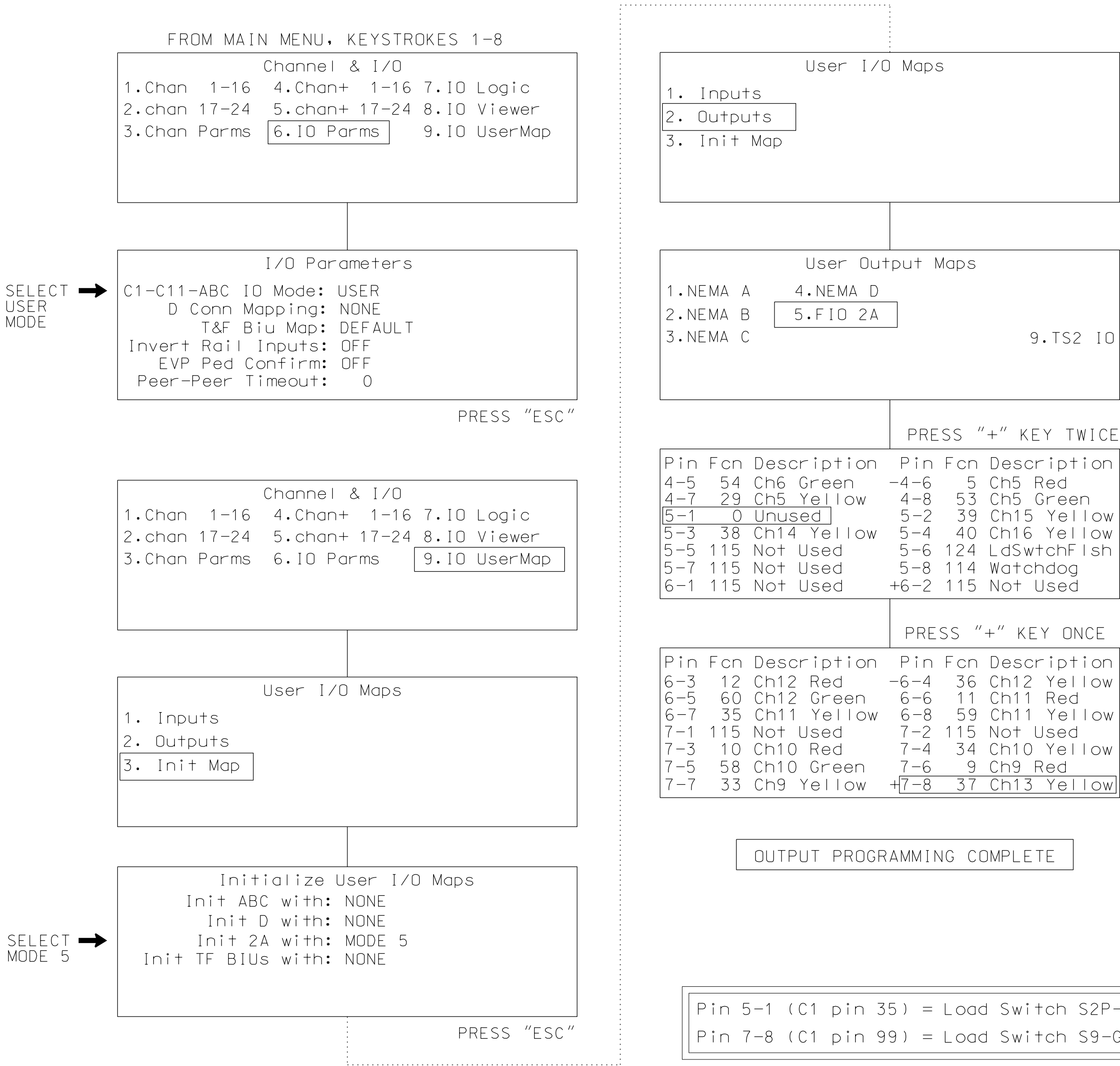


4-SECTION PPLT FYA OUTPUT REMAPPING PROGRAMMING DETAIL

(program controller as shown below)

1. Before proceeding with output programming, be sure to switch the “RUN ENABLE STATUS” to “OFF”. The “RUN ENABLE STATUS” setting is located from Main Menu, key strokes 1-7.
2. The Flashing Yellow Arrow in a 4-section PPLT FYA head is controlled by a normally unused PED Yellow output. This programming takes a specific PED Yellow output and remaps it to the appropriate Overlap Green output.



PRESS “ESC”

PRESS “+” KEY TWICE

Programming notes:

	Default	Change To:
Pin	Fcn Description	Fcn Description
5-1	37 Ch13 Yellow...	0 Unused

Programming notes:

	Default	Change To:
Pin	Fcn Description	Fcn Description
7-8	57 Ch9 Green...	37 Ch13 Yellow

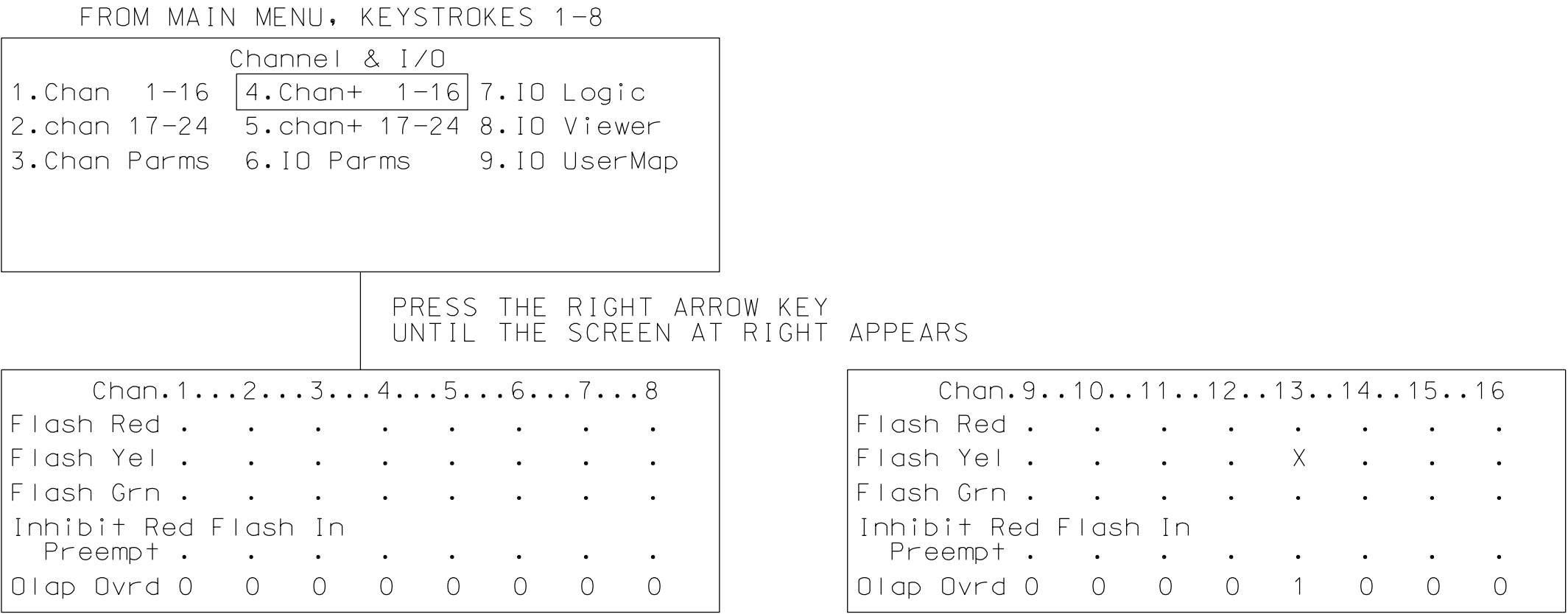
NOTE

I/O re-programming is necessary for proper FYA operation. See Channel & I/O Programming Detail for FYA Operation on this sheet.

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. It also specifies which overlap is to be overridden for the FYA to display properly.



Program the controller as shown above.

CHANNEL & I/O PROGRAMMING COMPLETE

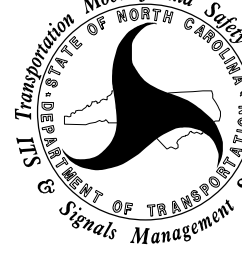
NOTE

Output remapping is necessary for proper FYA operation. See the 4-Section PPLT FYA Output Programming Detail on this.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1648T3
DESIGNED: January 2025
SEALED: 03-14-2025
REVISED: N/A

Electrical Detail - Sheet 3 of 3
Temporary Design 3

Electrical AND PROGRAMMING
DETAILS FOR:

Prepared for the Offices of:

750 N.Greenfeld Pkwy,Garner,NC 27529

1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326



SR 1850 (Sandy Ridge Road)
at
I-40 EB Ramps

Division 7 Guilford County Greensboro

PLAN DATE: January 2025 REVIEWED BY: AM Encarnacion
PREPARED BY: JT Stiff REVIEWED BY: PL Alexander

REVISIONS INIT. DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SEAL
044476
ANTHONY M. ENCARNACION

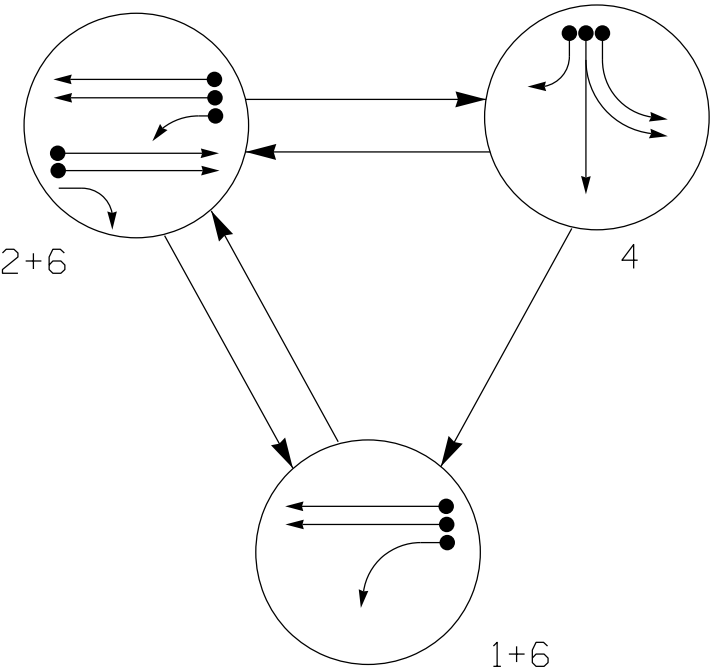
Designed by:
Anthony Encarnacion
Signature DATE 3/14/2025

SIG. INVENTORY NO. 07-1648T3

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S1F16655 AT L0591089

PROJECT REFERENCE NO.	SHEET NO.
U-4758	Sig. 26.0

PHASING DIAGRAM



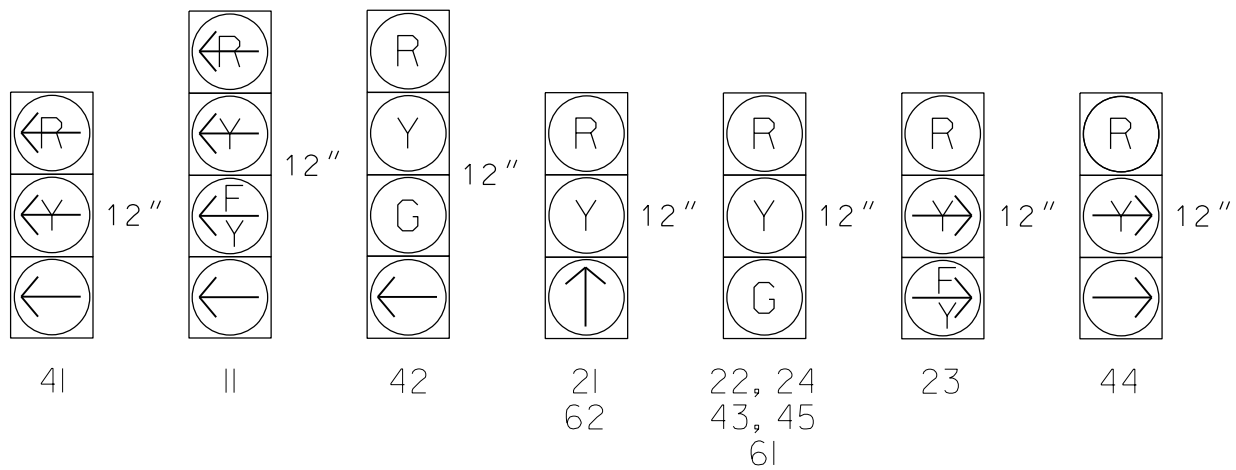
SIGNAL FACE	PHASE			
	1 + 6	2 + 6	4	11
11	←	→	←	→
21	R	↑	R	R
22, 24	R	G	R	R
23	R	→	R	R
41	←	←	←	←
42	R	R	→	R
43, 45	R	R	G	R
44	R	R	→	R
61	G	G	R	R
62	↑	↑	R	R

PHASING DIAGRAM DETECTION LEGEND

- ← ● DETECTED MOVEMENT
- ← UNDETECTED MOVEMENT (OVERLAP)
- ← UNSIGNALIZED MOVEMENT
- ← PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.



LOOP & DETECTOR UNIT INSTALLATION CHART													
TRAFFICWARE APOGEE SOFTWARE 2070 CONTROLLER													
INDUCTIVE LOOPS/ZONES					DETECTOR PROGRAMMING								
ZONE	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	SWITCH (PHASE)	DELAY TIME	STRETCH TIME	CALLING	EXTENSION	ADDED INIT.	SYSTEM LOOP	NEW CARD
1A*	6X40	0	*	*	1	-	15.0	-	X	X	-	-	*
					6	-	-	-	X	X	-	-	*
2A*	6X6	300	*	*	2	-	-	-	X	X	X	-	*
2B*	6X6	300	*	*	2	-	-	-	X	X	X	-	*
4A*	6X40	0	*	*	4	-	-	-	X	X	-	-	*
4B*	6X40	0	*	*	4	-	-	-	X	X	-	-	*
4C*	6X40	0	*	*	4	-	15.0	-	X	X	-	-	*
6A*	6X6	300	*	*	6	-	-	-	X	X	X	-	*
6B*	6X6	300	*	*	6	-	-	-	X	X	X	-	*

* Non-Intrusive Detection Zone

3 Phase
Fully Actuated
(Greensboro Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 may be lagged.
- Reposition existing signal heads numbered 11, 24, 43, 61 and 62.
- Set all detector units to presence mode.
- This intersection uses video detection. Maintain detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

PROPOSED	EXISTING
○ → Traffic Signal Head	● →
○ → Modified Signal Head	N/A
↓ Sign	↓
□ Pedestrian Signal Head	□
□ With Push Button & Sign	□
○ Signal Pole with Guy	●
○ Signal Pole with Sidewalk Guy	●
▭ Inductive Loop Detector	▭
▭ Non-Intrusive Detection Zone	N/A
▭ Controller & Cabinet	▭
□ Junction Box	□
----- 2-in Underground Conduit	-----
N/A Right of Way	-----
→ Directional Arrow	→
N/A Curb Ramp	▭
N/A Guardrail	▭
(A) No U-Turn/No Left Turn Sign (R3-18)	(A)
(B) No Right Turn Sign (R3-1)	(B)
(C) Street Name Sign (D3-1)	(C)
(D) Right Arrow "ONLY" Sign (R3-5R)	(D)
(E) Left Arrow "ONLY" Sign (R3-5L)	(E)
(F) Combined Through and Left Arrow Sign (R3-6L)	(F)

TRAFFICWARE APOGEE 2070 TIMING CHART					
FEATURE	PHASE				
	1	2	4	6	
Min Green *	7	15	7	15	
Gap, Extension *	2.0	6.0	2.0	6.0	
Maximum Green 1 *	20	60	30	60	
Yellow Clear	3.0	4.9	3.7	4.9	
Red Clear	3.1	1.3	2.1	1.3	
Walk *	-	-	-	-	
Pedestrian Clear	-	-	-	-	
Added Initial *	-	1.5	-	1.5	
Maximum Initial *	-	34	-	34	
Time Before Reduction *	-	15	-	15	
Time To Reduce *	-	30	-	30	
Minimum Gap	-	3.0	-	3.0	
Recall Mode	-	MIN RECALL	-	MIN RECALL	
Lock Calls	NO	YES	NO	YES	
Dual Entry	-	-	-	-	
Simultaneous Gap	ON	ON	ON	ON	

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

Signal Upgrade - Temporary Design 4
(TMP Phase IV)

Prepared for the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529		SR 1850 (Sandy Ridge Road) at I-40 EB Ramps		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Division 7		Guilford County		Greensboro	
PLAN DATE: January 2025		REVIEWED BY: AM Encarnacion		SEAL 056276 JAMES T. STIFF ENGINEER	
PREPARED BY: JT Stiff		REVIEWED BY: PL Alexander		SIGNED BY: James Stiff 054800378724434 DATE: 3/14/2025	
REVISIONS		INIT.		DATE	
SCALE 0 40 1"=40'		SIGNATURE		DATE	
		SIC. INVENTORY NO.		07-164874	

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1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

OVERLAP PROGRAMMING DETAIL
FOR OVERLAPS A AND C*

(program controller as shown below)

*NOTE FOR ALL OVERLAPS: Use Default values for
Overlap 'PLUS' programming details.

FROM MAIN MENU PRESS "1" CONTROLLER
AND THEN "5" OVERLAPS

Overlaps

1.General Parm
2.Program
3.Status

General Overlap Parameters

Lock Inhibit OFF
Confl Lock Enable OFF
Parent P Clnos ON
Extra Included Phases OFF

PRESS "ESC"

Overlaps

1.General Parm
2.Program
3.Status

Enter Overlap # 1
then press Enter

Overlap A-1

1.Program Parm
2.Confl Prog+
3.Program Parm+

Notice
type
FYA-4
→

OvrIp A-1 Ps.....

Included Ps 1 0 0 0 0 0 0 0

Modifier Ps 2 0 0 0 0 0 0 0

Type:FYA-4 Grn: 0 Yel: 3.5 Red: 1.5

PRESS "ESC"

Enter Overlap # 3
then press Enter

Overlap C-3

1.Program Parm
2.Confl Prog+
3.Program Parm+

Notice
type
NORMAL
→

OvrIp C-3 Ps.....

Included Ps 2 0 0 0 0 0 0 0

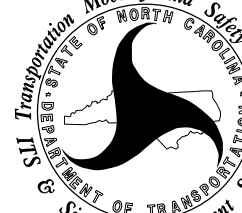
Modifier Ps 0 0 0 0 0 0 0 0

Type:NORMAL Grn: 0 Yel: 3.5 Red: 1.5

END OF OVERLAP PROGRAMMING DETAIL

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1648T4
DESIGNED: January 2025
SEALED: 03-14-2025
REVISED: N/A

Electrical Detail - Sheet 2 of 3
Temporary Design 4

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared for the Offices of:  DEPARTMENT OF TRANSPORTATION & SAFETY STATE OF NORTH CAROLINA 750 N.Greenfeld Pkwy,Garner,NC 27529	SR 1850 (Sandy Ridge Road) at I-40 EB Ramps		SEAL  SEAL 044476 ENGINEER ANTHONY M. ENCARNACION
	Division 7 Guilford County Greensboro		
	PLAN DATE: January 2025	REVIEWED BY: AM Encarnacion	
	PREPARED BY: JT Stiff	REVIEWED BY: PL Alexander	
	REVISIONS	INIT. DATE	

Designed by:
Anthony Encarnacion
3/14/2025

SIGNATURE DATE

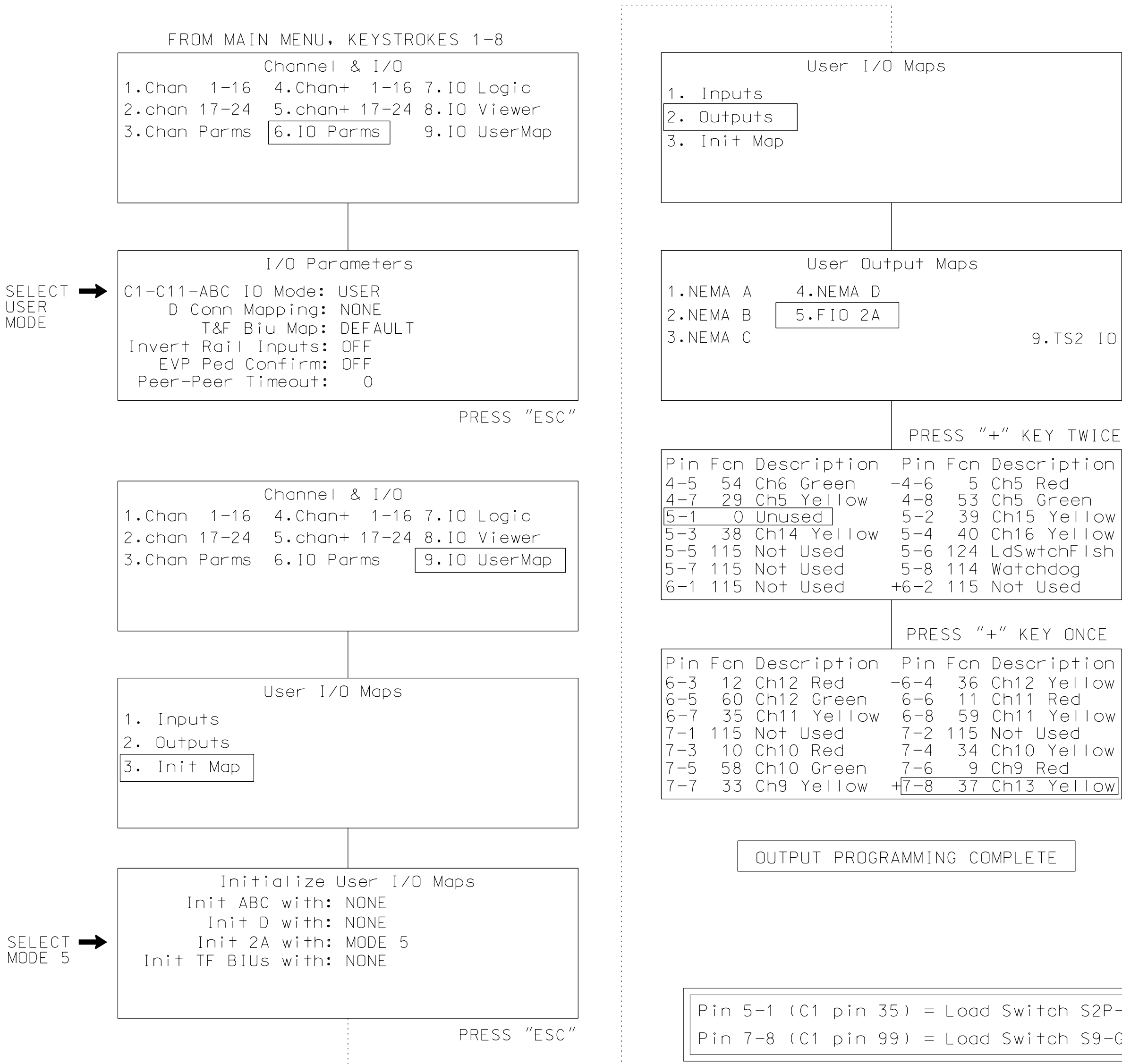
SIG. INVENTORY NO. 07-1648T4

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S1F4685 AT L05491289

4-SECTION PPLT FYA OUTPUT REMAPPING PROGRAMMING DETAIL

(program controller as shown below)

1. Before proceeding with output programming, be sure to switch the “RUN ENABLE STATUS” to “OFF”. The “RUN ENABLE STATUS” setting is located from Main Menu, key strokes 1-7.
2. The Flashing Yellow Arrow in a 4-section PPLT FYA head is controlled by a normally unused PED Yellow output. This programming takes a specific PED Yellow output and remaps it to the appropriate Overlap Green output.



- ! Press the “*” key to return to Main Menu. Now
- o go back to “RUN-ENABLE STATUS” and switch to “QN”.

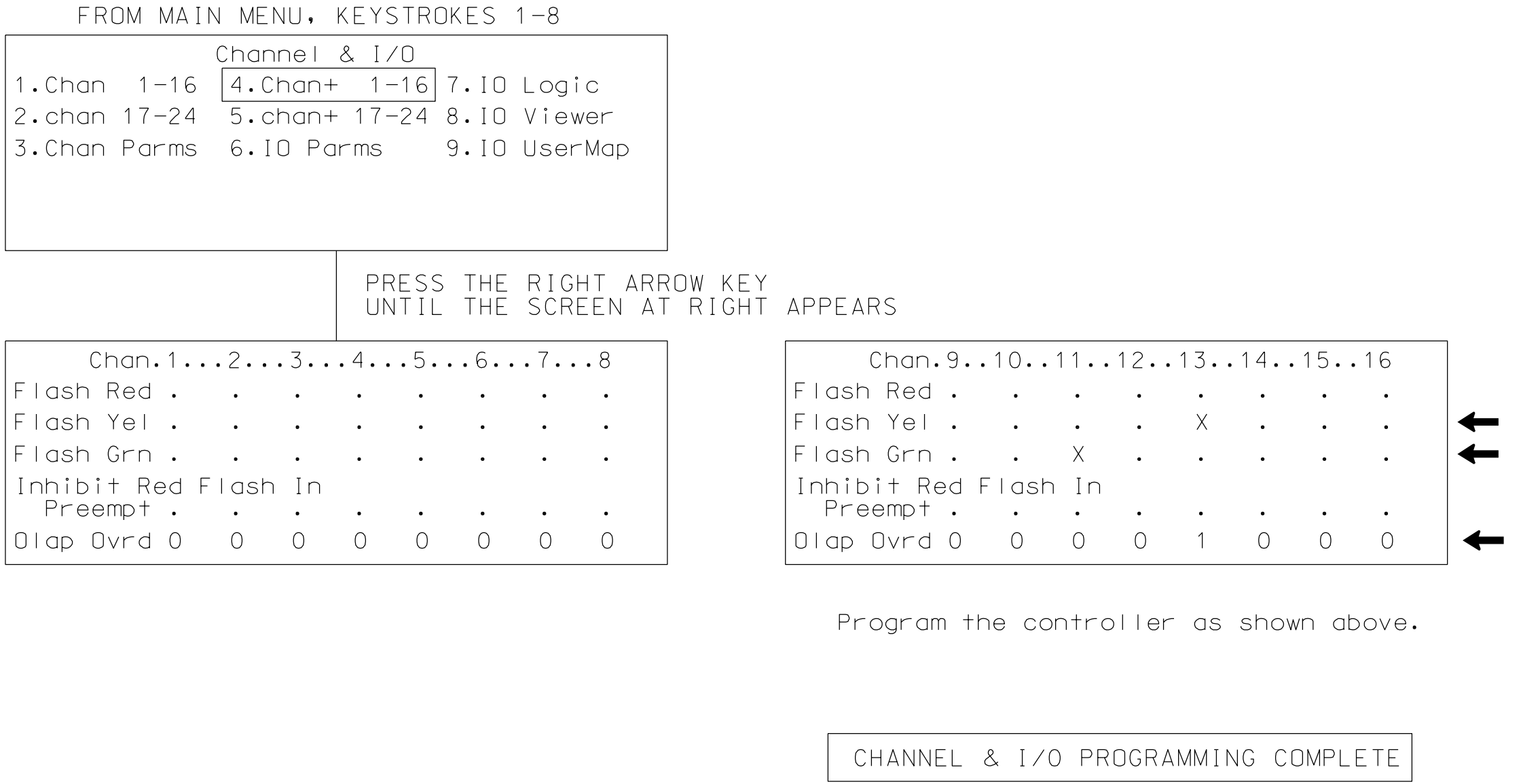
NOTE

I/O re-programming is necessary for proper FYA operation. See Channel & I/O Programming Detail for FYA Operation on this sheet.

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. It also specifies which overlap is to be overridden for the FYA to display properly.

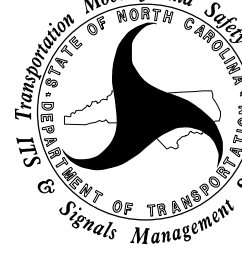
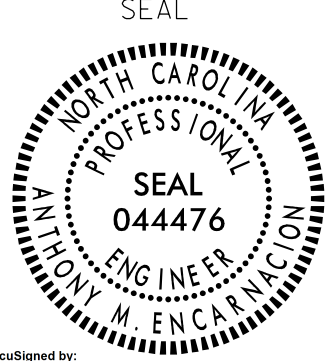


NOTE

Output remapping is necessary for proper FYA operation. See the 4-Section PPLT FYA Output Programming Detail on this.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 07-1648T4
DESIGNED: January 2025
SEALED: 03-14-2025
REVISED: N/A

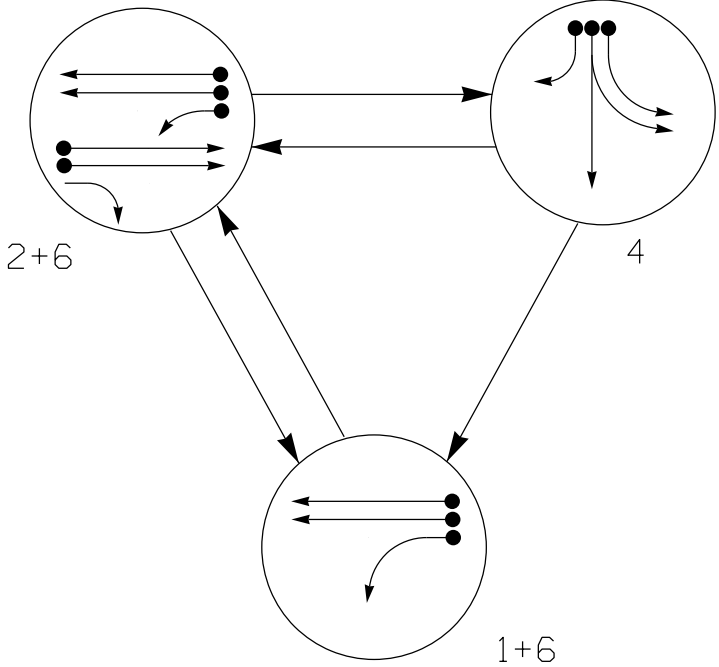
Electrical Detail - Sheet 3 of 3
Temporary Design 4

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared for the Offices of:  750 N.Greenfeld Pkwy,Garner,NC 27529	SR 1850 (Sandy Ridge Road) at I-40 EB Ramps		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL  SEAL 044476 ENGINEER Designed by: Anthony Encarnacion 3/14/2025 SIGNATURE DATE SIG. INVENTORY NO. 07-1648T4	
	Division 7	Guilford County		Greensboro
	PLAN DATE: January 2025	REVIEWED BY: AM Encarnacion		
	PREPARED BY: JT Stiff	REVIEWED BY: PL Alexander		
	REVISIONS	INIT.		DATE

 **AtkinsRéal**
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

PROJECT REFERENCE NO.	SHEET NO.
U-4758	Sig. 27.0

PHASING DIAGRAM



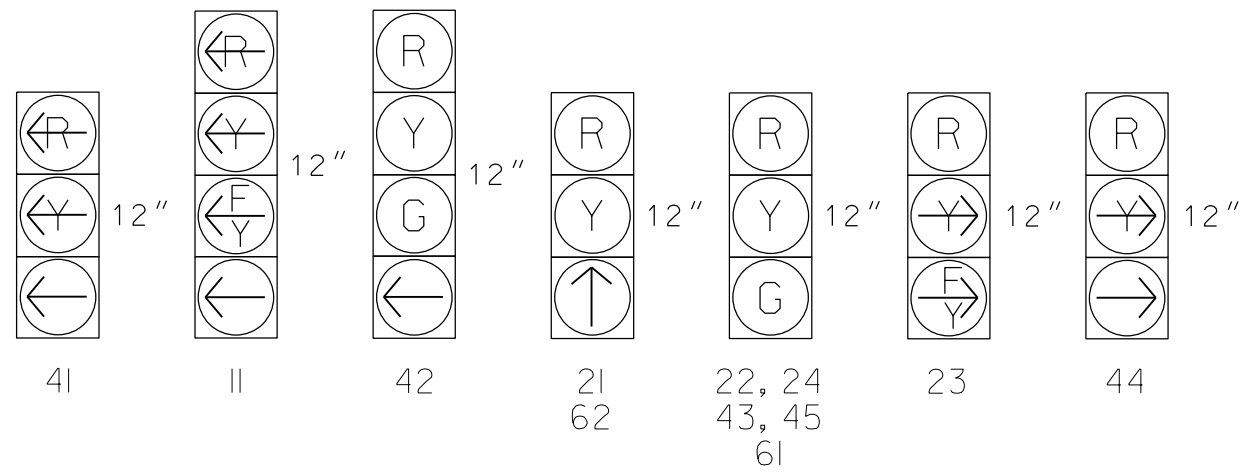
SIGNAL FACE	PHASE			
	1 + 6	2 + 6	4	11
11	←	→	←	→
21	R	↑	R	R
22, 24	R	G	R	R
23	R	→	R	R
41	←	←	←	←
42	R	R	→	R
43, 45	R	R	G	R
44	R	R	→	R
61	G	G	R	R
62	↑	↑	R	R

PHASING DIAGRAM DETECTION LEGEND

- ←● DETECTED MOVEMENT
- ← UNDETECTED MOVEMENT (OVERLAP)
- ←..... UNSIGNALIZED MOVEMENT
- ←..... PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.



LOOP & DETECTOR UNIT INSTALLATION CHART TRAFFICWARE APOGEE SOFTWARE 2070 CONTROLLER												
INDUCTIVE LOOPS/ZONES					DETECTOR PROGRAMMING							
LOOPZONE	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	SWITCH (PHASE)	DELAY TIME	STRETCH TIME	CALLING	EXTENSION	ADDED INIT.	SYSTEM LOOP
1A	6X40	0	2-4-2	X	1	-	15.0	-	X	X	-	X
					6	-	-	-	X	X	-	X
2A	6X6	300	4	X	2	-	-	-	X	X	-	X
2B	6X6	300	4	X	2	-	-	-	X	X	-	X
4A	6X40	0	2-4-2	X	4	-	-	-	X	X	-	X
4B	6X40	0	2-4-2	X	4	-	-	-	X	X	-	X
4C	6X40	0	2-4-2	X	4	-	15.0	-	X	X	-	X
6A*	6X6	300	*	*	6	-	-	-	X	X	-	*
6B*	6X6	300	*	*	6	-	-	-	X	X	-	*

* Non-Intrusive Detection Zone

3 Phase
Fully Actuated
(Greensboro Signal System)

NOTES

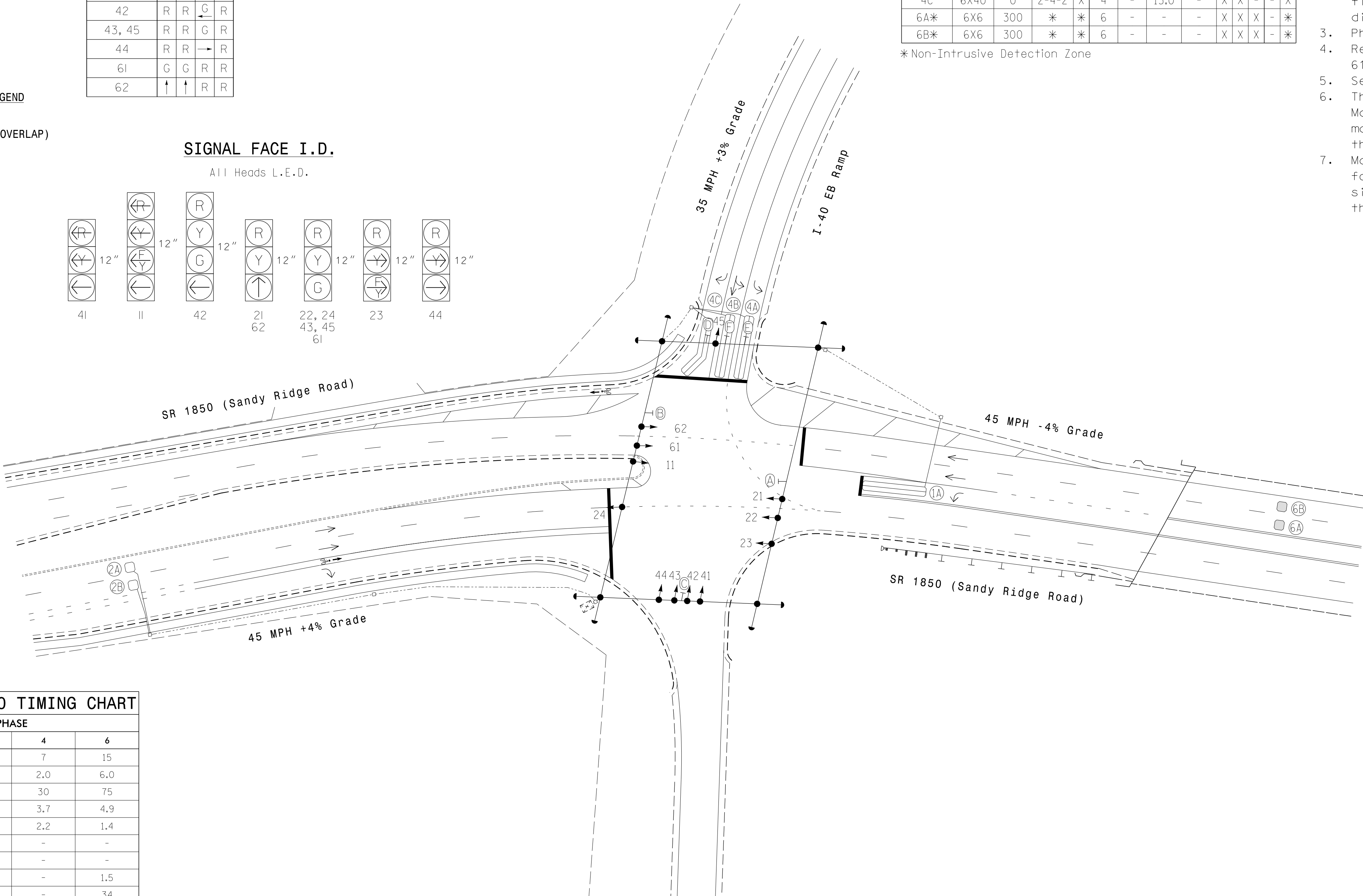
- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 may be lagged.
- Reposition existing signal heads numbered 61 and 62.
- Set all detector units to presence mode.
- This intersection uses video detection. Maintain detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

- | PROPOSED | EXISTING |
|----------|--|
| → | Traffic Signal Head |
| ● | Modified Signal Head |
| ↑ | Sign |
| ↓ | Pedestrian Signal Head |
| □ | With Push Button & Sign |
| ○ | Signal Pole with Guy |
| ○ | Signal Pole with Sidewalk Guy |
| ▬ | Inductive Loop Detector |
| ▬ | Non-Intrusive Detection Zone |
| ⊠ | Controller & Cabinet |
| □ | Junction Box |
| ----- | 2-in Underground Conduit |
| N/A | Right of Way |
| → | Directional Arrow |
| N/A | Curb Ramp |
| N/A | Guardrail |
| (A) | No U-Turn/No Left Turn Sign (R3-18) |
| (B) | No Right Turn Sign (R3-1) |
| (C) | Street Name Sign (D3-1) |
| (D) | Right Arrow "ONLY" Sign (R3-5R) |
| (E) | Left Arrow "ONLY" Sign (R3-5L) |
| (F) | Combined Through and Left Arrow Sign (R3-6L) |

TRAFFICWARE APOGEE 2070 TIMING CHART					
FEATURE	PHASE				
	1	2	4	6	
Min Green *	7	15	7	15	
Gap, Extension *	2.0	6.0	2.0	6.0	
Maximum Green 1 *	20	75	30	75	
Yellow Clear	3.0	4.9	3.7	4.9	
Red Clear	3.1	1.4	2.2	1.4	
Walk *	-	-	-	-	
Pedestrian Clear	-	-	-	-	
Added Initial *	-	1.5	-	1.5	
Maximum Initial *	-	34	-	34	
Time Before Reduction *	-	15	-	15	
Time To Reduce *	-	30	-	30	
Minimum Gap	-	3.0	-	3.0	
Recall Mode	-	MIN RECALL	-	MIN RECALL	
Lock Calls	NO	YES	NO	YES	
Dual Entry	-	-	-	-	
Simultaneous Gap	ON	ON	ON	ON	

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



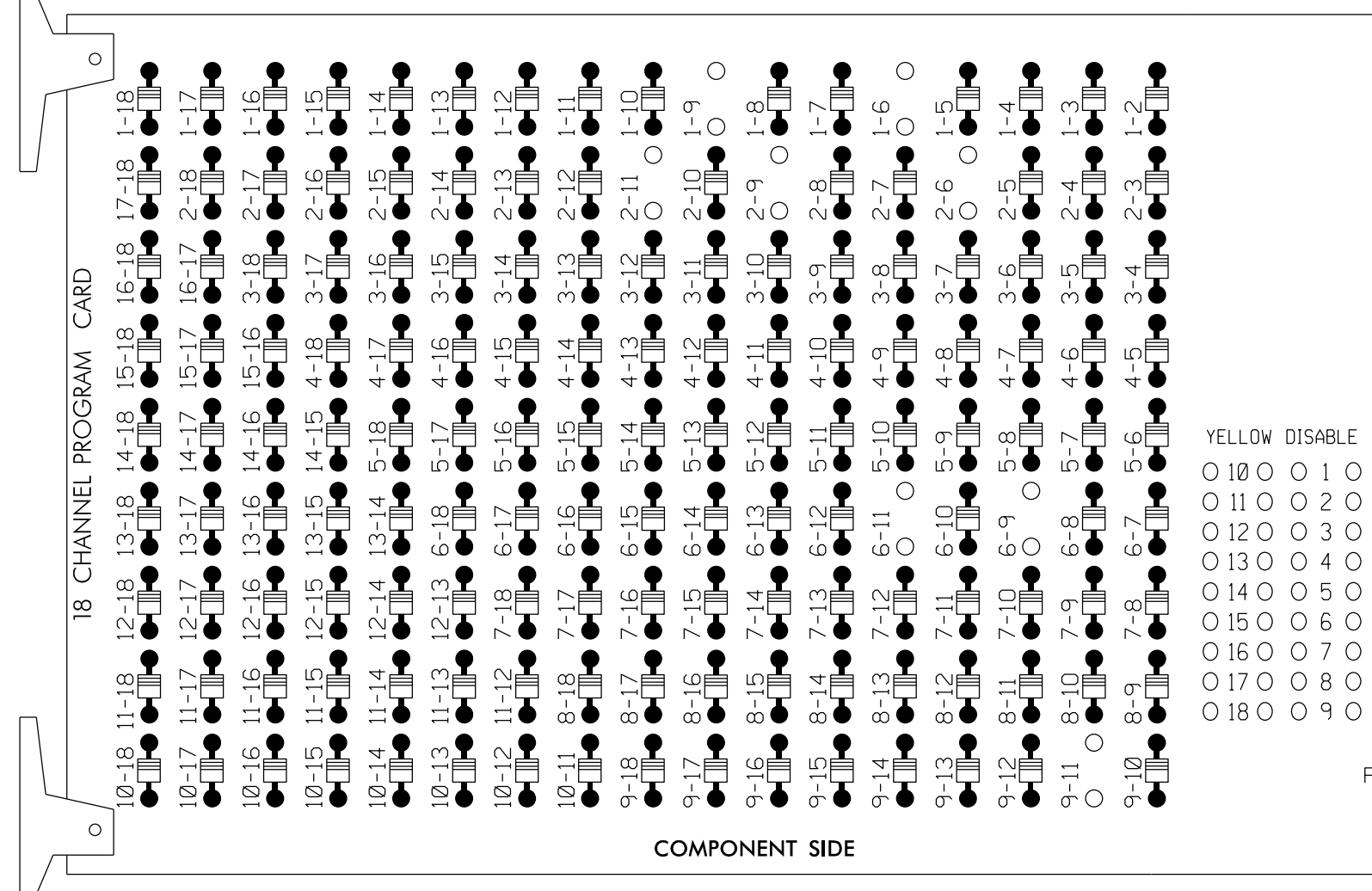
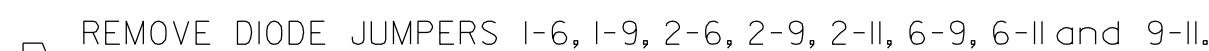
Signal Upgrade - Final Design

AtkinsRéal
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529 SCALE 0 40 1"=40'	SR 1850 (Sandy Ridge Road) at I-40 EB Ramps Division 7 Guilford County Greensboro <table><tr><td>PLAN DATE: January 2025</td><td>REVIEWED BY: AM Encarnacion</td></tr><tr><td>PREPARED BY: JT Stiff</td><td>REVIEWED BY: PL Alexander</td></tr><tr><td>REVISIONS</td><td>INIT.</td><td>DATE</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>		PLAN DATE: January 2025	REVIEWED BY: AM Encarnacion	PREPARED BY: JT Stiff	REVIEWED BY: PL Alexander	REVISIONS	INIT.	DATE										DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL NORTH CAROLINA PROFESSIONAL ENGINEER JAMES T. STIFF 056276 Signed By: 0548BD037872A434 SIGNATURE DATE 3/14/2025 SIG. INVENTORY NO. 07-1648
	PLAN DATE: January 2025	REVIEWED BY: AM Encarnacion																	
	PREPARED BY: JT Stiff	REVIEWED BY: PL Alexander																	
	REVISIONS	INIT.	DATE																

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

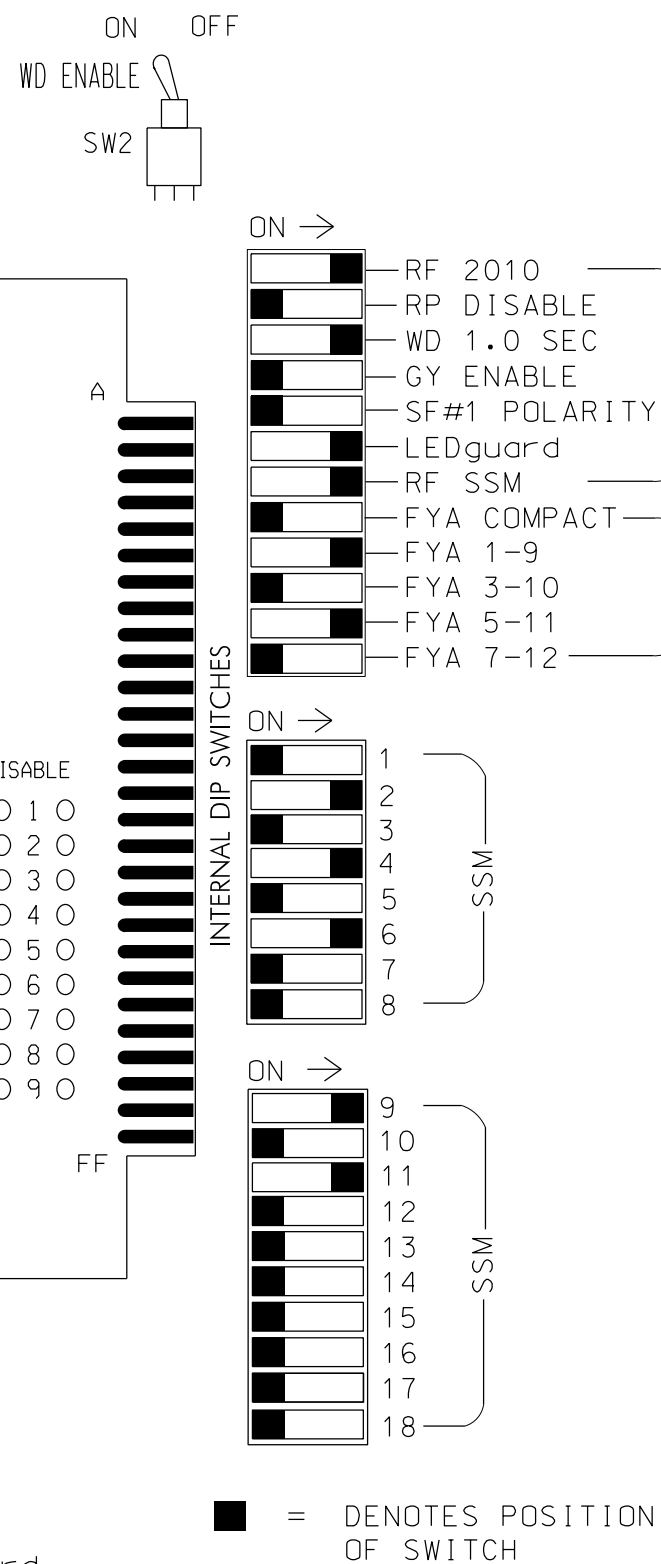
(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

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



NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Initialize database in Trafficware 2070 local software (APOGEE) as FULL-CALTRANS. This initialization should be done prior to programming controller.
3. 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).
4. Program phases 2 and 6 for Start Up In Green.
5. Program "Start Up Flash" for 0 sec. The conflict monitor will govern start-up flash time.
6. Ensure "Local Flash Start" feature is set to "RSt".
7. Program "Start Red Time" for 6.0 seconds.

FROM MAIN MENU->1->8->7 (I/O LOGIC)

Result	Src.Fcn	TimeOp	Time
1208	= 01208	DLY	1

9. The cabinet and controller are part of the City of Greensboro Signal System.

EQUIPMENT INFORMATION

```

CONTROLLER.....2070E
CABINET.....332 W/ AUX
SOFTWARE.....TRAFFICWARE APOGEE
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S5,S8,AUX S1,AUX S4
PHASES USED.....1,2,4,6
OVERLAP "A".....*
OVERLAP "B".....NOT USED
OVERLAP "C".....*
OVERLAP "D".....NOT USED

```

* See overlap programming detail on sheet 2

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
1A ¹	TB2-1,2	11U	56	1	1		15.0		X	X	
	-	J4U	48	26	6				X	X	
2A	TB2-5,6	12U	39	2	2				X	X	X
2B	TB2-7,8	12L	43	3	2				X	X	X
4A	TB4-9,10	16U	41	8	4				X	X	
4B	TB4-11,12	16L	45	9	4		5.0		X	X	
4C	TB6-1,2	17U	65	10	4		15.0		X	X	

¹ Add jumper from I1-W to J4-W, on rear of input file.

INPUT FILE POSITION LEGEND: J2L

FILE J _____
SLOT 2 _____
LOWER _____

SPECIAL DETECTOR NOTE

Install a non-intrusive detection system for vehicle detection zones 6A and 6B. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.



SIGNAL HEAD HOOK-UP CHART

[illegible]

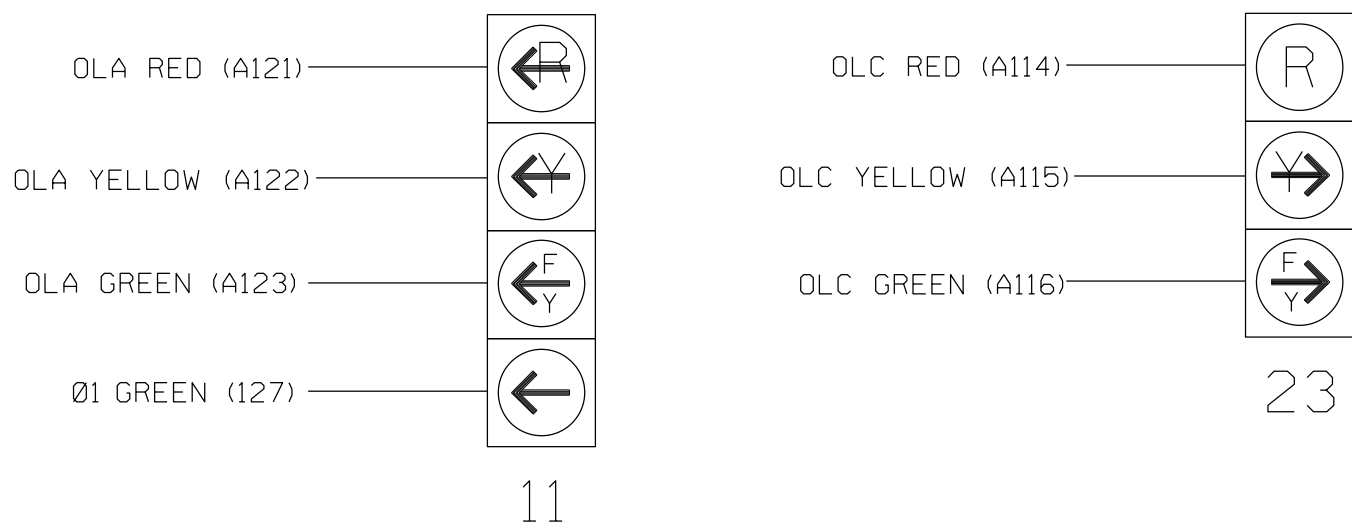
NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail below.

FYA SIGNAL WIRING DETAIL

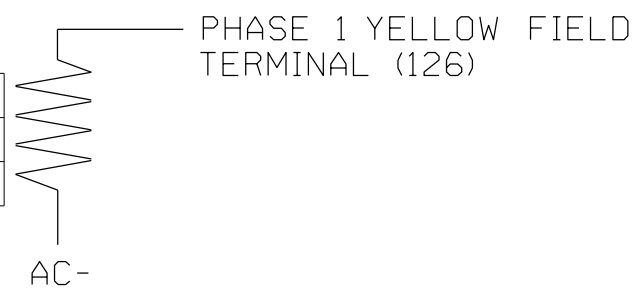
(wire signal heads as shown)

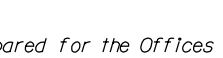


LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared for the Offices of: 	SR 1850 (Sandy Ridge Road) at I-40 EB Ramps	SEAL 
	Division 7 Guilford County Greensboro	
	PLAN DATE: January 2025	REVIEWED BY: AM Encarnacion
	PREPARED BY: JT Stiff	REVIEWED BY: PL Alexander
	REVISIONS	INIT. DATE
750 N.Greenfield Pkwy,Garner,NC 27529		Digitized by: <u>Anthony Encarnacion</u> PROFESSIONAL ENGINEER SIGNATURE DATE
		3/14/2025 SIG. INVENTORY NO. 07-1648

OVERLAP PROGRAMMING DETAIL
FOR OVERLAPS A AND C*

(program controller as shown below)

*NOTE FOR ALL OVERLAPS: Use Default values for
Overlap 'PLUS' programming details.

FROM MAIN MENU PRESS "1" CONTROLLER
AND THEN "5" OVERLAPS

Overlaps

1.General Parm
2.Program
3.Status

General Overlap Parameters

Lock Inhibit OFF
Confl Lock Enable OFF
Parent P Clnocs ON
Extra Included Phases OFF

PRESS "ESC"

Overlaps

1.General Parm
2.Program
3.Status

Enter Overlap # 1
then press Enter

Overlap A-1

1.Program Parm
2.Confl Prog+
3.Program Parm+

Notice
type
FYA-4
➔

OvrIp A-1 Ps.....

Included Ps 1 0 0 0 0 0 0 0

Modifier Ps 2 0 0 0 0 0 0 0

Type:FYA-4 Grn: 0 Yel: 3.5 Red: 1.5

PRESS "ESC"

Enter Overlap # 3
then press Enter

Overlap C-3

1.Program Parm
2.Confl Prog+
3.Program Parm+

OvrIp C-3 Ps.....

Included Ps 2 0 0 0 0 0 0 0

Modifier Ps 0 0 0 0 0 0 0 0

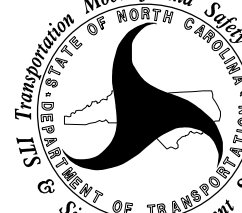
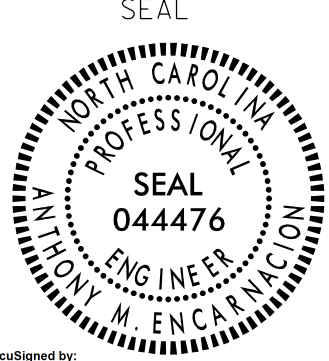
Type:NORMAL Grn: 0 Yel: 3.5 Red: 1.5

Notice
type
NORMAL
➔

END OF OVERLAP PROGRAMMING DETAIL

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1648
DESIGNED: January 2025
SEALED: 03-14-2025
REVISED: N/A

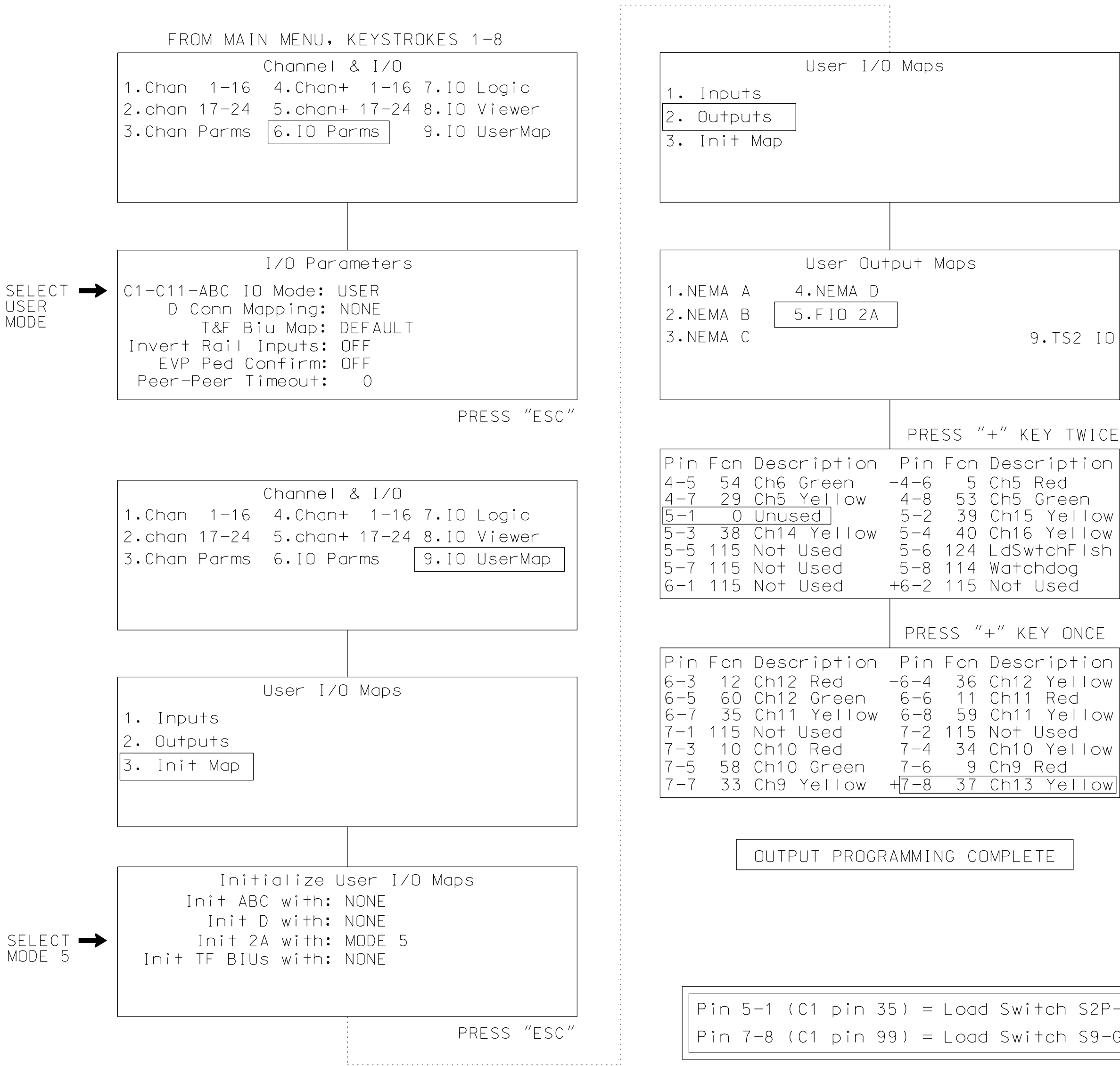
Electrical Detail - Sheet 2 of 3
Final Design

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared for the Offices of:  750 N.Greenfeld Pkwy,Garner,NC 27529	SR 1850 (Sandy Ridge Road) at I-40 EB Ramps		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL  Over designed by Anthony Encarnacion 3/14/2025 SIGNATURE DATE SIG. INVENTORY NO. 07-1648	
	Division 7 Guilford County Greensboro			
	PLAN DATE: January 2025	REVIEWED BY: AM Encarnacion		
	PREPARED BY: JT Stiff	REVIEWED BY: PL Alexander		
	REVISIONS	INIT.		DATE

4-SECTION PPLT FYA OUTPUT REMAPPING PROGRAMMING DETAIL

(program controller as shown below)

1. Before proceeding with output programming, be sure to switch the “RUN ENABLE STATUS” to “OFF”. The “RUN ENABLE STATUS” setting is located from Main Menu, key strokes 1-7.
2. The Flashing Yellow Arrow in a 4-section PPLT FYA head is controlled by a normally unused PED Yellow output. This programming takes a specific PED Yellow output and remaps it to the appropriate Overlap Green output.



- ! Press the “*” key to return to Main Menu. Now
- o go back to “RUN-ENABLE STATUS” and switch to “ON”.

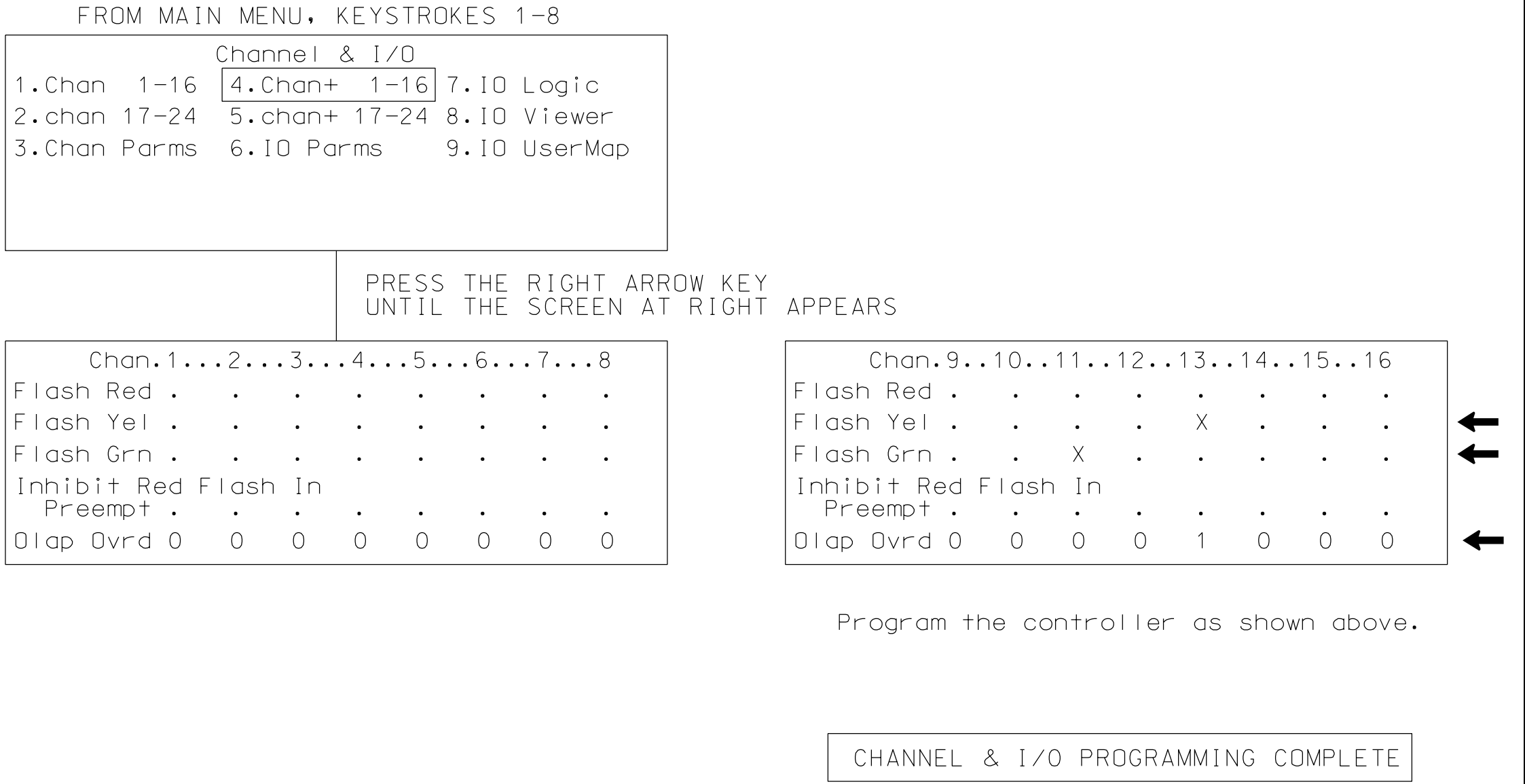
NOTE

I/O re-programming is necessary for proper FYA operation. See Channel & I/O Programming Detail for FYA Operation on this sheet.

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. It also specifies which overlap is to be overridden for the FYA to display properly.



NOTE

Output remapping is necessary for proper FYA operation. See the 4-Section PPLT FYA Output Programming Detail on this.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 07-1648
DESIGNED: January 2025
SEALED: 03-14-2025
REVISED: N/A

Electrical Detail - Sheet 3 of 3
Final Design

Electrical AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:



750 N.Greenfeld Pkwy,Garner,NC 27529

SR 1850 (Sandy Ridge Road) at I-40 EB Ramps

Division 7 Guilford County Greensboro

PLAN DATE: January 2025

REVIEWED BY: AM Encarnacion

PREPARED BY: JT Stiff

REVIEWED BY: PL Alexander

REVISIONS

INIT.

DATE

Seal of North Carolina Professional Engineer SEAL 044476

Designed by: Anthony Encarnacion

SIGNATURE

DATE

SIG. INVENTORY NO. 07-1648

PROJECT REFERENCE NO.	SHEET NO.
U-4758	Sig. 28.0

PHASING DIAGRAM

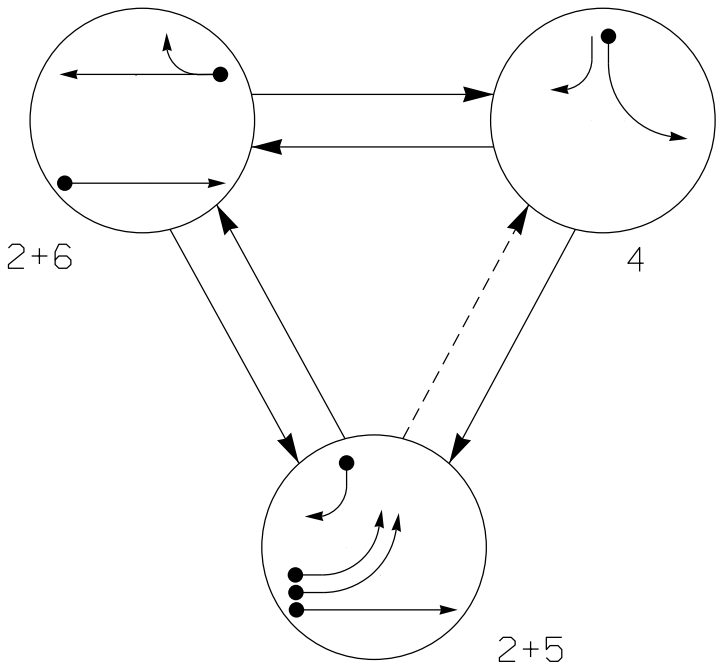


TABLE OF OPERATION

SIGNAL FACE	PHASE			
	2+5	2+6	4	FLIGHT
2l, 22	G	G	R	R
4l	R	R	R	R
42, 43	R	R	R	R
5l, 52	R	R	R	R
6l	R	R	R	R
62	R	G	R	R

ASC/3 DETECTOR INSTALLATION CHART												
DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
2A	6X6	420	6	X	2	Yes	-	-	X	N	-	X
4A	6X40	0	2-4-2	X	4	Yes	-	-	-	N	-	X
5A	6X40	0	2-4-2	X	5	Yes	-	-	-	N	-	X
5B	6X40	0	2-4-2	X	5	Yes	-	-	-	N	-	X
5C	6X40	0	2-4-2	X	5	Yes	-	15.0	-	N	-	X
6A	6X6	420	6	X	6	Yes	-	-	X	N	-	X

3 Phase
Fully Actuated
(High Point Signal System)

NOTES

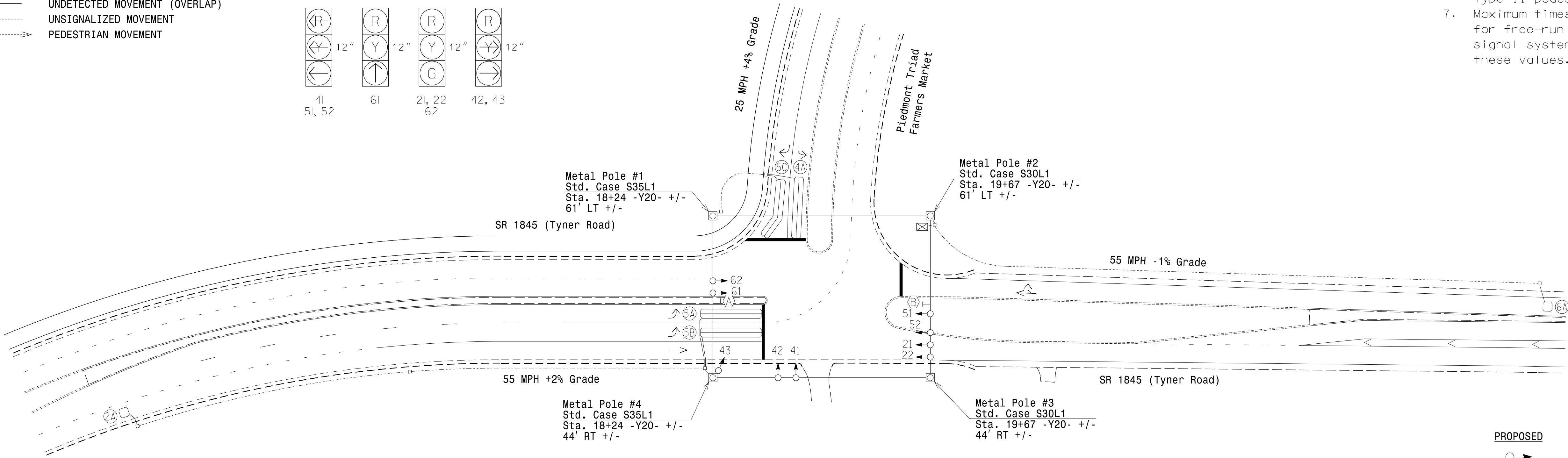
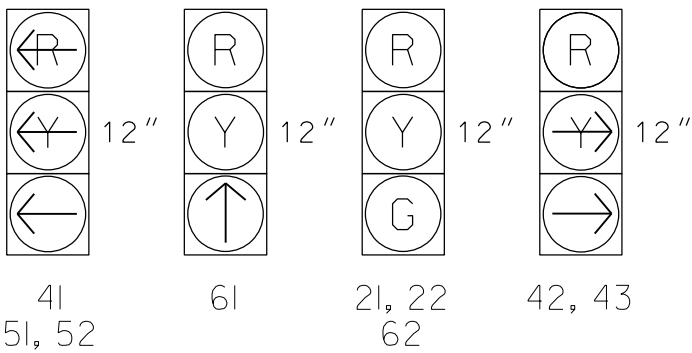
- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 5 may be lagged.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Metal poles, Type I pushbutton posts and Type II pedestals shall be BLACK in color.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.



ASC/3 TIMING CHART

FEATURE	PHASE			
	2	4	5	6
Min Green *	12	7	7	12
Delayed Green	-	-	-	-
Walk *	-	-	-	-
Ped Clear	-	-	-	-
Veh. Extension *	6.0	2.0	2.0	6.0
Max l *	90	30	30	90
Yellow	5.3	3.0	3.0	5.3
Red Clear	1.2	3.1	2.8	1.2
Actuations B4 Add *	-	-	-	-
Seconds /Actuation *	2.5	-	-	2.5
Max Initial *	46	-	-	46
Time Before Reduction *	15	-	-	15
Time To Reduce *	30	-	-	30
Minimum Gap	3.4	-	-	3.4
Locking Detector	X	-	-	X
Recall Position **	SOFT RECALL	-	-	SOFT RECALL
Dual Entry	-	-	-	-
Simultaneous Gap	X	X	X	X

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.
** May be changed to Min Recall by Time of Day at discretion of City Traffic Engineer.

LEGEND

- | PROPOSED | | EXISTING |
|----------|--|----------|
| | Traffic Signal Head | |
| | Modified Signal Head | N/A |
| | Sign | |
| | Pedestrian Signal Head With Push Button & Sign | |
| | Signal Pole with Guy | |
| | Signal Pole with Sidewalk Guy | |
| | Inductive Loop Detector | |
| | Controller & Cabinet | |
| | Junction Box | |
| | 2-in Underground Conduit | |
| | Right of Way | |
| | Directional Arrow | |
| | Metal Strain Pole | |
| | No U-Turn/No Left Turn Sign (R3-18) | |
| | "U-TURN YIELD TO RIGHT TURN" Sign (R10-16) | |

New Installation

AtkinsRéal
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	SR 1845 (Tyner Road) at Piedmont Triad Farmers Market Division 7 Guilford County High Point PLAN DATE: January 2025 REVIEWED BY: AM Encarnacion PREPARED BY: JT Stiff REVIEWED BY: PL Alexander	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SIGNED BY: James T. Stiff DATE: 3/14/2025 SIGNATURE DATE SIC. INVENTORY NO. 07-1120
--	---	---

13-MAR-2025 17:32
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S1F4685 - AT L05491289

ECONOLITE ASC/3-2070
OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 2. CONTROLLER
2. From CONTROLLER Submenu select 2. VEHICLE OVERLAPS

Toggle to 'Overlap D'
OVERLAP D

Select TMG VEH OVLP [D] and 'NORMAL'

TMG VEH OVLP...[D] TYPE:NORMAL

PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6

INCLUDED . . . X X

LAG GRN 0.0 YEL 0.0 RED 0.0

END PROGRAMMING

ECONOLITE ASC/3-2070 STARTUP AND
SOFTWARE FLASH PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 2. CONTROLLER
2. From CONTROLLER Submenu select 5. START/FLASH

START/FLASH DATA

-----START UP-----

1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6

PHASE G G

A B C D E F G H I J K L M N O P

OVERLAP X X X X X X X X X X X X X X X X

FLASH>MON. NO FL TIME.. 0 ALL RED... 6

PWR START SEQ.. 1 MUTCD> YES Y- G: NO

Scroll down on this screen and set "Exit Fl" to Green "G"

ASC/3 FLASH SENSE INPUT CONTROL
FOR RED-RED FLASH

*The NCDOT default database is programmed to addresss Yellow-Red flash.
Logic Statement 100 must be modified as shown when running Red-Red flash.

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 8. LOGIC PROCESSOR
3. From LOGIC PROCESSOR Submenu select 2. LOGIC STATEMENTS

Change the "LP" to 100 and move the cursor down. Delete the two "CTR-SET" statements by moving the cursor over them and hitting the "C" key. then hit "ENTER", select "LP SET CIB ON", hit "ENT", and then set the number to 427.

LP#:100 COPY FROM:100 ACTIVE: M FALSE

IF LP CIB CODE ON 331 F

THEN LP DELAY FOR 1.0 SECONDS

LP SET CIB ON 427

ELSE

THIS STATEMENT IS USED
TO CONTROL THE FLASH
SENSE INPUT WHEN RUNNING
RED-RED FLASH OPERATION.

Hit "ESC", then 1 for "LOGIC STATEMENT CONTROL",
next verify that LP#100 is ENABLED.

END PROGRAMMING

FLASHER CIRCUIT MODIFICATION DETAIL

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

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

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

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1120
DESIGNED: January 2025
SEALED: 03-14-2025
REVISED: N/A

AtkinsRéalis

1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Electrical Detail - Sheet 2 of 2

Prepared for the Offices of:

ALL Transportation Mobility and Safety Projects
EXCEPT OR TRANSPORTATION
& Signal Management Systems

ELECTRICAL AND PROGRAMMING
DETAILS FOR:

SR 1845 (Tyner Road)
at
Piedmont Triad Farmers Market

Division 7 Guilford County High Point

PLAN DATE: January 2025 REVIEWED BY: AM Encarnacion

PREPARED BY: JT Stiff REVIEWED BY: PL Alexander

REVISIONS INIT. DATE

750 N.Greenfield Pkwy,Garner,NC 27529

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL

SEAL

044476

ENGINEER

Anthony Encarnacion

3/14/2025

SIGNATURE DATE

SIG. INVENTORY NO. 07-1120

03-01-2023 12:07 S:\ITS\SSM\115\Signal\Structures\Drawings\2024 Metal Pole Standards\2024 Sig. M1A Standard 411 Metal Pole (700-yr MRI).dgn kdurigon

NCDOT METAL POLE STANDARDS

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

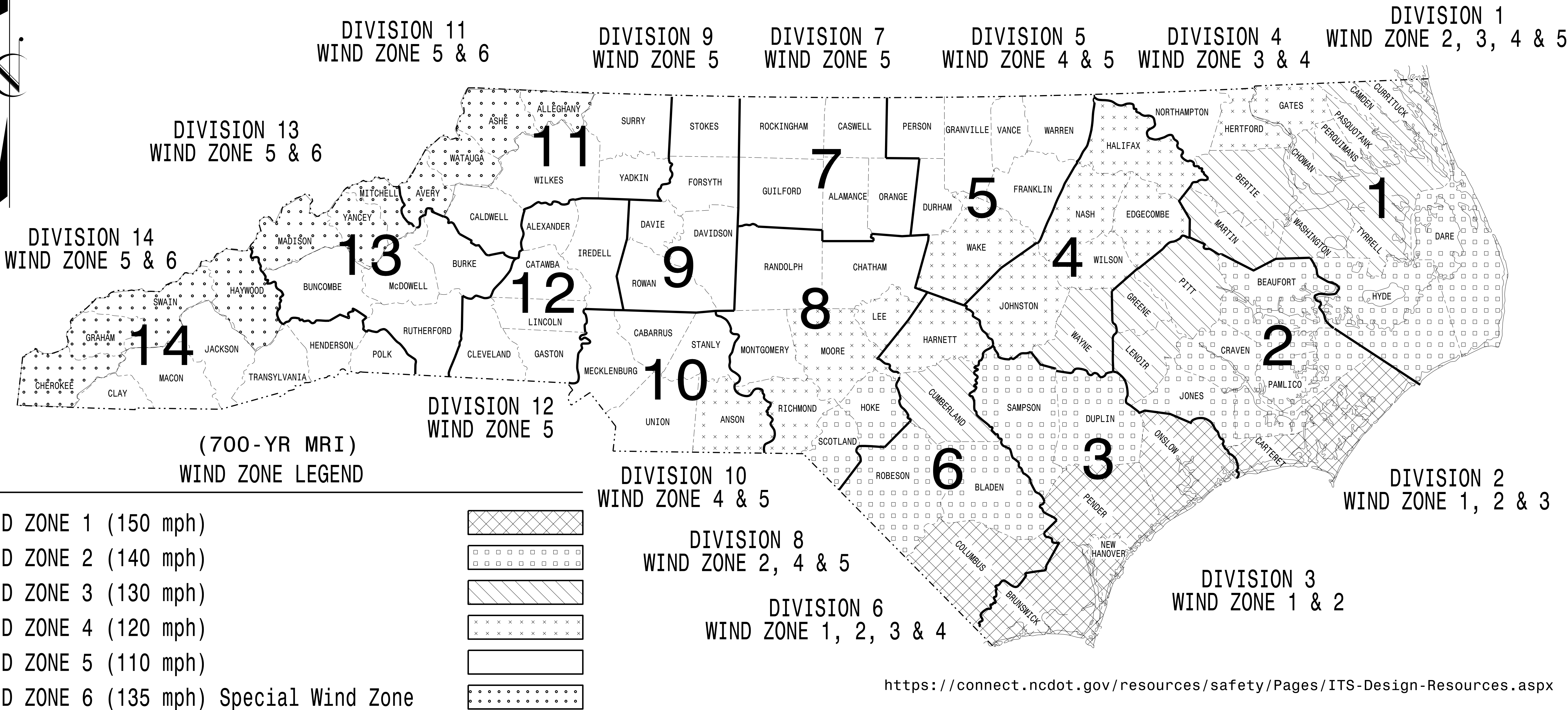
PROJECT I.D.NO.

SHEET NO.

U-4758

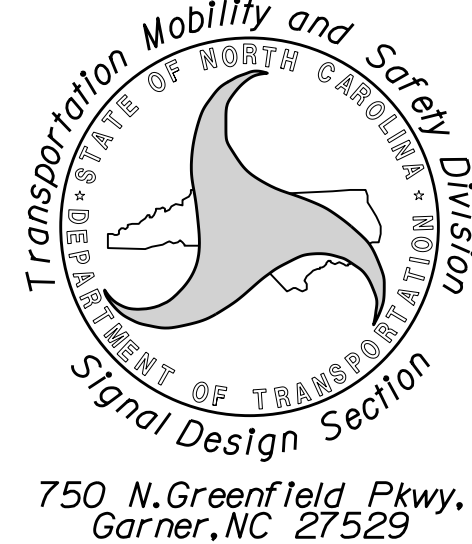
Sig.M1A

STANDARD DRAWINGS FOR ALL METAL POLES (LRFD)



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

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**

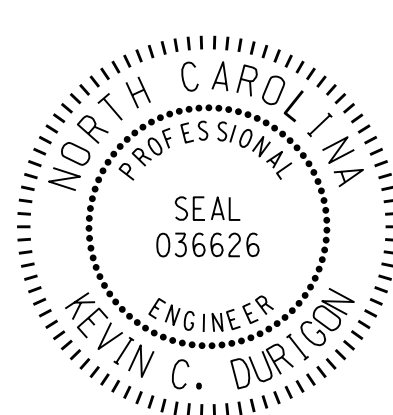
Sig. M 1A	Statewide Wind Zone Map (700-yr MRI)
Sig. M 1B	Statewide Wind Zone Map (10-yr MRI)
Sig. M 2	Typical Fabrication Details-All Metal Poles
Sig. M 3	Typical Fabrication Details-Strain Poles
Sig. M 4	Typical Fabrication Details-Mast Arm Poles
Sig. M 5	Typical Fabrication Details-Mast Arm Connection
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

**INDEX OF PLANS
DESCRIPTION**

**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

09-01-2023 12:21
S:\ITS\ASU\ITS Signal Structures\Drawings\2024 Metal Pole Standards\2024 Metal Pole (10-yr MRI).dgn
Koduri.gon

NCDOT METAL POLE STANDARDS

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

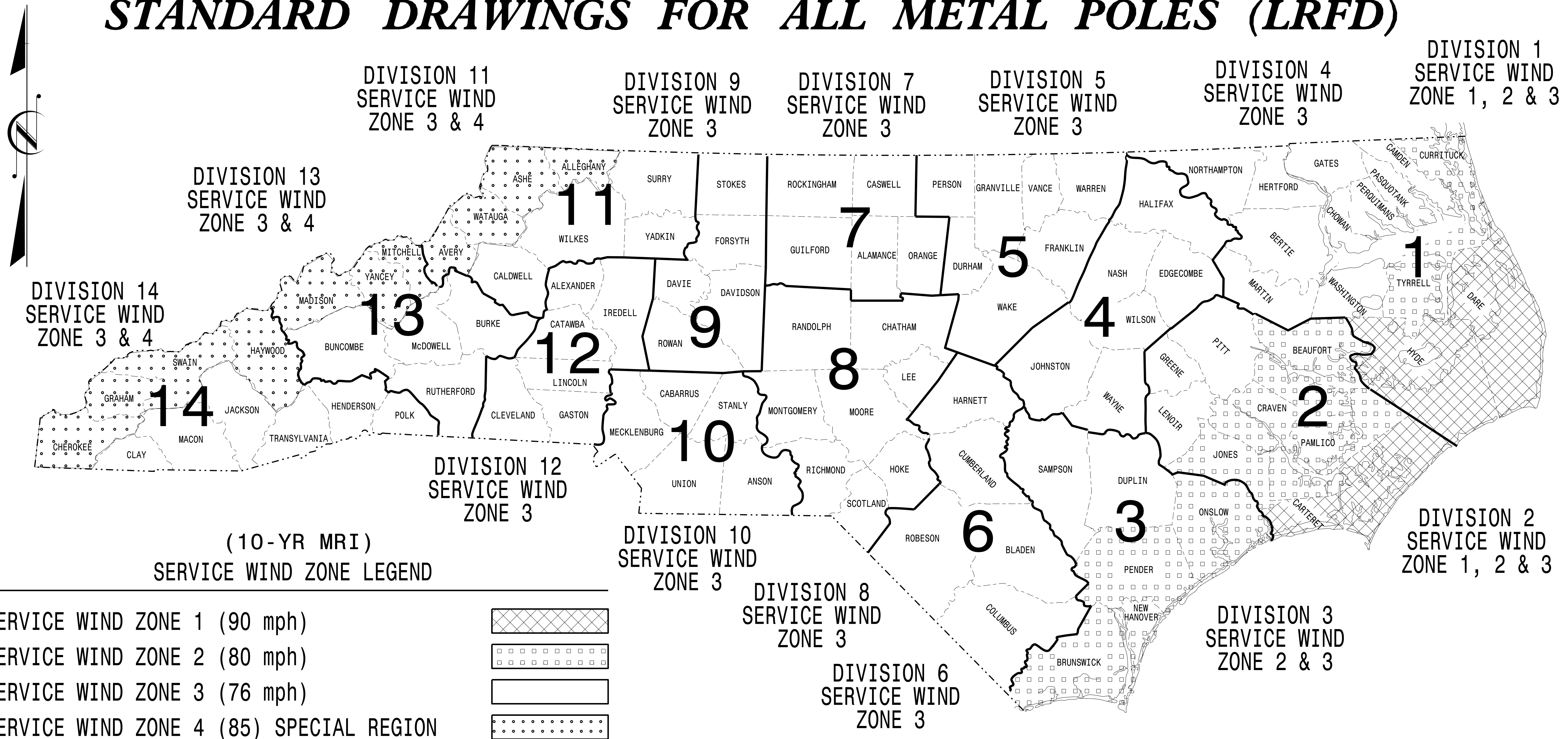
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SHEET NO.

U-4758

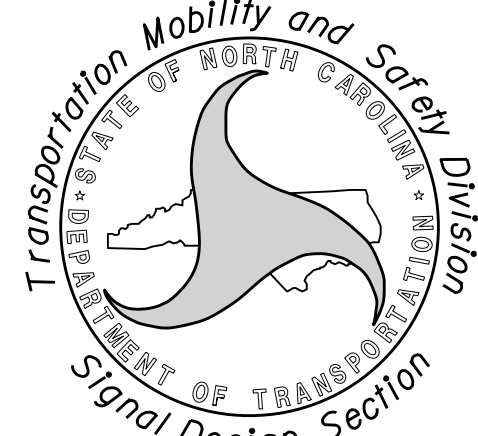
Sig.M1B

STANDARD DRAWINGS FOR ALL METAL POLES (LRFD)



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

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

DRAWING NUMBER	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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INDEX OF PLANS DESCRIPTION

NCDOT 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



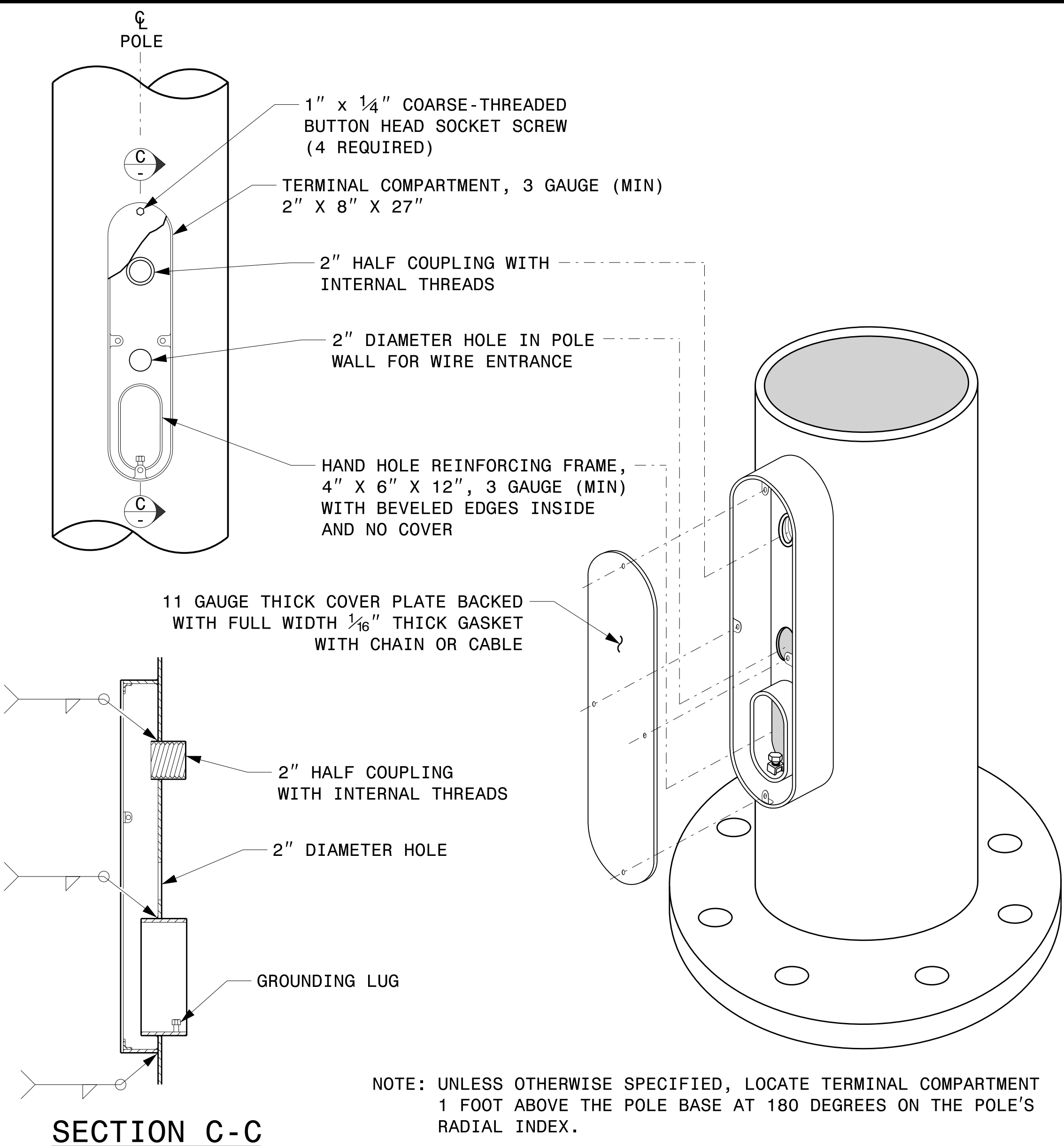
DocuSigned by:

Kevin Durigon

4B23DC79B3784DA

09/21/2023

DATE



SECTION C-C

TERMINAL COMPARTMENT DETAIL

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. _____	

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

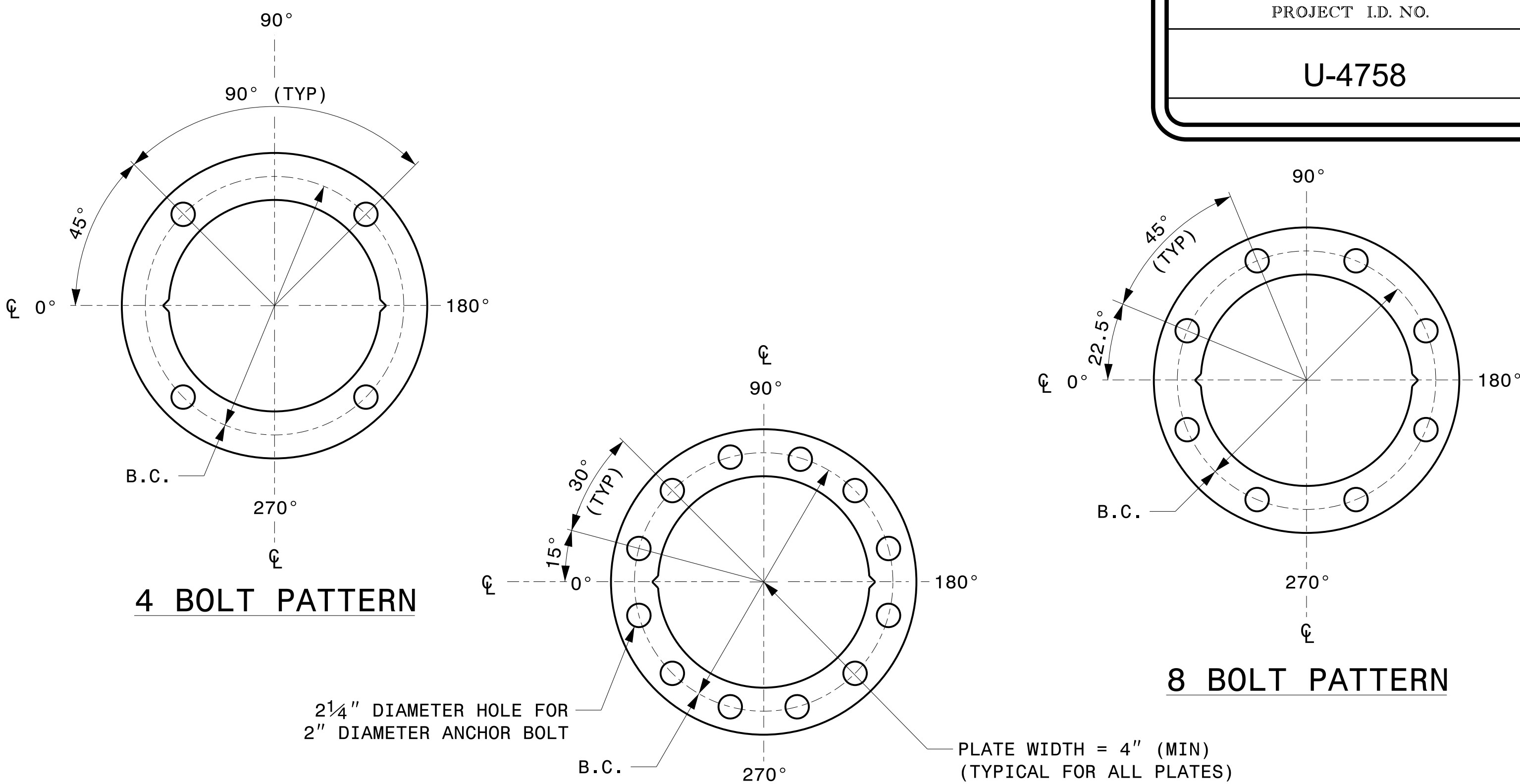
MFG _____	MFG. DATE: MM/YY _____
SECTION D/T/L/Y _____	
NCDOT SIG. INV. NO. _____	
NCDOT POLE NO. _____	

ARM I.D. TAG
(PROVIDE ON EACH SECTION OF
A MULTI-SECTION MAST ARM)

NOTES:

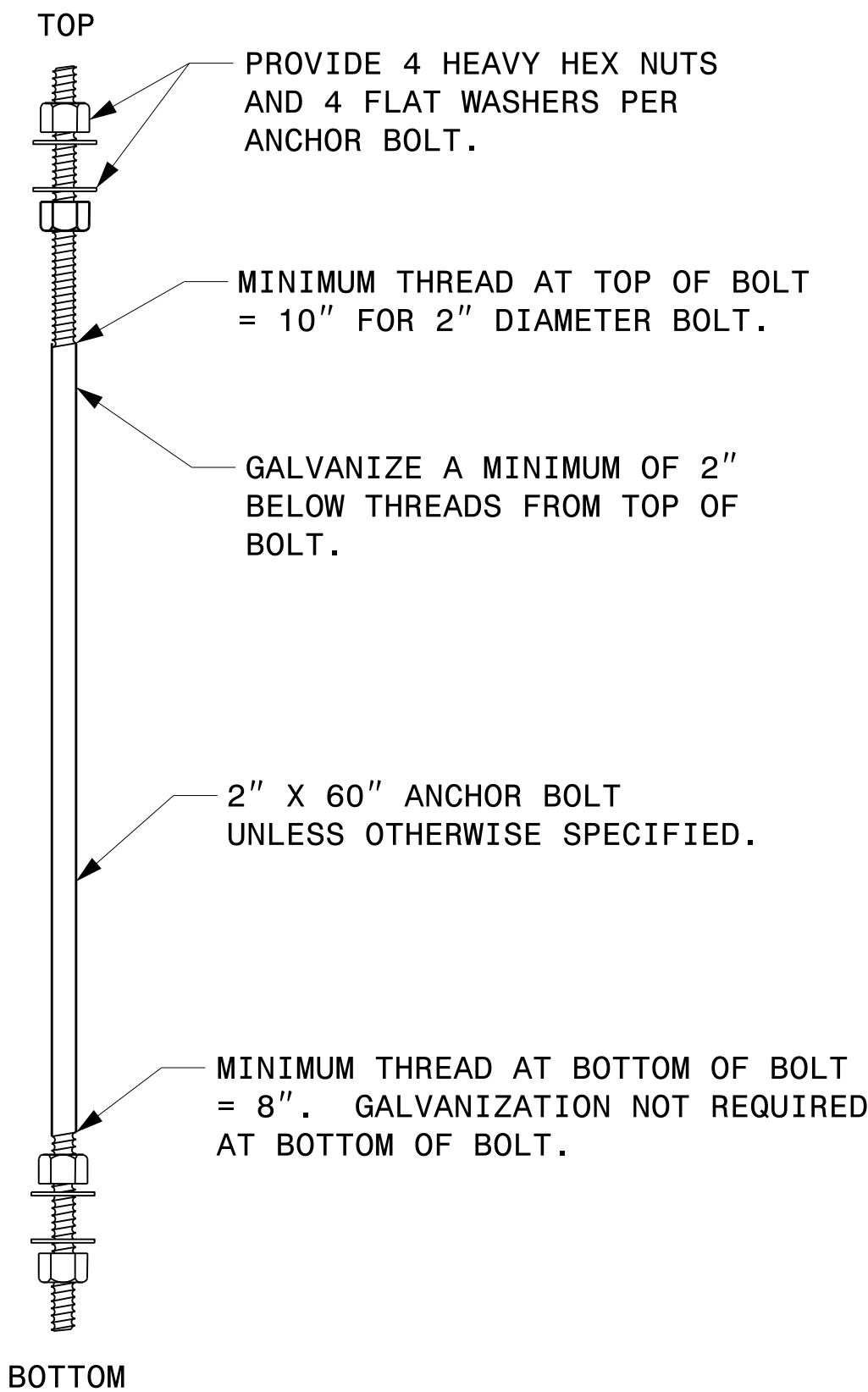
- D = DIAMETER, T = THICKNESS, L = LENGTH, Y = YIELD STRENGTH
- A.B. = ANCHOR BOLT
- B.C. = BOLT CIRCLE OF ANCHOR BOLTS
- IF STANDARD DESIGN, INCLUDE CASE NUMBER IN ADDITION TO POLE NUMBER ON "NCDOT POLE NO." LINE.
- SIGNAL INV. NUMBER AND POLE I.D. NUMBER.
SEE DRAWING M3 AND M4 FOR MOUNTING POSITIONS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

IDENTIFICATION TAG DETAILS

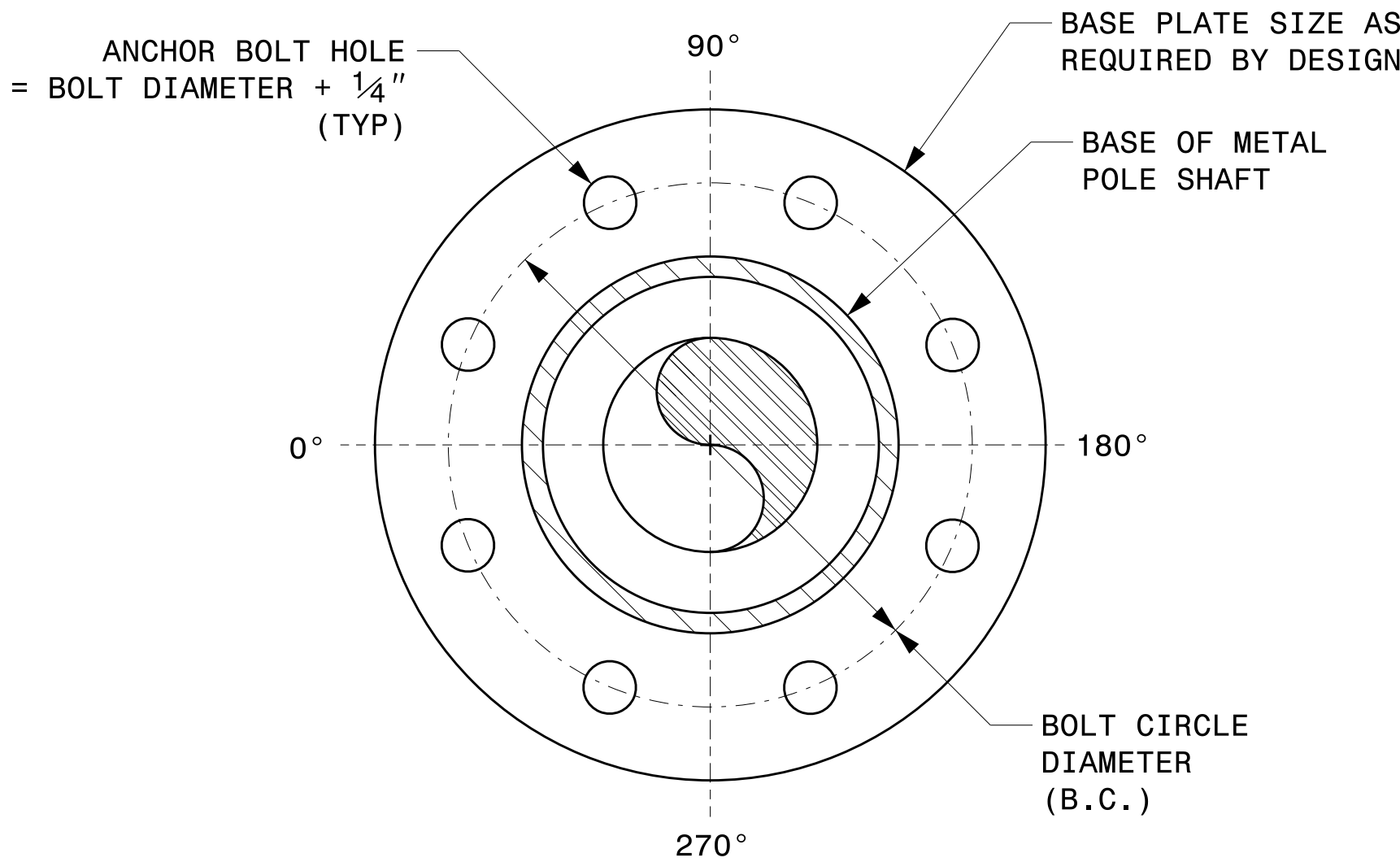


CONSTRUCT TEMPLATES AND PLATES FROM 1/4" (MIN) THICK STEEL. GALVANIZING IS NOT REQUIRED.

BASE PLATE TEMPLATE AND ANCHOR BOLT LOCK PLATE DETAILS



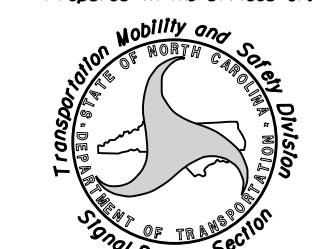
ANCHOR BOLT DETAIL



NOTE: BASE PLATE MAY BE CIRCULAR, OCTAGONAL, SQUARE OR RECTANGULAR IN SHAPE.

TYPICAL BASE PLATE DETAIL

Prepared In the Offices of:



750 N. Greenfield Pkwy, Garner, NC 27529

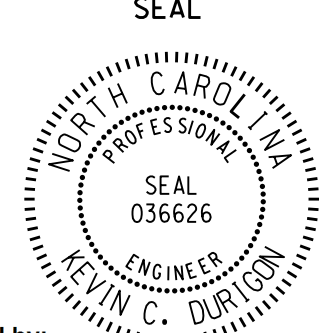
SCALE: NA
NONE

Typical Fabrication Details
For
All Metal Poles

PLAN DATE: SEPTEMBER 2023 DESIGNED BY: C.F. ANDREWS
PREPARED BY: K.C. DURIGON REVIEWED BY: D.C. SARKAR

REVISIONS	INIT.	DATE

SEAL

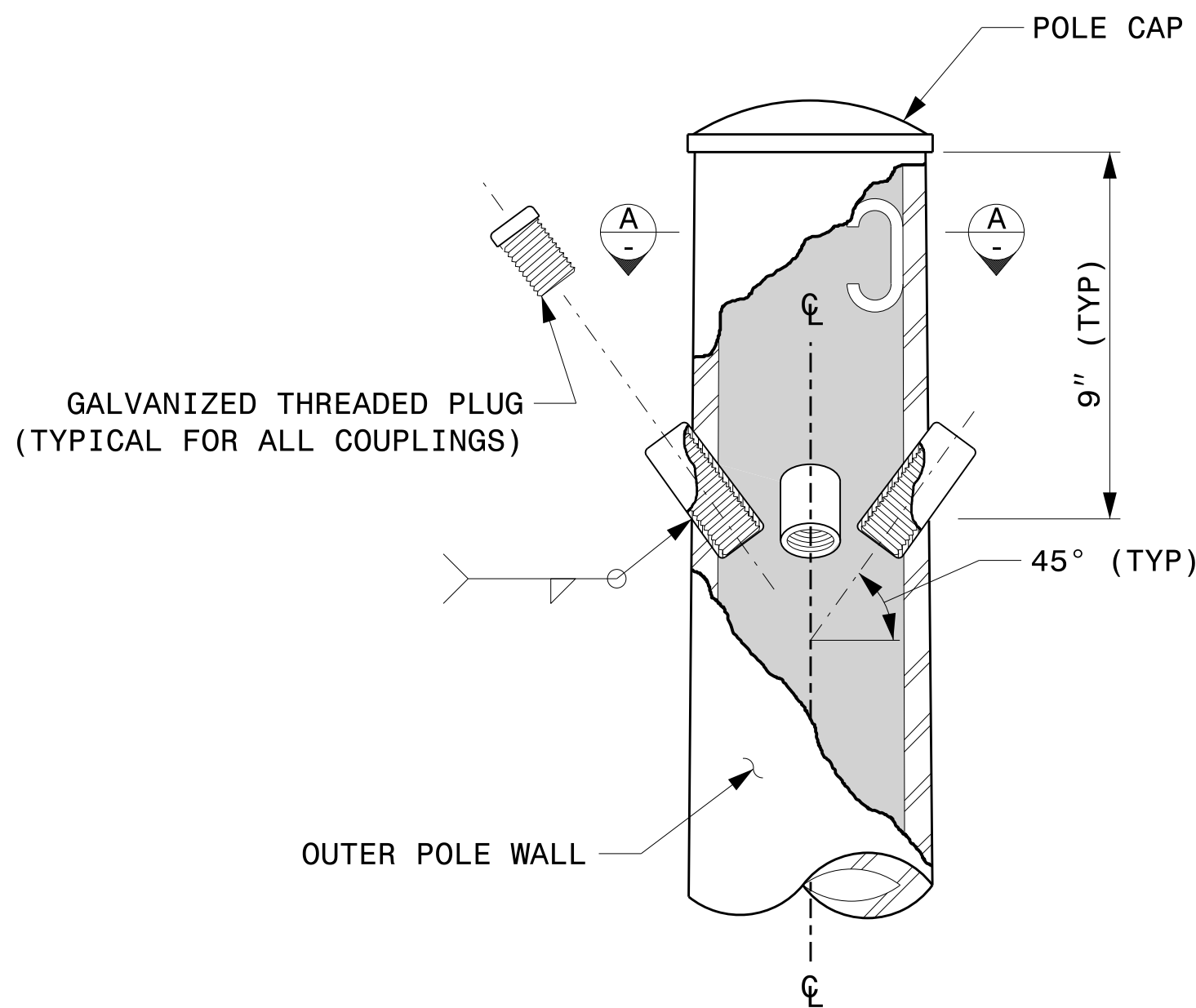


DocuSigned by:
Kevin Durigon
4B23DC79B3784DA

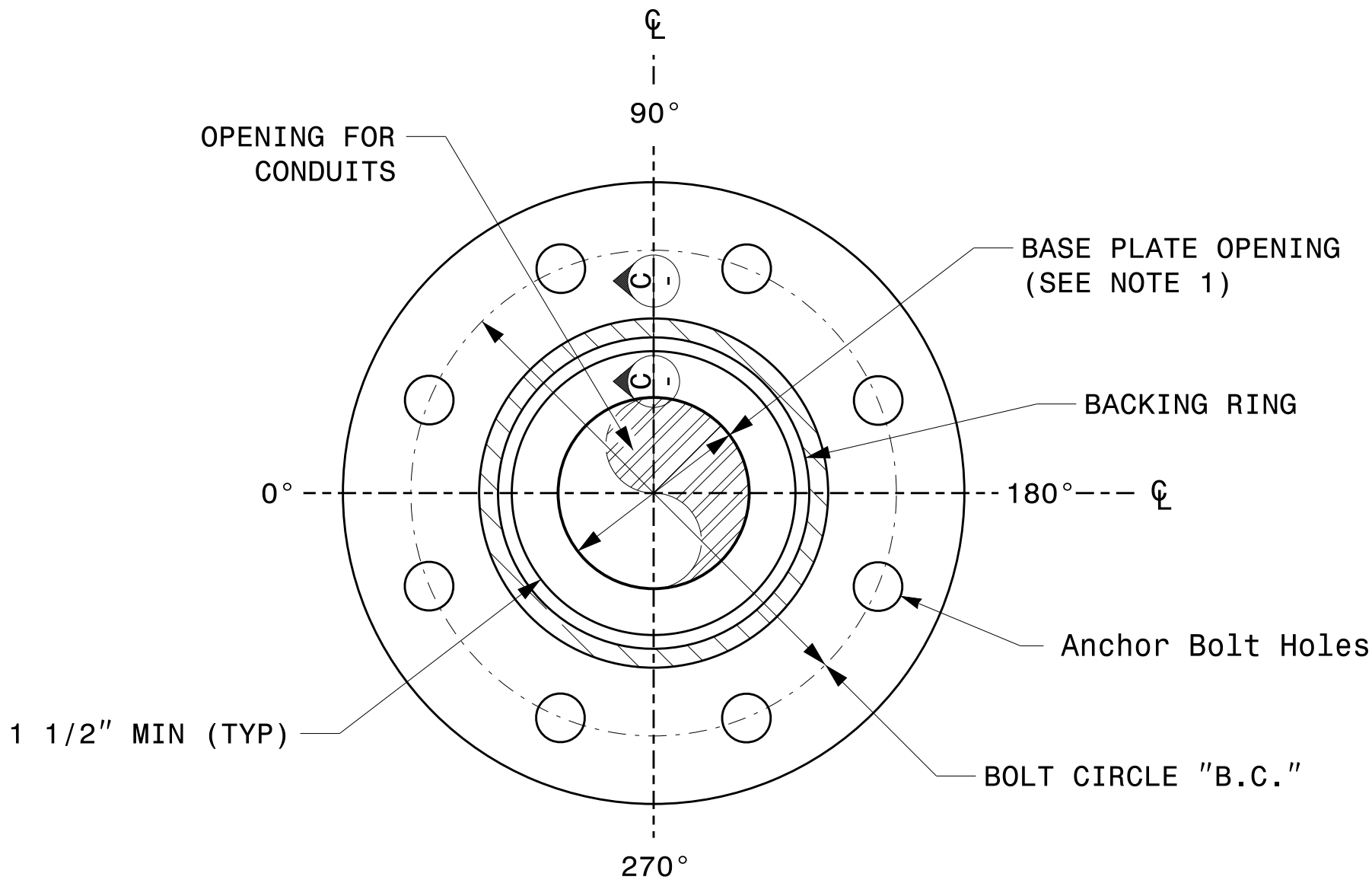
09/21/2023
DATE

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 $8\frac{1}{2}$ ".

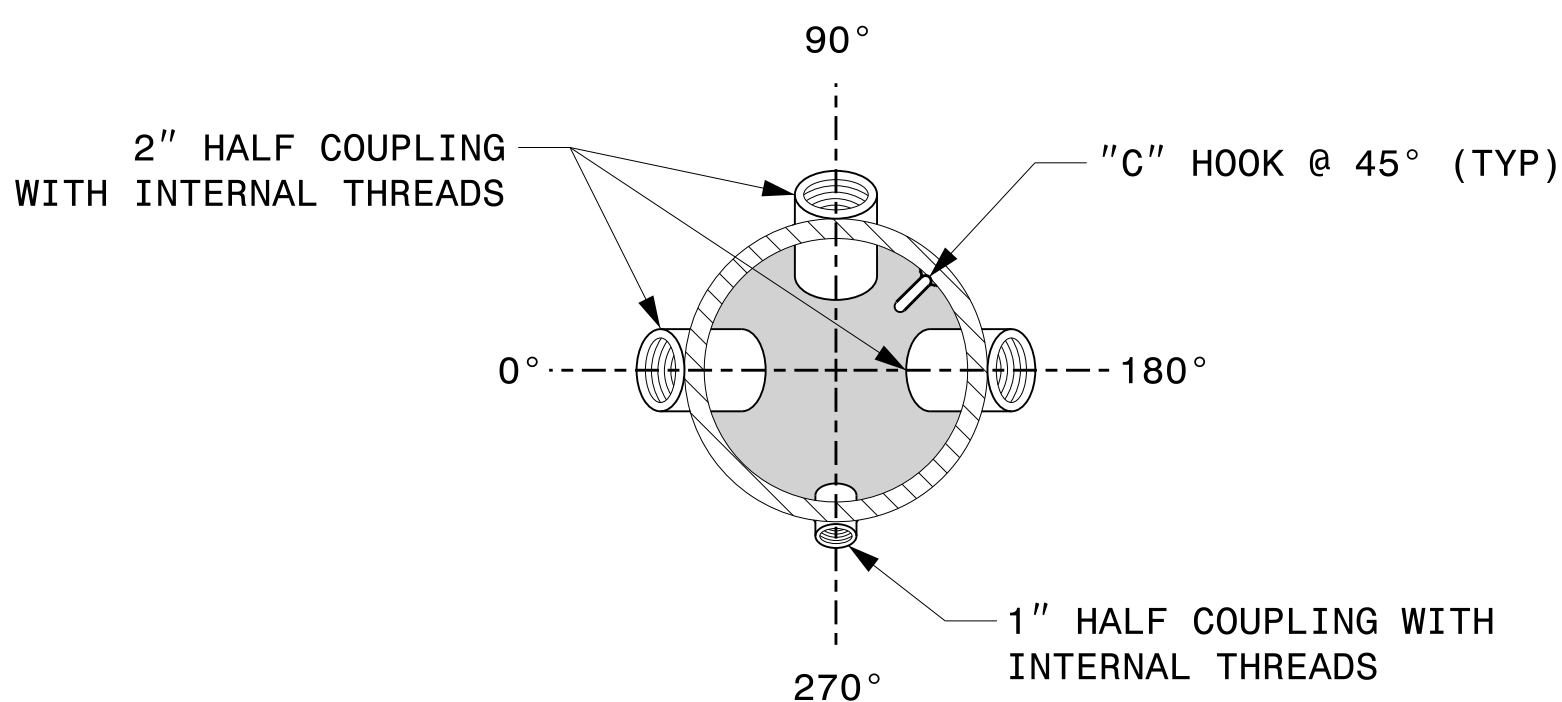


CABLE ENTRANCES AT TOP OF POLE



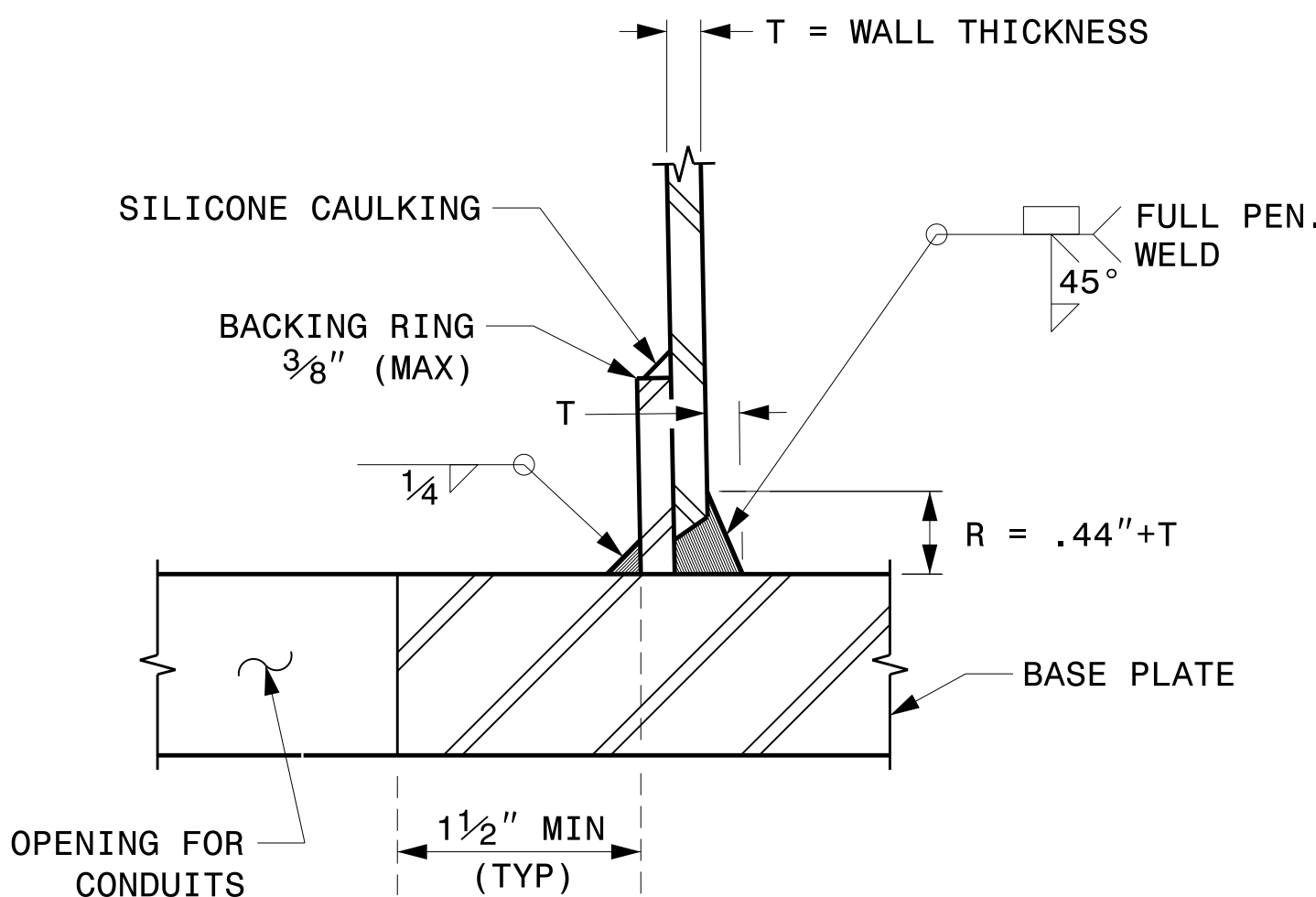
SECTION B-B

POLE BASE PLATE DETAILS
(8 AND 12 BOLT PATTERN)



SECTION A-A

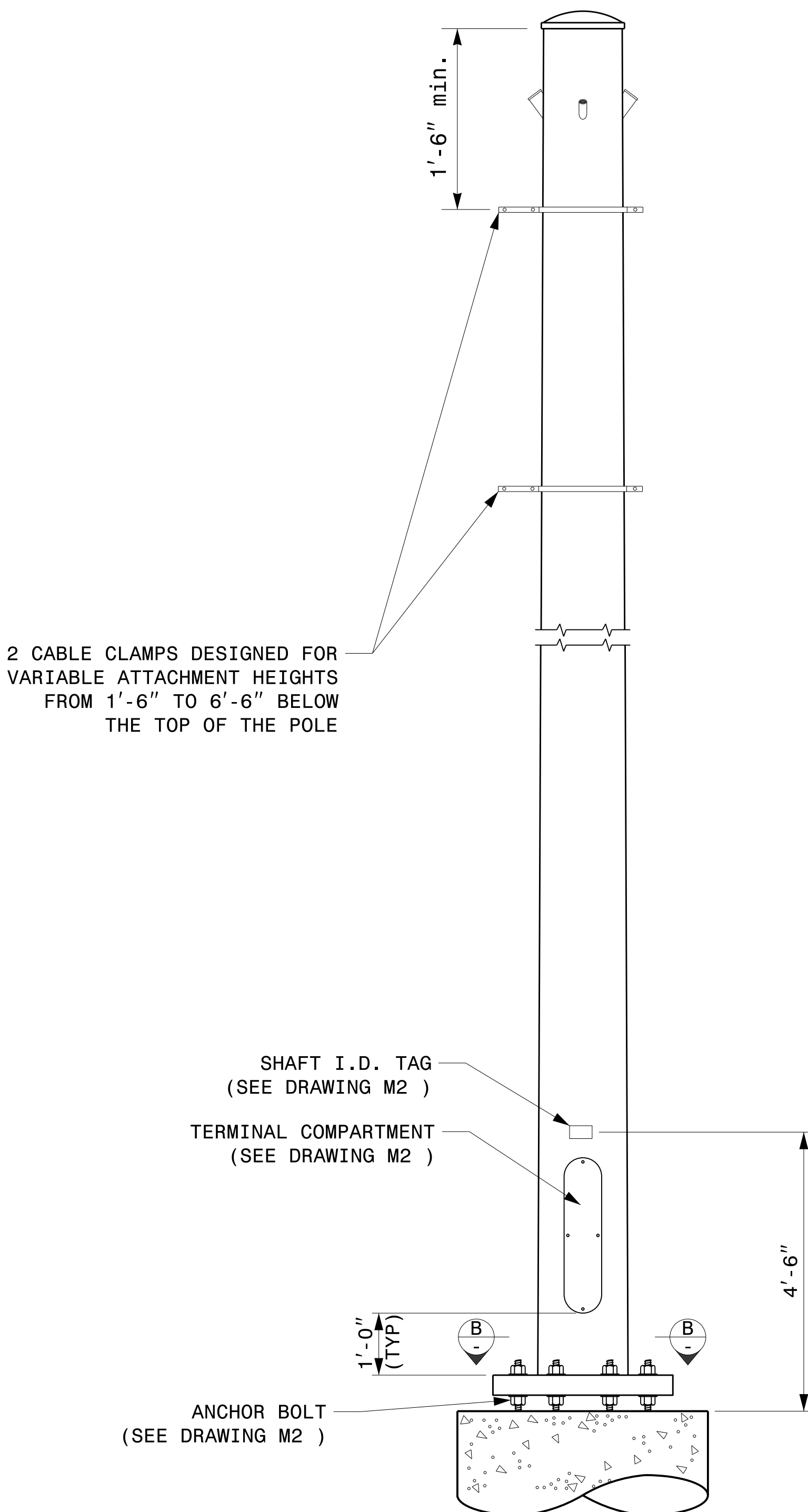
RADIAL ORIENTATION OF FACTORY INSTALLED
ACCESSORIES AT TOP OF POLE



SECTION C-C

(POLE ATTACHMENT TO BASE PLATE)

FULL-PENETRATION
GROOVE WELD DETAIL

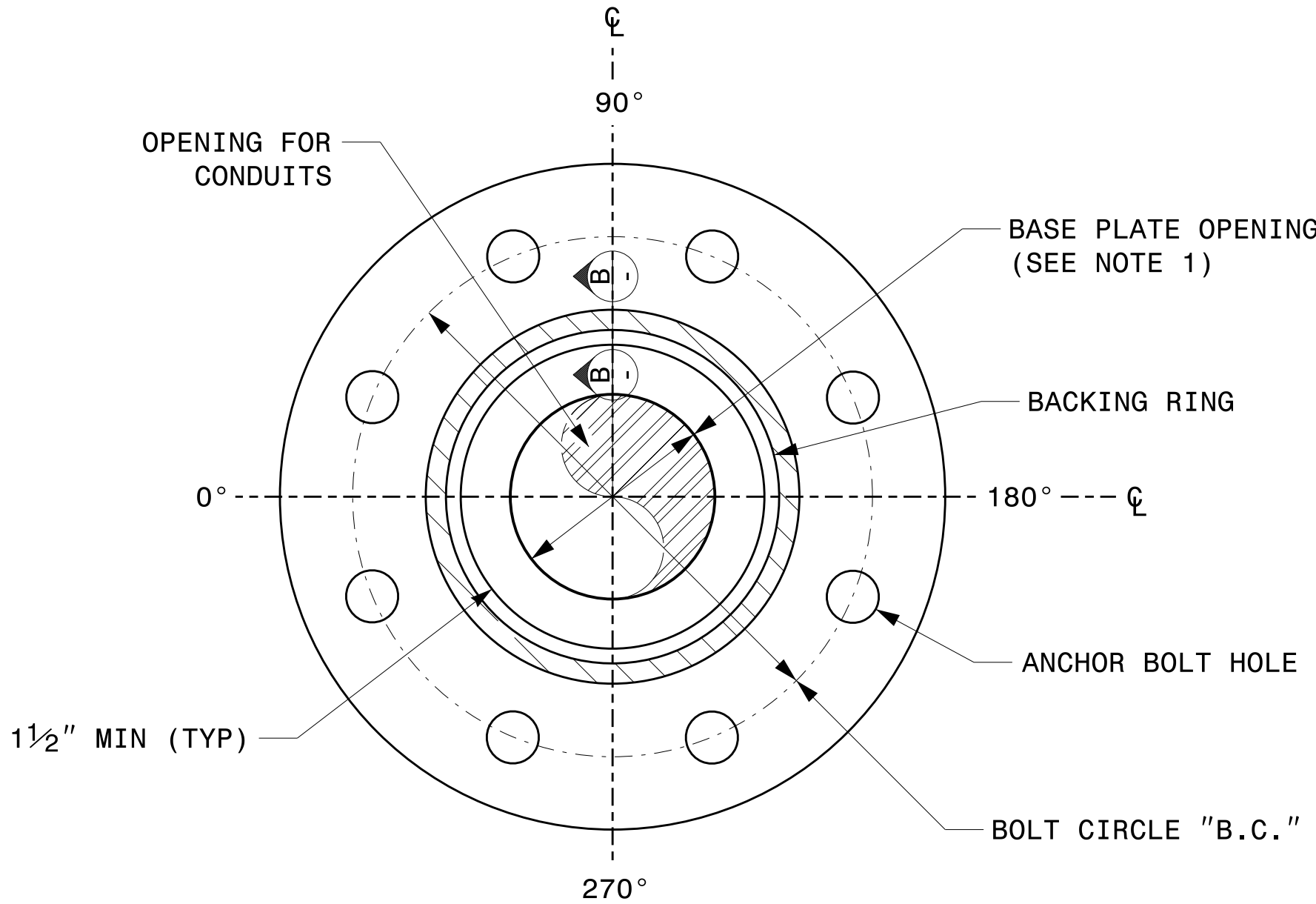


MONOTUBE STRAIN POLE

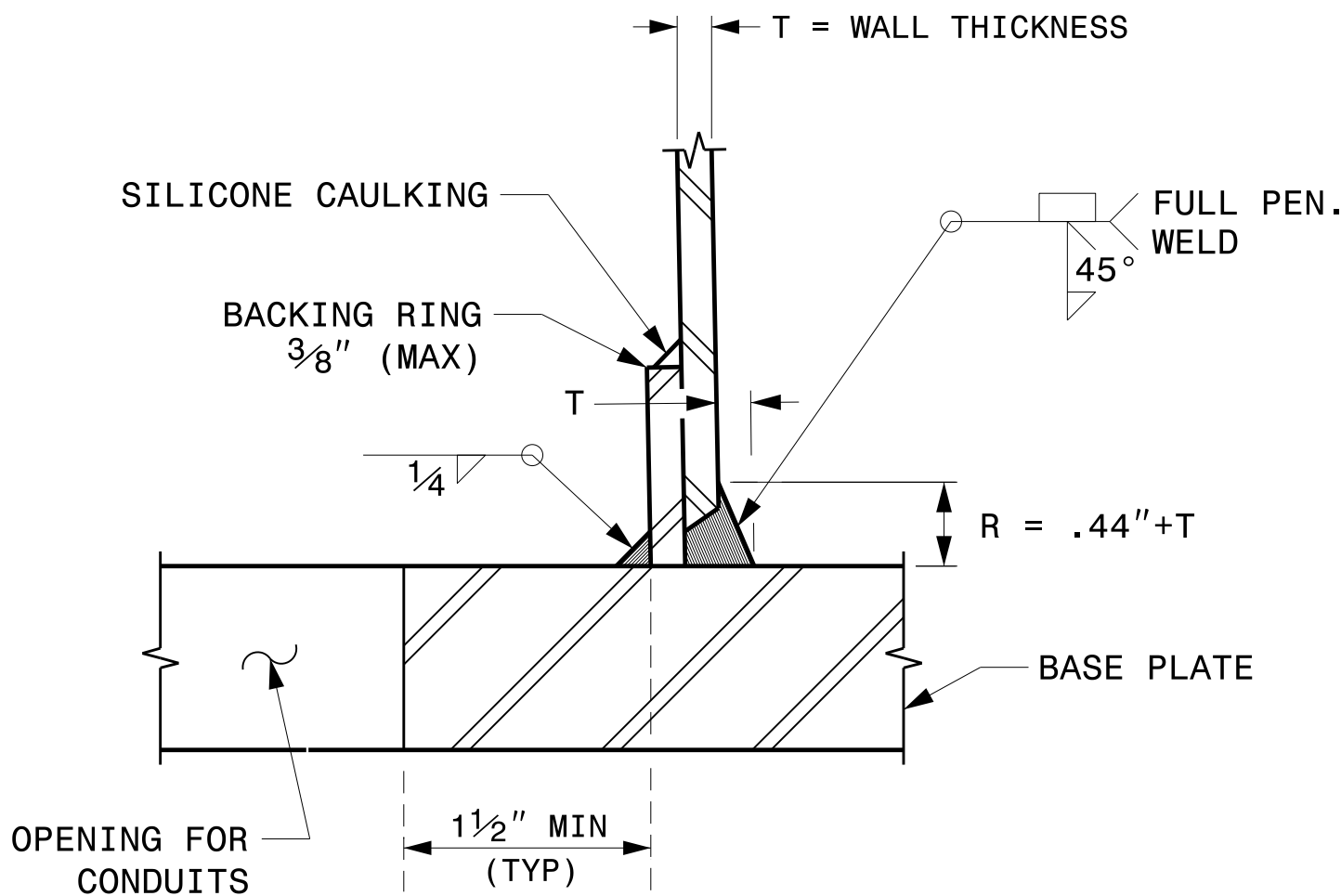
	Typical Fabrication Details For Strain Poles		
	PLAN DATE: SEPTEMBER 2023	DESIGNED BY: K.C. DURIGON	
	PREPARED BY: K.C. DURIGON	REVIEWED BY: D.C. SARKAR	
SCALE: 0 NA NONE	REVISIONS	INIT.	DATE
DocuSigned by: Kevin Durigon		09/21/2023	

NOTE:

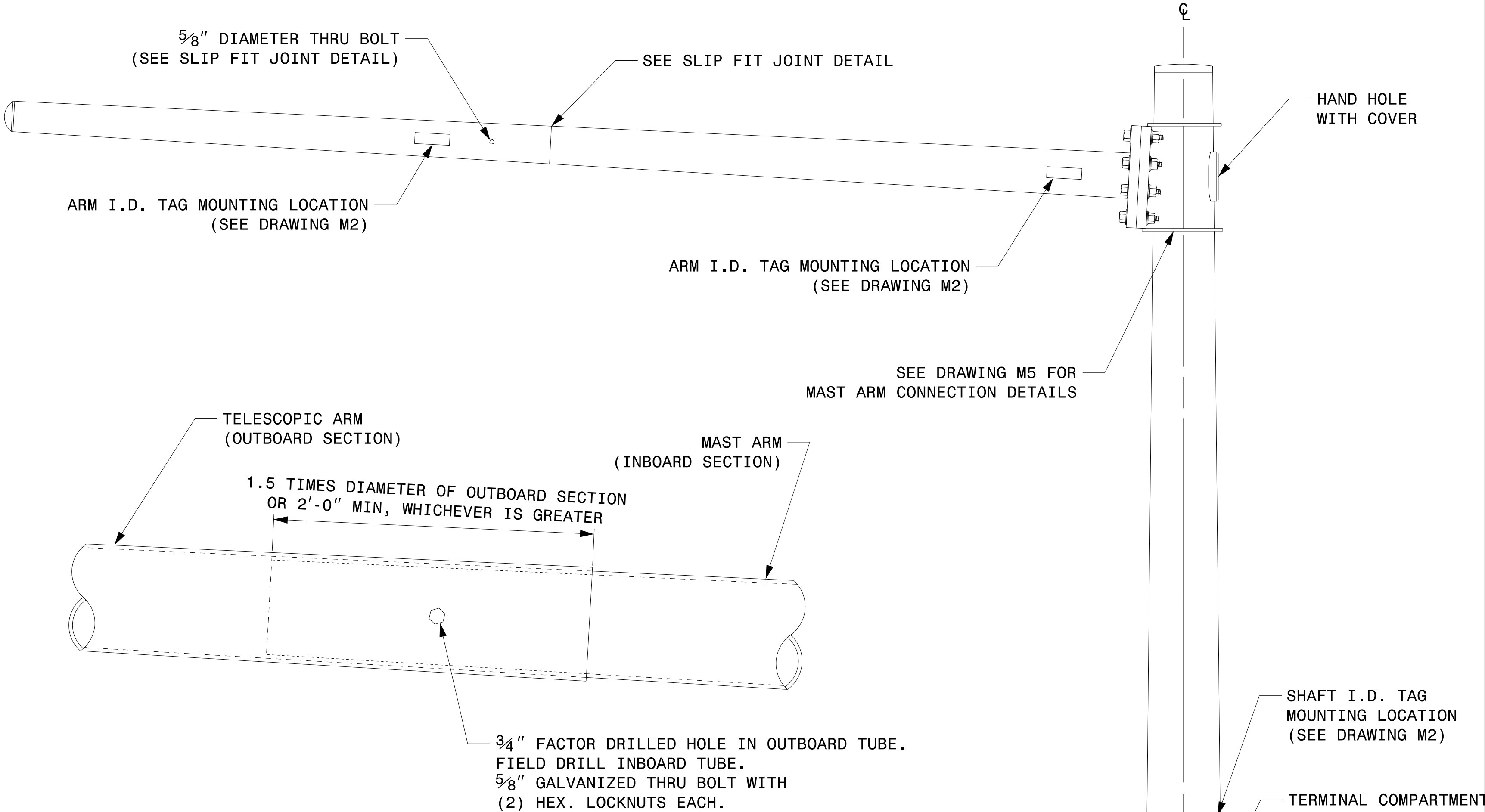
1. OPENING IN POLE BASE PLATE SHALL BE EQUAL TO POLE BASE INSIDE DIAMETER MINUS 3 1/2" BUT SHALL NOT BE LESS THAN 8 1/2".



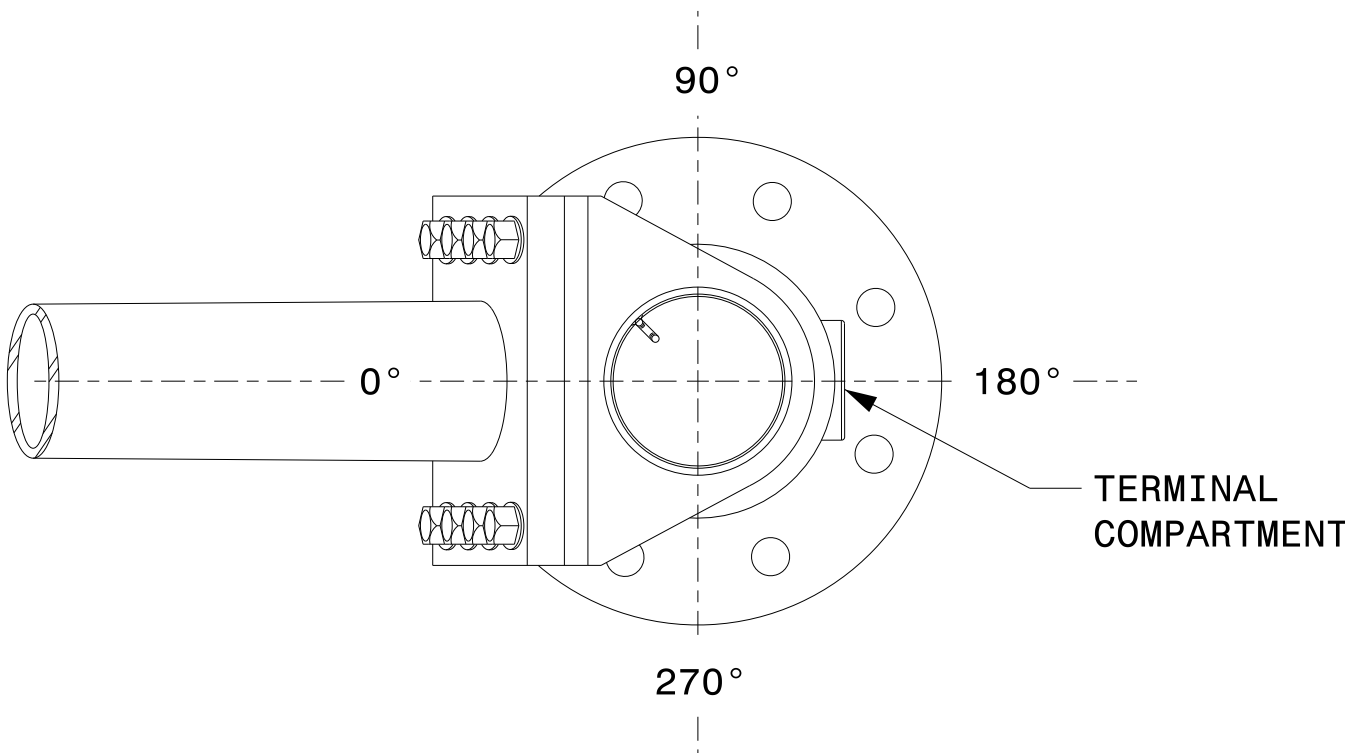
SECTION A-A
POLE BASE PLATE DETAILS



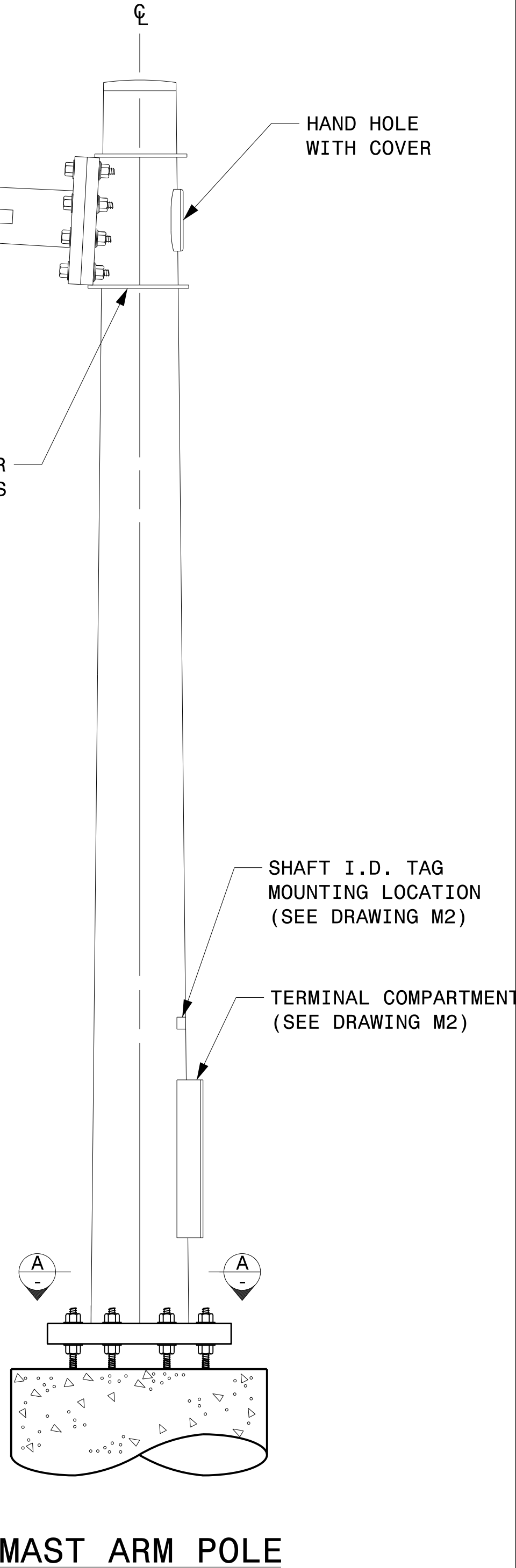
SECTION B-B
(POLE ATTACHMENT TO BASE PLATE)
FULL-PENETRATION
GROOVE WELD DETAIL



SLIP FIT JOINT DETAIL FOR MAST ARM



MAST ARM RADIAL ORIENTATION



MAST ARM POLE

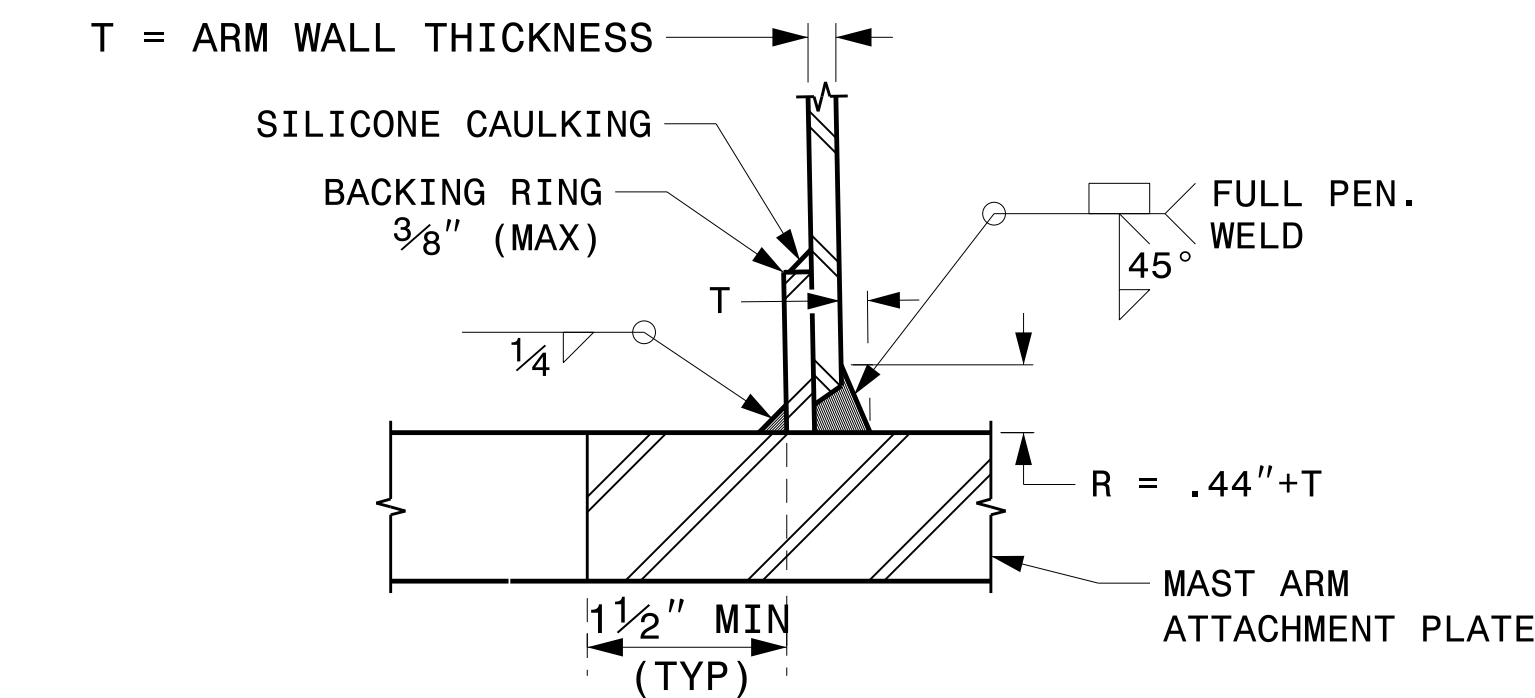
Prepared In the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	Typical Fabrication Details For Mast Arm Poles		SEAL DocuSigned by: <i>Kevin Durigon</i> 1B23DC70R378ADA						
	PLAN DATE: SEPTEMBER 2023 DESIGNED BY: K.C. DURIGON PREPARED BY: K.C. DURIGON REVIEWED BY: D.C. SARKAR	REVISIONS <table><tr><th>INIT.</th><th>DATE</th></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>		INIT.	DATE				
INIT.	DATE								

0 SCALE NA NONE

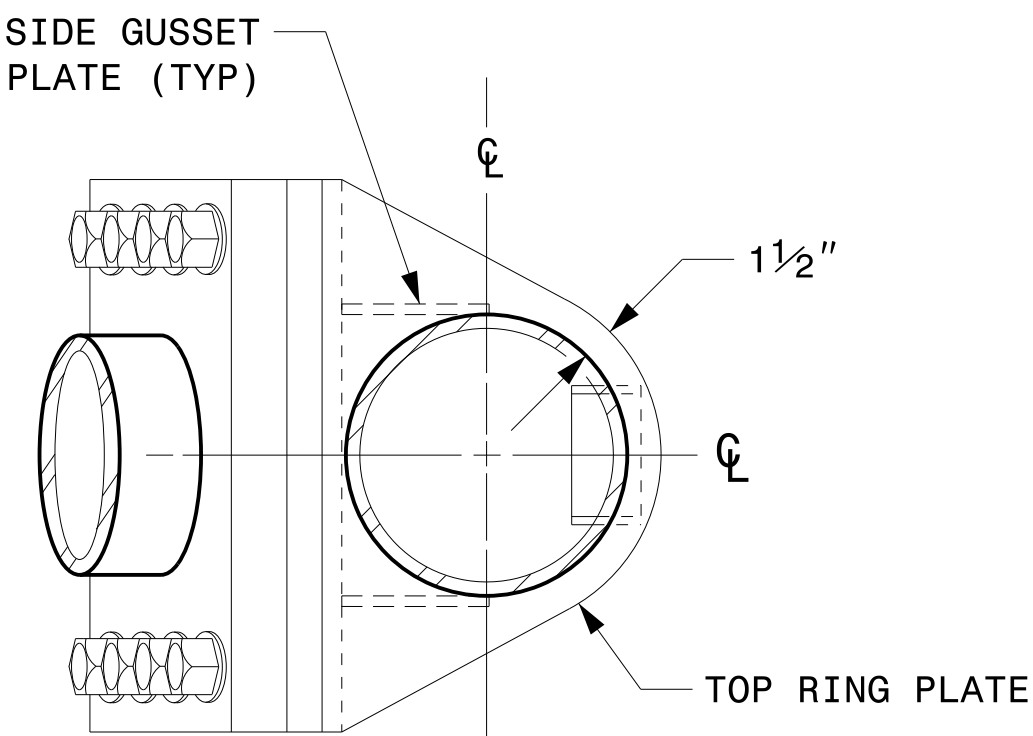
09/21/2023 DATE

WELDED RING STIFFENED MAST ARM CONNECTION

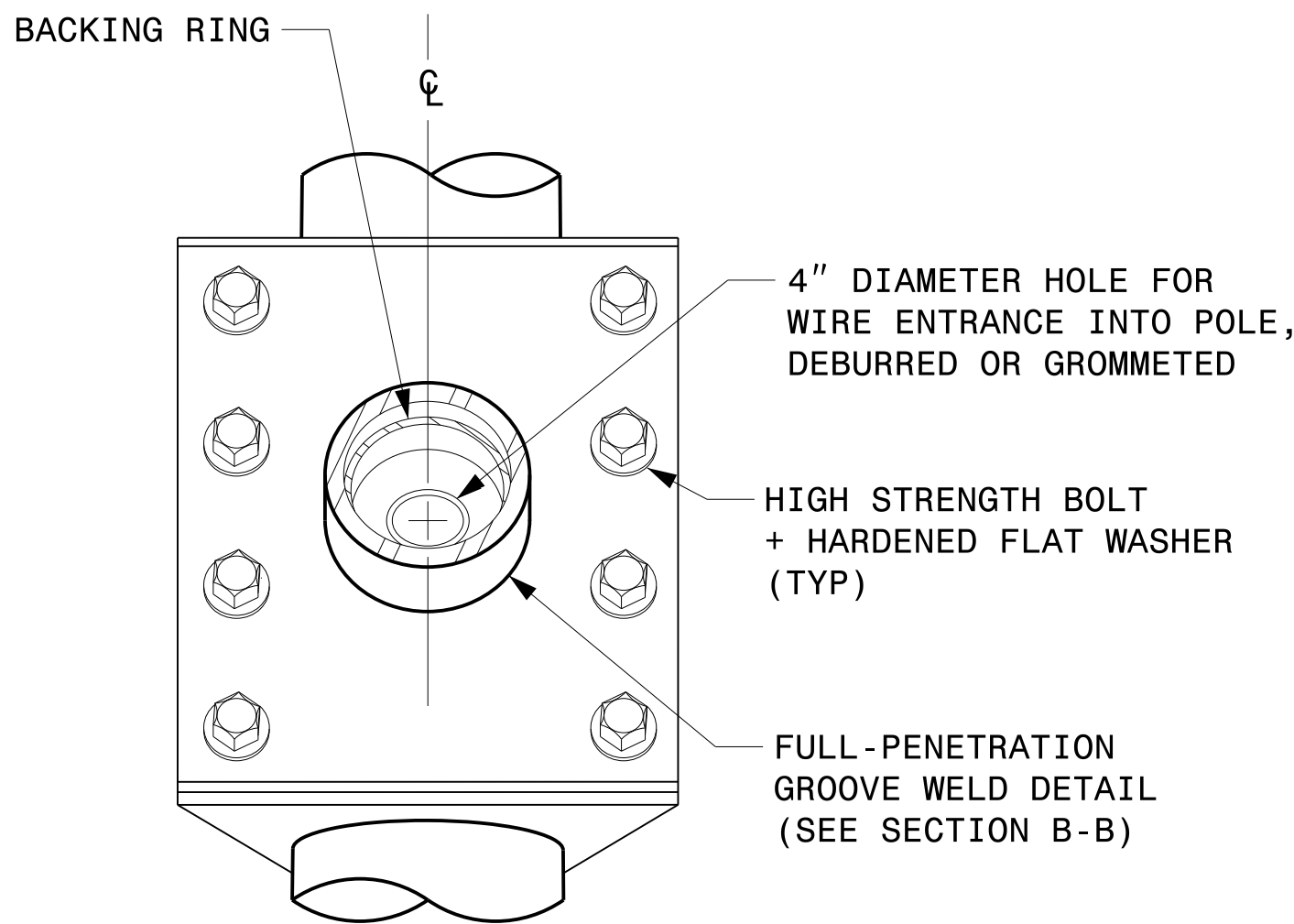
PROJECT I.D. NO.	SHEET NO.
U-4758	Sig.M5



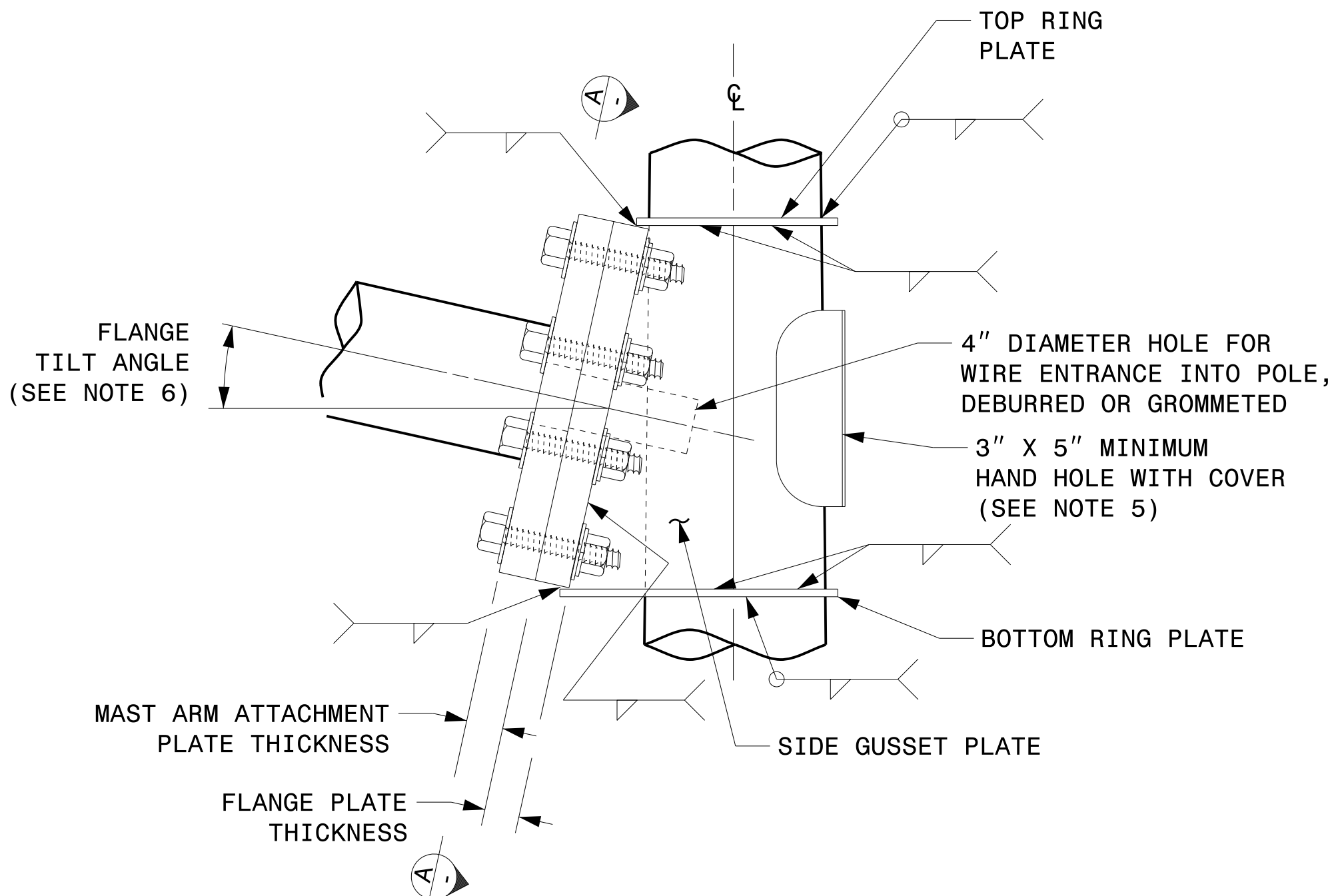
SECTION B-B
FULL-PENETRATION GROOVE WELD DETAIL



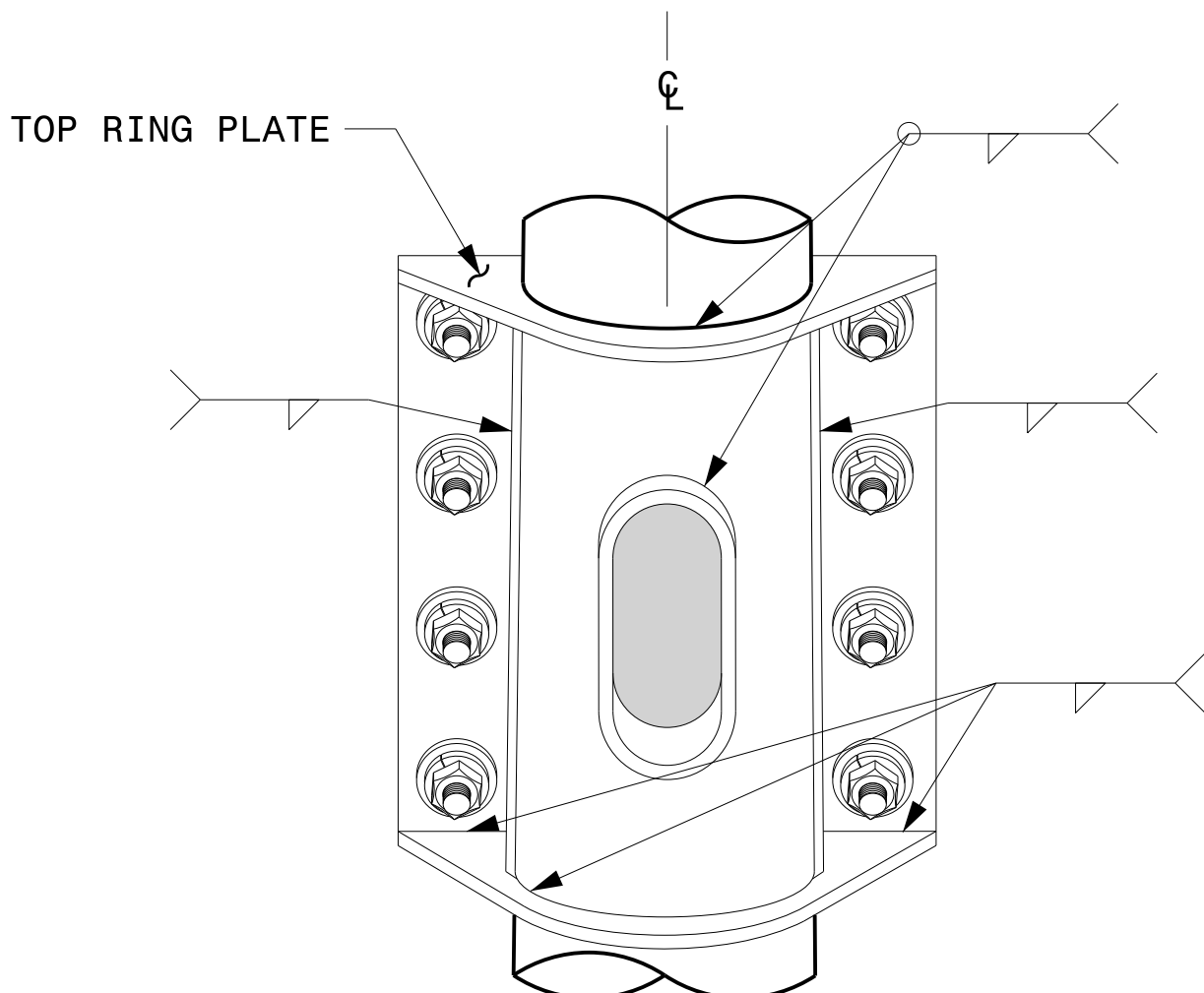
PLAN VIEW



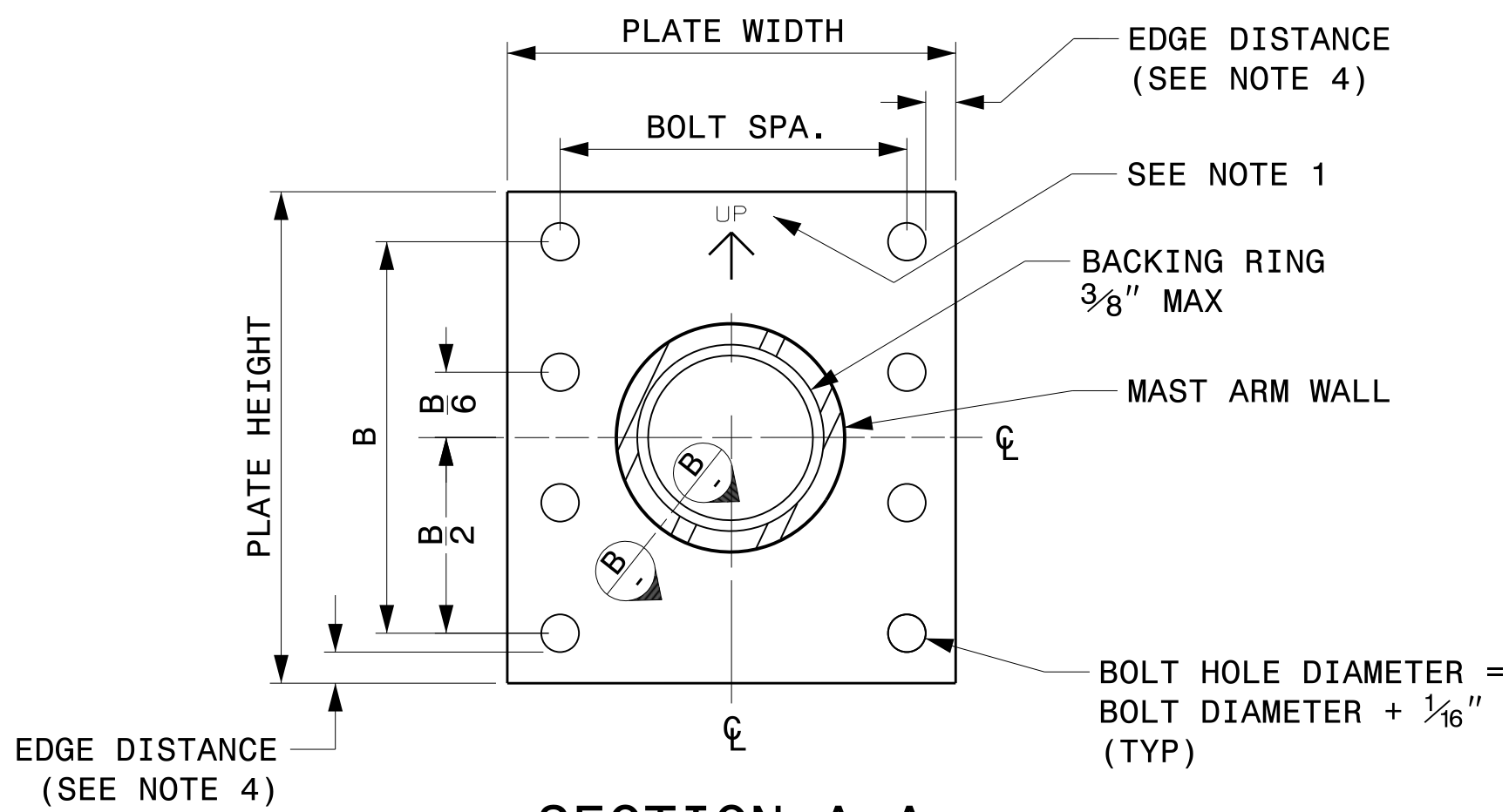
FRONT ELEVATION VIEW



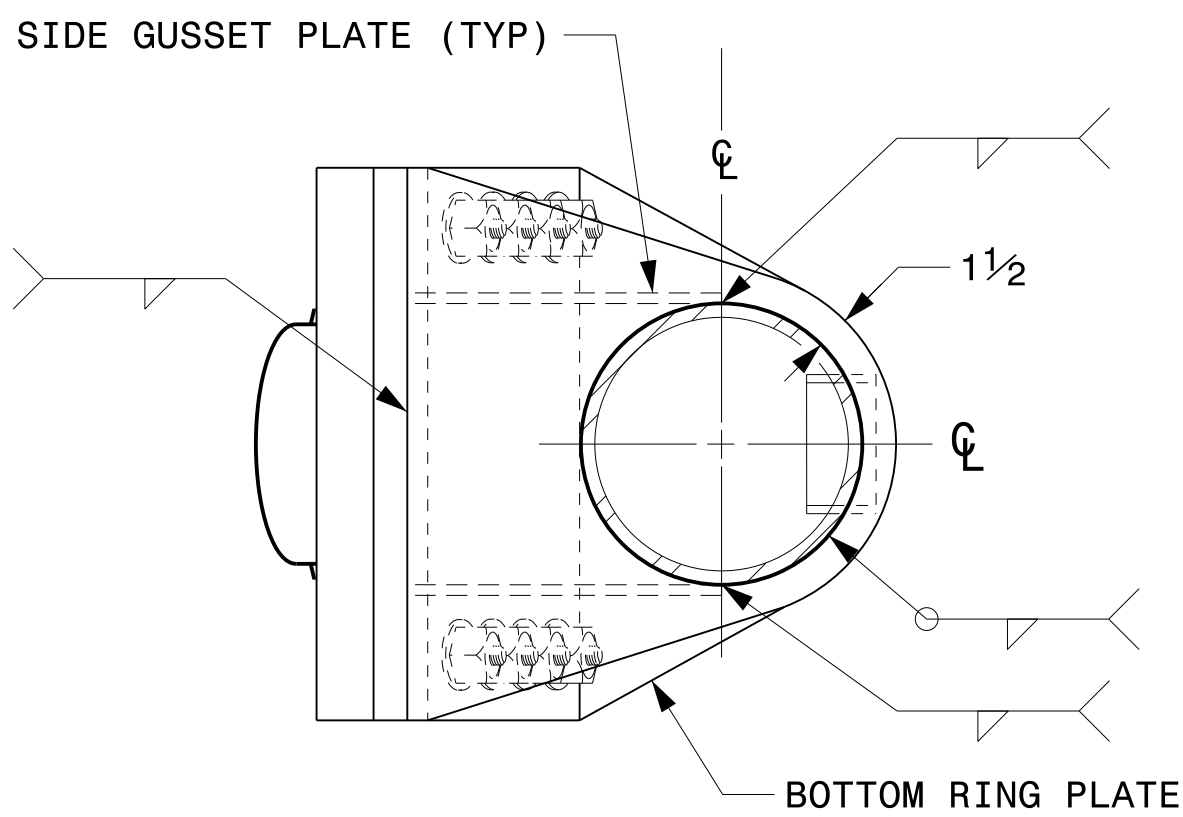
SIDE ELEVATION VIEW



BACK ELEVATION VIEW



SECTION A-A
MAST ARM ATTACHMENT PLATE



BOTTOM VIEW

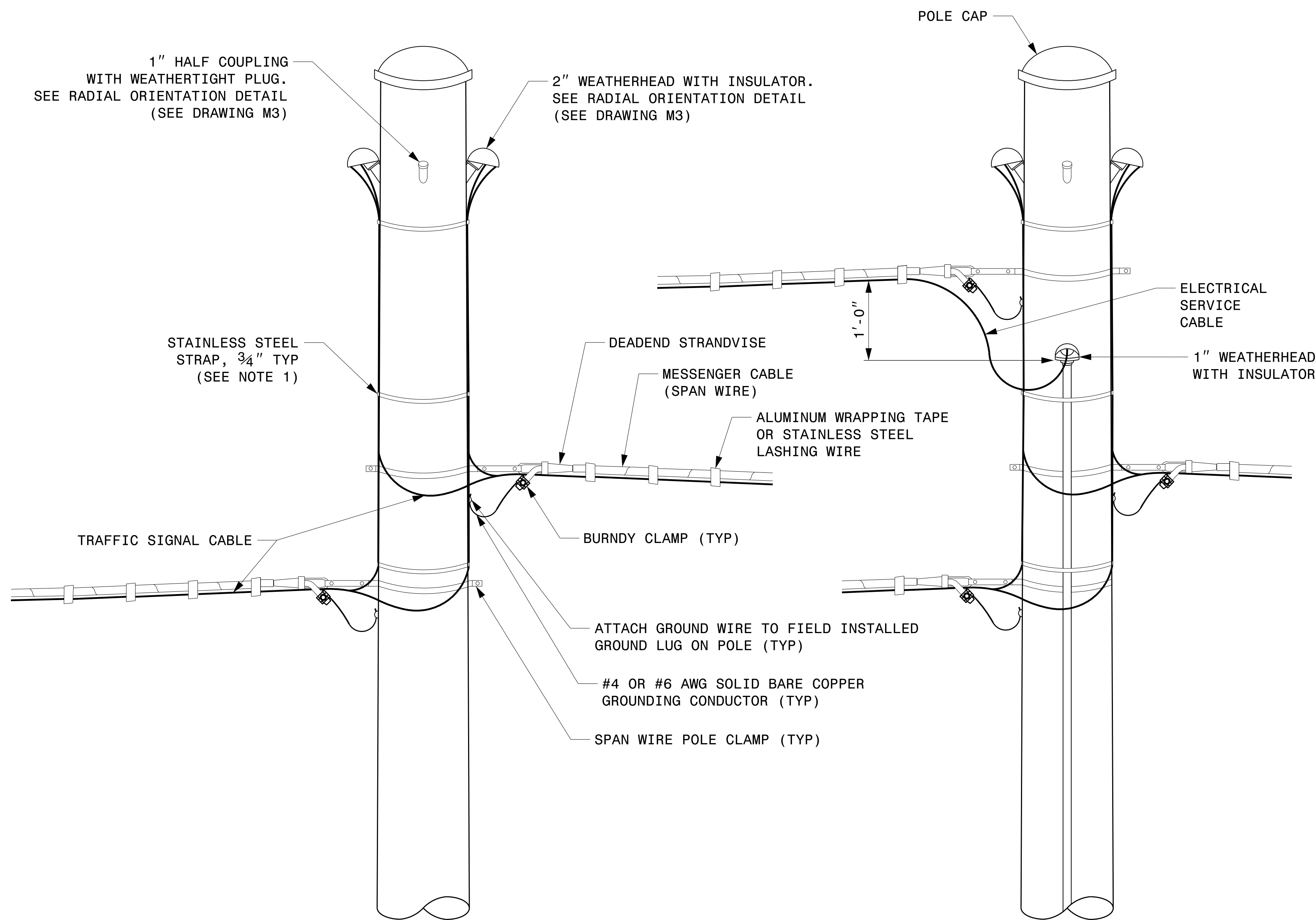
NOTES:

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.

	Typical Fabrication Details For Mast Arm Connection To Pole		
	PLAN DATE: SEPTEMBER 2023	DESIGNED BY: C.F. ANDREWS	
	PREPARED BY: K.C. DURIGON	REVIEWED BY: D.C. SARKAR	
SCALE: 0 NA NONE	REVISIONS	INIT.	DATE
DocuSigned by: 		09/21/2023 DATE	

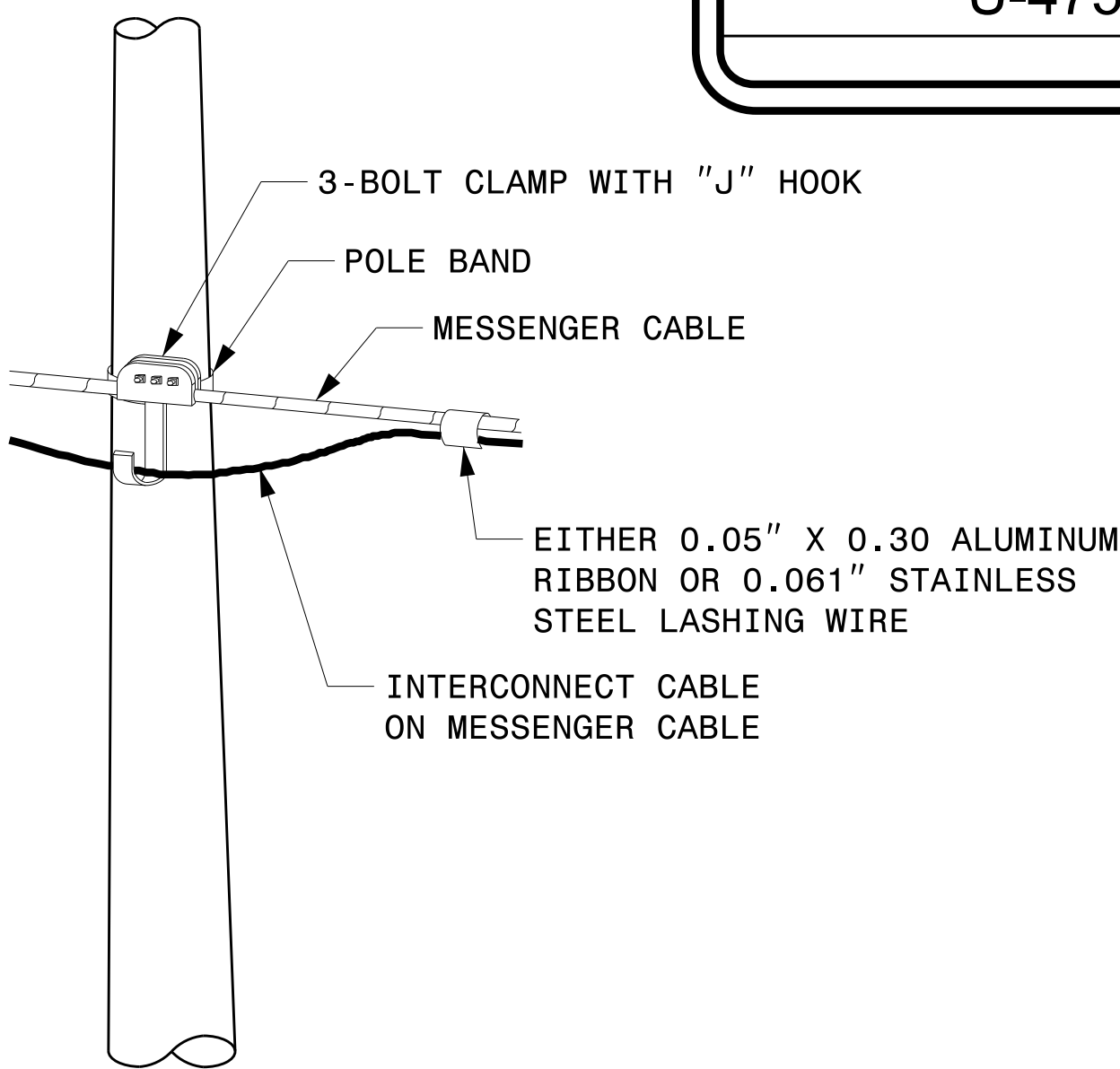
09-001-2023 19-38
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Kedur.fgn

Fabrication Details – Mast Arm Connection

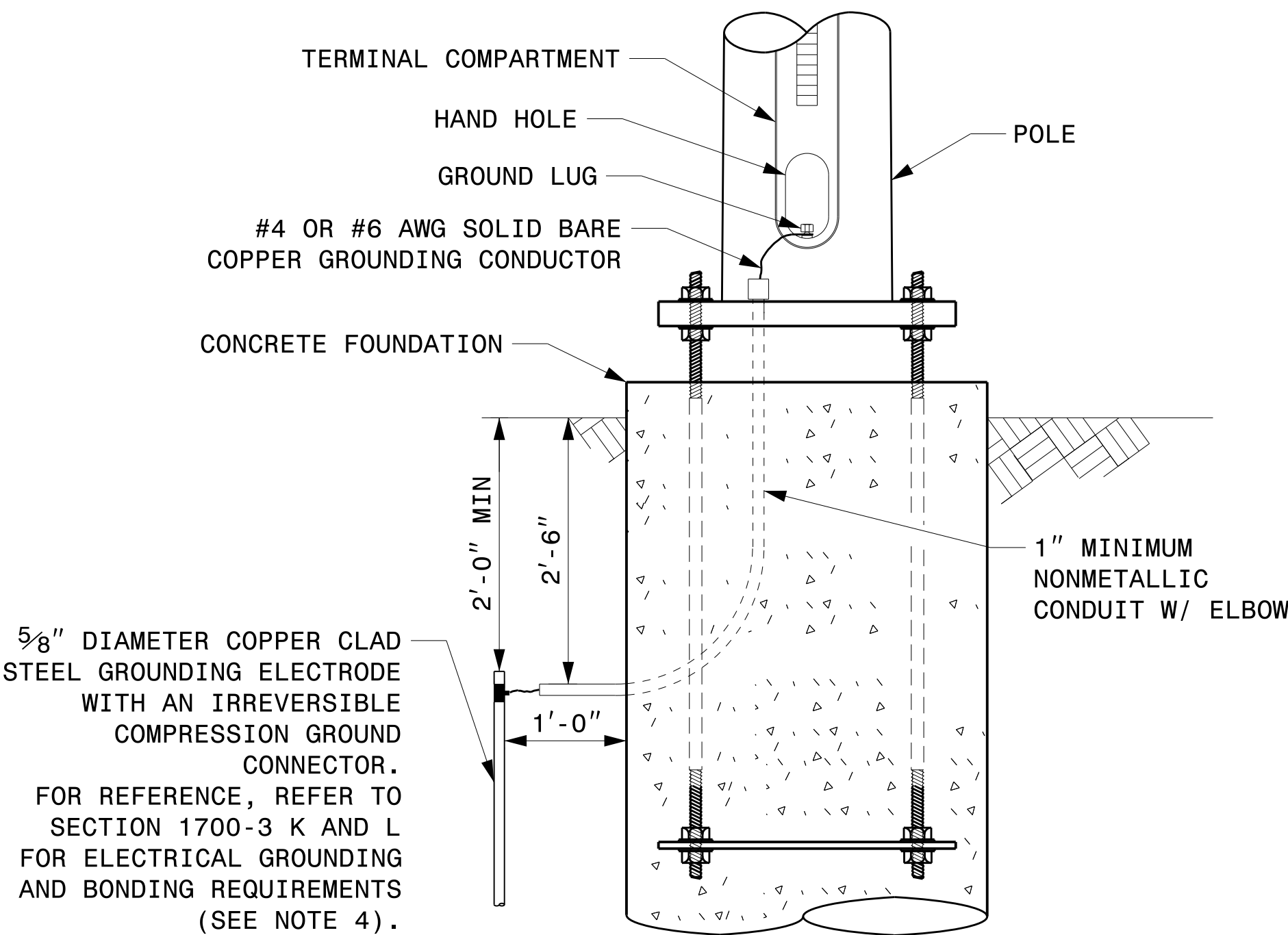


STRAIN POLE ATTACHMENTS

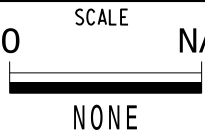
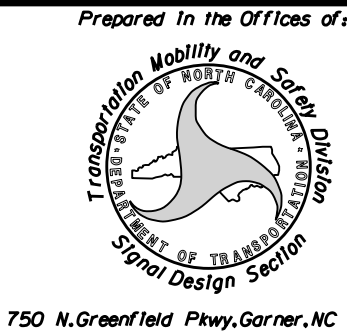
- NOTES:
1. STRAP ALL SIGNAL CABLES TO THE SIDE OF THE POLE WITH 3/4" STAINLESS STEEL STRAPS WHEN THE DISTANCE BETWEEN SPAN WIRE ATTACHMENT CLAMP AND WEATHERHEADS EXCEEDS 3'-0".
 2. PROVIDE MINIMUM TWO SPAN WIRE POLE CLAMPS PER POLE.
 3. IT IS PROHIBITED TO ATTACH TWO SPAN WIRES AT ONE POLE CLAMP.
 4. 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



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...

SEAL

PROFESSIONAL ENGINEER

SEAL 036626

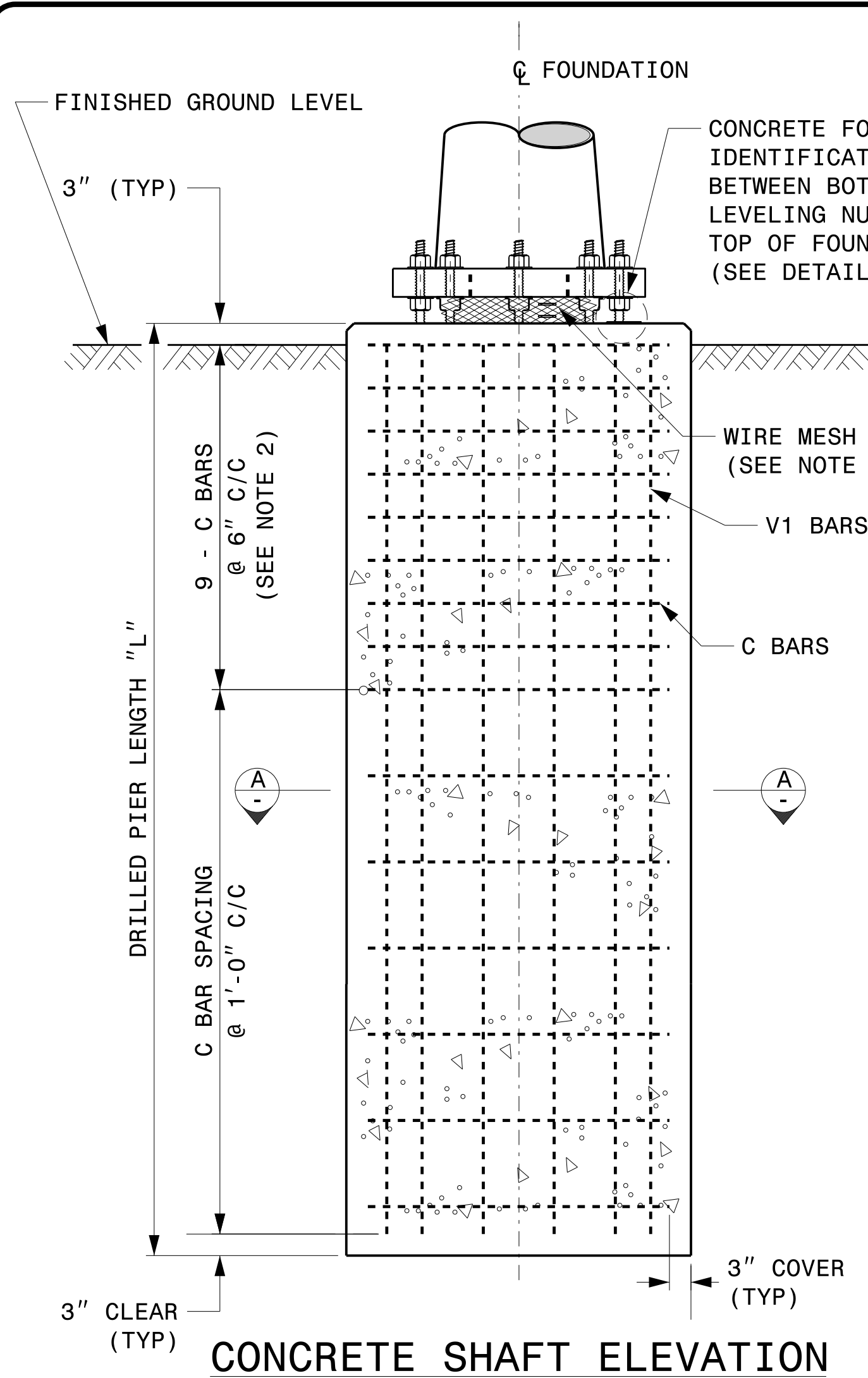
KEYVIN C. DURIGON

09/21/2023

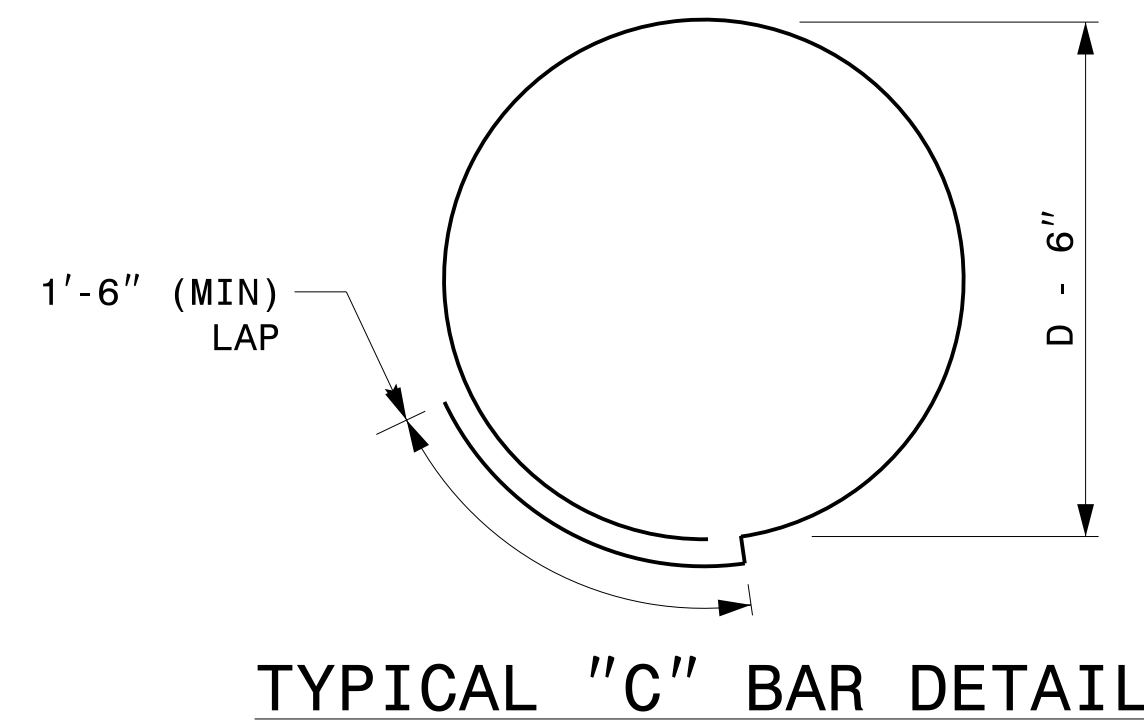
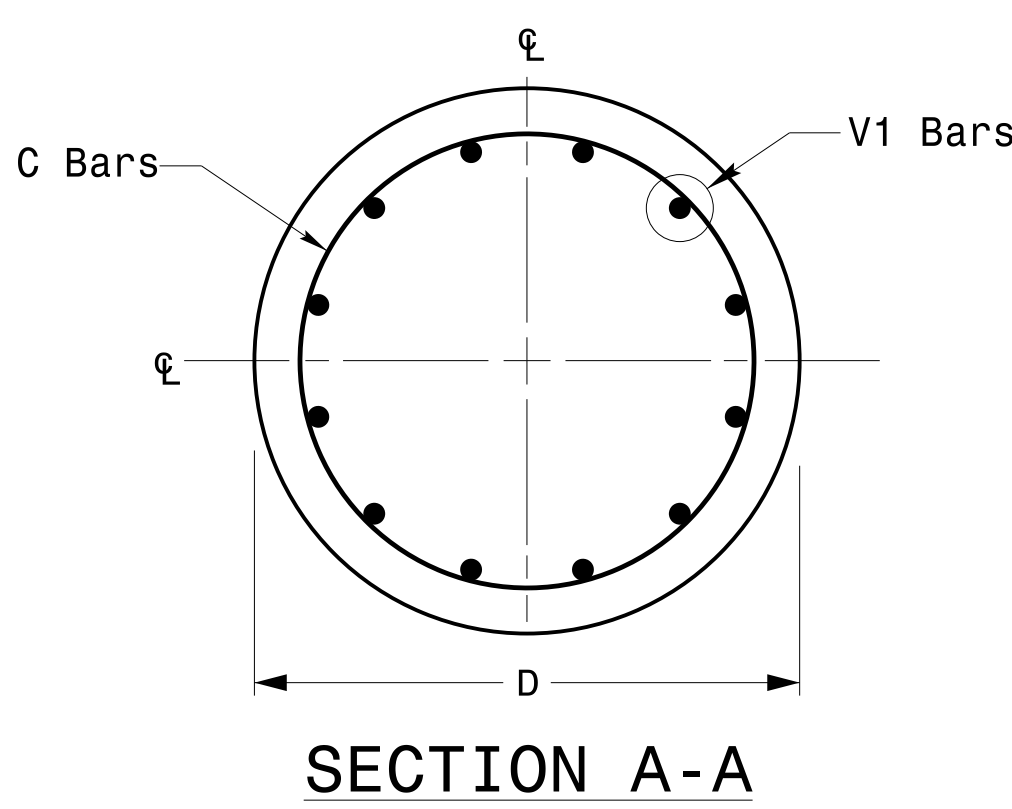
DATE

03-dgt-2023 19x41
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Kedurigon

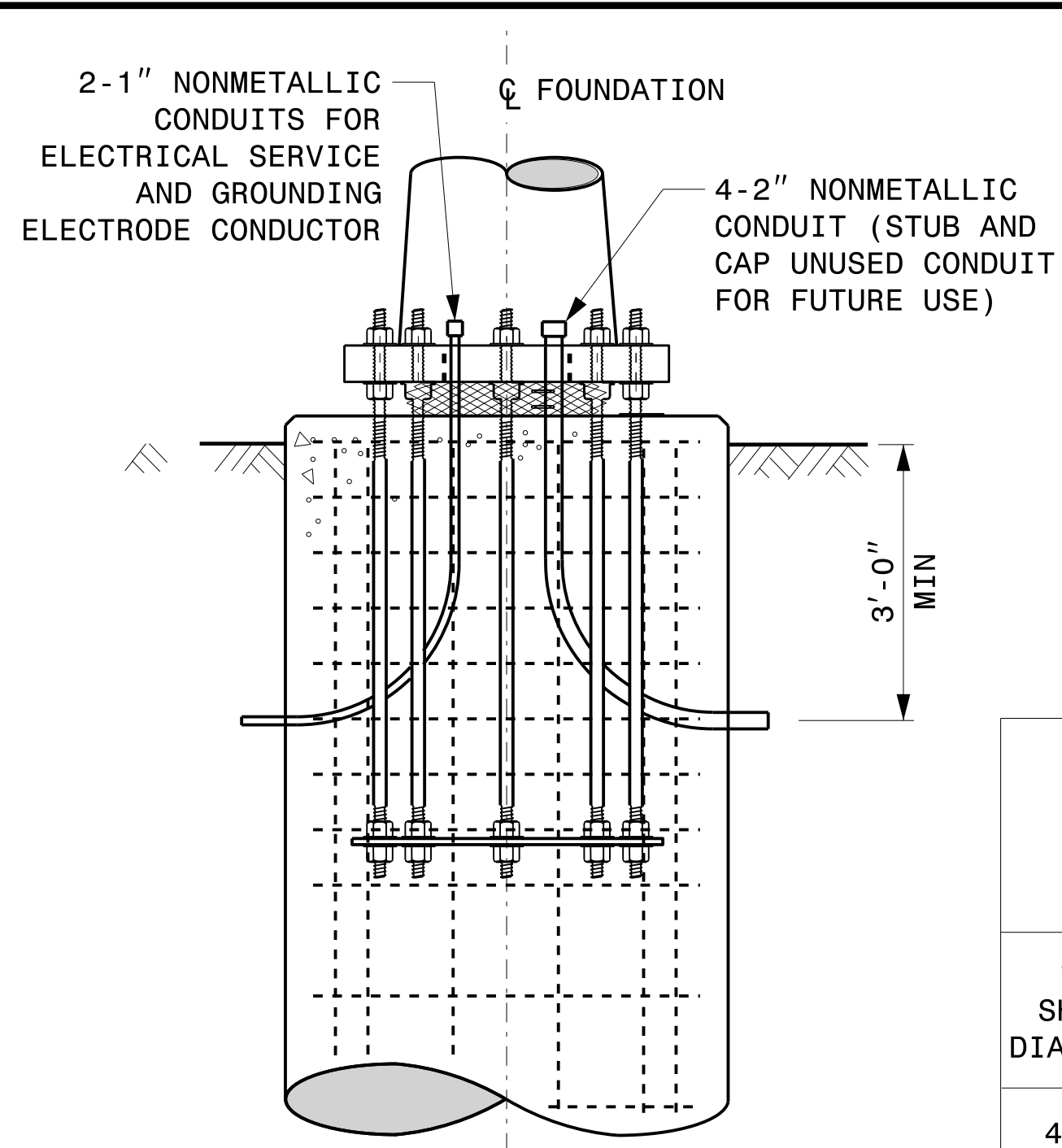
Fabrication Details – Strain Pole Attachments



CONCRETE SHAFT ELEVATION



TYPICAL "C" BAR DETAIL



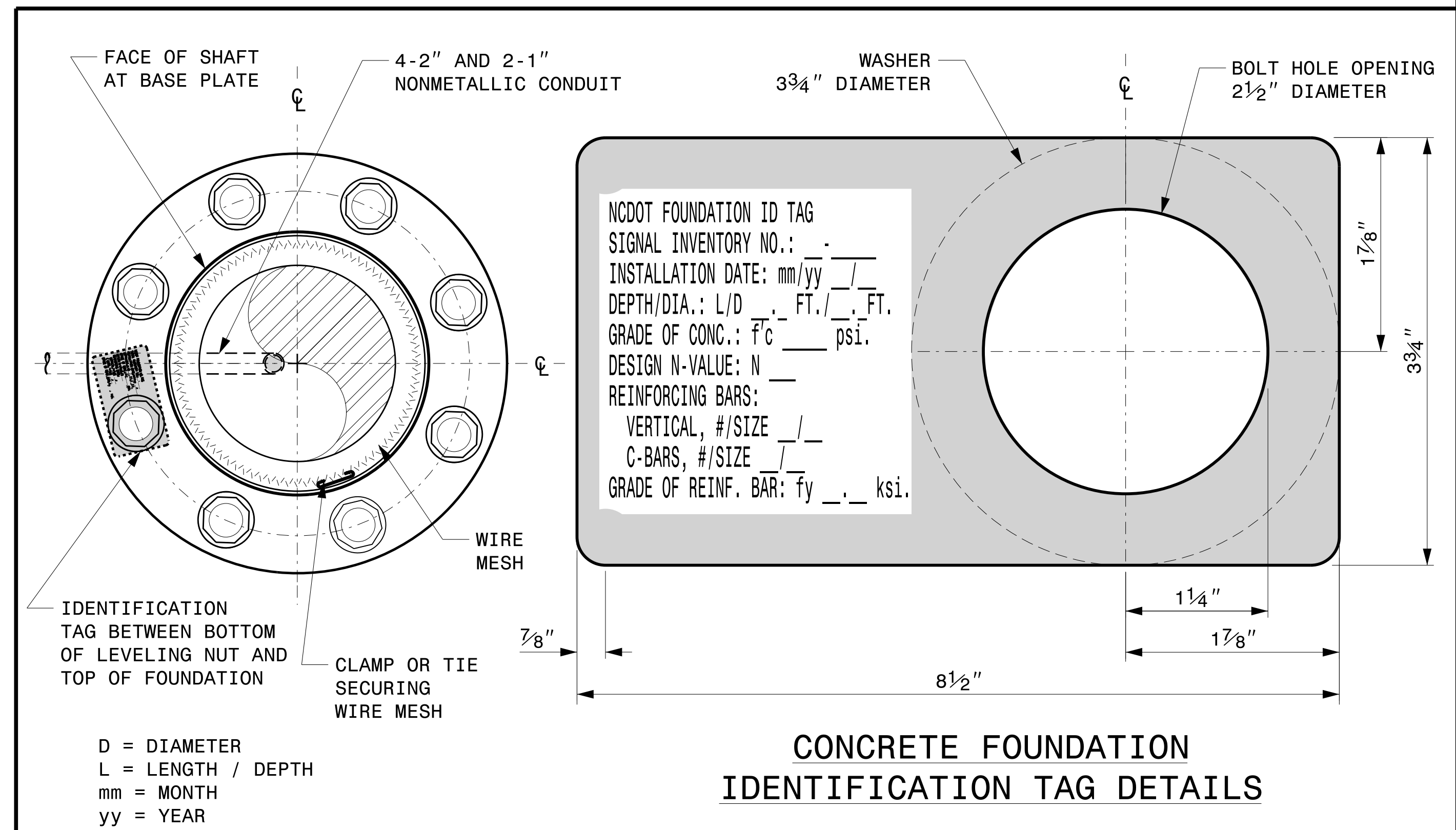
TYPICAL FOUNDATION CONDUIT DETAILS

GENERAL NOTES:

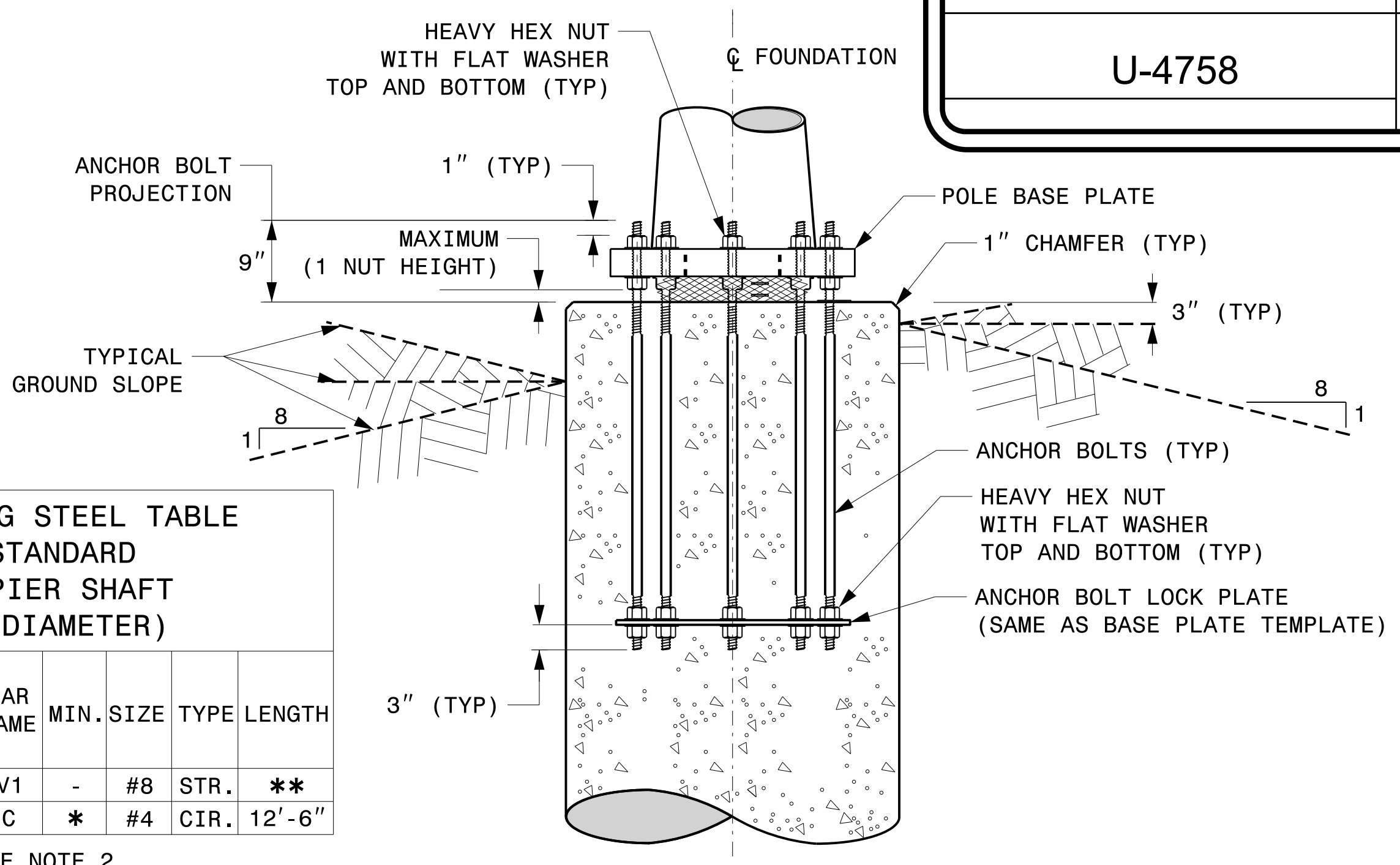
- IF ACTUAL SUBSURFACE CONDITIONS DIFFER SIGNIFICANTLY FROM BORING DATA, CONTACT THE ENGINEER BEFORE EXCAVATING OR PLACING CONCRETE.
- CIRCULAR TIE REINFORCING RINGS MAY BE VERTICALLY ADJUSTED BY +/-3" AT A DEPTH BETWEEN 2'-0" AND 3'-0" TO FACILITATE THE INSTALLATION OF ELECTRICAL CONDUIT ENTERING IN 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



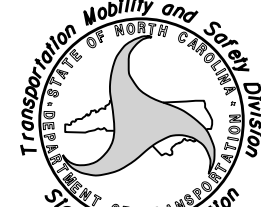
DETAIL-A



TYPICAL FOUNDATION ANCHOR BOLT DETAILS

(REINFORCING CAGE NOT SHOWN FOR CLARITY)

Prepared In the Offices of:



TRANSPORTATION MOBILITY AND SAFETY DIVISION
DIVISION OF TRANSPORTATION
STANDARD DESIGN SECTION

750 N.Greenfield Pkwy,Garner,NC 27529

SCALE
0 NA
NONE

Construction Details
For
Foundations

PLAN DATE: SEPTEMBER 2023 DESIGNED BY: K.C. DURIGON
PREPARED BY: K.C. DURIGON REVIEWED BY: D.C. SARKAR

REVISIONS
INIT. DATE

SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
SEAL 036626
KEYVIN C. DURIGON

DocuSigned by:
Kevin Durigon
4B23DC79B3784DA

09/23/2023
DATE

SOIL CONDITION

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

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

PROJECT I.D. NO.	SHEET NO.
U-4758	Sig.M8

GENERAL NOTES:

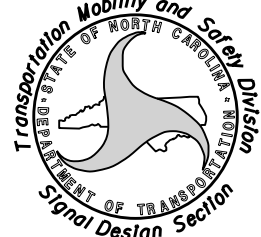
1. VALUES SHOWN IN THE "REACTIONS AT THE POLE BASE" COLUMN REPRESENT THE MINIMUM ACCEPTABLE CAPACITY ALLOWED FOR DESIGN USING A COMBINED FORCE RATIO (CFR) OF 1.00.
2. USE CHAIRS AND SPACERS TO MAINTAIN PROPER CLEARANCE.
3. FOR FOUNDATION, ALWAYS USE AIR-ENTRAINED CONCRETE MIX.

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.

09-001-2023 19x48
S:\1\SSM1\15 Signal\Signal Design Section\Structures\Drawings\2024 Metal Pole Str. Strain Pole Found.-Saturated Soil Condition.dgn
Kedur.fgm

Prepared In the Offices of:



750 N.Greenfield Pkwy,Garner,NC 27529

SCALE

0 1"=10' NA

NONE

Standard Strain Pole Foundation for All Soil Conditions

PLAN DATE: SEPTEMBER 2023DESIGNED BY: K.C. DURIGON

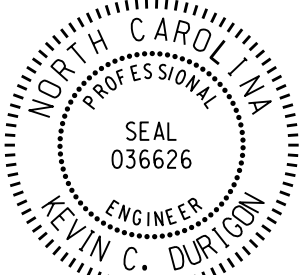
PREPARED BY: K.C. DURIGONREVIEWED BY: D.C. SARKAR

REVISIONS

INIT.

DATE

SEAL



SEAL 036626

DocuSigned by:

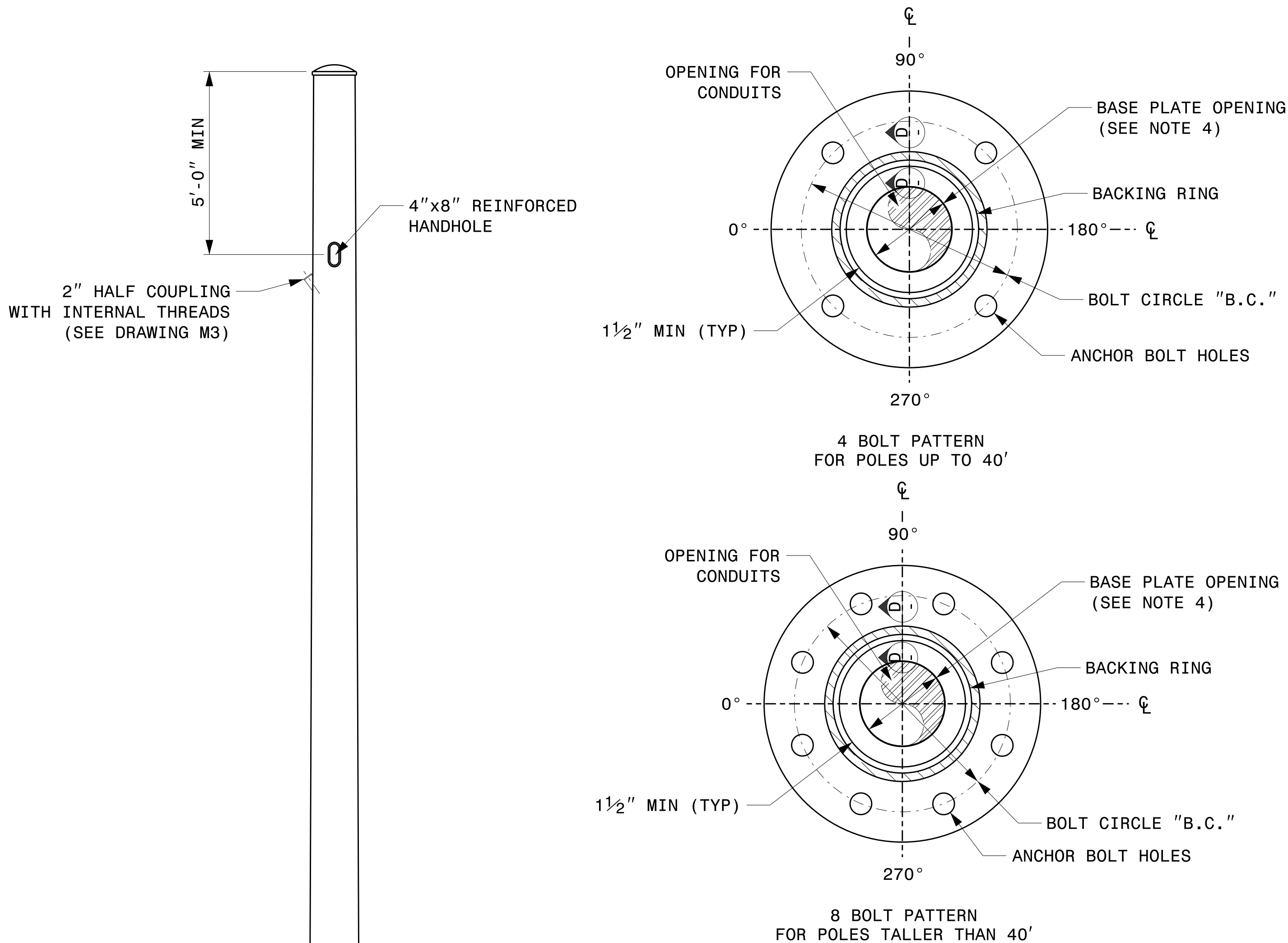


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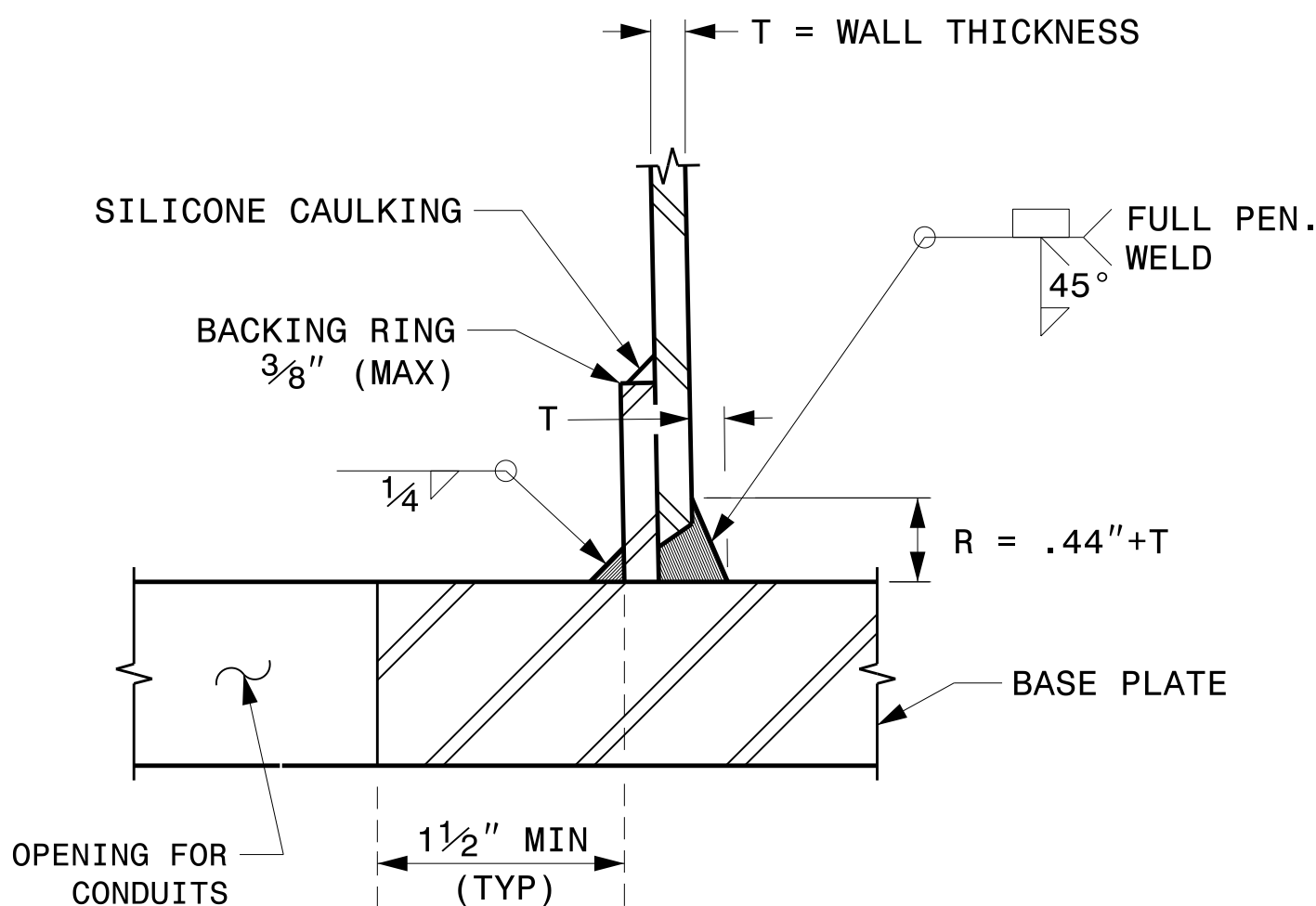
09/21/2023

DATE

Standard Strain Pole Foundation – All Soil Conditions

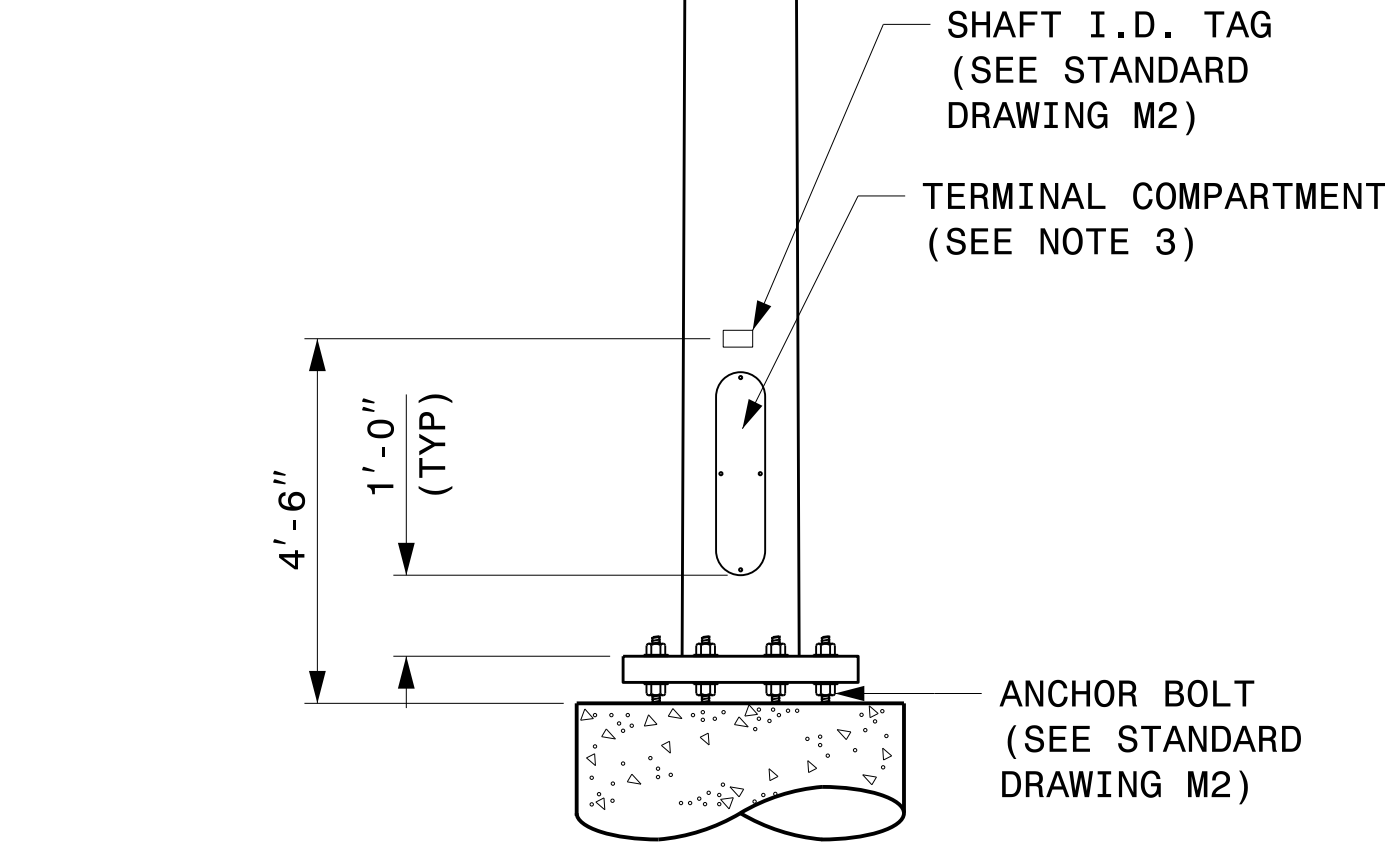


BASE PLATE DETAILS



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

- 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.



CCTV CAMERA POLE
(NOT TO SCALE)

	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	
SCALE 0 NA NONE	REVISIONS	INIT.	DATE
DocuSigned by: Kevin Durigon 4B23DC79B3784DA...		09/21/2023 DATE	

MEMBER NOT CONSIDERED FINAL
ALL SIGNATURES COMPLETED

SEAL

NORTH CAROLINA
PROFESSIONAL
SEAL
056276
ENGINEER
JAMES T. STIFF

Sealed by
James Stiff
054800376724434

3/14/2025

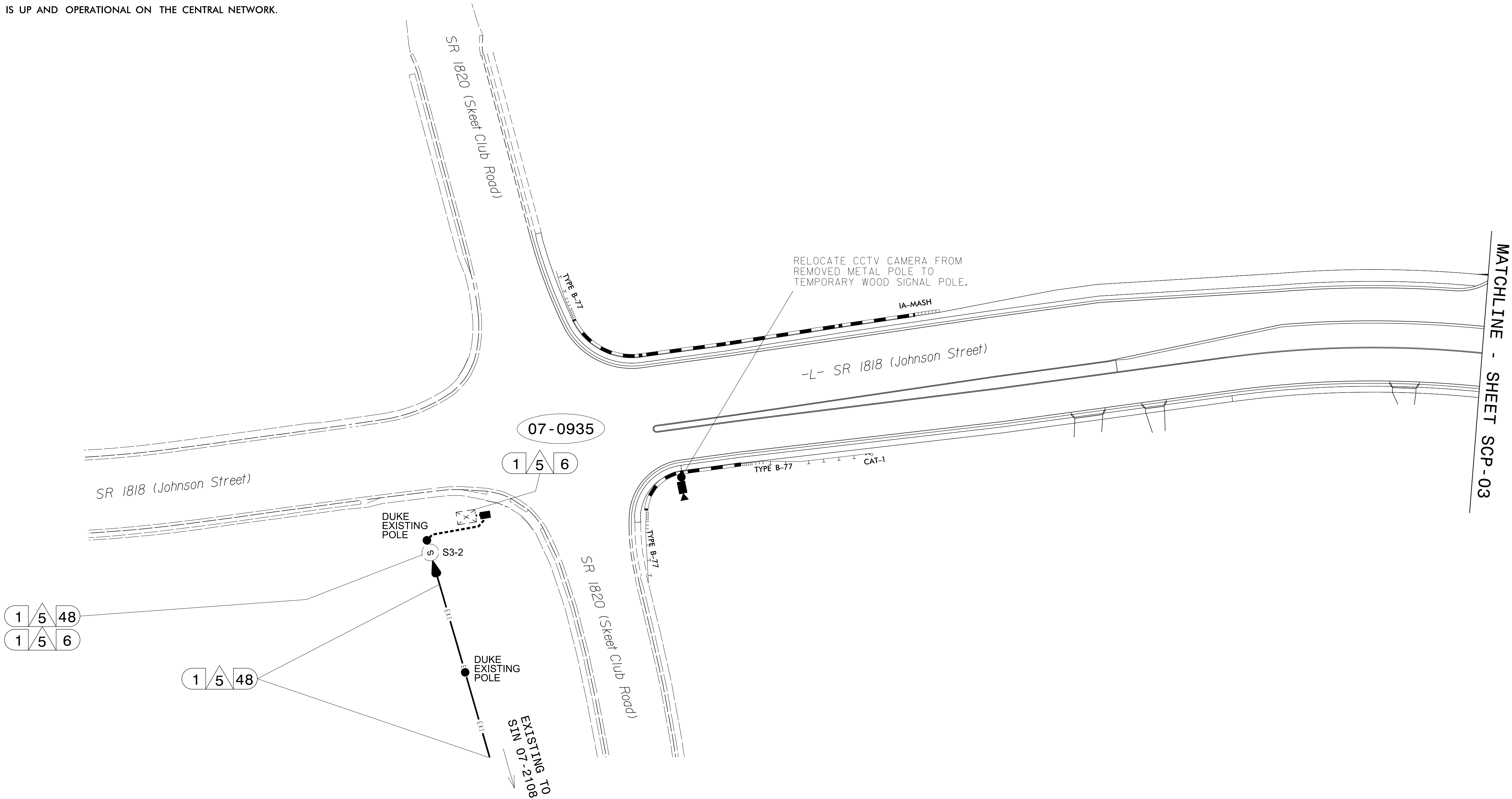
DATE

CADD File Name: U4758_SCP-01.dgn

PROJECT REFERENCE NO.	SHEET NO.
U - 4758	SCP - 02

NOTES:

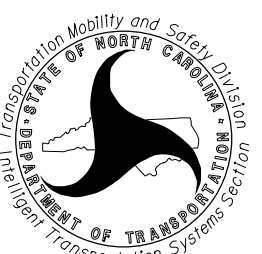
1. FIVE (5) DAYS PRIOR TO RELOCATION OF CCTV CAMERA, CONTACT CITY OF HIGH POINT TRAFFIC DEPARTMENT AT (336) 345-4616. NOTIFY THE CITY TRAFFIC DEPARTMENT AFTER ALL WORK IS PERFORMED TO ENSURE THAT THE CCTV CAMERA IS FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE CCTV CAMERA IS UP AND OPERATIONAL ON THE CENTRAL NETWORK.



1	INSTALL COAX CABLE	11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	22	INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)	32	INSTALL POLE MOUNTED SPLICE CABINET	42	INSTALL WOOD POLE	52B	INSTALL JUNCTION BOX MARKER	63	BOND RISER TO POLE GROUND
2	INSTALL ETHERNET CABLE	12	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	23	INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)	33	INSTALL BASE MOUNTED SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	53A	STORE 20 FEET OF COMMUNICATIONS CABLE	64	BOND MESSENGER CABLE TO POLE GROUND
3	EXISTING ETHERNET (OR COAX) CABLE	13	INSTALL OUTER-DUCT POLYETHYLENE CONDUIT	24	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	34	INSTALL CABINET FOUNDATION	44	INSTALL AERIAL GUY ASSEMBLY	53B	STORE 50 FEET OF EACH COMMUNICATIONS CABLE	65	INSTALL HEAT SHRINK TUBING RETROFIT KIT
4	INSTALL SMFO CABLE	14	INSTALL POLYETHYLENE CONDUIT	25	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	35	INSTALL CCTV CAMERA POLE MOUNTED CABINET	45	INSTALL STANDARD GUY ASSEMBLY	54	LASH CABLE(S) TO EXISTING COMMUNICATIONS CABLE	66	INSTALL MOLDABLE DUCT SEAL
5	EXISTING SMFO CABLE	15	DIRECTIONAL DRILL CONDUIT	26	INSTALL NEW ETHERNET EDGE SWITCH	36	INSTALL CCTV CAMERA ASSEMBLY	46	INSTALL SIDEWALK GUY ASSEMBLY	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	SLACK SPAN
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7	INSTALL TRACER WIRE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	38	INSTALL CCTV CAMERA METAL POLE AND FOUNDATION	48A	REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE	57	MODIFY EXISTING ELECTRICAL SERVICE		
8	TRENCH	18	INSTALL CABLE(S) IN NEW CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	39	INSTALL JUNCTION BOX	48B	REMOVE EXISTING COMMUNICATIONS CABLE	58	INSTALL NEW ELECTRICAL SERVICE		
9	INSTALL PVC CONDUIT	19	INSTALL CABLE(S) IN EXISTING RISER	30	INSTALL AERIAL SPLICE ENCLOSURE	40A	INSTALL OVERSIZED JUNCTION BOX	49	BACK PULL EXISTING COMMUNICATIONS CABLE	59	INSTALL NEW EQUIPMENT CABINET DISCONNECT		
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	20	INSTALL CABLE(S) IN NEW RISER	31	MODIFY EXISTING INTERCONNECT CENTER /SPLICE ENCLOSURE	40B	INSTALL SPECIAL OVERSIZED JUNCTION BOX (36" x 24" x 24")	50	INSTALL CELL MODEM AND ANTENNA	60	BOND TRACER WIRE TO EQUIPMENT GROUND BUS		
		21	INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS			41	REMOVE EXISTING JUNCTION BOX	51	INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE	61	DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS		
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TMP PHASE I

Prepared for the Offices of:



750 Greenfield Parkway, Garner, NC 27529

SCALE

NTS

High Point Signal System
SR 1818 (Johnson Street)/
SR 1850 (Sandy Ridge Road)
Cable Routing Plans

Division 7 Guilford County High Point

PLAN DATE: February 2025	REVIEWED BY: AM Encarnacion
PREPARED BY: JT Stiff	REVIEWED BY: PL Alexander
REVISIONS	INIT. DATE

SEAL

NORTH CAROLINA

PROFESSIONAL ENGINEER

056276

James T. Stiff

05480037072A434

3/14/2025

DATE

CADD Filename: U4758_SCP-02.dgn

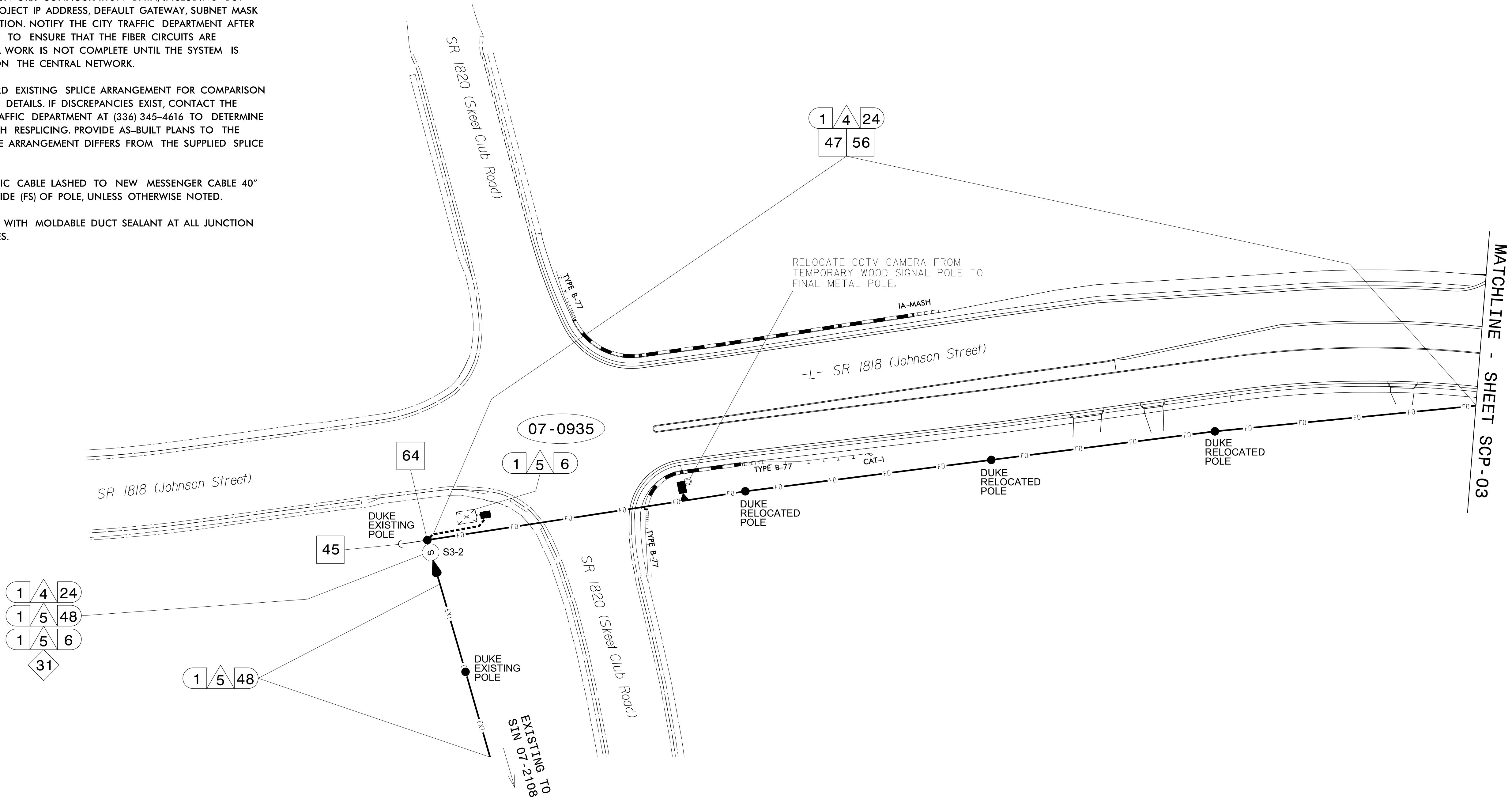
AtkinsRéalis

1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NOTES:

1. FIVE (5) DAYS PRIOR TO BEGINNING SPlice WORK AT SPlice LOCATION S3-2 CONTACT CITY OF HIGH POINT TRAFFIC DEPARTMENT AT (336) 345-4616 TO ARRANGE FOR THE CITY TO PROGRAM THE 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 CITY TRAFFIC DEPARTMENT AFTER ALL WORK IS PERFORMED TO ENSURE THAT THE FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SYSTEM IS UP AND OPERATIONAL ON THE CENTRAL NETWORK.
2. CONTRACTOR TO RECORD EXISTING SPlice ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPlice DETAILS. IF DISCREPANCIES EXIST, CONTACT THE CITY OF HIGH POINT TRAFFIC DEPARTMENT AT (336) 345-4616 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. ATTACH NEW FIBER OPTIC CABLE LASHED TO NEW MESSENGER CABLE 40" BELOW POWER, FRONT SIDE (FS) OF POLE, UNLESS OTHERWISE NOTED.
4. SEAL ALL CONDUIT ENDS WITH MOLDABLE DUCT SEALANT AT ALL JUNCTION BOX / CABINET ENTRANCES.



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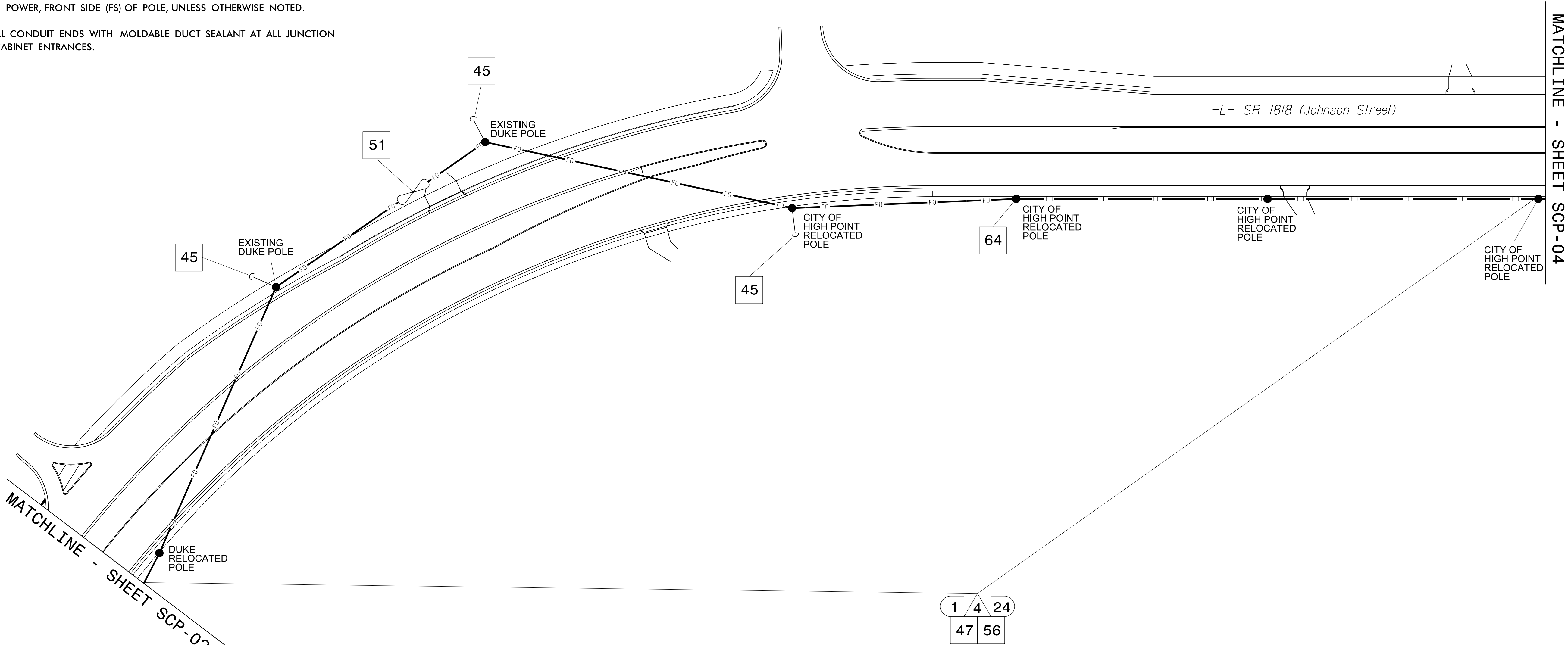
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<i>Prepared for the Offices of:</i>  750 Greenfield Parkway, Garner, NC 27529	High Point Signal System SR 1818 (Johnson Street)/ SR 1850 (Sandy Ridge Road) Cable Routing Plans	SEAL 																																	
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PROJECT REFERENCE NO.	SHEET NO.
U-4758	SCP-03

NOTES:

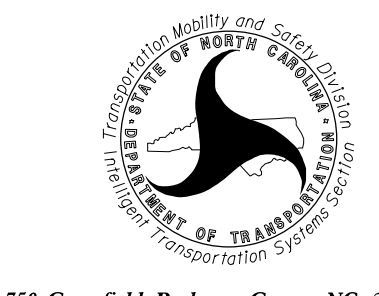
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TMP PHASE IV - Final Design

Prepared for the Offices of:



750 Greenfield Parkway, Garner, NC 27529

High Point Signal System
SR 1818 (Johnson Street)/
SR 1850 (Sandy Ridge Road)
Cable Routing Plans

Division 7 Guilford County High Point

PLAN DATE: February 2025	REVIEWED BY: AM Encarnacion
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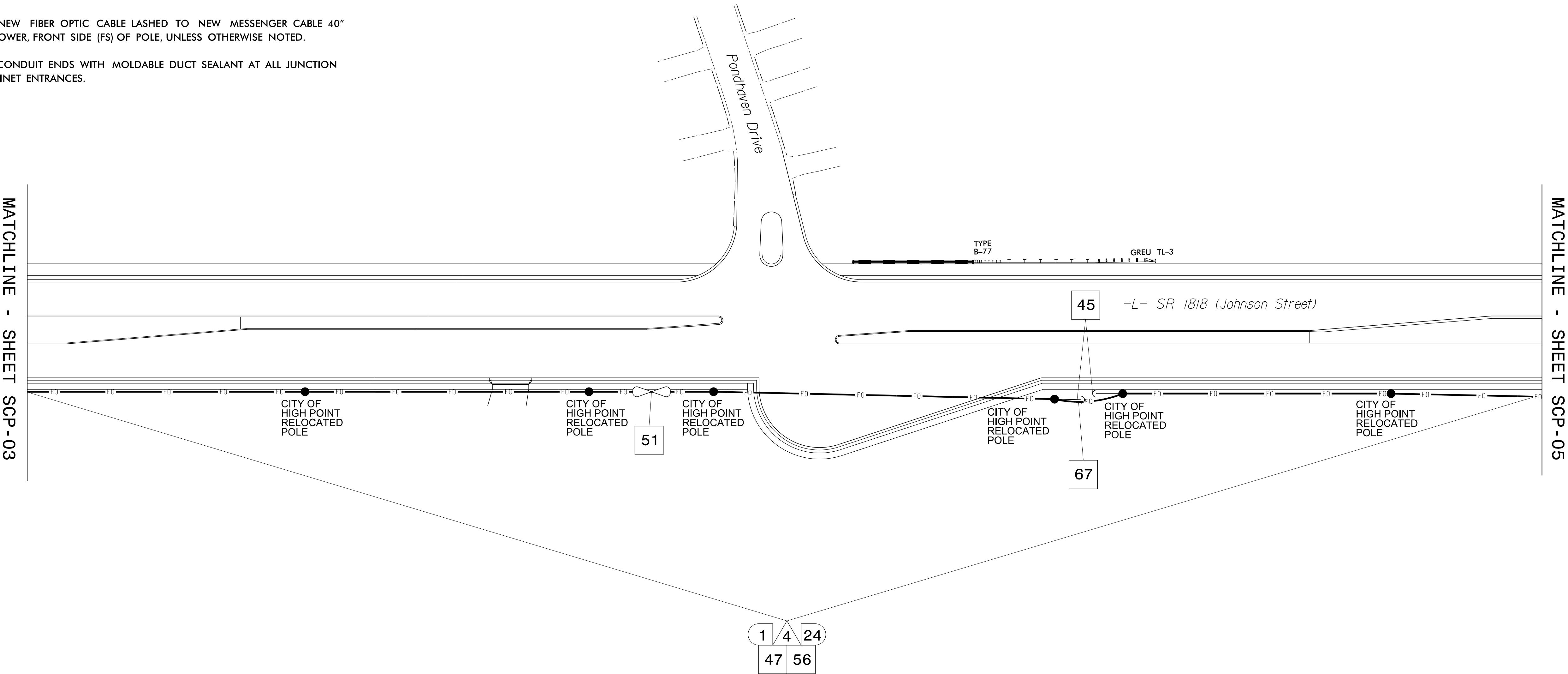
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SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
JAMES T. STIFF
056276
3/14/2025
DATE
CADD Filename: U4758_SCP-03.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4758	SCP-04

NOTES:

1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM
CONTACT CITY OF HIGH POINT TRAFFIC DEPARTMENT AT (336) 345-4616
TO ARRANGE FOR THE CITY TO PROGRAM THE FIELD ETHERNET SWITCHES
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Prepared for the Offices of:

750 Greenfield Parkway, Garner, NC 27529

SCALE
NTS

High Point Signal System
SR 1818 (Johnson Street)/
SR 1850 (Sandy Ridge Road)
Cable Routing Plans

Division 7 Guilford County High Point

PLAN DATE: February 2025
PREPARED BY: JT Stiff
REVISIONS
INIT. DATE

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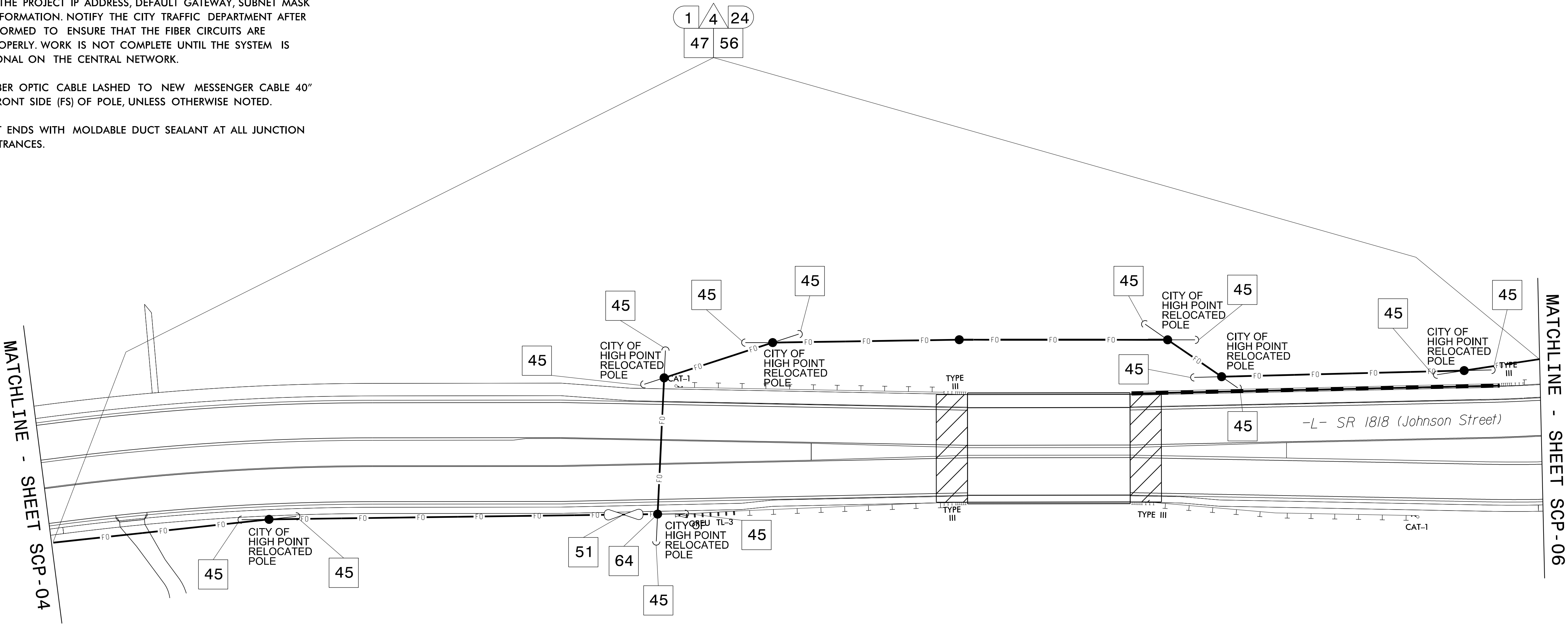
SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL
056276
ENGINEER
JAMES T. STIFF

Signed by:
James Stiff
05648037072A434
3/14/2025
DATE
CADD Filename: U4758_SCP-04.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4758	SCP-05

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Signed by: James Stiff 0548037072M434	3/14/2025 DATE
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| 1 | INSTALL COAX CABLE | 11 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 22 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 32 | INSTALL POLE MOUNTED SPLICE CABINET | 42 | INSTALL WOOD POLE | 52B | INSTALL JUNCTION BOX MARKER | 63 | BOND RISER TO POLE GROUND |
| 2 | INSTALL ETHERNET CABLE | 12 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL | 23 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 33 | INSTALL BASE MOUNTED SPLICE CABINET | 43 | REMOVE EXISTING WOOD POLE | 53A | STORE 20 FEET OF COMMUNICATIONS CABLE | 64 | BOND MESSENGER CABLE TO POLE GROUND |
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| 4 | INSTALL SMFO CABLE | 14 | INSTALL POLYETHYLENE CONDUIT | 25 | INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET | 35 | INSTALL CCTV CAMERA POLE MOUNTED CABINET | 45 | INSTALL STANDARD GUY ASSEMBLY | 54 | LASH CABLE(S) TO EXISTING COMMUNICATIONS CABLE | 66 | INSTALL MOLDBABLE DUCT SEAL |
| 5 | EXISTING SMFO CABLE | 15 | DIRECTIONAL DRILL CONDUIT | 26 | INSTALL NEW ETHERNET EDGE SWITCH | 36 | INSTALL CCTV CAMERA ASSEMBLY | 46 | INSTALL SIDEWALK GUY ASSEMBLY | 55 | LASH CABLE(S) TO EXISTING MESSENGER CABLE | 67 | SLACK SPAN |
| 6 | INSTALL FIBER OPTIC DROP CABLE | 16 | BORE AND JACK CONDUIT | 27 | INSTALL NEW FIBER OPTIC TRANSCEIVER | 37 | INSTALL CCTV CAMERA WOOD POLE | 47 | INSTALL MESSENGER CABLE | 56 | LASH CABLE(S) TO NEW MESSENGER CABLE | | |
| 7 | INSTALL TRACER WIRE | 17 | INSTALL CABLE(S) IN EXISTING CONDUIT | 28 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 38 | INSTALL CCTV CAMERA METAL POLE AND FOUNDATION | 48A | REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE | 57 | MODIFY EXISTING ELECTRICAL SERVICE | | |
| 8 | TRENCH | 18 | INSTALL CABLE(S) IN NEW CONDUIT | 29 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 39 | INSTALL JUNCTION BOX | 48B | REMOVE EXISTING COMMUNICATIONS CABLE | 58 | INSTALL NEW ELECTRICAL SERVICE | | |
| 9 | INSTALL PVC CONDUIT | 19 | INSTALL CABLE(S) IN EXISTING RISER | 30 | INSTALL AERIAL SPLICE ENCLOSURE | 40A | INSTALL OVERSIZED JUNCTION BOX | 49 | BACK PULL EXISTING COMMUNICATIONS CABLE | 59 | INSTALL NEW EQUIPMENT CABINET DISCONNECT | | |
| 10 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 20 | INSTALL CABLE(S) IN NEW RISER | 31 | MODIFY EXISTING INTERCONNECT CENTER /SPLICE ENCLOSURE | 40B | INSTALL SPECIAL OVERSIZED JUNCTION BOX (36" x 24" x 24") | 50 | INSTALL CELL MODEM AND ANTENNA | 60 | BOND TRACER WIRE TO EQUIPMENT GROUND BUS | | |
| | | 21 | INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS | | | 41 | REMOVE EXISTING JUNCTION BOX | 51 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 61 | DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS | | |
| | | | | | | | | 52A | INSTALL DELINEATOR MARKER | 62 | BOND RISER AND MESSENGER CABLE TO POLE GROUND | | |

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

<i>Prepared for the Offices of:</i>  750 Greenfield Parkway, Garner, NC 27529	High Point Signal System SR 1818 (Johnson Street)/ SR 1850 (Sandy Ridge Road) Cable Routing Plans	SEAL 								
Division 7 Guilford County High Point										
PLAN DATE: February 2025 REVIEWED BY: AM Encarnacion										
PREPARED BY: JT Stiff REVIEWED BY: PL Alexander										
SCALE NTS	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 40px;"> </td></tr> <tr><td style="height: 40px;"> </td></tr> <tr><td style="height: 40px;"> </td></tr> <tr><td style="height: 40px;"> </td></tr> </table>					INIT. DATE <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 40px;"> </td></tr> <tr><td style="height: 40px;"> </td></tr> <tr><td style="height: 40px;"> </td></tr> <tr><td style="height: 40px;"> </td></tr> </table>				
  										
Signed by: <u><i>James Stiff</i></u> 3/14/2025 0548003782A434 DATE										
CADD Filename: U4758_SCP-06.dgn										

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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DATE	
Signed by:  054BD037872M34	
CADD File name: U4758_SCP-07.dgn	

1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM CONTACT CITY OF HIGH POINT TRAFFIC DEPARTMENT AT (336) 345-4616 TO ARRANGE FOR THE CITY TO PROGRAM THE 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 CITY TRAFFIC DEPARTMENT AFTER ALL WORK IS PERFORMED TO ENSURE THAT THE FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SYSTEM IS UP AND OPERATIONAL ON THE CENTRAL NETWORK.
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3. SEAL ALL CONDUIT ENDS WITH MOLDABLE DUCT SEALANT AT ALL JUNCTION BOX / CABINET ENTRANCES.



Prepared for the Offices of:

750 Greenfield Parkway, Garner, NC 27525

[illegible]

SEAL

NORTH CAROLINA

PROFESSIONAL

SEAL

056276

ENGINEER

JAMES T. STIFF

Signed by:

James Stiff

D548D037872M434

3/14/2021

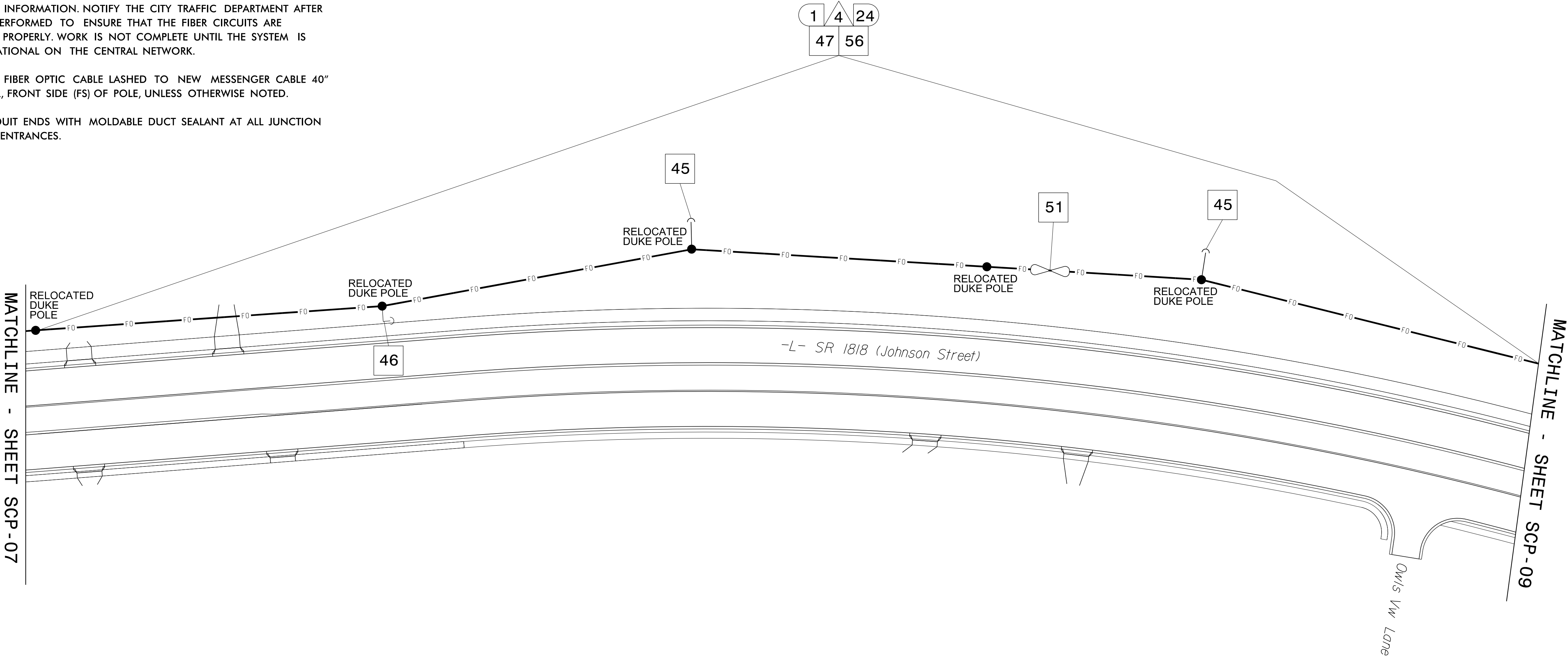
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CADD Filename: U4758_SCP-07.dwg

PROJECT REFERENCE NO.	SHEET NO.
U-4758	SCP-08

NOTES:

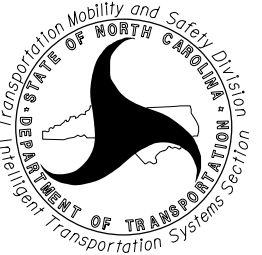
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TMP PHASE IV - Final Design

Prepared for the Offices of:



750 Greenfield Parkway, Garner, NC 27529

SCALE

NTS

High Point Signal System
SR 1818 (Johnson Street)/
SR 1850 (Sandy Ridge Road)
Cable Routing Plans

Division 7 Guilford County High Point

PLAN DATE: February 2025	REVIEWED BY: AM Encarnacion
PREPARED BY: JT Stiff	REVIEWED BY: PL Alexander
REVISIONS	INIT. DATE

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 056276

JAMES T. STIFF

Signed by: James Stiff
06480037072A434

3/14/2025

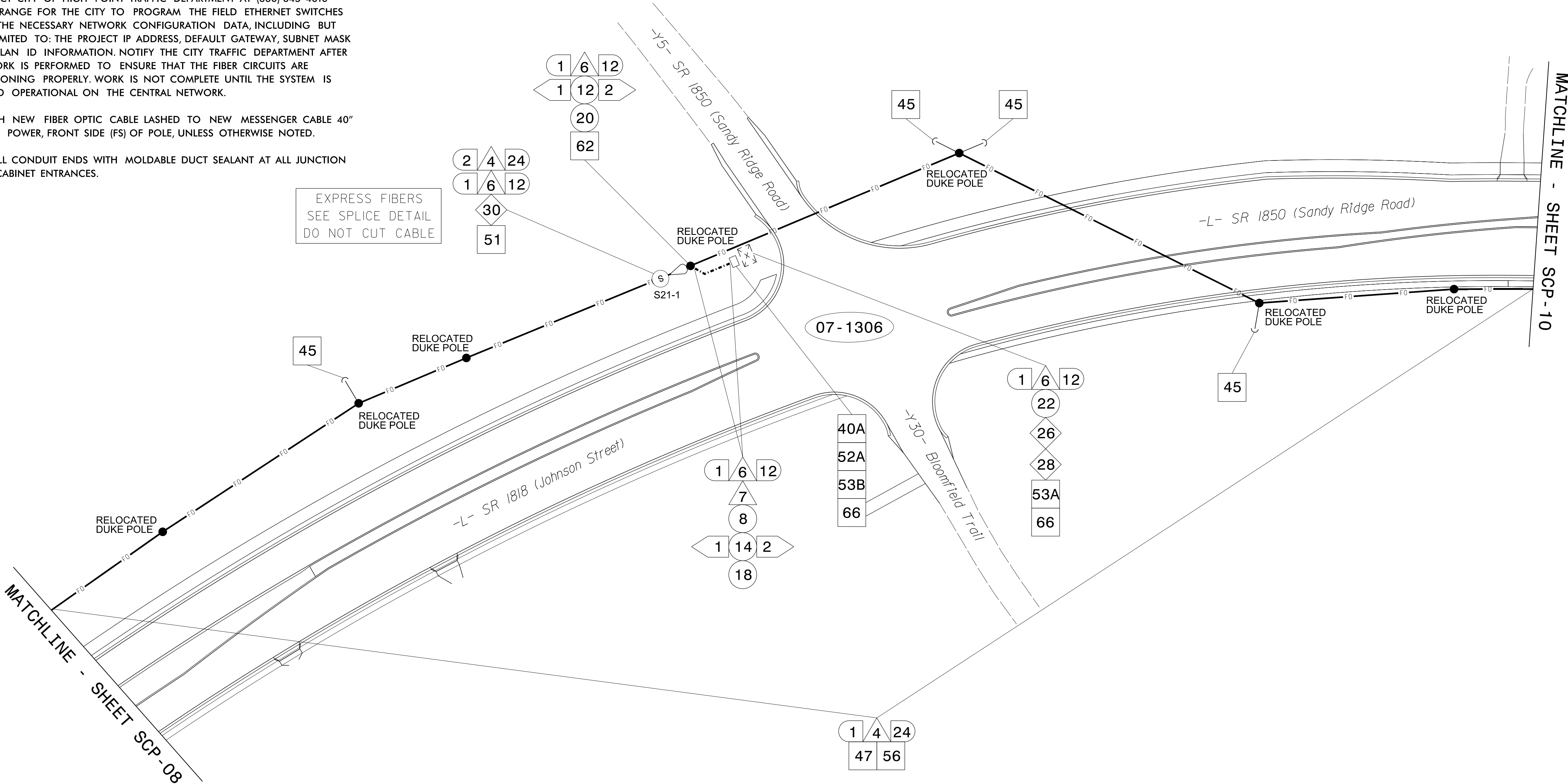
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CADD Filename: U4758_SCP-08.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4758	SCP-09

NOTES:

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1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

TMP PHASE IV - Final Design

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Prepared for the Offices of:

750 Greenfield Parkway, Garner, NC 27529

High Point Signal System
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Division 7 Guilford County High Point

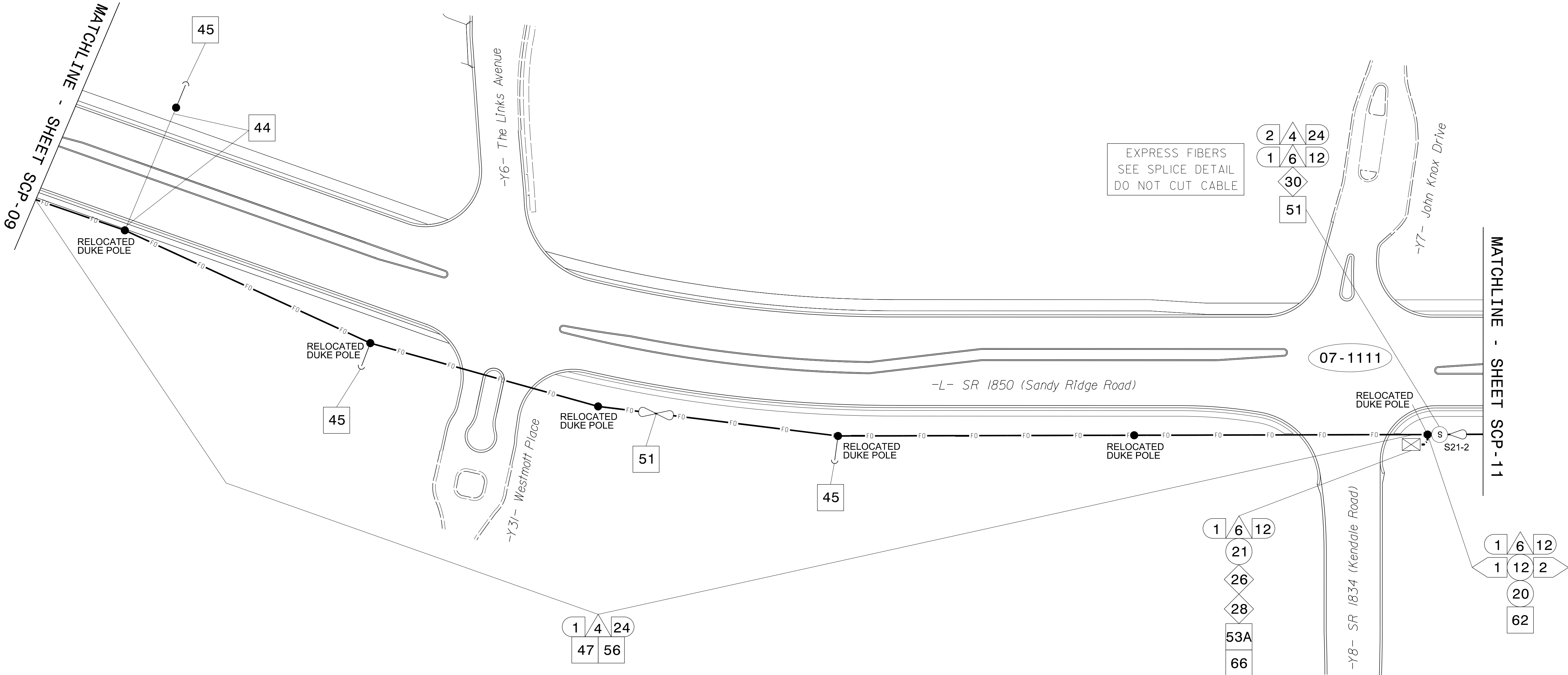
PLAN DATE: February 2025	REVIEWED BY: AM Encarnacion
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REVISIONS	INIT. DATE

SCALE
NTS

SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
JAMES T. STIFF
056276
3/14/2025
DATE
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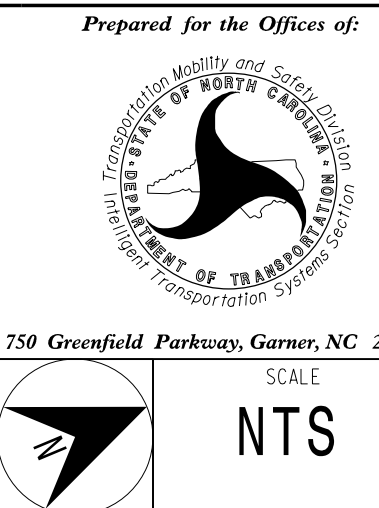
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TMP PHASE IV - Final Design

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750 Greenfield Parkway, Garner, NC 27529

SCALE

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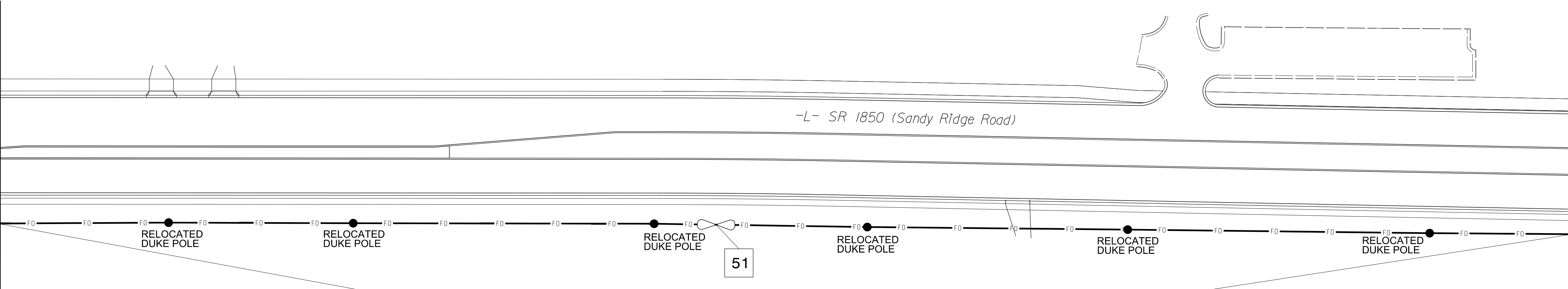
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PROJECT REFERENCE NO.	SHEET NO.
U-4758	SCP-11

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MATCHLINE - SHEET SCP-10



MATCHLINE - SHEET SCP-12

1 4 24
47 56

1	INSTALL COAX CABLE	11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	22	INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)	32	INSTALL POLE MOUNTED SPLICE CABINET	42	INSTALL WOOD POLE	52B	INSTALL JUNCTION BOX MARKER	63	BOND RISER TO POLE GROUND
2	INSTALL ETHERNET CABLE	12	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	23	INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)	33	INSTALL BASE MOUNTED SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	53A	STORE 20 FEET OF COMMUNICATIONS CABLE	64	BOND MESSENGER CABLE TO POLE GROUND
3	EXISTING ETHERNET (OR COAX) CABLE	13	INSTALL OUTER-DUCT POLYETHYLENE CONDUIT	24	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	34	INSTALL CABINET FOUNDATION	44	INSTALL AERIAL GUY ASSEMBLY	53B	STORE 50 FEET OF EACH COMMUNICATIONS CABLE	65	INSTALL HEAT SHRINK TUBING RETROFIT KIT
4	INSTALL SMFO CABLE	14	INSTALL POLYETHYLENE CONDUIT	25	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	35	INSTALL CCTV CAMERA POLE MOUNTED CABINET	45	INSTALL STANDARD GUY ASSEMBLY	54	LASH CABLE(S) TO EXISTING COMMUNICATIONS CABLE	66	INSTALL MOLDABLE DUCT SEAL
5	EXISTING SMFO CABLE	15	DIRECTIONAL DRILL CONDUIT	26	INSTALL NEW ETHERNET EDGE SWITCH	36	INSTALL CCTV CAMERA ASSEMBLY	46	INSTALL SIDEWALK GUY ASSEMBLY	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	SLACK SPAN
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								52A	INSTALL DELINEATOR MARKER	62	BOND RISER AND MESSENGER CABLE TO POLE GROUND		

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Prepared for the Offices of:

750 Greenfield Parkway, Garner, NC 27529

SCALE
NTS

High Point Signal System
SR 1818 (Johnson Street)/
SR 1850 (Sandy Ridge Road)
Cable Routing Plans

Division 7 Guilford County High Point

PLAN DATE: February 2025 REVIEWED BY: AM Encarnacion

PREPARED BY: JT Stiff REVIEWED BY: PL Alexander

REVISIONS INIT. DATE

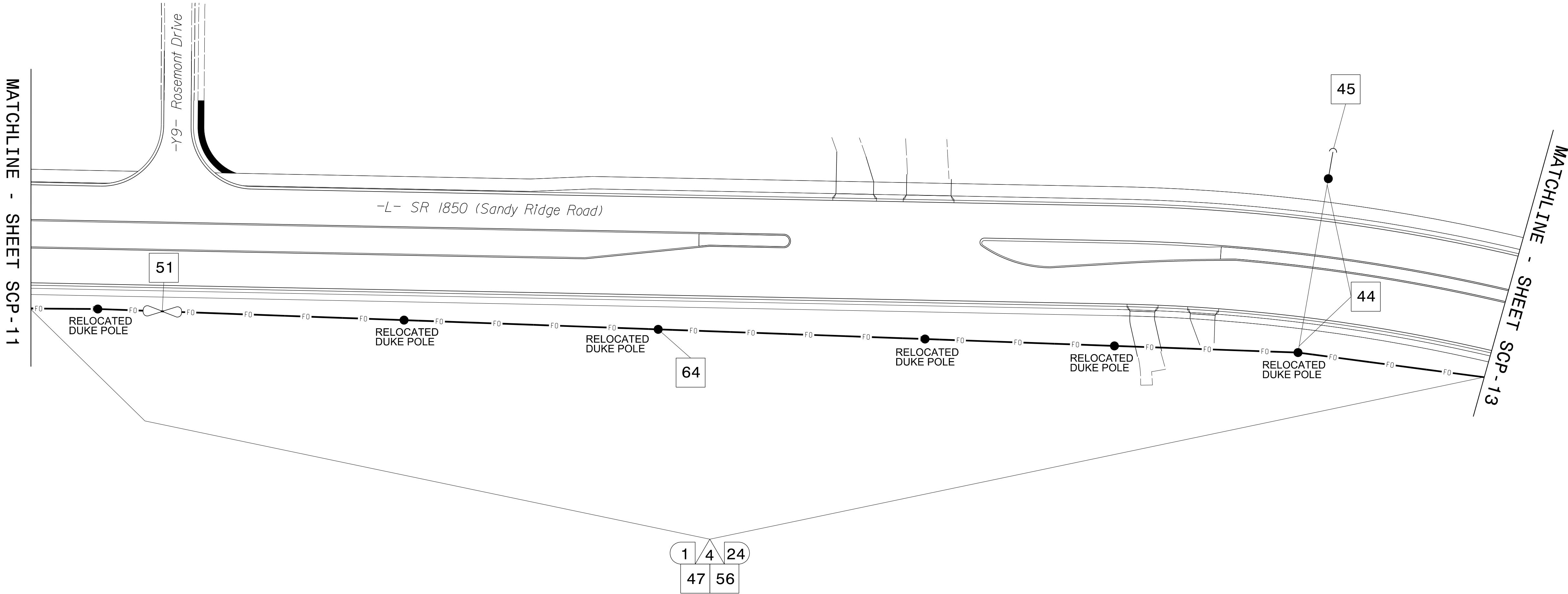
James Stiff
0548037072A434
3/14/2025
DATE

CADD Filename: U4758_SCP-11.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4758	SCP-12

NOTES:

1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM
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1424

4756

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PREPARED BY: JT Stiff REVIEWED BY: PL Alexander

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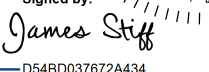
SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
JAMES T. STIFF
056276

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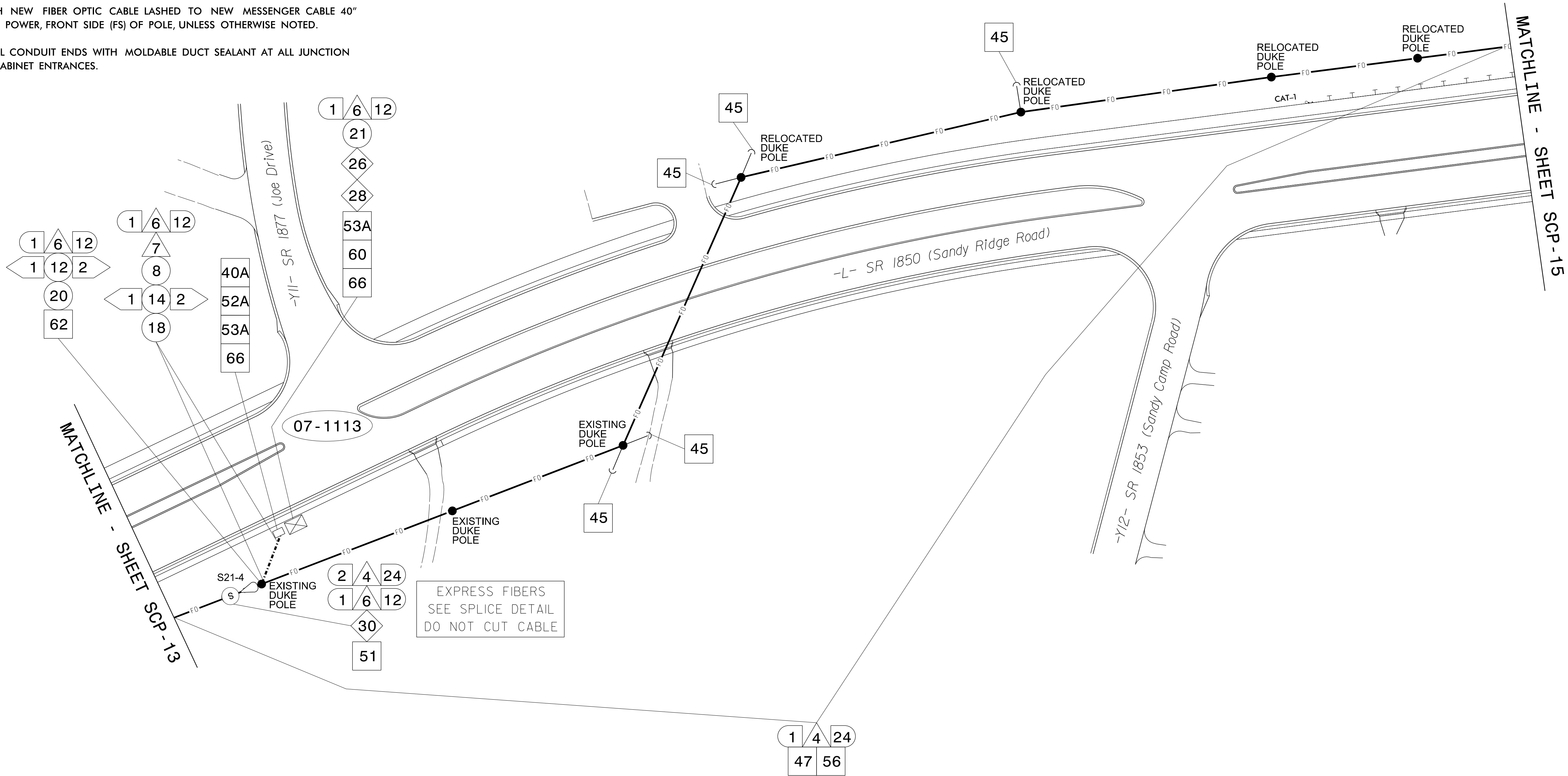
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PREPARED BY: JT Stiff		REVIEWED BY: PL Alexander			
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 NTS		Signed by:  D54BD03D72A434			
		3/14/2025 DATE			
		CADD Filename: U4758_SCP-13.dgn			

PROJECT REFERENCE NO.	SHEET NO.
U-4758	SCP-14

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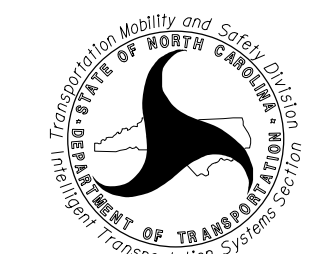
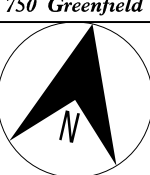


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