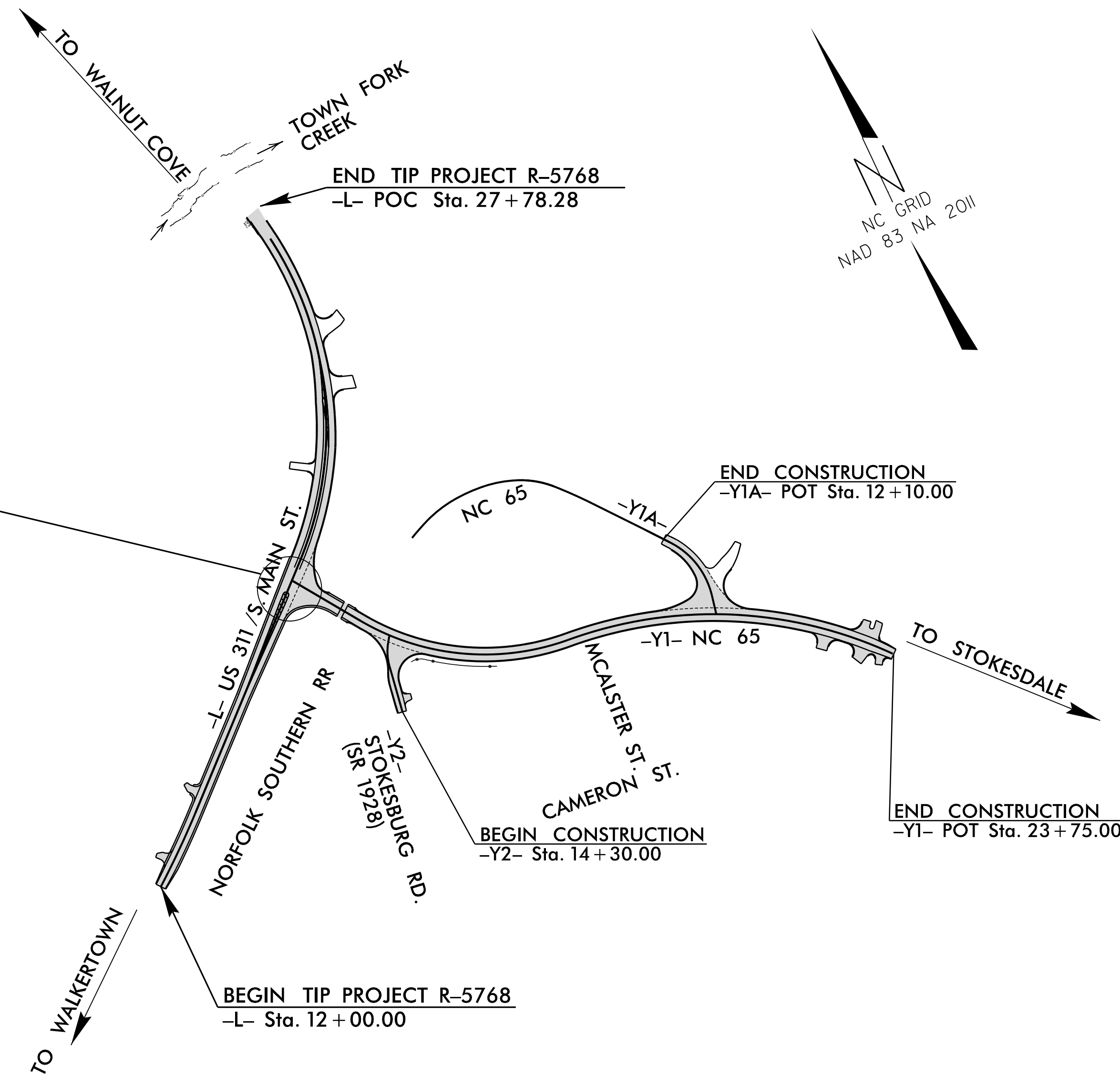
LOCATION: US 311 / NC 65 IN VICINITY OF SR 1928 (STOKESBURG RD.)
IN WALNUT COVE

TYPE OF WORK: TRAFFIC SIGNALS



VICINITY MAP (NTS)

09-0360



11/8/2022
David T. Seare

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

Refer to "Roadway Standard Drawings
NCDOT" dated January 2018 and
"Standard Specifications for Roads
and Structures" dated January 2018.

TIP PROJECT: R-5768

CONTRACT:

Sheet #	Reference #	Index of Plans	Location/Description
SIG. 1.0	-----	TITLE SHEET	
SIG. 1.1	-----	STANDARD PLATE SHEET	
SIG. 2.0-2.6	09-0360	US 311 (S. MAIN ST.) AT NC 65 [NORTH INTERSECTION]	
M1-M8	-----	STANDARD DRAWINGS FOR METAL POLES	

Legend

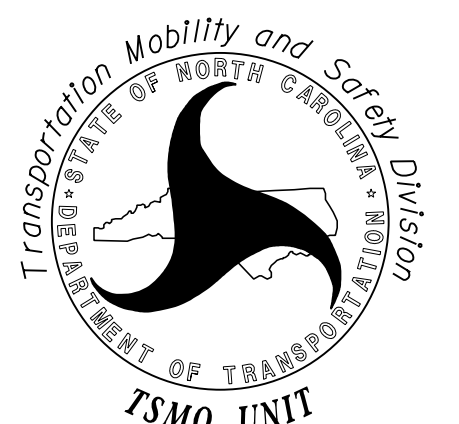
XX-XXXX - SIGNAL INVENTORY NUMBER

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

Robert J. Ziemba, P.E. - Central Region Signals Engineer
D. Todd Joyce, P.E. - Signal Equipment Design Engineer

Prepared for the Office of:
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY AND SAFETY
DIVISION

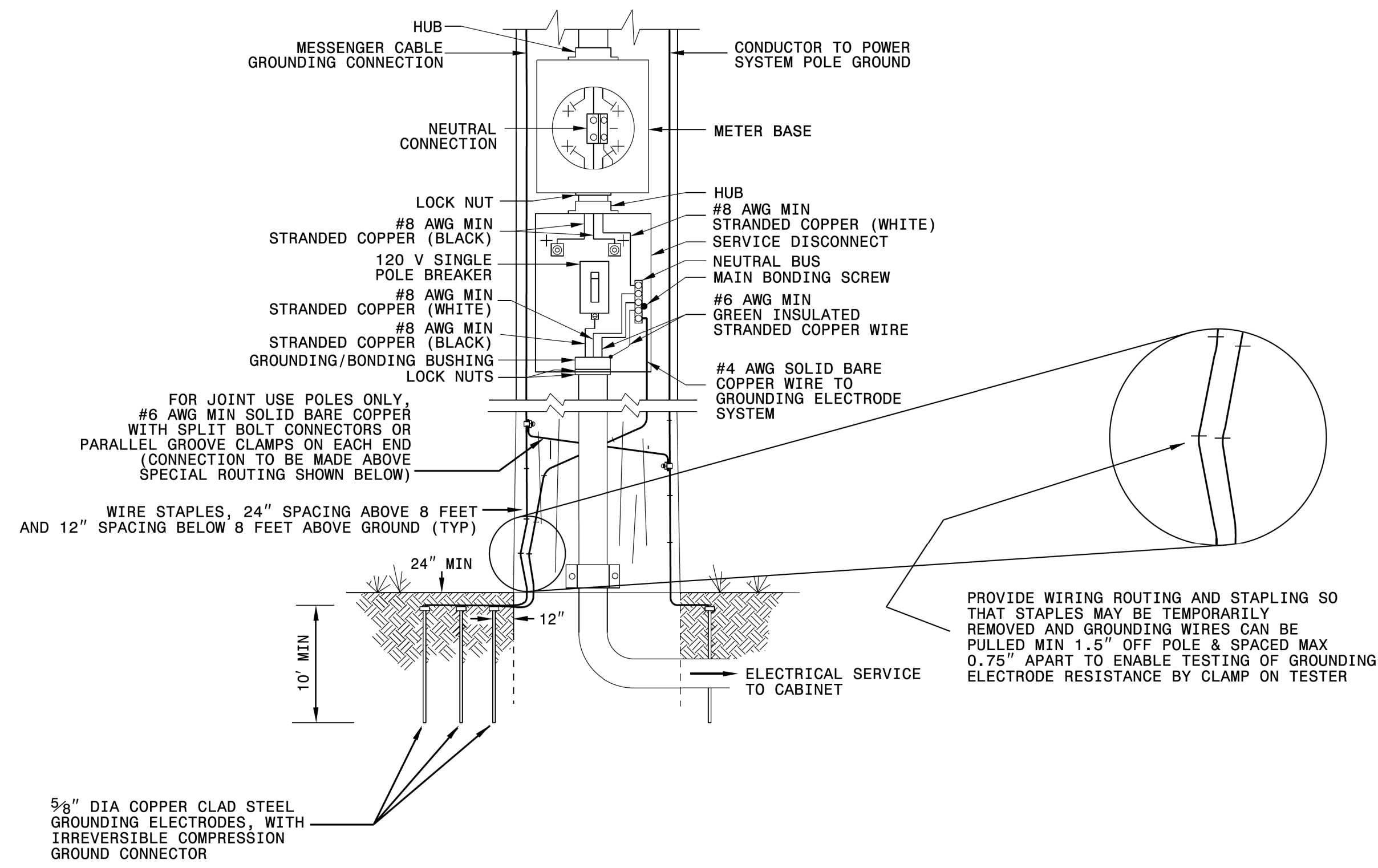


750 N. Greenfield Parkway, Garner, NC 27529

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
ELECTRICAL SERVICE GROUNDING
GROUNDING AND BONDING

SHEET 1 OF 1
1700D01



FOR JOINT USE POLES ONLY, #6 AWG MIN SOLID BARE COPPER WITH SPLIT BOLT CONNECTORS OR PARALLEL GROOVE CLAMPS ON EACH END (CONNECTION TO BE MADE ABOVE SPECIAL ROUTING SHOWN BELOW)

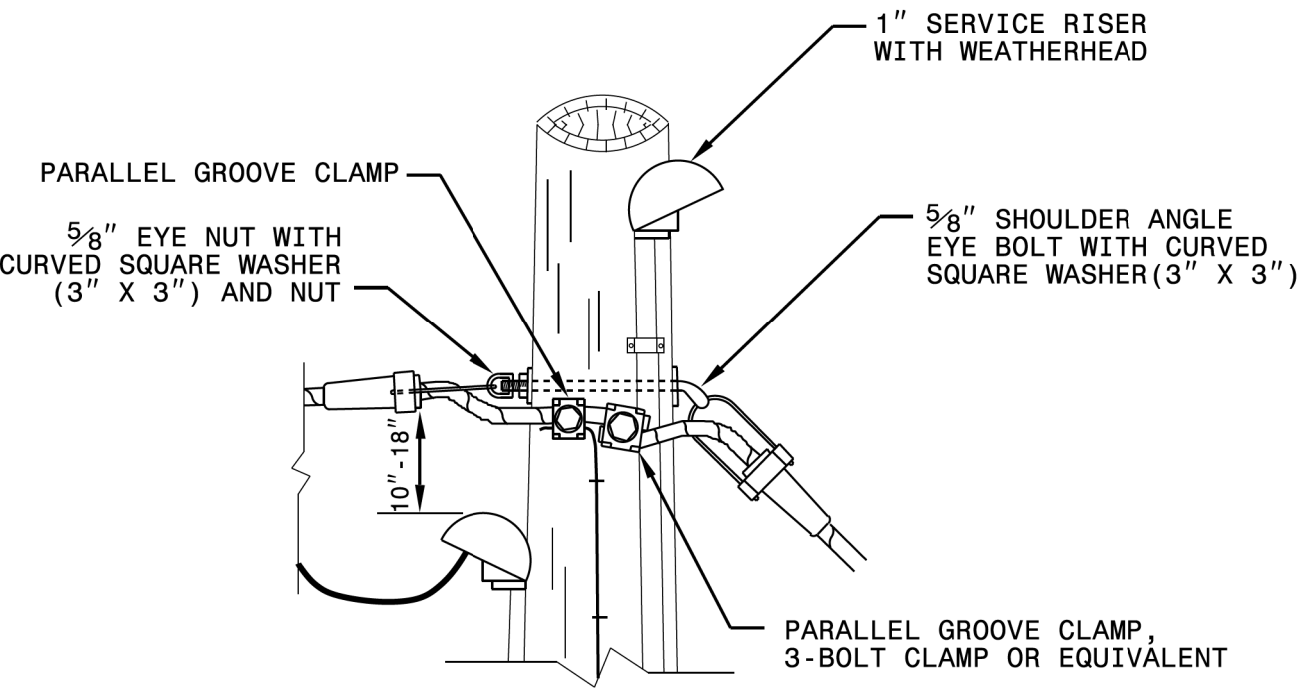
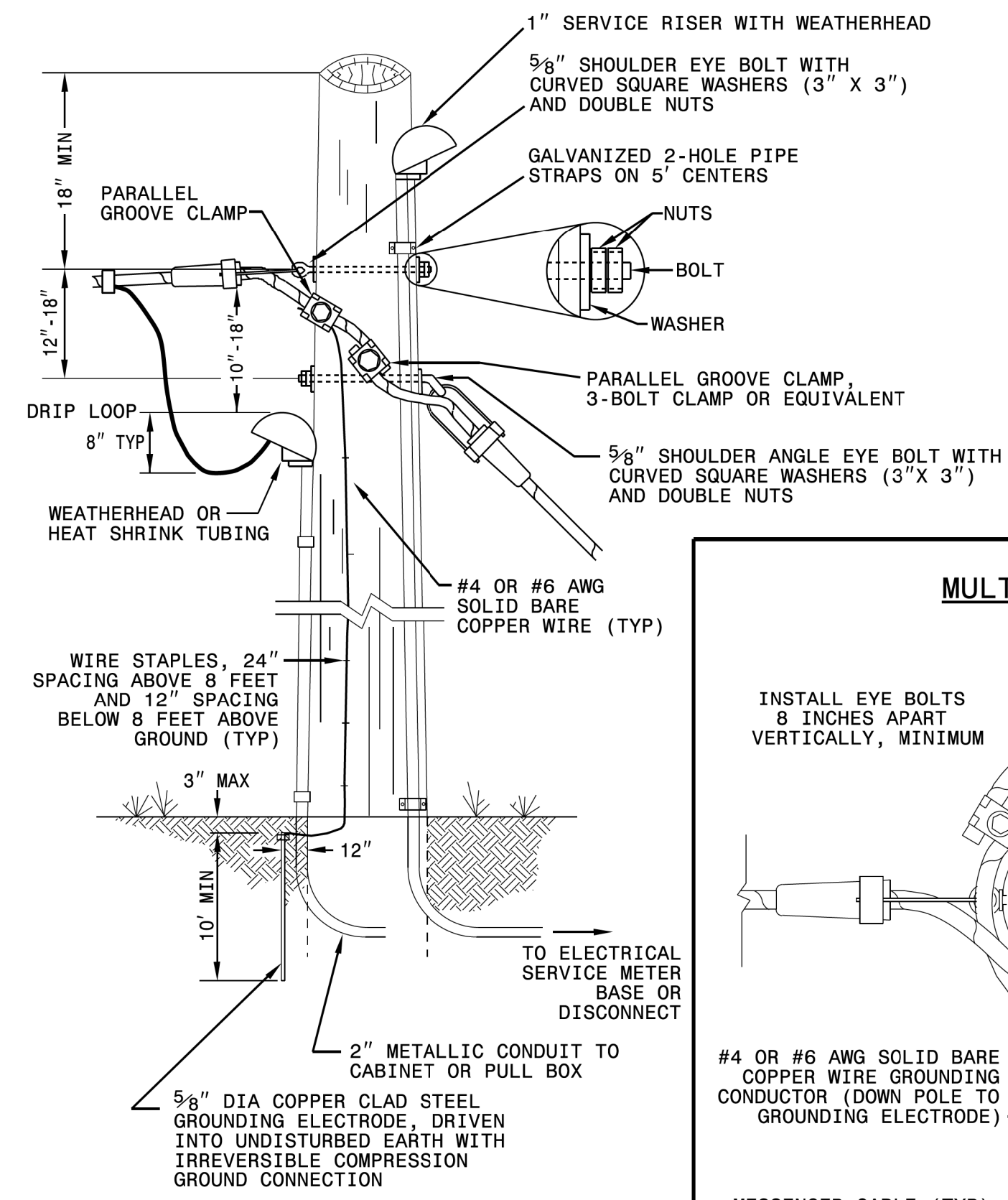
WIRE STAPLES, 24" SPACING ABOVE 8 FEET AND 12" SPACING BELOW 8 FEET ABOVE GROUND (TYP)

PROVIDE WIRING ROUTING AND STAPLING SO THAT STAPLES MAY BE TEMPORARILY REMOVED AND GROUNDING WIRES CAN BE PULLED MIN 1.5" OFF POLE & SPACED MAX 0.75" APART TO ENABLE TESTING OF GROUNDING ELECTRODE RESISTANCE BY CLAMP ON TESTER

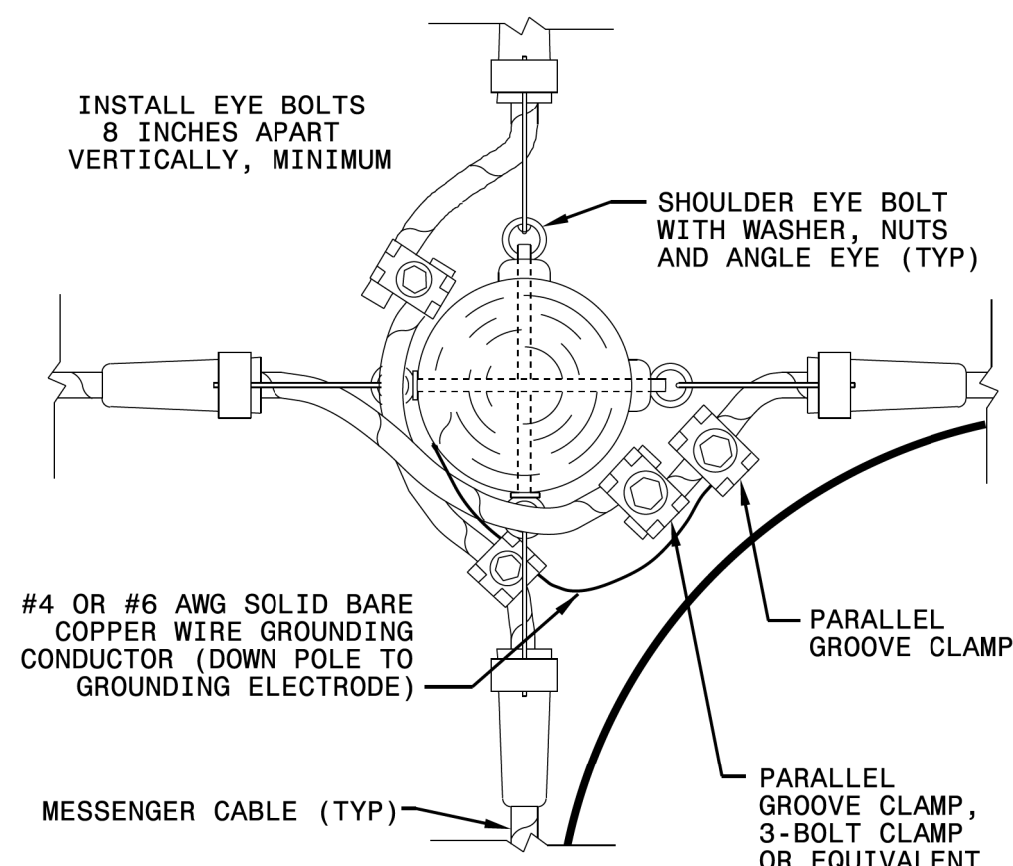
5/8" DIA COPPER CLAD STEEL GROUNDING ELECTRODES, WITH IRREVERSIBLE COMPRESSION GROUND CONNECTOR

TWO-BOLT METHOD (PREFERRED)

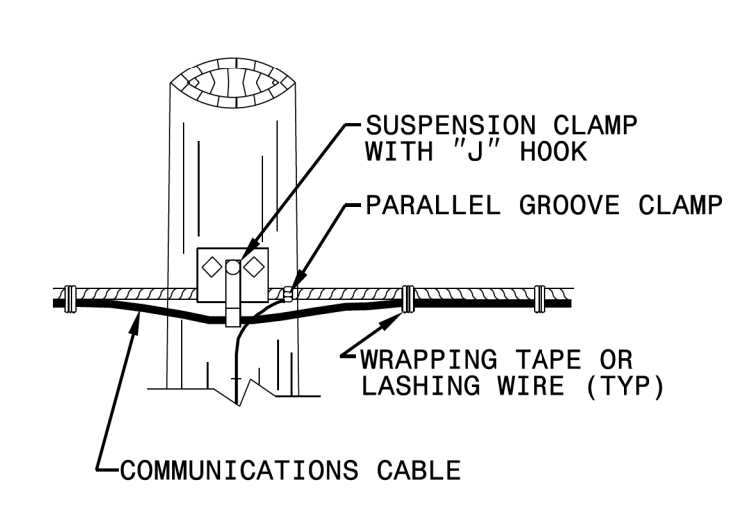
ONE-BOLT METHOD



MULTIPLE SPANS



COMMUNICATIONS CABLE AT INTERMEDIATE POLE



NOTE

FOR CONNECTING MESSENGER TO MESSENGER, USE PARALLEL GROOVE CLAMP, 3-BOLT CLAMP OR EQUIVALENT. FOR CONNECTING COPPER WIRE TO MESSENGER, USE PARALLEL GROOVE CLAMP.

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

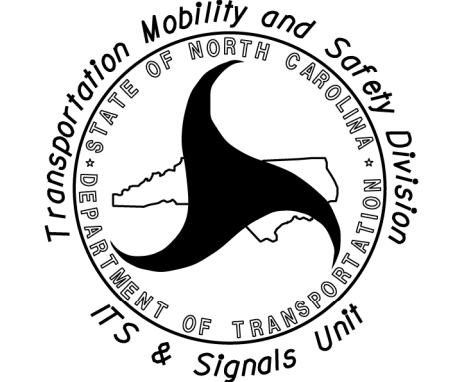
ENGLISH STANDARD DRAWING FOR
WOOD POLES
METHODS OF ATTACHMENT AND GROUNDING

SHEET 1 OF 1
1720D01

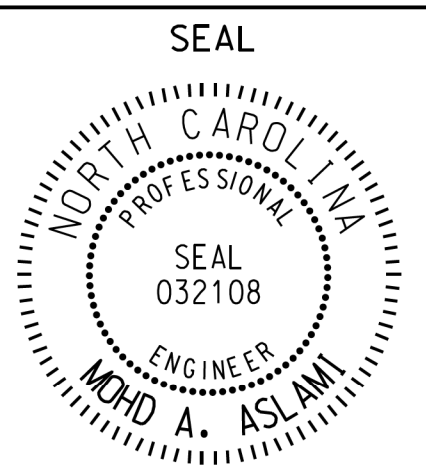
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

See Plate for Title

Prepared in the Offices of:



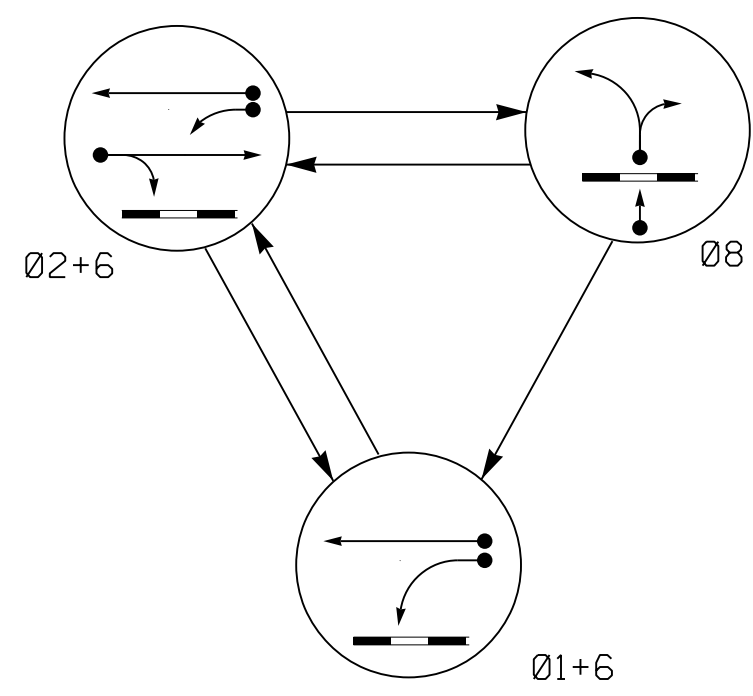
750 N. Greenfield Parkway
Garner, NC 27529



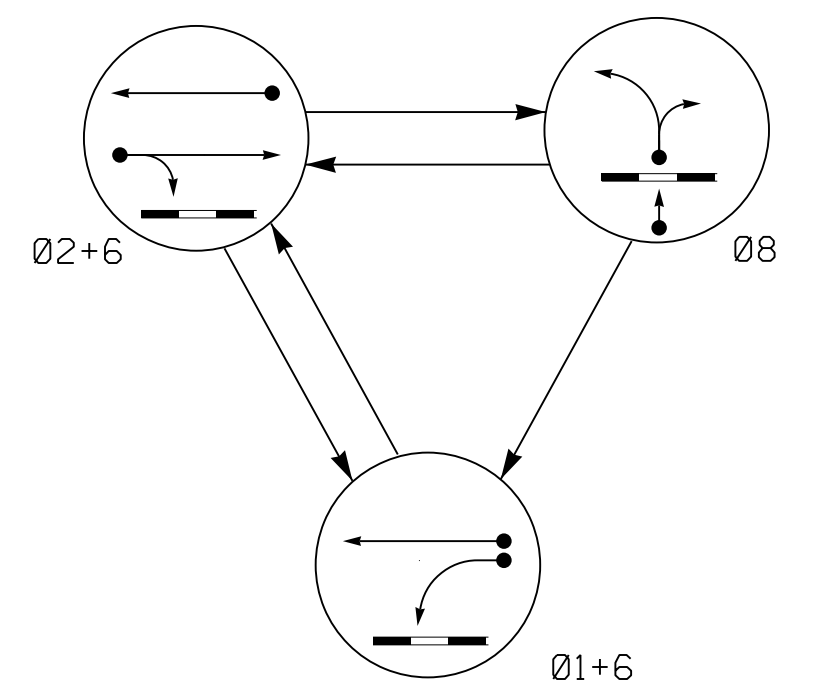
10/11/2017
DATE

11-001-2017_08-155
11-2018 STD Drawings/Plate Sheets/2018_Plate Sheet -dgn
r.wrough

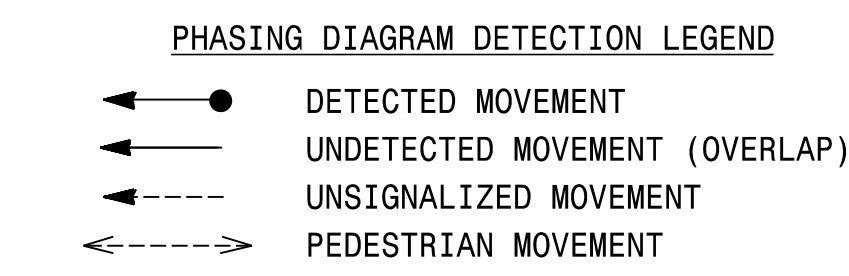
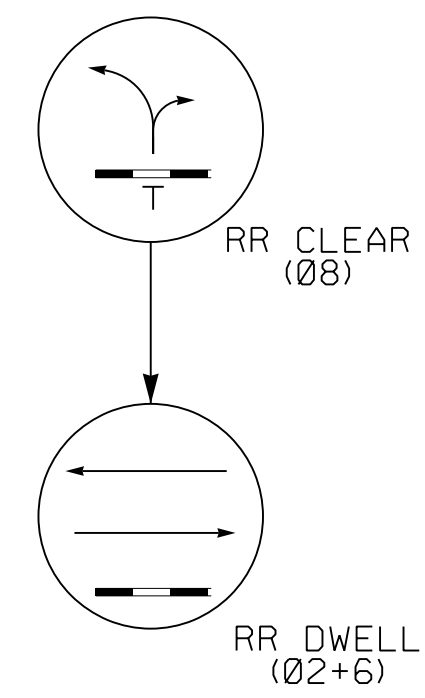
DEFAULT PHASING DIAGRAM



ALTERNATIVE PHASING DIAGRAM



RAIL PREEMPT PHASES (HIGH PRIORITY)



DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+6	02+6	08	C	D	F	H	S
11	←	←	←	←	←	←	←	←
21,22	←	←	←	←	←	←	←	←
61,62,63	←	←	←	←	←	←	←	←
81,85	←	←	←	←	←	←	←	←
82	←	←	←	←	←	←	←	←
83,84	←	←	←	←	←	←	←	←
Sign (A)	OFF	OFF	OFF	ON	ON	ON	ON	*

* See Note 6

ALTERNATIVE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+6	02+6	08	C	D	F	H	S
11	←	←	←	←	←	←	←	←
21,22	←	←	←	←	←	←	←	←
61,62,63	←	←	←	←	←	←	←	←
81,85	←	←	←	←	←	←	←	←
82	←	←	←	←	←	←	←	←
83,84	←	←	←	←	←	←	←	←
Sign (A)	OFF	OFF	OFF	ON	ON	ON	ON	*

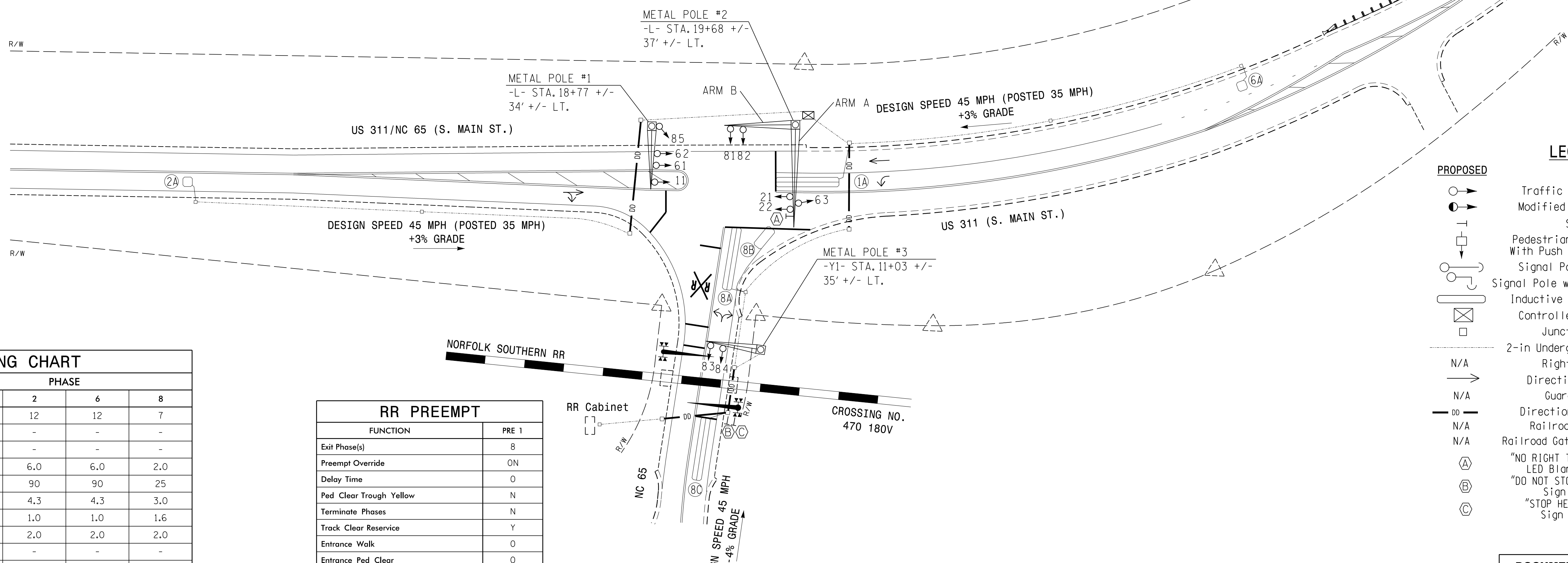
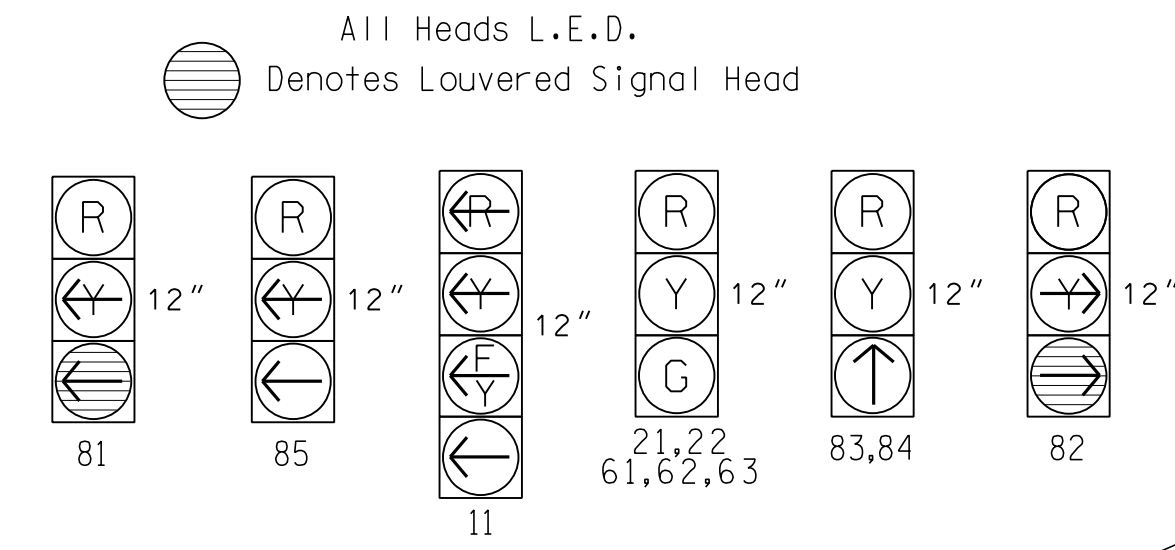
* See Note 6

DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	X	1	Yes	-	15*	-	N	-	X
2A	6X6	300	5	X	2	Yes	-	-	-	G	-	X
6A	6X6	300	4	X	6	Yes	-	-	X	N	-	X
8A	6X40	0	2-4-2	X	8	Yes	-	10	-	N	-	X
8B	6X15	0	3	X	8	Yes	-	10	-	N	-	X
8C	6X40	0@	2-4-2	X	8	Yes	5.0	-	-	N	-	X

* Disable delay during alternate phasing operation.
 # Disable phase call(s) for loop(s) during alternate phasing operation.
 @ Located at Stop Line for Pre Signal/Railroad Gate

SIGNAL FACE I.D.



TIMING CHART

FEATURE	PHASE			
	1	2	6	8
Min Green *	7	12	12	7
Walk *	-	-	-	-
Ped Clear	-	-	-	-
Veh. Extension *	2.0	6.0	6.0	2.0
Max I *	25	90	90	25
Yellow	3.0	4.3	4.3	3.0
Red Clear	1.4	1.0	1.0	1.6
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-
Seconds / Actuation *	-	2.5	2.5	-
Max Initial *	-	34	34	-
Time Before Reduction *	-	15	15	-
Time To Reduce *	-	30	30	-
Minimum Gap	-	3.0	3.0	-
Locking Detector	-	X	X	-
Recall Position	-	VEH. RECALL	VEH. RECALL	-
Dual Entry	-	-	-	-
Simultaneous Gap	X	X	X	X

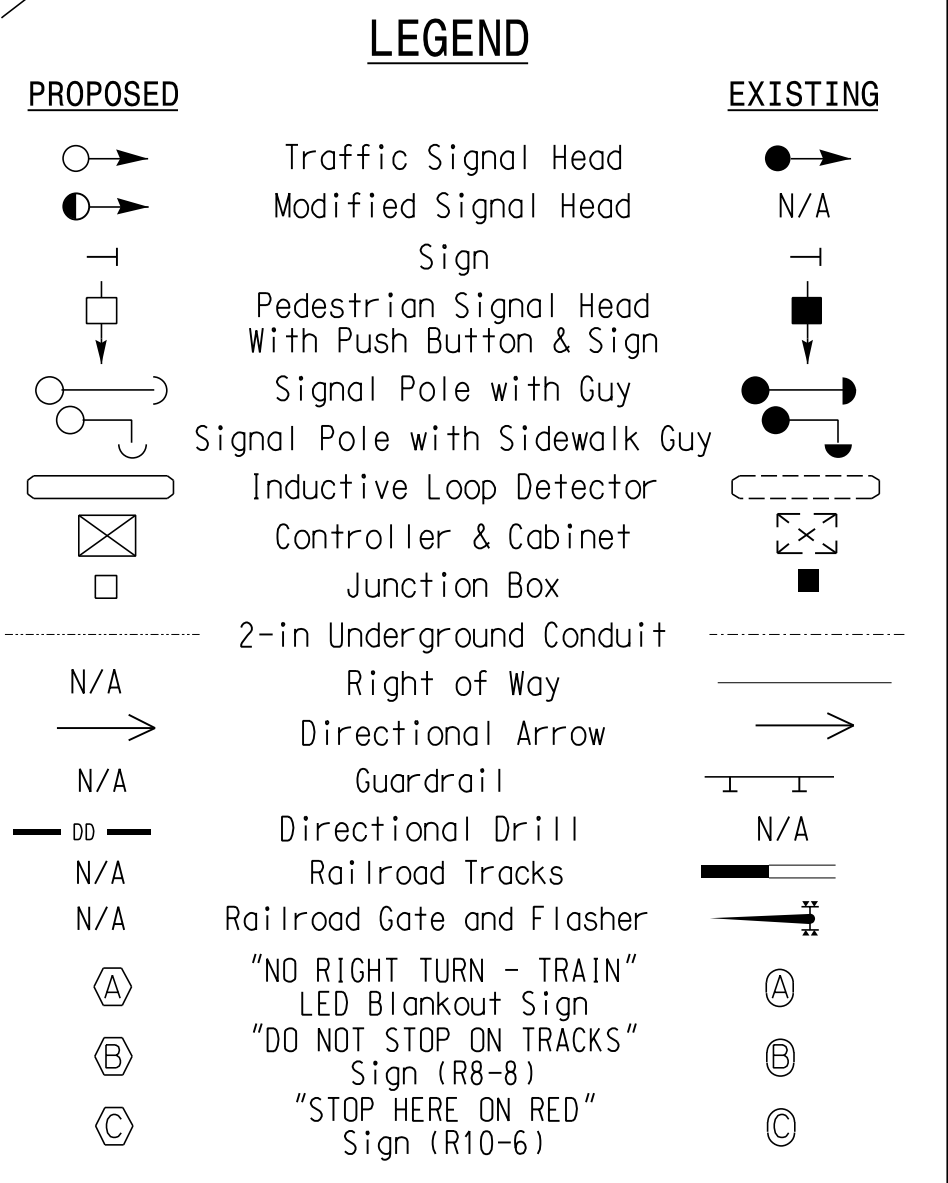
RR PREEMPT

FUNCTION	PRE 1
Exit Phase(s)	8
Preempt Override	ON
Delay Time	0
Ped Clear Trough Yellow	N
Terminate Phases	N
Track Clear Reserve	Y
Entrance Walk	0
Entrance Ped Clear	0
Entrance Min Green	1
Entrance Yellow Change	4.3
Entrance Red Clear	1.4
Track Clear Min Green	23
Track Clear Yellow Change	3.0
Track Clear Red Clear	1.6
Min Dwell Time	12
Exit Yellow Change	25.5*
Exit Red Clear	25.5*

* Allows normal phase times to be used.
 THIS SIGNAL IS DESIGNED FOR ADVANCED PREEMPTION

3 PHASE FULLY ACTUATED WITH RAILROAD PREEMPTION (ISOLATED) NOTES

- REFER TO "ROADWAY STANDARD DRAWINGS NCDOT" DATED JANUARY 2018 AND "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.
- THIS LOCATION CONTAINS RAILROAD PREEMPTION PHASING. DO NOT PROGRAM SIGNAL FOR LATE NIGHT FLASHING OPERATION.
- PHASE 1 MAY BE LAGGED.
- SET ALL DETECTOR UNITS TO PRESENCE MODE.
- LOCATE NEW CABINET SO AS NOT TO OBSTRUCT SIGHT DISTANCE OF VEHICLES TURNING RIGHT ON RED.
- ENSURE FLASHING OPERATION DOES NOT ALTER OPERATION OF BLANKOUT SIGN.
- PROGRAM PARENT PHASES FOR OVERLAP "P" FOR ALL PHASES USED IN NORMAL OPERATION.
- ENSURE OVERLAP "P" IS TERMINATED PRIOR TO ENTERING PREEMPTION.



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New Installation

Prepared for the Offices of:
 Transportation Mobility and Safety Division
 DEPARTMENT OF TRANSPORTATION
 STATE OF NORTH CAROLINA
 Signal Design Section

US 311 (S. MAIN ST.) AT NC 65 [North Intersection]

DIVISION 9 STOKES COUNTY WALNUT COVE
 PLAN DATE: NOVEMBER 2022 REVIEWED BY: DTSEARS
 PREPARED BY: WP. ERICKSON-JONES REVIEWED BY:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: 1" = 40'

Seal: DAVID T. SEARS, PROFESSIONAL ENGINEER, SEAL 044558

DocuSigned by: David T. Sears 11/8/2022

SIG. INVENTORY NO. 09-0360

RK&K
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ECONOLITE ASC/3-2070 ACTION PLAN

PROGRAMMING DETAIL

1. From Main Menu select 5. TIME BASE
2. From TIME BASE Submenu select 2. ACTION PLAN

```

ACTION PLAN... [ *]
PATTERN.....AUTO   SYS OVERRIDE.... NO
TIMING PLAN..... 0   SEQUENCE..... 0
VEH DETECTOR PLAN.. 2   DET LOG.....NONE
FLASH..... --   RED REST..... NO
VEH DET DIAG PLN... 0   PED DET DIAG PLN..0
DIMMING ENABLE.. NO   PRIORITY RETURN. NO
PED PR RETURN.. NO   QUEUE DELAY..... NO
PMT COND DELAY   NO

  PHASE  1  2  3  4  5  6  7  8  9  0  1  2  3  4  5  6
PED RCL  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
WALK 2   .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
VEX 2    .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
VEH RCL  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
MAX RCL  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
MAX 2    .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
  PHASE  1  2  3  4  5  6  7  8  9  0  1  2  3  4  5  6
MAX 3    .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
CS INH   .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
OMIT     .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
SPC FCT  X  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
AUX FCT  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
          1  2  3  4  5  6  7  8  9  0  1  2  3  4  5

LP 1-15  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 16-30 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 31-45 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 46-60 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 61-75 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 76-90 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 91-100 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
    
```

* The Action Plan number(s) are to be determined by the Division and/or City Traffic Engineer.

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT THE TIME BASED ACTION PLAN THAT IS PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 1.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM CHANGES (SHOWN BELOW) IN A TIME-BASED ACTION PLAN. SCHEDULE A DAY PLAN THAT INCLUDES THE ACTION PLAN PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 1.

PHASING	VEH DET PLAN	SF BITS ENABLED
ACTIVE PAGES REQUIRED TO RUN <u>DEFAULT PHASING</u>	1	NONE
ACTIVE PAGES REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	1

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAPS PAGE 2: Modifies overlap parent phases for head 11 to run protected turns only.

INPUTS PAGE 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 0 seconds.

ECONOLITE ASC/3-2070 PREEMPT FILTERING PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 4. PREEMPTOR/TSP
2. From PREEMPT/TSP/SCP Submenu select 2. ENABLE PREEMPT FILTERING & TSP/SCP

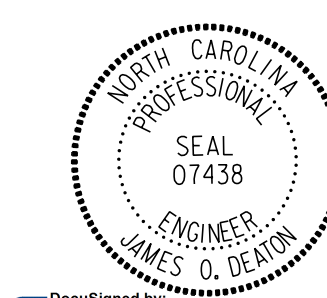
```

ENABLE PREEMPT FILTERING & TSP/SCP
FILTERED   SOLID   PULSING
INPUT  1  ..PREEMPT  1.  ...BYPASSED..
        2  ...BYPASSED.. ...BYPASSED..
        3  ...BYPASSED.. ...BYPASSED..
        4  ...BYPASSED.. ...BYPASSED..
        5  ...BYPASSED.. ...BYPASSED..
        6  ...BYPASSED.. ...BYPASSED..
        7  ...BYPASSED.. ...BYPASSED..
        8  ...BYPASSED.. ...BYPASSED..
        9  ...BYPASSED.. ...BYPASSED..
        10 ...BYPASSED.. ...BYPASSED..
    
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-0360
DESIGNED: November 2022
SEALED: November 8, 2022
REVISED:

Electrical Detail - Sheet 4 of 4

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<p style="font-size: x-small;">ELECTRICAL AND PROGRAMMING DETAILS FOR:</p> <p style="font-size: x-small;">Prepared for the Offices of: Transportation Mobility and Safety Division STATEMENT OF WORK CONTRACT #2022-0000000000 Signal Management Section</p>	<p style="font-size: large;">US 311 (S.Main St.) at NC 65 [North Intersection]</p> <p style="font-size: x-small;">Division 9 Stokes County Walnut Cove</p> <p style="font-size: x-small;">PLAN DATE: November 2022 REVIEWED BY: J O Deaton</p> <p style="font-size: x-small;">PREPARED BY: M W Valch REVIEWED BY:</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISIONS	INIT.	DATE										<p style="font-size: x-small;">SEAL</p>  <p style="font-size: x-small;">DocuSigned by: JAMES O. Deaton 11/8/2022</p> <p style="font-size: x-small;">SIGNATURE DATE</p> <p style="font-size: x-small;">SIG. INVENTORY NO. 09-0360</p>
REVISIONS	INIT.	DATE												



P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112

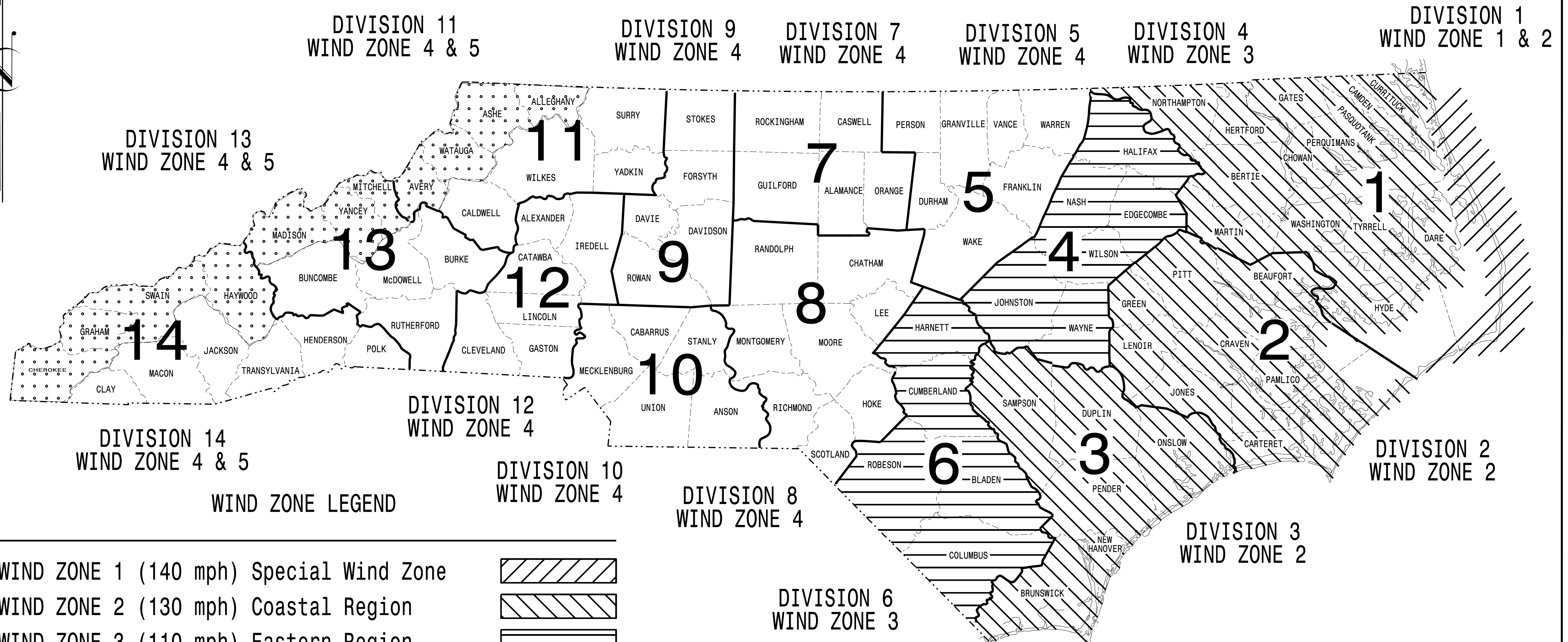
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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

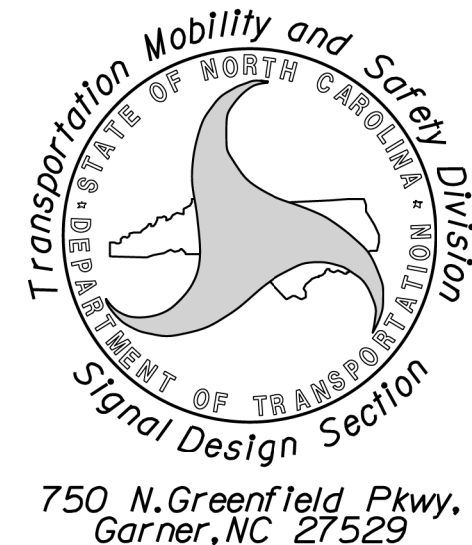
PROJECT I.D. NO. R-5768	SHEET NO. Sig.M1
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STANDARD DRAWINGS FOR ALL METAL POLES



<https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

Prepared in the Offices of:



Designed in conformance with the latest 2015 Interim to the 6th Edition 2013

AASHTO

Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals

INDEX OF PLANS

DRAWING NUMBER	DESCRIPTION
Sig. M 1	Statewide Wind Zone Map
Sig. M 2	Typical Fabrication Details-All Metal Poles
Sig. M 3	Typical Fabrication Details-Strain Poles
Sig. M 4	Typical Fabrication Details-Mast Arm Poles
Sig. M 5	Typical Fabrication Details-Mast Arm Connection
Sig. M 6	Typical Fabrication Details-Strain Pole Attachments
Sig. M 7	Construction Details-Foundations
Sig. M 8	Standard Strain Pole Foundation-All Soil Conditions

NC DOT CONTACTS:

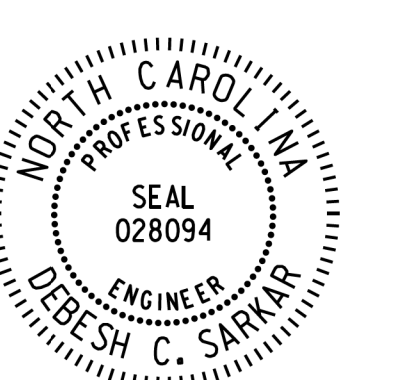
MOBILITY AND SAFETY DIVISION - ITS AND SIGNALS UNIT

M.M. MCDIARMID, P.E. - STATE ITS AND SIGNALS ENGINEER

J.P. GALLOWAY, P.E. - STATE SIGNALS ENGINEER

D.C. SARKAR, P.E. - ITS AND SIGNALS SENIOR STRUCTURAL ENGINEER

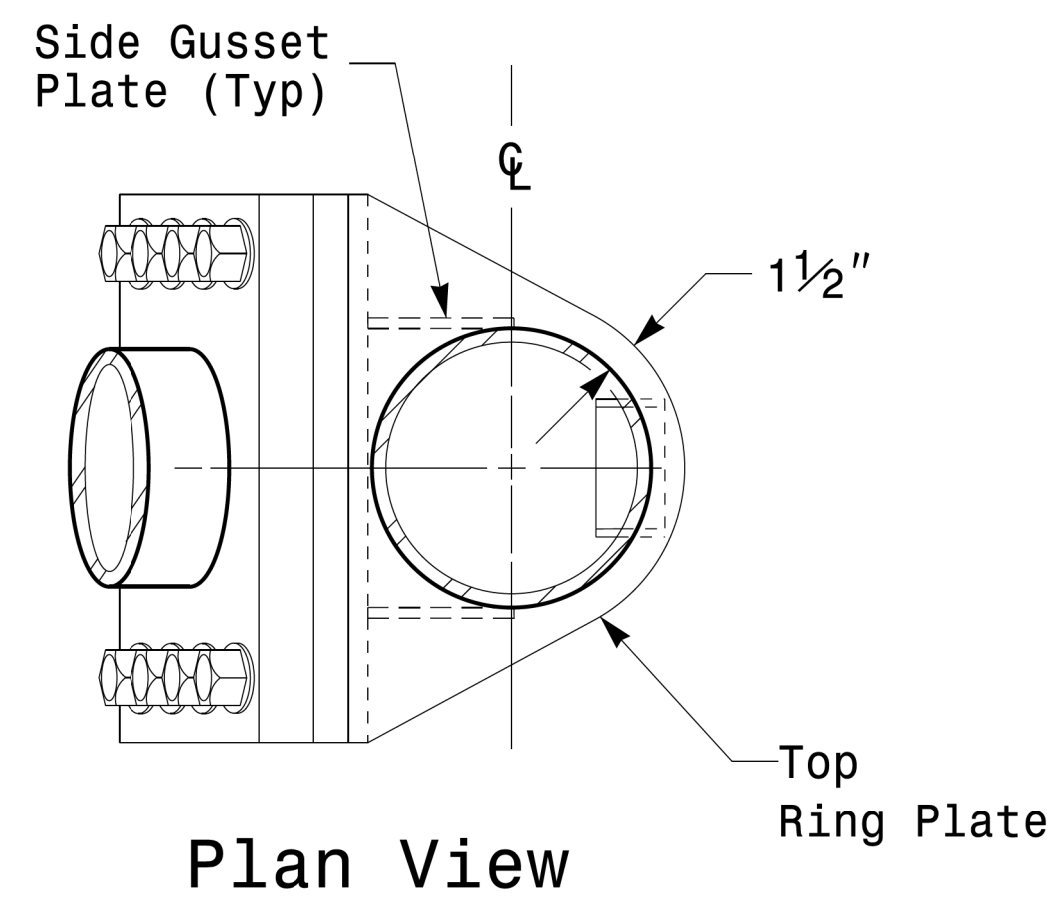
SEAL



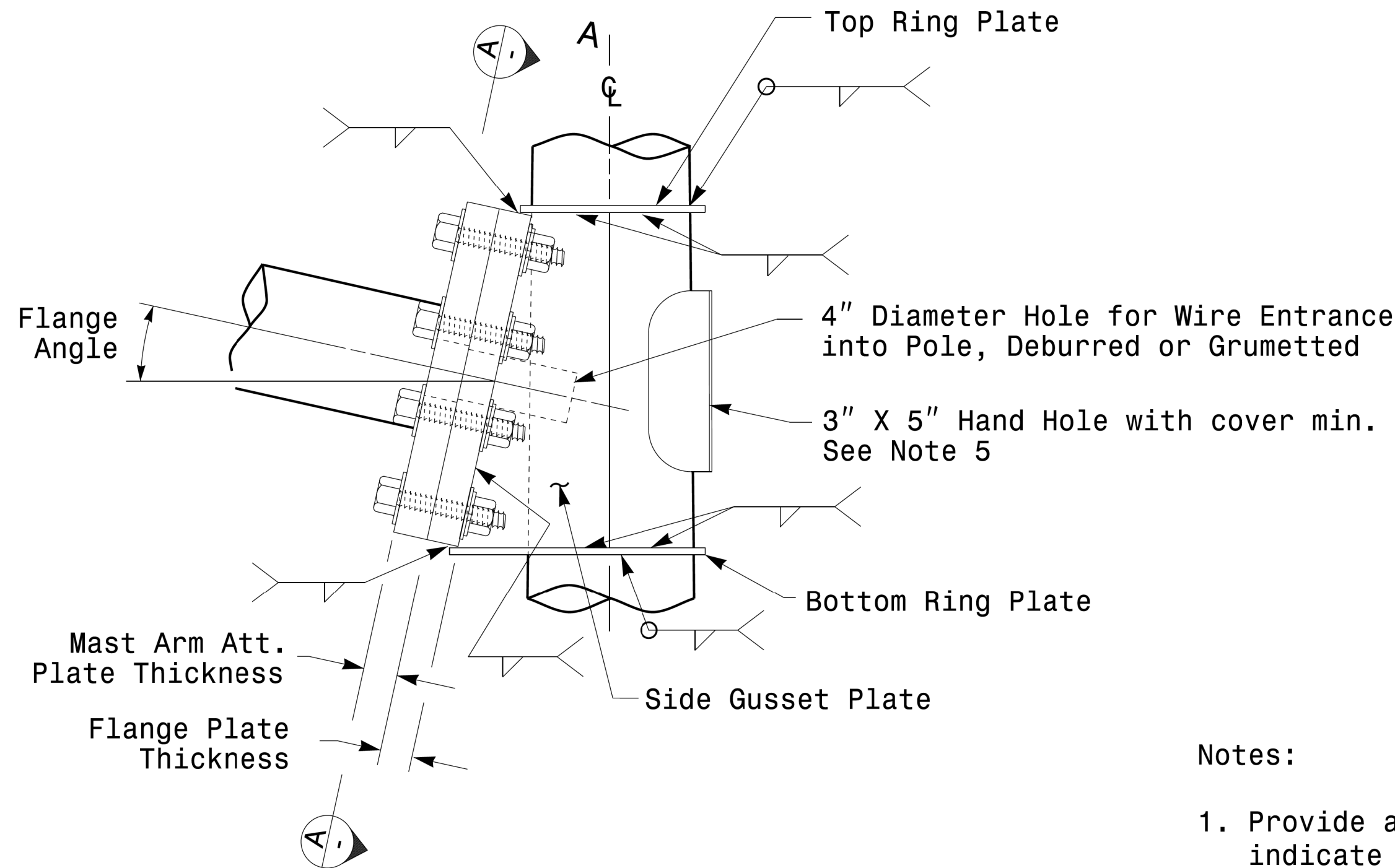
Designed by: Debesh C. Sarkar 10/11/2017
DATE

Welded Ring Stiffened Mast Arm Connection

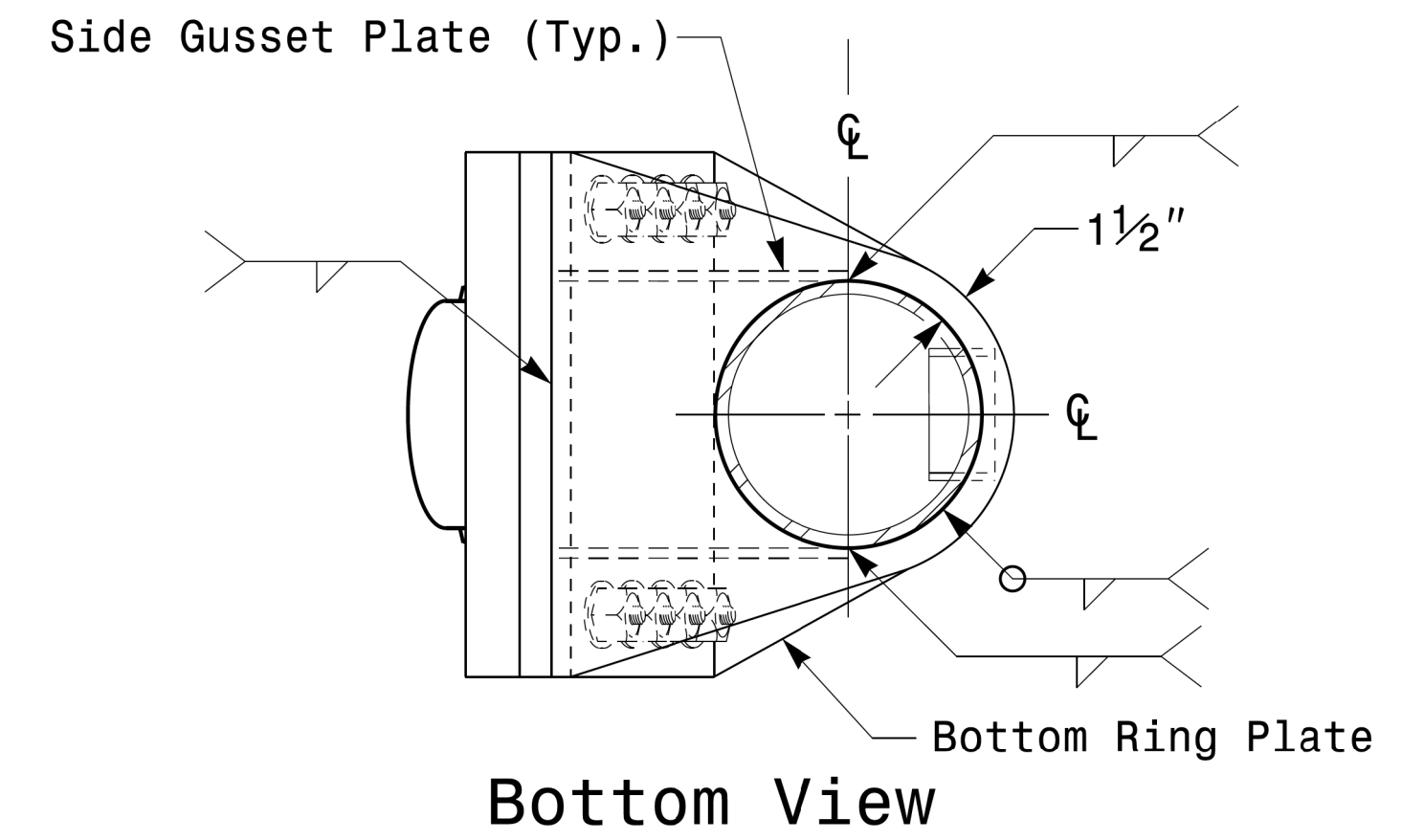
PROJECT ID. NO.	SHEET NO.
R-5768	Sig.M5



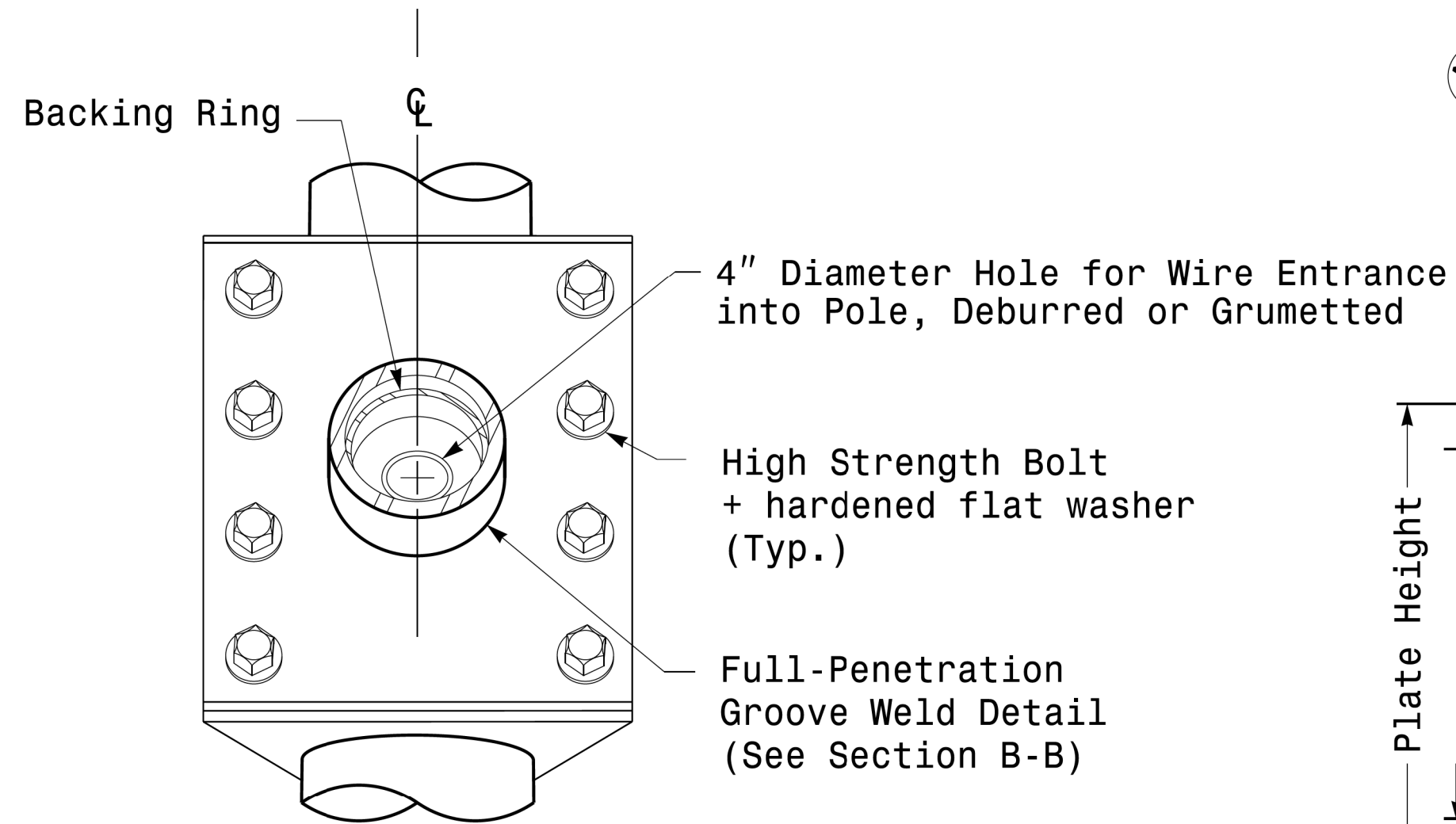
Plan View



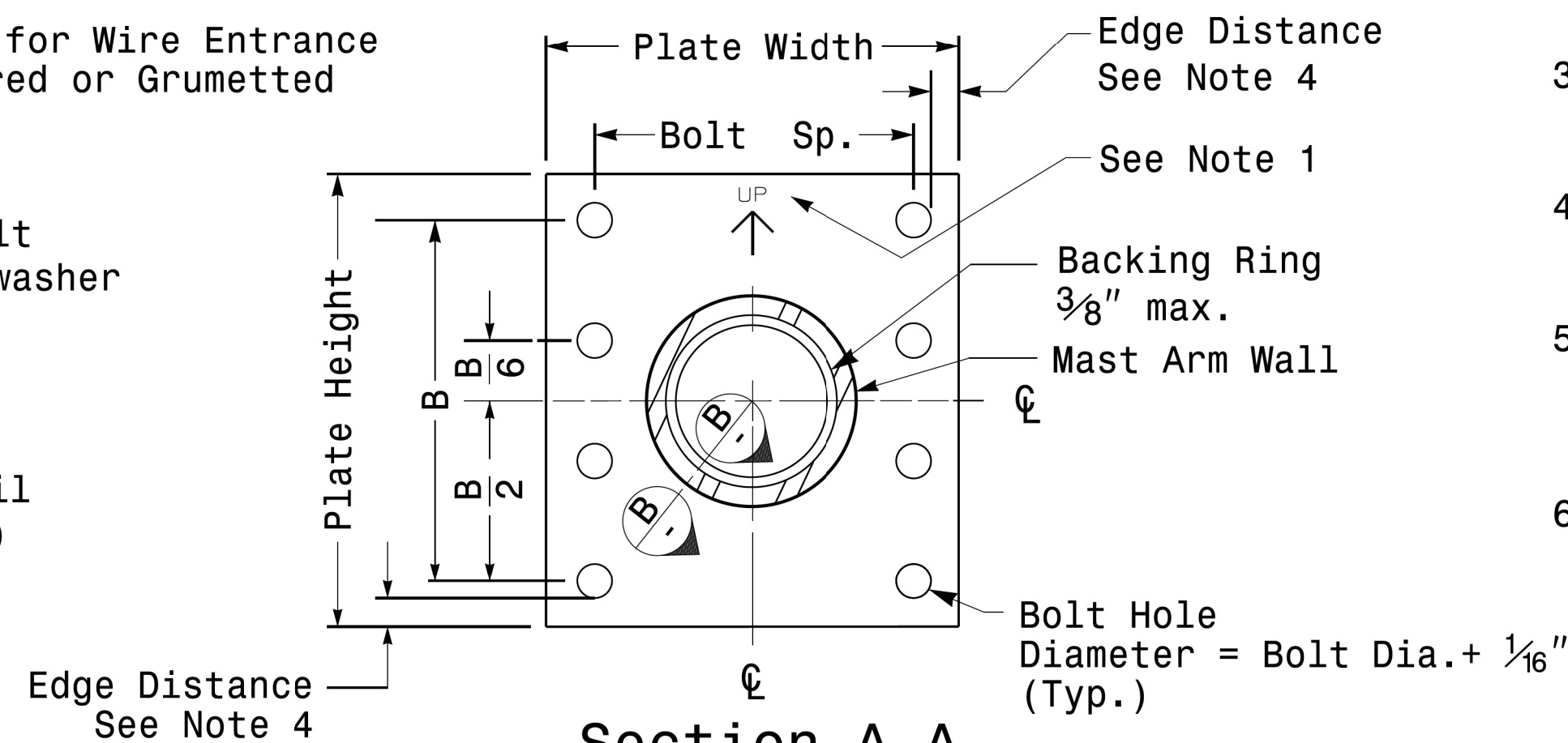
Side Elevation View



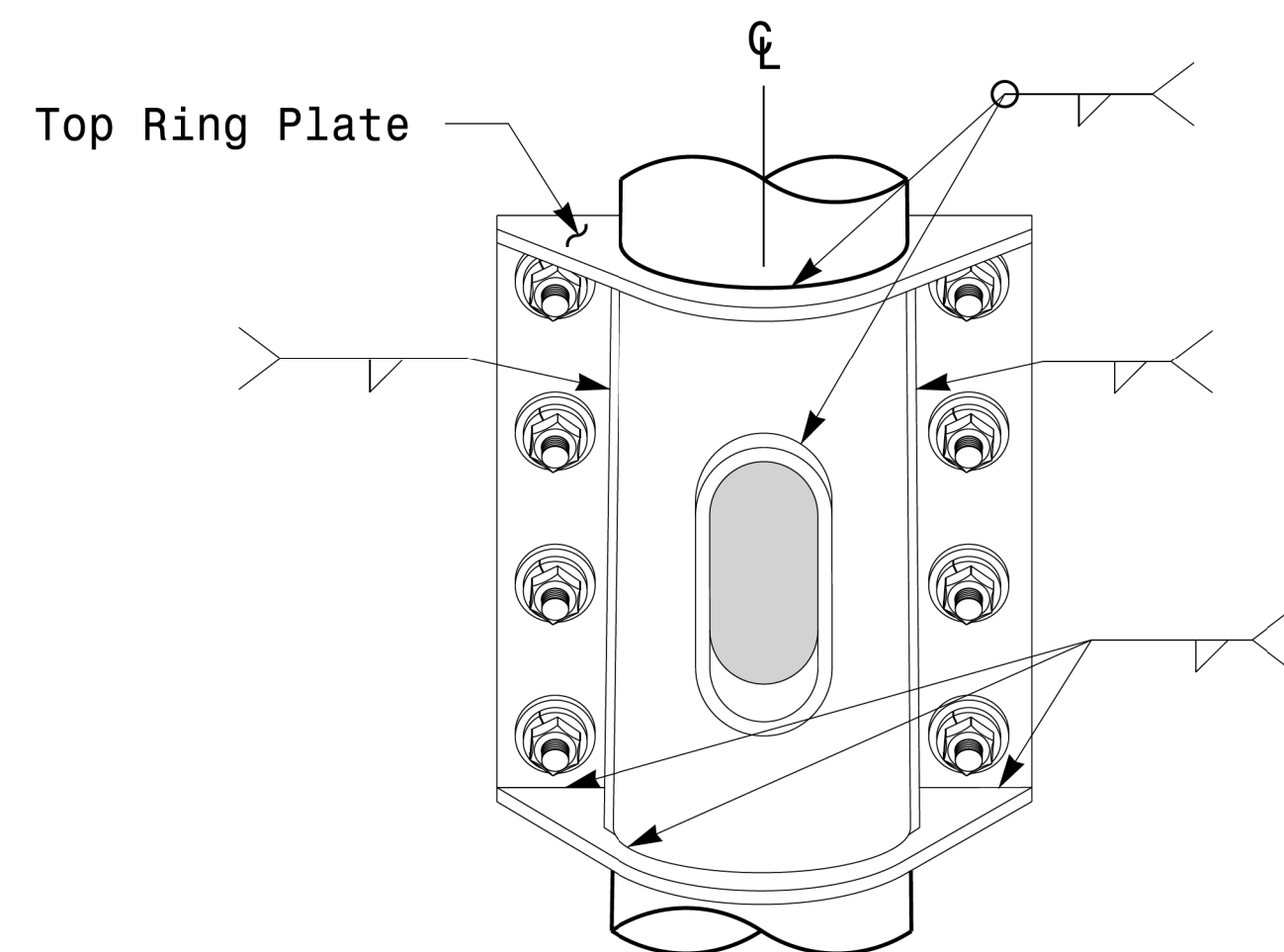
Bottom View



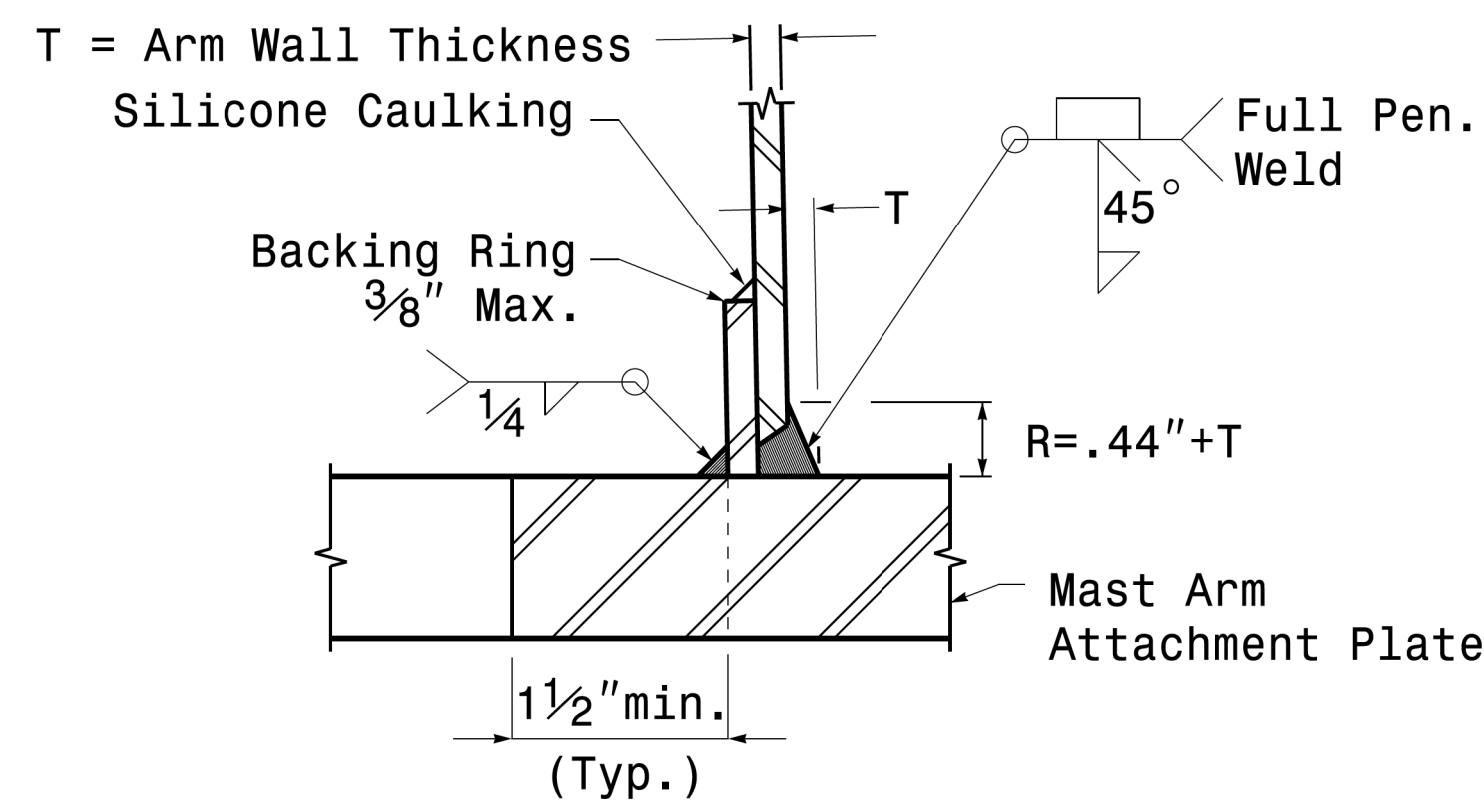
Front Elevation View



Section A-A
Mast Arm Attachment Plate



Back Elevation View



Section B-B
Full-Penetration Groove Weld Detail

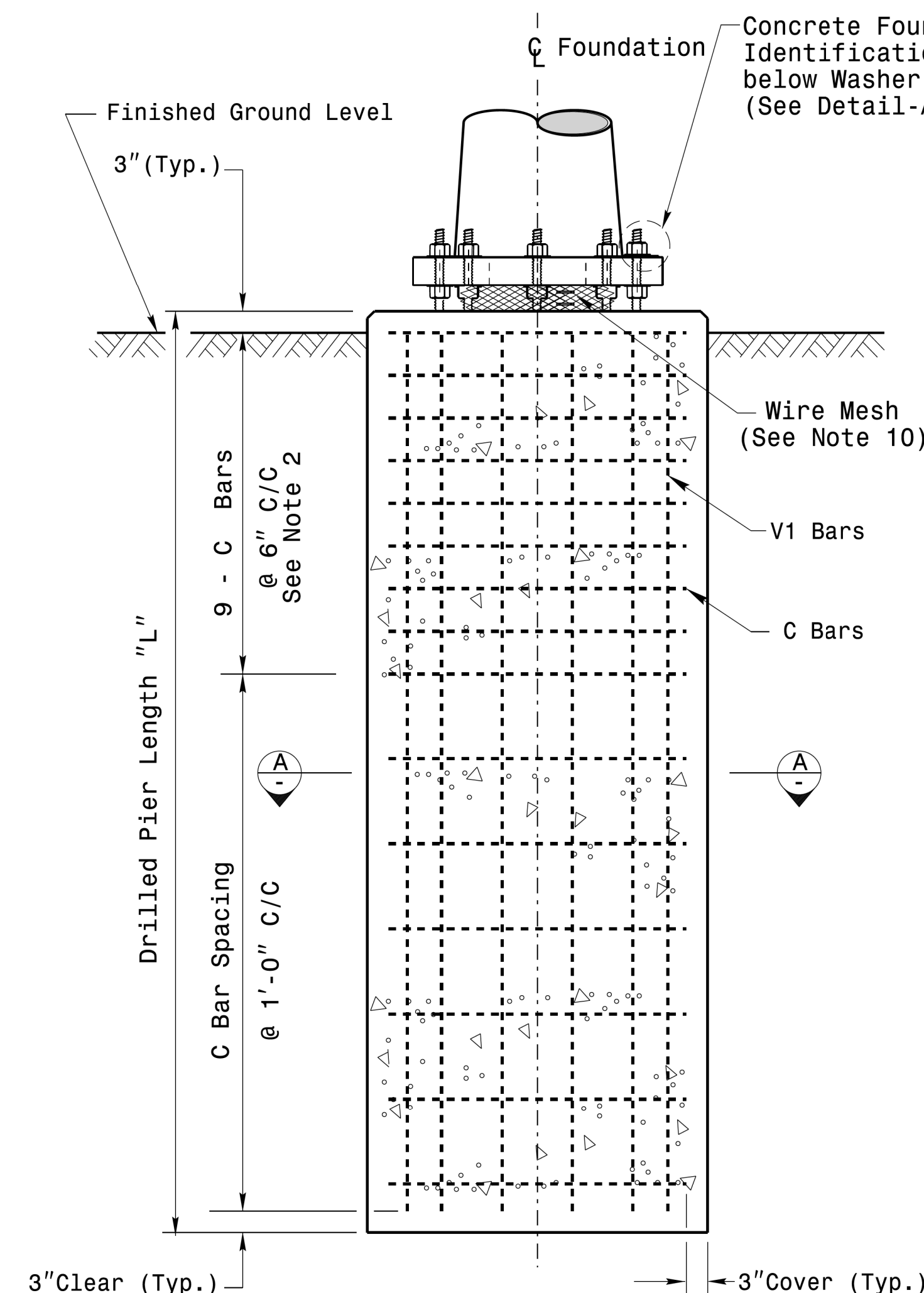
Notes:

1. Provide a permanent means of identification above the mast arm to indicate proper attachment orientation of the mast arm.
2. Designer will determine the size of all structural components, plates, fasteners, and welds shown unless they are already specified.
3. Fabricator is responsible for providing appropriate holes at drainage points to drain galvanizing materials.
4. For minimum edge distance follow AISC Table J3.4 and J3.5. For nominal bolt hole size use Table J3.3.
5. Provide upper handhole as necessary when shaft extensions are required for luminaire arms or camera. For poles without luminaires/camera, wiring can be done through the top of pole.
6. Allowable range of flange tilt angle will vary from 0° to as required.

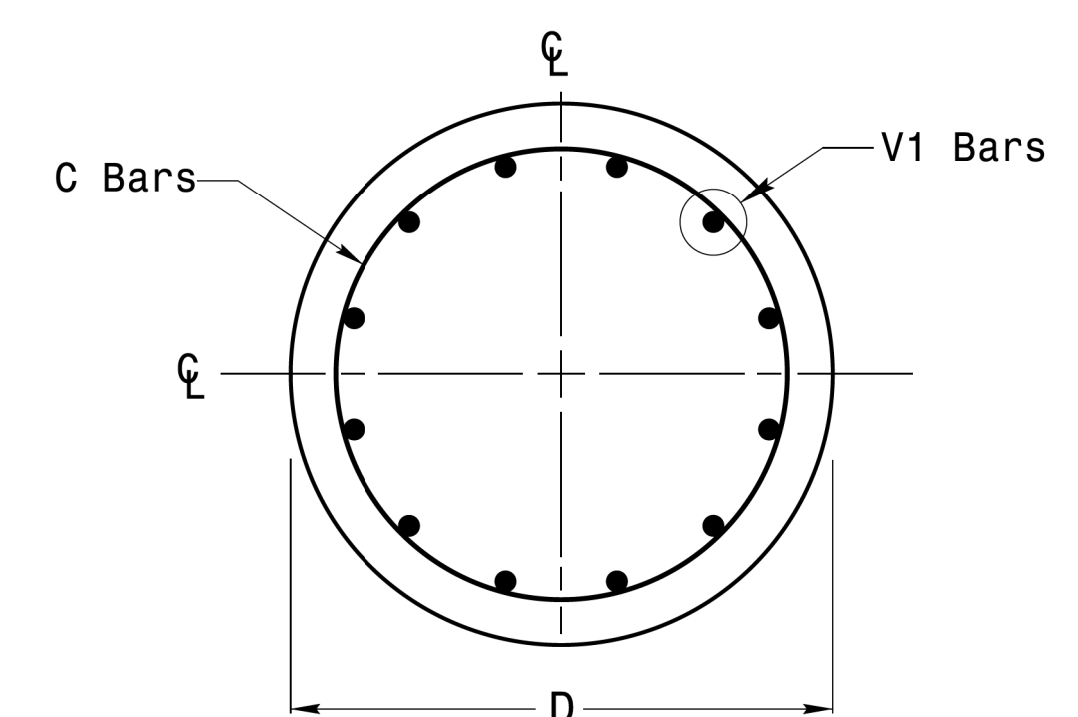
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Fabrication Details – Mast Arm Connection

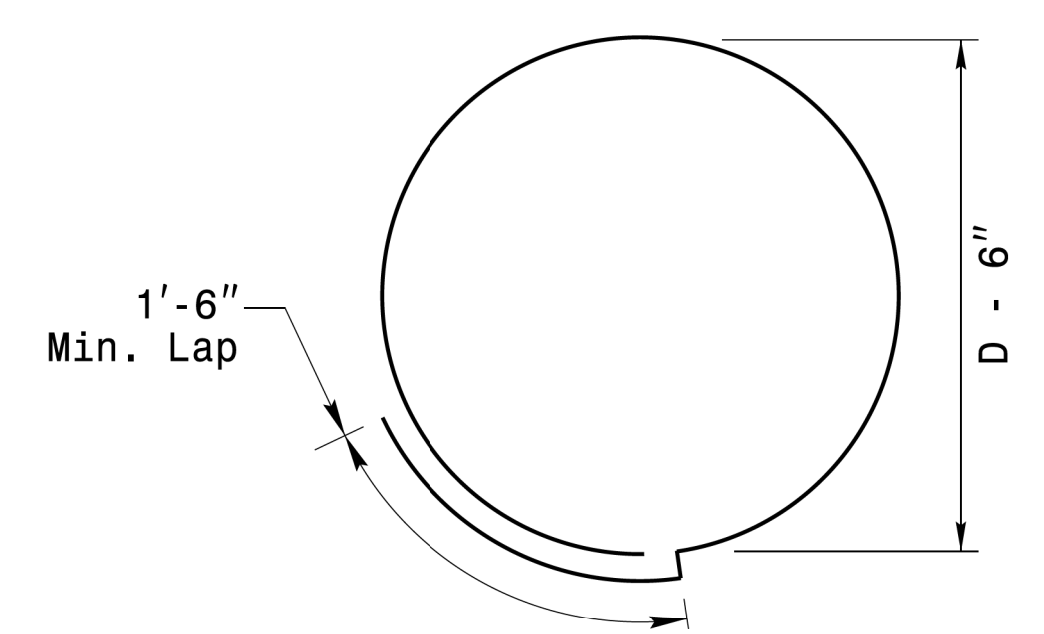
 Prepared In the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	Typical Fabrication Details For Mast Arm Connection To Pole		SEAL DEVESH C. SARKAR
	PLAN DATE: OCTOBER 2017 PREPARED BY: N. BITTING	DESIGNED BY: C. F. ANDREWS REVIEWED BY: D. C. SARKAR	
SCALE 0 NA NONE	DocuSigned by: Devesh C. Sarkar 10/11/2017 DATE		



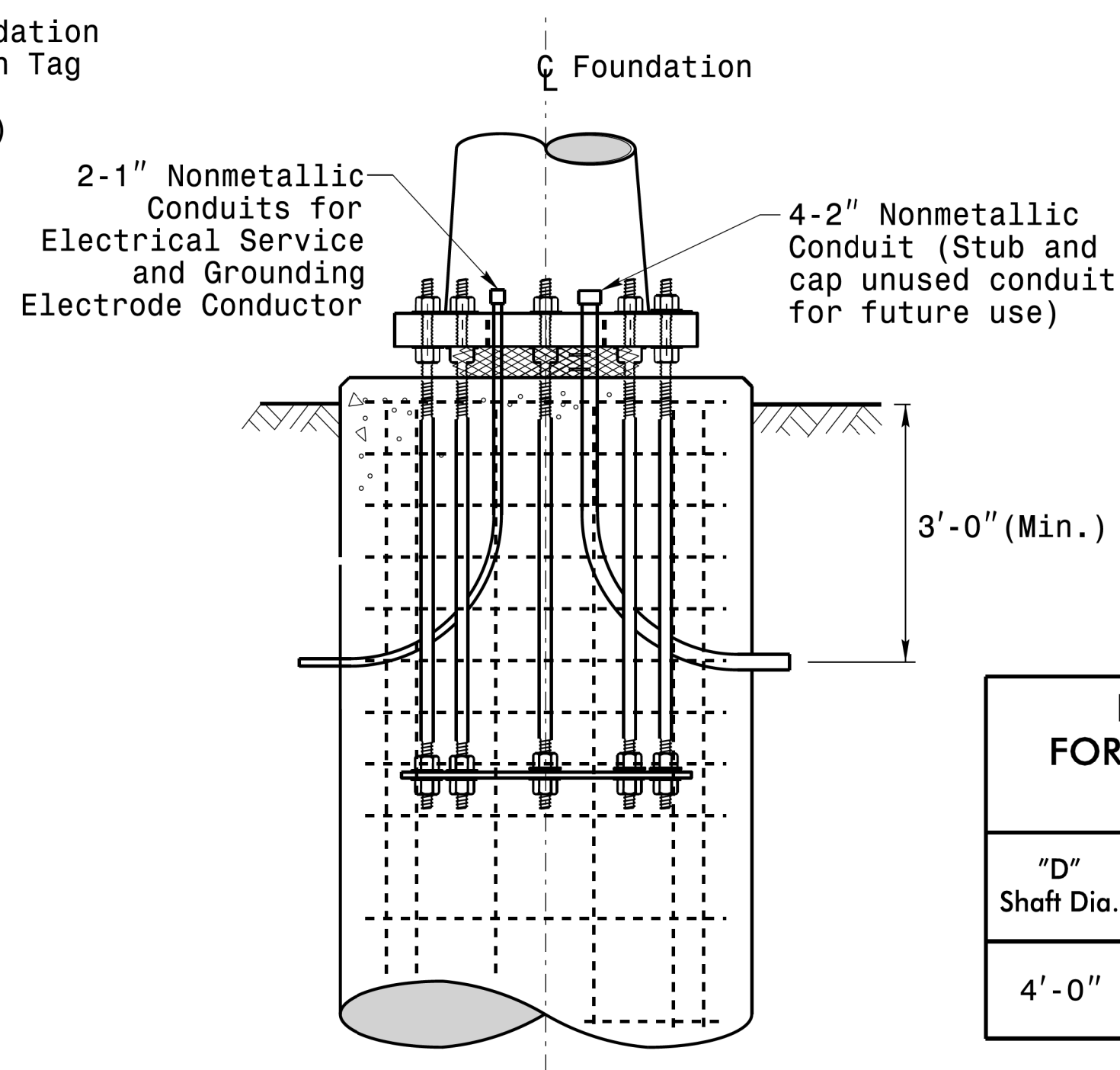
Concrete Shaft Elevation



Section A-A



Typical "C" Bar Detail



Typical Foundation Conduit Details

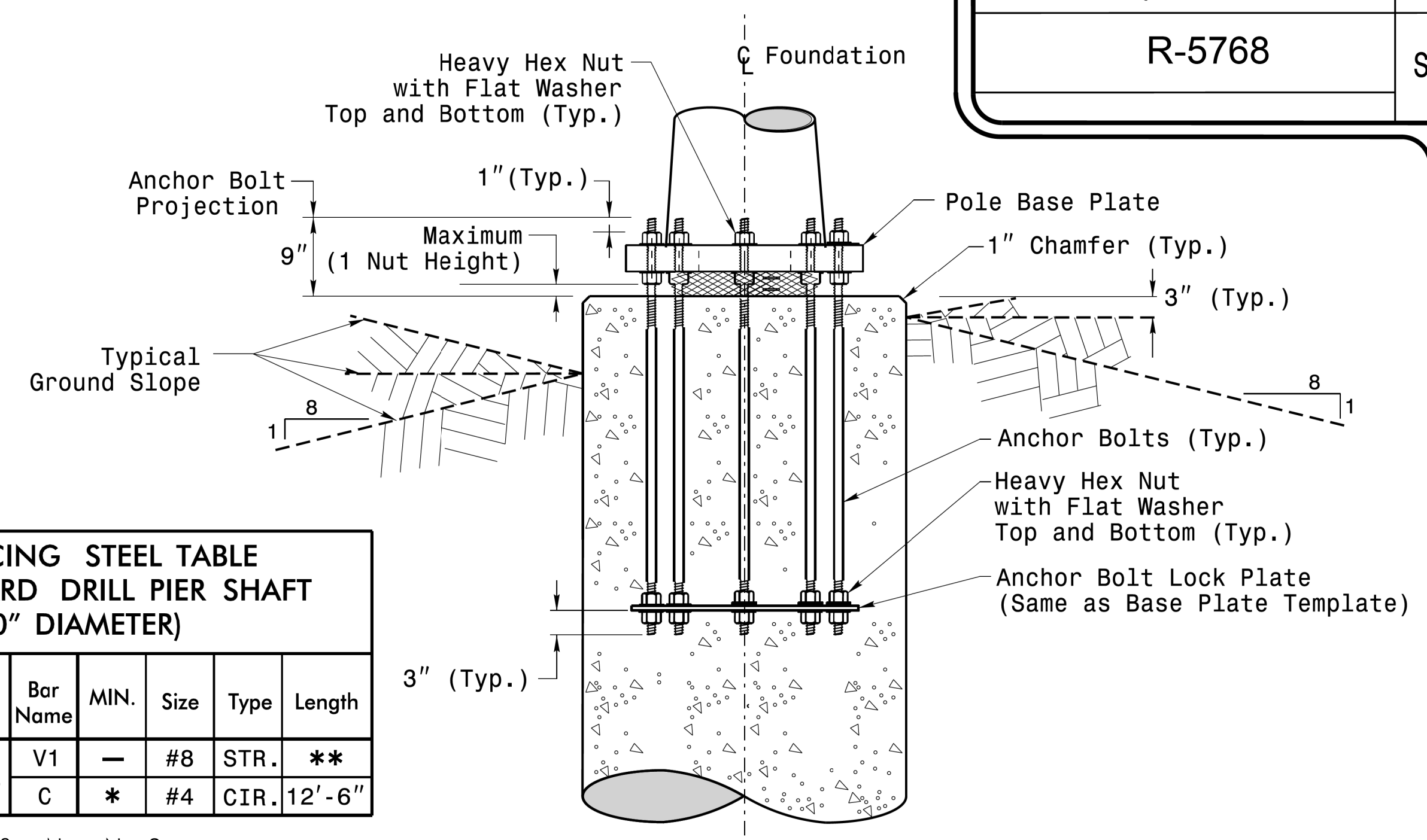
REINFORCING STEEL TABLE FOR STANDARD DRILL PIER SHAFT (4'-0" DIAMETER)

"D" Shaft Dia.	Conc. Volume (cu. yds.)	Bar Name	MIN.	Size	Type	Length
4'-0"	.465 x L	V1	-	#8	STR.	**
		C	*	#4	CIR.	12'-6"

* See Note No. 2
** See Note No. 3

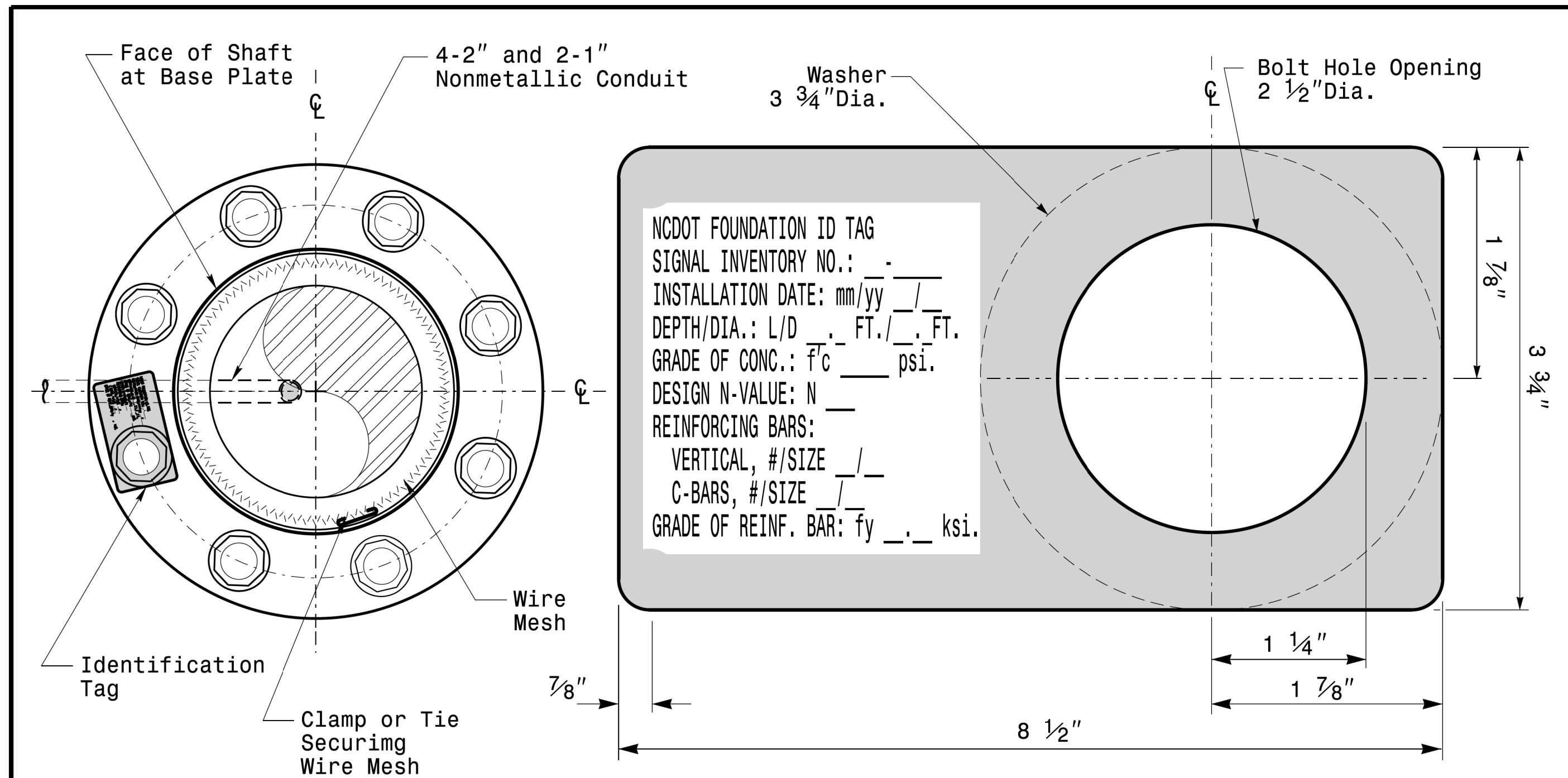
General Notes:

1. If actual subsurface conditions differ significantly from boring data contact the Engineer before excavating or placing concrete.
2. Circular tie reinforcing rings may be vertically adjusted by +/-3" at a depth between 2'-0" and 3'-0" to facilitate the installation of electrical conduit entering in the cage.
3. For standard foundations, see sheet Sig. M8 for details. Vertical reinforcing bars (V1) may be horizontally adjusted by +/-3" to facilitate the installation of electrical conduit entering into the cage.
4. Provide 2" to 5" foundation projection above ground level depending on the ground slope.
5. Unless otherwise shown, foundation designs are based on non-sloping level ground surfaces with slope ratios of 8:1 (H:V) or flatter. If actual ground line slopes are steeper contact the Engineer before excavating or placing concrete.
6. Construct foundations in accordance with NCDOT Standard Provisions SP09 R005- Foundations and Anchor Rod Assemblies for Metal Poles. All applicable 2018 NCDOT Standard Specifications are referenced in this provision. Refer to the NCDOT Resources/Specifications page located on the Connect NCDOT website.
[https://connect.ncdot.gov/resources/Specifications and Special Provisions.aspx](https://connect.ncdot.gov/resources/Specifications%20and%20Special%20Provisions.aspx)
7. Use air entrained AA concrete mix with a compression strength of f'c=4500 psi. (min.) after 28 days.
8. Use ASTM A615 grade 60 deformed bars for all reinforcing steel. Maintain at least 3" cover on all reinforcement.
9. Locate the Identification Tag on the top of the base plate, directly above the conduit's entry point.
10. Provide two layers of galvanized welded 23 gauge (0.25) 6" wide 4 mesh wire around pipes under the base plate and secure it with ties if necessary.
11. Preferred location for the I.D. Tag is as shown in Detail-A; directly above the conduit entering the foundation.



Typical Foundation Anchor Bolt Details

(Reinforcing Cage Not Shown for Clarity)



Concrete Foundation Identification Tag Details

D = Diameter
L = Length/Depth
mm = Month
yy = Year

Detail-A

Prepared in the Offices of:

 750 N. Greenfield Pkwy, Garner, NC 27529

Construction Details For Foundations	
PLAN DATE: OCTOBER 2018	DESIGNED BY: C.B. COGDILL
PREPARED BY: N. BITTING	REVIEWED BY: D.C. SARKAR
REV. NO.	DATE
1	5/11/2015
COMMENTS	INIT.
Revised Foundation Tag Details	N.B.

SEAL

 D.C. SARKAR
 10/11/2017
 DATE

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Construction Details - Foundations

SOIL CONDITION

PROJECT ID. NO. SHEET NO.

R-5768

Sig.M8

		STANDARD STRAIN POLES						STANDARD FOUNDATIONS 48" Diameter Drilled Pier Length (L) - Feet							Reinforcement			
		Case No.	Pole Height (Ft.)	Base Plate BC (In.)	Reactions at the Pole Base			Clay				Sand			Longitudinal		Stirrups	
					Axial (kip)	Shear (kip)	Moment (ft-kip)	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	Bar Size (#)	Quantity (ea.)	Bar Size (#)	Spacing (in.)
WIND ZONE 1	LIGHT	S26L3	26	25	2	11	270	19	13	10	8	17	14.5	12.5	8	12	4	12
		S30L3	30	25	2	11	300	19.5	13.5	10	8	17.5	15	13	8	14	4	12
		S35L3	35	25	3	11	320	20	13.5	10.5	8	17.5	15	13	8	14	4	12
	HEAVY	S30H3	30	29	3	16	450	24.5	16	12	9	21	17.5	15	8	16	4	6
		S35H3	35	29	4	16	515	26	17	12.5	9.5	22	18.5	16	8	16	4	6
WIND ZONE 2	LIGHT	S26L2	26	23	2	10	245	18	12.5	9.5	8	16.5	14	12	8	12	4	12
		S30L2	30	23	2	10	270	18.5	12.5	10	8	16.5	14	12.5	8	12	4	12
		S35L2	35	23	3	10	300	19.5	13	10	8	17	14.5	13	8	12	4	12
	HEAVY	S30H2	30	29	3	15	415	23	15.5	11.5	9	20	17	14.5	8	16	4	6
		S35H2	35	29	4	15	475	25	16.5	12	9.5	21	17.5	15.5	8	16	4	6
WIND ZONE 3	LIGHT	S26L2	26	23	2	10	245	18	12.5	9.5	8	16.5	14	12	8	12	4	12
		S30L2	30	23	2	10	270	18.5	12.5	10	8	16.5	14	12.5	8	12	4	12
		S35L2	35	23	3	10	300	19.5	13	10	8	17	14.5	13	8	12	4	12
	HEAVY	S30H2	30	29	3	15	415	23	15.5	11.5	9	20	17	14.5	8	16	4	6
		S35H2	35	29	4	15	475	25	16.5	12	9.5	21	17.5	15.5	8	16	4	6
WIND ZONE 4	LIGHT	S26L1	26	22	2	8	190	16	11.5	8.5	8	15	12.5	11	8	12	4	12
		S30L1	30	22	2	8	205	16.5	11.5	9	8	15	13	11.5	8	12	4	12
		S35L1	35	22	3	8	230	17	12	9	8	15.5	13.5	11.5	8	12	4	12
	HEAVY	S30H1	30	25	3	12	320	20.5	13.5	10.5	8	18	15	13.5	8	16	4	6
		S35H1	35	25	4	12	350	21	14	10.5	8.5	18.5	15.5	13.5	8	16	4	6
WIND ZONE 5	LIGHT	S26L2	26	23	2	10	245	18	12.5	9.5	8	16.5	14	12	8	12	4	12
		S30L2	30	23	2	10	270	18.5	12.5	10	8	16.5	14	12.5	8	12	4	12
		S35L2	35	23	3	10	300	19.5	13	10	8	17	14.5	13	8	12	4	12
	HEAVY	S30H2	30	29	3	15	415	23	15.5	11.5	9	20	17	14.5	8	16	4	6
		S35H2	35	29	4	15	475	25	16.5	12	9.5	21	17.5	15.5	8	16	4	6

General Notes:

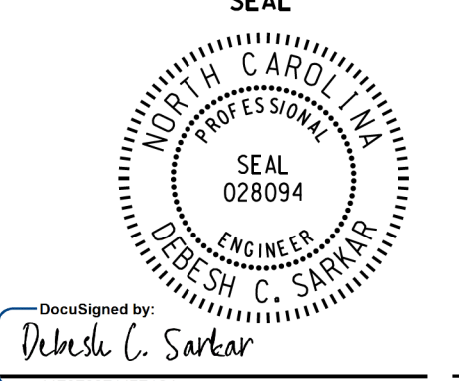
- Values shown in the "Reactions at the Pole Base" column represent the minimum acceptable capacity allowed for design using a design CSR of 1.00.
- Use chairs and spacers to maintain proper clearance.
- For foundation, always use air-entrain concrete mix.

Foundation Selection:

- Perform a standard penetration test at each proposed foundation site to determine "N" value.
- Select the appropriate wind zone from M 1 drawing.
- Select the soil type (Clay or Sand) that best describes the soil characteristics.
- Get the appropriate standard pole case number from the plans or from the Engineer.
- Select the appropriate column under "Standard Foundations" based on soil type and "N" value. Select the appropriate row based on the pole load case.
- The foundation depth is the value shown in the "Standard Foundations" category where the column and the row intersect.
- Use Construction Procedures and Design Methods prescribed by FHWA-NHI-10-016 for Reference Drilled Shafts.

Standard Strain Pole Foundation - All Soil Condition

48" Dia. Foundations Concrete Volume (cubic yards) = (0.465) x Drilled Pier Length



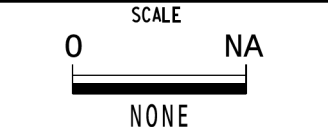
SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
028094
DINESH C. SARKAR

Standard Strain Pole Foundation for All Soil Conditions

PLAN DATE: OCTOBER 2017 DESIGNED BY: C.B. COGDELL
 PREPARED BY: N. BITTING REVIEWED BY: D.C. SARKAR

REVISIONS: INIT. DATE
 Changed "Foundation Depth" to "Drilled Pier Length" in Conc. Eq. N.B. 7/12/2015

DocuSigned by: *Dinesh C. Sarkar* 10/11/2017



SCALE
0 NA
NONE

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