

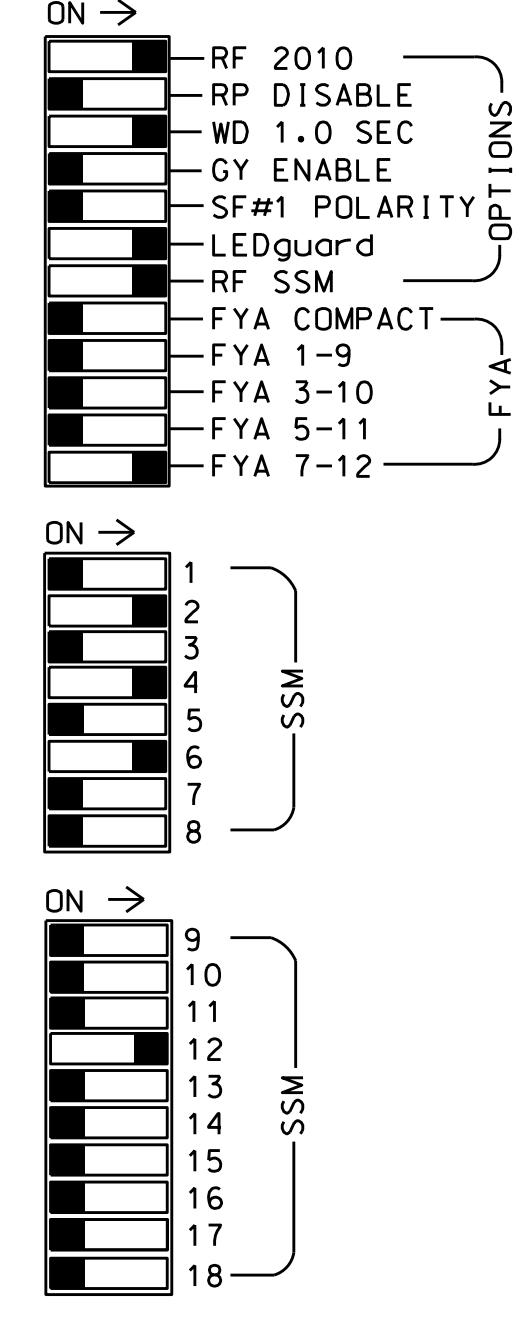
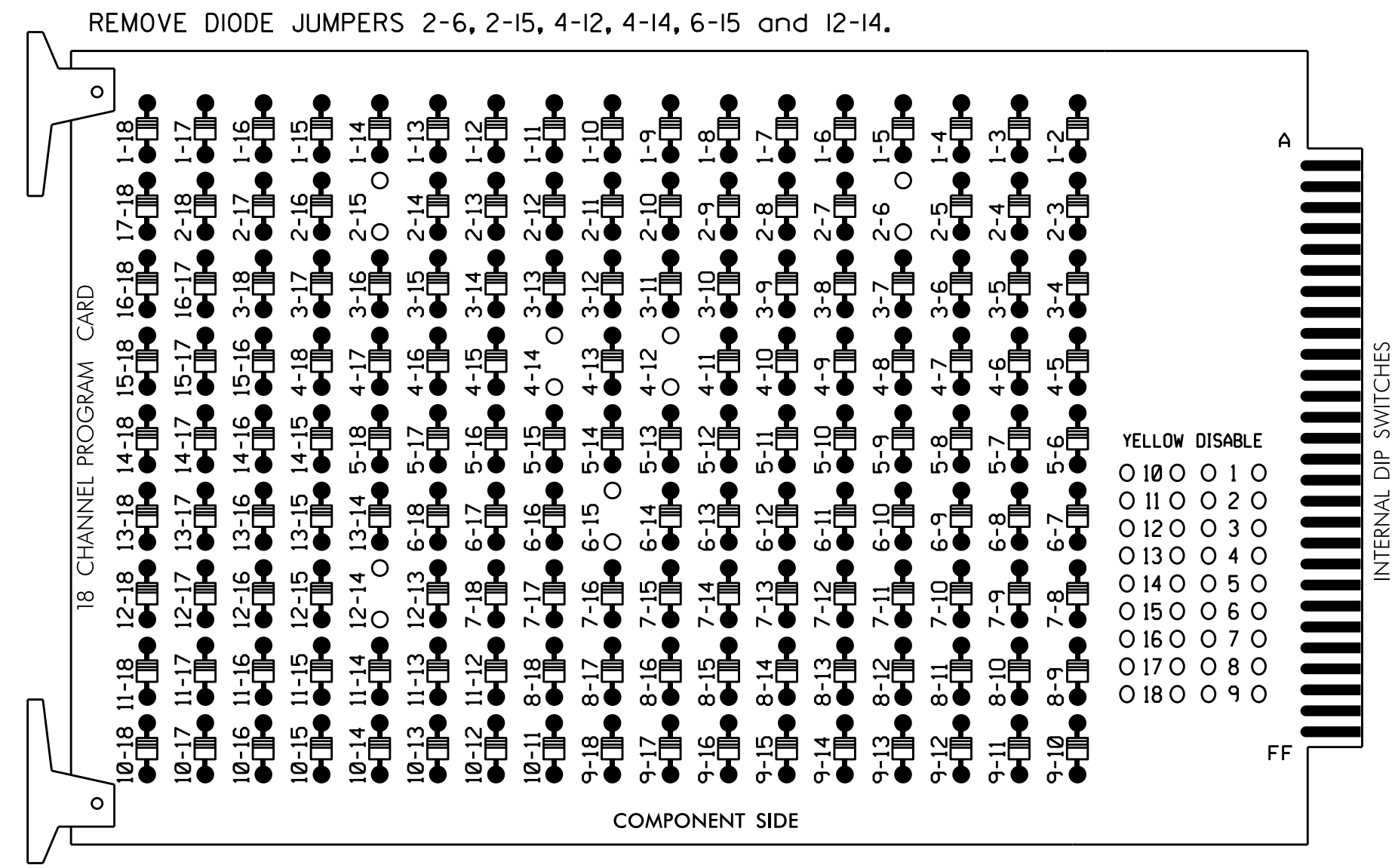
**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



- YELLOW DISABLE
- 10 0 0 0 1 0
 - 11 0 0 0 2 0
 - 12 0 0 0 3 0
 - 13 0 0 0 4 0
 - 14 0 0 0 5 0
 - 15 0 0 0 6 0
 - 16 0 0 0 7 0
 - 17 0 0 0 8 0
 - 18 0 0 0 9 0

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Ensure Conflict Monitor Ethernet port is connected to a Switch port located within the cabinet.

INPUT FILE POSITION LAYOUT

(front view)

FILE U	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I"	∅ 2	∅ 2	∅ 2C	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4
L	∅ 2B	NOT USED	∅ 4B	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4	∅ 4
FILE U	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6
L	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6	∅ 6

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Initialize database in Naztec 2070 local software (Apogee) as FULL-CALTRANS. This initialization should be done prior to programming controller.
- Initialize I/O "C1-C11-ABC IO Mode" to USER (MM 1-8-6). Then set "Init 2A" to MODE 5 (MM 1-8-9-3).
- Program phases 2 and 6 for Start Up In Green.
- Program "Start Up Flash" for 0 sec. The conflict monitor will govern start-up flash time.
- Ensure "Local Flash Start" feature is set to "DRK".
- Ensure "InhFYARedSt" feature is set to "ON".
- Program controller to provide a 1 second delay on the Flash Sense/Local Flash input. Use the following logic statement to provide this functionality:
FROM MAIN MENU->1->8->7 (I/O LOGIC) $\left\{ \begin{array}{l} \text{Result Src.Fcn} \\ 1208 = 01208 \end{array} \right\} \left\{ \begin{array}{l} \text{TimeOp Time} \\ \text{DLY} \quad 1 \end{array} \right\}$
- The cabinet and controller are part of the City of Greensboro Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....TRAFFICWARE APOGEE
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 (12-STD, 6-AUX)
LOAD SWITCHES USED.....S2,S5,S6,S8,S9,AUX S5
PHASES USED.....2,4,4 PED,6,6 PED
OVERLAP A.....NOT USED
OVERLAP B.....NOT USED
OVERLAP C.....NOT USED
OVERLAP D.....*

* See Overlap Programming Detail Sheet 2.

SIGNAL HEAD HOOK-UP CHART

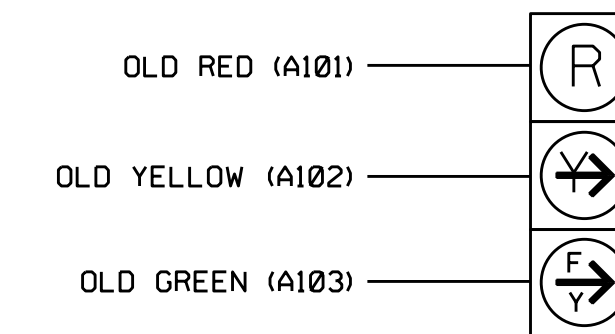
LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	21, 22, 23	NU	NU	41	P41, P42	NU	61, 62	P61, P62	NU	NU	NU	NU	NU	NU	NU	42	NU
RED		128			101			134									A101	
YELLOW		129						135										
GREEN																		
RED ARROW																		
YELLOW ARROW						102											A102	
FLASHING YELLOW ARROW																		A103
GREEN ARROW		130				103		136										
Hand							104			119								
Walking									106			121						

NU = Not Used

* See pictorial of head wiring in detail below.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal head as shown)



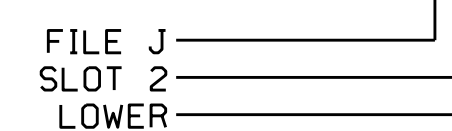
42

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	CALL PHASE	SWITCH	DELAY TIME	EXTEND TIME	CALL	EXTEND	ADDED INIT.
2A	TB2-5,6	I2U	39	2	2				X	X	X
2B	TB2-7,8	I2L	43	3	2				X	X	X
2C	TB2-9,10	I3U	63	4	2				X	X	X
4A	TB4-9,10	I6U	41	8	4				X	X	
4B	TB4-11,12	I6L	45	9	4		15		X	X	
6A	TB3-5,6	J2U	40	16	6				X	X	X
6B	TB3-7,8	J2L	44	17	6				X	X	X
PED PUSH BUTTONS											
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED						
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED						

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

INPUT FILE POSITION LEGEND: J2L



This Plan Supersedes Electrical Details Sealed on 11/23/2022 and 4/13/2023

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 07-0638
DESIGNED: January 2024
SEALED: 1/29/2024
REVISED: N/A

Electrical Detail - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:



750 N. Greenfield Pkwy, Corner, NC 27529

SR 2526 (Summit Avenue) at US 70 EB-US 220 SB (East Wendover Avenue) Ramps

Division 7 Guilford County Greensboro
PLAN DATE: January 2024 REVIEWED BY:
PREPARED BY: Zarrar Zafar REVIEWED BY:

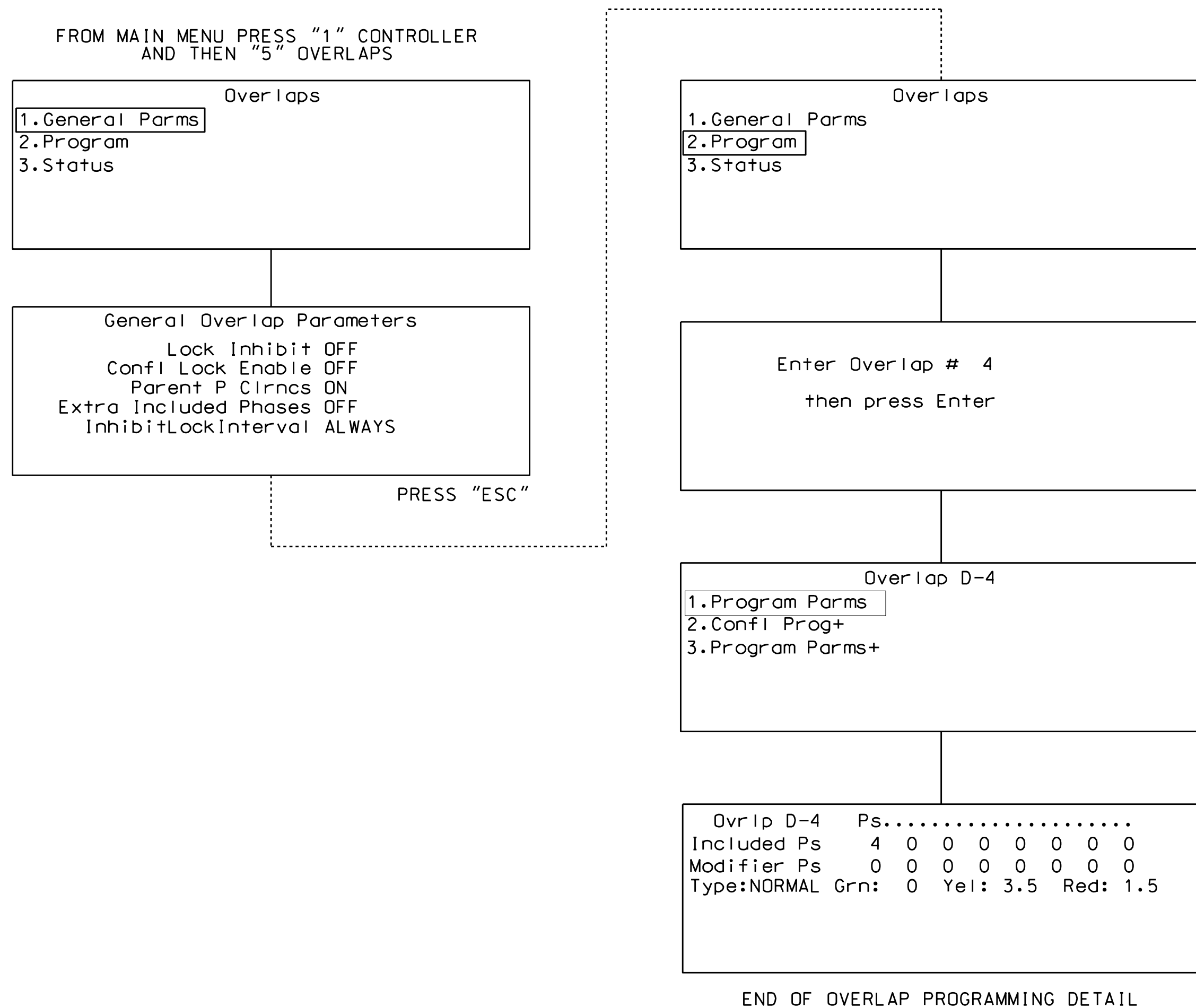
REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 031001
TODD JOYCE
DESIGNED BY: D. Todd Joyce 02/01/2024
DATE
SIG. INVENTORY NO. 07-0638

OVERLAP PROGRAMMING DETAIL FOR OVERLAP D

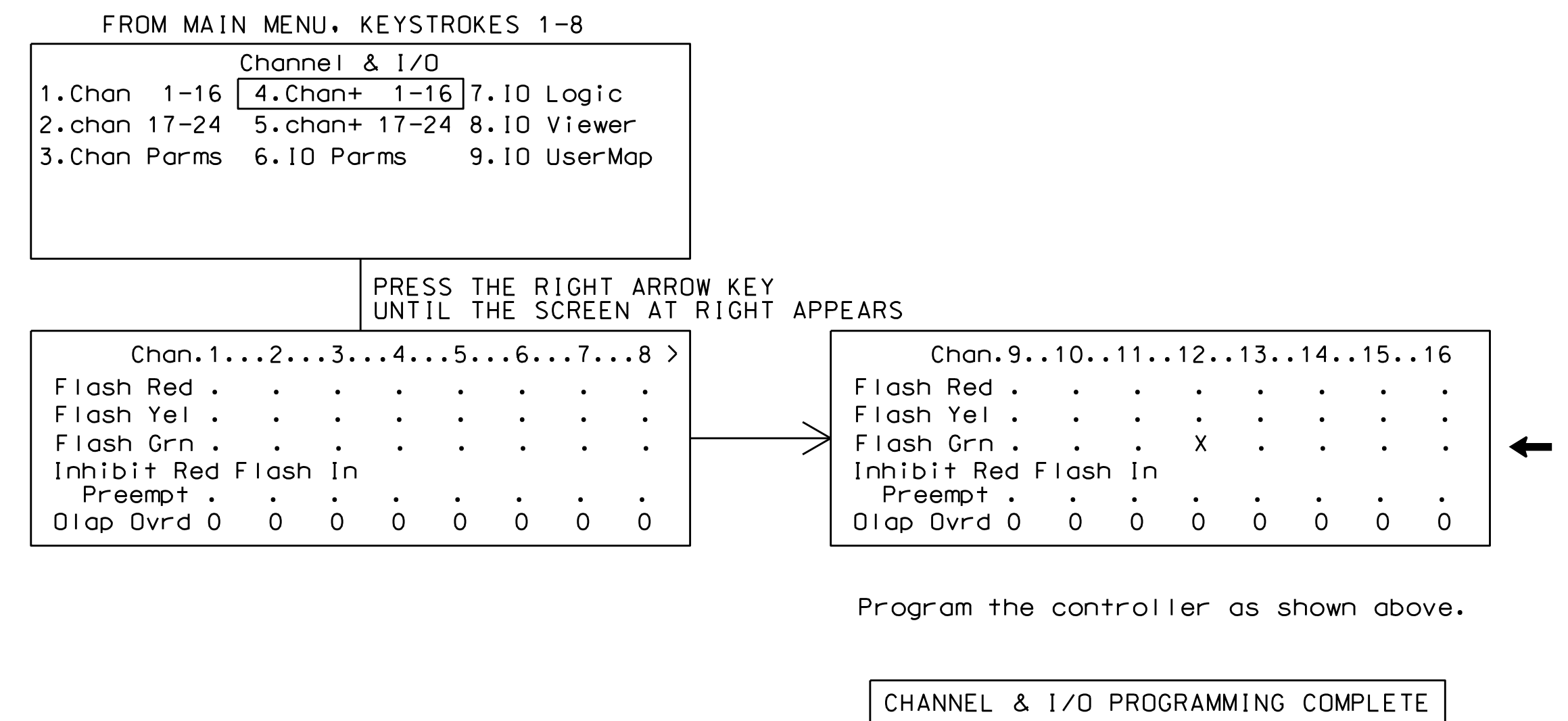
(program controller as shown below)



CHANNEL & I/O PROGRAMMING DETAIL FOR FYA OPERATION

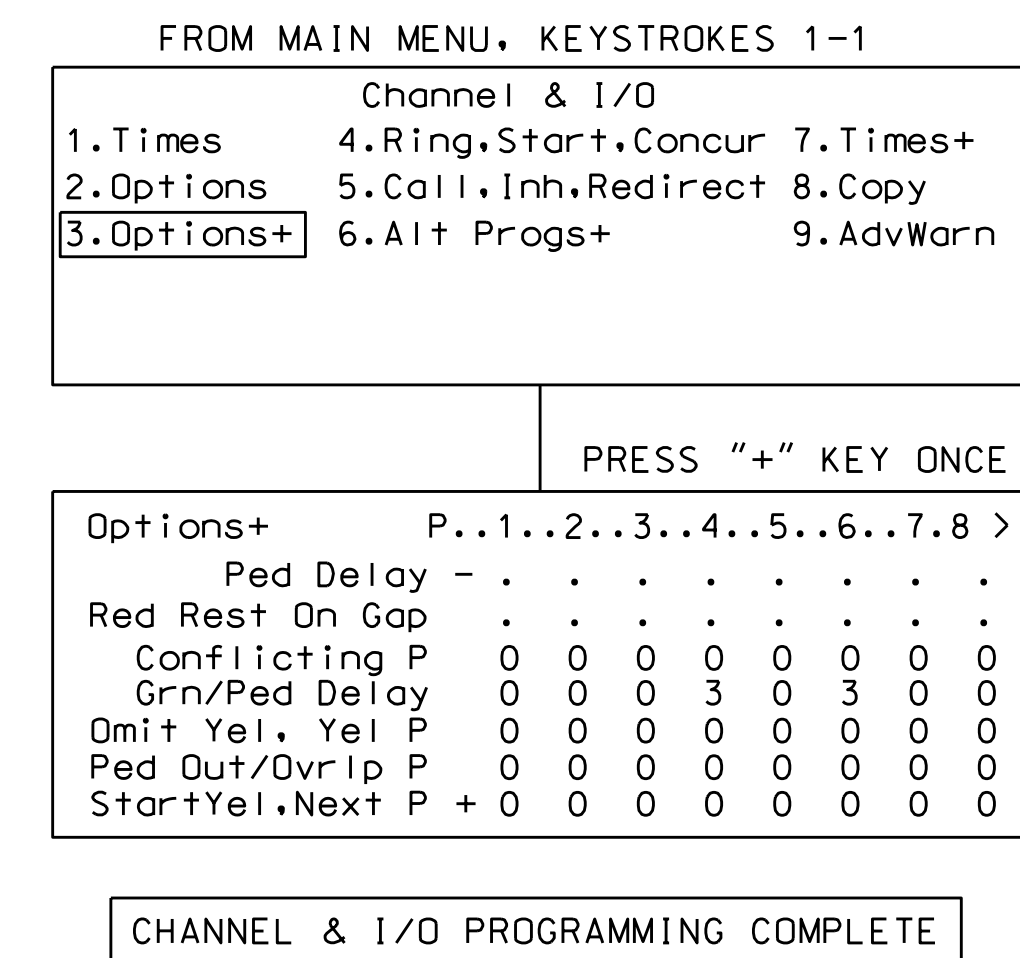
(program controller as shown below)

This programming takes the output that drives a Flashing Yellow Arrow and makes it flash.



GREEN DELAY PROGRAMMING DETAIL FOR LEADING PEDESTRIAN INTERVAL OPERATION

(program controller as shown below)



FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

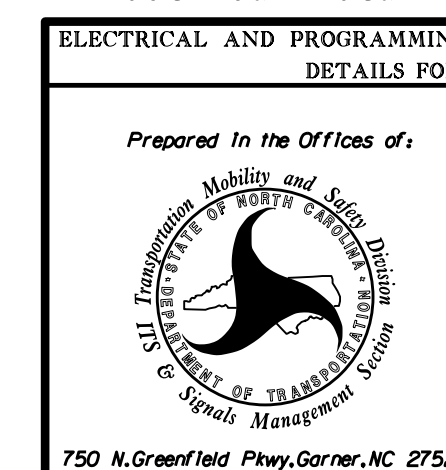
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

This Plan Supersedes Electrical Details Sealed on 11/23/2022 and 4/13/2023

Electrical Detail - Sheet 2 of 2

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 07-0638
DESIGNED: January 2024
SEALED: 1/29/2024
REVISED: N/A



SR 2526 (Summit Avenue)	
at US 70 EB-US 220 SB (East Wendover Avenue) Ramps	
Division 7	Guilford County Greensboro
PLAN DATE: January 2024	REVIEWED BY:
PREPARED BY: Zarrar Zafar	REVIEWED BY:
REVISIONS	INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

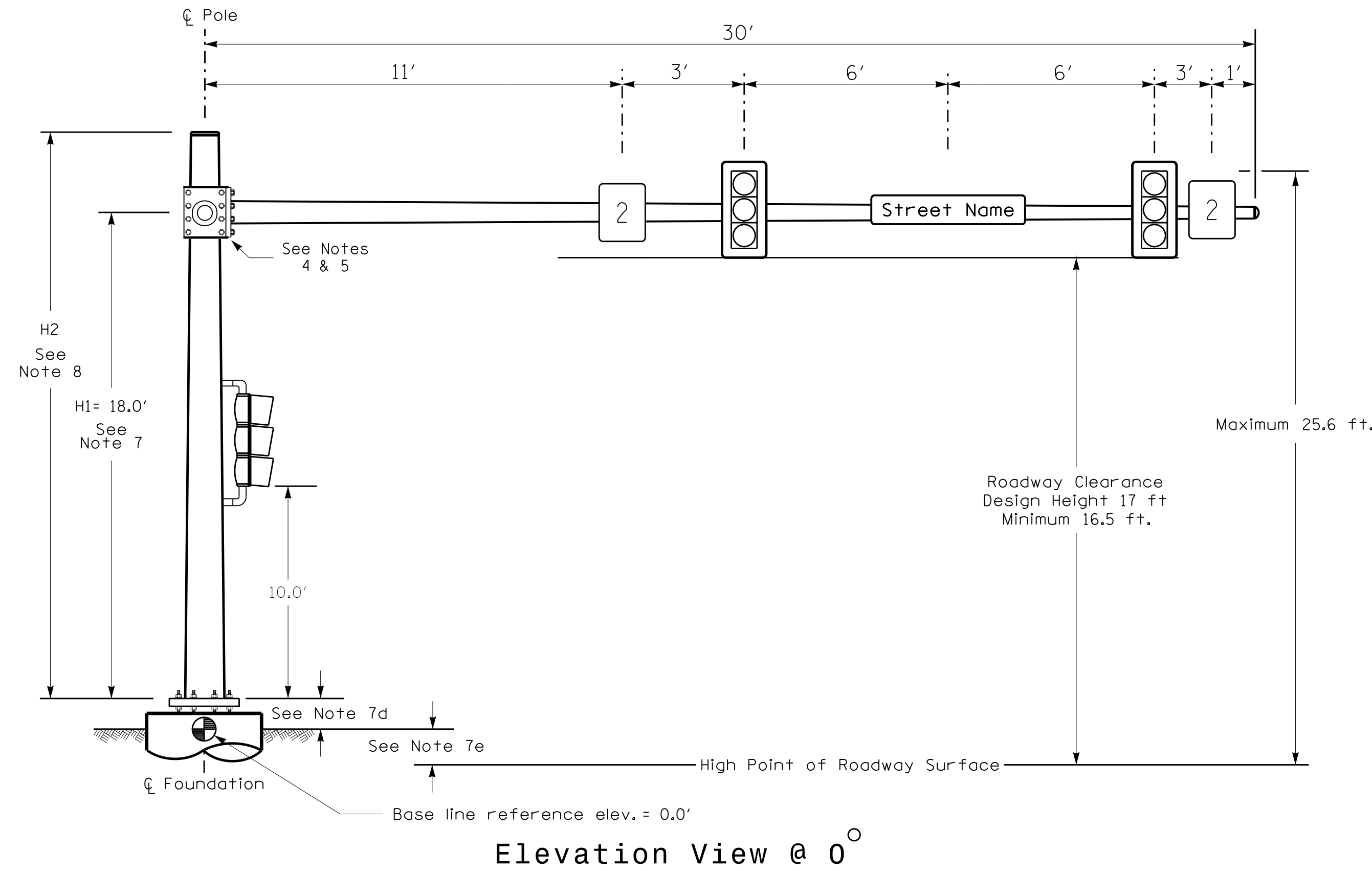
Seal of Todd Joyce, Professional Engineer, License No. 031001, State of North Carolina.

DocuSigned by: Todd Joyce 02/01/2024

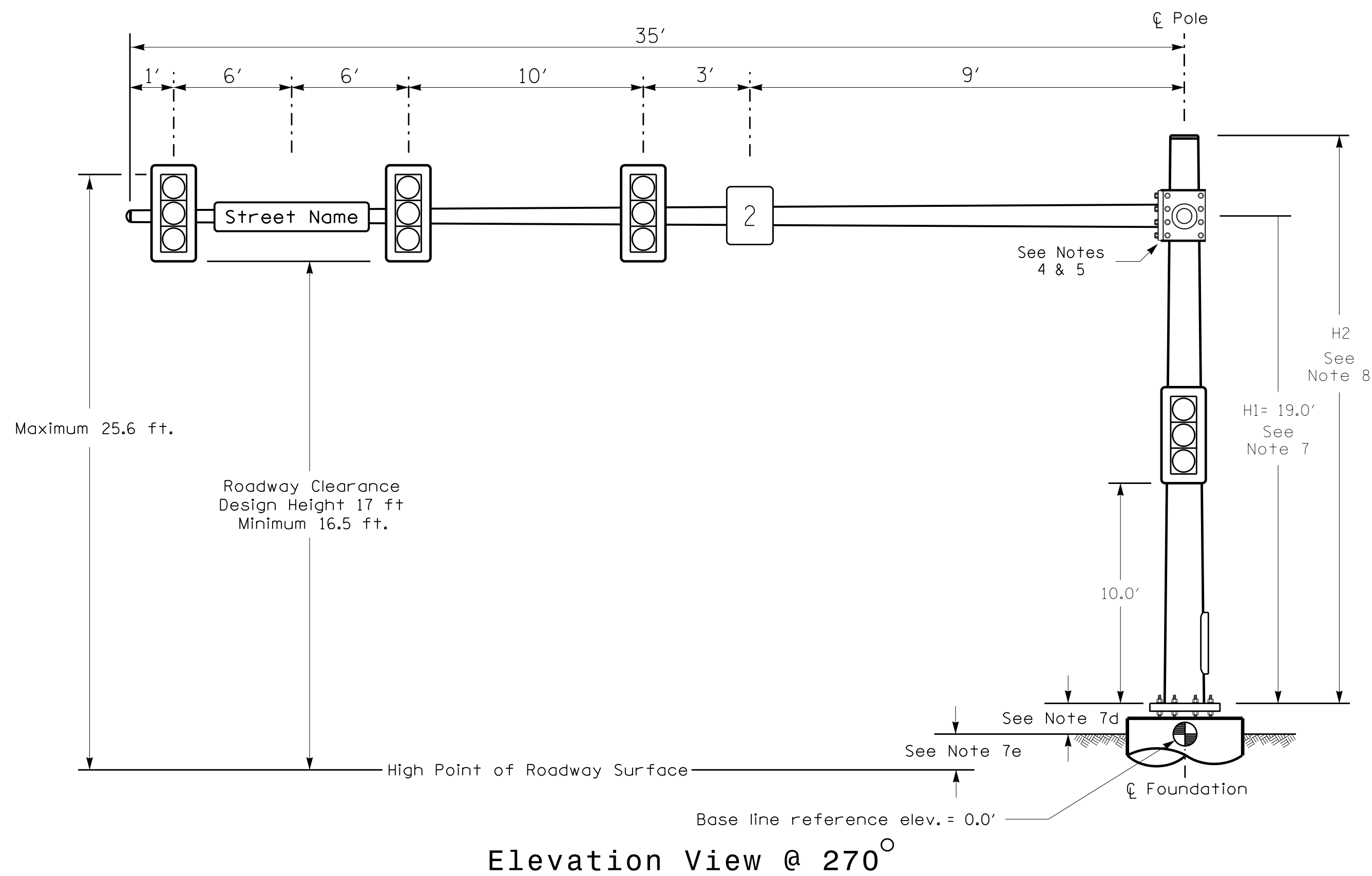
SIG. INVENTORY NO. 07-0638

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Design Loading for METAL POLE NO. 1, MAST ARM A



Design Loading for METAL POLE NO. 1, MAST ARM B

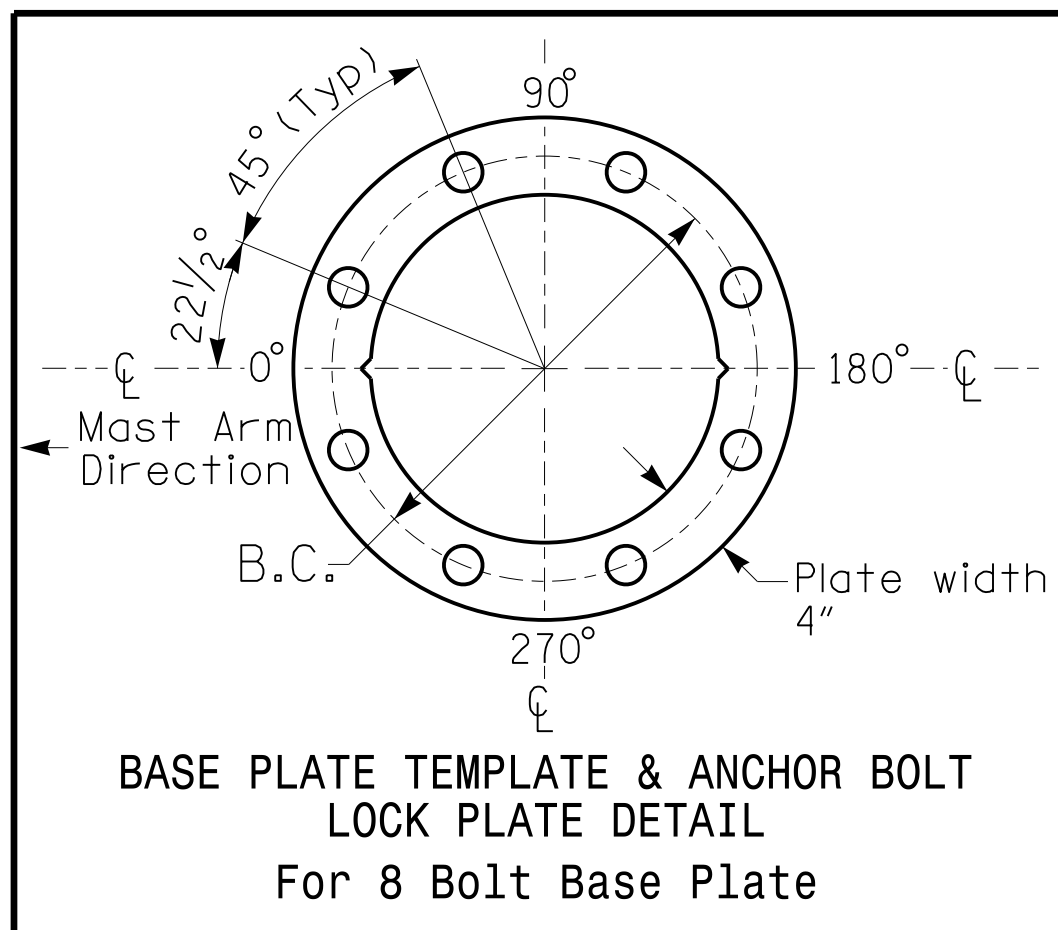
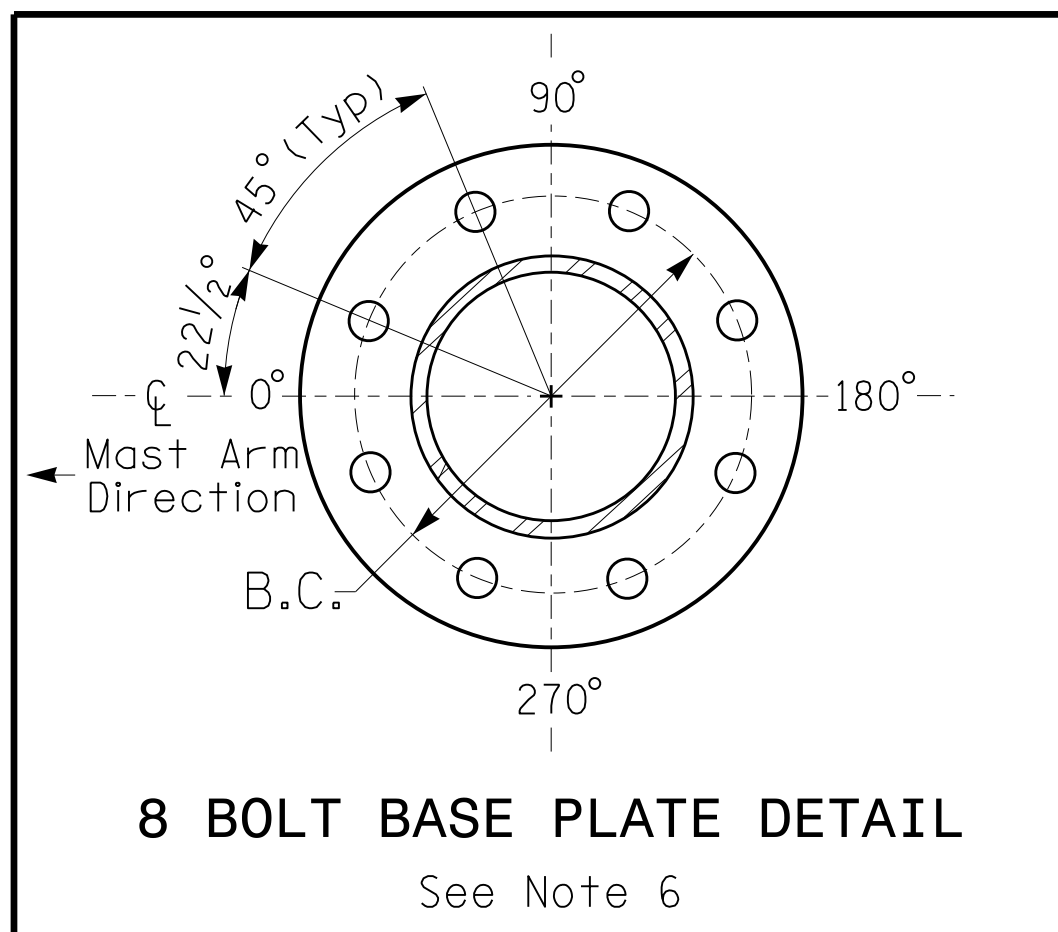
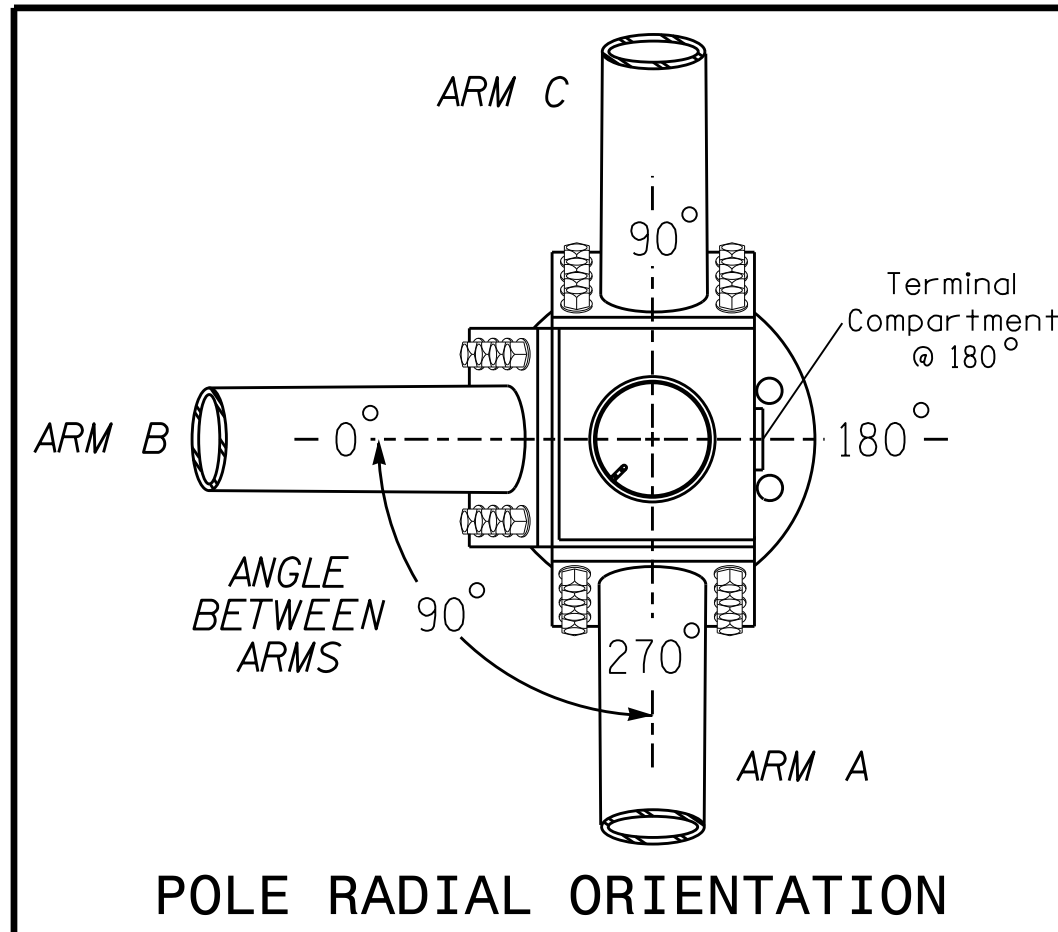


SPECIAL NOTE

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:	Arm A	Arm B
Baseline reference point at ϕ Foundation @ ground level	0.0 ft.	0.0 ft.
Elevation difference at High point of roadway surface	-0.6 ft.	+0.2 ft.
Elevation difference at Edge of travelway or face of curb	-0.6 ft.	+0.1 ft.



METAL POLE No. 1

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS
	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS

NOTES

DESIGN REFERENCE MATERIAL

- Design the traffic signal structure and foundation in accordance with:
 - The 1st Edition 2015 AASHTO LRFD "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
 - The 2024 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
 - The 2024 NCDOT Roadway Standard Drawings.
 - The traffic signal project plans and special provisions.
 - The NCDOT "Metal Pole Standards" located at the following NCDOT website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

DESIGN REQUIREMENTS

- 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 installation.
- Design all signal supports using force ratios that do not exceed 0.9.
- 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.
- 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.
- Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- The mast arm attachment height (H1) shown is based on the following design assumptions:
 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Signal heads are rigidly mounted and vertically centered on the mast arm.
 - The roadway clearance height for design is as shown in the elevation views.
 - The top of the pole base plate is 0.75 feet above the ground elevation.
 - Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
- 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.
- 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) 814-5000.
- The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

This plan supersedes the plan signed and sealed on 3/9/23.

NCDOT Wind Zone 4 (90 mph)

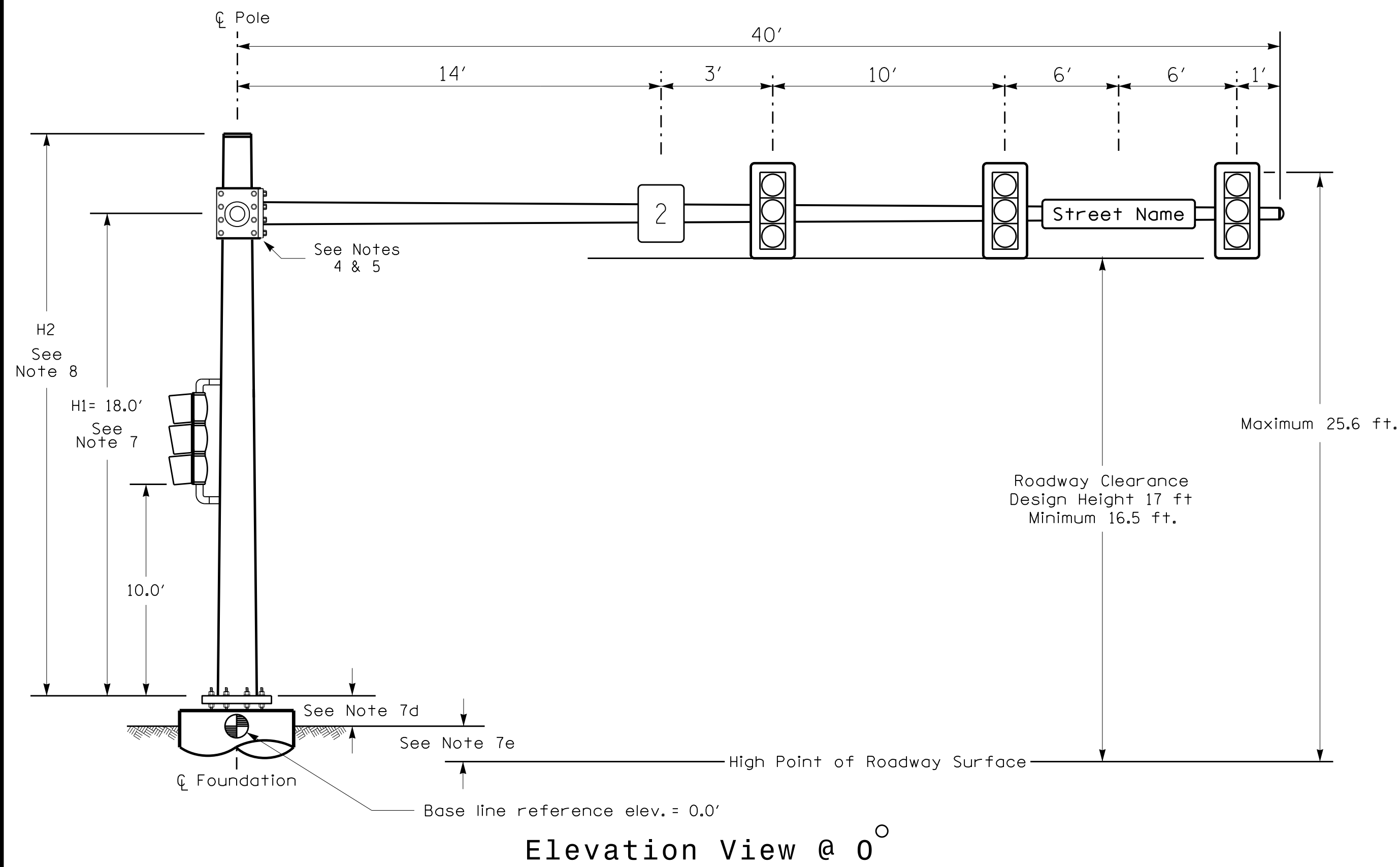
	SR 2526 (Summit Avenue) at US 70 EB-US 220 SB (East Wendover Avenue) Ramps Division 7 Guilford County Greensboro		
	PLAN DATE: January 2024 PREPARED BY: J.A. Lohr	REVIEWED BY: REVISIONS INIT. DATE	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 026486
 ROBERT J. ZIEMBA
 02/05/2024
 DATE
 SIG. INVENTORY NO. 07-0638

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 7/1/2024

Design Loading for METAL POLE NO. 1, MAST ARM C

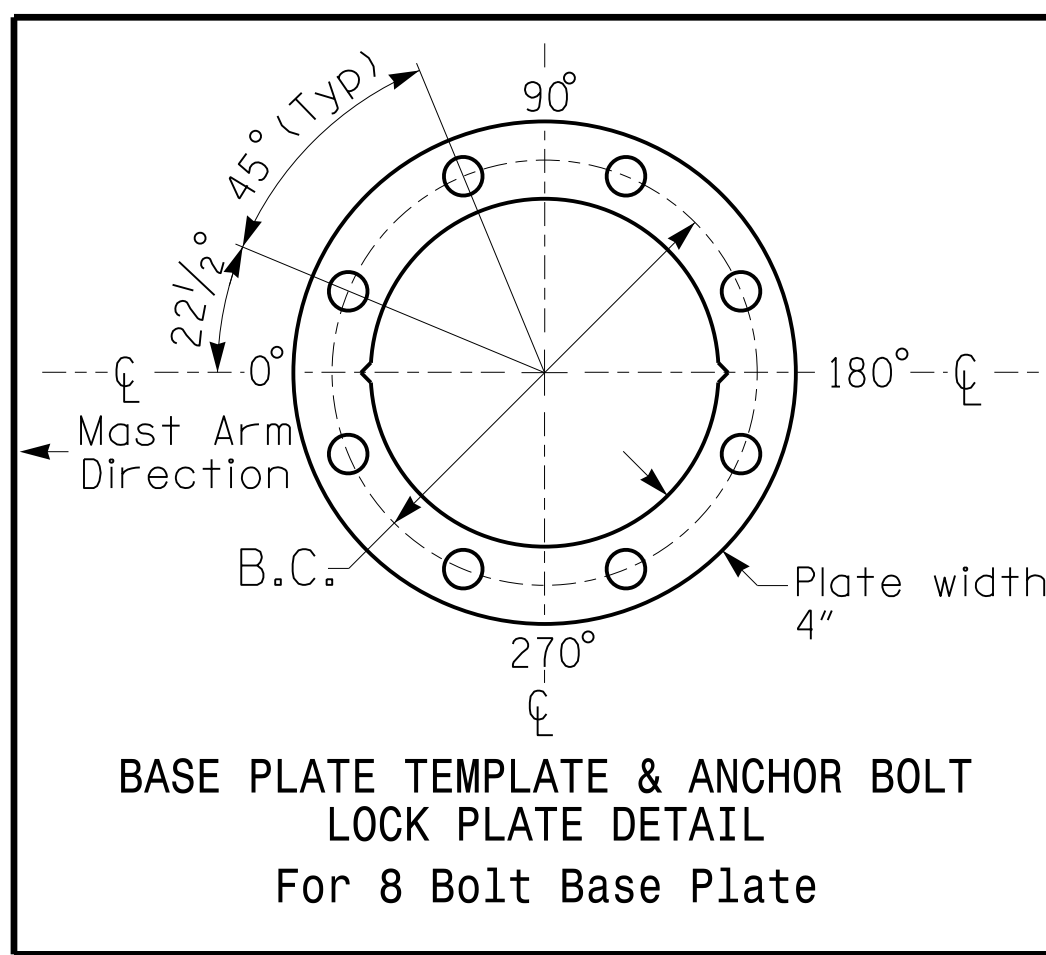
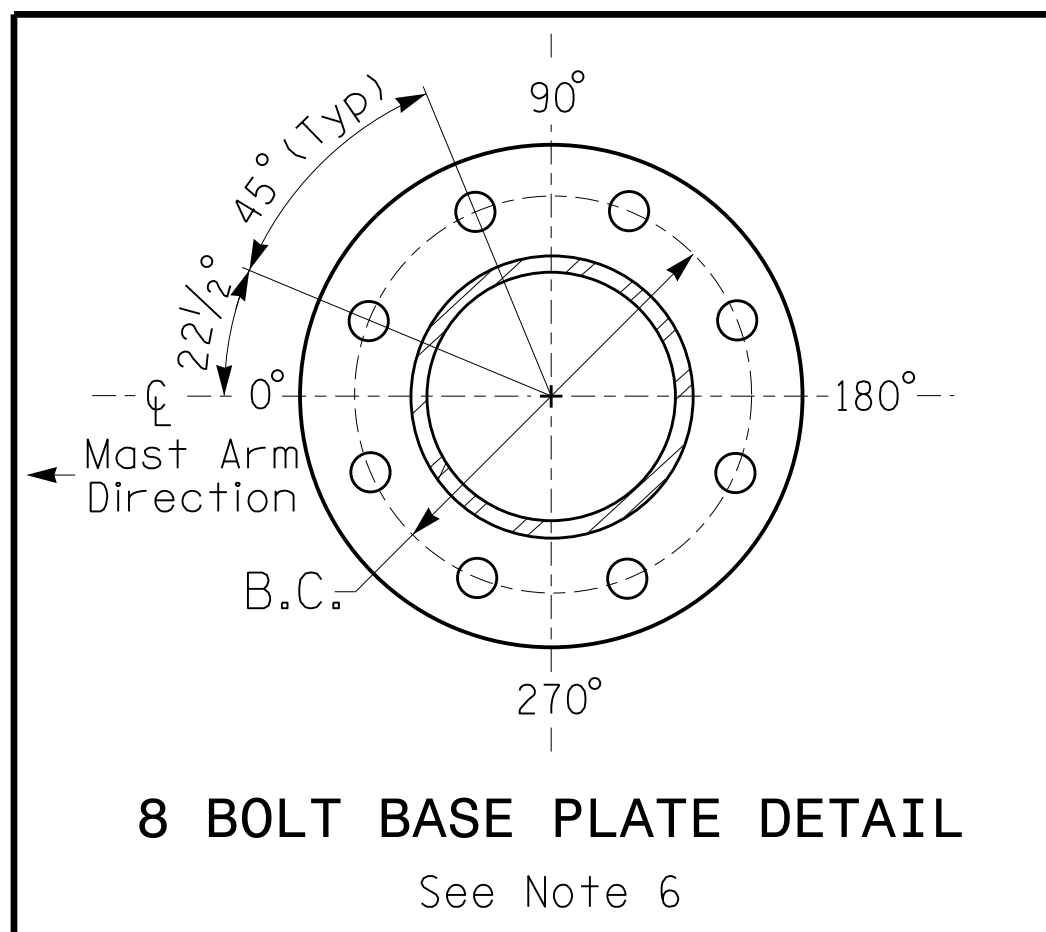
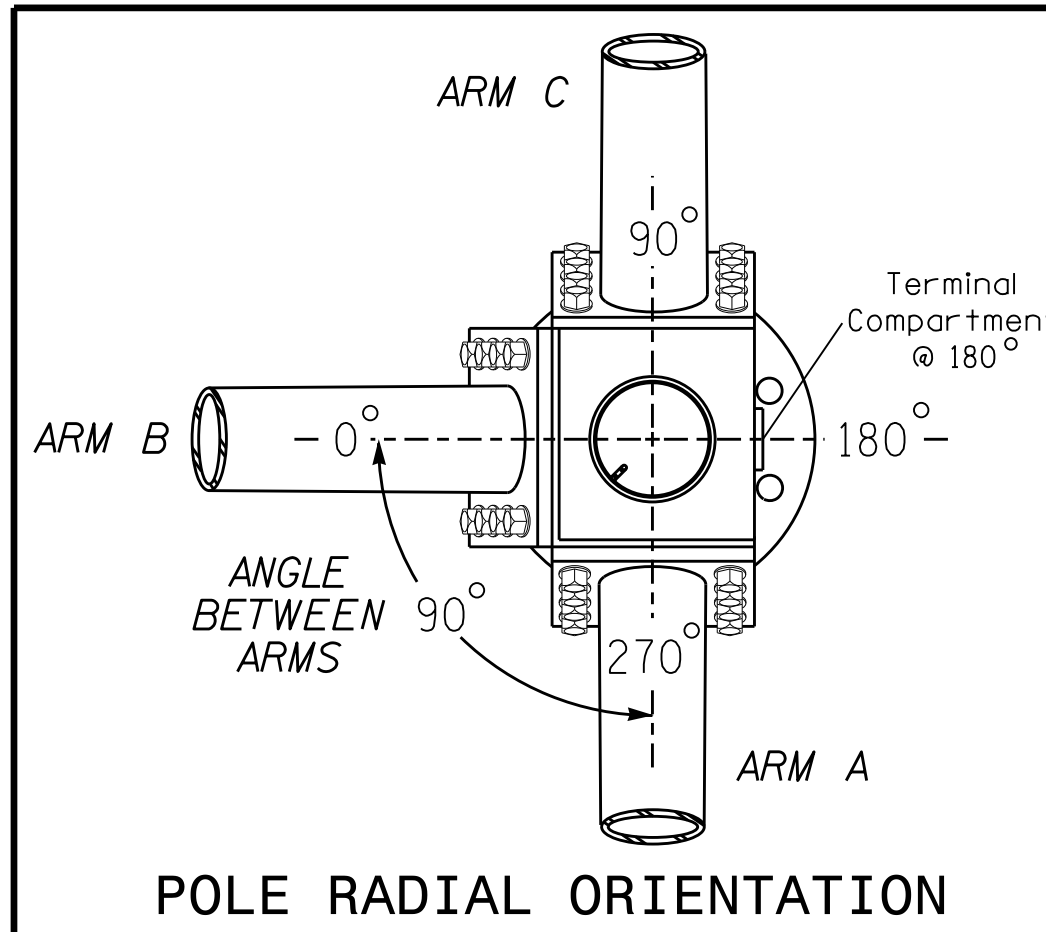


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Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Arm C
Baseline reference point at ϕ Foundation @ ground level	0.0 ft.
Elevation difference at High point of roadway surface	-0.6 ft.
Elevation difference at Edge of travelway or face of curb	-0.6 ft.



METAL POLE No. 1

PROJECT REFERENCE NO.	SHEET NO.
W-5807A	Sig 5

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
2	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS
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- Design all signal supports using force ratios that do not exceed 0.9.
- 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.
- 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.
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- The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

This plan supersedes the plan signed and sealed on 3/9/23.

NCDOT Wind Zone 4 (90 mph)

<p>Prepared In the Offices of: TRANSPORTATION MOBILITY AND SAFETY DIVISION SIGNAL DESIGN SECTION 750 N. Greenfield Pkwy, Garner, NC 27529</p>	SR 2526 (Summit Avenue) at US 70 EB-US 220 SB (East Wendover Avenue) Ramps Division 7 Guilford County Greensboro		
	PLAN DATE: January 2024 PREPARED BY: J.A. Lohr	REVIEWED BY: REVISIONS INIT. DATE	

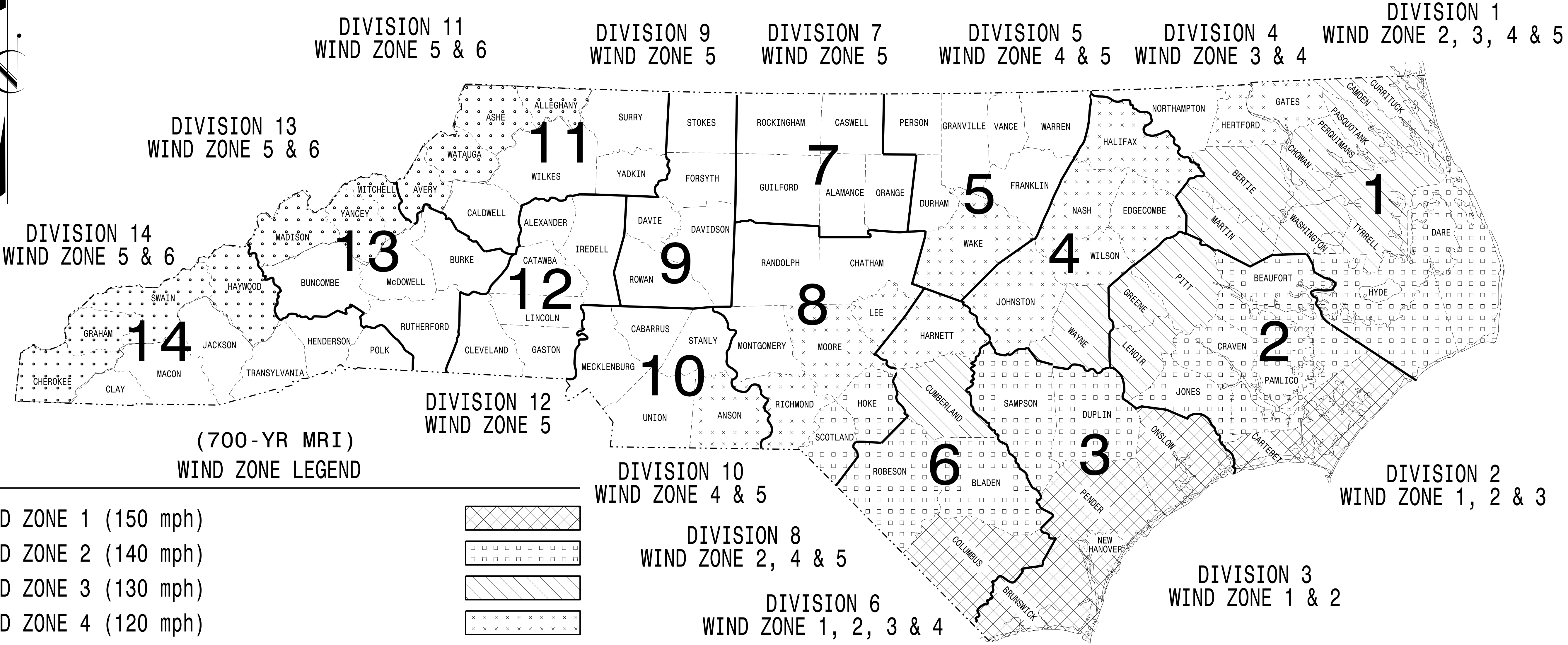
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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NORTH CAROLINA PROFESSIONAL ENGINEER
ROBERT J. ZIEMBA
026486
02/05/2024
DATE
SIG. INVENTORY NO. 07-0638

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 JAL

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

STANDARD DRAWINGS FOR ALL METAL POLES (LRFD)



(700-YR MRI)
WIND ZONE LEGEND

WIND ZONE 1 (150 mph)	
WIND ZONE 2 (140 mph)	
WIND ZONE 3 (130 mph)	
WIND ZONE 4 (120 mph)	
WIND ZONE 5 (110 mph)	
WIND ZONE 6 (135 mph) Special Wind Zone	

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

NC DOT METAL POLE STANDARDS

03-001-2023 1P-07
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Prepared In the Offices of:

750 N. Greenfield Pkwy.
Garner, NC 27529

Designed in conformance
with the latest
2020 Interim to the
1st Edition 2015

AASHTO LRFD

Standard Specifications for
Highway Signs, Luminaires,
and Traffic Signals

DRAWING NUMBER	INDEX OF PLANS DESCRIPTION
Sig. M 1A	Statewide Wind Zone Map (700-yr MRI)
Sig. M 1B	Statewide Wind Zone Map (10-yr MRI)
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
Sig. M 9	Typical Fabrication Details-CCTV Camera Poles

**MOBILITY AND SAFETY DIVISION -
TRANSPORTATION SYSTEMS MANAGEMENT
AND OPERATIONS UNIT**

D.Y. ISHAK - STATE SIGNALS ENGINEER
K. DURIGON, P.E. - ITS AND SIGNALS STRUCTURAL ENGINEER
B. WALKER, P.E. - ITS AND SIGNALS STRUCTURAL ENGINEER

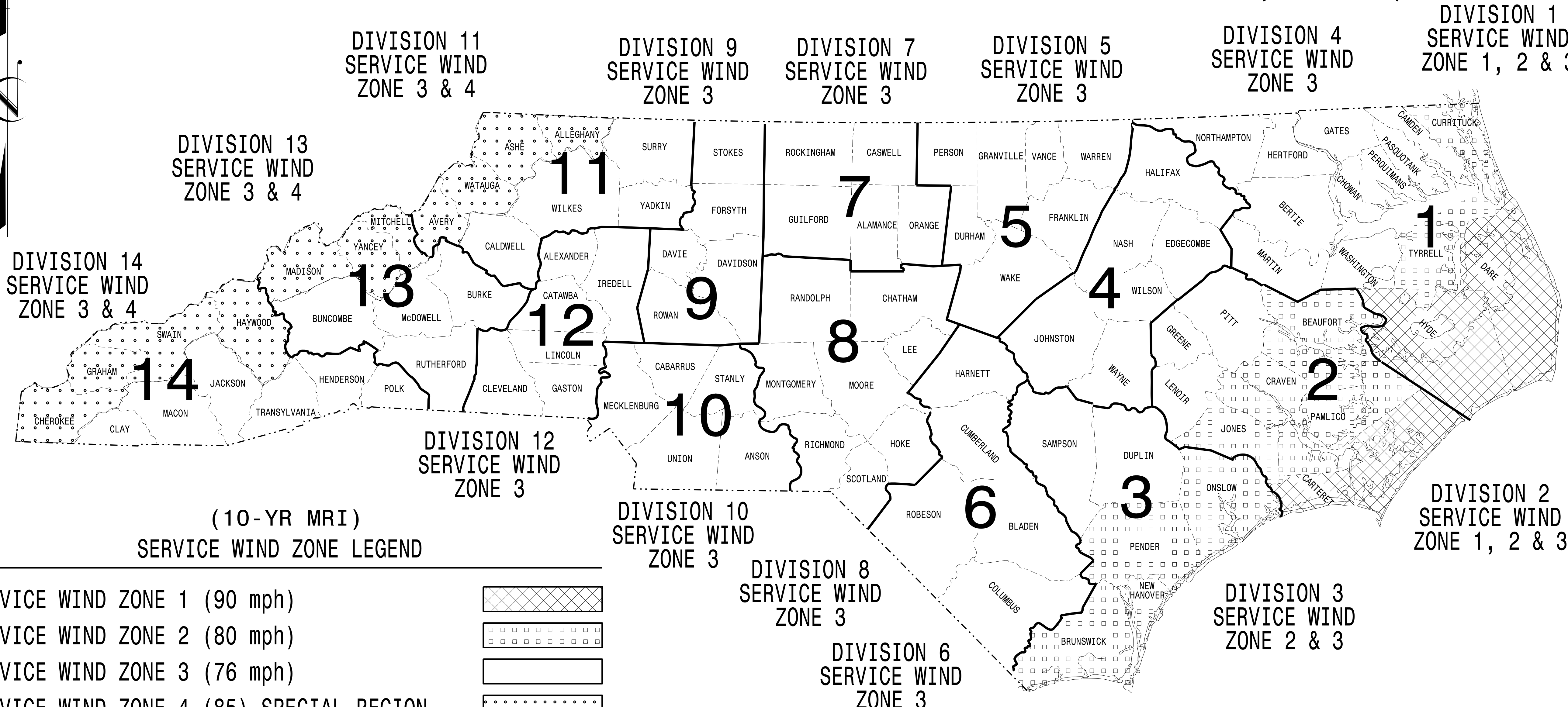
SEAL

DocuSigned by:
Kevin Durigon
SIGNATURE
4B23DC79B3764DA

09/21/2023
DATE

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

STANDARD DRAWINGS FOR ALL METAL POLES (LRFD)



(10-YR MRI)
SERVICE WIND ZONE LEGEND

SERVICE WIND ZONE 1 (90 mph)	
SERVICE WIND ZONE 2 (80 mph)	
SERVICE WIND ZONE 3 (76 mph)	
SERVICE WIND ZONE 4 (85) SPECIAL REGION	

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

NC DOT METAL POLE STANDARDS

03-OCT-2023 10:51 S:\IT\AS\14\15\Sig\Drawings\Drawings\2024\Metal Pole (10-yr MRI).dgn

Prepared in the Offices of:

750 N. Greenfield Pkwy.
Garner, NC 27529

Designed in conformance with the latest 2020 Interim to the 1st Edition 2015

AASHTO LRFD

Standard Specifications for Highway Signs, Luminaires, and Traffic Signals

DRAWING NUMBER	INDEX OF PLANS DESCRIPTION
Sig. M 1A	Statewide Wind Zone Map (700-yr MRI)
Sig. M 1B	Statewide Wind Zone Map (10-yr MRI)
Sig. M 2	Typical Fabrication Details-All Metal Poles
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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
Sig. M 9	Typical Fabrication Details-CCTV Camera Poles

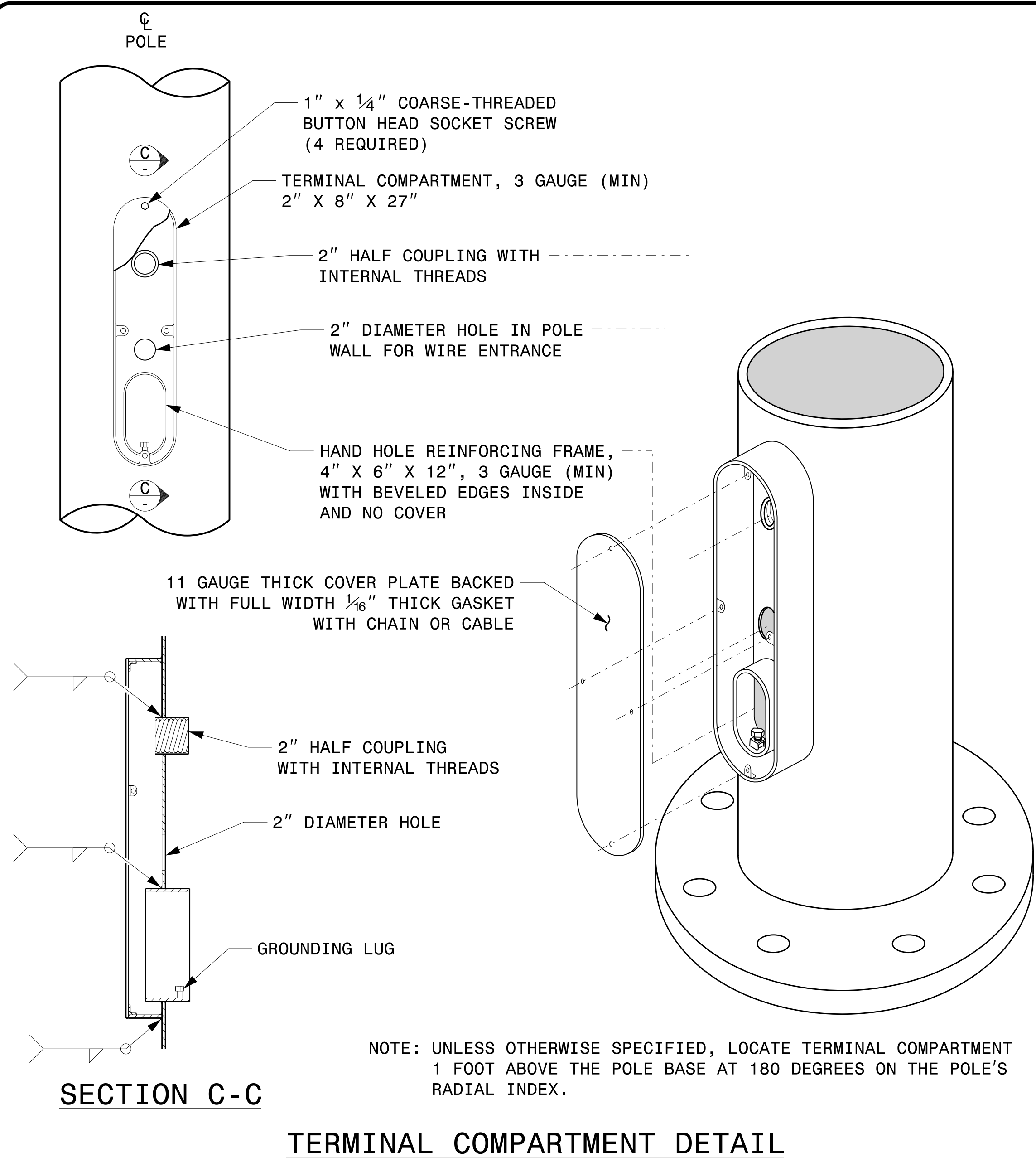
NC DOT CONTACTS:
MOBILITY AND SAFETY DIVISION -
TRANSPORTATION SYSTEMS MANAGEMENT
AND OPERATIONS UNIT

D.Y. ISHAK - STATE SIGNALS ENGINEER
K. DURIGON, P.E. - ITS AND SIGNALS STRUCTURAL ENGINEER
B. WALKER, P.E. - ITS AND SIGNALS STRUCTURAL ENGINEER

SEAL

DocuSigned by:
Kevin Durigon
4B23DC78B3784DA

09/21/2023
DATE



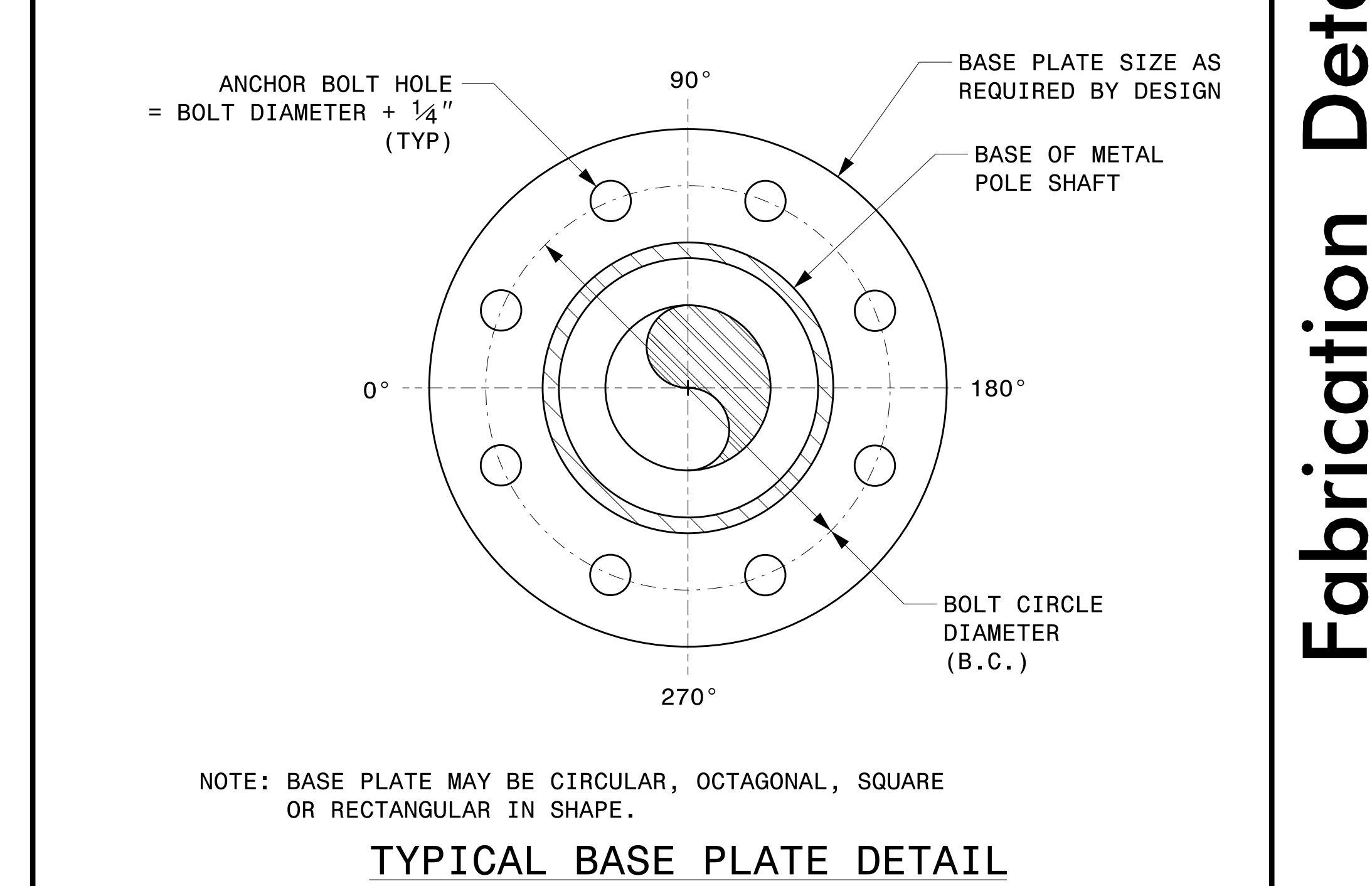
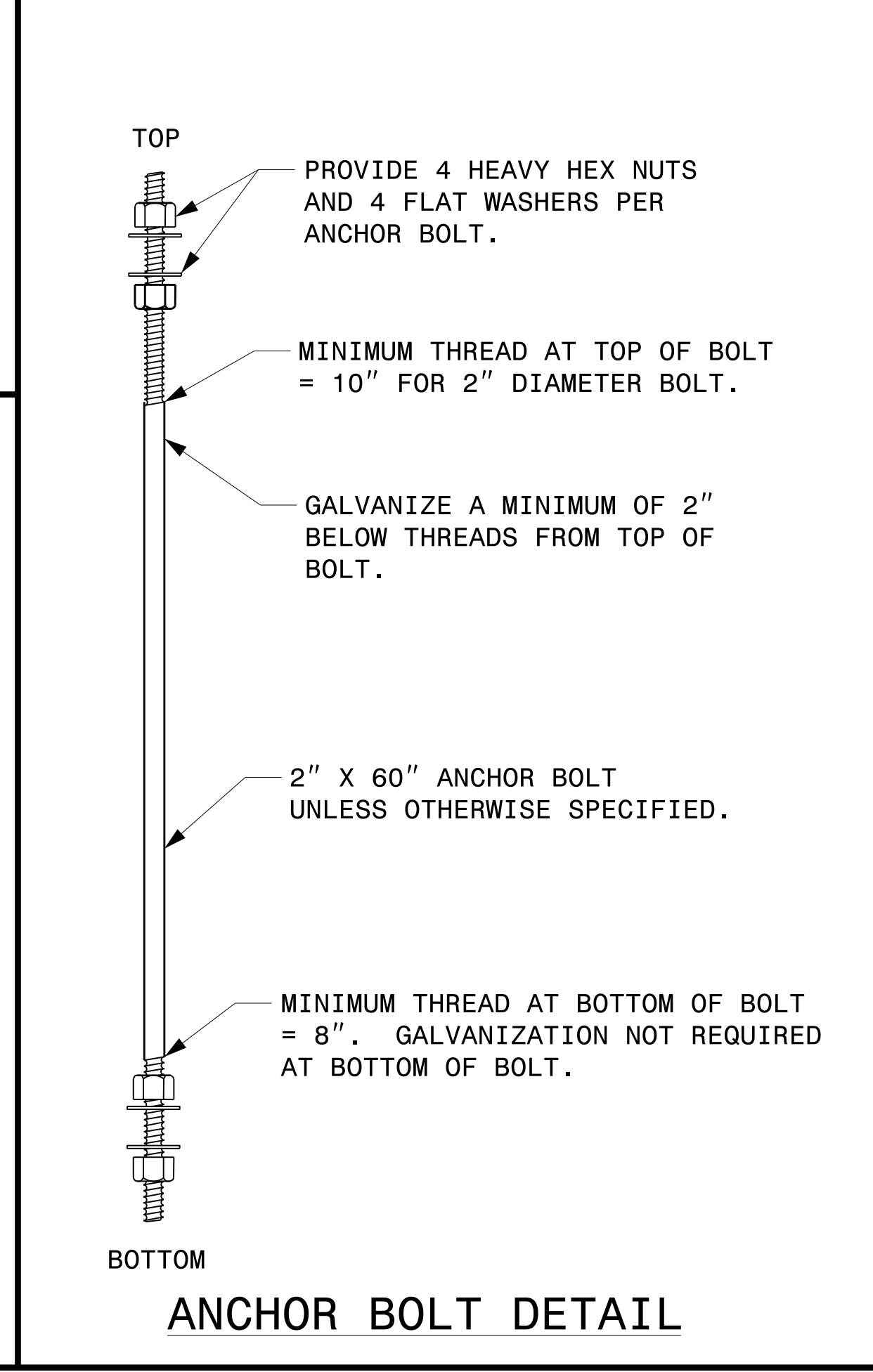
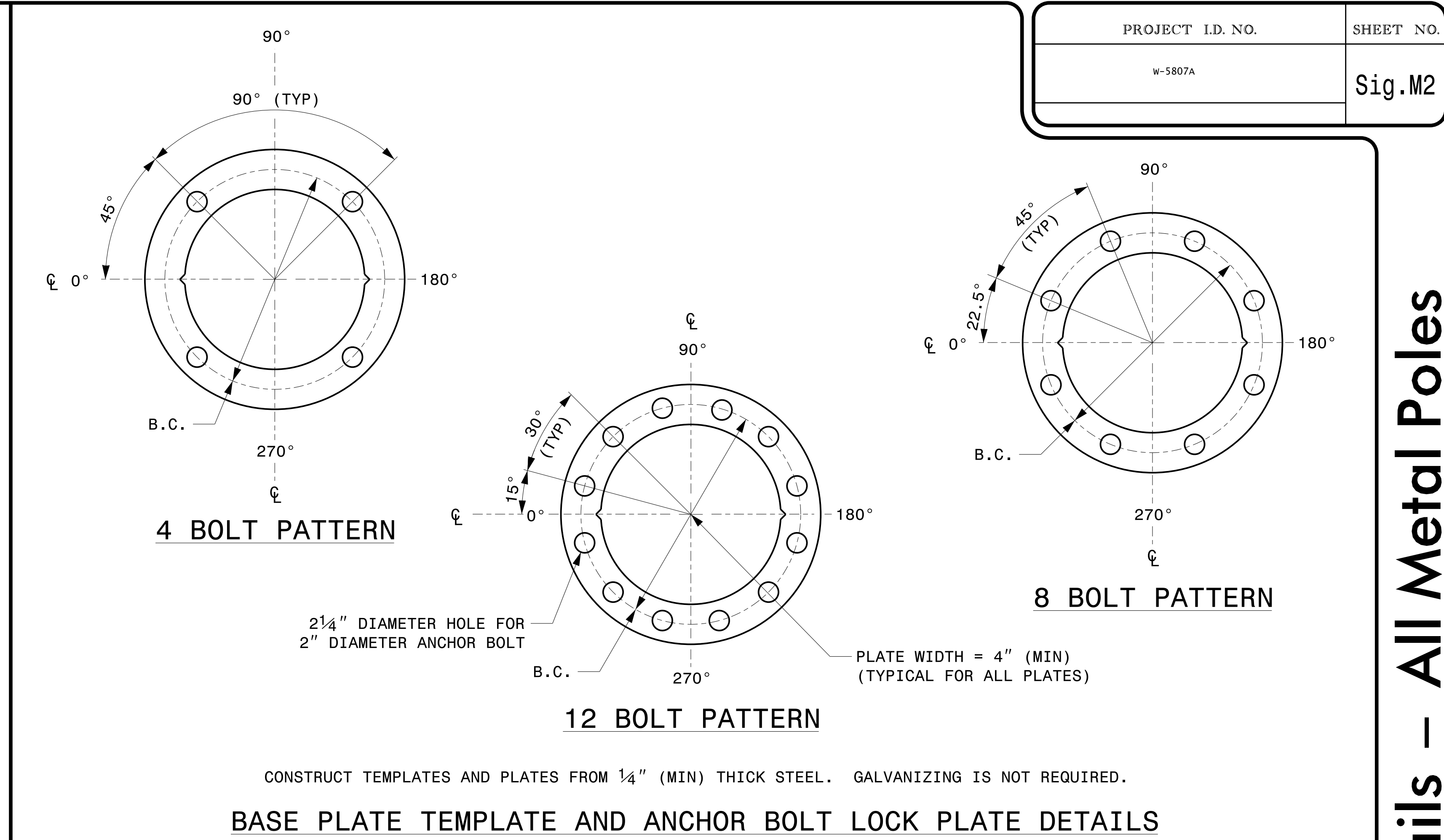
MFG _____ MFG. DATE: MM/YY SHAFT D/T/L/Y ARM-A D/T/L/Y ARM-B D/T/L/Y A.B. DIA./B.C./L/Y NCDOT SIG. INV. NO. NCDOT POLE NO.	MFG _____ MFG. DATE: MM/YY SECTION D/T/L/Y NCDOT SIG. INV. NO. NCDOT POLE NO. ARM I.D. TAG (PROVIDE ON EACH SECTION OF A MULTI-SECTION MAST ARM)
--	--

SHAFT I.D. TAG
(PROVIDE ON SHAFT OF STRAIN POLES
AND MAST ARM POLE SHAFT)

NOTES:

- D = DIAMETER, T = THICKNESS, L = LENGTH, Y = YIELD STRENGTH
- A.B. = ANCHOR BOLT
- B.C. = BOLT CIRCLE OF ANCHOR BOLTS
- IF STANDARD DESIGN, INCLUDE CASE NUMBER IN ADDITION TO POLE NUMBER ON "NCDOT POLE NO." LINE.
- SIGNAL INV. NUMBER AND POLE I.D. NUMBER. SEE DRAWING M3 AND M4 FOR MOUNTING POSITIONS OF I.D. TAGS.

IDENTIFICATION TAG DETAILS



	Typical Fabrication Details For All Metal Poles		
	Prepared in the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	PLAN DATE: SEPTEMBER 2023 DESIGNED BY: C.F. ANDREWS PREPARED BY: K.C. DURIGON REVIEWED BY: D.C. SARKAR	

DocuSigned by:
Kevin Durigon
4P23DC79B3784DA

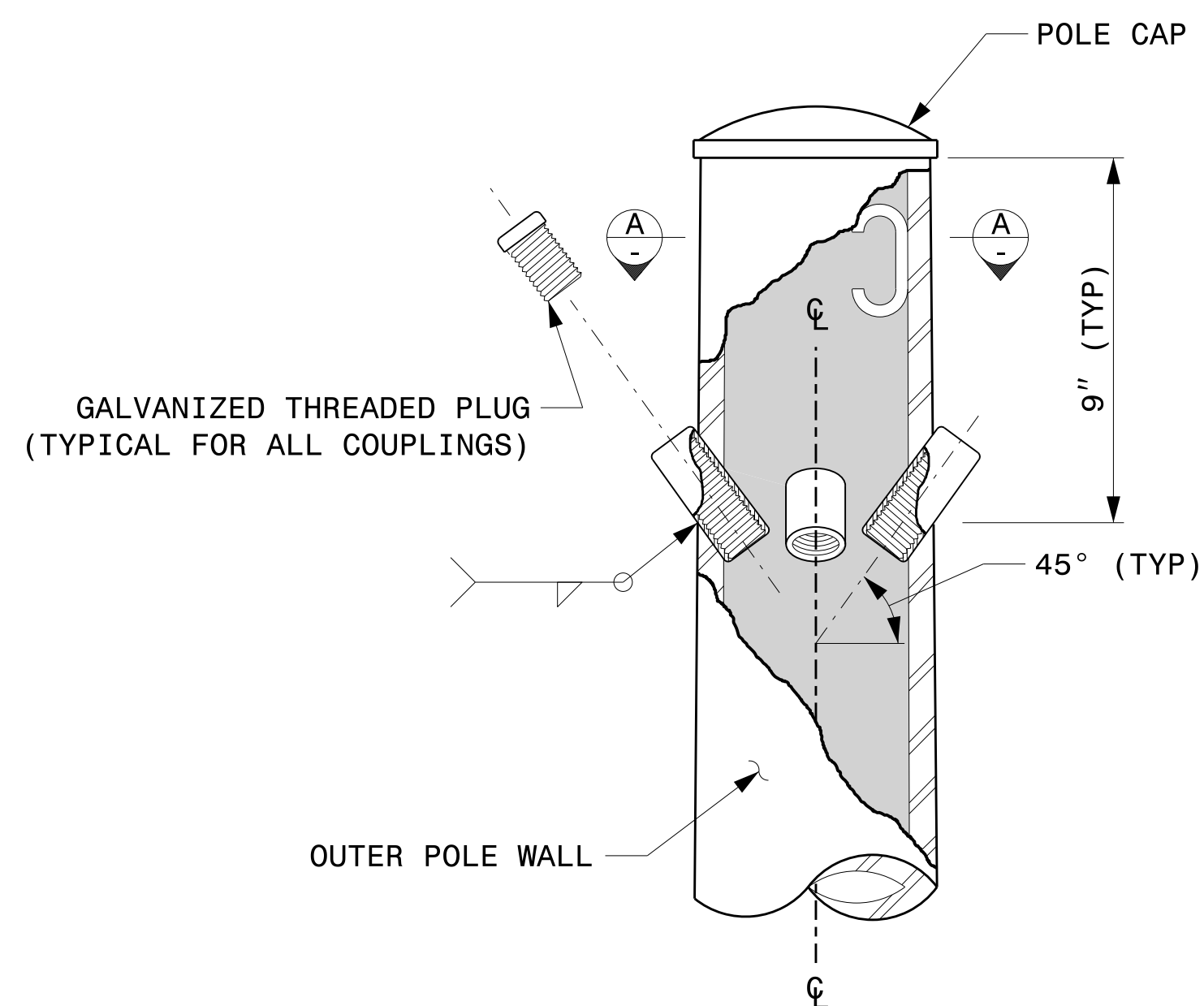
09/21/2023
DATE

Fabrication Details – All Metal Poles

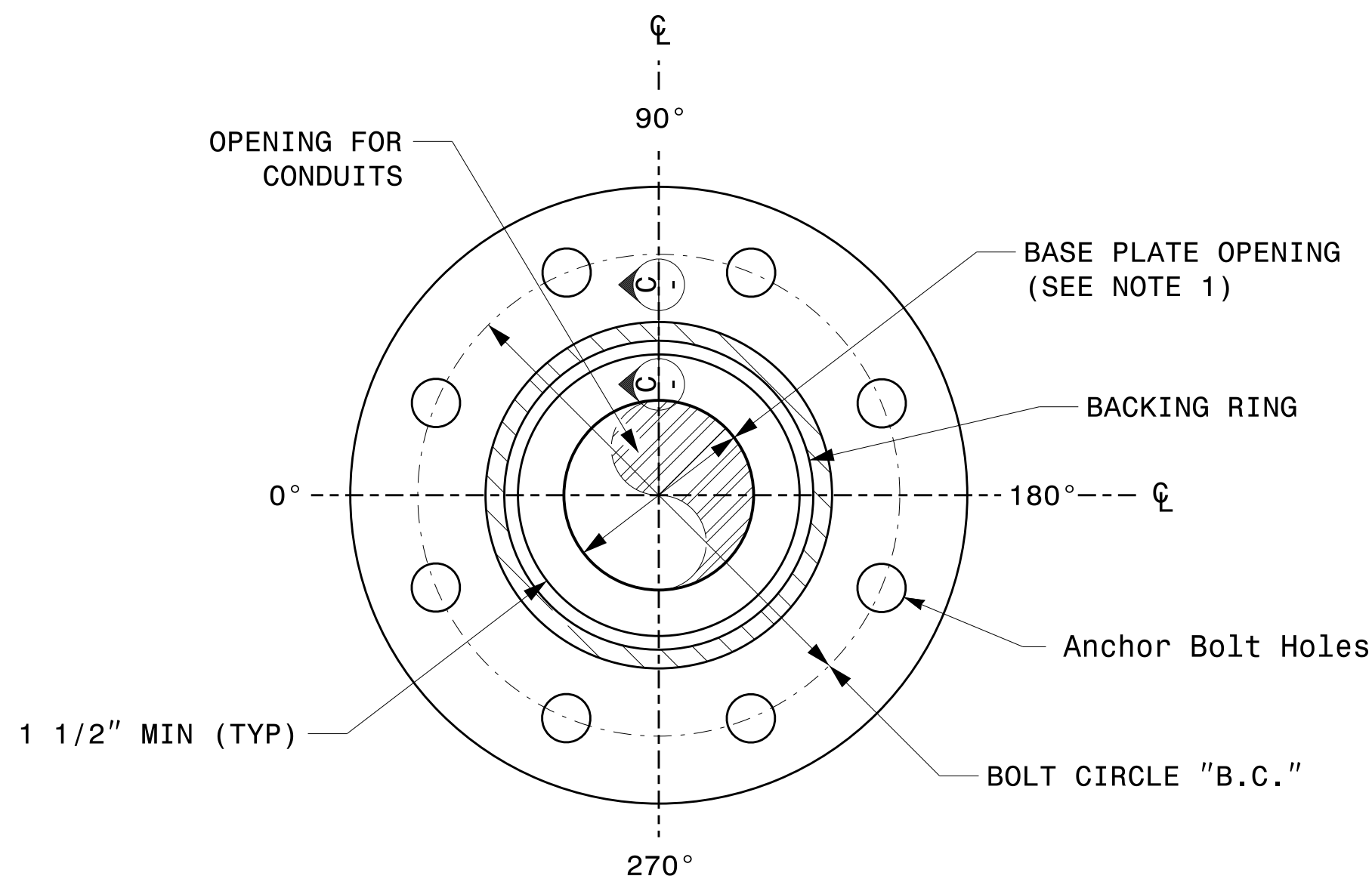
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Kedar Figon

NOTE:

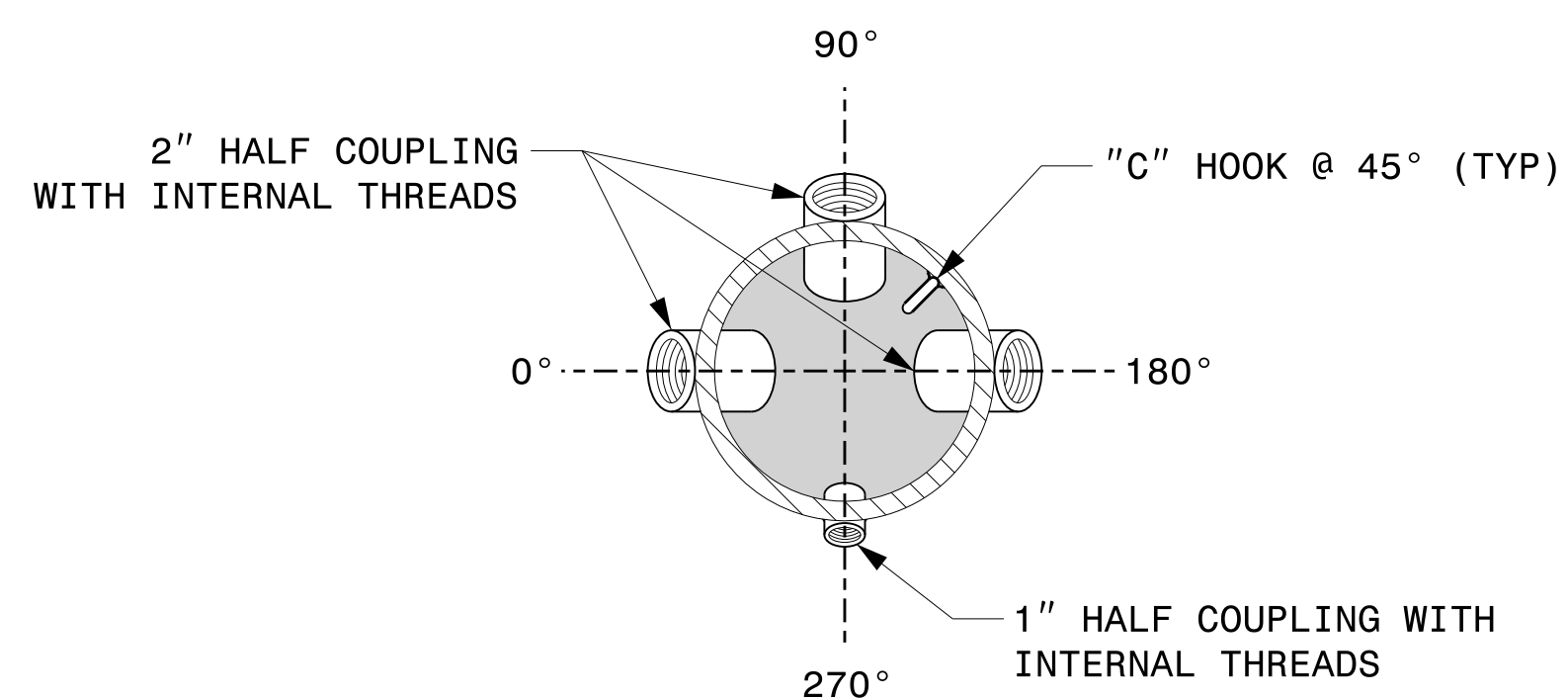
- 1. OPENING IN POLE BASE PLATE SHALL BE EQUAL TO POLE BASE INSIDE DIAMETER MINUS $3\frac{1}{2}$ " BUT SHALL NOT BE LESS THAN $8\frac{1}{2}$ ".



CABLE ENTRANCES AT TOP OF POLE

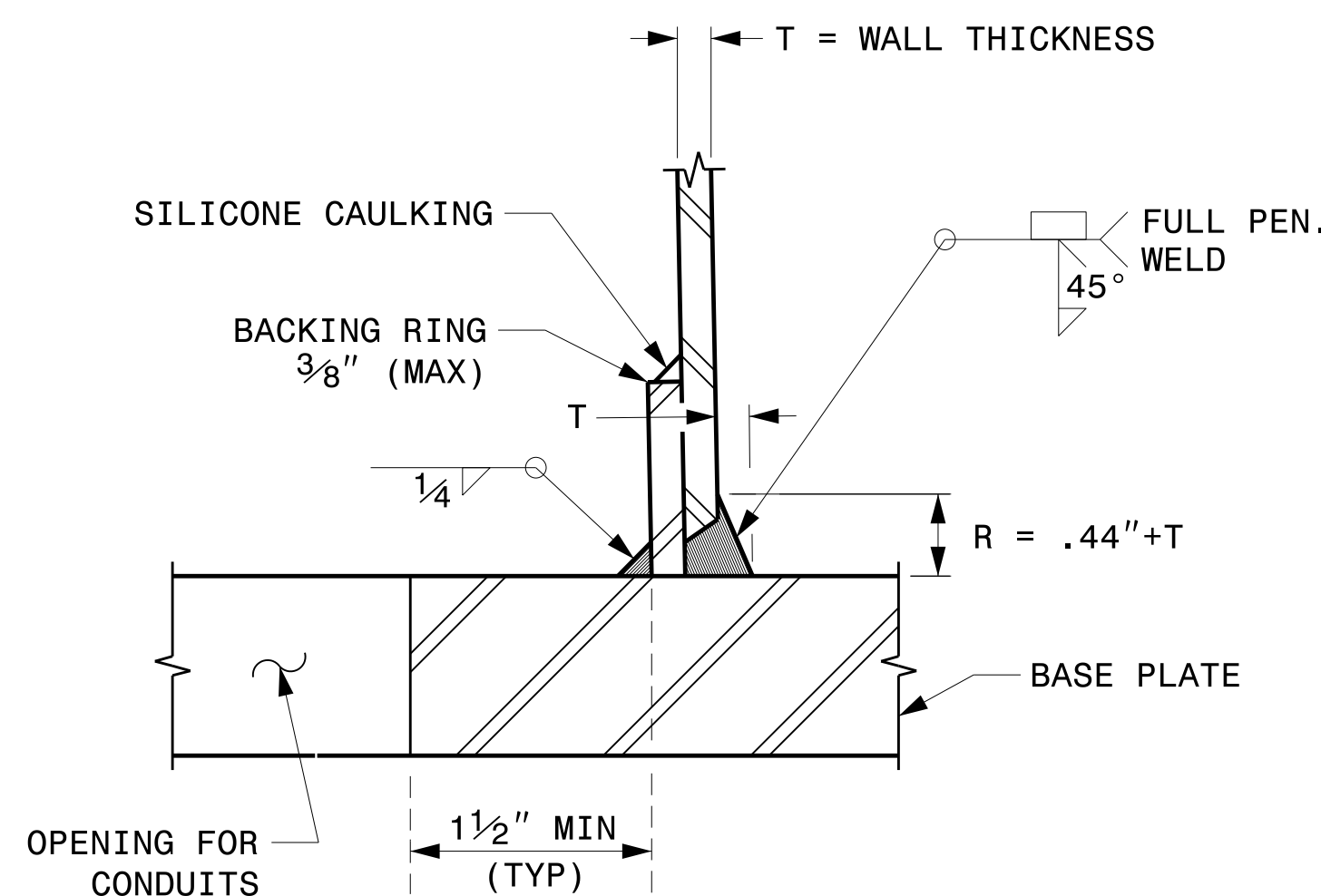


SECTION B-B
POLE BASE PLATE DETAILS
(8 AND 12 BOLT PATTERN)

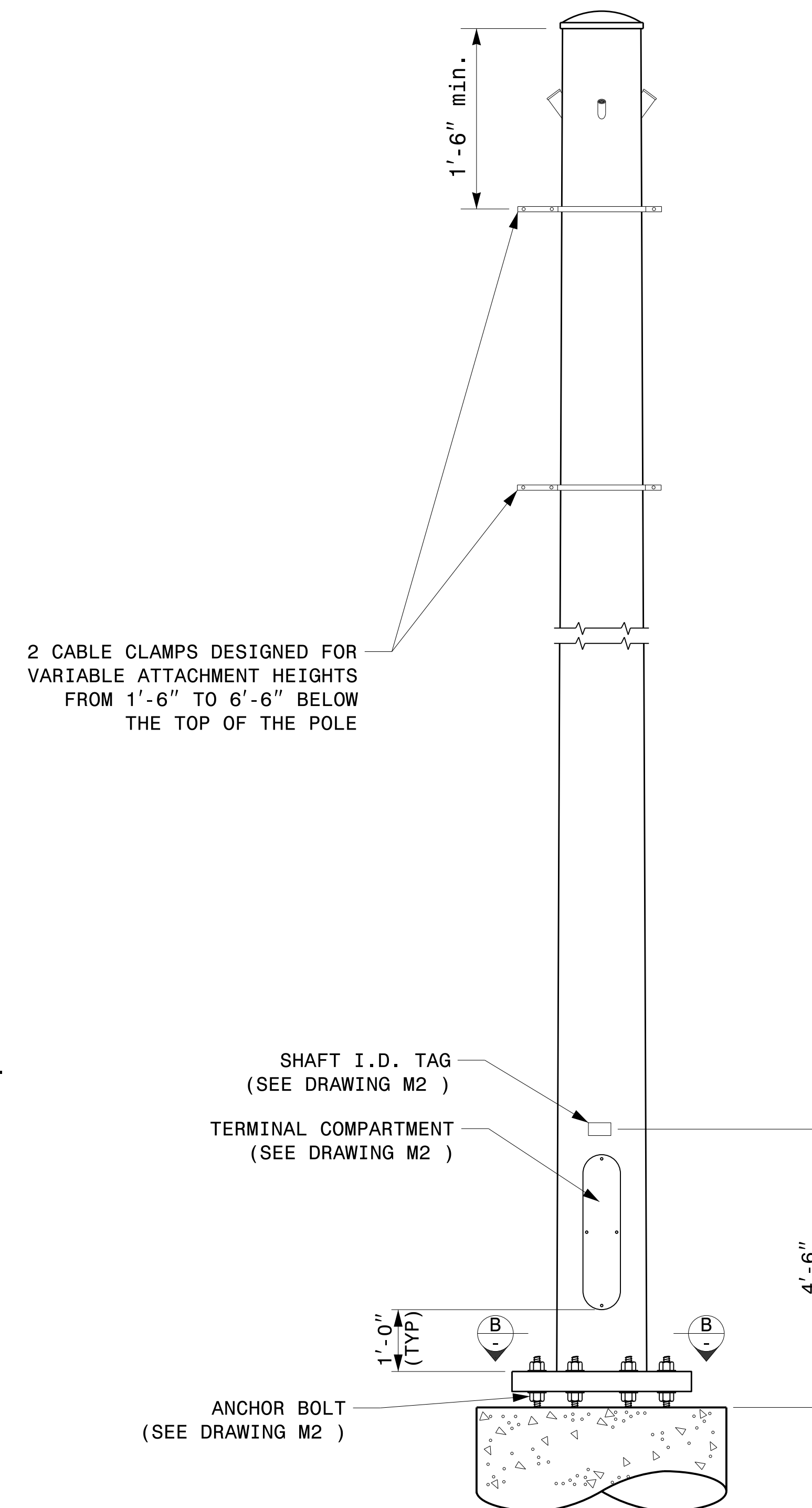


SECTION A-A

RADIAL ORIENTATION OF FACTORY INSTALLED ACCESSORIES AT TOP OF POLE



SECTION C-C
(POLE ATTACHMENT TO BASE PLATE)
FULL-PENETRATION GROOVE WELD DETAIL



MONOTUBE STRAIN POLE

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: NA
NONE

Typical Fabrication Details For Strain Poles			
PLAN DATE:	SEPTEMBER 2023	DESIGNED BY:	K.C. DURIGON
PREPARED BY:	K.C. DURIGON	REVIEWED BY:	D.C. SARKAR
REVISIONS	INIT.	DATE	

SEAL

DocuSigned by:
Kevin Durigon
SIGNATURE

09/23/2023
DATE

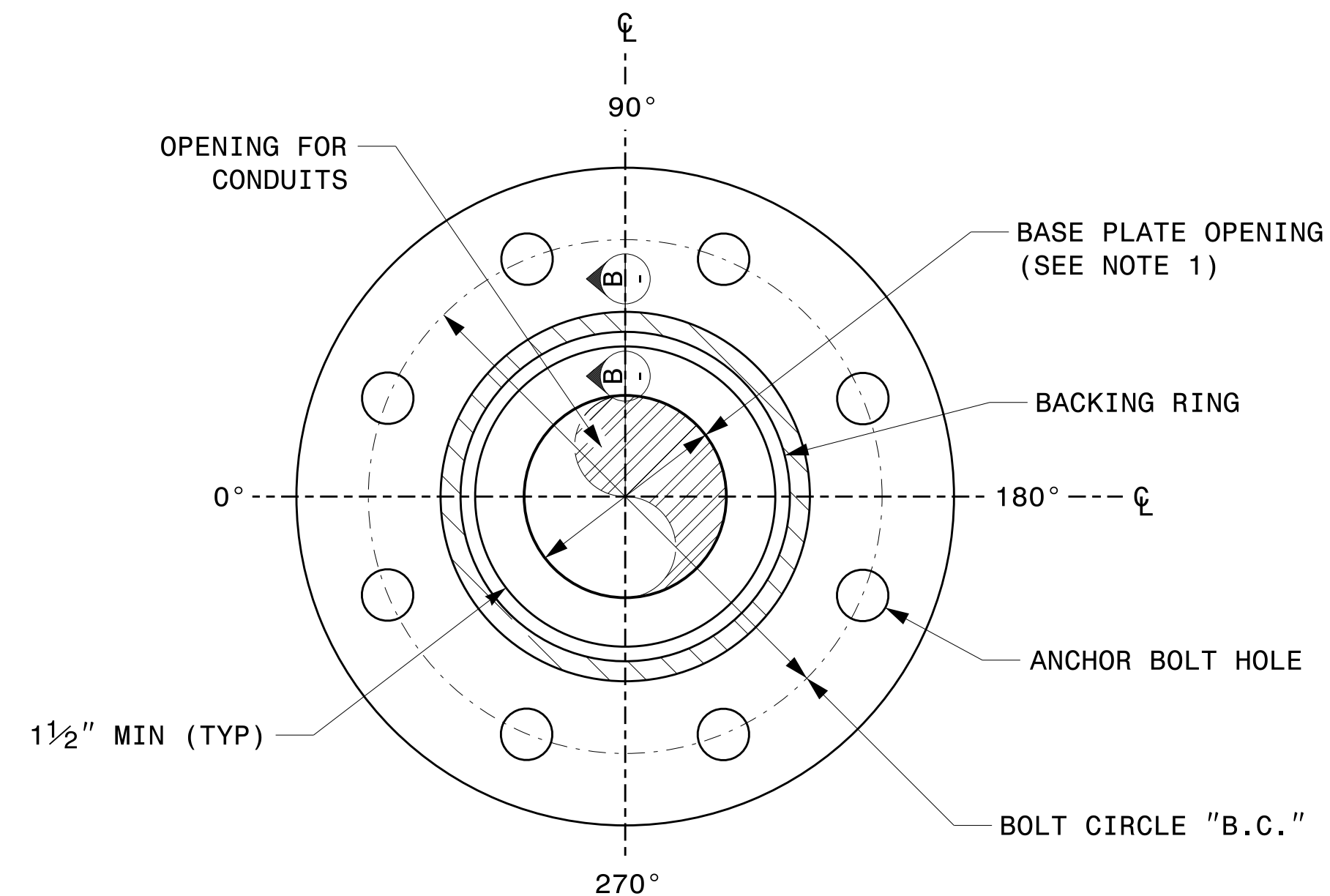
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08-dt-2023-10-31
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Kedar Durigon

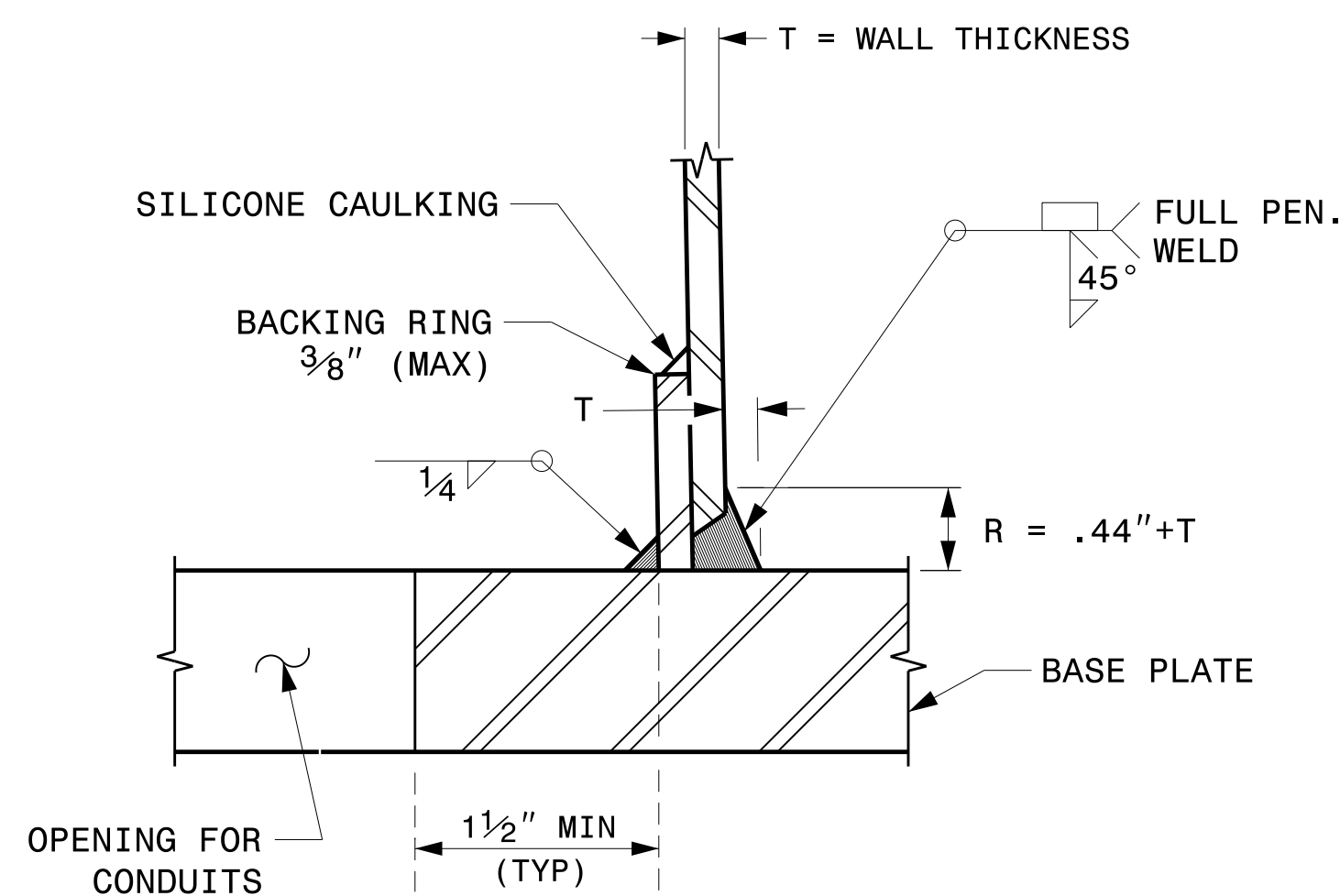
Fabrication Details - Strain Poles

NOTE:

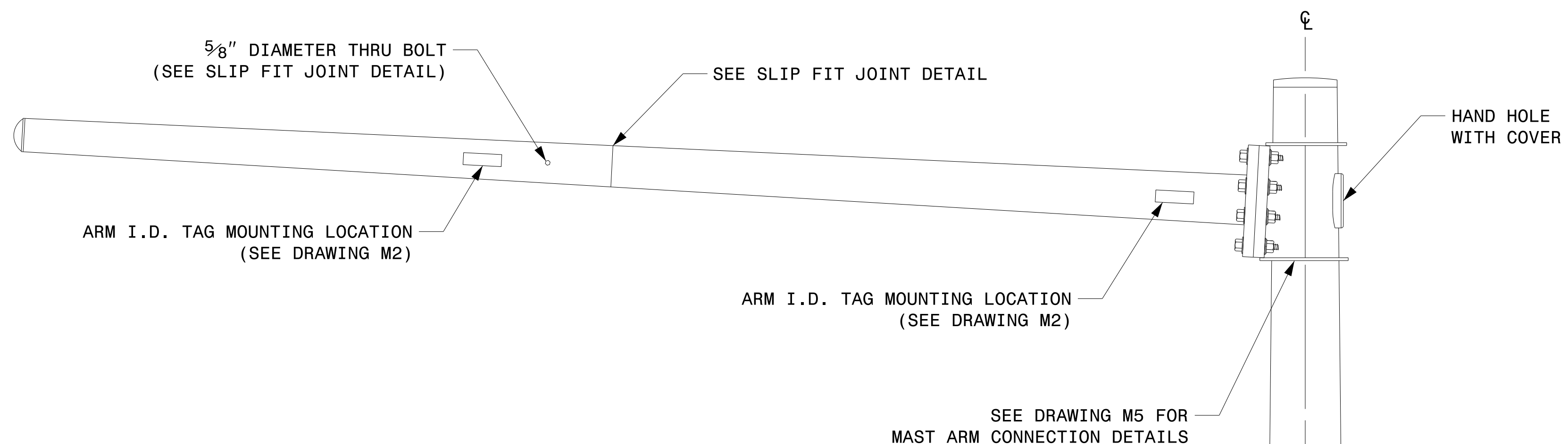
- 1. OPENING IN POLE BASE PLATE SHALL BE EQUAL TO POLE BASE INSIDE DIAMETER MINUS 3 1/2" BUT SHALL NOT BE LESS THAN 8 1/2".



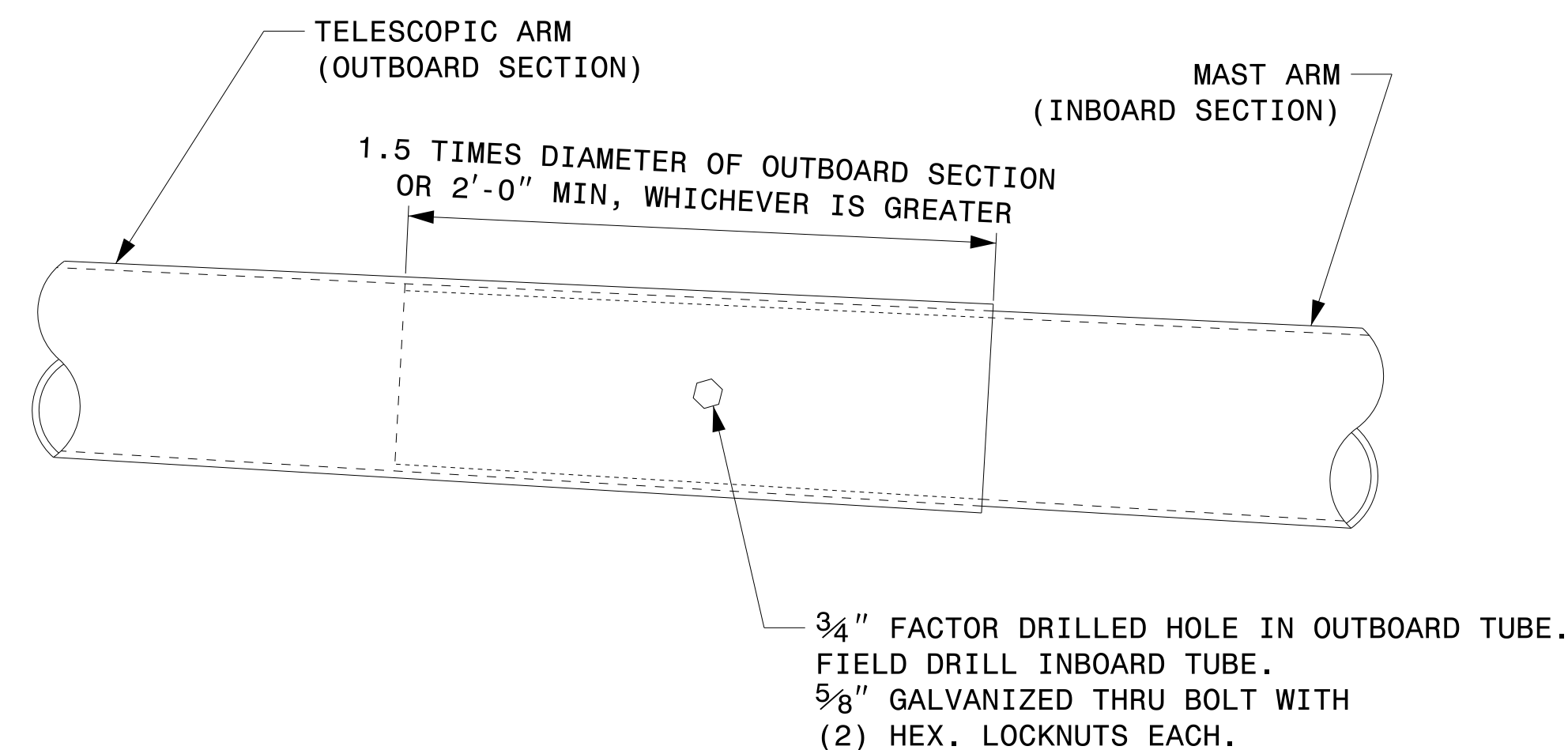
SECTION A-A
POLE BASE PLATE DETAILS



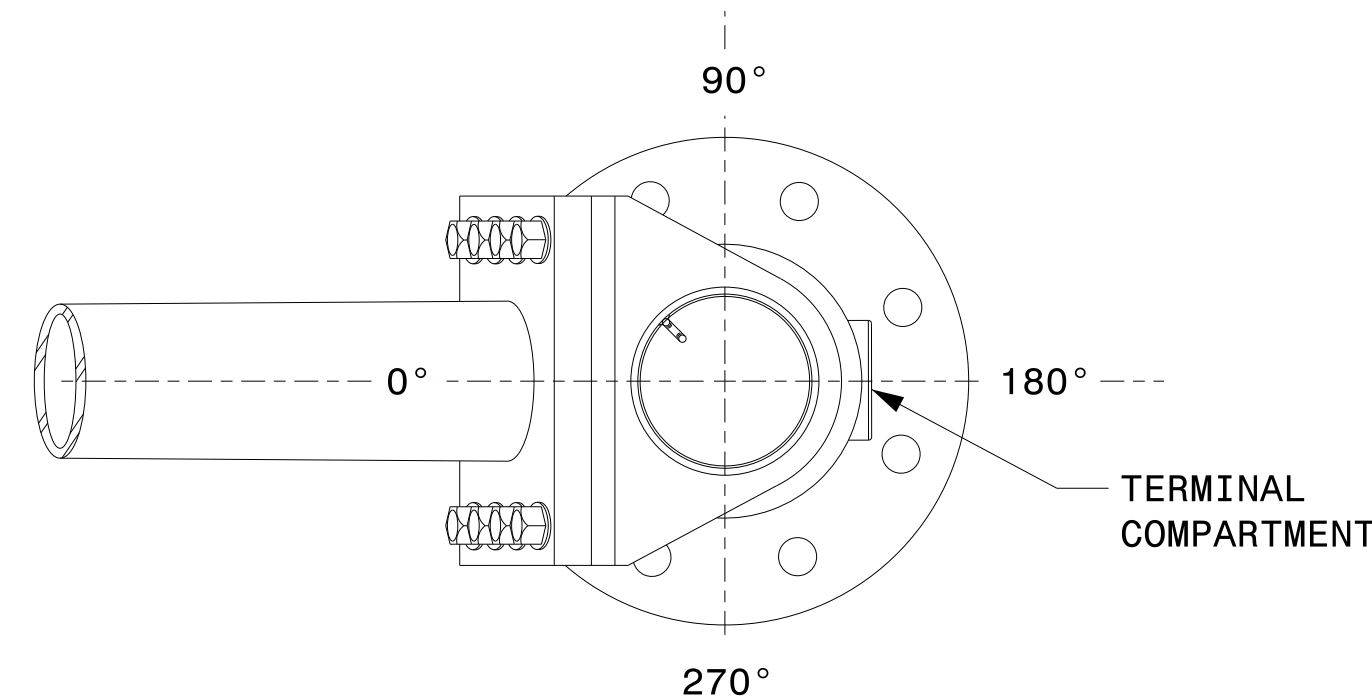
SECTION B-B
(POLE ATTACHMENT TO BASE PLATE)
FULL-PENETRATION
GROOVE WELD DETAIL



MAST ARM POLE



SLIP FIT JOINT DETAIL FOR MAST ARM



MAST ARM RADIAL ORIENTATION

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: NA
NONE

Typical Fabrication Details For Mast Arm Poles			
PLAN DATE:	SEPTEMBER 2023	DESIGNED BY:	K.C. DURIGON
PREPARED BY:	K.C. DURIGON	REVIEWED BY:	D.C. SARKAR
REVISIONS	INIT.	DATE	

SEAL

DocuSigned by:
Kevin Durigon
SIGNATURE

09/21/2023
DATE

09-drt-2023-10-31E
S:\155504115\Sigal\Signal Design\Section\Structures\Drawings\2024\Merol Pole Std Drawings for LRF\2024 Sig.M4 Str. Fabrication Details-Mast Arm Poles.dgn
Kedar Tigon

Fabrication Details – Mast Arm Poles

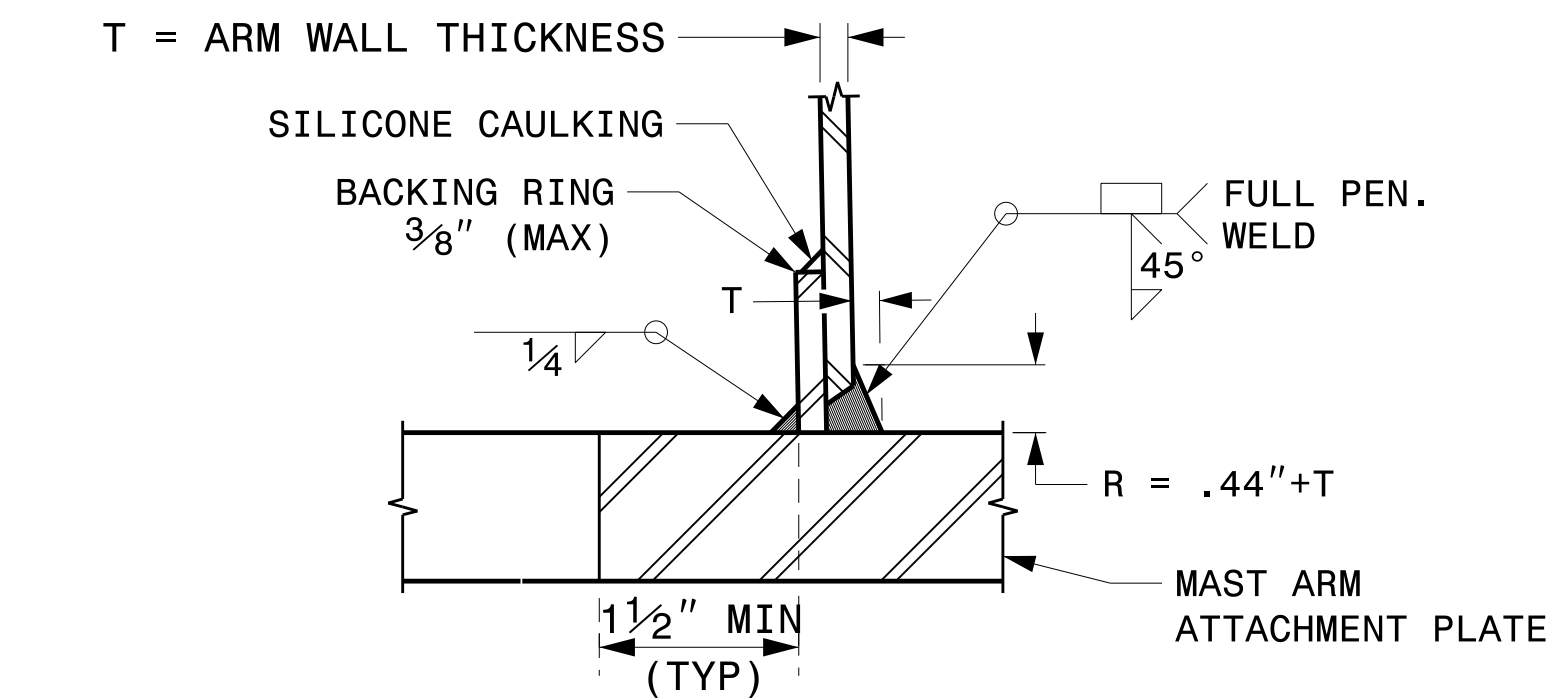
WELDED RING STIFFENED MAST ARM CONNECTION

PROJECT I.D. NO.

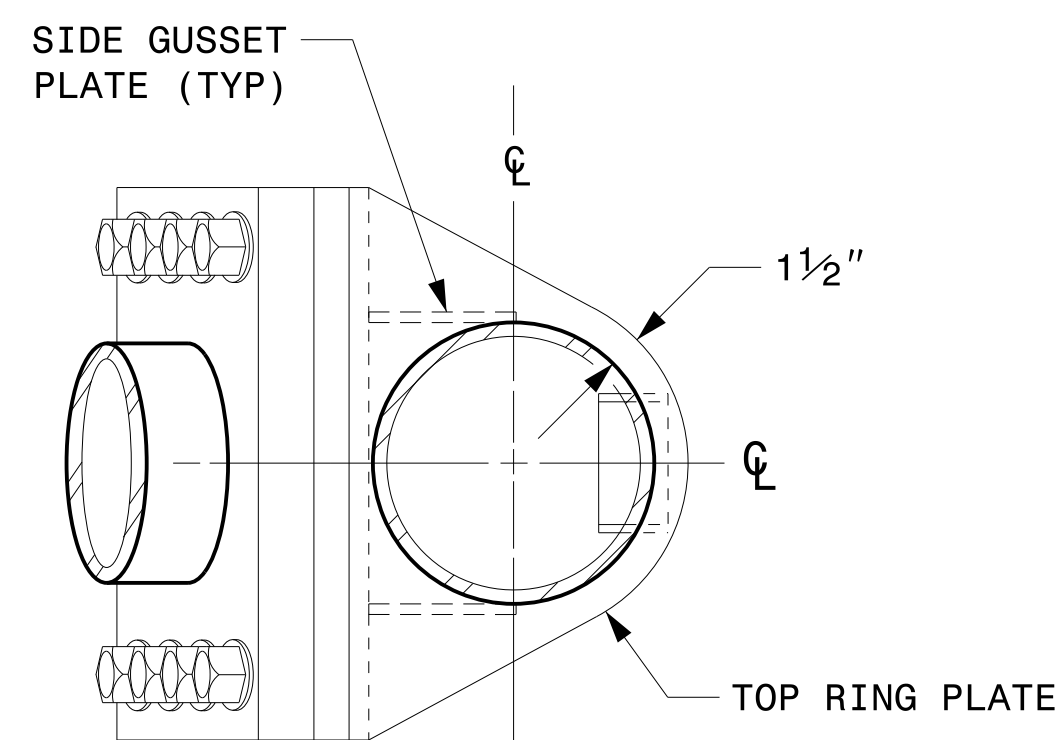
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w-5807A

Sig.M5



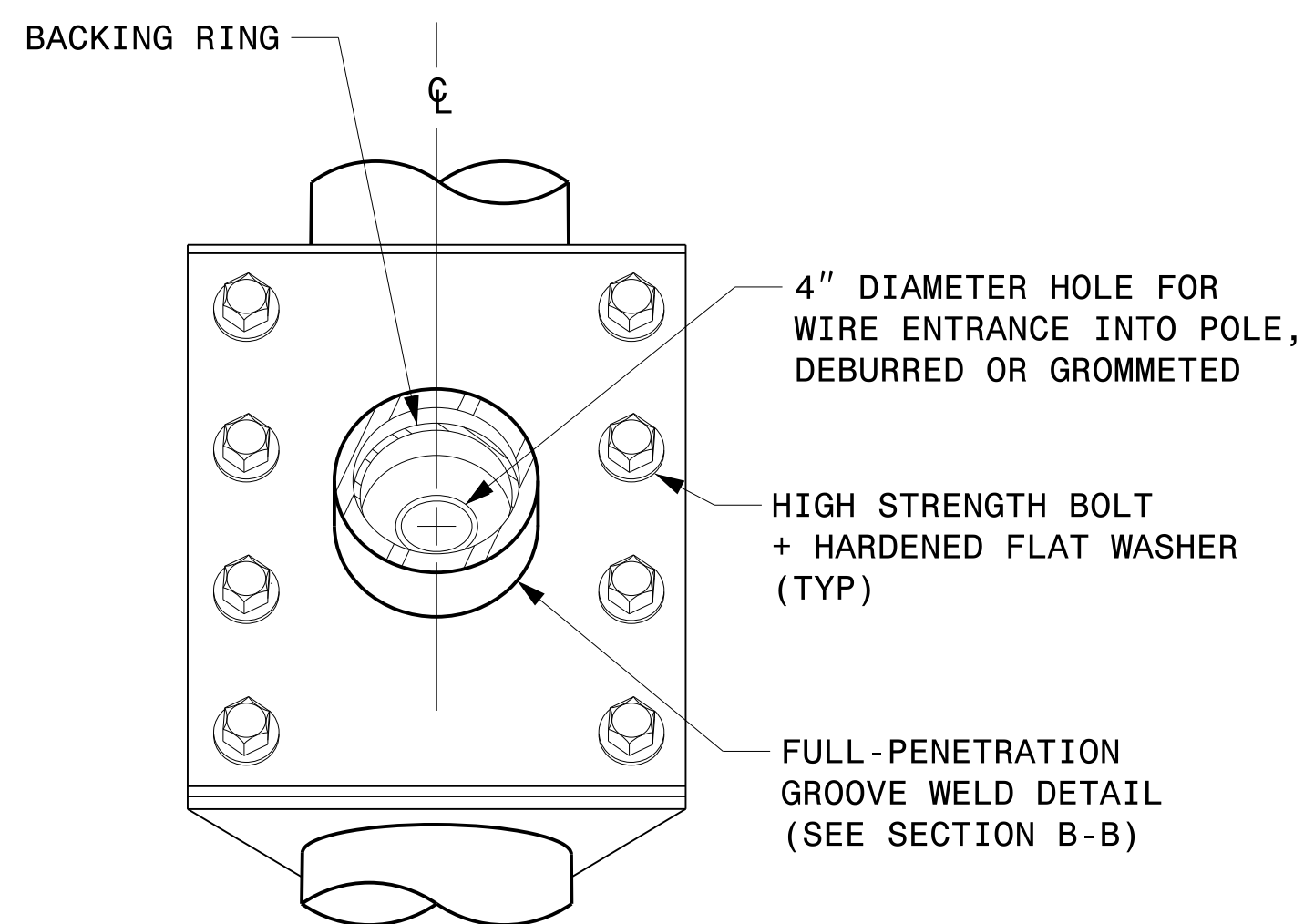
**SECTION B-B
FULL-PENETRATION GROOVE WELD DETAIL**



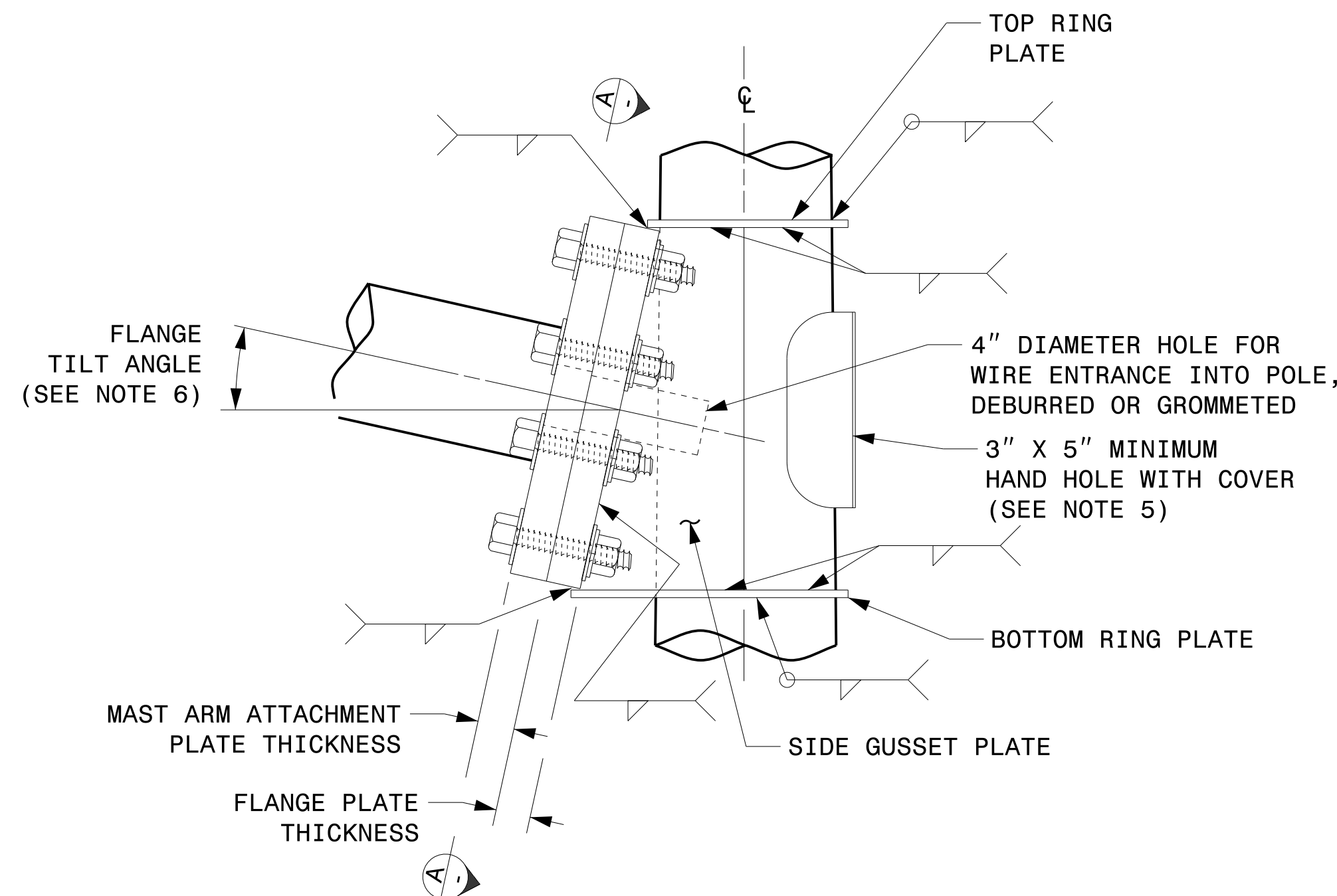
PLAN VIEW

NOTES:

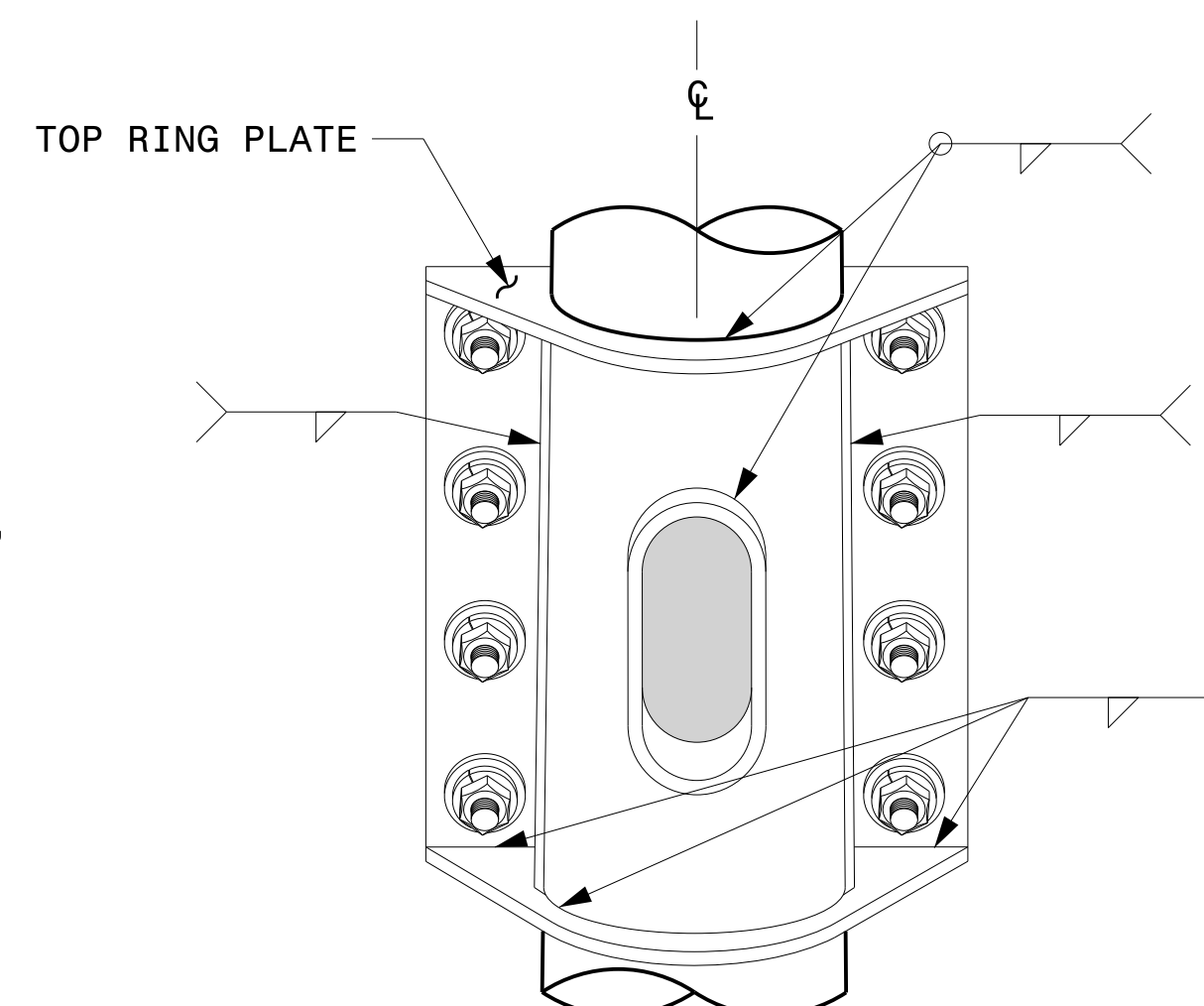
1. PROVIDE A PERMANENT MEANS OF IDENTIFICATION ABOVE THE MAST ARM TO INDICATE PROPER ATTACHMENT ORIENTATION OF THE MAST ARM.
2. DESIGNER WILL DETERMINE THE SIZE OF ALL STRUCTURAL COMPONENTS, PLATES, FASTENERS, AND WELDS SHOWN UNLESS THEY ARE ALREADY SPECIFIED.
3. FABRICATOR IS RESPONSIBLE FOR PROVIDING APPROPRIATE HOLES AT DRAINAGE POINTS TO DRAIN GALVANIZING MATERIALS.
4. FOR MINIMUM EDGE DISTANCE AND NOMINAL BOLT HOLE SIZE, FOLLOW THE LATEST AISC STEEL CONSTRUCTION MANUAL.
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.



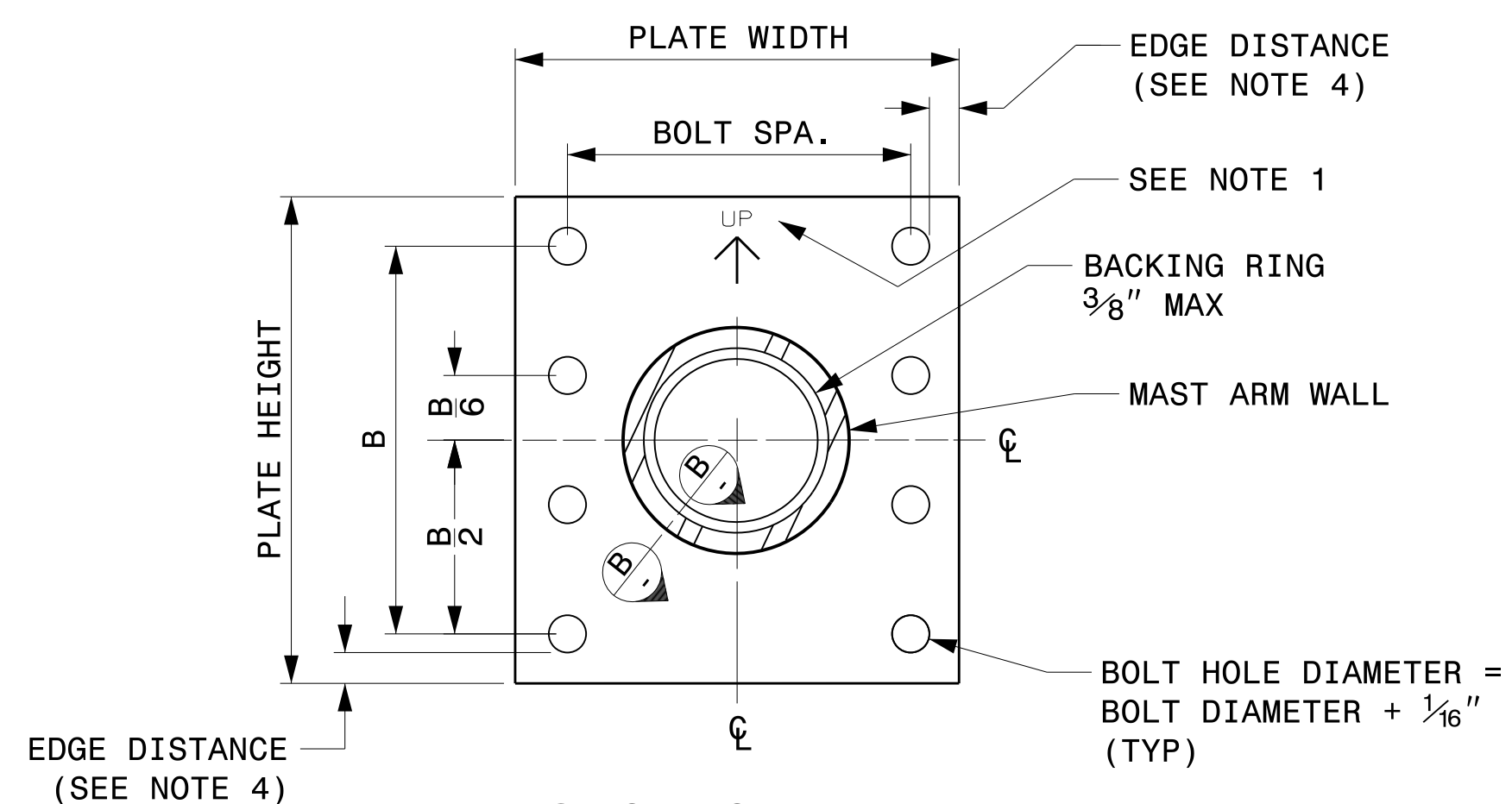
FRONT ELEVATION VIEW



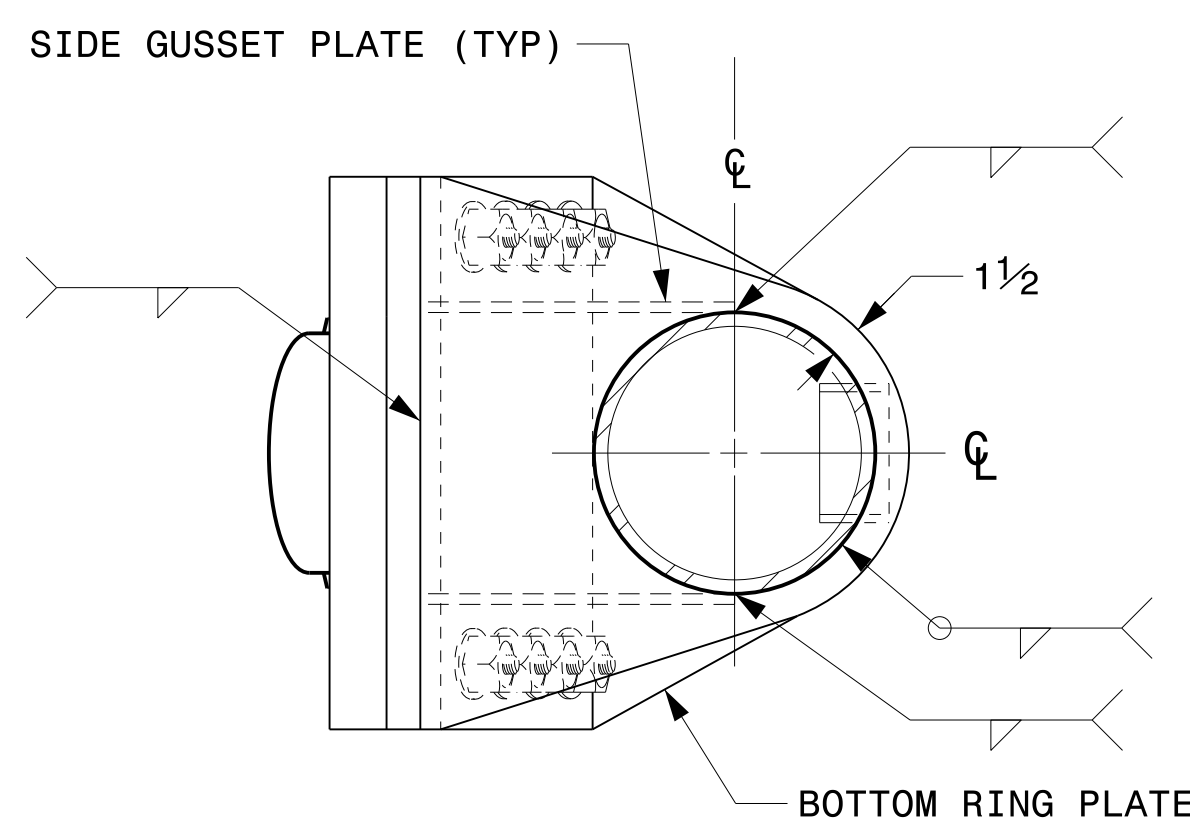
SIDE ELEVATION VIEW



BACK ELEVATION VIEW



**SECTION A-A
MAST ARM ATTACHMENT PLATE**



BOTTOM VIEW

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: NA
NONE

<p>Typical Fabrication Details For Mast Arm Connection To Pole</p>	
<p>PLAN DATE: SEPTEMBER 2023</p>	<p>DESIGNED BY: C.F. ANDREWS</p>
<p>PREPARED BY: K.C. DURIGON</p>	<p>REVIEWED BY: D.C. SARKAR</p>
<p>REVISIONS</p>	<p>INIT. DATE</p>

SEAL

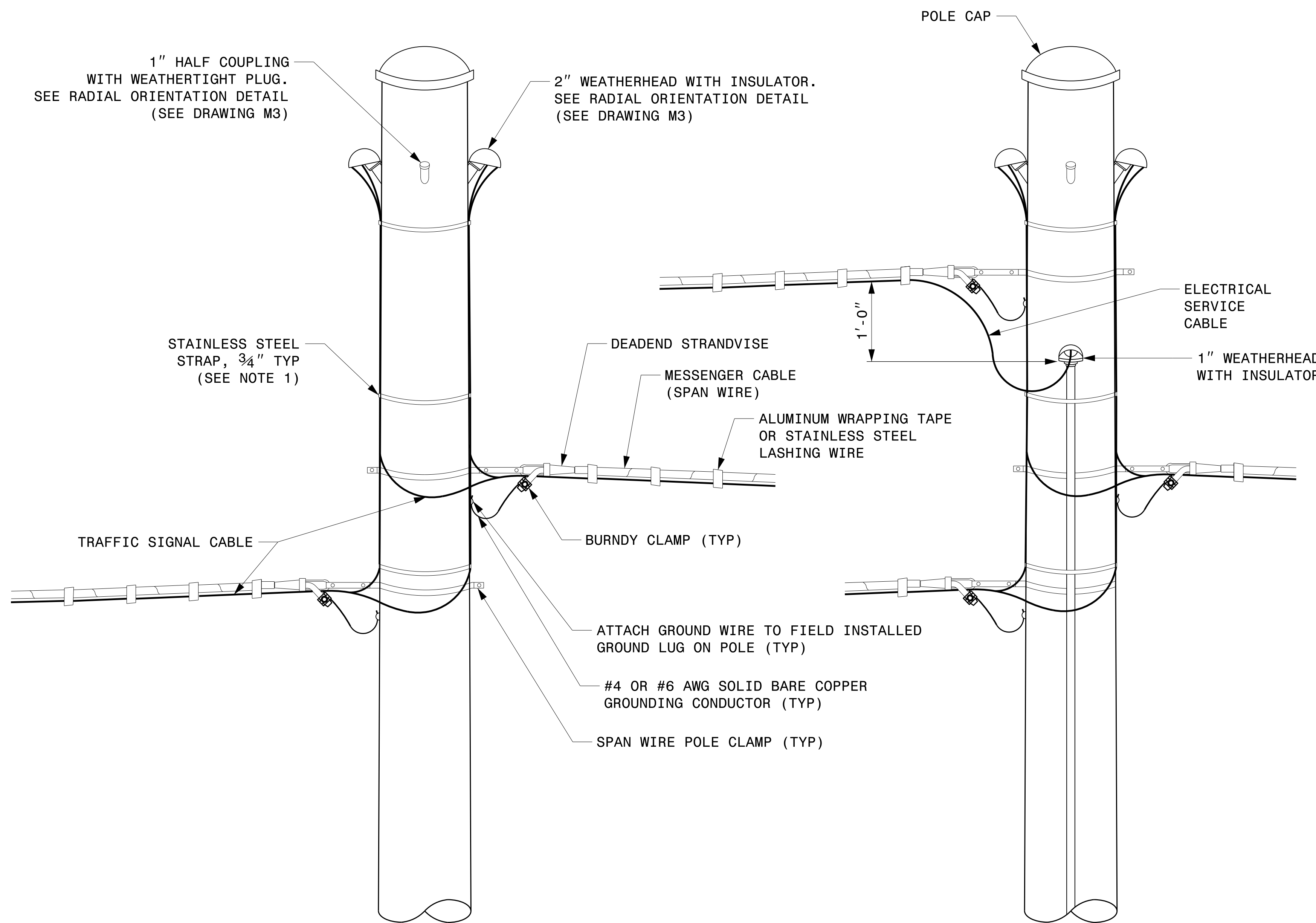
DocuSigned by:
Kevin Durigon
SIGNATURE

4B23DC79B3784DA

09/21/2023
DATE

03-dwt-2023-10-30
 S:\Projects\2023\Signal Design Section\Structures\Drawings\2024 Merlot Pole Std Drawings for LRFD\2024 Sig.M5 Str. Connection Fabrication Details\Mast Arm Poles.dgn
 Kedar Tagon

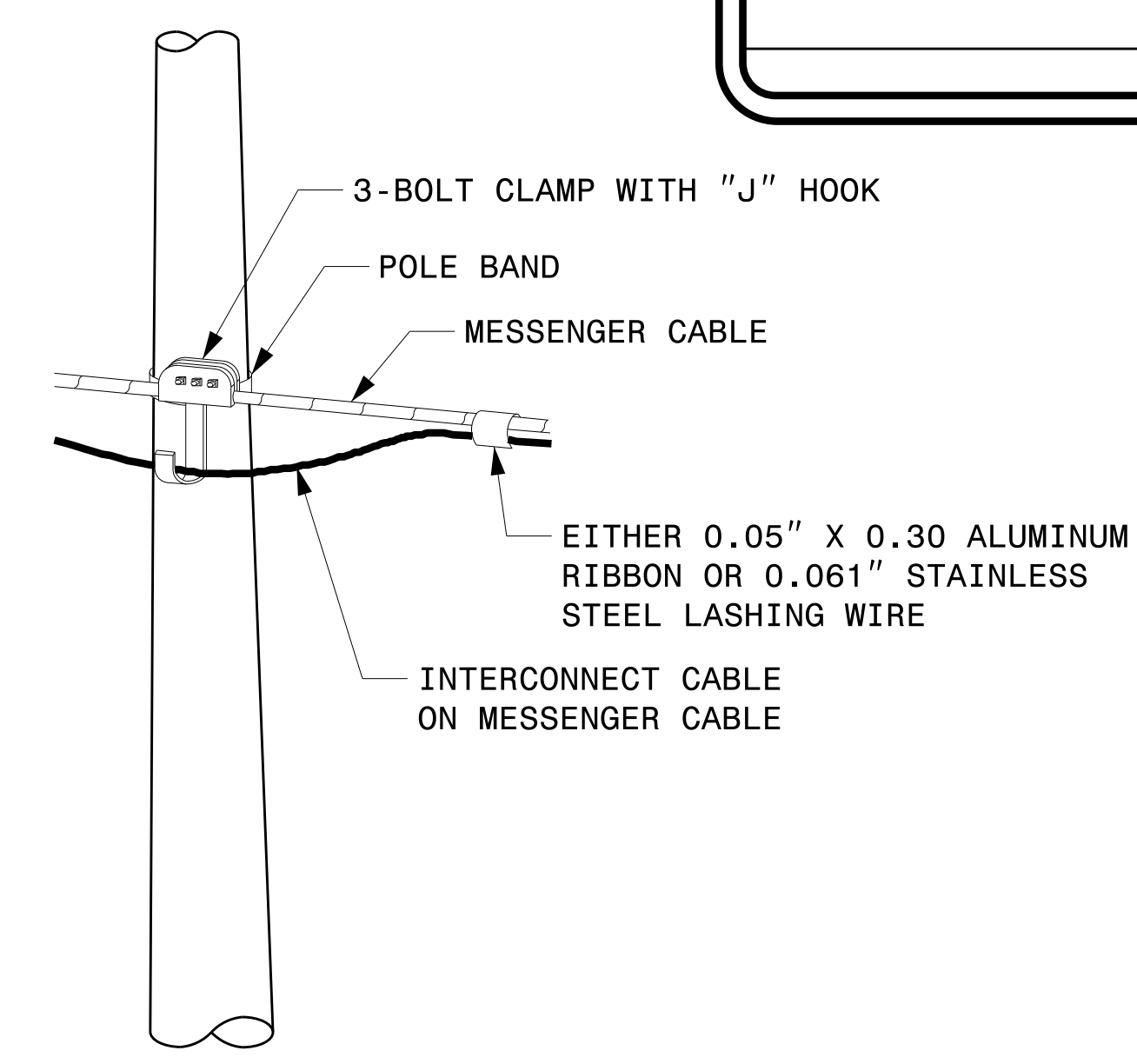
Fabrication Details – Mast Arm Connection



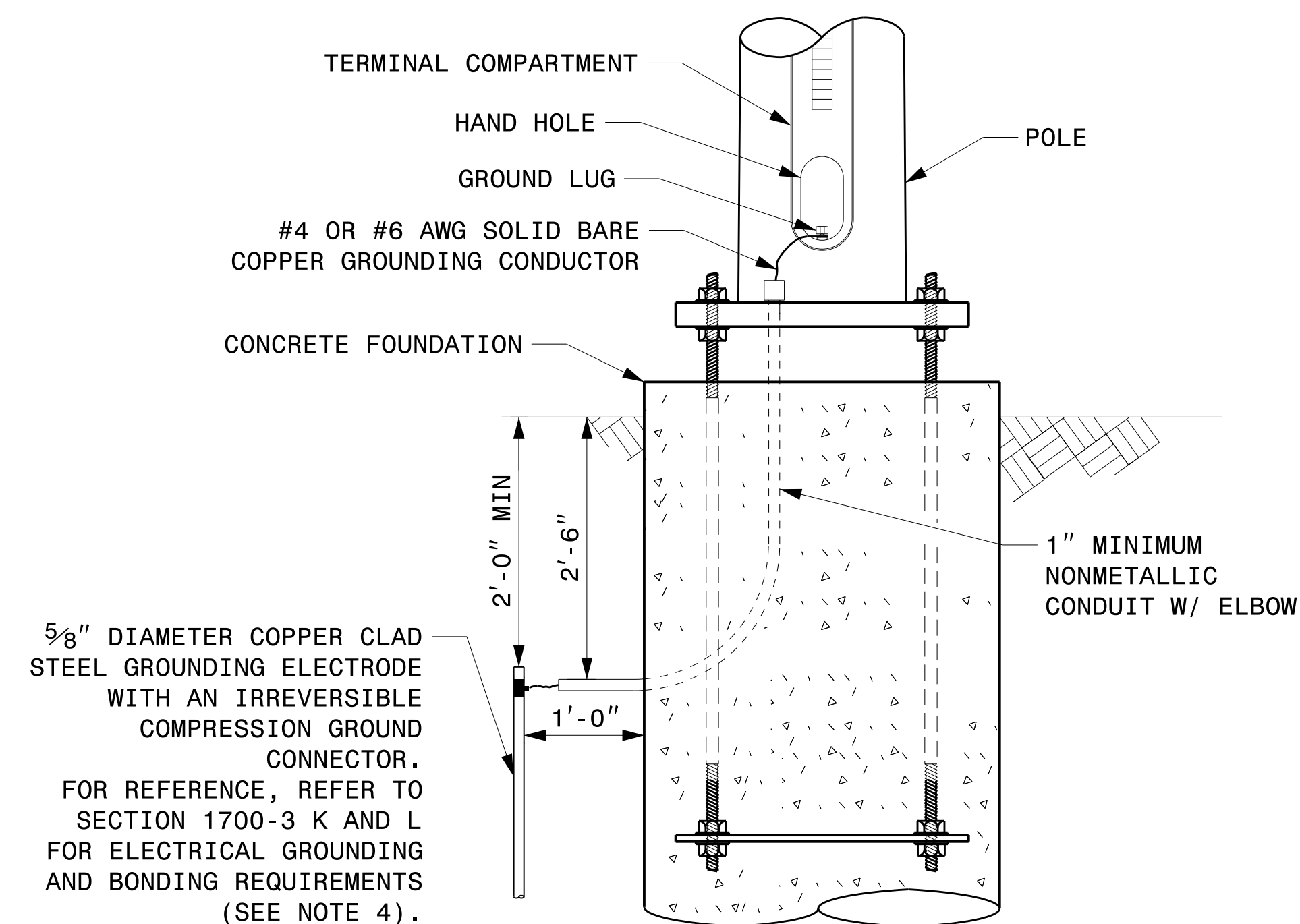
STRAIN POLE ATTACHMENTS

NOTES:

1. STRAP ALL SIGNAL CABLES TO THE SIDE OF THE POLE WITH 3/4" STAINLESS STEEL STRAPS WHEN THE DISTANCE BETWEEN SPAN WIRE ATTACHMENT CLAMP AND WEATHERHEADS EXCEEDS 3'-0".
2. PROVIDE MINIMUM TWO SPAN WIRE POLE CLAMPS PER POLE.
3. IT IS PROHIBITED TO ATTACH TWO SPAN WIRES AT ONE POLE CLAMP.
4. FOR GENERAL REQUIREMENTS, REFER TO NCDOT STANDARD SPECIFICATIONS FOR ROADWAY AND STRUCTURES, JANUARY 2024.



ATTACHMENT OF CABLE TO INTERMEDIATE METAL POLE



METAL POLE GROUNDING DETAIL FOR STRAIN POLE AND MAST ARM

08-dpt-2023-10-41
S:\ISSUES\415 Signal\Signal Design\Structures\Drawings\2024 Metal Pole Str. Fabrication Details-Strain Poles.dgn
Kedar Tigon

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

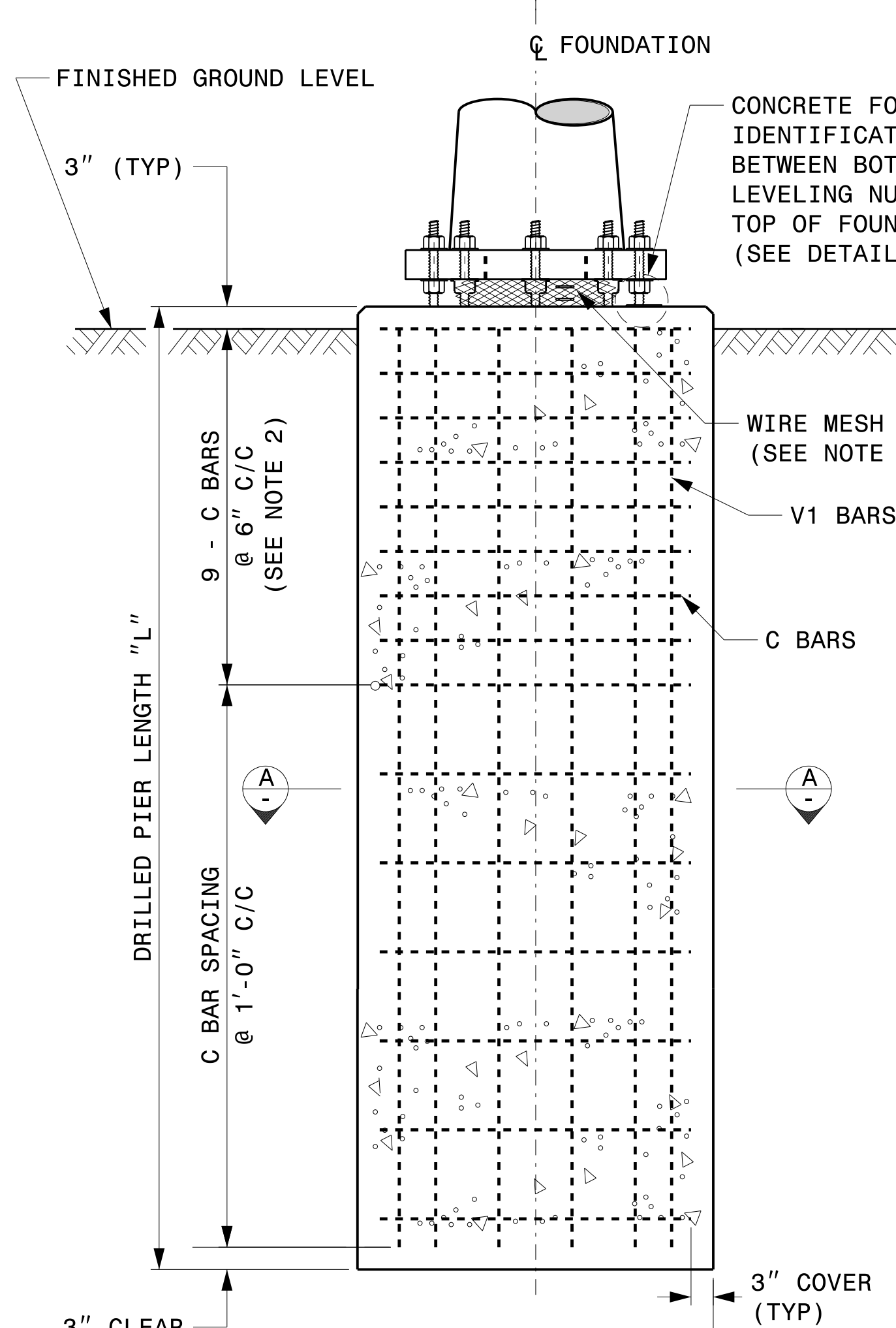
Typical Fabrication Details For Strain Pole Attachments	
PLAN DATE: SEPTEMBER 2023	DESIGNED BY: C.F. ANDREWS
PREPARED BY: K.C. DURIGON	REVIEWED BY: D.C. SARKAR
REVISIONS	INIT. DATE

DocuSigned by:

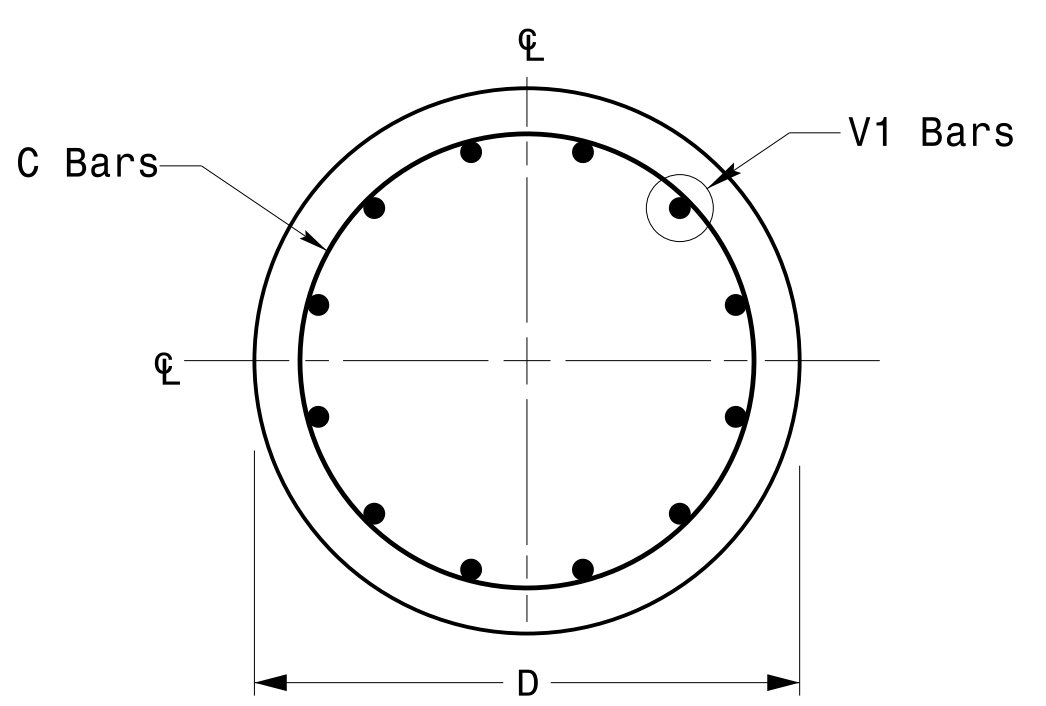
Kevin Durigon
4B23DC79B3784DA

09/21/2023
DATE

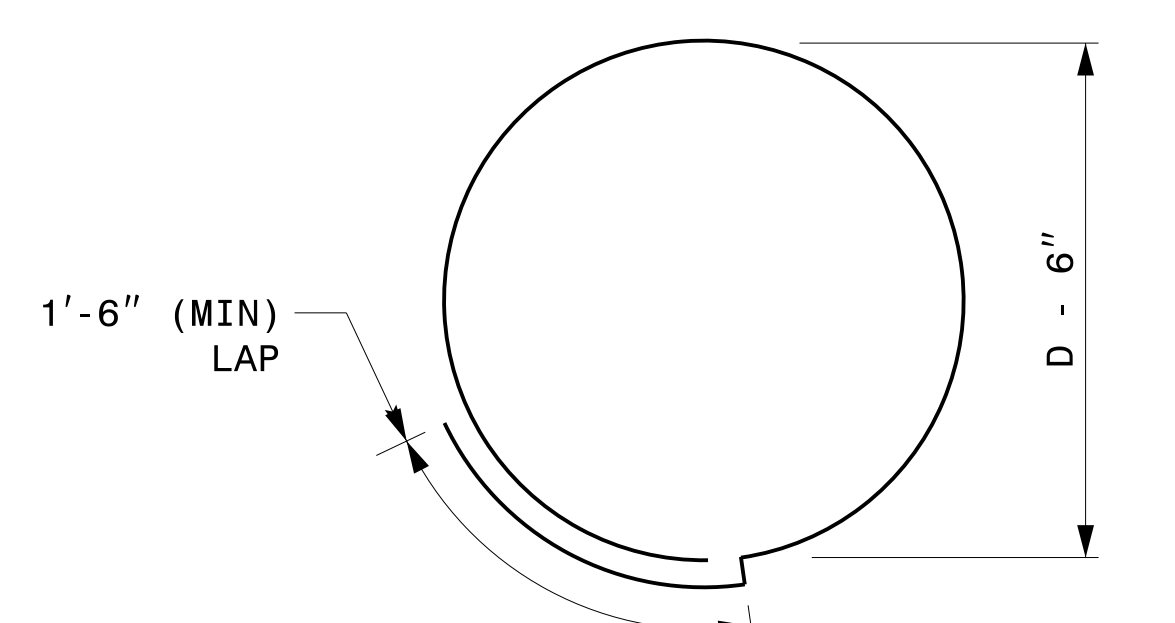
Fabrication Details - Strain Pole Attachments



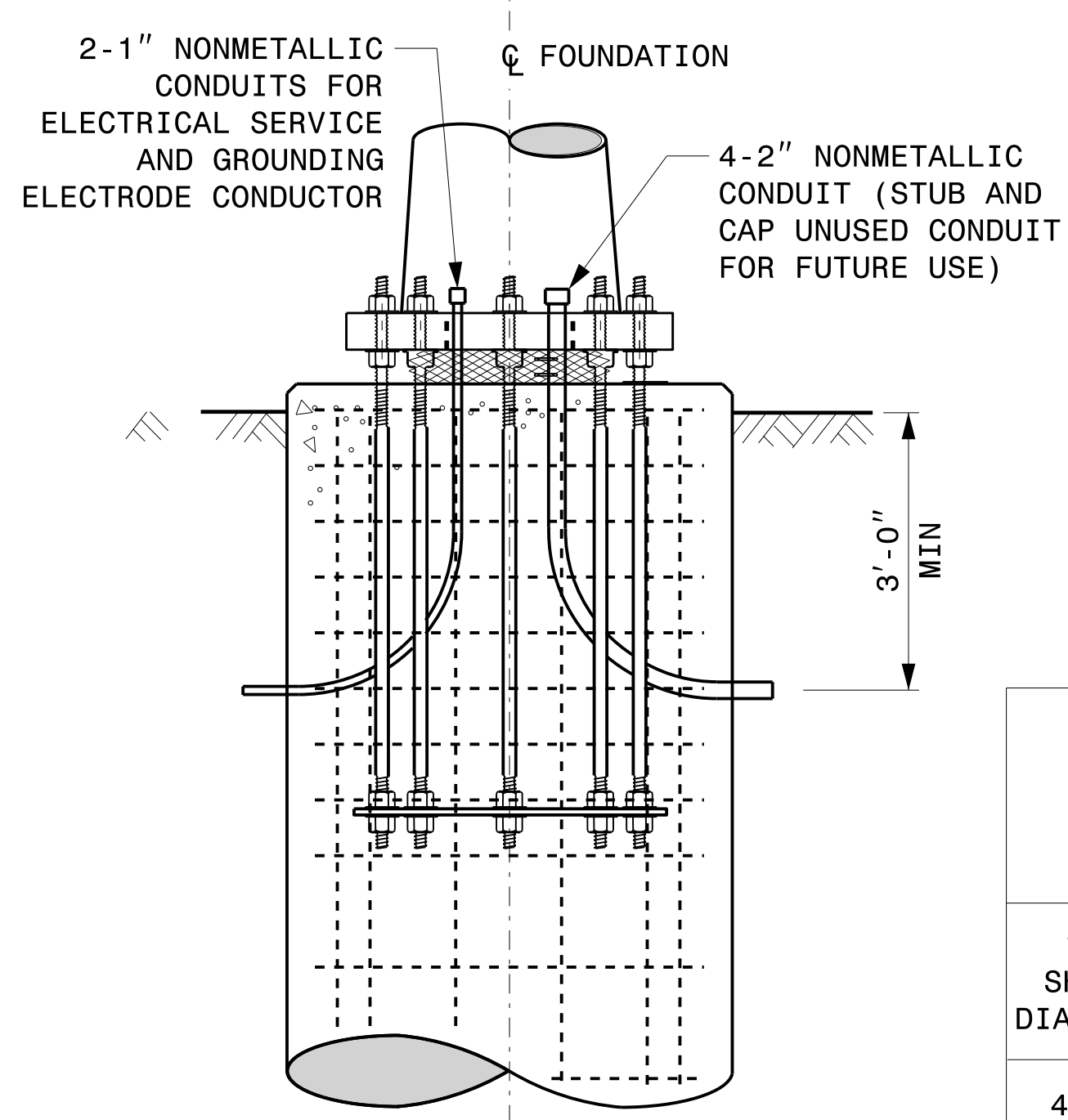
CONCRETE SHAFT ELEVATION



SECTION A-A



TYPICAL \"C\" BAR DETAIL



TYPICAL FOUNDATION CONDUIT DETAILS

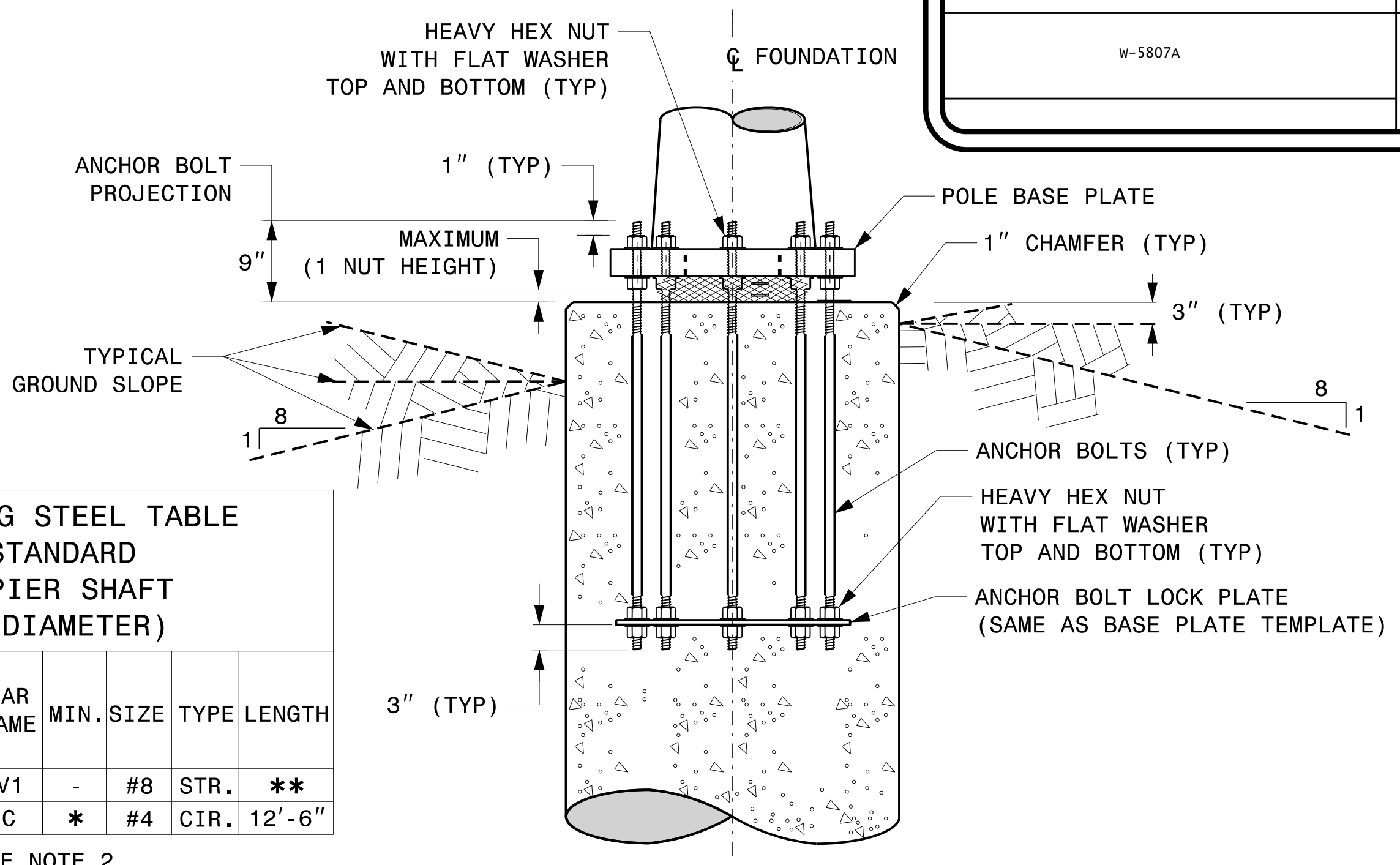
GENERAL NOTES:

- IF ACTUAL SUBSURFACE CONDITIONS DIFFER SIGNIFICANTLY FROM BORING DATA, CONTACT THE ENGINEER BEFORE EXCAVATING OR PLACING CONCRETE.
- 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.
- 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.
- PROVIDE 2" TO 5" FOUNDATION PROJECTION ABOVE GROUND LEVEL, DEPENDING ON THE GROUND SLOPE.
- 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.
- CONSTRUCT FOUNDATIONS IN ACCORDANCE WITH NCDOT STANDARD PROVISIONS SP09 R005- FOUNDATIONS AND ANCHOR ROD ASSEMBLIES FOR METAL POLES. ALL APPLICABLE 2024 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)
- USE AIR ENTRAINED AA CONCRETE MIX WITH A COMPRESSION STRENGTH OF f'c=4500 psi (MIN) AFTER 28 DAYS.
- USE ASTM A615 GRADE 60 DEFORMED BARS FOR ALL REINFORCING STEEL. MAINTAIN AT LEAST 3" COVER ON ALL REINFORCEMENT.
- LOCATE IDENTIFICATION TAG ON TOP OF THE FOUNDATION, DIRECTLY ABOVE THE CONDUIT'S ENTRY POINT.
- PROVIDE TWO LAYERS OF 4 MESH GALVANIZED WELDED 23 GAUGE (0.025) 6" WIDE AROUND PIPES UNDER THE BASE PLATE AND SECURE IT WITH TIES IF NECESSARY.
- PREFERRED LOCATION FOR THE I.D. TAG IS AS SHOWN IN DETAIL-A: DIRECTLY ABOVE THE CONDUIT ENTERING THE FOUNDATION.

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

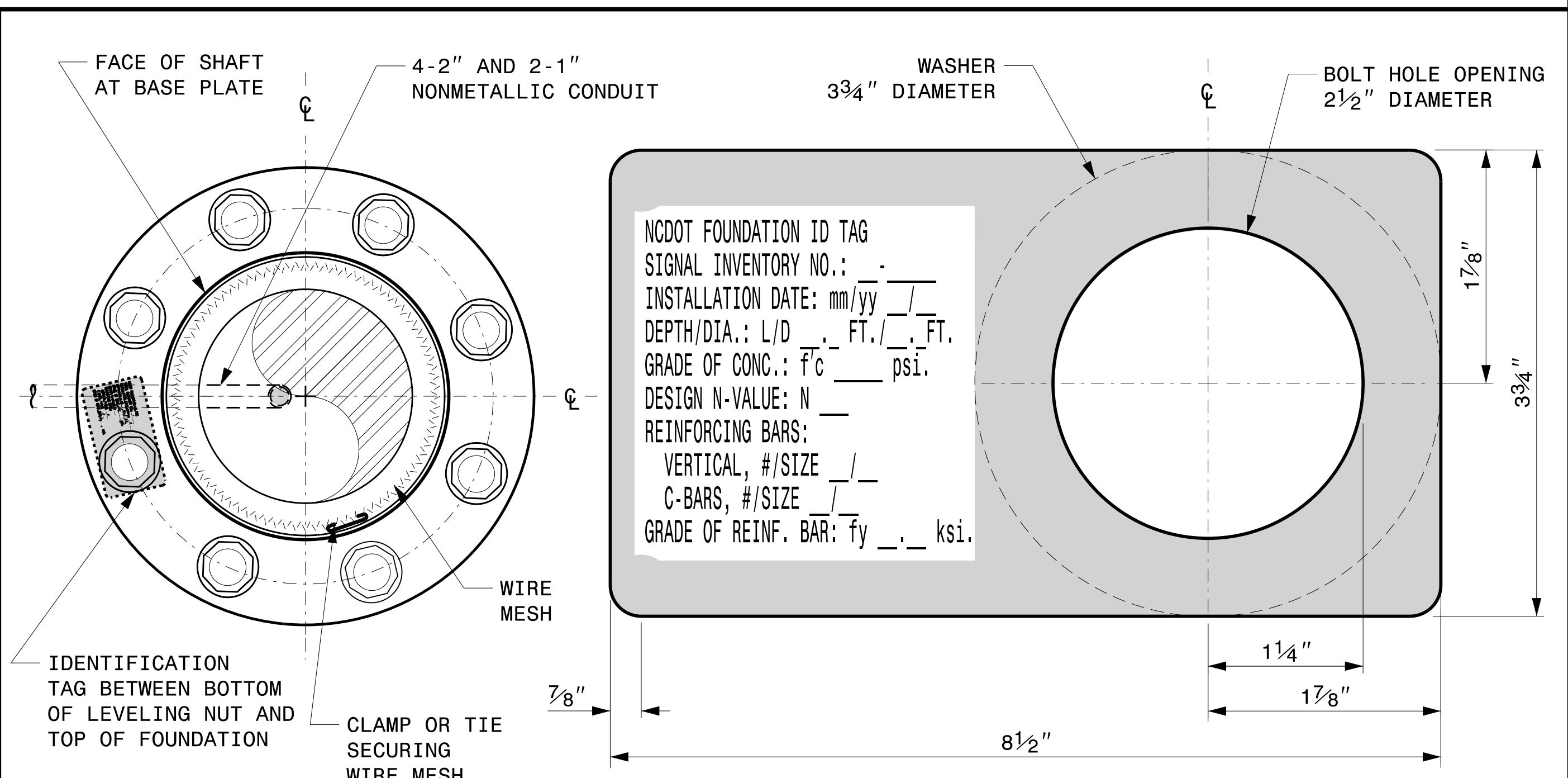
"D" SHAFT DIAMETER	CONCRETE VOLUME (CU. YDS)	BAR NAME	MIN. SIZE	TYPE	LENGTH
4'-0"	.465 X L	V1	#8	STR.	**
		C	#4	CIR.	12'-6"

* SEE NOTE 2
** SEE NOTE 3



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

<p>750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>Construction Details For Foundations</p>		<p>SEAL</p> <p>DocuSigned by: <i>Kevin Durigon</i></p>					
	<p>PLAN DATE: SEPTEMBER 2023 DESIGNED BY: K.C. DURIGON</p> <p>PREPARED BY: K.C. DURIGON REVIEWED BY: D.C. SARKAR</p>	<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		NO.	INIT.	DATE		
NO.	INIT.	DATE						

03-dt-2023-10-4f
 S:\SS\0415\SIGNAL\Signal Design\Structures\Drawings\2024 Metal Pole Std Drawings for LRF\0204_Sig.M7_Std_Construction_Details_Strain_Poles.dgn
 Kedar Tigon

Construction Details - Foundations

SOIL CONDITION

PROJECT I.D. NO.

SHEET NO.

W-5807A

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.)
S26L1	26	22	2	9	210	19.5	12.5	9	6.5	15.5	14.5	13	8	12	4	12
S26L2	26	23	2	10	240	19.5	12	9	6.5	15.5	14.5	13	8	12	4	12
S26L3	26	25	2	11	260	20.5	12	10	8	16	15	13	8	12	4	12
S30L1	30	22	2	9	230	19	11	9	7	15.5	14	12.5	8	12	4	12
S30L2	30	23	2	10	270	20	12	10	8	16	14.5	13	8	12	4	12
S30L3	30	25	2	11	290	21	12	10	8	17	15	13.5	8	12	4	12
S30H1	30	25	3	13	355	23	13	11	9	18	16.5	14.5	8	12	4	12
S30H2	30	29	3	15	405	25	14	11	9	19	17.5	15.5	8	14	4	12
S30H3	30	29	3	16	430	26	15	12	9	20	18	16	8	14	4	6
S35L1	35	22	3	8	260	19.5	12	10	8	15.5	14.5	13	8	12	4	12
S35L2	35	23	3	10	300	21	12	10	8	16.5	15	13.5	8	12	4	12
S35L3	35	25	3	10	320	21.5	13	10	8	17	15.5	14	8	12	4	12
S35H1	35	25	3	12	390	23.5	14	11	9	18	17	15	8	14	4	12
S35H2	35	29	4	14	460	26	15	12	9	20	18	16	8	14	4	6
S35H3	35	29	4	16	495	28.5	15	13.5	10	21.5	19	17	8	14	4	6

GENERAL NOTES:

1. VALUES SHOWN IN THE "REACTIONS AT THE POLE BASE" COLUMN REPRESENT THE MINIMUM ACCEPTABLE CAPACITY ALLOWED FOR DESIGN USING A COMBINED FORCE RATIO (CFR) OF 1.00.
2. USE CHAIRS AND SPACERS TO MAINTAIN PROPER CLEARANCE.
3. FOR FOUNDATION, ALWAYS USE AIR-ENTRAINED CONCRETE MIX.

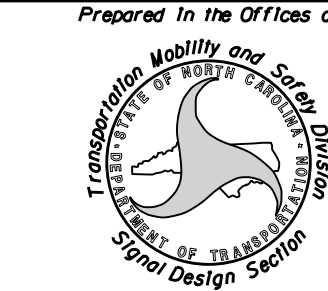
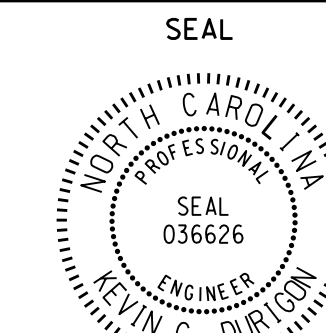

FOUNDATION SELECTION:

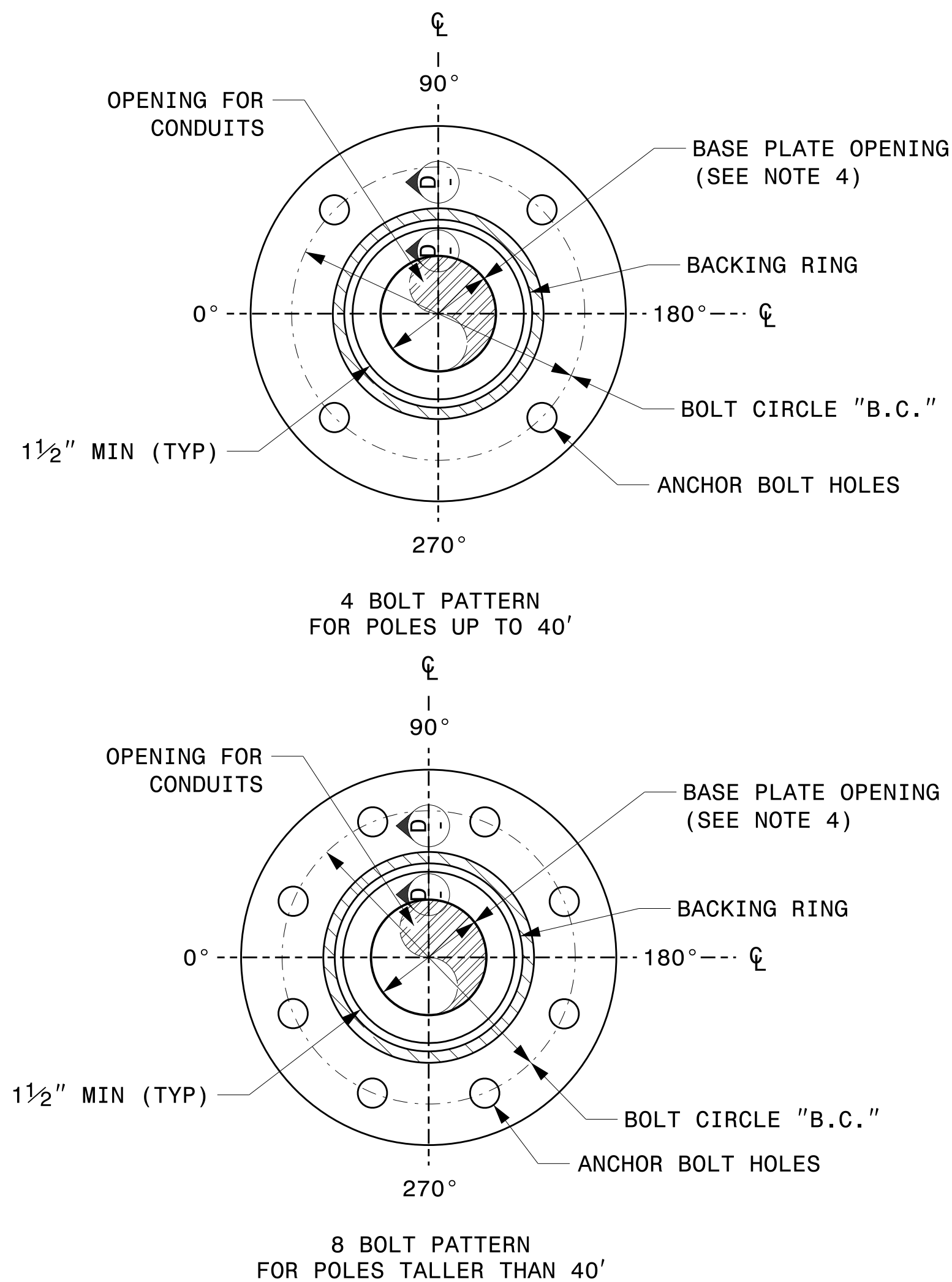
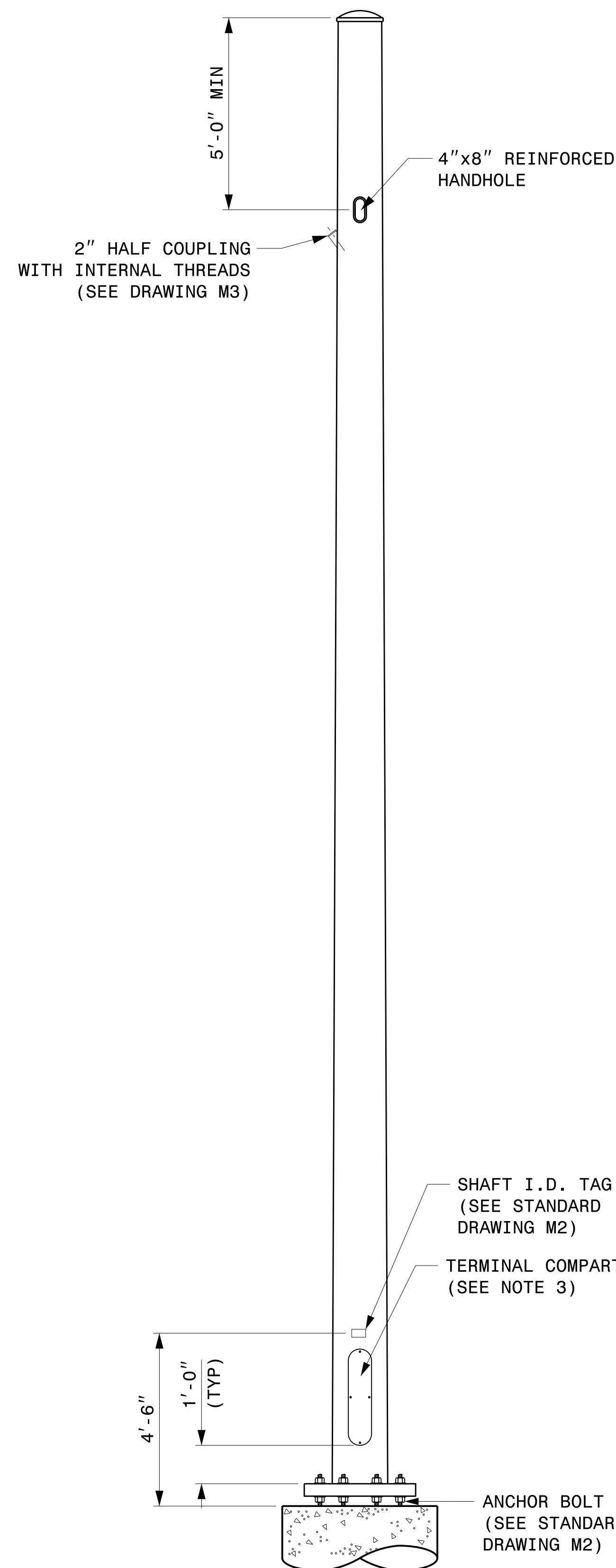
1. PERFORM A STANDARD PENETRATION TEST AT EACH PROPOSED FOUNDATION SITE TO DETERMINE "N" VALUE.
2. SELECT THE APPROPRIATE WIND ZONE FROM M1 DRAWING.
3. SELECT THE SOIL TYPE (CLAY OR SAND) THAT BEST DESCRIBES THE SOIL CHARACTERISTICS.
4. GET THE APPROPRIATE STANDARD POLE CASE NUMBER FROM THE PLANS OR FROM THE ENGINEER.
5. SELECT THE APPROPRIATE COLUMN UNDER "STANDARD FOUNDATIONS" BASED ON SOIL TYPE AND "N" VALUE. SELECT THE APPROPRIATE ROW BASED ON THE POLE LOAD CASE.
6. THE FOUNDATION DEPTH IS THE VALUE SHOWN IN THE "STANDARD FOUNDATIONS" CATEGORY WHERE THE COLUMN AND THE ROW INTERSECT.
7. USE CONSTRUCTION PROCEDURES AND DESIGN METHODS PRESCRIBED BY FHWA-NHI-10-016 MANUAL FOR DRILLED SHAFTS.

48" DIAMETER FOUNDATION CONCRETE VOLUME (CUBIC YARDS) = (0.465) x DRILLED PIER LENGTH

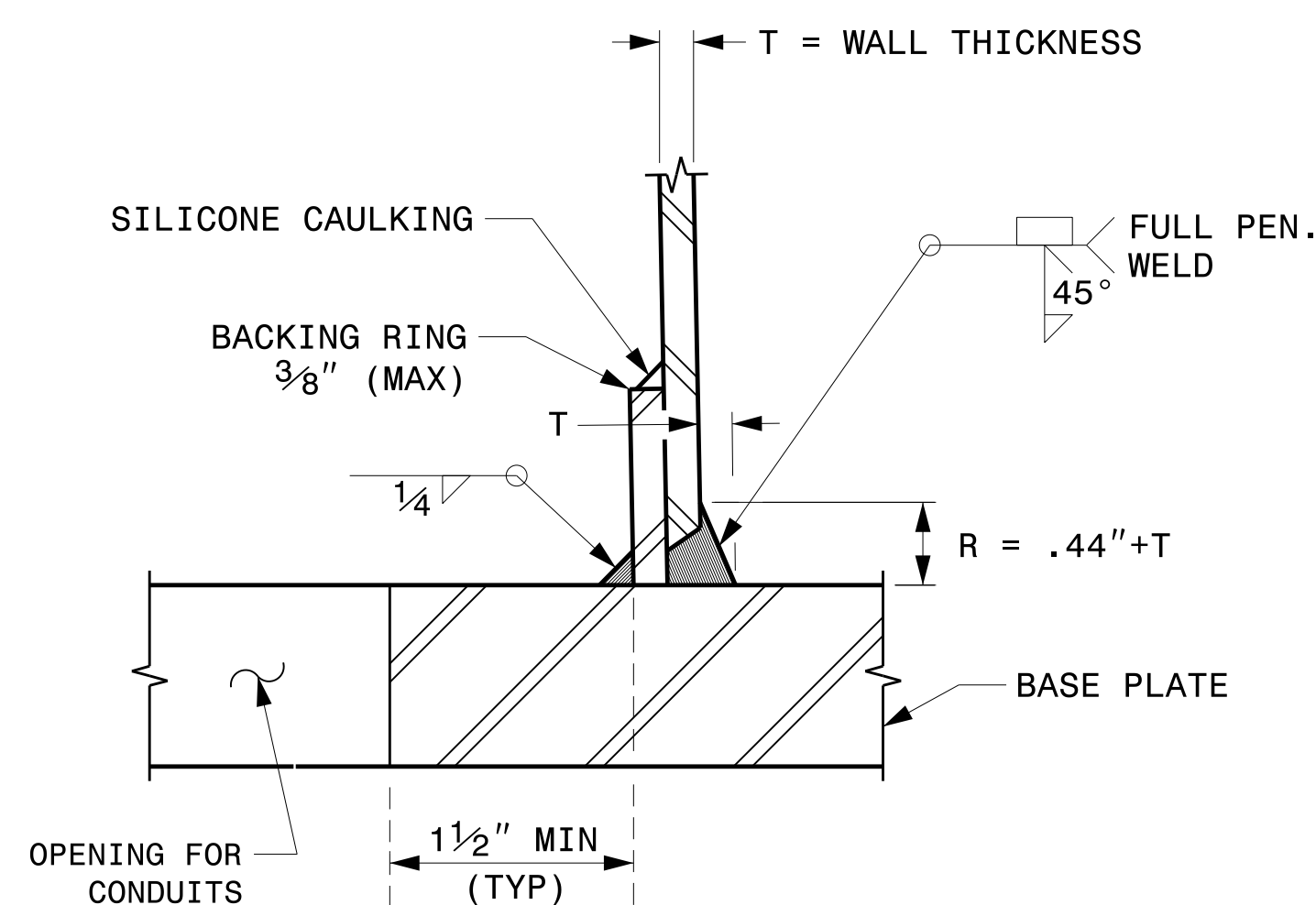
09-21-2023 10:46 S:\SSS\415\SIGNAL\Signal Design Section\Structures\Drawings\2024 Merol Pole Str. Drawings for LRF\0204_Sig.M8 Str. Strain Pole Found.-Saturated Soil Condition.dgn Kedar Tigon

Standard Strain Pole Foundation – All Soil Conditions

 Prepared in the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	<h3>Standard Strain Pole Foundation for All Soil Conditions</h3>	SEAL 
SCALE: NONE	PLAN DATE: SEPTEMBER 2023 DESIGNED BY: K.C. DURIGON PREPARED BY: K.C. DURIGON REVIEWED BY: D.C. SARKAR	DocuSigned by: 
	REVISIONS: INIT. DATE	4B23DC79B3784DA 09/21/2023



BASE PLATE DETAILS



**SECTION D-D
(POLE ATTACHMENT TO BASE PLATE)
FULL - PENETRATION
GROOVE WELD DETAIL**

**CCTV CAMERA POLE
(NOT TO SCALE)**

NOTES:

1. THIS DRAWING PROVIDES BASIC DETAILS FOR CCTV POLES. PROJECT REQUIREMENTS MAY REQUIRE SPECIAL FACTORY PREPS THAT ARE NOT SHOWN ON THESE DETAILS.
2. DETAILS FOR INTERNAL CAMERA LOWERING SYSTEMS ARE NOT SHOWN.
3. POLE MOUNTED CABINETS MAY REQUIRE MODIFICATIONS TO THE LOWER HANDHOLE OPENING TO MOUNT CABINETS. 4" X 8" REINFORCED HANDHOLES ARE ACCEPTABLE OPTIONS, AND MAY BE PREFERRED.
4. OPENING IN POLE BASE SHALL BE EQUAL TO POLE BASE INSIDE DIAMETER MINUS 3 1/2" BUT SHALL NOT BE LESS THAN 8 1/2".
5. USE COMPACT SECTION CRITERIA D/T RATIO PER AASHTO LTS-LRFD 1ST EDITION SECTION 5.7.2.

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: 0 NA NONE

Typical Fabrication Details For CCTV Poles	
PLAN DATE: SEPTEMBER 2023	DESIGNED BY: K.C. DURIGON
PREPARED BY: K.C. DURIGON	REVIEWED BY: C.F. ANDREWS
REVISIONS	INIT. DATE

SEAL

DocuSigned by:
Kevin Durigon
SIGNATURE
4B23DC79B3784DA

09/23/2023
DATE

02-dct-2023-10-15
S:\ISSUES\415 Signal\Signal Design Section\Structures\Drawings\2024 Metal Pole Std Drawings for LRF\2024 Sig.M9 Fabrication Details - CCTV Poles.dgn
Kedar Tigon

- 1 INSTALL COAX CABLE
- 2 INSTALL ETHERNET CABLE
- 3 EXISTING ETHERNET (OR COAX) CABLE
- 4 INSTALL SMFO CABLE
- 5 EXISTING SMFO CABLE
- 6 INSTALL FIBER OPTIC DROP CABLE
- 7 INSTALL TRACER WIRE
- 8 TRENCH
- 9 INSTALL PVC CONDUIT
- 10 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 12 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 13 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
- 14 INSTALL POLYETHYLENE CONDUIT
- 15 DIRECTIONAL DRILL CONDUIT
- 16 BORE AND JACK CONDUIT
- 17 INSTALL CABLE(S) IN EXISTING CONDUIT
- 18 INSTALL CABLE(S) IN NEW CONDUIT
- 19 INSTALL CABLE(S) IN EXISTING RISER
- 20 INSTALL CABLE(S) IN NEW RISER
- 21 INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS
- 22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 24 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 26 INSTALL NEW ETHERNET EDGE SWITCH
- 27 INSTALL NEW FIBER OPTIC TRANSCEIVER
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS AND FUSION SPlice CABLE IN CABINET
- 29 INSTALL UNDERGROUND SPlice ENCLOSURE
- 30 INSTALL AERIAL SPlice ENCLOSURE
- 31 MODIFY EXISTING INTERCONNECT CENTER /SPlice ENCLOSURE
- 32 INSTALL POLE MOUNTED SPlice CABINET
- 33 INSTALL BASE MOUNTED SPlice CABINET

- 34 INSTALL CABINET FOUNDATION
- 35 INSTALL CCTV CAMERA POLE MOUNTED CABINET
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40A INSTALL OVERSIZED JUNCTION BOX
- 40B INSTALL SPECIAL OVERSIZED JUNCTION BOX (36" x 24" x 24")
- 41 REMOVE EXISTING JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 REMOVE EXISTING WOOD POLE
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48A REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE
- 48B REMOVE EXISTING COMMUNICATIONS CABLE
- 49 BACK PULL EXISTING COMMUNICATIONS CABLE
- 50 INSTALL CELL MODEM AND ANTENNA
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52A INSTALL DELINEATOR MARKER
- 52B INSTALL JUNCTION BOX MARKER
- 53A STORE 20 FEET OF COMMUNICATIONS CABLE
- 53B STORE 50 FEET OF EACH COMMUNICATIONS CABLE
- 54 LASH CABLE(S) TO EXISTING COMMUNICATIONS CABLE
- 55 LASH CABLE(S) TO EXISTING MESSENGER CABLE
- 56 LASH CABLE(S) TO NEW MESSENGER CABLE
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE
- 59 INSTALL NEW EQUIPMENT CABINET DISCONNECT
- 60 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS
- 61 BOND RISER AND MESSENGER CABLE TO POLE GROUND
- 62 BOND RISER TO POLE GROUND
- 63 BOND MESSENGER CABLE TO POLE GROUND
- 64 INSTALL HEAT SHRINK TUBING RETROFIT KIT
- 65 INSTALL MOLDABLE DUCT SEAL
- 67 SLACK SPAN

LEGEND

	NEW FIBER OPTIC COMMUNICATIONS CABLE
	EXISTING COMMUNICATIONS CABLE
	EXISTING COMMUNICATIONS CABLE TO BE REMOVED
	NEW AERIAL GUY ASSEMBLY
	NEW CONDUIT
	EXISTING CONDUIT
	NEW DIRECTIONAL DRILLED CONDUIT

NEW

	OVERSIZED JUNCTION BOX
	WOOD POLE
	AERIAL SPlice ENCLOSURE
	UNDERGROUND SPlice ENCLOSURE
	METAL POLE
	CCTV ASSEMBLY
	STANDARD GUY ASSEMBLY
	SIDEWALK GUY ASSEMBLY
	CABLE STORAGE RACKS (SNOW SHOES)
	SIGNAL/EQUIPMENT CABINET
	SPlice CABINET
	FLAT PANEL ANTENNA (SINGLE)
	YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION
	YAGI ANTENNA (SINGLE)
	OMNI ANTENNA
	SIGNAL POLE
	SIGNAL INVENTORY NUMBER

EXISTING

	OVERSIZED JUNCTION BOX
	WOOD POLE
	AERIAL SPlice ENCLOSURE
	UNDERGROUND SPlice ENCLOSURE
	METAL POLE
	CCTV ASSEMBLY
	STANDARD GUY ASSEMBLY
	SIDEWALK GUY ASSEMBLY
	CABLE STORAGE RACKS (SNOW SHOES)
	SIGNAL/EQUIPMENT CABINET
	SPlice CABINET
	FLAT PANEL ANTENNA (SINGLE)
	YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION
	YAGI ANTENNA (SINGLE)
	OMNI ANTENNA
	SIGNAL POLE
	SIGNAL INVENTORY NUMBER

ATTACHMENT POINT:

'SS' symbol"/>	DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT
	REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT
"SS" REFERENCE LOCATION	
FS =	FRONT SIDE OF POLE
BS =	BACK SIDE OF POLE

CONSTRUCTION NOTE SYMBOLOGY KEY

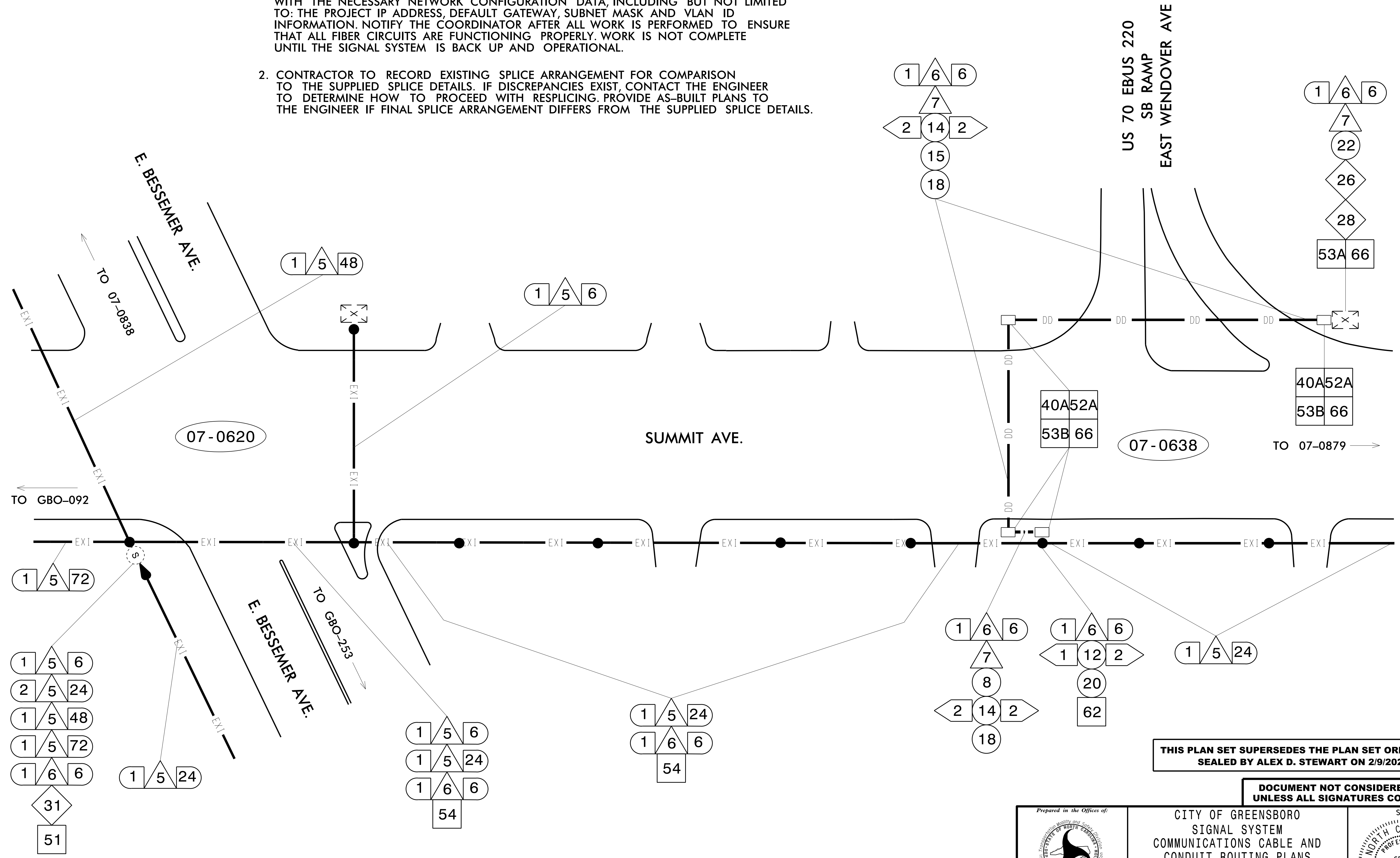
	INDICATES NUMBER OF CABLES, LOOPS, ETC.
	INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
	INDICATES NUMBER OF RISER(S)/CONDUIT(S)
	INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)

THIS PLAN SET SUPERSEDES THE PLAN SET ORIGINALLY SEALED BY ALEX D. STEWART ON 2/9/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

	CITY OF GREENSBORO SIGNAL SYSTEM CONSTRUCTION NOTES	
	DIVISION 7 GUILFORD CO. GREENSBORO PLAN DATE: APRIL 2023 REVIEWED BY: <i>Alex D. Stewart</i> PREPARED BY: D.J. SONDERFAN DATE: _____	REVISIONS: _____ _____ _____

1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE CITY OF GREENSBORO TRAFFIC SIGNAL SYSTEMS COORDINATOR AT (336) 373-4192 TO ARRANGE FOR THE CITY TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE COORDINATOR AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
2. CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.



THIS PLAN SET SUPERSEDES THE PLAN SET ORIGINALLY SEALED BY ALEX D. STEWART ON 2/9/2023

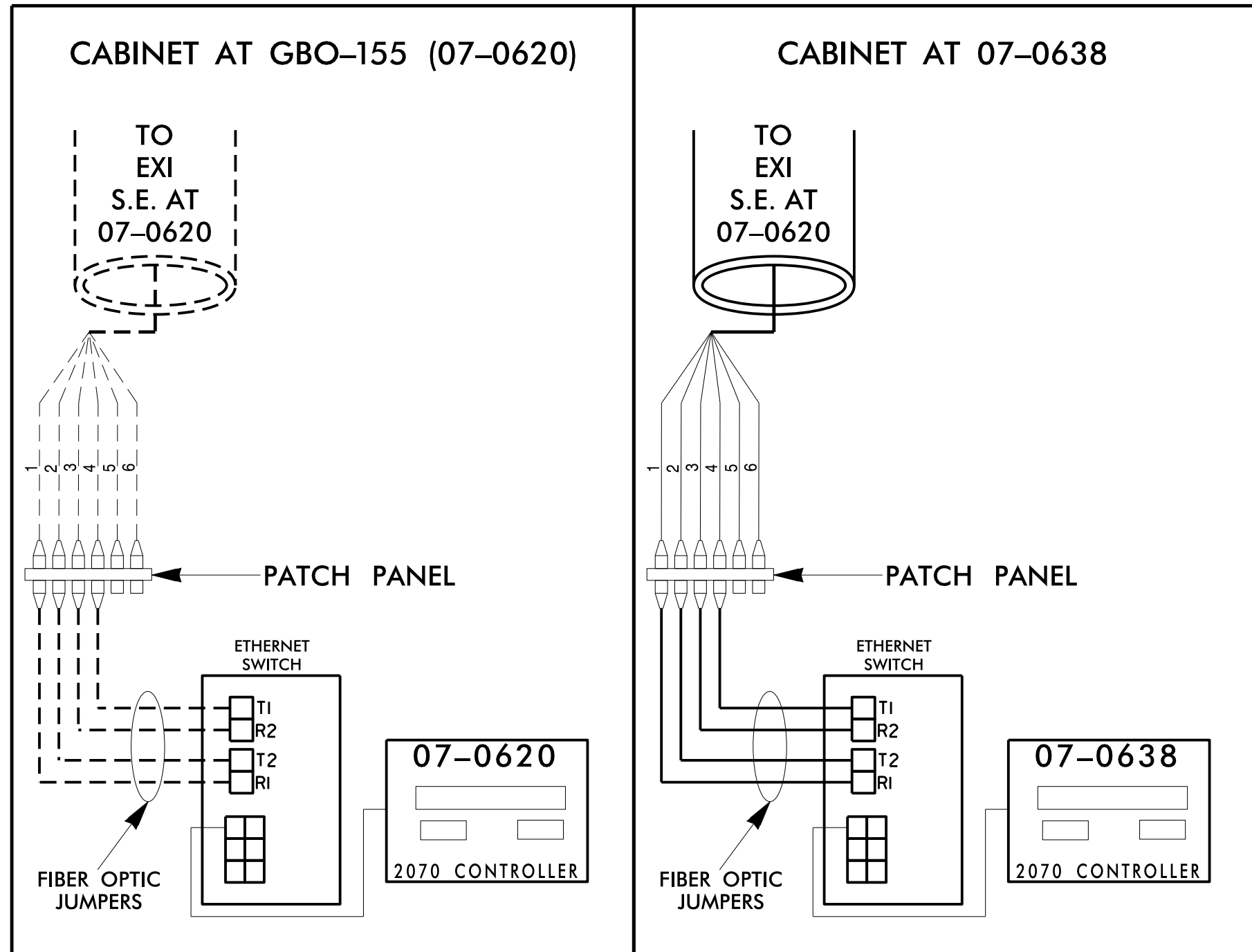
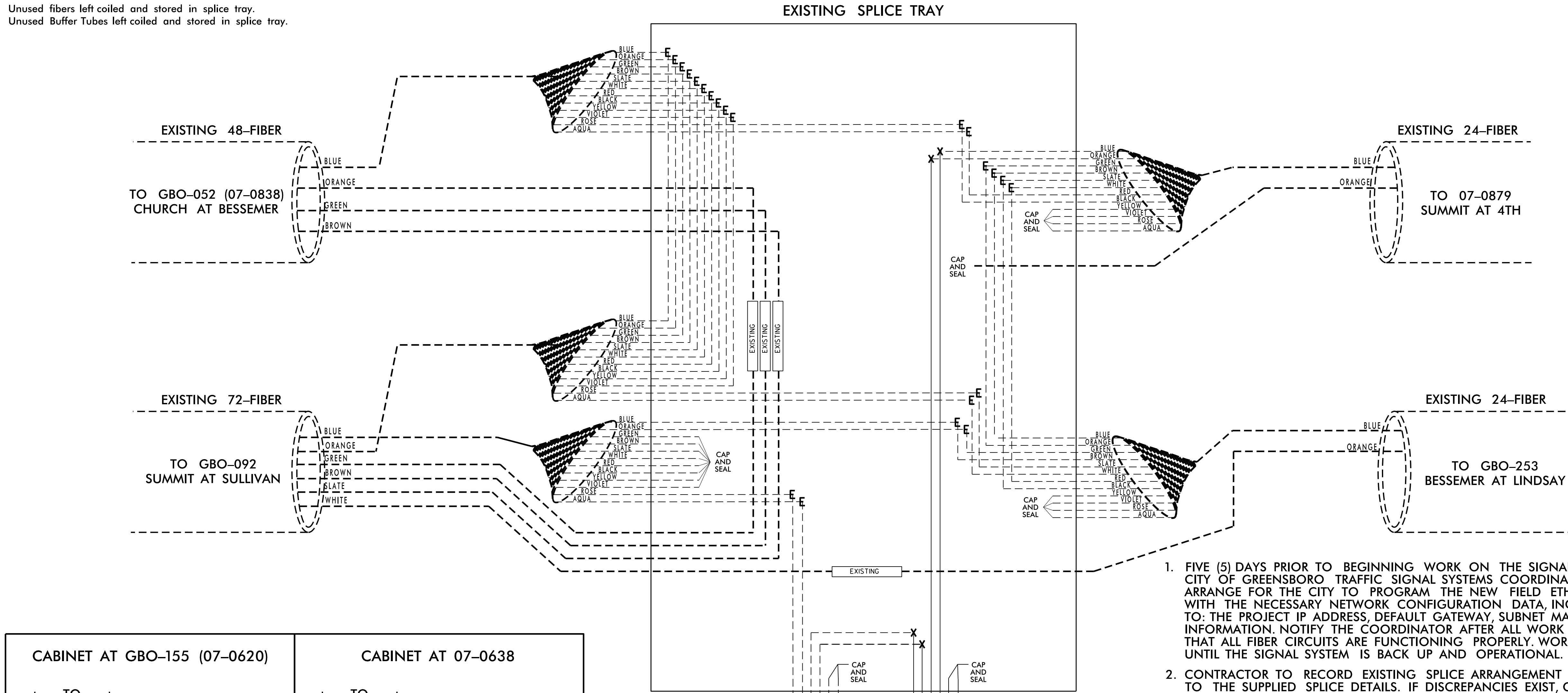
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<p>250 N. Greenfield Place, Greensboro, NC 27429</p>	<p>CITY OF GREENSBORO SIGNAL SYSTEM COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS</p>		
	<p>DIVISION 7 GUILFORD CO. GREENSBORO</p>	<p>PLAN DATE: APRIL 2023 REVIEWED BY: <i>Gregg Green</i></p>	
<p>SCALE: 0 N/A</p>	<p>PREPARED BY: D.J. SONDERFAN</p>	<p>INIT. DATE</p>	<p>SIGNATURE: <i>Alex D. Stewart</i> DATE: 04/13/2023</p>

**GROUP EG08
BESSEMER AT SUMMIT
SIG. INV. GBO-155 (07-0620)**

LEGEND		COLOR CODE TIA/EIA 598-A	
X	= FUSION SPLICE	(1) BLUE	(7) RED
C	= CAP IN TRAY	(2) ORANGE	(8) BLACK
E	= EXISTING SPLICE	(3) GREEN	(9) YELLOW
EXPRESS	= EXPRESS ALL FIBERS/ BUFFER TUBES	(4) BROWN	(10) VIOLET
SPLICE	= SPLICE ALL FIBERS/ BUFFER TUBES	(5) SLATE	(11) ROSE
EXISTING	= EXISTING BUFFER TUBE	(6) WHITE	(12) AQUA

Notes:
Unused fibers left coiled and stored in splice tray.
Unused Buffer Tubes left coiled and stored in splice tray.



1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE CITY OF GREENSBORO TRAFFIC SIGNAL SYSTEMS COORDINATOR AT (336) 373-4192 TO ARRANGE FOR THE CITY TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE COORDINATOR AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
 2. CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.
 3. ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING \ ENSURING PROPER TERMINATIONS.
 4. INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:
REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"
1) SPLICE LOCATION
2) DATE
3) COMPANY NAME
4) NAME OF INDIVIDUAL PERFORMING THE SPLICING
- PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

THIS PLAN SET SUPERSEDES THE PLAN SET ORIGINALLY SEALED BY ALEX D. STEWART ON 2/9/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

	<p>CITY OF GREENSBORO SIGNAL SYSTEM SPLICE DETAIL</p>		
	<p>DIVISION 7 GUILFORD CO. GREENSBORO</p>	<p>PLAN DATE: APRIL 2023 REVIEWED BY: <i>Greg Gruen</i></p>	
<p>250 N. Greenfield Pkwy., Garner, NC 27529</p>	<p>SCALE 0 N/A</p>	<p>REVISIONS</p>	<p>INIT. DATE</p>