

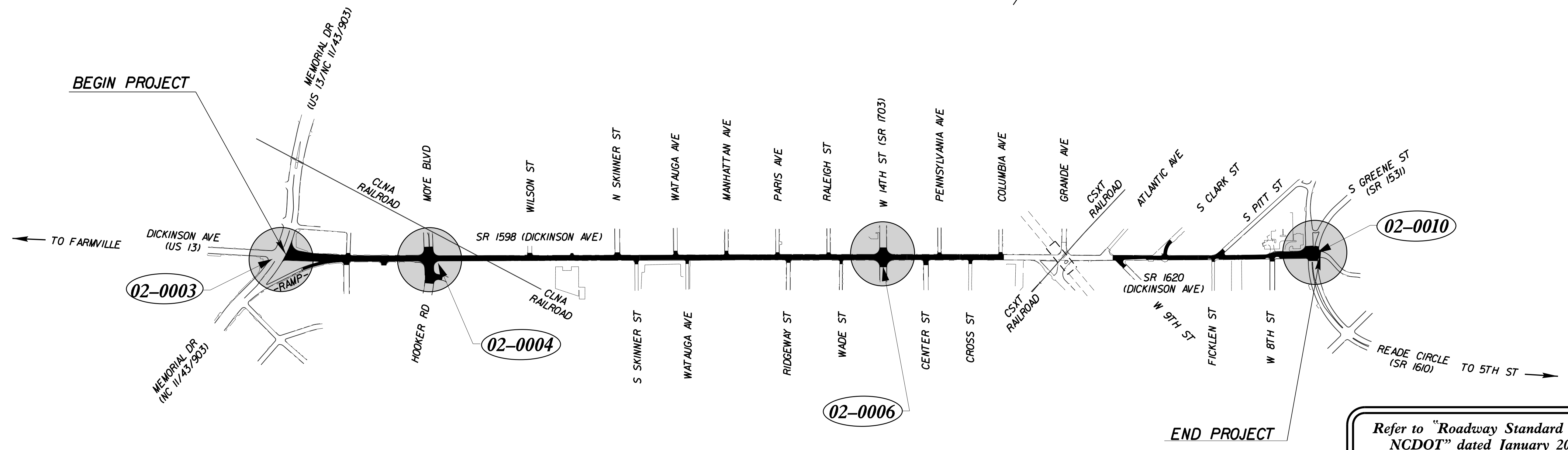
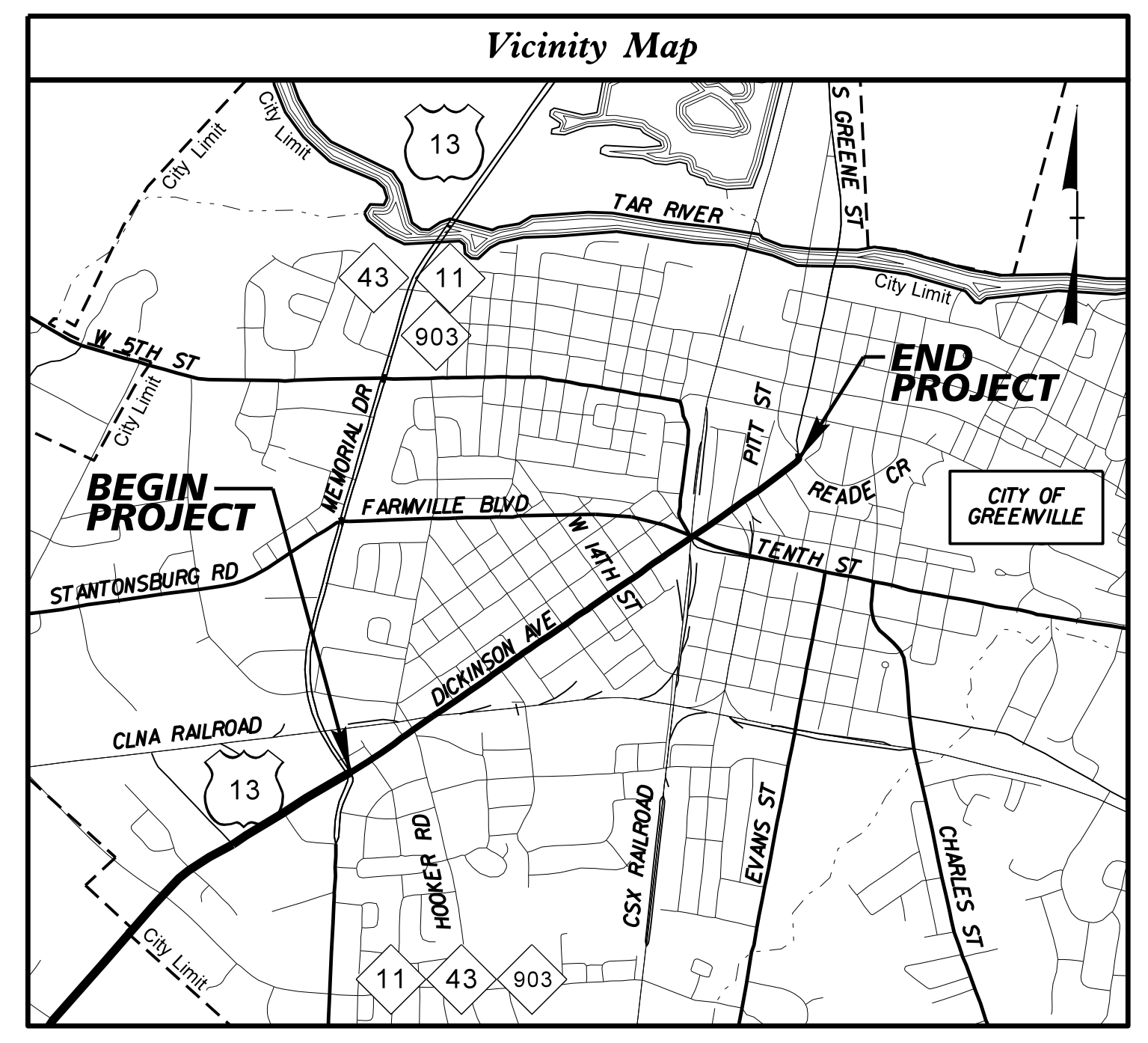
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

LOCATION: SR 1598/SR 1620 (Dickinson Avenue)–From NC 11 (Memorial Drive)
To SR 1610 (Reade Circle)

TYPE OF WORK: Signals

TIP Project: U-5606



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

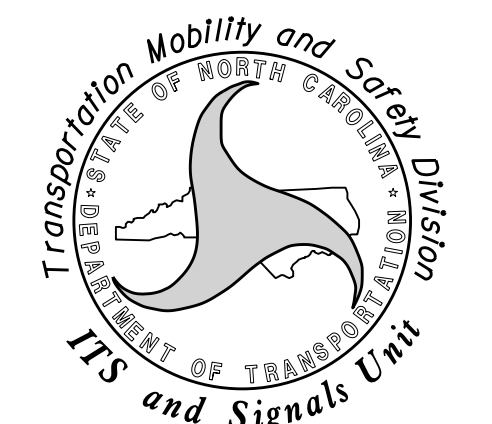
Sheet #	Reference #
Sig. 1.0	-----
Sig. 2.0-2.2	02-0003T1
Sig. 3.0-3.2	02-0003
Sig. 4.0-4.3	02-0004T1
Sig. 5.0-5.3	02-0004
Sig. 6.0-6.2	02-0006T1
Sig. 7.0-7.4	02-0006
Sig. 8.0-8.2	02-0010
Sig. 9.0-9.1	-----
Sig. P1-P3	-----
Sig. M1-M8	-----
SCP1-SCP13	-----

Index of Plans	Location/Description
Title Sheet	-----
NC 11/43/903/US 13-NC 11/43/903 (Memorial Dr) at US 13/SR 1598 (Dickinson Avenue)	-----
NC 11/43/903/US 13-NC 11/43/903 (Memorial Dr) at US 13/SR 1598 (Dickinson Avenue)	-----
SR 1598 (Dickinson Ave) at SR 1701 (Hooker Rd)/SR 1709 (Moye Boulevard)	-----
SR 1598 (Dickinson Ave) at SR 1701 (Hooker Rd)/SR 1709 (Moye Boulevard)	-----
SR 1703 (West 14th Street) at SR 1598 (Dickinson Avenue)	-----
SR 1703 (West 14th Street) at SR 1598 (Dickinson Avenue)	-----
SR 1610 (Reade Circle)/SR 1531 (Green Street) at SR 1620 (Dickinson Avenue)	-----
Electrical Service Grounding Revised Standards	-----
Standard Pushbutton Pedestal Sheets	-----
Metal Pole Standards	-----
Signal Communications Plans	-----

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT
Contacts:

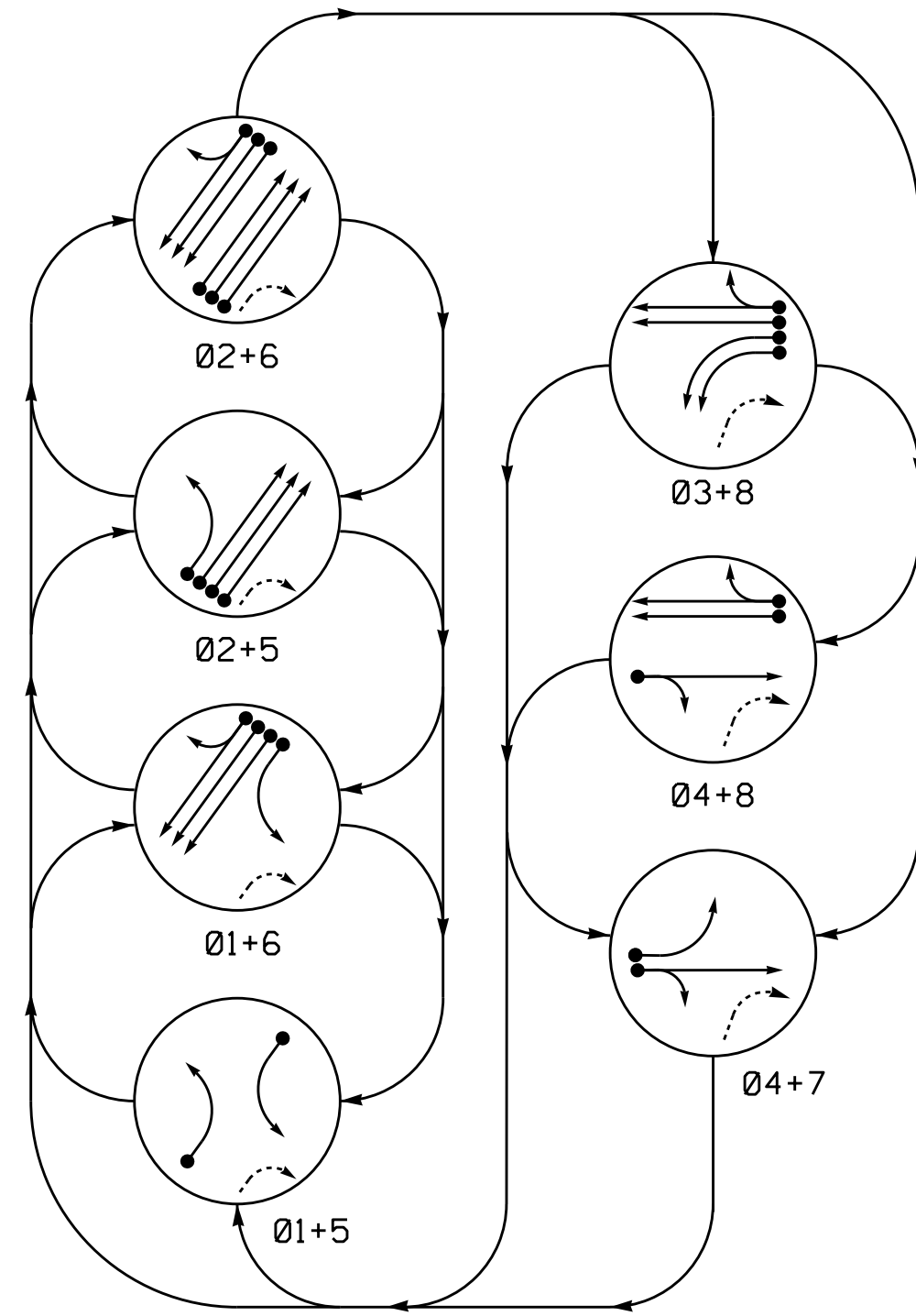
Meghan E. LeBlanc, PE - Eastern Region Signals Project Engineer
Keith M. Mims, PE - Signal Equipment Design Engineer
Heidi T. Berggren, EI - Intelligent Transportation Systems Engineer

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



05-MAR-2018 10:01 AM C:\signals\Design\TIP\sheet\U-5606-Tip-Sheet.dgn

PHASING DIAGRAM



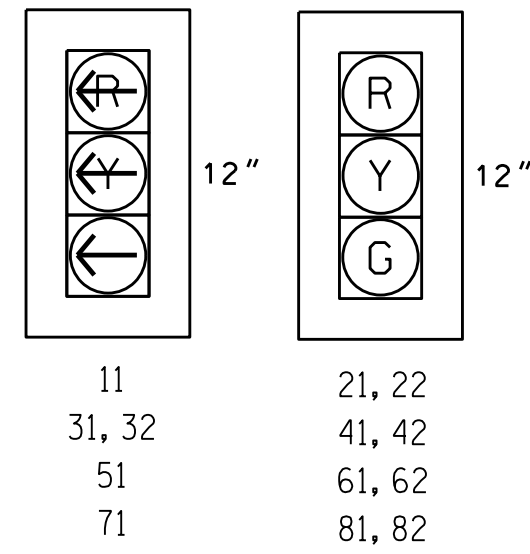
PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+8	04+7	04+8	FL HEADS
11	←	←	←	←	←	←	←	←
21,22	R	R	G	G	R	R	R	Y
31,32	←	←	←	←	←	←	←	←
41,42	R	R	R	R	R	G	G	R
51	←	←	←	←	←	←	←	←
61,62	R	G	R	G	R	R	R	Y
71	←	←	←	←	←	←	←	←
81,82	R	R	R	R	G	G	R	

SIGNAL FACE I.D.

All Heads L.E.D.



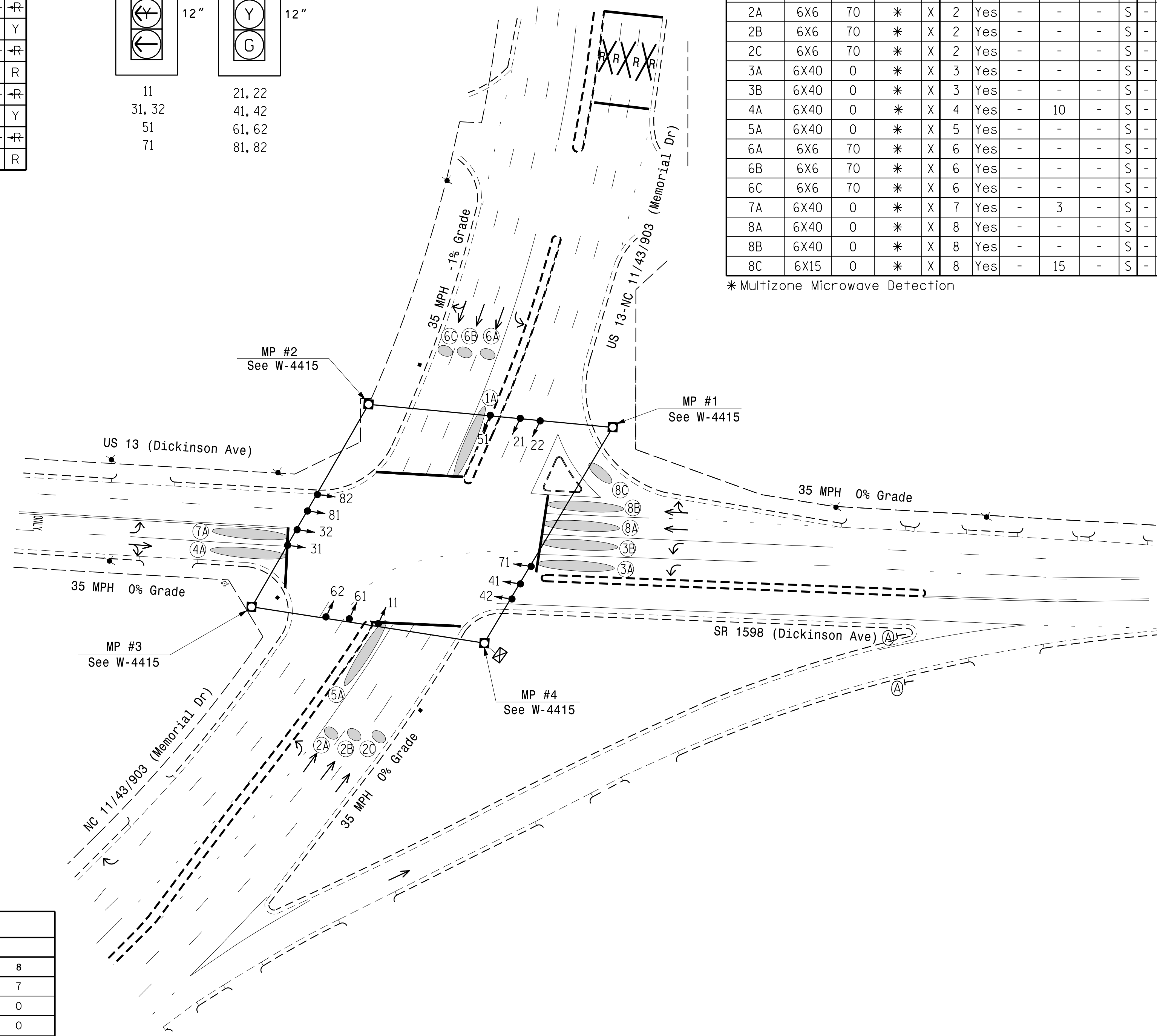
ASC/3 DETECTOR INSTALLATION CHART												
DETECTOR				PROGRAMMING								
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	*	X	1	Yes	-	-	-	S	-	X
2A	6X6	70	*	X	2	Yes	-	-	-	S	-	X
2B	6X6	70	*	X	2	Yes	-	-	-	S	-	X
2C	6X6	70	*	X	2	Yes	-	-	-	S	-	X
3A	6X40	0	*	X	3	Yes	-	-	-	S	-	X
3B	6X40	0	*	X	3	Yes	-	-	-	S	-	X
4A	6X40	0	*	X	4	Yes	-	10	-	S	-	X
5A	6X40	0	*	X	5	Yes	-	-	-	S	-	X
6A	6X6	70	*	X	6	Yes	-	-	-	S	-	X
6B	6X6	70	*	X	6	Yes	-	-	-	S	-	X
6C	6X6	70	*	X	6	Yes	-	-	-	S	-	X
7A	6X40	0	*	X	7	Yes	-	3	-	S	-	X
8A	6X40	0	*	X	8	Yes	-	-	-	S	-	X
8B	6X40	0	*	X	8	Yes	-	-	-	S	-	X
8C	6X15	0	*	X	8	Yes	-	15	-	S	-	X

* Multizone Microwave Detection

7 Phase Fully Actuated Greenville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 or phase 7 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.
- All signal heads have backplates existing.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



ASC/3 TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green *	7	10	7	7	7	10	7	7
Walk *	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max 1 *	25	60	25	40	15	60	25	40
Yellow	3.0	3.8	3.0	3.9	3.0	3.8	3.0	3.8
Red Clear	2.3	2.3	3.4	2.2	2.1	1.4	3.4	2.3
Actuations B4 Add *	-	-	-	-	-	-	-	-
Seconds / Actuation *	-	-	-	-	-	-	-	-
Max Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	X	X	X	X	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.

LEGEND

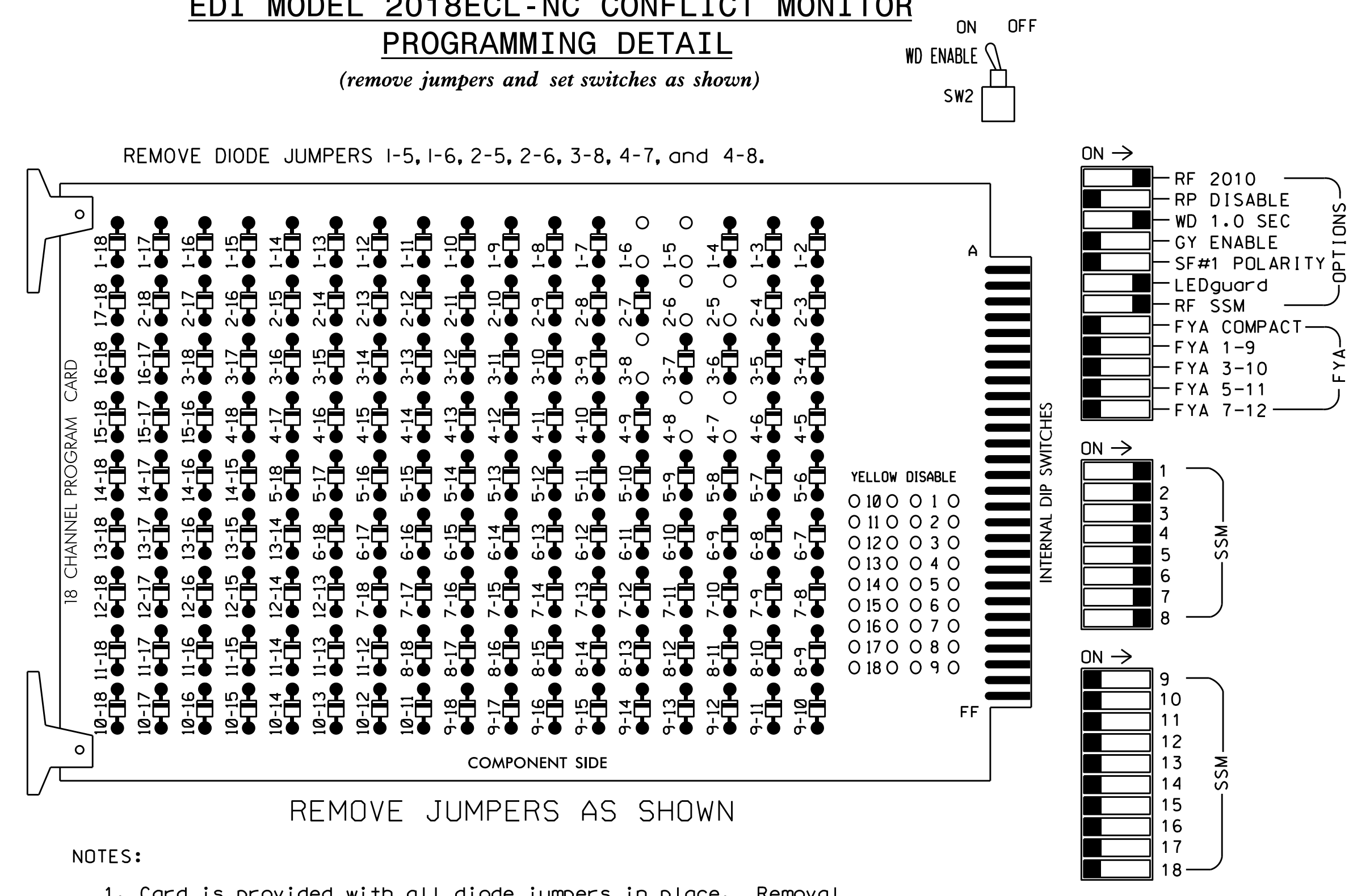
- | PROPOSED | EXISTING |
|--|--|
| ○ → Traffic Signal Head | ● → Traffic Signal Head |
| ○ → Modified Signal Head | ○ → Modified Signal Head |
| ⊥ Sign | ⊥ Sign |
| ⊥ Pedestrian Signal Head With Push Button & Sign | ⊥ Pedestrian Signal Head With Push Button & Sign |
| ○ Signal Pole with Guy | ○ Signal Pole with Guy |
| ○ Signal Pole with Sidewalk Guy | ○ Signal Pole with Sidewalk Guy |
| ⊠ Metal Strain Pole | ⊠ Metal Strain Pole |
| ○ Microwave Detection Zone | ○ Microwave Detection Zone |
| ⊠ Inductive Loop Detector | ⊠ Inductive Loop Detector |
| ⊠ Controller & Cabinet | ⊠ Controller & Cabinet |
| ⊠ Junction Box | ⊠ Junction Box |
| ⊠ 2-in Underground Conduit | ⊠ 2-in Underground Conduit |
| → Right of Way | → Right of Way |
| → Directional Arrow | → Directional Arrow |
| ⊠ "YIELD" Sign (R1-2) | ⊠ "YIELD" Sign (R1-2) |

Signal Upgrade - Temporary 1

	Prepared in the Offices of: NC 11/43/903/ US 13-NC 11/43/903 (Memorial Dr) at US 13/SR 1598 (Dickinson Ave) Division 2 Pitt County Greenville		SEAL
	PLAN DATE: January 2018 PREPARED BY: EMM REVISIONS:	REVIEWED BY: MEL REVIEWED BY:	

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



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.
- Program controller to start up in phase 2 Green and 6 Green.
- The cabinet and controller are part of the Greenville Signal System.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11	21,22	NU	31,32	41,42	NU	51	61,62	NU	71	81,82	NU
RED		128			101			134			107	
YELLOW		129			102			135			108	
GREEN		130			103			136			109	
RED ARROW	125			116			131			122		
YELLOW ARROW	126			117			132			123		
GREEN ARROW	127			118			133			124		
Hand icon												
Person icon												

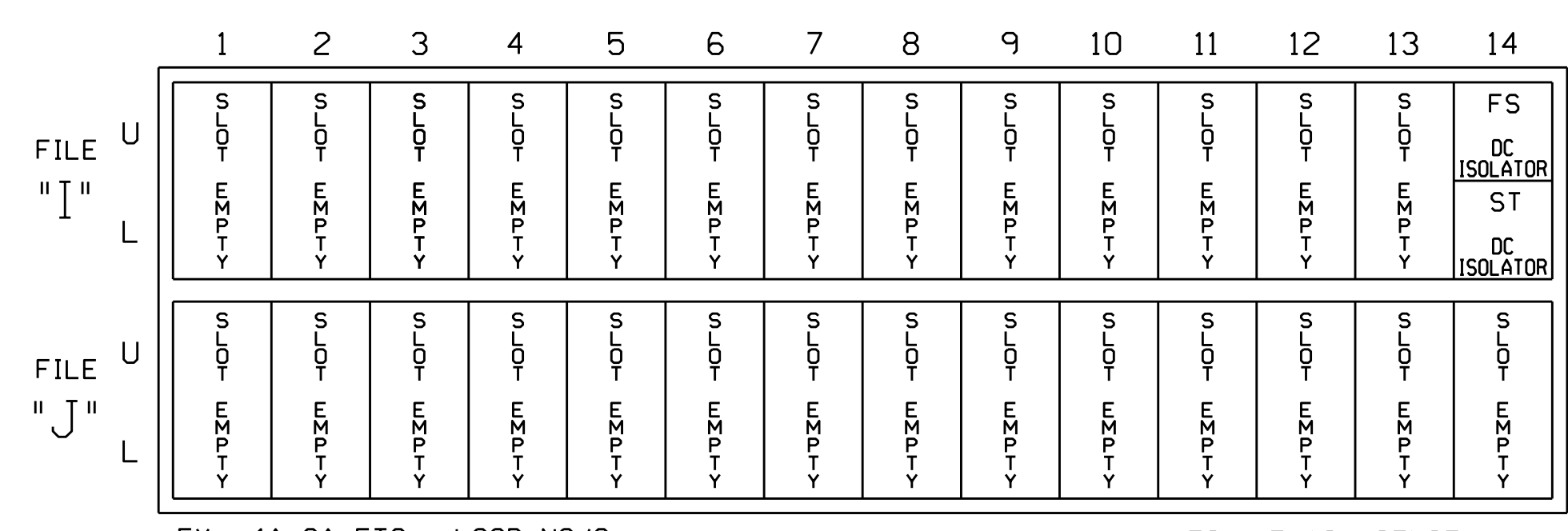
NU = Not Used

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S4,S5,S7,S8,S10,S11
 PHASES USED.....1,2,3,4,5,6,7,8
 OVERLAPS.....NONE

INPUT FILE POSITION LAYOUT

(front view)



SPECIAL DETECTOR NOTE

Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0003T1
 DESIGNED: January 2018
 SEALED: 2/19/2018
 REVISED: N/A

Electrical Detail - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared In the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	NC 11/43/903/ US 13-NC 11/43/903 (Memorial Dr) at US 13/SR 1598 (Dickinson Ave)	SEAL KEITH M. MINS ENGINEER
	Division 2 Pitt County Greenville PLAN DATE: February 2018 REVIEWED BY: PREPARED BY: S. Armstrong REVIEWED BY: REVISIONS INIT. DATE DocuSigned by: Keith M. Mins 2/26/2018 2F30726E8C73445 DATE SIG. INVENTORY NO. 02-0003T1	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

23-EEB-2018-06-54
 S:\ITS\ASIS\15_Signal\work\hgr\oups\51g_MonHrMstrFrng#20003.sm.ele.xxx.dgn
 somstrfrng

ECONOLITE ASC/3-2070 CONTROLLER SEQUENCE PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 1. CONTROLLER SEQ
3. From CONTROLLER SEQUENCE Submenu select 1. PHASE RING SEQUENCE AND ASSIGNMENT

Move the cursor to the SEQUENCE COMMANDS field, toggle to select "C" mode, enter phases in desired sequence.

```

CONTROLLER SEQUENCE [ 1 ]
SEQUENCE COMMANDS . HW ALT SEQ ENA.          NO
      01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
BC-   C C C C C C C C C C C C C C C C
R1-   1 2 3 4 . . . . . X X . . . .
R2-   5 6 8 7 . . . . . X X . . . .
R3-   . . . . . X X . . . . .
R4-   . . . . . X X . . . . .

R1-R4=RING 1-4, DATA ENTRY, PHASES 1-16
BC=BARRIER CONTROL, VALUES: B,C
B=CURRENT GROUP RING BARRIER
C=COMPATIBILITY PROGRAMMED BY MAIN MENU 1-1-2
    
```

END SEQUENCE AND ASSIGNMENT PROGRAMMING

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 1. CONTROLLER SEQ
3. From CONTROLLER SEQUENCE Submenu select 2. PHASE COMPATIBILITY

Program phase compatibility as shown below to ensure phases 3 and 7 cannot run concurrently.

```

PHASE COMPATIBILITY

      6 5 4 3 2 1 0 9 8 7 6 5 4 3 2
1 . . . . . X X . . . .
2 . . . . . X X . . . .
3 . . . . . X . . . .
4 . . . . . X X . . . .
5 . . . . . X . . . .
6 . . . . . X . . . .
7 . . . . . X . . . .
8 . . . . . X . . . .
9 . . . . . X . . . .
10 . . . . . X . . . .
11 . . . . . X . . . .
12 . . . . . X . . . .
13 . . . . . X . . . .
14 . . . . . X . . . .
15 . . . . . X . . . .
    
```

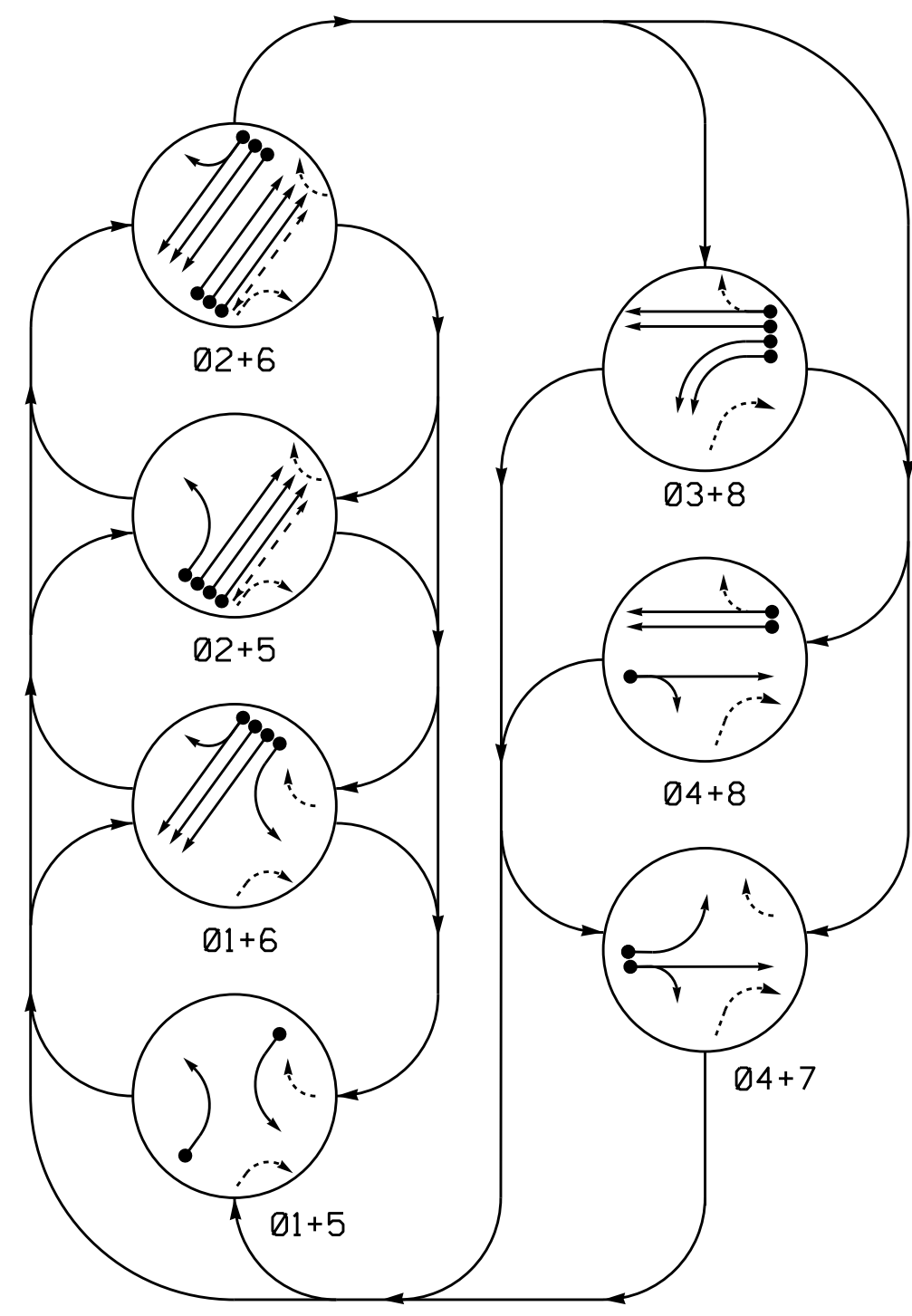
END COMPATIBILITY PROGRAMMING

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0003T1
DESIGNED: January 2018
SEALED: 2/19/2018
REVISED: N/A

Electrical Detail - Sheet 2 of 2

<p style="font-size: small;">ELECTRICAL AND PROGRAMMING DETAILS FOR:</p> <p style="font-size: x-small;">Prepared In the Offices of: STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Signal Management Section 750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>NC 11/43/903/ US 13-NC 11/43/903 (Memorial Dr) at US 13/SR 1598 (Dickinson Ave)</p> <p style="font-size: x-small;">Division 2 Pitt County Greenville</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none; font-size: x-small;">PLAN DATE: February 2018</td> <td style="border: none; font-size: x-small;">REVIEWED BY:</td> </tr> <tr> <td style="border: none; font-size: x-small;">PREPARED BY: S. Armstrong</td> <td style="border: none; font-size: x-small;">REVIEWED BY:</td> </tr> </table> <table style="width: 100%; border: none; font-size: x-small;"> <tr> <td style="border: none;">REVISIONS</td> <td style="border: none;">INIT.</td> <td style="border: none;">DATE</td> </tr> <tr> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;"> </td> </tr> </table>	PLAN DATE: February 2018	REVIEWED BY:	PREPARED BY: S. Armstrong	REVIEWED BY:	REVISIONS	INIT.	DATE				<p style="font-size: x-small;">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p style="font-size: x-small;">SEAL</p> <p style="font-size: x-small;">DocuSigned by: Keith M. Miras 2/26/2018 2F80786E8C0F3465 DATE</p> <p style="font-size: x-small;">SIG. INVENTORY NO. 02-0003T1</p>
PLAN DATE: February 2018	REVIEWED BY:											
PREPARED BY: S. Armstrong	REVIEWED BY:											
REVISIONS	INIT.	DATE										

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

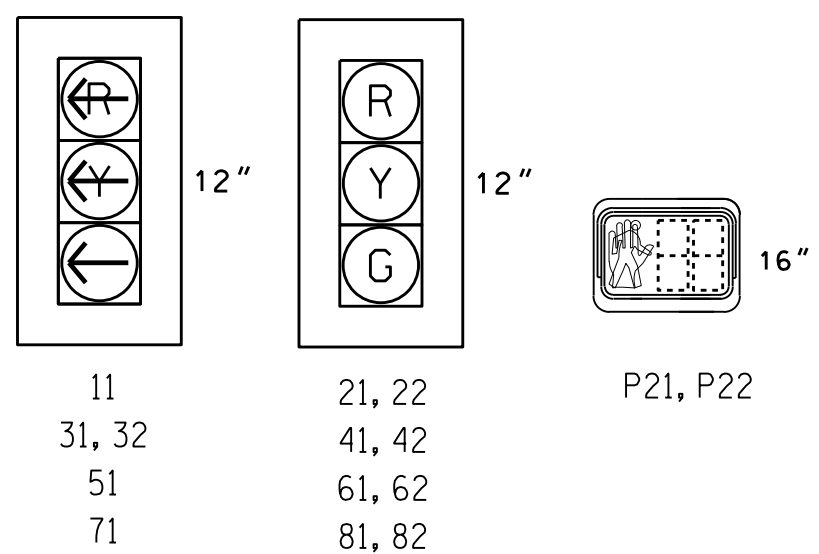
- ← ● DETECTED MOVEMENT
- ← ○ UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- ← --- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+7	04+8	04+7	FL
11	---	---	---	---	---	---	---	---
21,22	R	R	G	G	R	R	R	Y
31,32	---	---	---	---	---	---	---	---
41,42	R	R	R	R	R	G	G	R
51	---	---	---	---	---	---	---	---
61,62	R	G	R	G	R	R	R	Y
71	---	---	---	---	---	---	---	---
81,82	R	R	R	R	G	R	G	R
P21, P22	DW	DW	W	W	DW	DW	DRK	

SIGNAL FACE I.D.

All Heads L.E.D.



ASC/3 DETECTOR INSTALLATION CHART

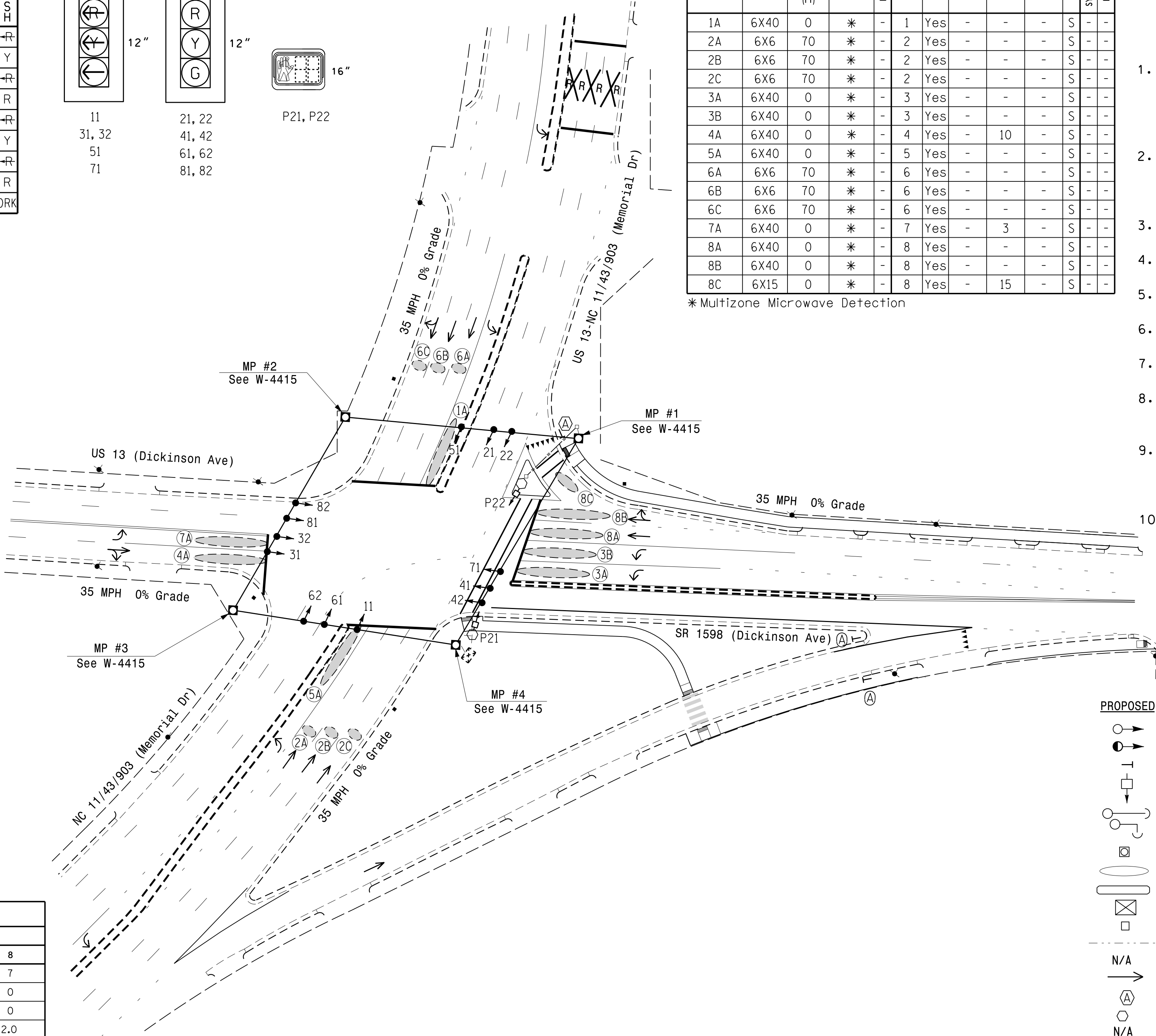
DETECTOR				PROGRAMMING								
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	*	-	1	Yes	-	-	-	S	-	-
2A	6X6	70	*	-	2	Yes	-	-	-	S	-	-
2B	6X6	70	*	-	2	Yes	-	-	-	S	-	-
2C	6X6	70	*	-	2	Yes	-	-	-	S	-	-
3A	6X40	0	*	-	3	Yes	-	-	-	S	-	-
3B	6X40	0	*	-	3	Yes	-	-	-	S	-	-
4A	6X40	0	*	-	4	Yes	-	10	-	S	-	-
5A	6X40	0	*	-	5	Yes	-	-	-	S	-	-
6A	6X6	70	*	-	6	Yes	-	-	-	S	-	-
6B	6X6	70	*	-	6	Yes	-	-	-	S	-	-
6C	6X6	70	*	-	6	Yes	-	-	-	S	-	-
7A	6X40	0	*	-	7	Yes	-	3	-	S	-	-
8A	6X40	0	*	-	8	Yes	-	-	-	S	-	-
8B	6X40	0	*	-	8	Yes	-	-	-	S	-	-
8C	6X15	0	*	-	8	Yes	-	15	-	S	-	-

* Multizone Microwave Detection

7 Phase Fully Actuated Greenville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 or phase 7 may be lagged.
- Set all detector units to presence mode.
- All signal heads have backplates existing.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to count down the flashing "DON'T WALK" time only.
- Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



ASC/3 TIMING CHART

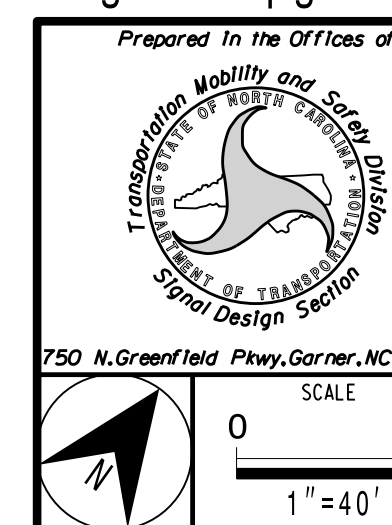
FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green *	7	10	7	7	7	10	7	7
Walk *	0	7	0	0	0	0	0	0
Ped Clear	0	20	0	0	0	0	0	0
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max 1 *	25	60	25	40	15	60	25	40
Yellow	3.0	3.8	3.0	3.8	3.0	3.8	3.0	3.8
Red Clear	2.4	1.7	3.5	2.4	2.1	1.4	3.4	2.3
Actuations B4 Add *	-	-	-	-	-	-	-	-
Seconds / Actuation *	-	-	-	-	-	-	-	-
Max Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	X	X	X	X	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 be lower than 4 seconds.

LEGEND

- | PROPOSED | EXISTING |
|--|----------|
| ○ → Traffic Signal Head | ● → N/A |
| ○ → Modified Signal Head | ○ → N/A |
| ○ → Sign | ○ → N/A |
| ○ → Pedestrian Signal Head With Push Button & Sign | ○ → N/A |
| ○ → Signal Pole with Guy | ○ → N/A |
| ○ → Signal Pole with Sidewalk Guy | ○ → N/A |
| □ → Metal Strain Pole | □ → N/A |
| ○ → Microwave Detection Zone | ○ → N/A |
| □ → Inductive Loop Detector | □ → N/A |
| □ → Controller & Cabinet | □ → N/A |
| □ → Junction Box | □ → N/A |
| ○ → 2-in Underground Conduit | ○ → N/A |
| → → Right of Way | → → N/A |
| → → Directional Arrow | → → N/A |
| Ⓐ → "YIELD" Sign (R1-2) | Ⓐ → N/A |
| ○ → Type II Signal Pedestal | ○ → N/A |
| ○ → Curb Ramp | ○ → N/A |

Signal Upgrade - Final



NC 11/43/903/ US 13-NC 11/43/903 (Memorial Dr) at US 13/SR 1598 (Dickinson Ave) Division 2 Pitt County Greenville

PLAN DATE: October 2021 REVIEWED BY: MEL, PE

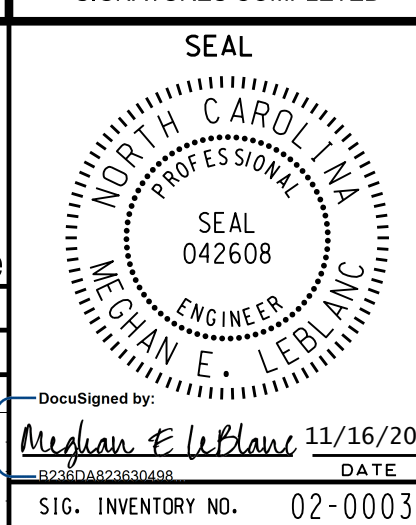
PREPARED BY: EMM REVIEWED BY:

REVISIONS

NO.	DATE	INIT.	DATE

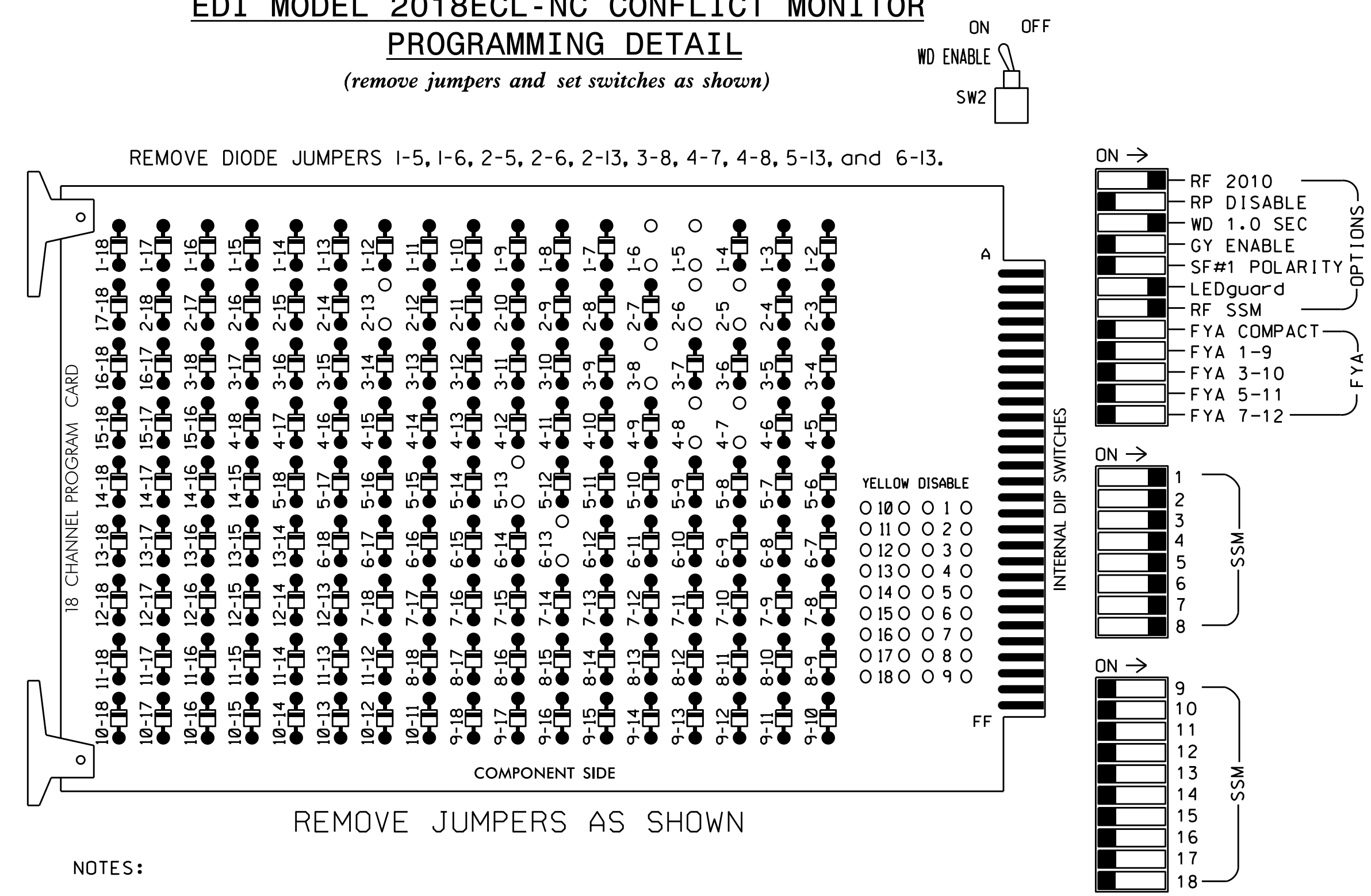
DocuSigned by: Matthew P. Wilson 11/16/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches 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. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

■ = DENOTES POSITION OF SWITCH

NOTES

1. 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.
2. Program controller to start up in phase 2 Walk and 6 Green.
3. The cabinet and controller are part of the Greenville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S7,S8,S10,S11
 PHASES USED.....1,2,PED,3,4,5,6,7,8
 OVERLAPS.....NONE

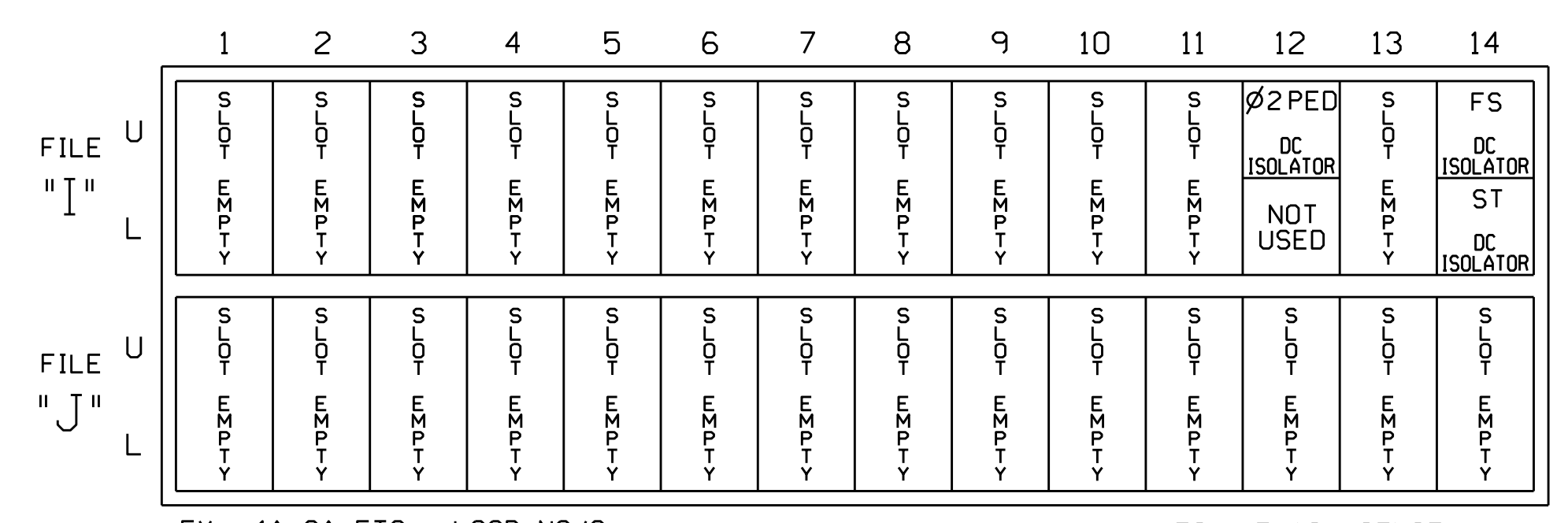
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11	21,22	P21, P22	31,32	41,42	NU	51	61,62	NU	71	81,82	NU
RED		128			101			134				107
YELLOW		129			102			135				108
GREEN		130			103			136				109
RED ARROW	125			116			131				122	
YELLOW ARROW	126			117			132				123	
GREEN ARROW	127			118			133				124	
Hand icon			113									
Walking person icon			115									

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)



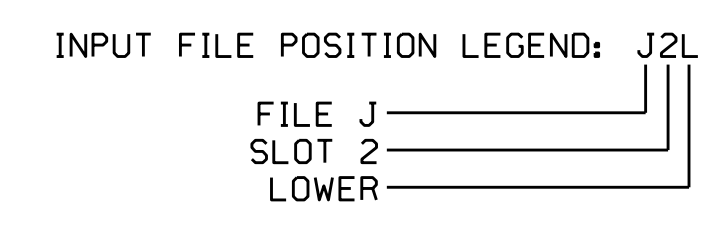
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
PED PUSH BUTTONS										
P21,P22	T88-4,6	112U	67	PED 2	2 PED					

NOTE:
 INSTALL DC ISOLATOR IN INPUT FILE SLOT 112.



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0003
 DESIGNED: October 2021
 SEALED: 11/16/2021
 REVISED: N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION SEAL

DocuSigned by: Ryan W. Hough 11/17/2021

SPECIAL DETECTOR NOTE

Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

Electrical Detail - Sheet 1 of 2

Electrical and Programming Details for: NC 11/43/903/ US 13-NC 11/43/903 (Memorial Dr) at US 13/SR 1598 (Dickinson Ave)

Division 2 Pitt County Greenville

PLAN DATE: February 2018 REVIEWED BY:

PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS: No electrical changes. (MSA)

DATE: 11/17/21

750 N. Greenfield Pkwy, Garner, NC 27529

Not a certified document as to the Original Document but only as to the Revisions - This document originally issued and sealed by Keith M. Sims, #036880, on 2/26/2018. This document is only certified as to the revisions.

SIG. INVENTORY NO. 02-0003

17-Nov-2021 11:55
 4020003 Sem ete.vmk.dgn
 sarmstr.dwg

ECONOLITE ASC/3-2070 CONTROLLER SEQUENCE PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 1. CONTROLLER SEQ
3. From CONTROLLER SEQUENCE Submenu select 1. PHASE RING SEQUENCE AND ASSIGNMENT

Move the cursor to the SEQUENCE COMMANDS field, toggle to select "C" mode, enter phases in desired sequence.

```

CONTROLLER SEQUENCE [ 1 ]
SEQUENCE COMMANDS . HW ALT SEQ ENA.          NO
      01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
BC-   C C C C C C C C C C C C C C C C
R1-   1 2 3 4 . . . . .
R2-   5 6 8 7 . . . . .
R3-   . . . . .
R4-   . . . . .

R1-R4=RING 1-4, DATA ENTRY, PHASES 1-16
BC=BARRIER CONTROL, VALUES: B,C
B=CURRENT GROUP RING BARRIER
C=COMPATIBILITY PROGRAMMED BY MAIN MENU 1-1-2

```

END SEQUENCE AND ASSIGNMENT PROGRAMMING

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 1. CONTROLLER SEQ
3. From CONTROLLER SEQUENCE Submenu select 2. PHASE COMPATIBILITY

Program phase compatibility as shown below to ensure phases 3 and 7 cannot run concurrently.

```

PHASE COMPATIBILITY
      6 5 4 3 2 1 0 9 8 7 6 5 4 3 2
1 . . . . . X X . . .
2 . . . . . . . X X . .
3 . . . . . X . . .
4 . . . . . X X . .
5 . . . . . . . . .
6 . . . . . . . . .
7 . . . . . . . . .
8 . . . . . . . . .
9 . . . . . . . . .
10 . . . . . . . . .
11 . . . . . . . . .
12 . . . . . . . . .
13 . . . . . . . . .
14 . . . . . . . . .
15 . . . . . . . . .

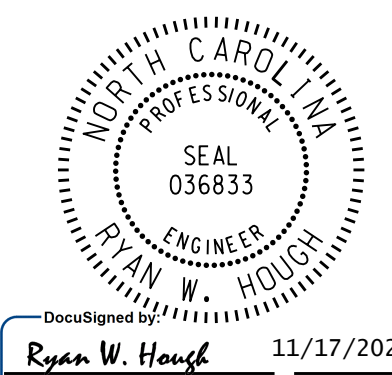
```

END COMPATIBILITY PROGRAMMING

▽ THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0003
DESIGNED: October 2021
SEALED: 11/16/2021
REVISED: N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED


REVISION ▽ SEAL



SEAL
036833
ENGINEER
RYAN W. HOUGH

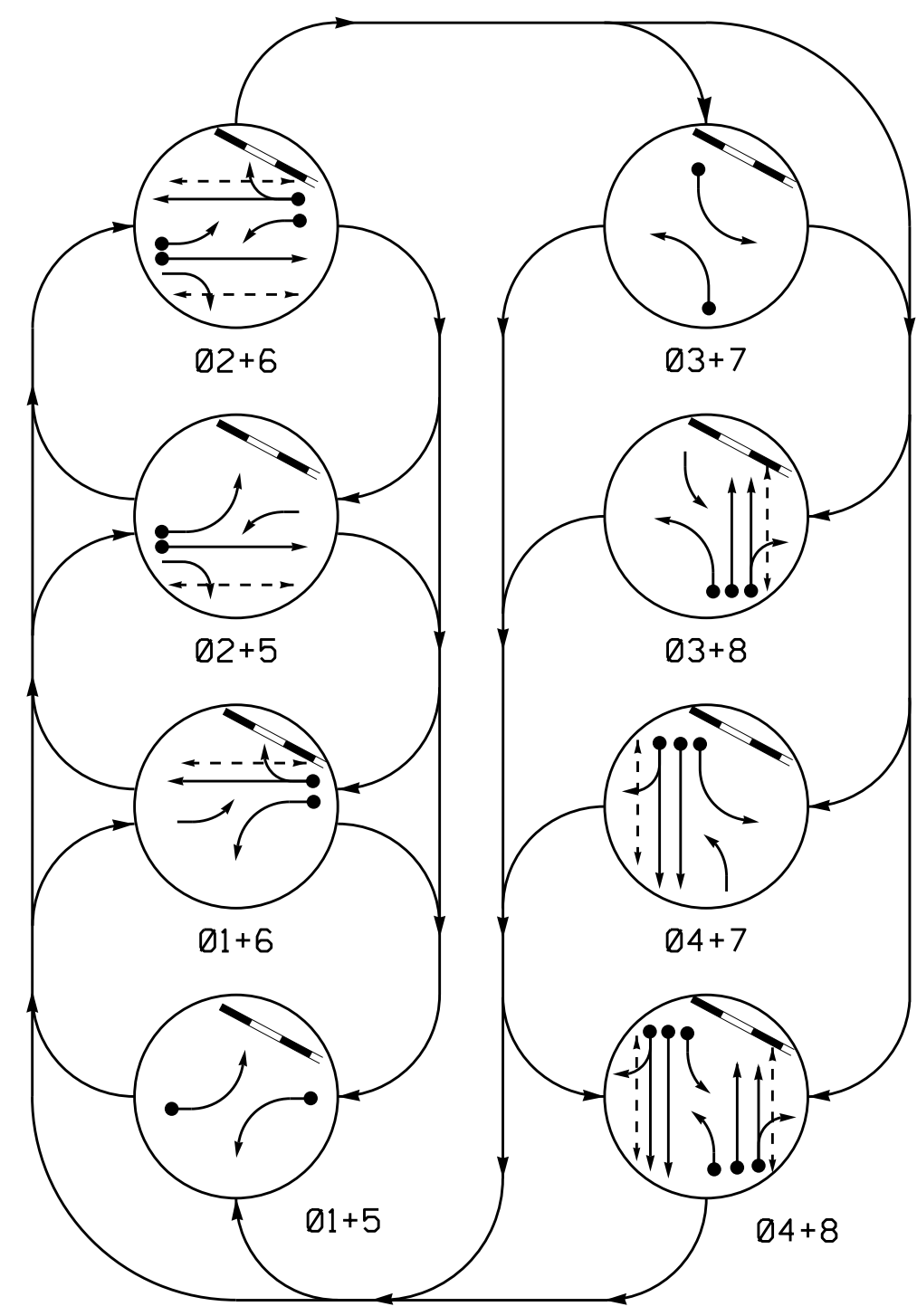
DocuSigned by: Ryan W. Hough 11/17/2021
430320FAA2654C3 DATE

Electrical Detail - Sheet 2 of 2

<p style="font-size: small;">ELECTRICAL AND PROGRAMMING DETAILS FOR:</p> <p style="font-size: x-small;">Prepared In the Offices of:</p>  <p style="font-size: x-small;">750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p style="text-align: right;">NC 11/43/903/ US 13-NC 11/43/903 (Memorial Dr) at US 13/SR 1598 (Dickinson Ave)</p> <p style="font-size: x-small;">Division 2 Pitt County Greenville</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; font-size: x-small;">PLAN DATE: February 2018</td> <td style="width: 50%; font-size: x-small;">REVIEWED BY:</td> </tr> <tr> <td style="font-size: x-small;">PREPARED BY: S. Armstrong</td> <td style="font-size: x-small;">REVIEWED BY:</td> </tr> </table> <p style="font-size: x-small;">REVISIONS</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%; font-size: x-small;">No electrical changes. (USA)</td> <td style="width: 10%; font-size: x-small;">DWIT.</td> <td style="width: 10%; font-size: x-small;">DATE</td> </tr> <tr> <td></td> <td style="text-align: center; border: 1px solid black;">RWHT</td> <td style="text-align: center;">11/17/21</td> </tr> </table>	PLAN DATE: February 2018	REVIEWED BY:	PREPARED BY: S. Armstrong	REVIEWED BY:	No electrical changes. (USA)	DWIT.	DATE		RWHT	11/17/21	<p style="text-align: center;">SEAL</p> <p style="font-size: x-small;">Not a certified document as to the Original Document but Only as to the Revisions - This document originally issued and sealed by Keith M. Mims, #036880, on 2/26/2018. This document is only certified as to the revisions.</p> <p style="font-size: x-small;">SIG. INVENTORY NO. 02-0003</p>
PLAN DATE: February 2018	REVIEWED BY:											
PREPARED BY: S. Armstrong	REVIEWED BY:											
No electrical changes. (USA)	DWIT.	DATE										
	RWHT	11/17/21										

17-0000-2021 11-56
4/20/2023 Sem ete.ec.wmk.dgn
S00MSTR.DWG

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

RAIL PREEMPT PHASES (High Priority)

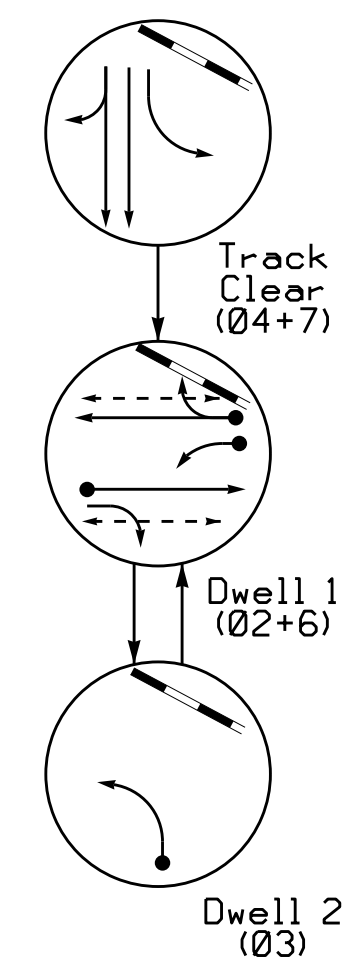


TABLE OF OPERATION

SIGNAL FACE	PHASE											
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	TRUCK CLEAR (04+7)	TRUCK CLEAR (04+7)	TRUCK CLEAR (04+7)	TRUCK CLEAR (04+7)
11	---	---	---	---	---	---	---	---	---	---	---	---
21,22	R	R	G	G	R	R	R	R	R	G	R	Y
31	---	---	---	---	---	---	---	---	---	---	---	---
41,42	R	R	R	R	R	R	G	G	G	R	R	R
51	---	---	---	---	---	---	---	---	---	---	---	---
61,62	R	G	R	G	R	R	R	R	R	G	R	Y
71	---	---	---	---	---	---	---	---	---	---	---	---
81,82	R	R	R	R	R	G	R	R	R	R	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DW	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	DW	W	W	DW	DW	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DW	W	DW	DW	DW	DW	DRK

ASC/3 DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP NEW CARD	
1A	6X40	0	*	X	1	Yes	-	15	-	S	-	X
6	6X40	0	*	X	6	Yes	-	3	-	S	-	X
2A	6X40	0	*	X	2	Yes	-	-	-	S	-	X
3A	6X40	0	*	X	3	Yes	-	15	-	S	-	X
4A	6X40	0	*	X	4	Yes	-	-	-	S	-	X
4B	6X40	0	*	X	4	Yes	-	10	-	S	-	X
5A	6X40	0	*	X	5	Yes	-	15	-	S	-	X
6A	6X40	0	*	X	6	Yes	-	-	-	S	-	X
7A	6X40	0	*	X	7	Yes	-	15	-	S	-	X
8A	6X40	0	*	X	8	Yes	-	-	-	S	-	X
8B	6X40	0	*	X	8	Yes	-	10	-	S	-	X

* Multizone Microwave Detection

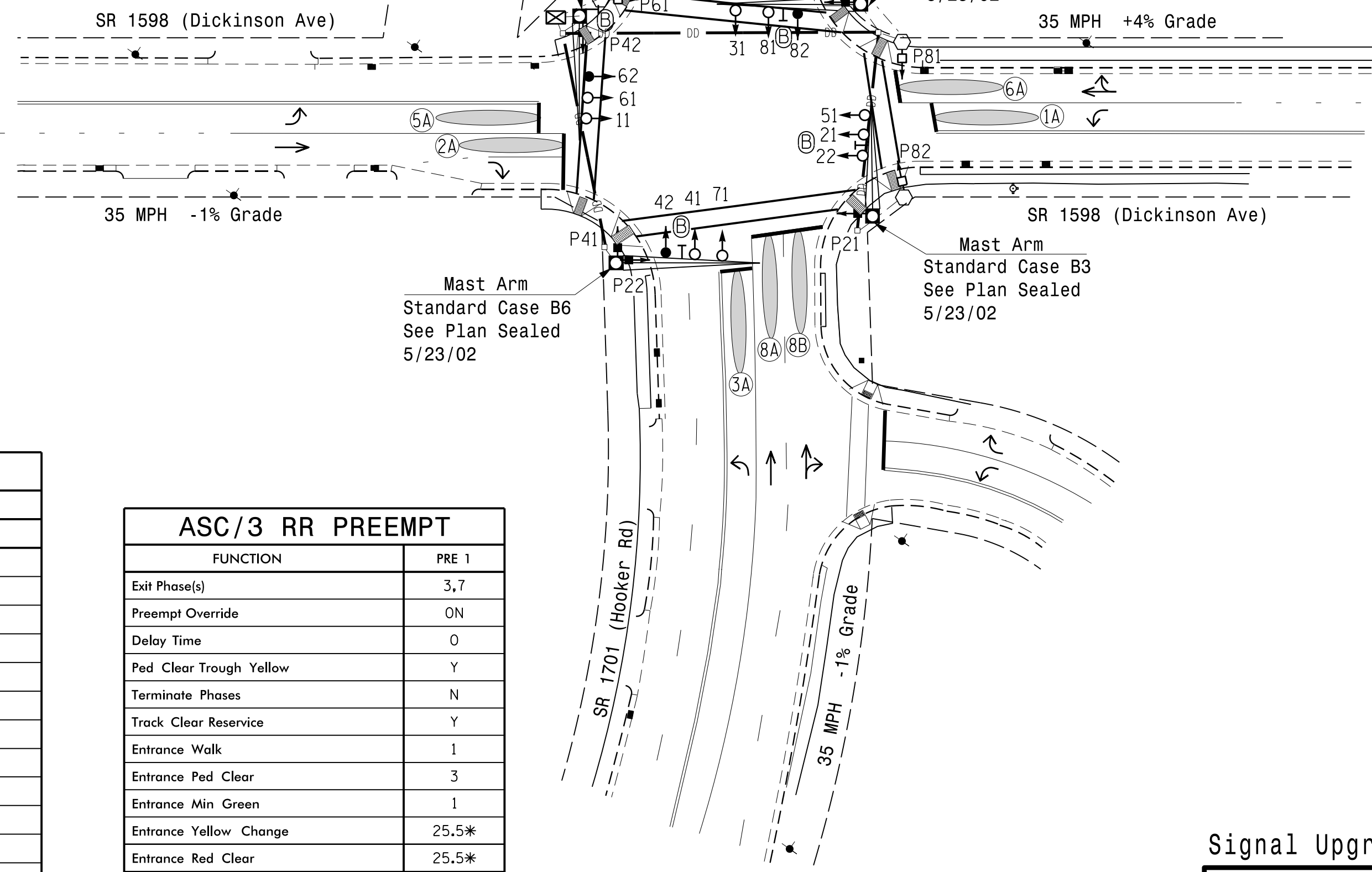
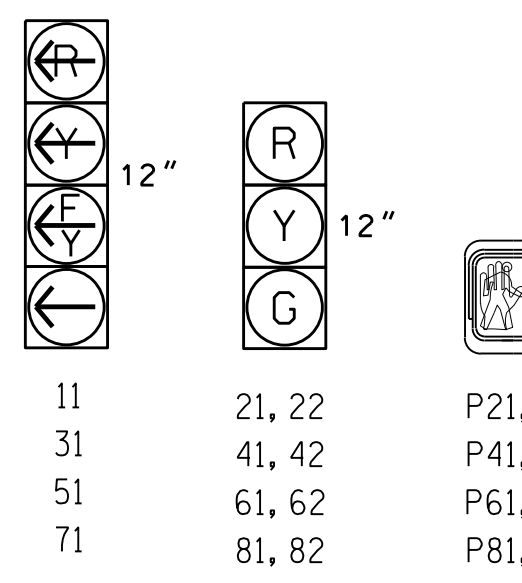
8 Phase Fully Actuated W/ Railroad Preemption Greenville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
- Reposition existing signal heads numbered 42, 62 and 82.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
- Pavement markings are existing.
- Program parent phases for Overlap "P" for all phases used in normal operation.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

SIGNAL FACE I.D.

All Heads L.E.D.



LEGEND

PROPOSED	EXISTING
○ → Traffic Signal Head	● → N/A
○ → Modified Signal Head	○ → N/A
○ → Sign	○ → N/A
○ → Pedestrian Signal Head With Push Button & Sign	○ → N/A
○ → Type II Signal Pedestal	○ → N/A
○ → Metal Pole with Mastarm	○ → N/A
N/A Railroad Tracks	○ → N/A
N/A Railroad Gate and Flasher	○ → N/A
N/A Railroad Cantilever	○ → N/A
○ → Inductive Loop Detector	○ → N/A
○ → Out of Pavement Detection Zone	○ → N/A
○ → Controller & Cabinet Junction Box	○ → N/A
○ → 2-in Underground Conduit	○ → N/A
○ → Directional Drill	○ → N/A
N/A Right of Way	○ → N/A
○ → Directional Arrow	○ → N/A
N/A Curb Ramp	○ → N/A
○ → "DO NOT STOP ON TRACKS" Sign (R8-8)	○ → N/A
○ → "Street Name" Sign	○ → N/A

ASC/3 TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green *	7	10	7	7	7	10	7	7
Walk *	0	7	0	7	0	7	0	7
Ped Clear	0	20	0	12	0	19	0	9
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max 1 *	20	35	20	30	20	35	20	30
Yellow	3.0	3.9	3.0	4.1	3.0	3.9	3.0	4.1
Red Clear	3.1	2.5	3.1	2.2	3.2	2.5	3.2	2.2
Actuations B4 Add *	-	-	-	-	-	-	-	-
Seconds / Actuation *	-	-	-	-	-	-	-	-
Max Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL	-	-
Dual Entry	-	-	-	X	-	-	-	X
Simultaneous Gap	X	X	X	X	X	X	X	X

ASC/3 RR PREEMPT

FUNCTION	PRE 1
Exit Phase(s)	3,7
Preempt Override	ON
Delay Time	0
Ped Clear Trough Yellow	Y
Terminate Phases	N
Track Clear Reserve	Y
Entrance Walk	1
Entrance Ped Clear	3
Entrance Min Green	1
Entrance Yellow Change	25.5*
Entrance Red Clear	25.5*
Track Clear Min Green	24
Track Clear Yellow Change	25.5*
Track Clear Red Clear	25.5*
Min Dwell Time	7
Exit Yellow Change	25.5*
Exit Red Clear	25.5*

* 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.

* Allows normal phase times to be used.

Signal Upgrade - Temporary 1

SR 1598 (Dickinson Avenue) at SR 1701 (Hooker Rd) / SR 1709 (Moye Boulevard)

Division 2 Pitt County Greenville

PLAN DATE: January 2018 REVIEWED BY: MEL

PREPARED BY: gmm REVIEWED BY:

REVISIONS INIT. DATE

SCALE 0 40 1"=40'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042608 MICHAN E. LEBLANC

2/19/2018

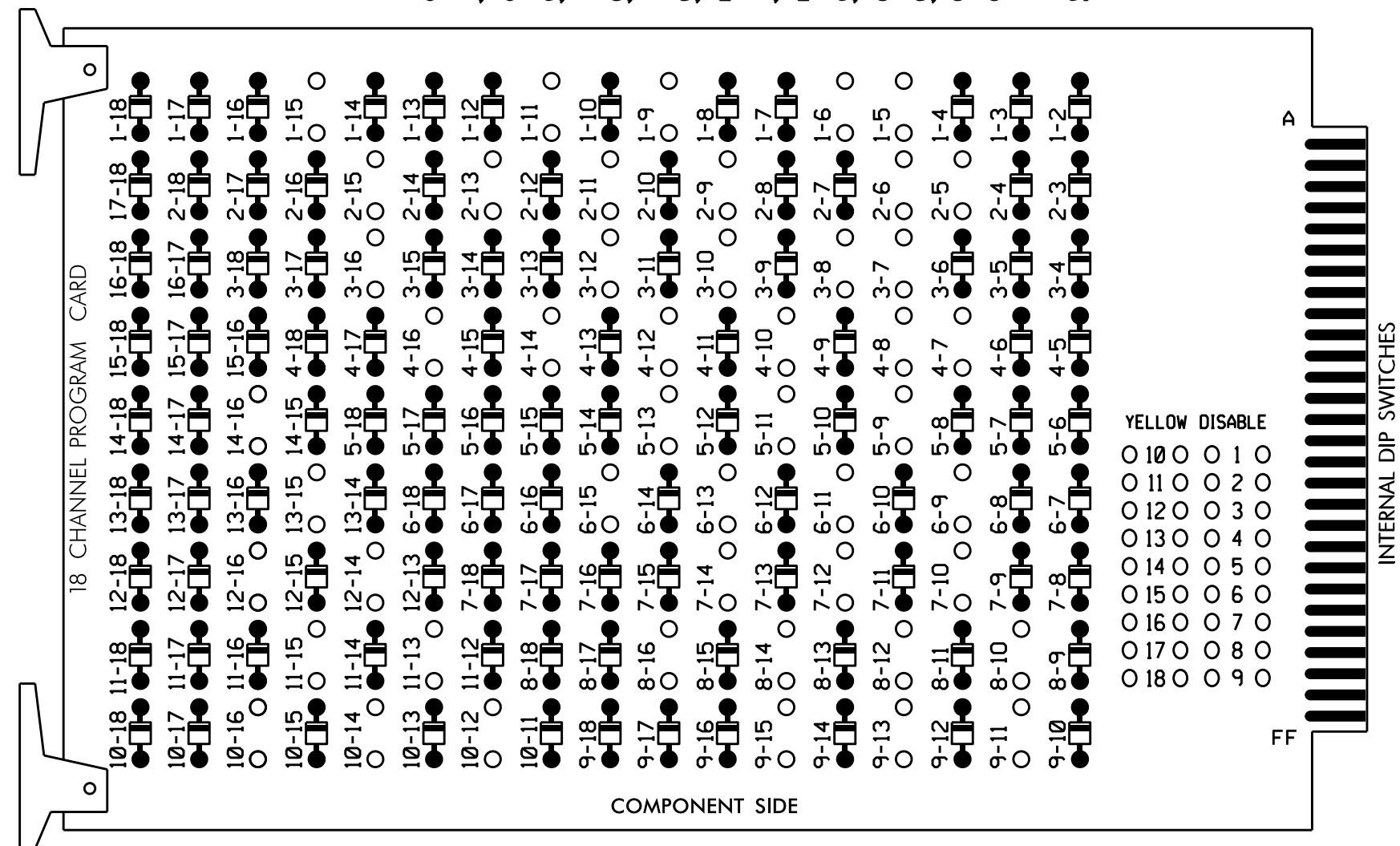
SIG. INVENTORY NO. 02-000471

05-MAR-2018 13:59
 C:\projects\1598\1598.dwg
 1598.dwg
 mel/eb/ltnc

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

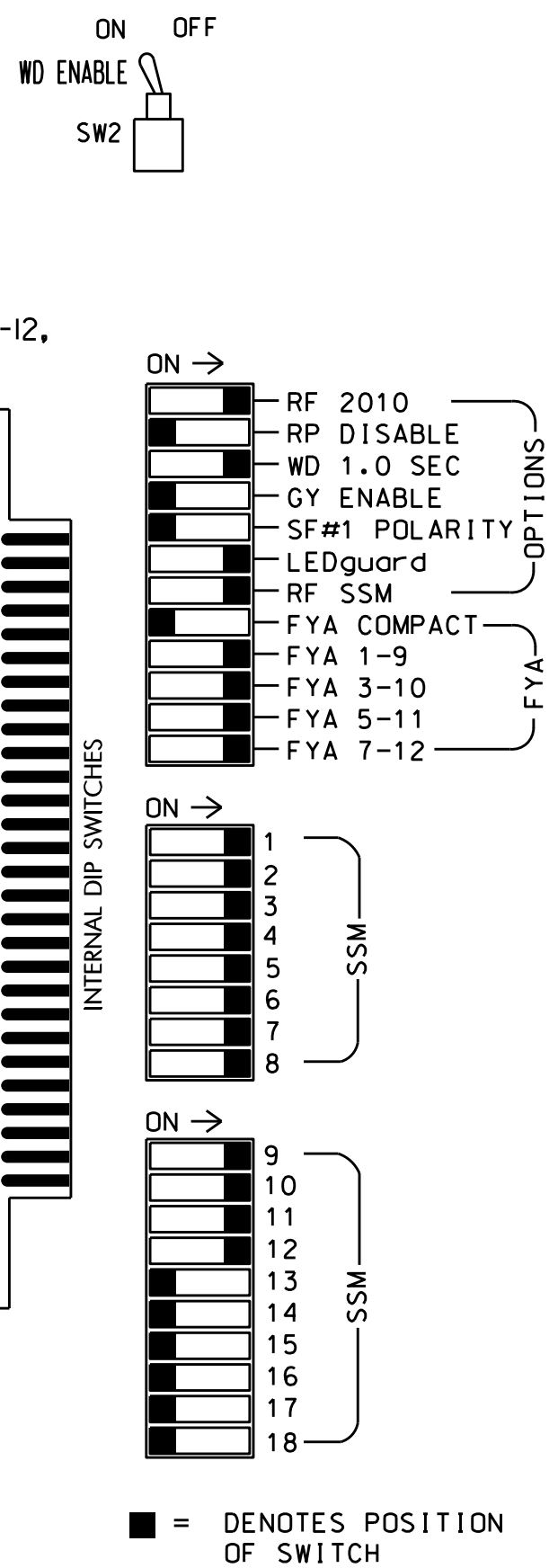
REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 3-7, 3-8, 3-10, 3-12, 3-16, 4-7, 4-8, 4-10, 4-12, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 7-10, 7-12, 7-14, 8-10, 8-12, 8-14, 8-16, 9-11, 9-13, 9-15, 10-12, 10-14, 10-16, 11-13, 11-15, 12-14, 12-16, 13-15, and 14-16.



REMOVE JUMPERS AS SHOWN

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.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



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.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Walk and 6 Walk.
- The cabinet and controller are part of the Greenville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332 W/AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,
 S12,AUX S1,AUX S2,AUX S4,AUX S5
 PHASES USED.....1,2,2PED,3,4,4PED,5,6,6PED,7,8,8PED
 OVERLAP "A".....*
 OVERLAP "B".....*
 OVERLAP "C".....*
 OVERLAP "D".....*
 OVERLAP "P".....1+2+3+4+5+6+7+8

* See overlap programming detail on 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.	11	21,22	P21, P22	31	41,42	P41, P42	51	61,62	P61, P62	71	81,82	P81, P82	11	31	NU	51	71	NU
RED	128			101				134			107							
YELLOW	*	129		* 102				* 135		* 108								
GREEN		130		103				136		109								
RED ARROW													A121	A124		A114	A101	
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW	127			118				133		124								
Hand icon			113			104			119		110							
Foot icon			115			106			121		112							

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.
 ★ See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(front view)

FILE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
L	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
U	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
L	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS

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

FS = FLASH SENSE
 ST = STOP TIME
 PRE1 = RR PREEMPT

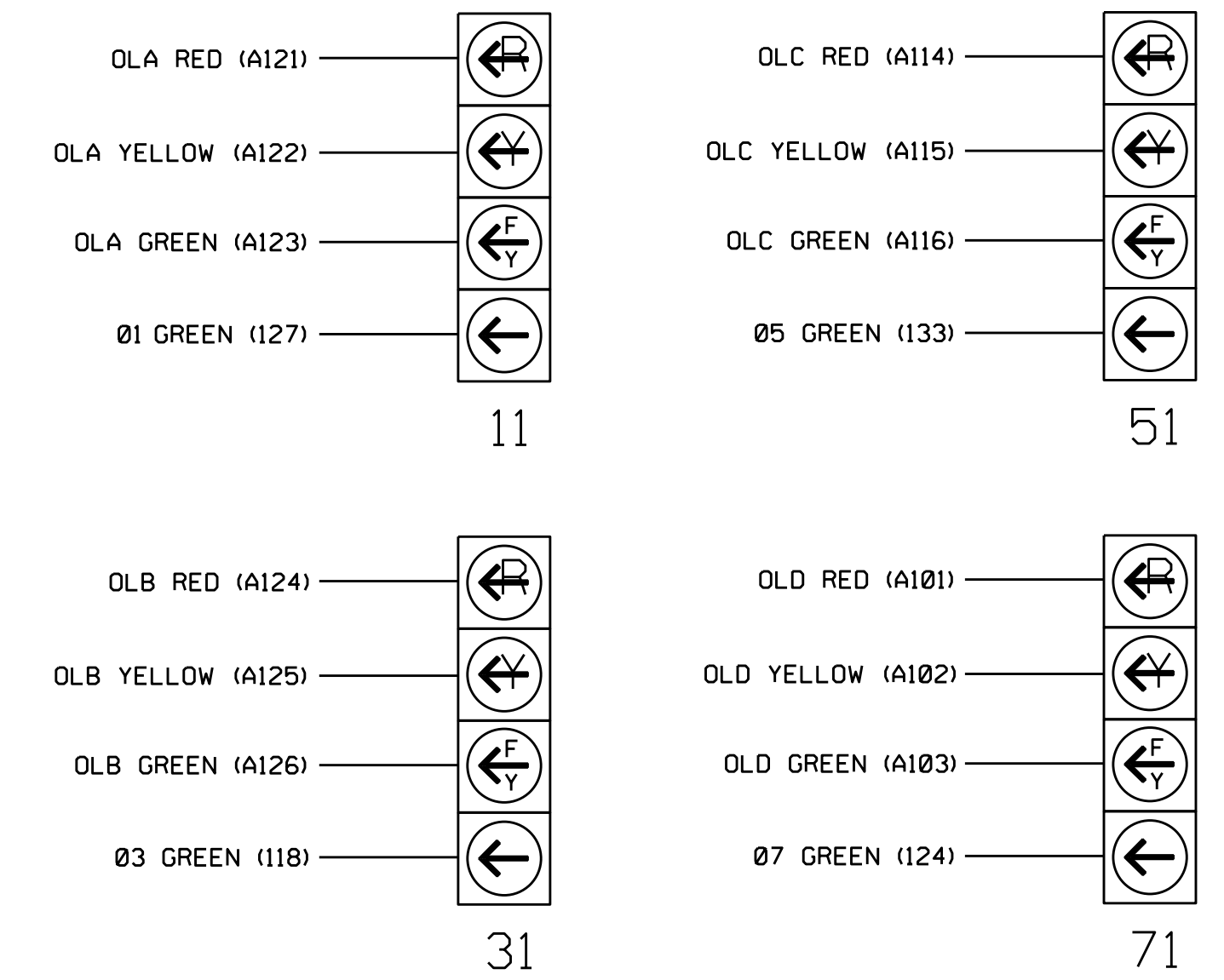
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
P21,P22	T88-4,6	I12U	67	PED 2	2 PED					
P41,P42	T88-5,6	I12L	69	PED 4	4 PED					
P61,P62	T88-7,9	I13U	68	PED 6	6 PED					
P81,P82	T88-8,9	I13L	70	PED 8	8 PED					

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

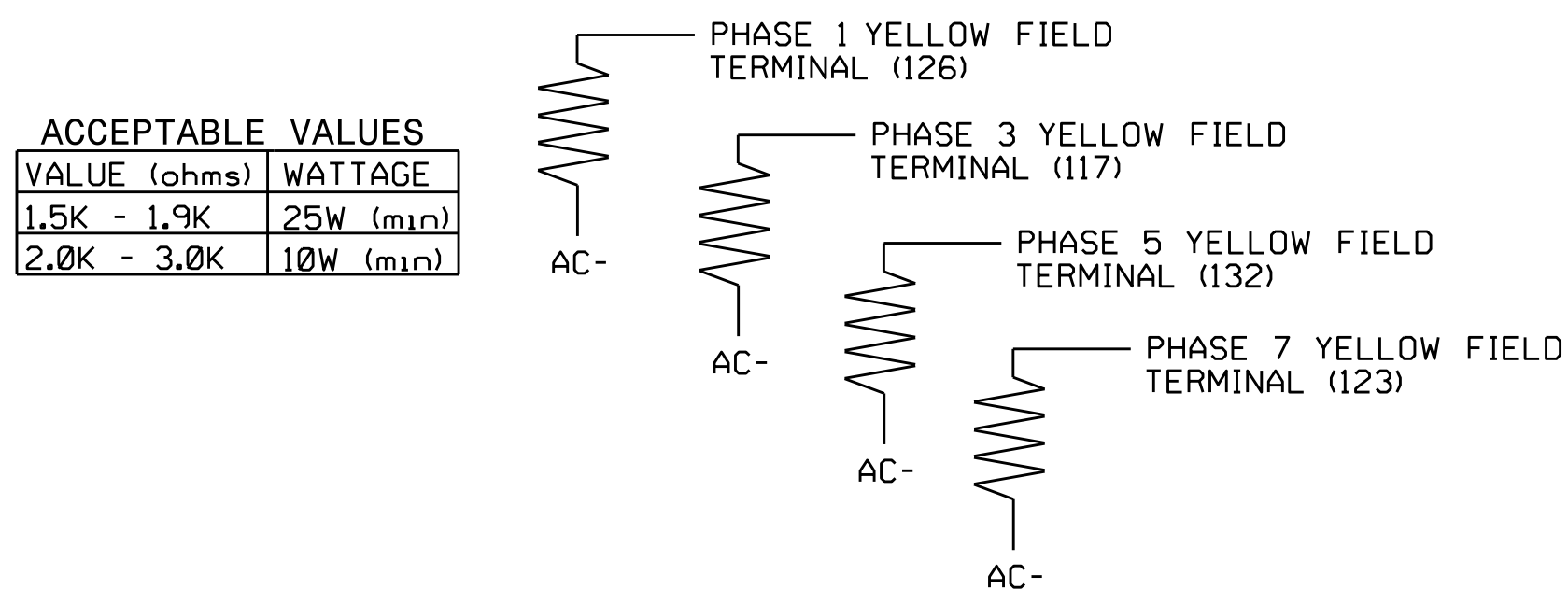
FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)



SPECIAL DETECTOR NOTE

Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0004T1
 DESIGNED: January 2018
 SEALED: 2/19/2018
 REVISED: N/A

Electrical Detail - Sheet 1 of 3

Electrical and Programming Details for: SR 1598 (Dickinson Avenue) at SR 1701 (Hooker Rd) / SR 1709 (Moye Boulevard)

Division 2 Pitt County Greenville

PLAN DATE: February 2018 REVIEWED BY: [Signature]

PREPARED BY: S. Armstrong REVIEWED BY: [Signature]

750 N. Greenfield Pkwy, Garner, NC 27529

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL: KEITH M. MINAS, PROFESSIONAL ENGINEER, No. 036880

DocuSigned by: Keith M. Minas 2/26/2018

SIG. INVENTORY NO. 02-0004T1

20-1-18-2018 13:21
 C:\Users\armstrong\Documents\Signal\20004-sm.e-xxx.dgn
 armstrong

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

- From Main Menu select **2. CONTROLLER**
- From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**

OVERLAP A

Select TMG VEH OVLP [A] and 'PPLT FYA'

TMG VEH OVLP...[A] TYPE:**PPLT FYA**
 PROTECTED LEFT TURN.... PHASE 1
 OPPOSING THROUGH..... PHASE 2
 FLASHING ARROW OUTPUT.....CH9 ISOLATE
 DELAY START OF: FYA..0.0 CLEARANCE..0.0
 ACTION PLAN SF BIT DISABLE..... 0

Toggle Once

OVERLAP B

Select TMG VEH OVLP [B] and 'PPLT FYA'

TMG VEH OVLP...[B] TYPE:**PPLT FYA**
 PROTECTED LEFT TURN.... PHASE 3
 OPPOSING THROUGH..... PHASE 4
 FLASHING ARROW OUTPUT.....CH10 ISOLATE
 DELAY START OF: FYA..0.0 CLEARANCE..0.0
 ACTION PLAN SF BIT DISABLE..... 0

Toggle Once

OVERLAP C

Select TMG VEH OVLP [C] and 'PPLT FYA'

TMG VEH OVLP...[C] TYPE:**PPLT FYA**
 PROTECTED LEFT TURN.... PHASE 5
 OPPOSING THROUGH..... PHASE 6
 FLASHING ARROW OUTPUT.....CH11 ISOLATE
 DELAY START OF: FYA..0.0 CLEARANCE..0.0
 ACTION PLAN SF BIT DISABLE..... 0

Toggle Once

OVERLAP D

Select TMG VEH OVLP [D] and 'PPLT FYA'

TMG VEH OVLP...[D] TYPE:**PPLT FYA**
 PROTECTED LEFT TURN.... PHASE 7
 OPPOSING THROUGH..... PHASE 8
 FLASHING ARROW OUTPUT.....CH12 ISOLATE
 DELAY START OF: FYA..0.0 CLEARANCE..0.0
 ACTION PLAN SF BIT DISABLE..... 0

Toggle to advance to Overlap 'P'

OVERLAP P

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 X X X X X
 LAG GRN 0.0 YEL 0.0 RED 0.0

END PROGRAMMING

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO ENSURE 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.

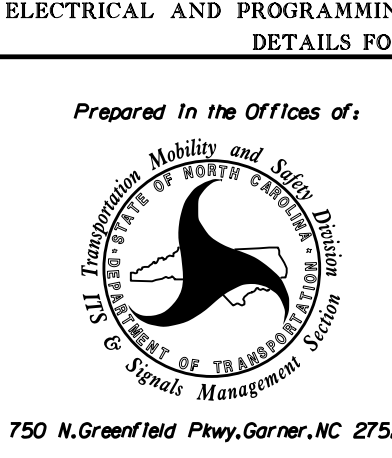
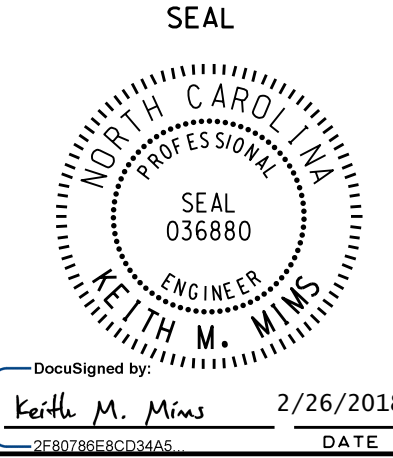
THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0004T1
 DESIGNED: January 2018
 SEALED: 2/19/2018
 REVISED: N/A

Electrical Detail - Sheet 2 of 3

	ELECTRICAL AND PROGRAMMING DETAILS FOR:	SR 1598 (Dickinson Avenue) at SR 1701 (Hooker Rd)/ SR 1709 (Moye Boulevard)	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL 
	Prepared In the Offices of: S. ARMSTRONG & ASSOCIATES, INC. Signal Management Systems	Division 2 Pitt County Greenville	
REVISIONS		INIT. DATE	DocuSigned by: Keith M. Mims 2/26/2018 2F8079E6C02465 DATE
SIG. INVENTORY NO. 02-0004T1			

20-FEB-2018 13:22
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 sarmstrong

ECONOLITE ASC/3-2070 RAILROAD PREEMPT PROGRAMMING DETAIL

(program controller as shown)

- From Main Menu select **4. PREEMPTOR/TSP**
- From PREEMPTOR/TSP/SCP Submenu select **1. PREEMPT PLAN 1-10**

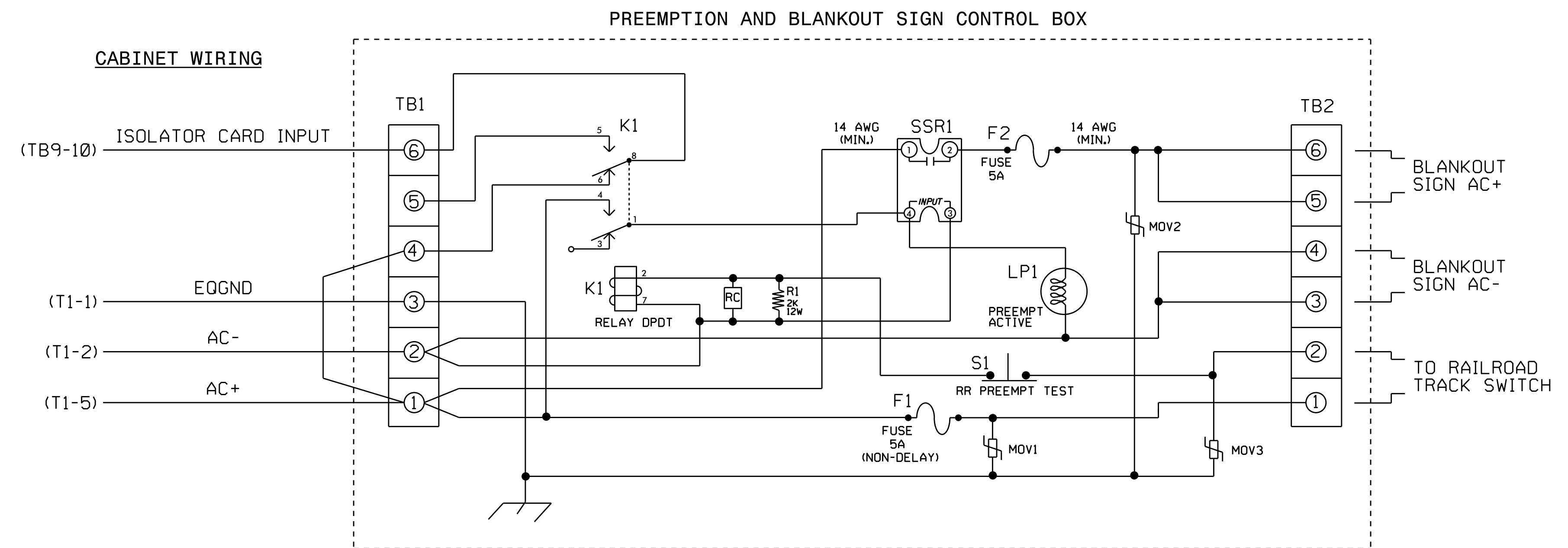
Place cursor in [] next to Preempt Plan and press 1. Then press the right cursor arrow and toggle the controller to YES. Next cursor down. This will select Railroad Preempt #1.

PREEMPT PLAN [1]	ENABLE....YES
VEH/PED 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6	
OVERLAP A B C D E F G H I J K L M N O P	
TRKCLR V . . . X . . . X	
TRKCLR O . . . F1	
ENA TRL	
DWEL VEH	
DWEL PED	
DWEL OLP	
CYC VEH . X X . . X	
CYC PED . X . . . X	
CYC OLP F1F1	
EXIT PH . . X . . . X	
EXIT CAL	
SP FUNC	

ENABLE... YES	IPMT	OVERRIDE	X	INTERLOCK	NO
DET LOCK... X	DELAY..	O	INHIBIT... 0		
OVERIDE FL. .	DURATION	O	ICLR-GRN... NO		
TERM OLP. NO	IPC>YEL	YES	ITERM PH NO		
PED DARK.. NO	ITC RESRV	YES	IDWELL FL OFF		
LINK PMT...O	IX FLCOLR	RED	EXIT OPT. OFF		
X TMG PLN...O	IRE-SERV..	O	FLT TYPE.HARD		
FREE DUR PMT	IR1 NOIR2	NOIR3	NOIR4 NO		
--TIMING----	WALKIPED	CLIMN	GRI YELI RED		
ENTRANCE TM.	11	31	1125.5	125.5	
-----MIN	GRIPMTEXTIMX	TMI	YELI RED		
TRACK CLEAR	241	0.01	0125.5	125.5	
-----MIN	DLIPMTEXTIMX	TMI	YELI RED		
DWL/CYC-EXIT	71	0.01	0125.5	125.5	
PMT ACTIVE OUT..	ON	PMT ACT	DWELL...NO		
OTHER - PRI	PMT.OFF	NON-PRI	PMT....OFF		
INH EXT TIME... 0.0	PED PR	RETURN...OFF			
PRIORITY RETURN.OFF	QUEUE	DELAY.... OFF			
COND DELAY.....OFF					
PHASES	1 2 3 4 5 6 7 8				
PR RTN%	0 0 0 0 0 0 0 0				
PHASES	9 10 11 12 13 14 15 16				
PR RTN%	0 0 0 0 0 0 0 0				

RAILROAD PREEMPTION WIRING DETAIL

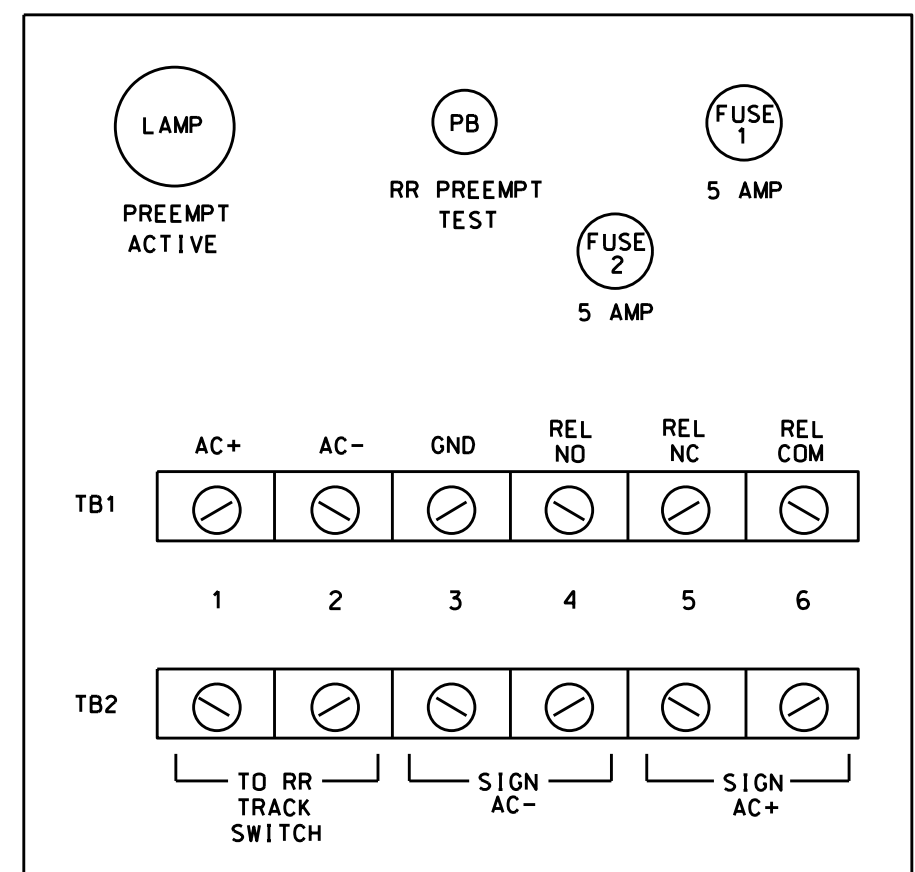
(wire as shown below)



NOTES

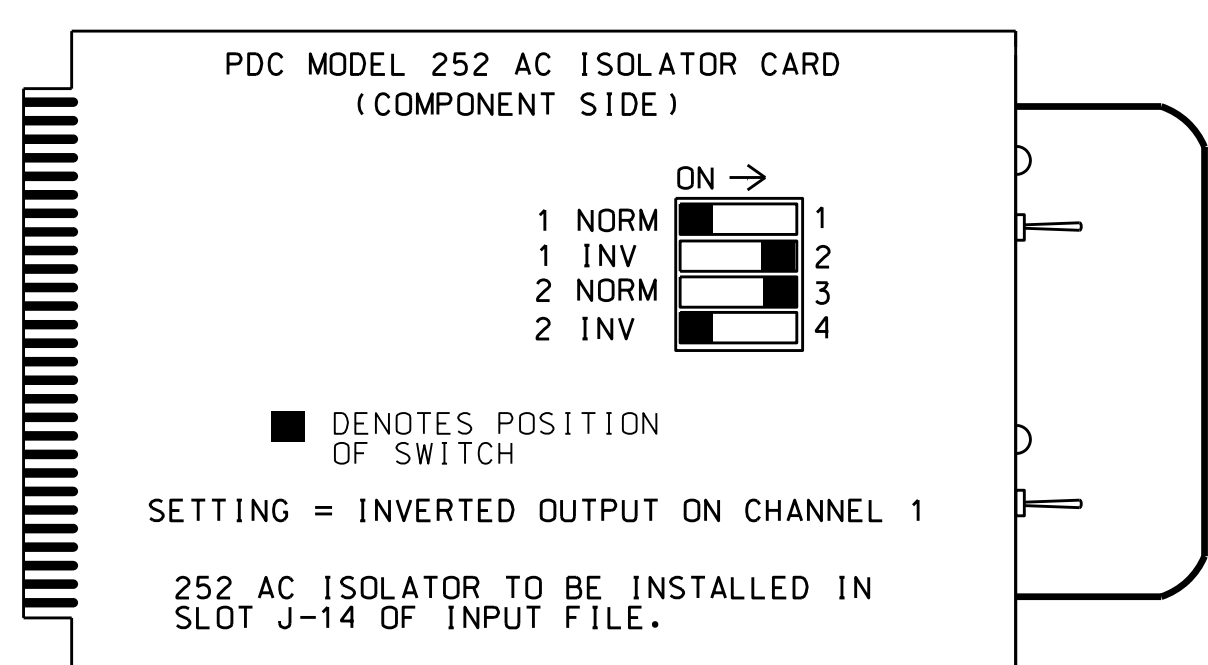
- Relay K1 is shown in the energized (Preempt not active) normal operation state.
- Relay K1 is a DPDT with 120VAC coil with octal base.
- Relay SSR1 is a SPST (normally open) Solid State Relay with AC input and AC (25 amp) output.
- AC Isolator Card shall activate preemption upon removal of AC+ from the input (as shown above). To accomplish this set invert dip switch on AC Isolator Card as shown on the detail on this sheet.
- IMPORTANT!!** A jumper must be added between input file terminals J14-E and J14-K if not already present. Also, terminal TB9-12 (on input panel) shall be connected to AC neutral (jumper may have to be added).

FRONT VIEW



PREEMPT 1 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL

(set DIP switches as shown below)



NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0004T1
 DESIGNED: January 2018
 SEALED: 2/19/2018
 REVISED: N/A

Electrical Detail - Sheet 3 of 3

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared In the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	SR 1598 (Dickinson Avenue) at SR 1701 (Hooker Rd)/ SR 1709 (Moye Boulevard)		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL KEITH M. MIRAS ENGINEER
	Division 2 PLAN DATE: February 2018 PREPARED BY: S. Armstrong	Pitt County REVIEWED BY: REVIEWED BY:	

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 sarmstrong

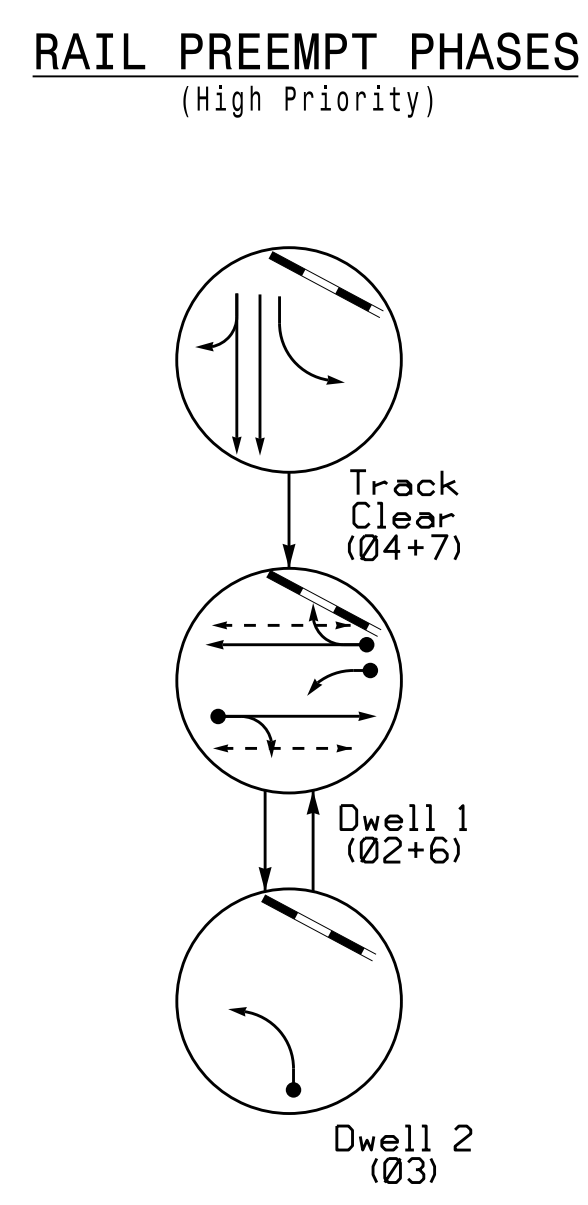
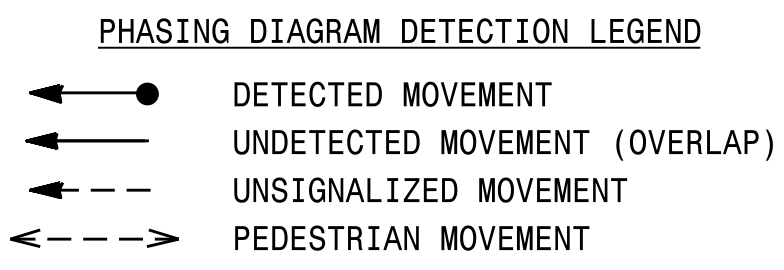
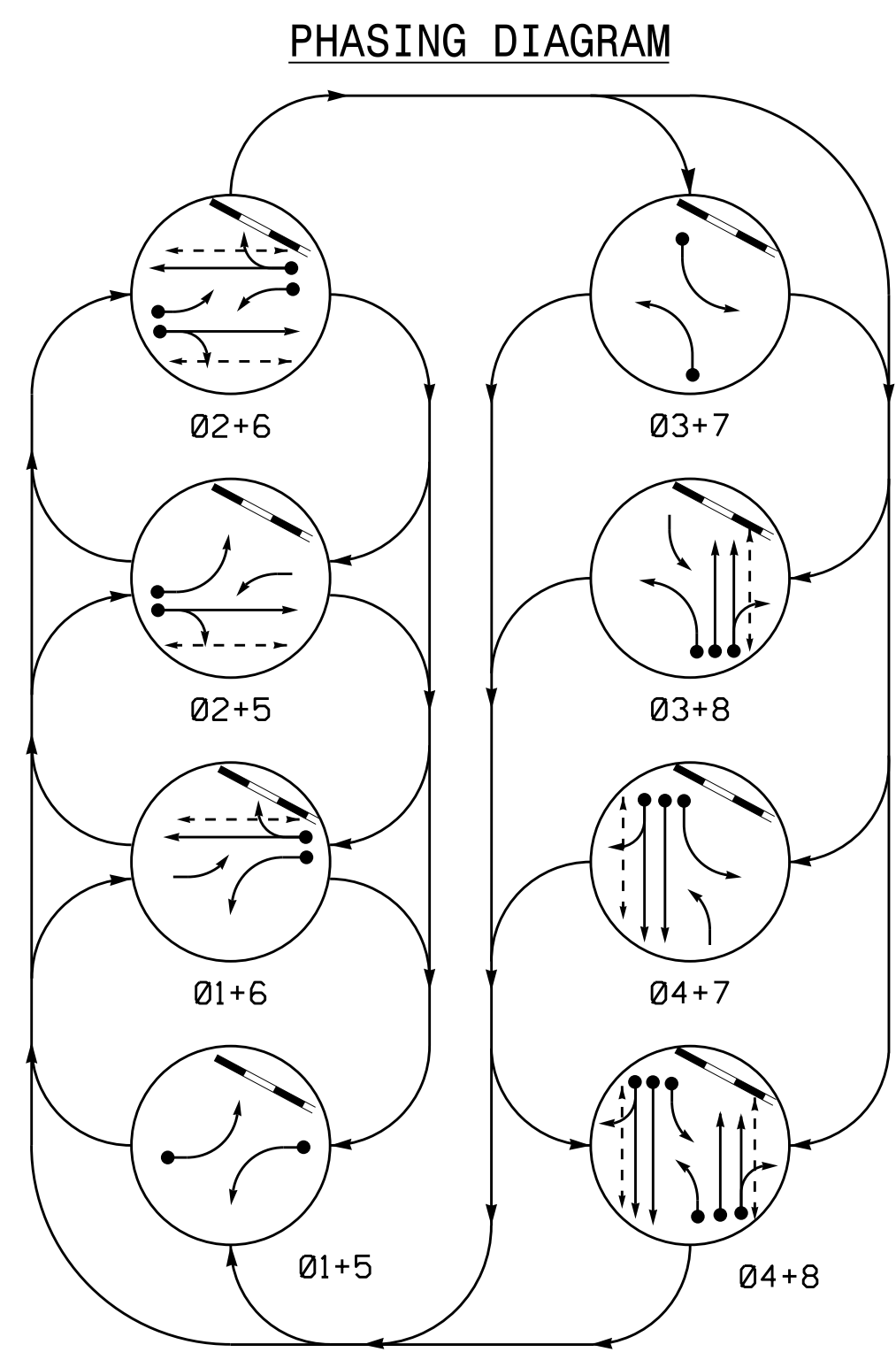


TABLE OF OPERATION

SIGNAL FACE	PHASE										
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	TRUCK STOP	TRUCK STOP	TRUCK STOP
11	---	---	---	---	---	---	---	---	---	---	---
21,22	R	R	G	G	R	R	R	R	G	R	Y
31	---	---	---	---	---	---	---	---	---	---	---
41,42	R	R	R	R	R	R	G	G	G	R	R
51	---	---	---	---	---	---	---	---	---	---	---
61,62	R	G	R	G	R	R	R	R	G	R	Y
71	---	---	---	---	---	---	---	---	---	---	---
81,82	R	R	R	R	R	G	R	R	R	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	DW	W	W	DW	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DW	W	DW	DW	DW	DRK

ASC/3 DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING						
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP NEW CARD
1A	6X40	0	*	-	1	Yes	-	15	-	S	-
2A	6X40	0	*	-	2	Yes	-	3	-	S	-
3A	6X40	0	*	-	3	Yes	-	15	-	S	-
4A	6X40	0	*	-	4	Yes	-	3	-	G	-
4B	6X40	0	*	-	4	Yes	-	10	-	S	-
5A	6X40	0	*	-	5	Yes	-	15	-	S	-
6A	6X40	0	*	-	6	Yes	-	3	-	S	-
7A	6X40	0	*	-	7	Yes	-	15	-	S	-
8A	6X40	0	*	-	8	Yes	-	-	-	G	-
8B	6X40	0	*	-	8	Yes	-	10	-	S	-

* Multizone Microwave Detection

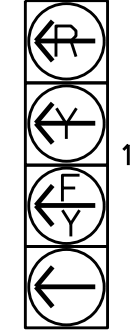
8 Phase Fully Actuated W/ Railroad Preemption Greenville Signal System

NOTES

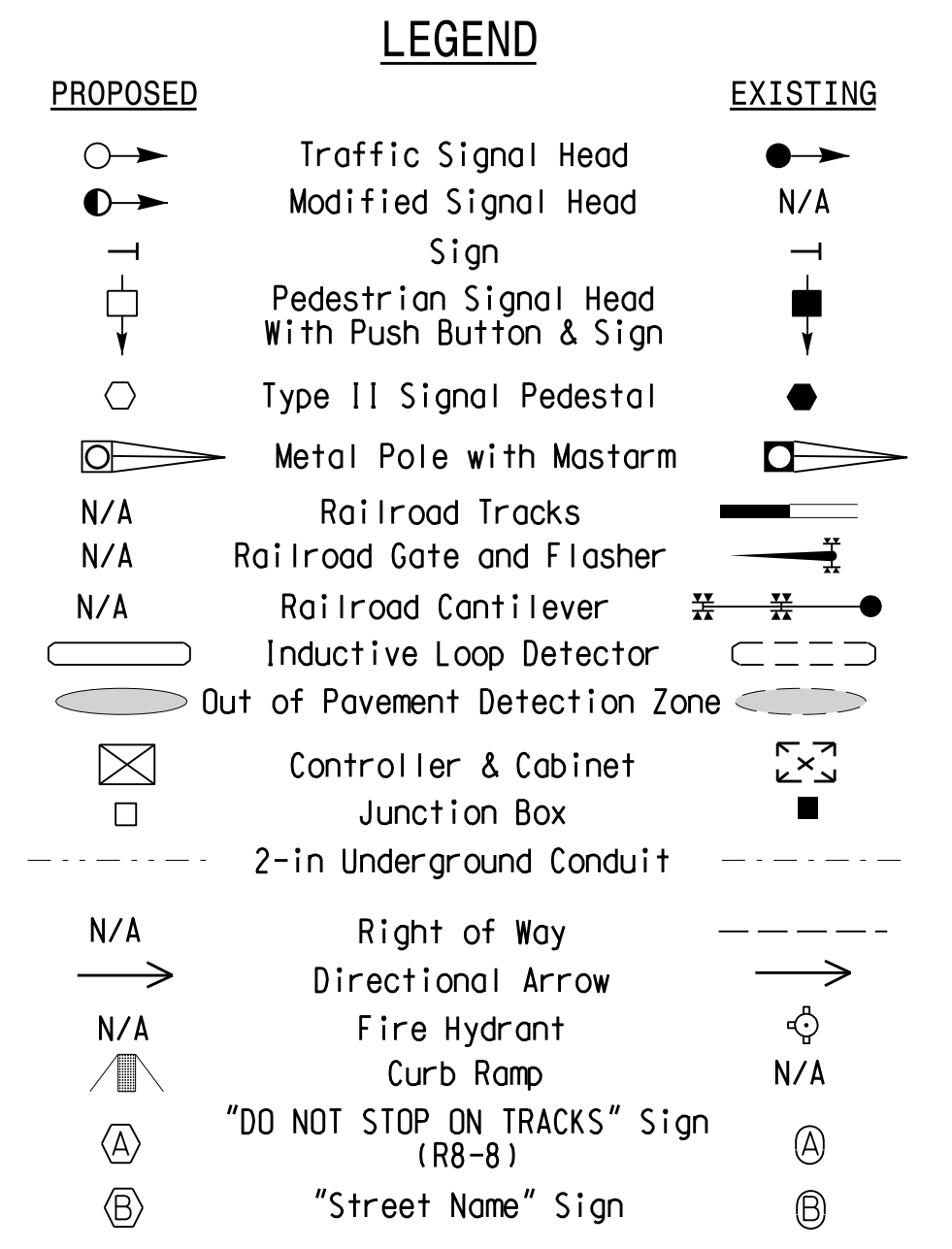
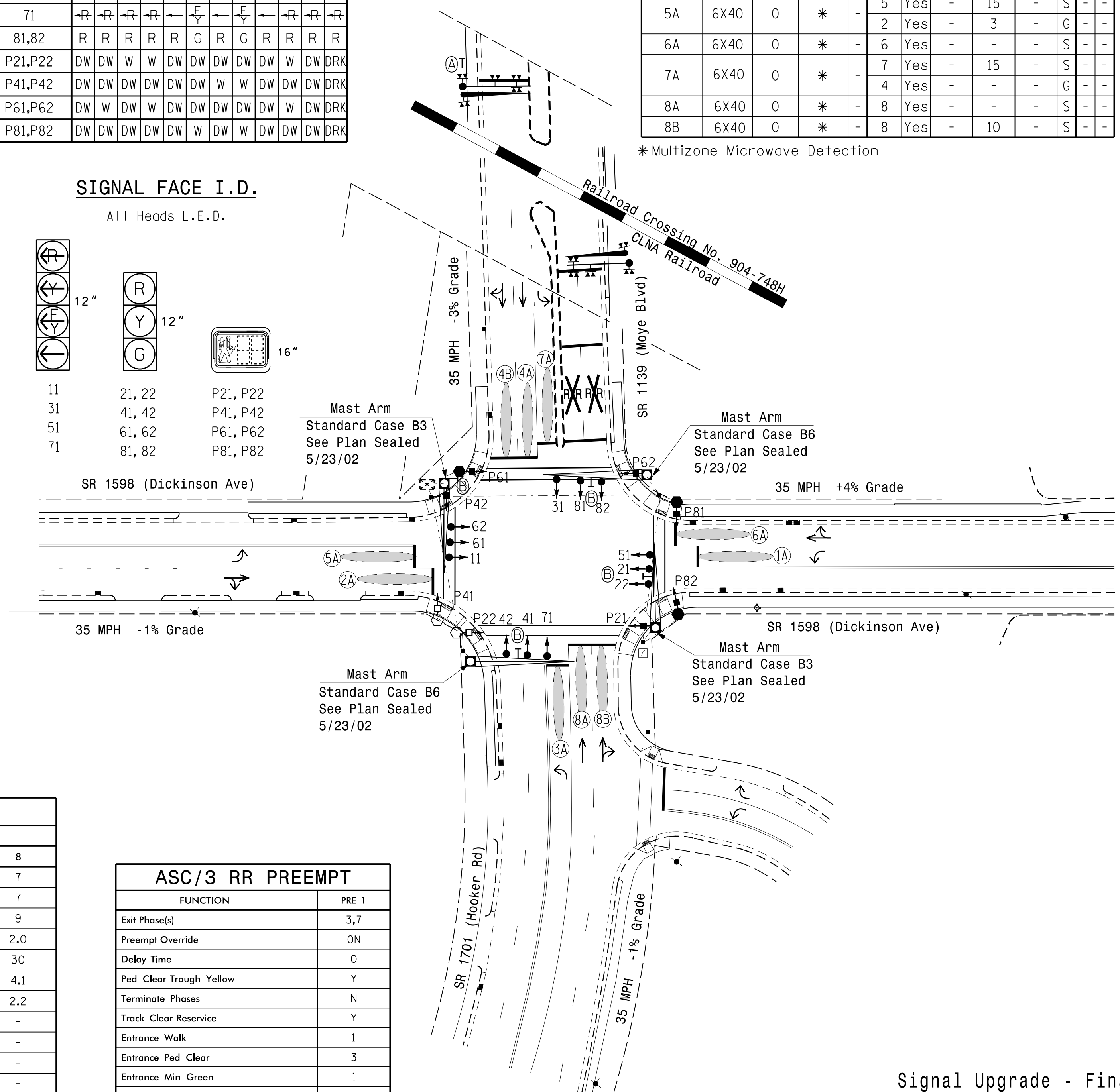
- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
- Program parent phases for Overlap "P" for all phases used in normal operation.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

SIGNAL FACE I.D.

All Heads L.E.D.



11	21, 22	P21, P22
31	41, 42	P41, P42
51	61, 62	P61, P62
71	81, 82	P81, P82



ASC/3 TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green *	7	10	7	7	7	10	7	7
Walk *	0	7	0	7	0	7	0	7
Ped Clear	0	19	0	11	0	17	0	9
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max 1 *	20	35	20	30	20	35	20	30
Yellow	3.0	3.9	3.0	4.1	3.0	3.9	3.0	4.1
Red Clear	3.1	2.5	3.1	2.2	3.2	2.5	3.1	2.2
Actuations B4 Add *	-	-	-	-	-	-	-	-
Seconds / Actuation *	-	-	-	-	-	-	-	-
Max Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL	-	-
Dual Entry	-	-	-	X	-	-	-	X
Simultaneous Gap	X	X	X	X	X	X	X	X

ASC/3 RR PREEMPT

FUNCTION	PRE 1
Exit Phase(s)	3,7
Preempt Override	ON
Delay Time	0
Ped Clear Trough Yellow	Y
Terminate Phases	N
Track Clear Reserve	Y
Entrance Walk	1
Entrance Ped Clear	3
Entrance Min Green	1
Entrance Yellow Change	25.5*
Entrance Red Clear	25.5*
Track Clear Min Green	24
Track Clear Yellow Change	25.5*
Track Clear Red Clear	25.5*
Min Dwell Time	7
Exit Yellow Change	25.5*
Exit Red Clear	25.5*

* Allows normal phase times to be used.

* 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

SR 1598 (Dickinson Avenue) at SR 1701 (Hooker Rd) / SR 1709 (Moye Boulevard)

Division 2 Pitt County Greenville

PLAN DATE: November 2021 PREPARED BY: MEL REVIEWED BY: MEL

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 40 1"=40'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

MECHAN E. WILSON

11/16/2021

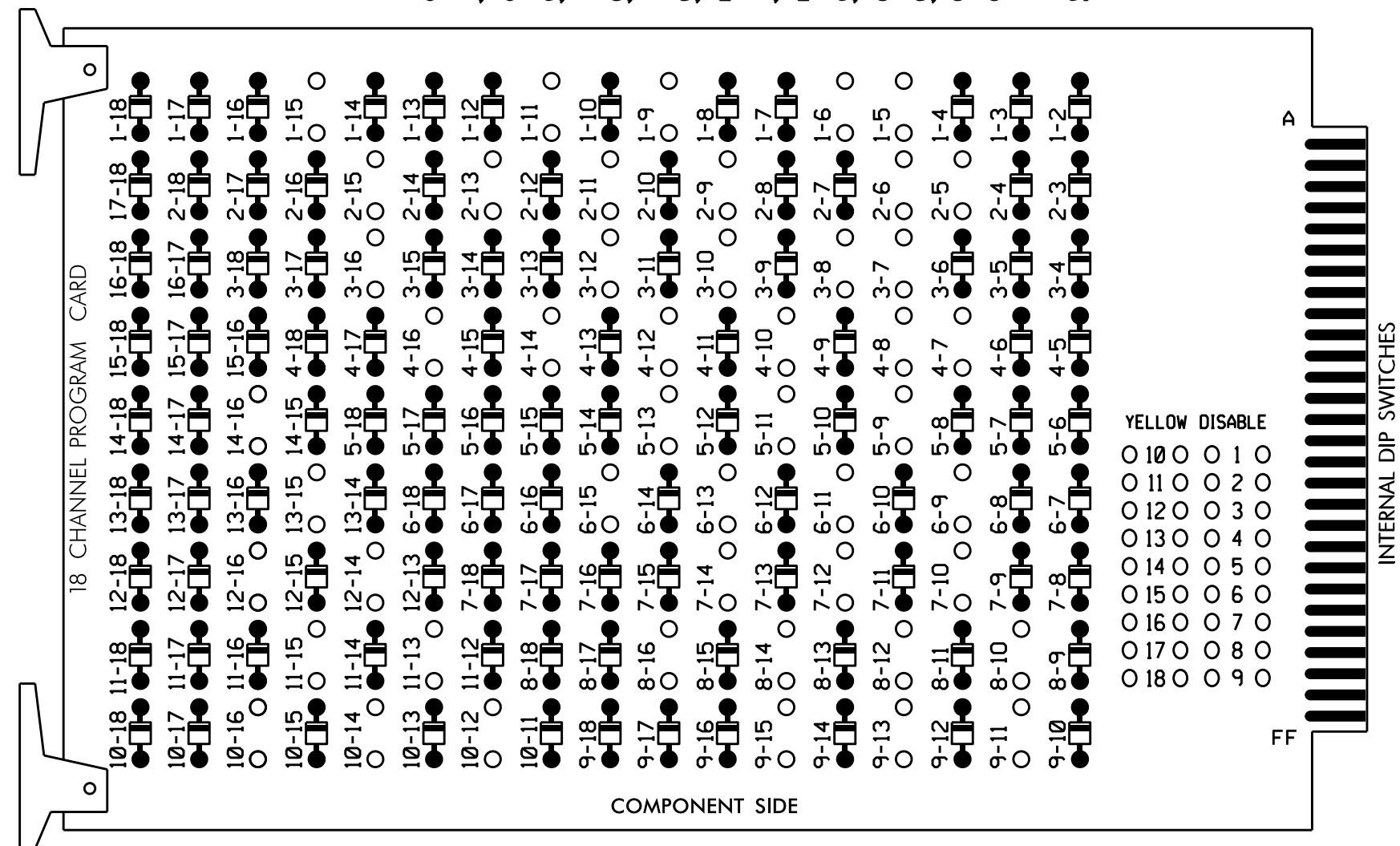
SIG. INVENTORY NO. 02-0004

01-DEC-2021 11:14 AM W:\2020\04\19_1598_20211116_Final.dgn mel/bb/01c

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

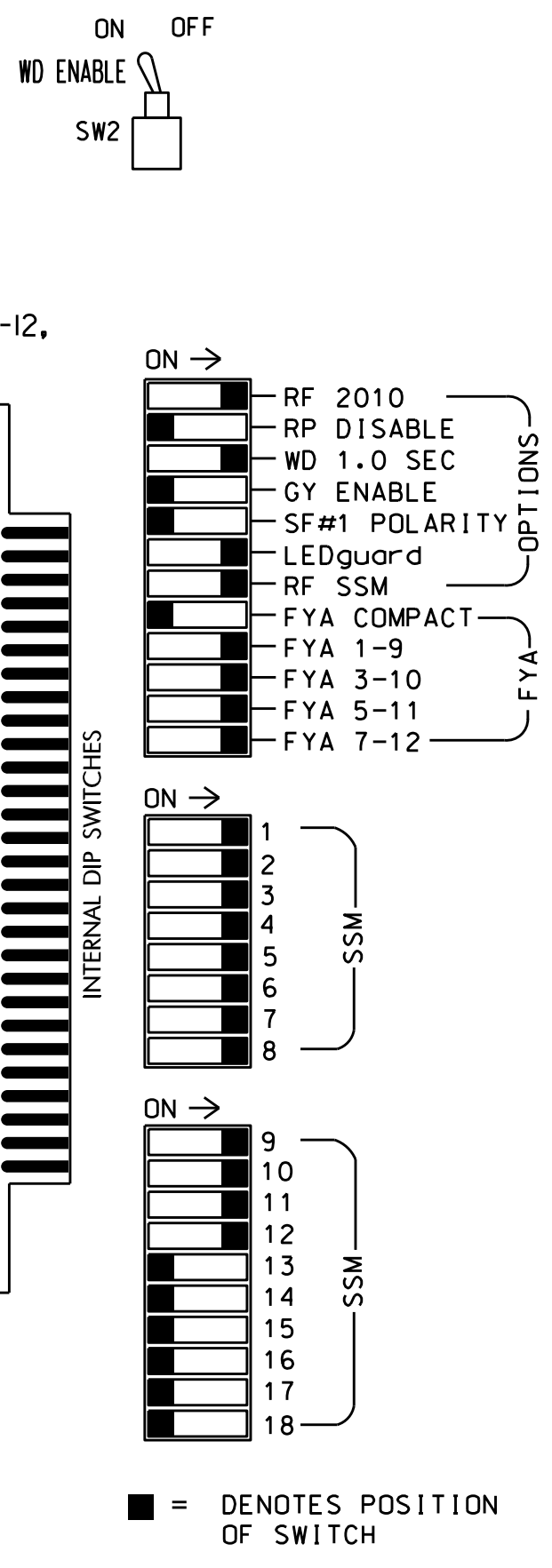
REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 3-7, 3-8, 3-10, 3-12, 3-16, 4-7, 4-8, 4-10, 4-12, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 7-10, 7-12, 7-14, 8-10, 8-12, 8-14, 8-16, 9-11, 9-13, 9-15, 10-12, 10-14, 10-16, 11-13, 11-15, 12-14, 12-16, 13-15, and 14-16.



REMOVE JUMPERS AS SHOWN

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.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



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.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Walk and 6 Walk.
- The cabinet and controller are part of the Greenville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332 W/AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,
 S12,AUX S1,AUX S2,AUX S4,AUX S5
 PHASES USED.....1,2,2PED,3,4,4PED,5,6,6PED,7,8,8PED
 OVERLAP "A".....*
 OVERLAP "B".....*
 OVERLAP "C".....*
 OVERLAP "D".....*
 OVERLAP "P".....1+2+3+4+5+6+7+8

* See overlap programming detail on 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.	11	21,22	P21, P22	31	41,42	P41, P42	51	61,62	P61, P62	71	81,82	P81, P82	11	31	NU	51	71	NU
RED	128			101				134			107							
YELLOW	*	129		* 102				* 135		* 108								
GREEN		130		103				136		109								
RED ARROW													A121	A124		A114	A101	
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW	127			118				133		124								
Hand icon			113			104			119			110						
Foot icon			115			106			121			112						

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.
 ★ See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(front view)

FILE	U	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I"	U	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
	L	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
	L	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
"J"	U	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
	L	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
	L	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS

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

FS = FLASH SENSE
 ST = STOP TIME
 PRE1 = RR PREEMPT

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
P21,P22	T88-4,6	112U	67	PED 2	2 PED					
P41,P42	T88-5,6	112L	69	PED 4	4 PED					
P61,P62	T88-7,9	113U	68	PED 6	6 PED					
P81,P82	T88-8,9	113L	70	PED 8	8 PED					

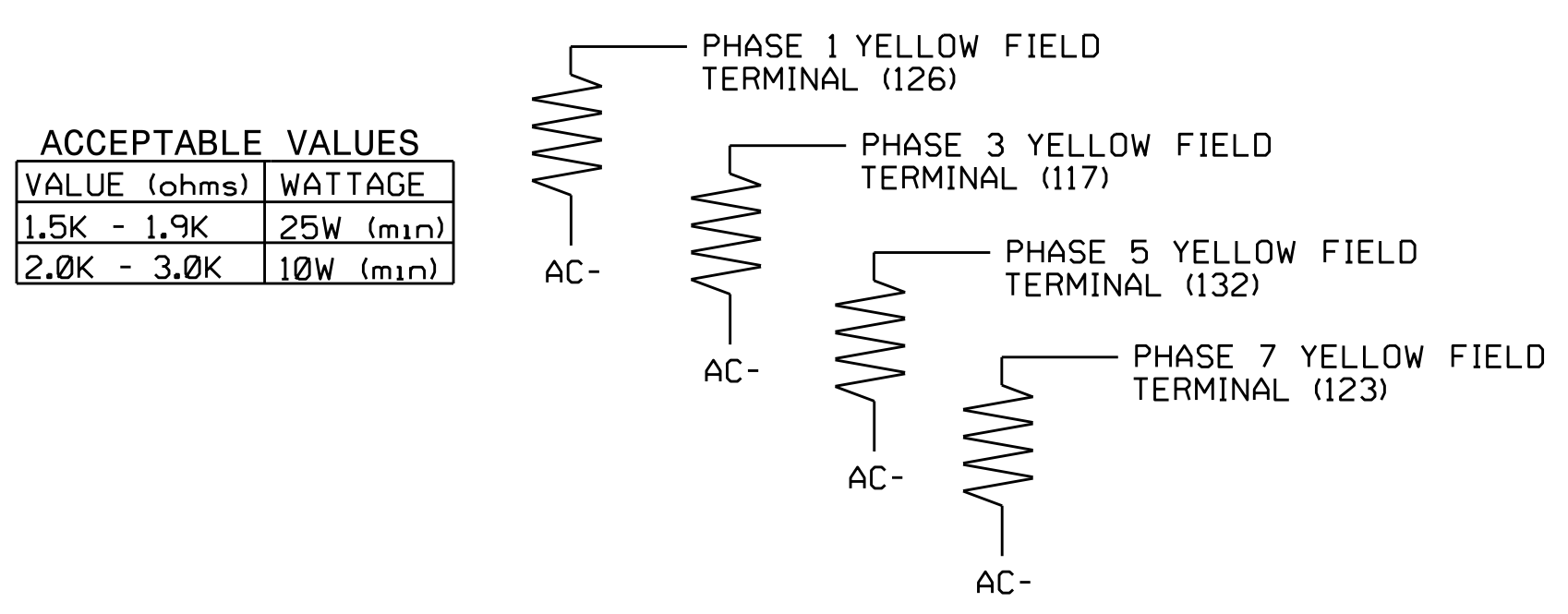
NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

SPECIAL DETECTOR NOTE

Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

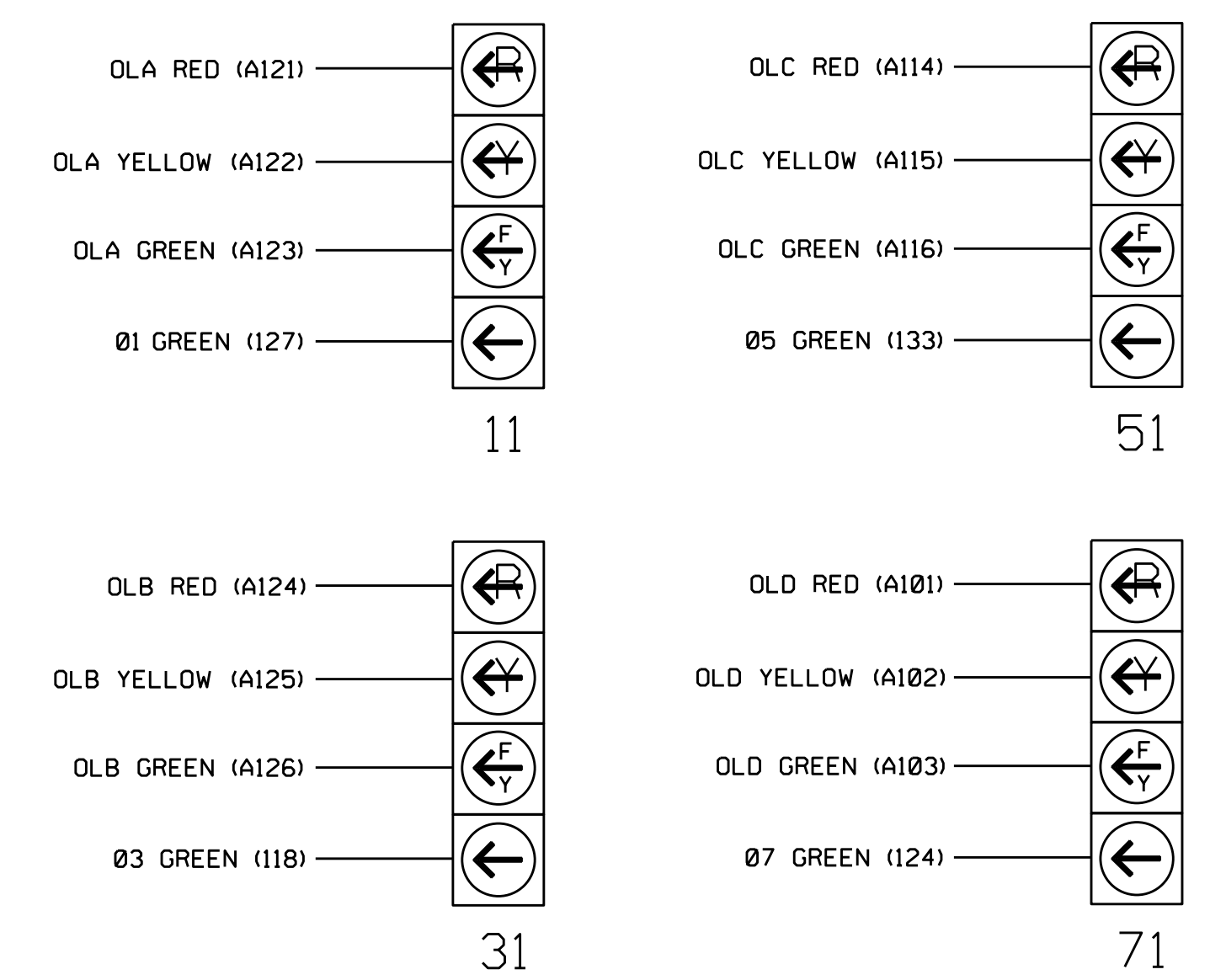
LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEERS
 SEAL 036833
 RYAN W. HOUGH

ELECTRICAL AND PROGRAMMING DETAILS FOR:
 Prepared in the Offices of:
 G.L. Transportation Mobility and Safety Division
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 Signal Management Section
 750 N. Greenfield Pkwy, Garner, NC 27529

SR 1598 (Dickinson Avenue) at SR 1701 (Hooker Rd) / SR 1709 (Moye Boulevard)
 Division 2 Pitt County Greenville
 PLAN DATE: February 2018 REVIEWED BY:
 PREPARED BY: S. Armstrong REVIEWED BY:
 REVISIONS: No electrical changes. (WSA)
 DATE: 11/17/2021

SEAL
 Not a certified document as to the Original Document but Only as to the Revisions - This document originally issued and sealed by Keith M. Wims, #036880, on 2/26/2018.
 This document is only certified as to the revisions.
 DATE: 11/17/2021
 SIG. INVENTORY NO. 02-0004

17-Nov-2021 11:59 S:\IT\SSA\115\Sig\Work\hough\sig\MonPrj\Projects\02-0003-0004_0006_0010_U-5606_d1v_Project\02-0004\020004_sme\el_xxx.dgn
 17-Nov-2021 11:59 S:\IT\SSA\115\Sig\Work\hough\sig\MonPrj\Projects\02-0003-0004_0006_0010_U-5606_d1v_Project\02-0004\020004_sme\el_xxx.dgn
 17-Nov-2021 11:59 S:\IT\SSA\115\Sig\Work\hough\sig\MonPrj\Projects\02-0003-0004_0006_0010_U-5606_d1v_Project\02-0004\020004_sme\el_xxx.dgn

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

- From Main Menu select **2. CONTROLLER**
- From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**

OVERLAP A

Select TMG VEH OVLP [A] and 'PPLT FYA'

```

TMG VEH OVLP...[A] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN.... PHASE 1
OPPOSING THROUGH..... PHASE 2

FLASHING ARROW OUTPUT.....CH9 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 0
    
```

Toggle Once

OVERLAP B

Select TMG VEH OVLP [B] and 'PPLT FYA'

```

TMG VEH OVLP...[B] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN.... PHASE 3
OPPOSING THROUGH..... PHASE 4

FLASHING ARROW OUTPUT.....CH10 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 0
    
```

Toggle Once

OVERLAP C

Select TMG VEH OVLP [C] and 'PPLT FYA'

```

TMG VEH OVLP...[C] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN.... PHASE 5
OPPOSING THROUGH..... PHASE 6

FLASHING ARROW OUTPUT.....CH11 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 0
    
```

Toggle Once

OVERLAP D

Select TMG VEH OVLP [D] and 'PPLT FYA'

```

TMG VEH OVLP...[D] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN.... PHASE 7
OPPOSING THROUGH..... PHASE 8

FLASHING ARROW OUTPUT.....CH12 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 0
    
```

Toggle to advance to Overlap 'P'

OVERLAP P

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 X X X X X . . . . .
LAG GRN 0.0 YEL 0.0 RED 0.0
    
```

END PROGRAMMING

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO ENSURE 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.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

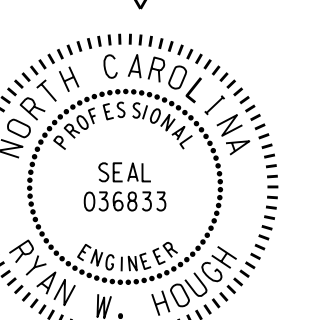
Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0004
 DESIGNED: November 2021
 SEALED: 11/16/2021
 REVISED: N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION SEAL



Documented by: Ryan W. Hough
 DATE: 11/17/2021

Electrical Detail - Sheet 2 of 3

	SR 1598 (Dickinson Avenue) at SR 1701 (Hooker Rd)/ SR 1709 (Moye Boulevard)	Division 2 Pitt County Greenville	
	PLAN DATE: February 2018 PREPARED BY: S. Armstrong	REVIEWED BY: REVIEWED BY:	SEAL Not a certified document as to the Original Document but only as to the Revisions - This document originally issued and sealed by Keith M. Sims, #036880, on 2/26/2018. This document is only certified as to the revisions.
	REVISIONS No electrical changes. (NSA)	UNIT: RWH DATE: 11/17/21	DATE:
	750 N. Greenfield Pkwy, Garner, NC 27529		SIG. INVENTORY NO. 02-0004

ECONOLITE ASC/3-2070 RAILROAD PREEMPT PROGRAMMING DETAIL

(program controller as shown)

- From Main Menu select **4. PREEMPTOR/TSP**
- From PREEMPTOR/TSP/SCP Submenu select **1. PREEMPT PLAN 1-10**

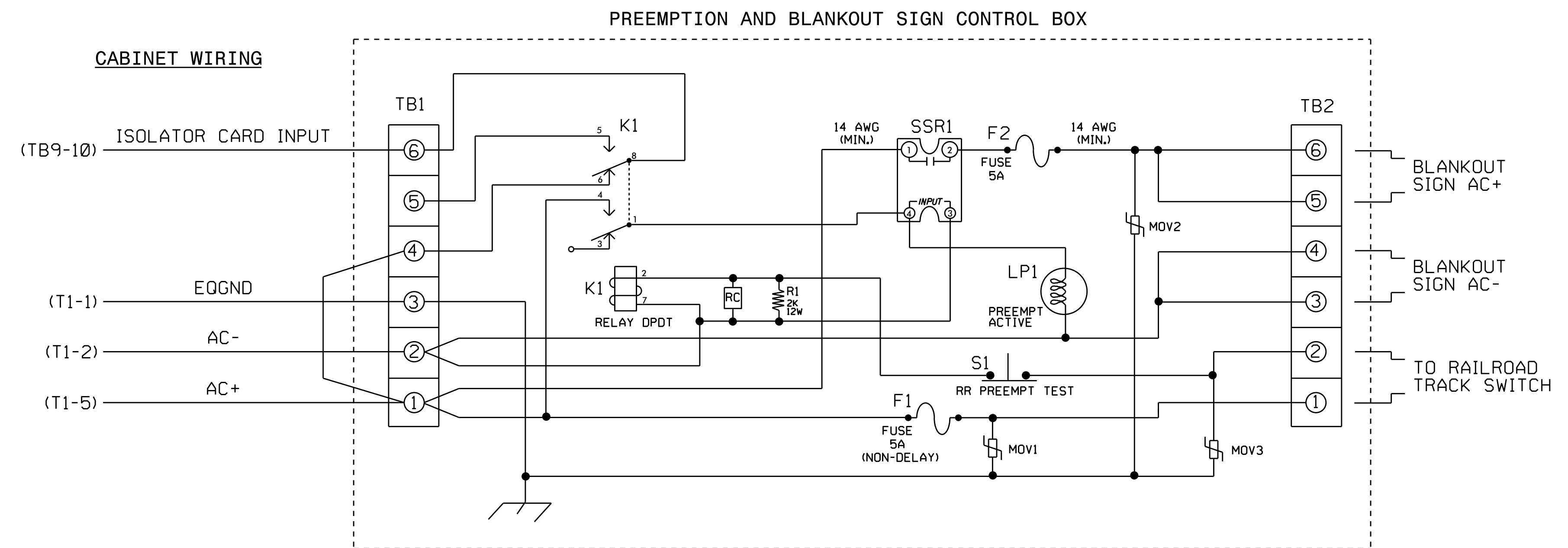
Place cursor in [] next to Preempt Plan and press 1. Then press the right cursor arrow and toggle the controller to YES. Next cursor down. This will select Railroad Preempt #1.

PREEMPT PLAN [1]	ENABLE....YES
VEH/PED 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6	
OVERLAP A B C D E F G H I J K L M N O P	
TRKCLR V . . . X . . . X	
TRKCLR O . . . F1	
ENA TRL	
DWEL VEH	
DWEL PED	
DWEL OLP	
CYC VEH . X X . . X	
CYC PED . X . . . X	
CYC OLP F1F1	
EXIT PH . . X . . . X	
EXIT CAL	
SP FUNC	

ENABLE... YES	IPMT	OVERRIDE	X	INTERLOCK	NO
DET LOCK... X	DELAY..	O	INHIBIT... 0		
OVERIDE FL. .	DURATION	O	ICLR-GRN... NO		
TERM OLP. NO	IPC>YEL	YES	TERM PH NO		
PED DARK.. NO	ITC RESRV	YES	DWELL FL OFF		
LINK PMT...O	IX FLCOLR	RED	EXIT OPT. OFF		
X TMG PLN...O	IRE-SERV..	O	FLT TYPE.HARD		
FREE DUR PMT	IR1 NOIR2	NOIR3	NOIR4 NO		
--TIMING----	WALKIPED	CLIMN	GRI YELI RED		
ENTRANCE TM.	11	31	1125.5	125.5	
-----MIN	GRIEXT	GRIMX	GRI YELI RED		
TRACK CLEAR	241	0.01	0125.5	125.5	
-----MIN	DLIPMTEXT	IMX TMI	YELI RED		
DWL/CYC-EXIT	71	0.01	0125.5	125.5	
PMT ACTIVE OUT..	ON	PMT ACT	DWELL...NO		
OTHER - PRI	PMT.OFF	NON-PRI	PMT....OFF		
INH EXT TIME... 0.0	PED PR	RETURN...OFF			
PRIORITY RETURN.OFF	QUEUE	DELAY.... OFF			
COND DELAY.....OFF					
PHASES	1 2 3 4 5 6 7 8				
PR RTN%	0 0 0 0 0 0 0 0				
PHASES	9 10 11 12 13 14 15 16				
PR RTN%	0 0 0 0 0 0 0 0				

RAILROAD PREEMPTION WIRING DETAIL

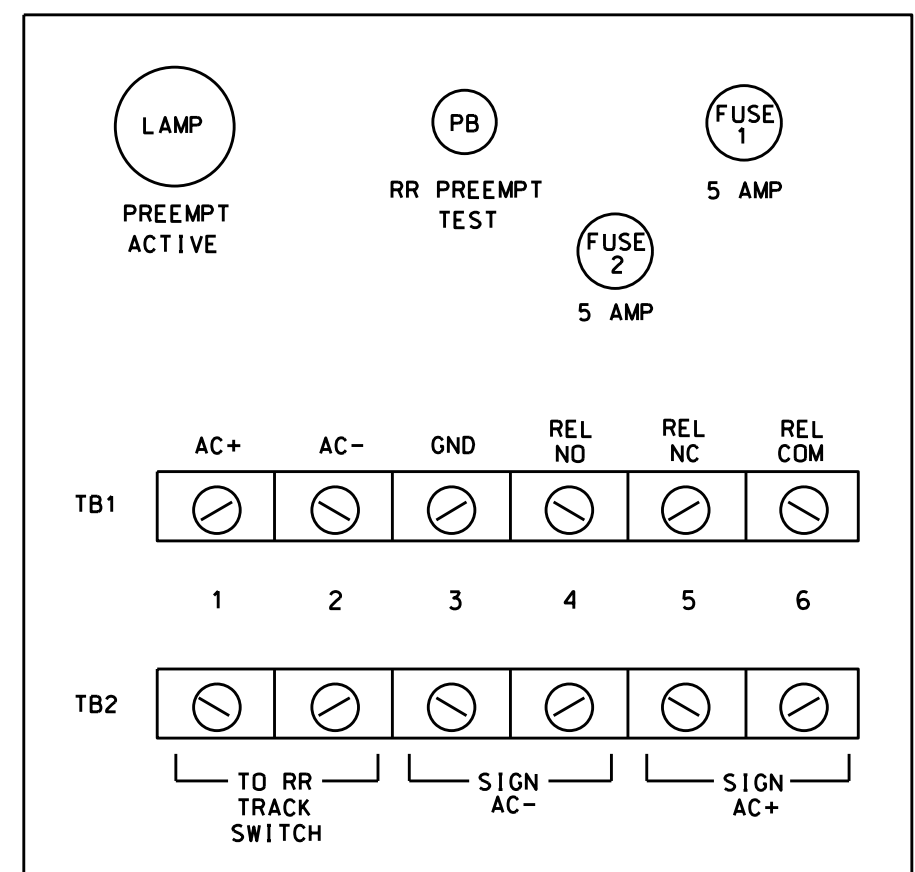
(wire as shown below)



NOTES

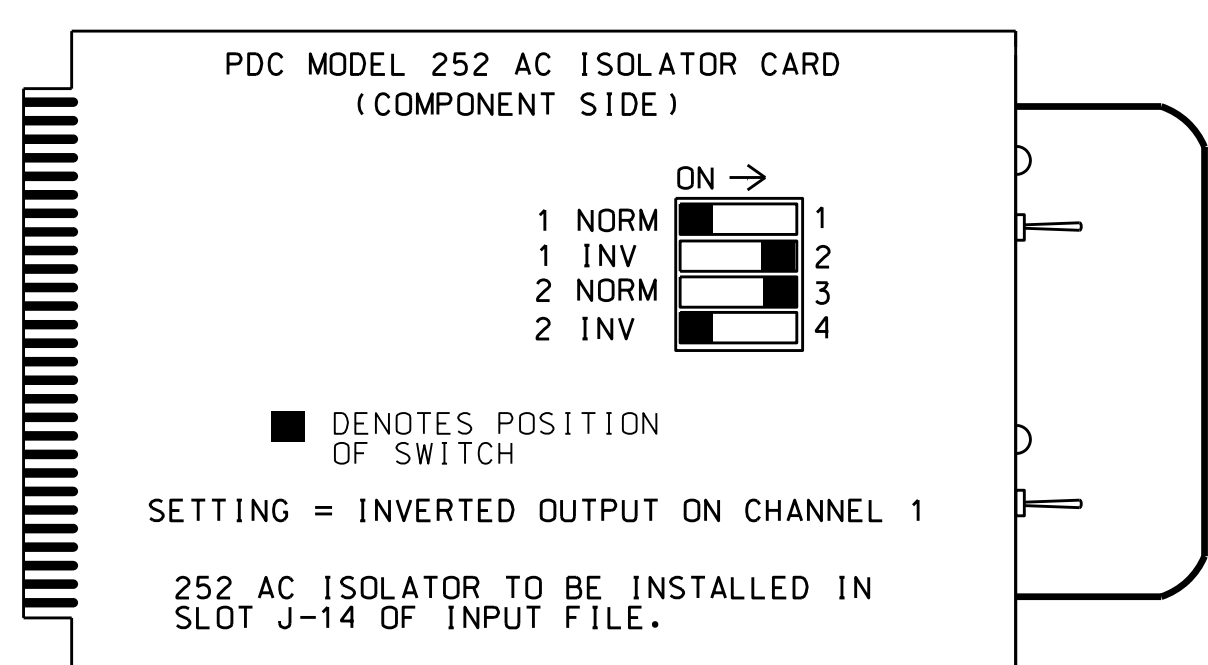
- Relay K1 is shown in the energized (Preempt not active) normal operation state.
- Relay K1 is a DPDT with 120VAC coil with octal base.
- Relay SSR1 is a SPST (normally open) Solid State Relay with AC input and AC (25 amp) output.
- AC Isolator Card shall activate preemption upon removal of AC+ from the input (as shown above). To accomplish this set invert dip switch on AC Isolator Card as shown on the detail on this sheet.
- IMPORTANT!!** A jumper must be added between input file terminals J14-E and J14-K if not already present. Also, terminal TB9-12 (on input panel) shall be connected to AC neutral (jumper may have to be added).

FRONT VIEW



PREEMPT 1 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL

(set DIP switches as shown below)



NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0004
DESIGNED: November 2021
SEALED: 11/16/2021
REVISED: N/A

Electrical Detail - Sheet 3 of 3

<p>Prepared In the Offices of:</p> <p>750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>SR 1598 (Dickinson Avenue) at SR 1701 (Hooker Rd)/ SR 1709 (Moye Boulevard)</p>	<p>REVISIONS</p> <p>No electrical changes. (WSA)</p>	<p>DATE</p> <p>11/17/21</p>
	<p>Division 2 Pitt County Greenville</p> <p>PLAN DATE: February 2018 REVIEWED BY:</p> <p>PREPARED BY: S. Armstrong REVIEWED BY:</p>	<p>SEAL</p> <p>Not a certified document as to the Original Document but only as to the Revisions - This document originally issued and sealed by Keith M. Mims, #036880, on 2/26/2018. This document is only certified as to the revisions.</p>	<p>DATE</p> <p>11/17/21</p>

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION SEAL

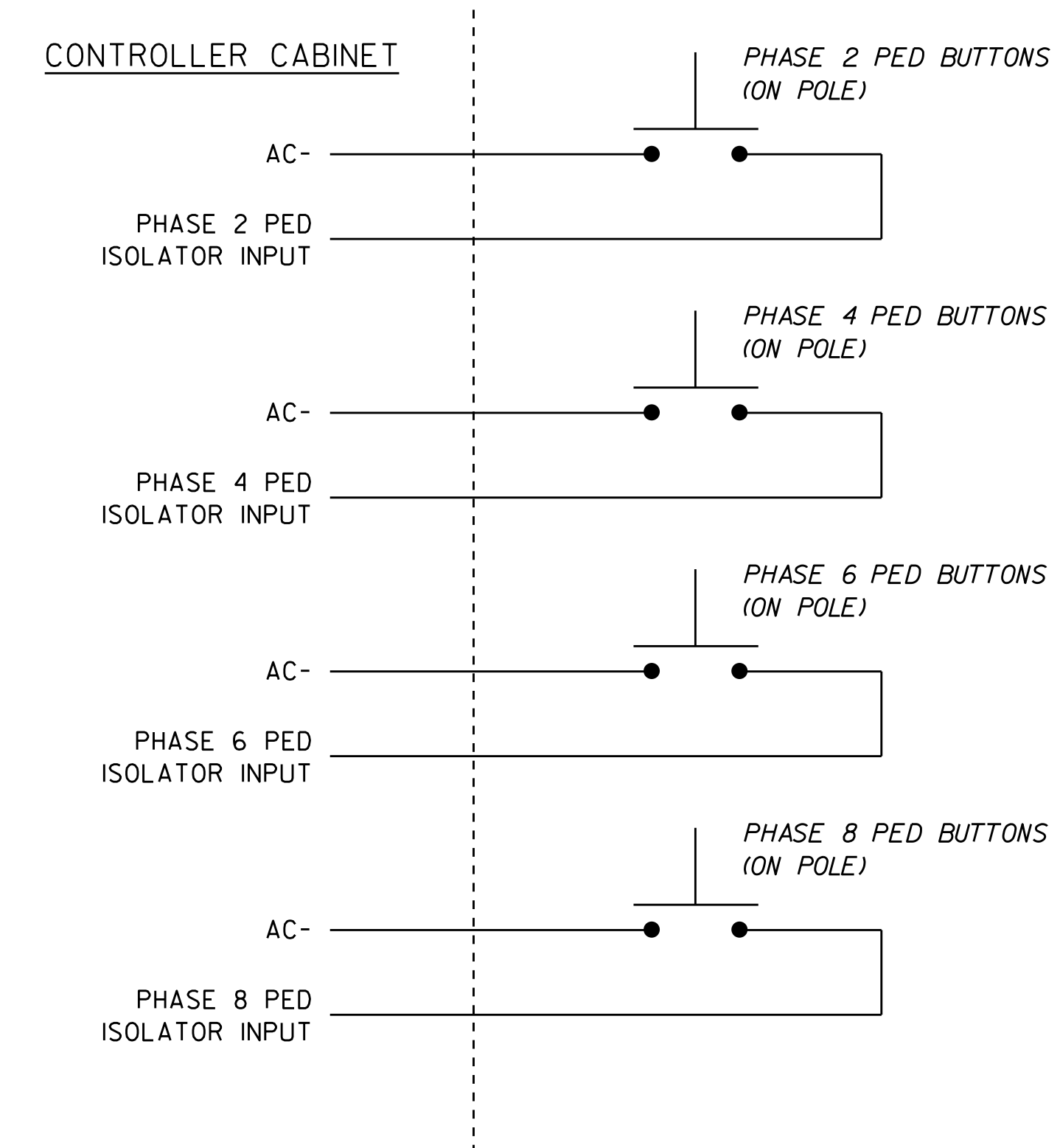
SEAL 036833

RYAN W. HOUGH

11/17/2021

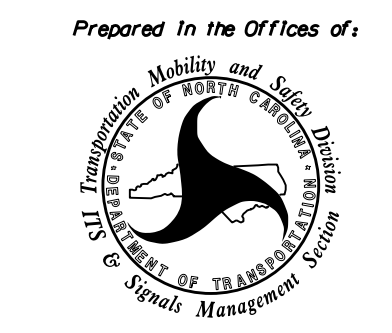
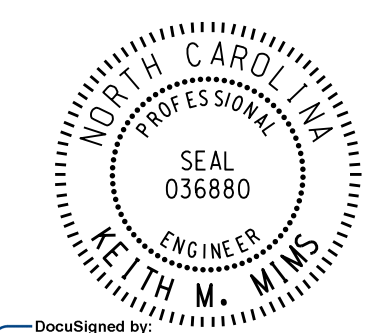
PEDESTRIAN PUSHBUTTON WIRING DETAIL

(wire pushbuttons as shown below)

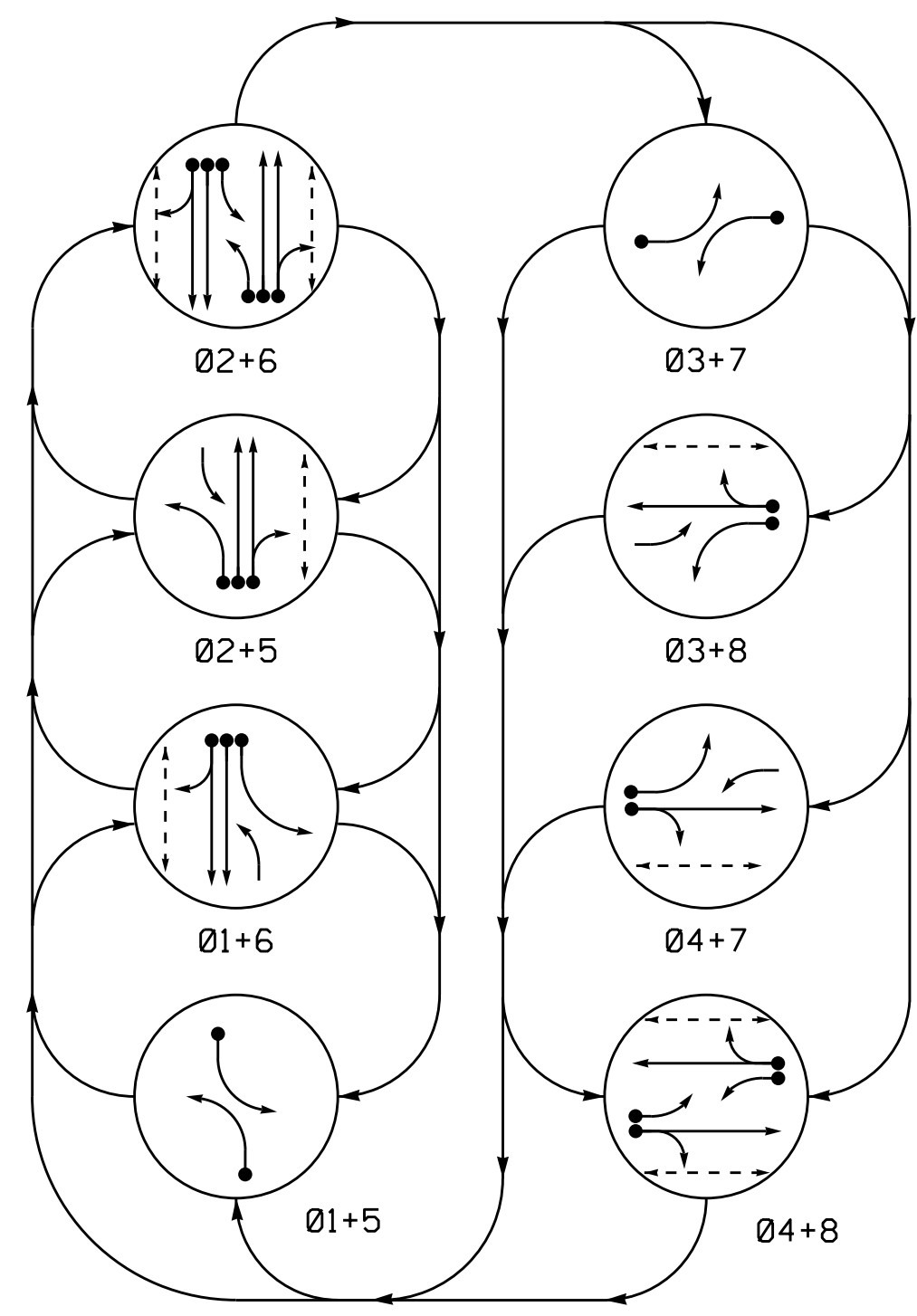


THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 02-0006T1
 DESIGNED: January 2018
 SEALED: 2/19/2018
 REVISED: N/A

20-SEP-2018 13:37
 C:\PITS\SIG\T\S\Sig\01\work\groups\Sig_MonHr\mstronp020006.sm.ele.xxx.dgn
 sarmstrong

Electrical Detail - Sheet 2 of 2		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED												
ELECTRICAL AND PROGRAMMING DETAILS FOR:		SEAL												
Prepared In the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529														
SR 1703 (West 14th Street) at SR 1598 (Dickinson Avenue)		ENGINEER KEITH M. MINS												
Division 2 PLAN DATE: February 2018 PREPARED BY: S. Armstrong	Pitt County Greenville REVIEWED BY: REVIEWED BY:	DocuSigned by: Keith M. Mins 2/26/2018 2F8079E8E6CD3445												
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REVISIONS	INIT.	DATE												
SIG. INVENTORY NO. 02-0006T1		DATE												

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

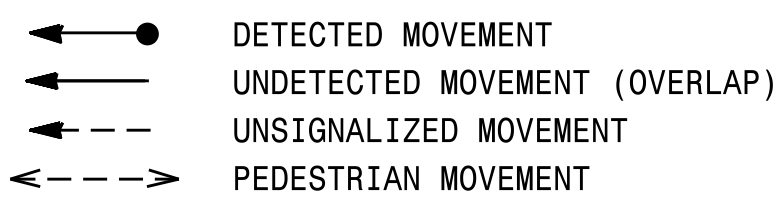
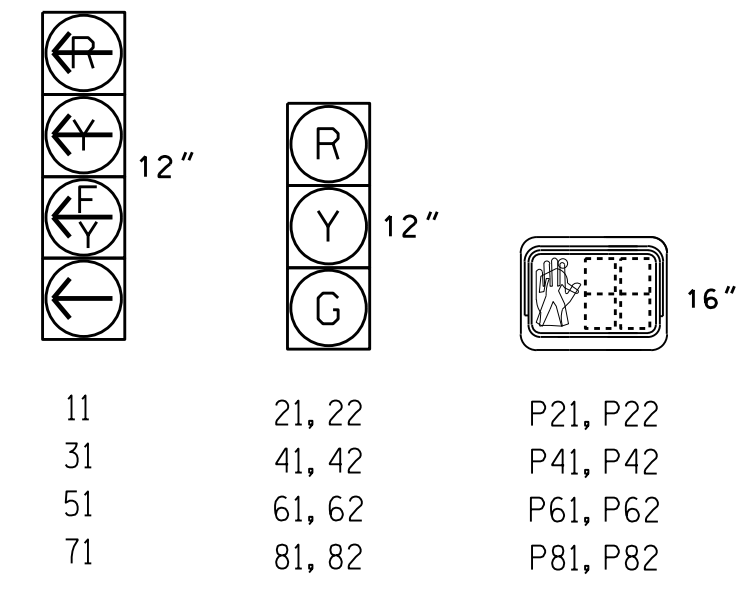


TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8
11	←	←	←	←	←	←	←	←
21,22	R	R	G	G	R	R	R	Y
31	←	←	←	←	←	←	←	←
41,42	R	R	R	R	R	R	G	R
51	←	←	←	←	←	←	←	←
61,62	R	G	R	G	R	R	R	Y
71	←	←	←	←	←	←	←	←
81,82	R	R	R	R	R	G	R	G
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	DW	DW	W	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	DW	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



ASC/3 DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	LOOP SYSTEM	NEW CARD
1A	6X40	0	*	-	1	Yes	-	15	-	S	-	X
					6	Yes	-	3	-	S	-	X
2A	6X6	70	*	-	2	Yes	-	-	-	S	-	X
2B	6X6	70	*	-	2	Yes	-	-	-	S	-	X
3A	6X40	0	*	-	3	Yes	-	15	-	S	-	X
					8	Yes	-	3	-	S	-	X
4A	6X40	0	*	-	4	Yes	-	10	-	S	-	X
5A	6X40	0	*	-	5	Yes	-	15	-	S	-	X
					2	Yes	-	3	-	S	-	X
6A	6X6	70	*	-	6	Yes	-	-	-	S	-	X
6B	6X6	70	*	-	6	Yes	-	-	-	S	-	X
7A	6X40	0	*	-	7	Yes	-	15	-	S	-	X
					4	Yes	-	3	-	S	-	X
8A	6X40	0	*	-	8	Yes	-	10	-	S	-	X

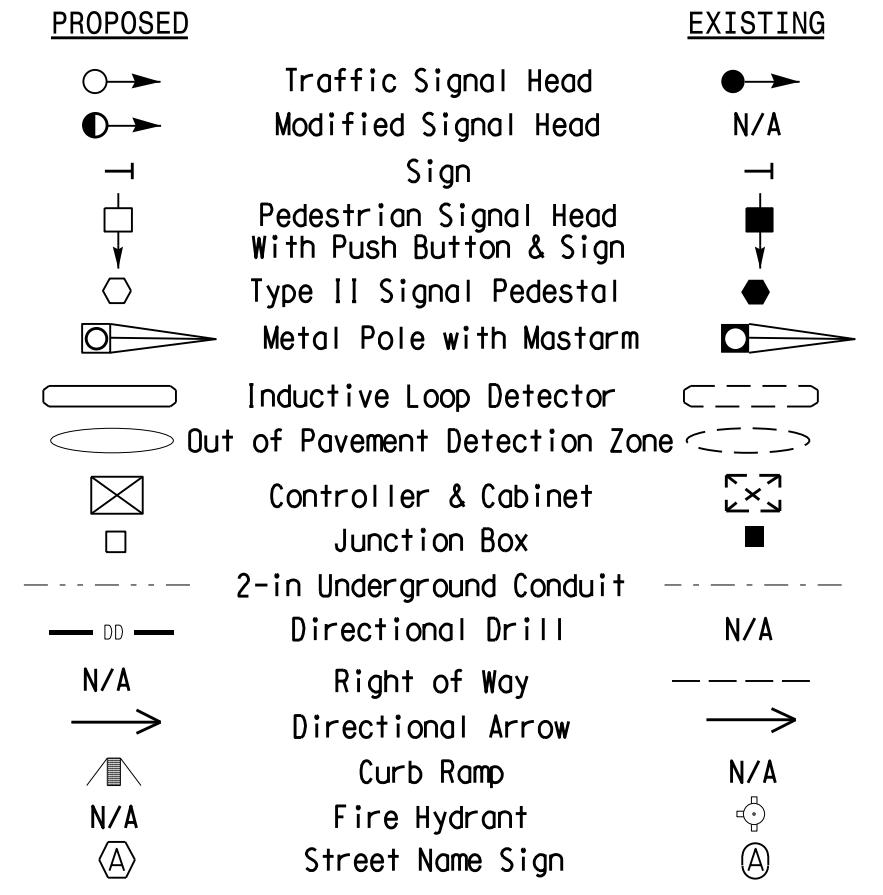
* Multizone Microwave Detection

8 Phase Fully Actuated Greenville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 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.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

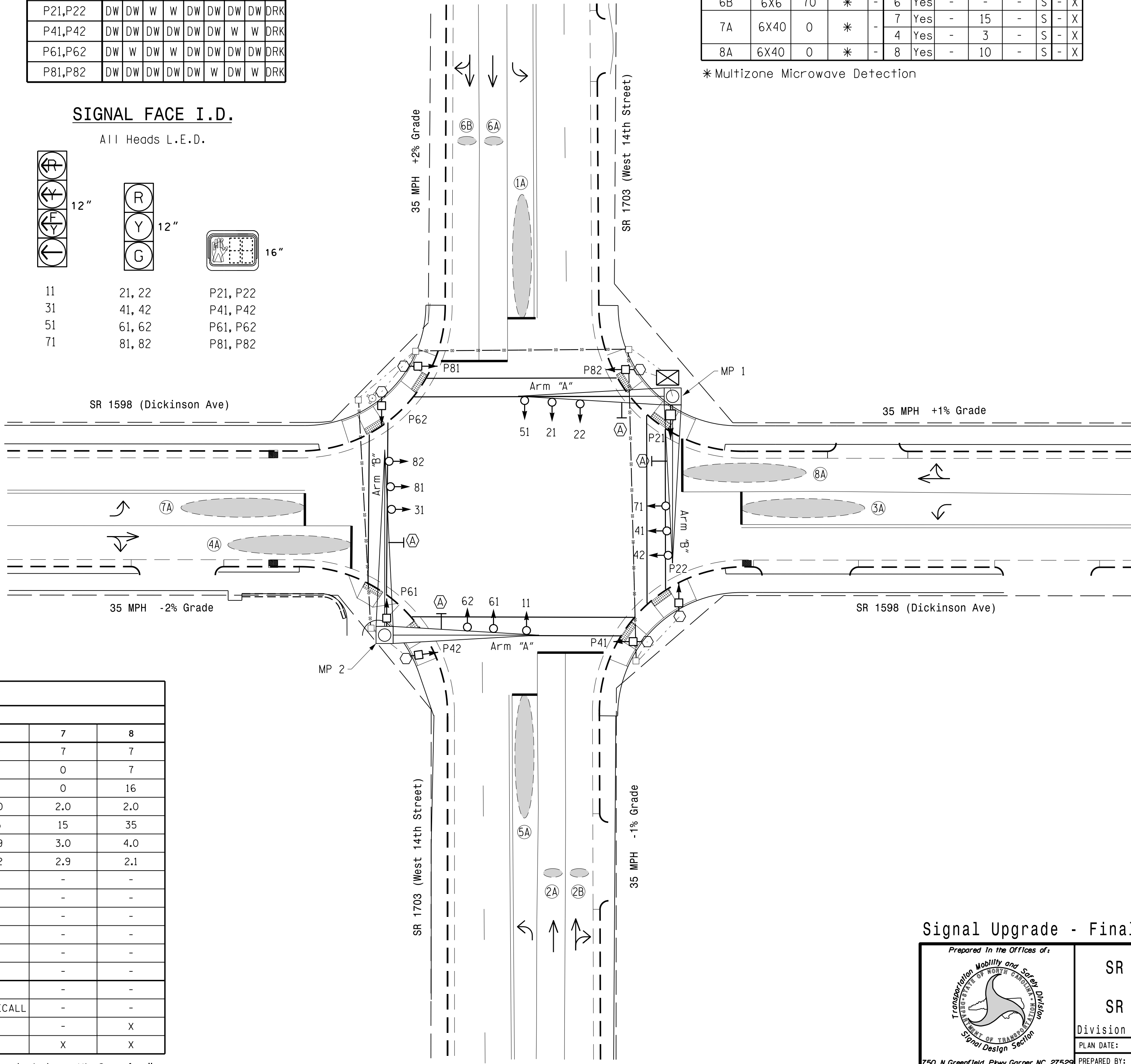
LEGEND



ASC/3 TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green *	7	10	7	7	7	10	7	7
Walk *	0	7	0	7	0	7	0	7
Ped Clear	0	13	0	15	0	12	0	16
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max I *	15	45	15	35	15	45	15	35
Yellow	3.0	3.9	3.0	4.0	3.0	3.9	3.0	4.0
Red Clear	2.9	2.2	3.1	2.1	2.9	2.2	2.9	2.1
Actuations B4 Add *	-	-	-	-	-	-	-	-
Seconds / Actuation *	-	-	-	-	-	-	-	-
Max Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL	-	-
Dual Entry	-	-	-	X	-	-	-	X
Simultaneous Gap	X	X	X	X	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.



Signal Upgrade - Final

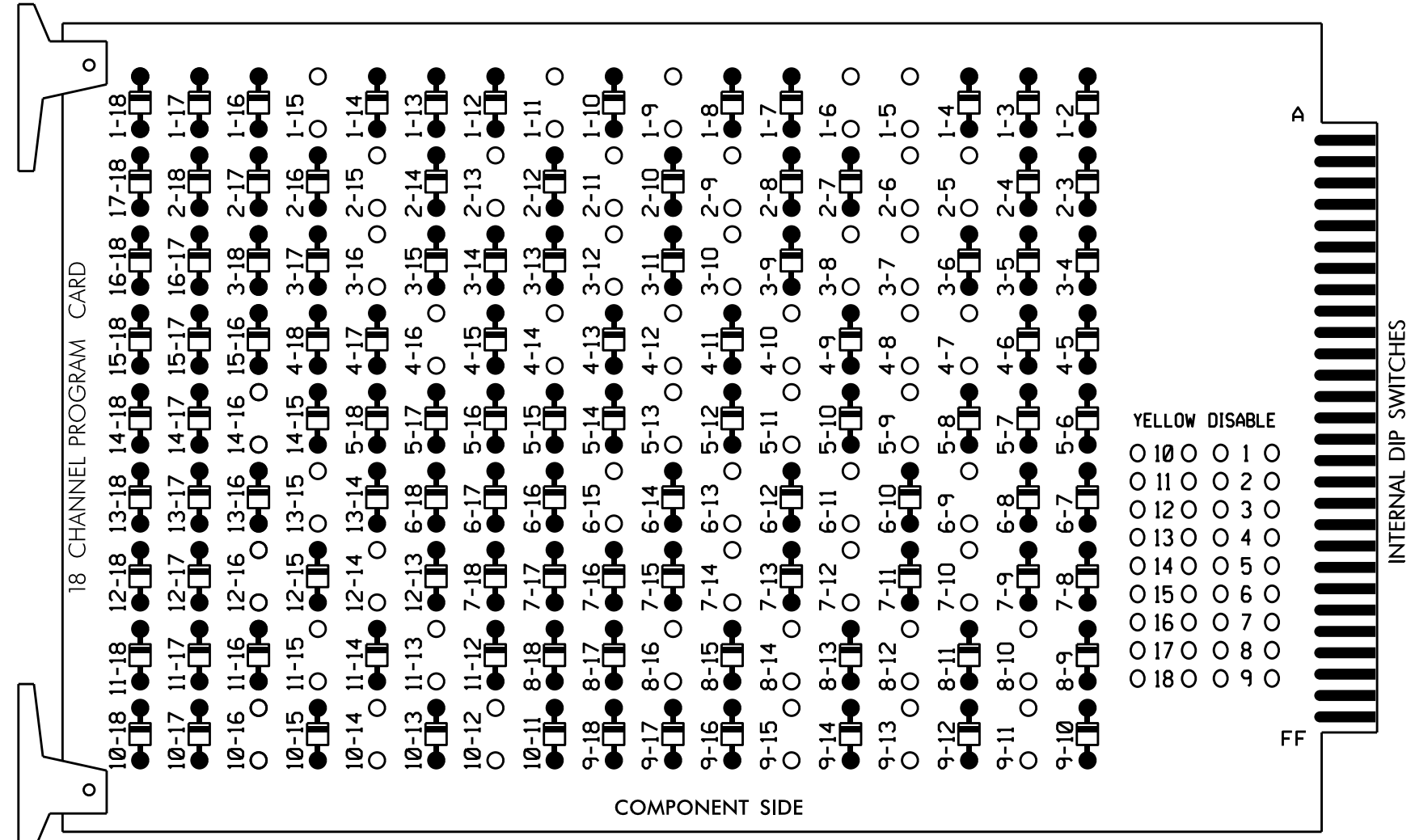
Prepared In the Offices of:

SR 1703 (West 14th Street) at SR 1598 (Dickinson Avenue)
 Division 2 Pitt County Greenville
 PLAN DATE: November 2021 REVIEWED BY: MEL
 PREPARED BY: @mm REVIEWED BY:
 REVISIONS: INIT. DATE
 SCALE: 1"=20'
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
 SEAL
 DocuSigned by: *Meaghan E. LeBlanc* 11/16/2021
 SIG. INVENTORY NO. 02-0006

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

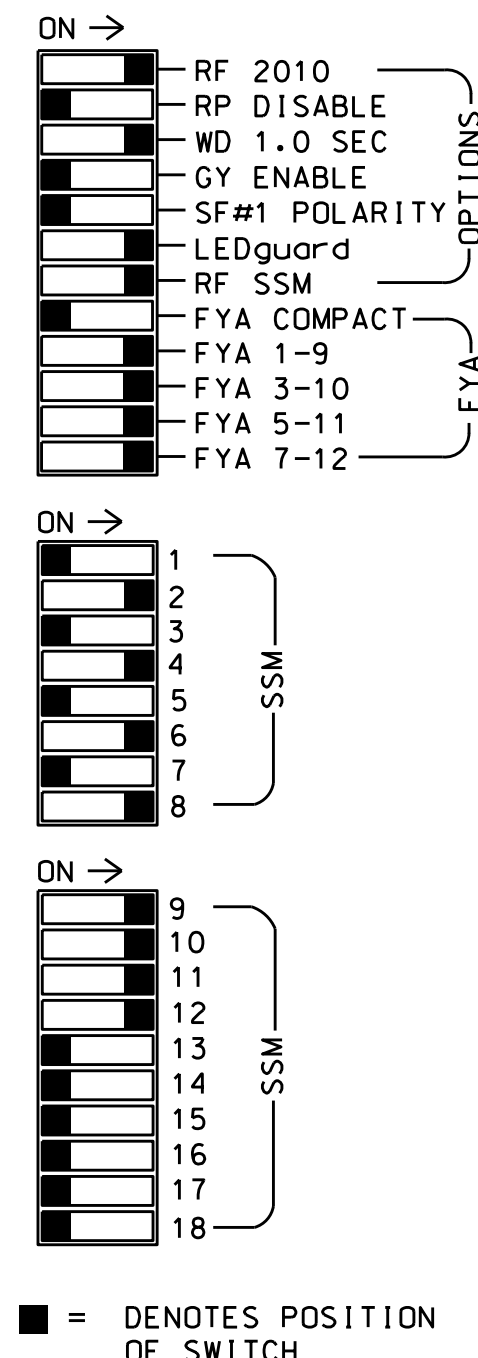
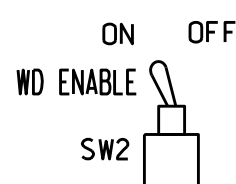
REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 3-7, 3-8, 3-10, 3-12, 3-16, 4-7, 4-8, 4-10, 4-12, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 7-10, 7-12, 7-14, 8-10, 8-12, 8-14, 8-16, 9-11, 9-13, 9-15, 10-12, 10-14, 10-16, 11-13, 11-15, 12-14, 12-16, 13-15, and 14-16.



REMOVE JUMPERS AS SHOWN

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.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



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.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Walk and 6 Walk.
- The cabinet and controller are part of the Greenville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332 W/AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,
 S12,AUX S1,AUX S2,AUX S4,AUX S5
 PHASES USED.....1,2,2PED,3,4,4PED,5,6,6PED,7,8,8PED
 OVERLAP "A".....*
 OVERLAP "B".....*
 OVERLAP "C".....*
 OVERLAP "D".....*
 * See overlap programming detail on 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.	11	21,22	P21, P22	31	41,42	P41, P42	51	61,62	P61, P62	71	81,82	P81, P82	11	31	NU	51	71	NU
RED	128			101				134			107							
YELLOW	*	129		* 102			*	135		*	108							
GREEN	130			103				136			109							
RED ARROW													A121	A124		A114	A101	
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW	127			118				133			124							
Hand icon			113			104				119				110				
Person icon			115			106				121				112				

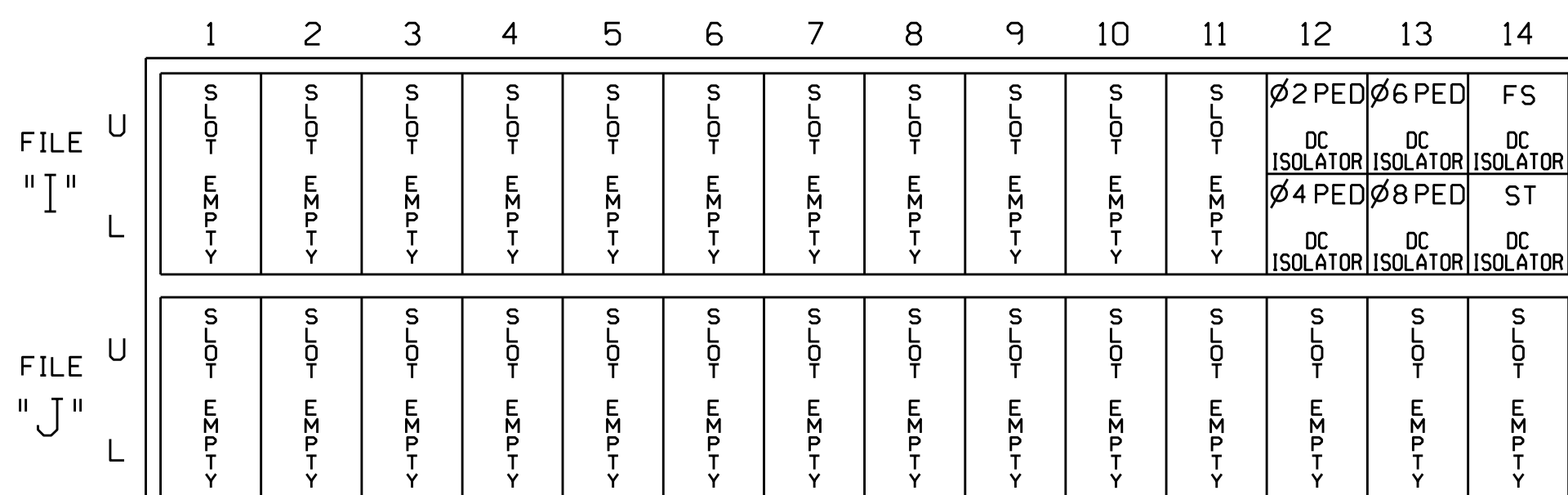
NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

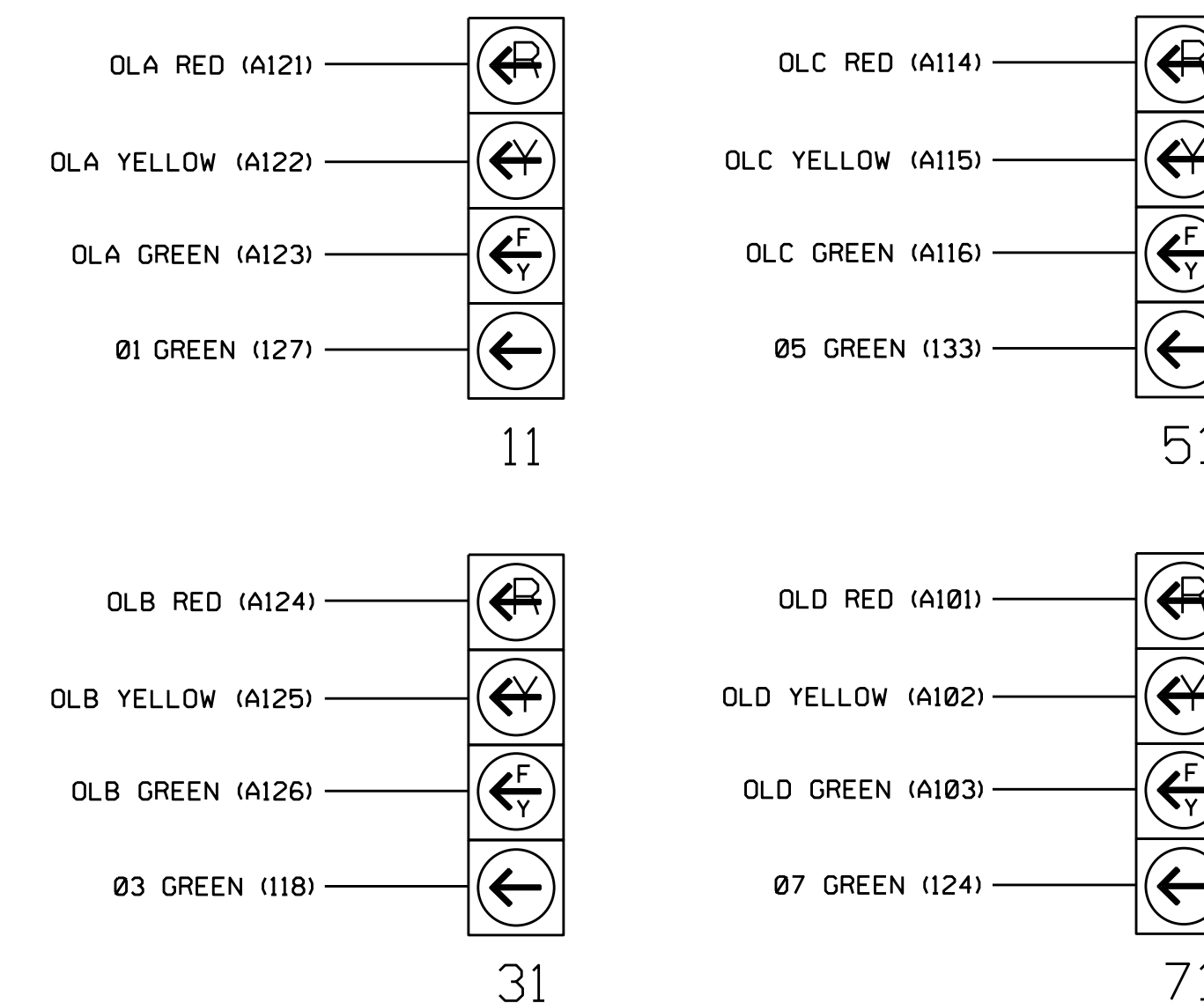
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
PED PUSH BUTTONS										
P21,P22	T88-4,6	I12U	67	PED 2	2 PED					
P41,P42	T88-5,6	I12L	69	PED 4	4 PED					
P61,P62	T88-7,9	I13U	68	PED 6	6 PED					
P81,P82	T88-8,9	I13L	70	PED 8	8 PED					

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

INPUT FILE POSITION LEGEND: J2L
 FILE J
 SLOT 2
 LOWER

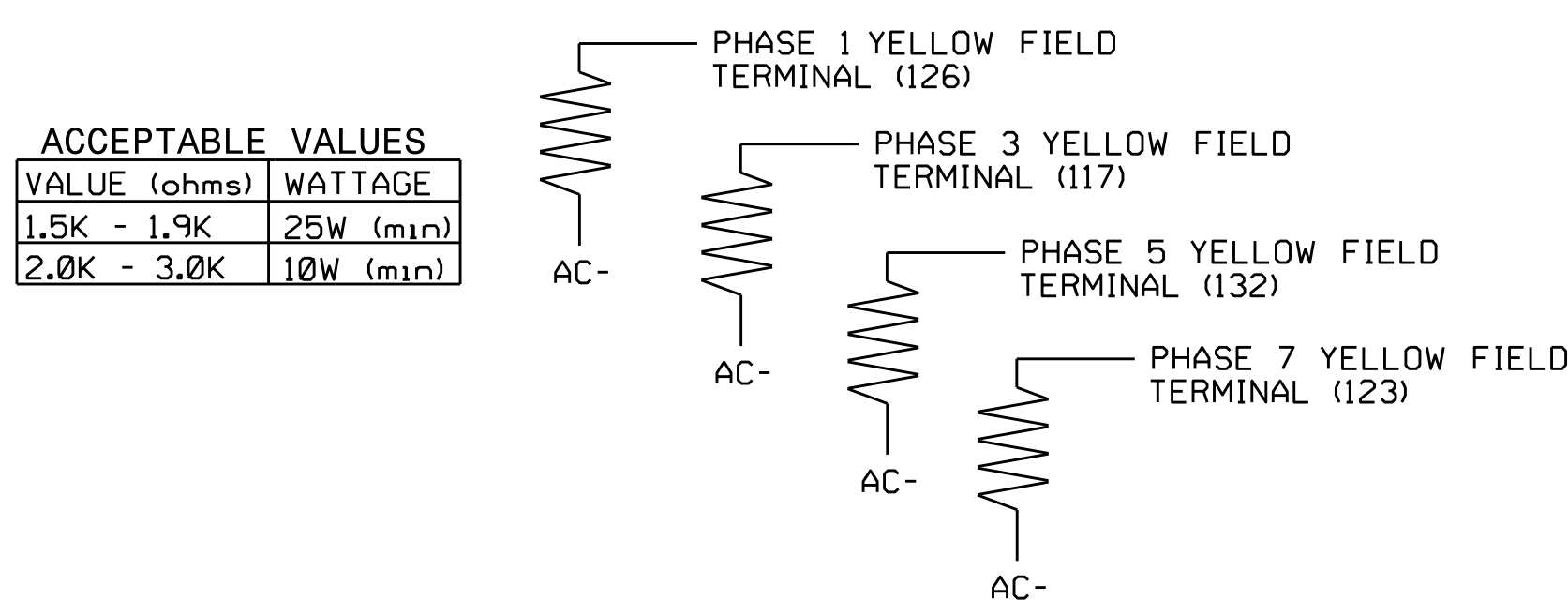
FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)

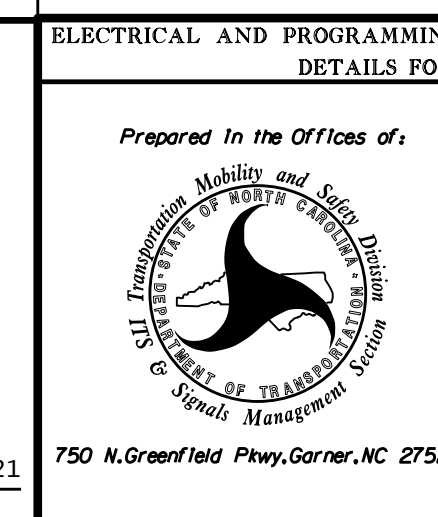
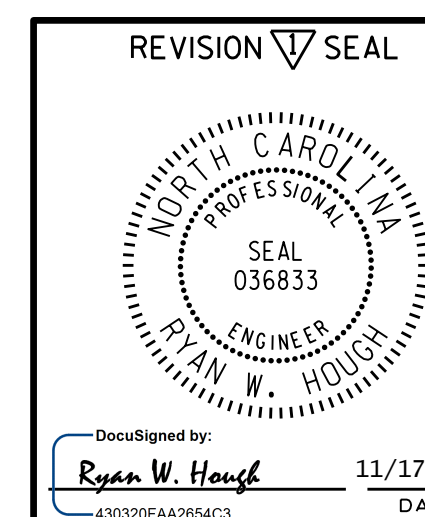


VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)

SPECIAL DETECTOR NOTE

Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0006
 DESIGNED: November 2021
 SEALED: 11/16/2021
 REVISED: N/A



Electrical Detail - Sheet 1 of 2

SR 1703 (West 14th Street) at SR 1598 (Dickinson Avenue)

Division 2 Pitt County Greenville

PLAN DATE: February 2018 REVIEWED BY:

PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS: No electrical changes. (WSA)

DATE: 11/17/21

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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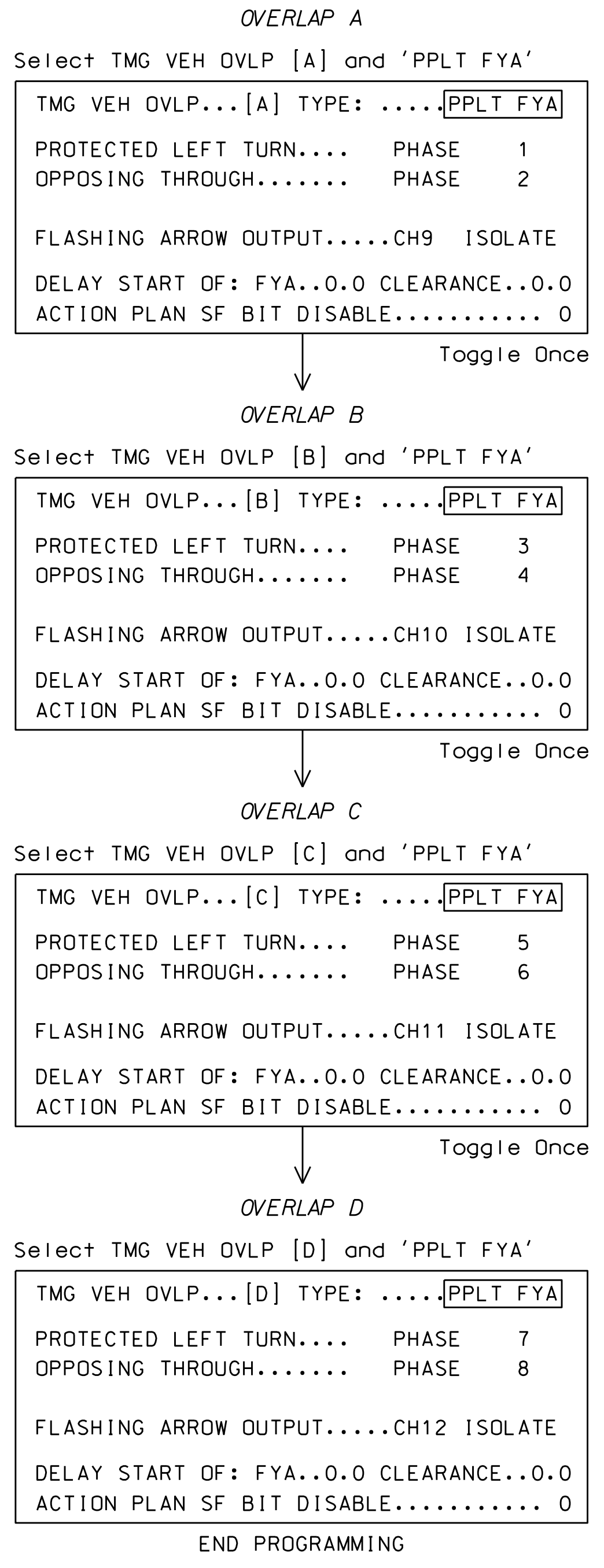
SIG. INVENTORY NO. 02-0006

11/17/2021 11:51 S:\MIS\AS\115\Sig\02\work\hough\51g_MonPrj\Projects\02-0003_0004_0006_0010_U-5606_d1v_projects\02-0006*020006_sml.ele_xxx.dgn sarmstrong

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



FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO ENSURE 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.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

▽ THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0006
 DESIGNED: November 2021
 SEALED: 11/16/2021
 REVISED: N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISION ▽ SEAL

NORTH CAROLINA
PROFESSIONAL
SEAL
036833
ENGINEER
RYAN W. HOUGH

Documented by: Ryan W. Hough 11/17/2021
DATE

Electrical Detail - Sheet 2 of 2

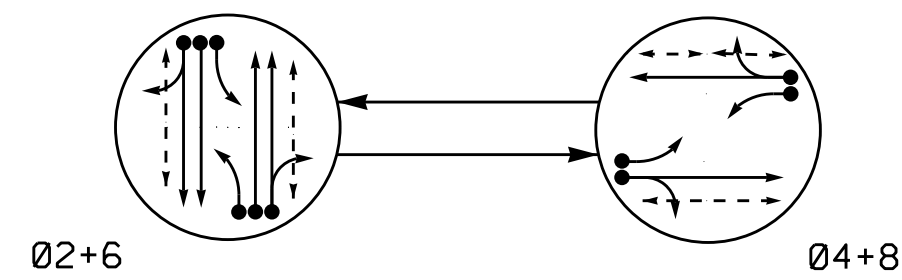
ELECTRICAL AND PROGRAMMING DETAILS FOR:	SR 1703 (West 14th Street) at SR 1598 (Dickinson Avenue)
Prepared In the Offices of:	Division 2 Pitt County Greenville
PLAN DATE: February 2018	REVIEWED BY:
PREPARED BY: S. Armstrong	REVIEWED BY:
REVISIONS	DATE
▽ No electrical changes. (WSA)	RW 11/17/21

750 N. Greenfield Pkwy, Garner, NC 27529

SIG. INVENTORY NO. 02-0006

17-0006-2021 11-152
4/20/2016 sem ete.wmk.dgm
sarmstr.dwg

PHASING DIAGRAM



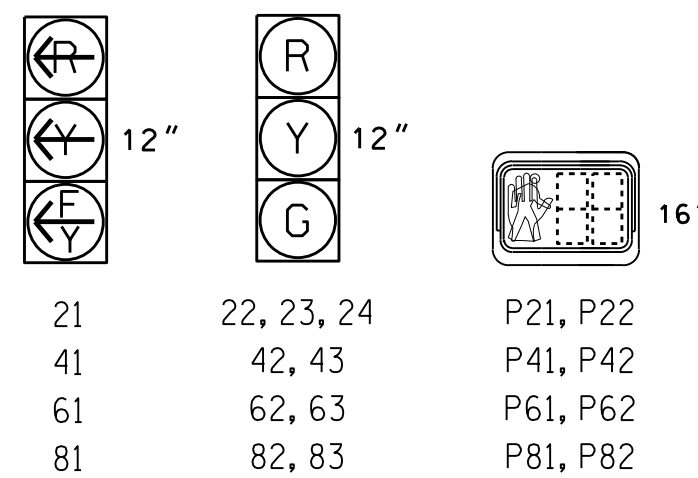
PHASING DIAGRAM DETECTION LEGEND
 ● ← DETECTED MOVEMENT
 ○ ← UNDETECTED MOVEMENT (OVERLAP)
 - - - UNSIGNALIZED MOVEMENT
 - - - PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE		
	02+6	04+8	F
21	F	R	Y
22,23,24	G	R	Y
41	R	F	R
42,43	R	G	R
61	F	R	Y
62,63	G	R	Y
81	R	F	R
82,83	R	G	R
P21,P22	W	DW	DRK
P41,P42	DW	W	DRK
P61,P62	W	DW	DRK
P81,P82	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



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	6X40	0	*	X	2	Yes	-	-	-	S	-	X
2B	6X6	70	*	X	2	Yes	-	-	-	S	-	X
2C	6X6	70	*	X	2	Yes	-	-	-	S	-	X
4A	6X40	0	*	X	4	Yes	-	3	-	S	-	X
4B	6X40	0	*	X	4	Yes	-	15	-	S	-	X
6A	6X40	0	*	X	6	Yes	-	-	-	S	-	X
6B	6X6	70	*	X	6	Yes	-	-	-	S	-	X
6C	6X6	70	*	X	6	Yes	-	-	-	S	-	X
8A	6X40	0	*	X	8	Yes	-	3	-	S	-	X
8B	6X40	0	*	X	8	Yes	-	15	-	S	-	X
S1	6X6	+230	*	X	-	Yes	-	-	-	N	X	X
S2	6X6	+230	*	X	-	Yes	-	-	-	N	X	X
S3	6X6	270	*	X	-	Yes	-	-	-	N	X	X

* Multizone Microwave Detection

2 Phase Fully Actuated Greenville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Reposition existing signal heads as shown.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Local telemetry address number 1.

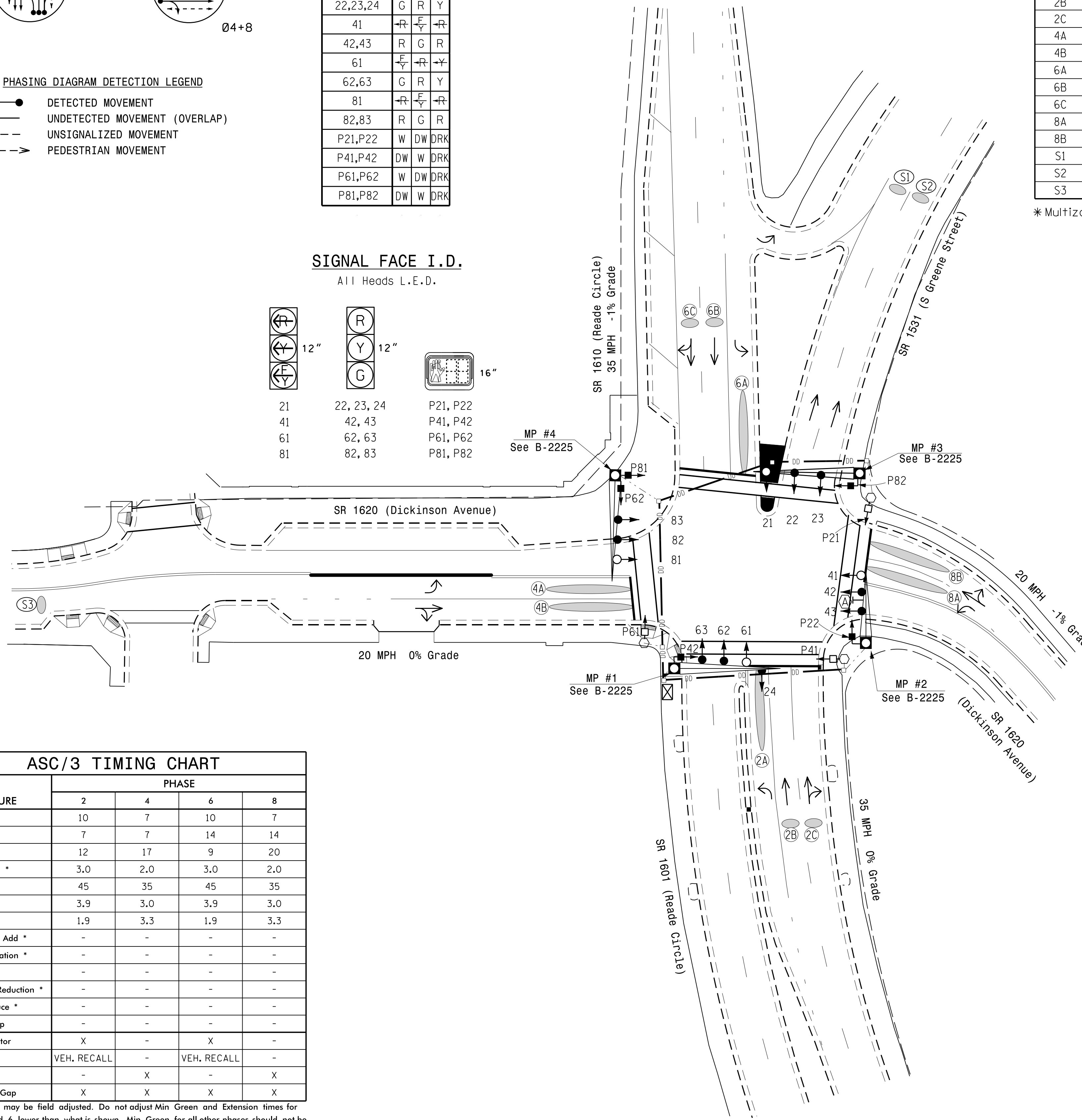
LEGEND

PROPOSED	EXISTING
○ → Traffic Signal Head	● → Traffic Signal Head
○ → Modified Signal Head	N/A
□ → Sign	□ → Sign
□ → Pedestrian Signal Head With Push Button & Sign	□ → Pedestrian Signal Head With Push Button & Sign
○ → Type II Signal Pedestal	○ → Type II Signal Pedestal
○ → Metal Pole with Mastarm	○ → Metal Pole with Mastarm
○ → Inductive Loop Detector	○ → Inductive Loop Detector
○ → Out of Pavement Detection Zone	○ → Out of Pavement Detection Zone
□ → Controller & Cabinet Junction Box	□ → Controller & Cabinet Junction Box
○ → 2-in Underground Conduit	○ → 2-in Underground Conduit
— DD — Directional Drill	N/A
N/A → Right of Way	N/A
N/A → Directional Arrow	N/A
N/A → Fire Hydrant	N/A
N/A → Curb Ramp	N/A
⊙ → Combined Through and Right Arrow Sign (R3-6R)	⊙ → Combined Through and Right Arrow Sign (R3-6R)

ASC/3 TIMING CHART

FEATURE	PHASE			
	2	4	6	8
Min Green *	10	7	10	7
Walk *	7	7	14	14
Ped Clear	12	17	9	20
Veh. Extension *	3.0	2.0	3.0	2.0
Max I *	45	35	45	35
Yellow	3.9	3.0	3.9	3.0
Red Clear	1.9	3.3	1.9	3.3
Actions B4 Add *	-	-	-	-
Seconds / Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	X	-	X	-
Recall Position	VEH. RECALL	-	VEH. RECALL	-
Dual Entry	-	X	-	X
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.



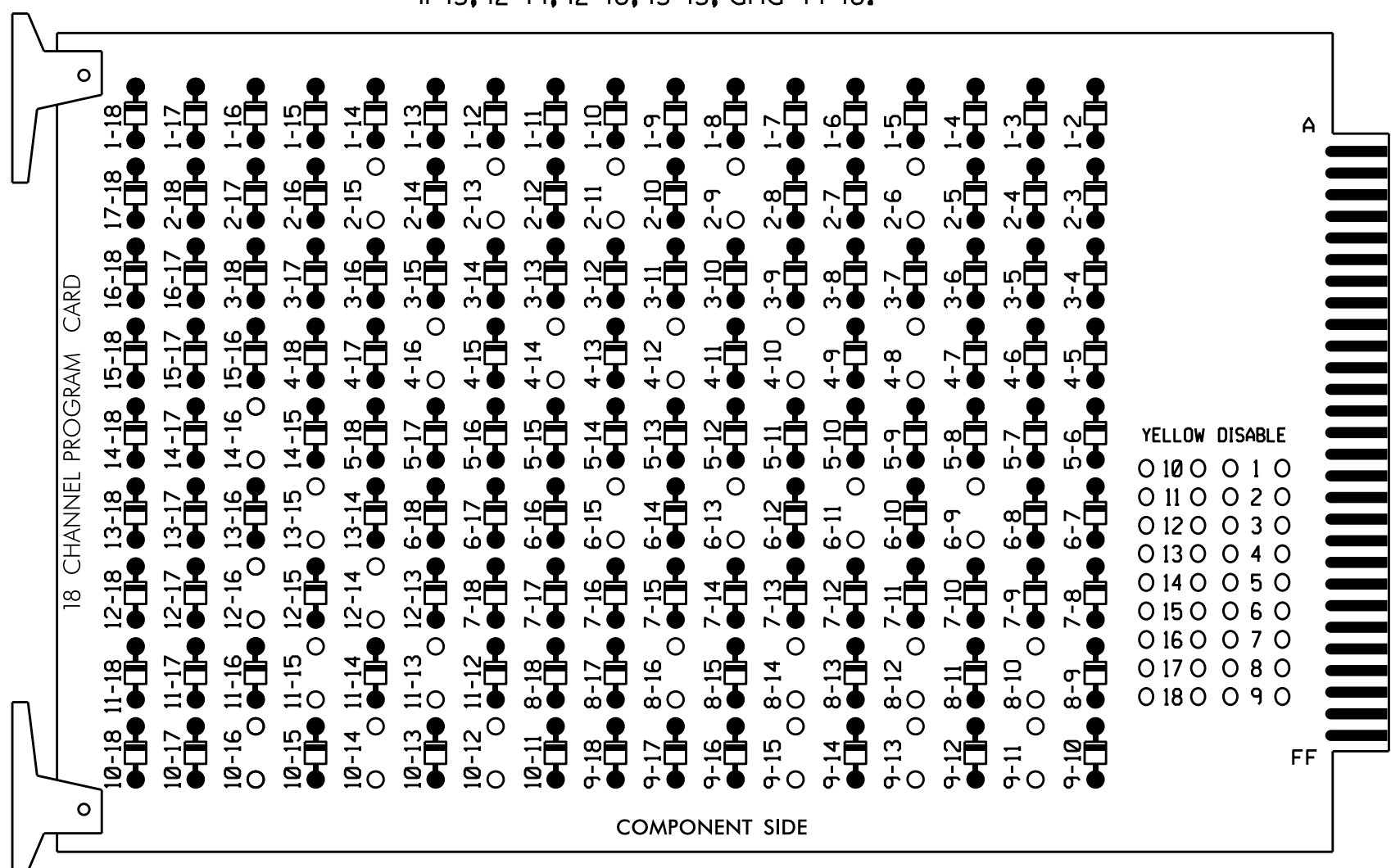
Signal Upgrade - Final

	SR 1610 (Reade Circle)/ SR 1531 (Greene Street) at SR 1620 (Dickinson Avenue)	SEAL STATE OF NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042608 M. GAYNE, E., LEED, AEC
	Division 2 Pitt County Greenville PLAN DATE: November 2021 REVIEWED BY: MEL PREPARED BY: BMM REVIEWED BY:	
750 N. Greenfield Pkwy, Garner, NC 27529 SCALE 0 30 1" = 30'	REVISIONS INIT. DATE	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED 11/16/2021 DATE SIG. INVENTORY NO. 02-0010

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

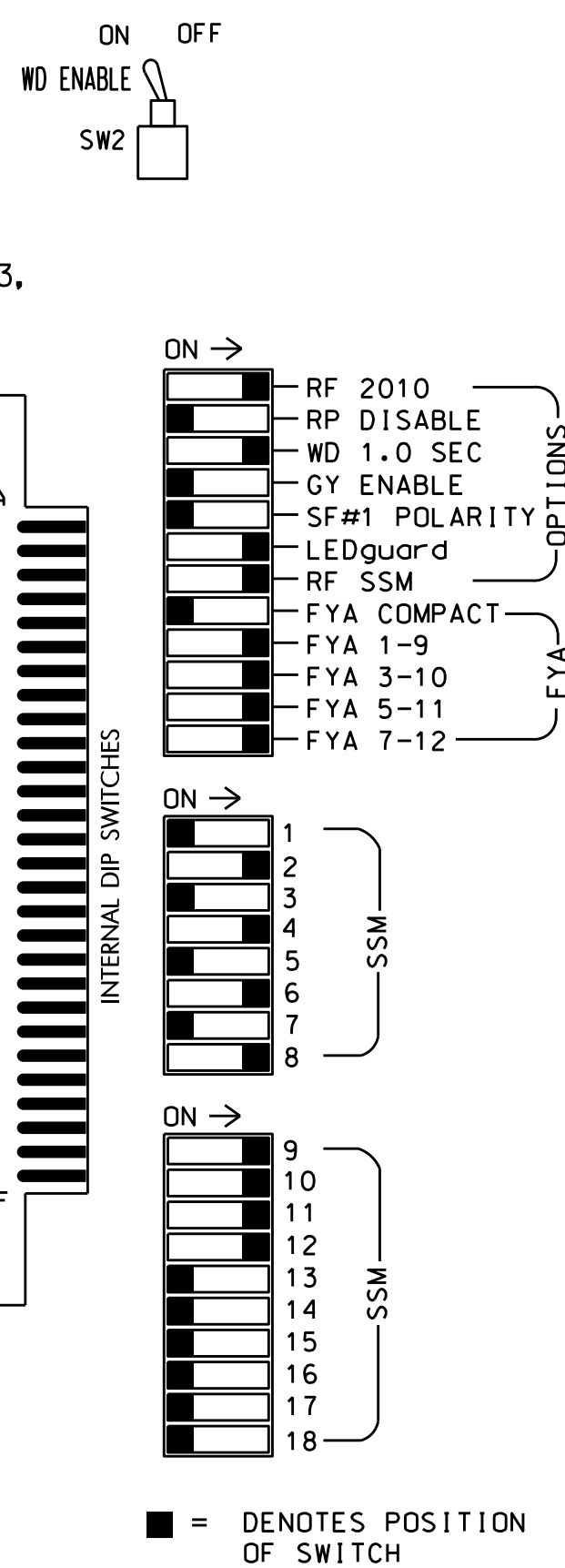
REMOVE DIODE JUMPERS 2-6, 2-9, 2-11, 2-13, 2-15, 4-8, 4-10, 4-12, 4-14, 4-16, 6-9, 6-11, 6-13, 6-15, 8-10, 8-12, 8-14, 8-16, 9-11, 9-13, 9-15, 10-12, 10-14, 10-16, 11-13, 11-15, 12-14, 12-16, 13-15, and 14-16.



REMOVE JUMPERS AS SHOWN

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.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



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.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Walk and 6 Walk.
- If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- The cabinet and controller are part of the Greenville Closed Loop System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332 W/AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S2,S3,S5,S6,S8,S9,S11,S12,
 AUX S1,AUX S2,AUX S4,AUX S5
 PHASES USED.....2,2PED,4,4PED,6,6PED,8,8PED
 OVERLAP "A".....*
 OVERLAP "B".....*
 OVERLAP "C".....*
 OVERLAP "D".....*
 * See overlap programming detail on 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	22,23 24	P21, P22	NU	42,43	P41, P42	NU	62,63	P61, P62	NU	82,83	P81, P82	61	81	NU	21	41	NU
RED		128			101				134			107						
YELLOW		129			102				135			108						
GREEN		130			103				136			109						
RED ARROW													A121	A124		A114	A101	
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW																		
Hand icon			113			104			119			110						
Person icon			115			106			121			112						

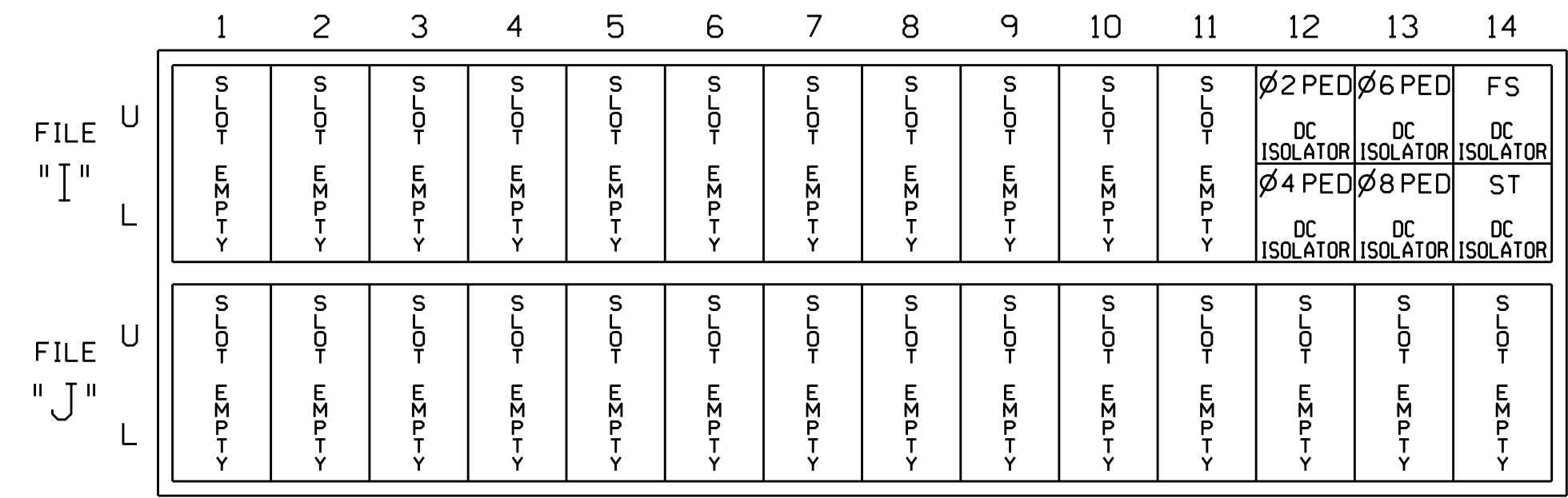
NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(front view)



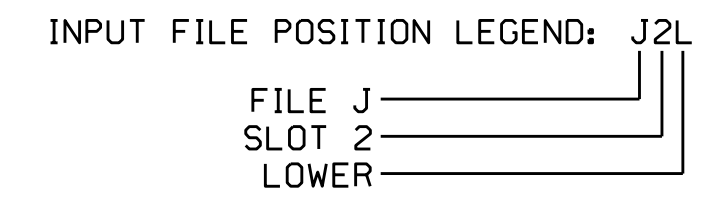
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

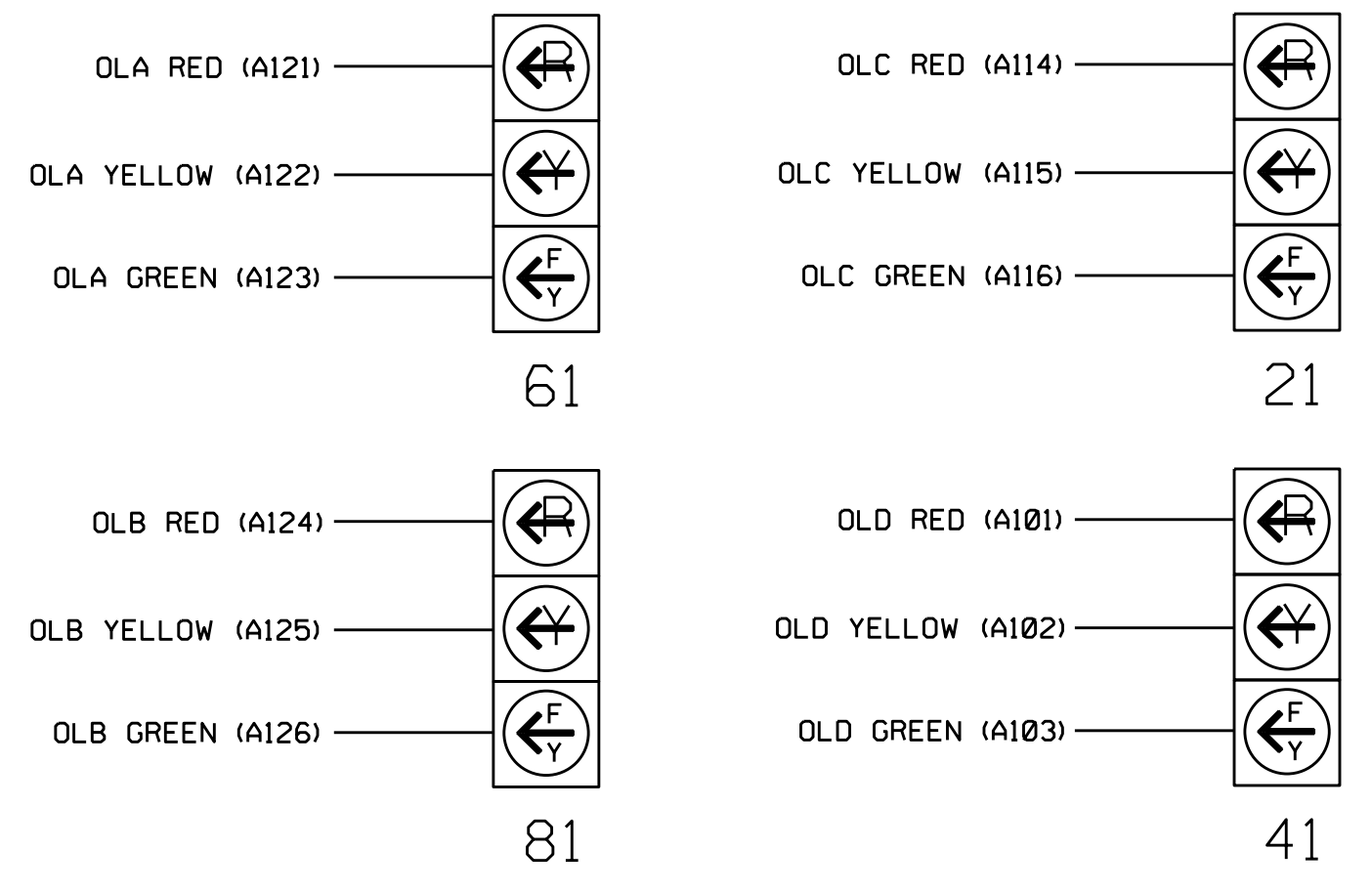
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
PED PUSH BUTTONS										
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED					
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	PED 8	8 PED					

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



SPECIAL DETECTOR NOTE

Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0010
 DESIGNED: November 2021
 SEALED: 11/16/2021
 REVISED: N/A

Electrical Detail - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared In the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	SR 1610 (Reade Circle)/ SR 1531 (Greene Street) at SR 1620 (Dickinson Avenue)	SEAL PROFESSIONAL ENGINEER RYAN W. HOUGH 036833
	Division 2 Pitt County Greenville PLAN DATE: October 2018 REVIEWED BY: PREPARED BY: S. Armstrong REVIEWED BY: REVISIONS INIT. DATE No electrical changes. (N/A)	DocuSigned by: Ryan W. Hough 10/17/2018 DATE

17-0010-2021 10:10
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 Signal Management Solutions, Inc.

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL
 (program controller as shown)

- From Main Menu select **2. CONTROLLER**
- From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**

OVERLAP A

Select TMG VEH OVLP [A] and 'OTHER/ECONOLITE'

TMG VEH OVLP...[A] TYPE:OTHER/ECONOLITE
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . X
PROTECT
PED PRTC
NOT OVLP
FLSH GRN . 1
LAG X PH
LAG 2 PH
LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0

Toggle Once

OVERLAP B

Select TMG VEH OVLP [B] and 'OTHER/ECONOLITE'

TMG VEH OVLP...[B] TYPE:OTHER/ECONOLITE
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . X
PROTECT
PED PRTC
NOT OVLP
FLSH GRN . . . 1
LAG X PH
LAG 2 PH
LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0

Toggle Once

OVERLAP C

Select TMG VEH OVLP [C] and 'OTHER/ECONOLITE'

TMG VEH OVLP...[C] TYPE:OTHER/ECONOLITE
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED X
PROTECT
PED PRTC
NOT OVLP
FLSH GRN 1
LAG X PH
LAG 2 PH
LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0

Toggle Once

OVERLAP D

Select TMG VEH OVLP [D] and 'OTHER/ECONOLITE'

TMG VEH OVLP...[D] TYPE:OTHER/ECONOLITE
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED X
PROTECT
PED PRTC
NOT OVLP
FLSH GRN 1
LAG X PH
LAG 2 PH
LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0

END PROGRAMMING

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO ENSURE 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.

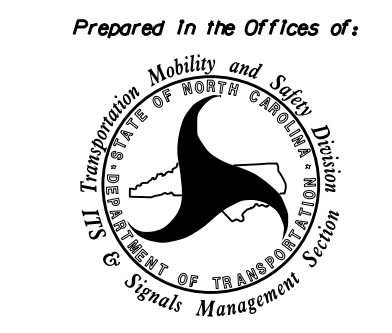
THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

▽ THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0010
 DESIGNED: November 2021
 SEALED: 11/16/2021
 REVISED: N/A

Electrical Detail - Sheet 2 of 2

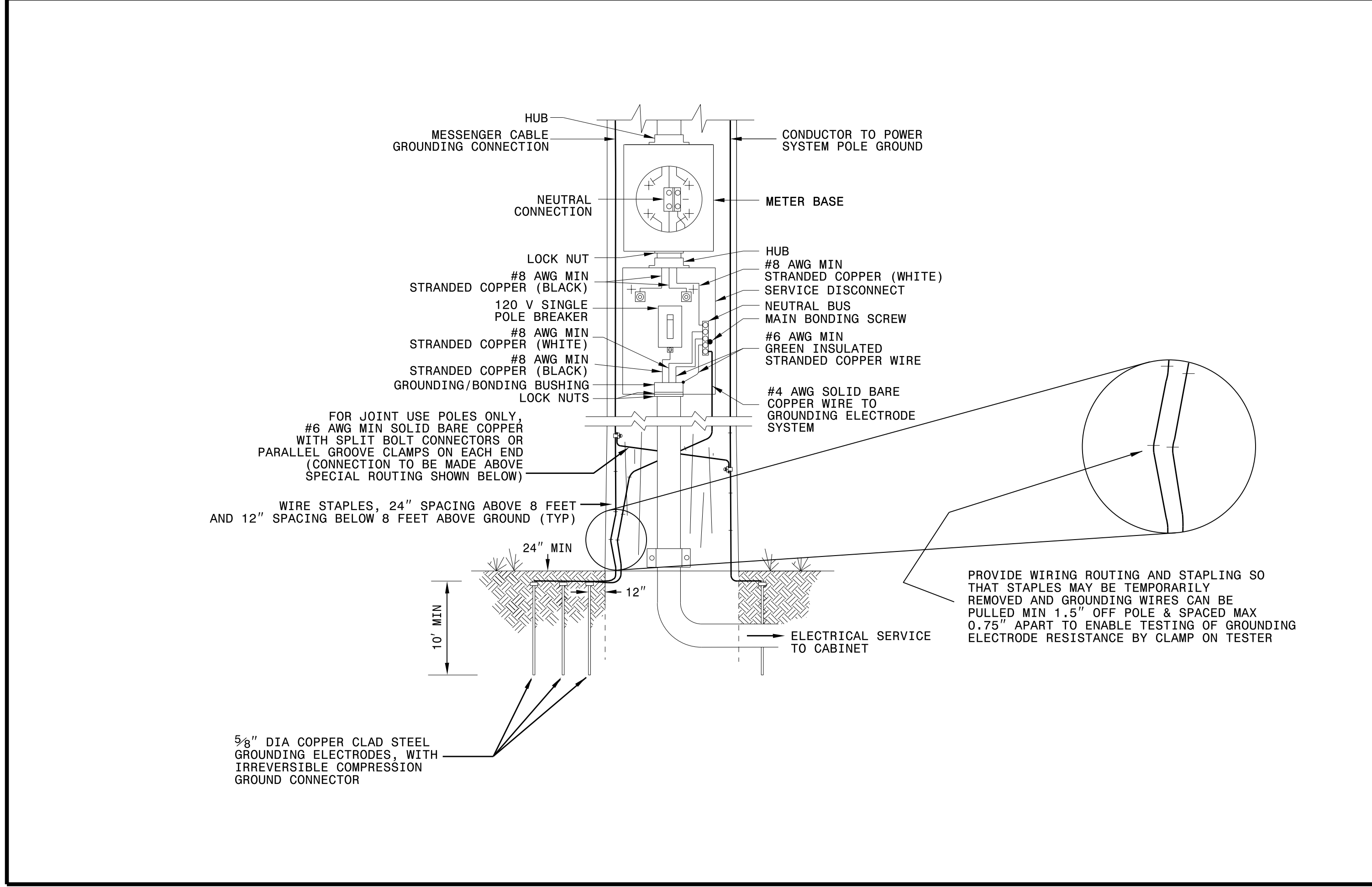
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	Division 2 PLAN DATE: October 2018 PREPARED BY: S. Armstrong	Pitt County Greenville REVIEWED BY: REVIEWED BY:
INIT. DATE		DocuSigned by: Ryan W. Hough 430320FAA2654C3 DATE: 10/17/2018
SIG. INVENTORY NO. 02-0010		DATE

17-0000-2070_12x11
 4/20/2010 Sem. et. c. xxx.dgn
 sarmstr.dwg

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

ENGLISH STANDARD DRAWING FOR
ELECTRICAL SERVICE GROUNDING
GROUNDING AND BONDING

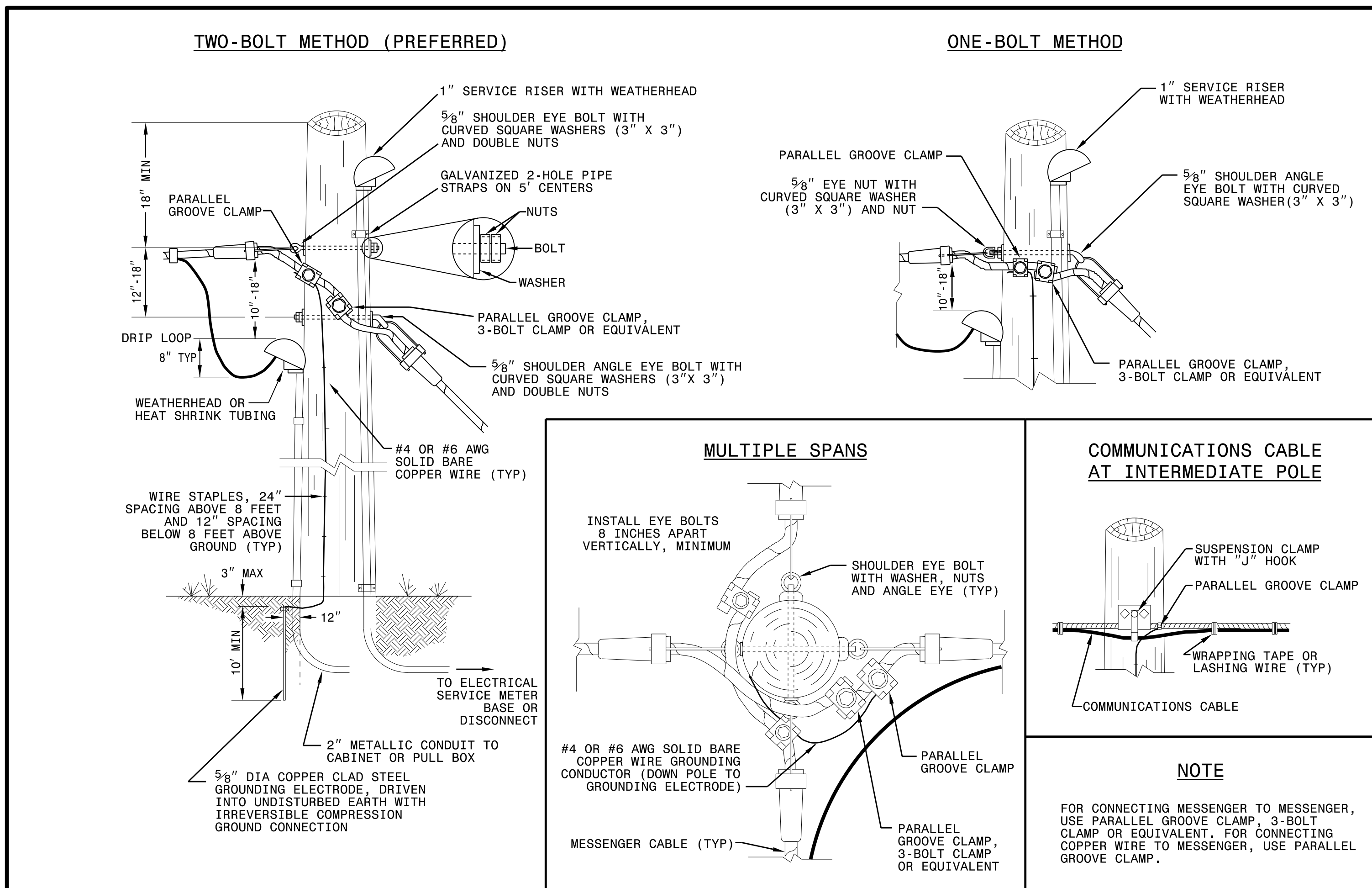
SHEET 1 OF 1
1700D01



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

ENGLISH STANDARD DRAWING FOR
WOOD POLES
METHODS OF ATTACHMENT AND GROUNDING

SHEET 1 OF 1
1720D01

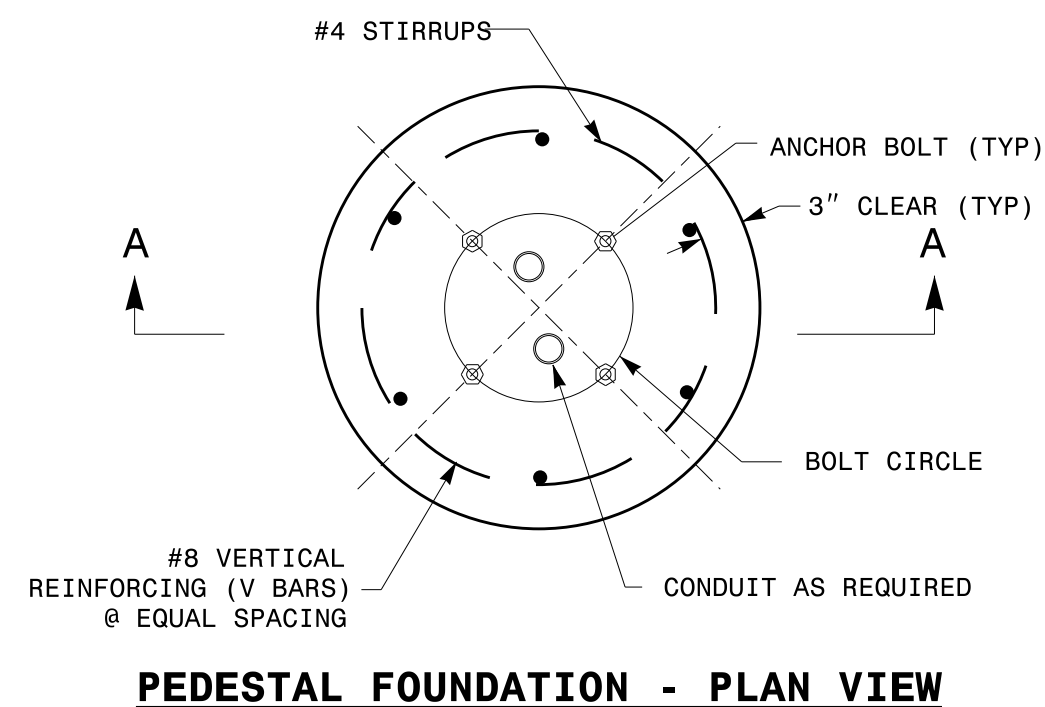


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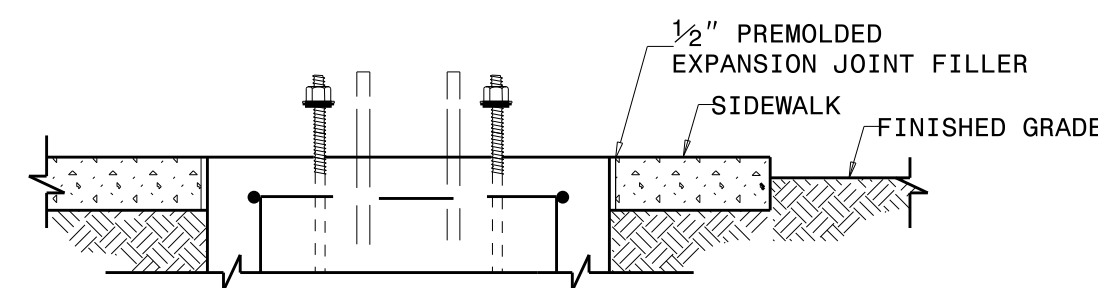
See Plate for Title

<p>Prepared in the Offices of:</p> <p>750 N. Greenfield Parkway Garner, NC 27529</p>	<p>SEAL</p> <p>DocuSigned by: Mohd Aslami</p> <p>10/11/2017 DATE</p>
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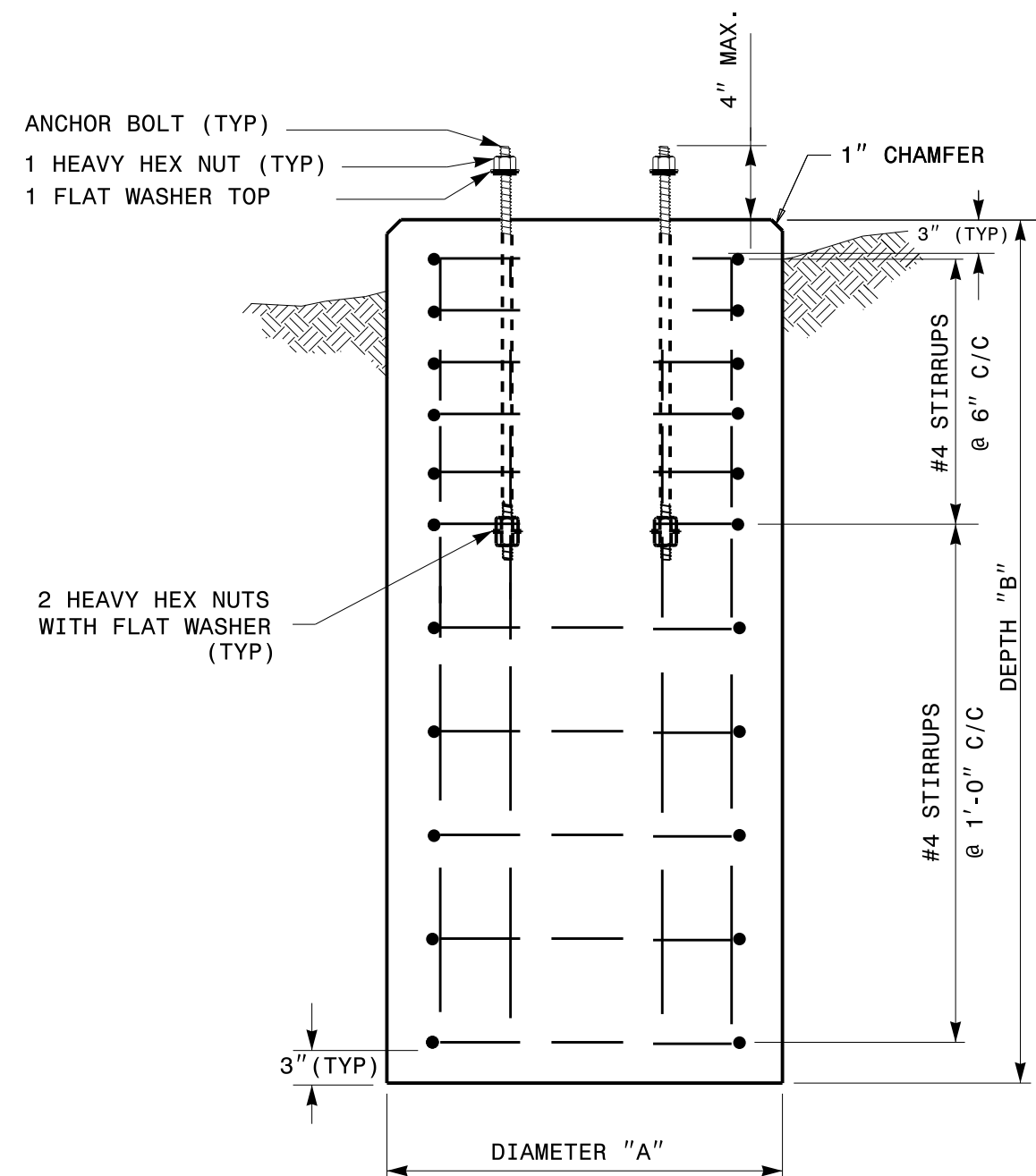
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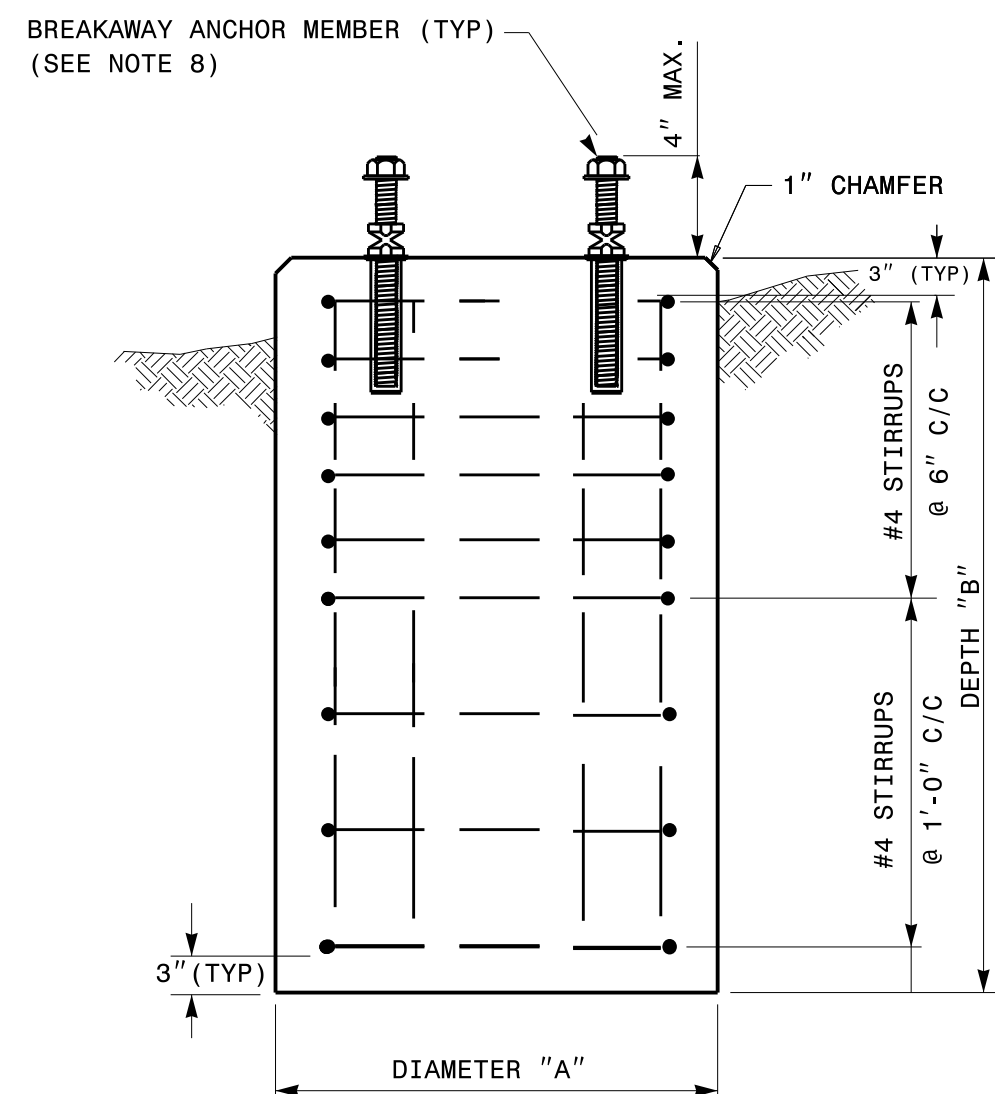
PEDESTAL FOUNDATION - PLAN VIEW



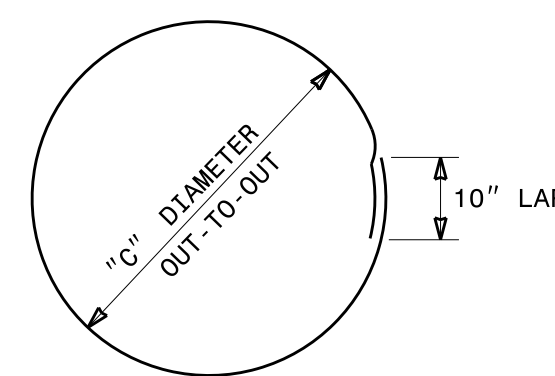
PEDESTAL FOUNDATION DETAILS FOR SIDEWALK



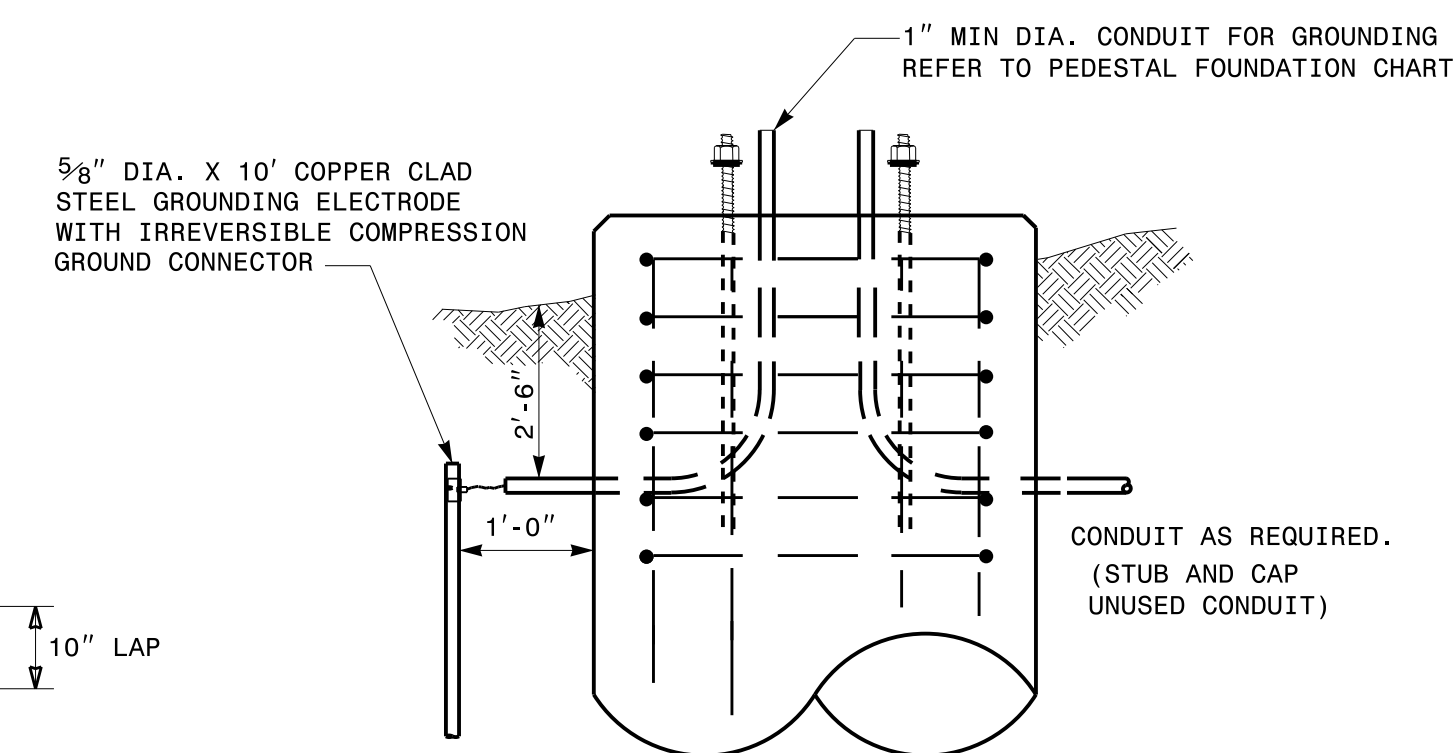
TYPES I, II & III
SECTION A-A



TYPES I & II ONLY
SECTION A-A



CLOSED HOOPS



GROUNDING & CONDUIT DETAIL

NOTES:

- CAST FOUNDATION AGAINST UNDISTURBED SOIL WHEREVER CONDITIONS PERMIT. IN UNSTABLE SOIL, CAST-IN-PLACE TUBE FORMS ARE ALLOWED WITH APPROVAL.
- COMPLY WITH APPLICABLE PROVISIONS OF SECTION 825 FOR CONCRETE CONSTRUCTION.
- USE CLASS "A" CONCRETE THAT MEETS THE REQUIREMENTS OF SECTION 1000 WITH A COMPRESSION STRENGTH AT 28 DAYS OF $F'c = 3000$ PSI (MIN.).
- USE ASTM GRADE 60 DEFORMED BARS FOR ALL REINFORCING STEEL.
- GRADE IS ASSUMED TO BE (8H:1V) OR FLATTER. FOUNDATION SIZE AND DEPTHS ARE BASED ON THE FOLLOWING SOIL DESIGN PARAMETERS:
 - SANDY TYPE SOIL
 - NO GROUND WATER WITHIN 5'-0" OF SURFACE ELEVATION
 - WIND SPEED NOT TO EXCEED 140 MPH
 IF ACTUAL CONDITIONS VARY SUBSTANTIALLY FROM THOSE ASSUMED, THE FOUNDATION DEPTH MAY BE ADJUSTED. IN THIS CASE, CONTACT THE ENGINEER.
- MAINTAIN AT LEAST 3" COVER ON ALL REINFORCEMENT.
- ORIENT CONDUIT AS REQUIRED BY THE DESIGN OR AS DICTATED BY FIELD CONDITIONS.
- USE ADHESIVE ANCHOR FOR THREADED COUPLING INSERT. FOR TYPE I MINIMUM DEPTH NECESSARY IS 0'-4 1/2" AND FOR TYPE II MINIMUM DEPTH NECESSARY IS 0'-6 5/8". FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PEDESTAL FOUNDATION TYPE AND SIZE							
TYPE	PEDESTAL DESCRIPTION	SIZE			ANCHOR BOLT		INSTALL GROUNDING SYSTEM (YES/NO)
		DIAMETER "A" FT	DEPTH "B" FT	CONCRETE VOLUME CY	DIAMETER (MIN.) IN	LENGTH FT-IN	
I	PEDESTRIAN PUSHBUTTON	2'-0"	3'-6"	.41	1/2	1'-6"	NO
II	NORMAL-DUTY	2'-0"	5'-0"	.58	3/4	2'-0"	YES
III	HEAVY-DUTY	2'-6"	7'-0"	1.27	1	4'-0"	YES

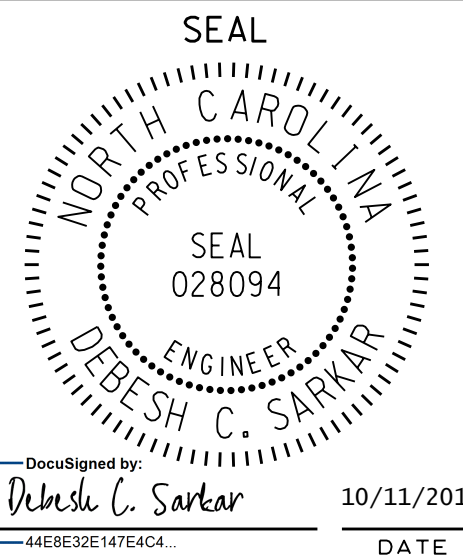
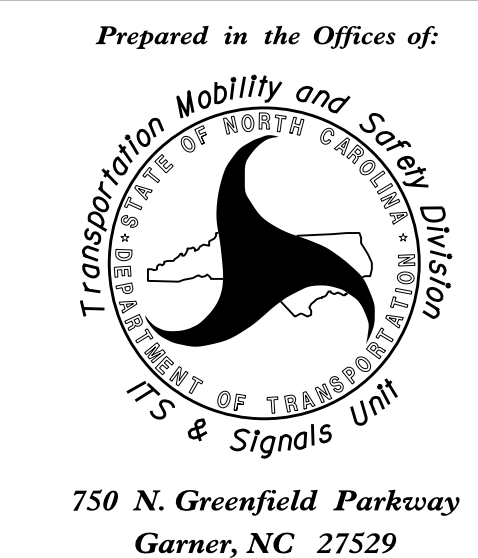
REINFORCING STEEL SCHEDULE													
TYPE	V-BAR				STIRRUP								
	SIZE #	QTY	LENGTH	WEIGHT LBS	SIZE #	QUANTITY			LENGTH	DIAMETER "C" FT	OVERLAP MIN.	WEIGHT LBS	TOTAL STEEL WEIGHT LBS
						VERTICAL ON 6" CENTERS	ON 12" CENTERS	TOTAL					
I	8	6	3'-0"	56	4	0	4	4	5'-7"	1'-6"	0'-10"	15	71
II	8	6	4'-6"	86	4	5	3	8	5'-7"	1'-6"	0'-10"	30	116
III	8	6	6'-6"	122	4	7	4	11	7'-2"	2'-0"	0'-10"	53	175

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

ENGLISH STANDARD DRAWING FOR
PEDESTALS
FOUNDATIONS

SHEET 1 OF 1
1743D01

See Plate for Title



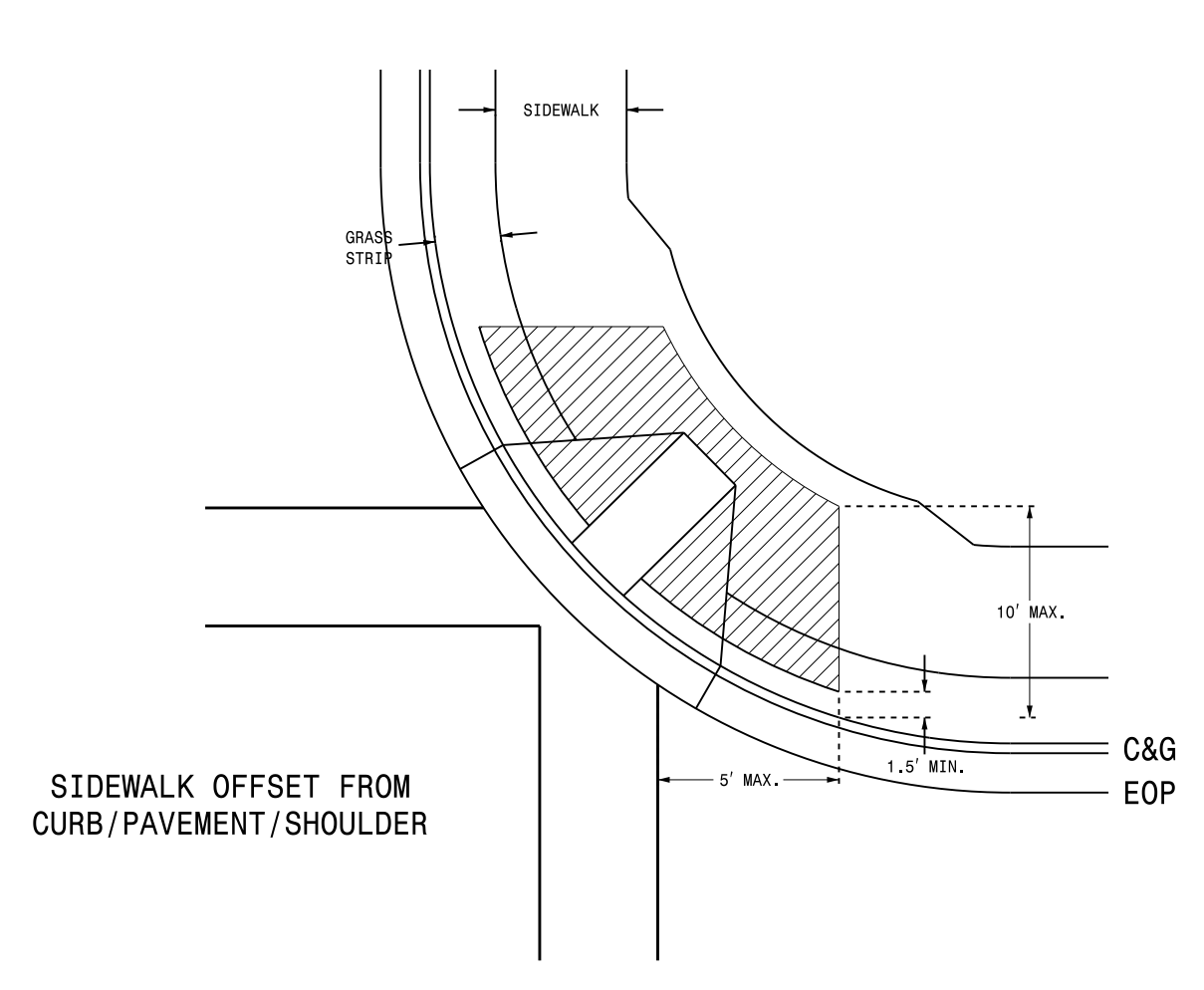
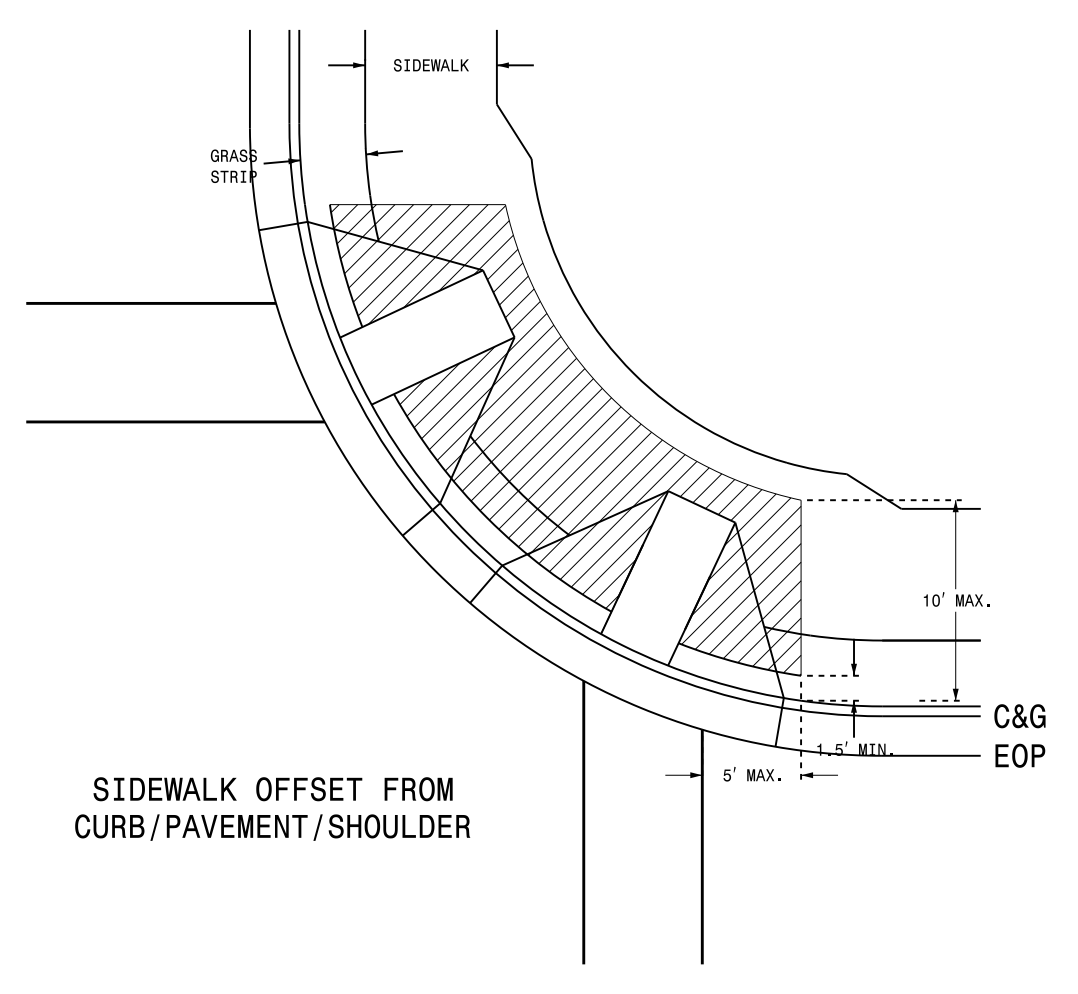
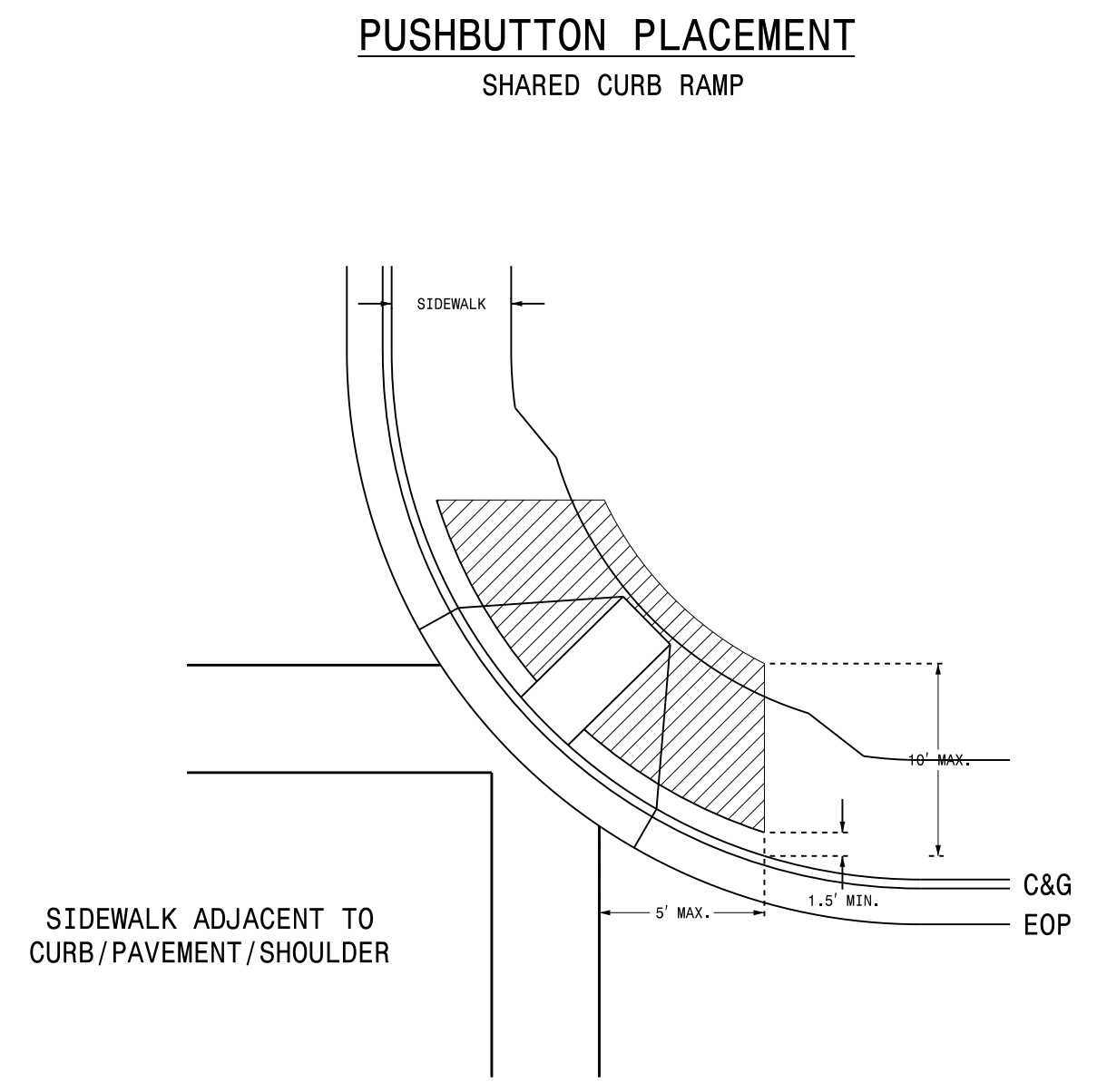
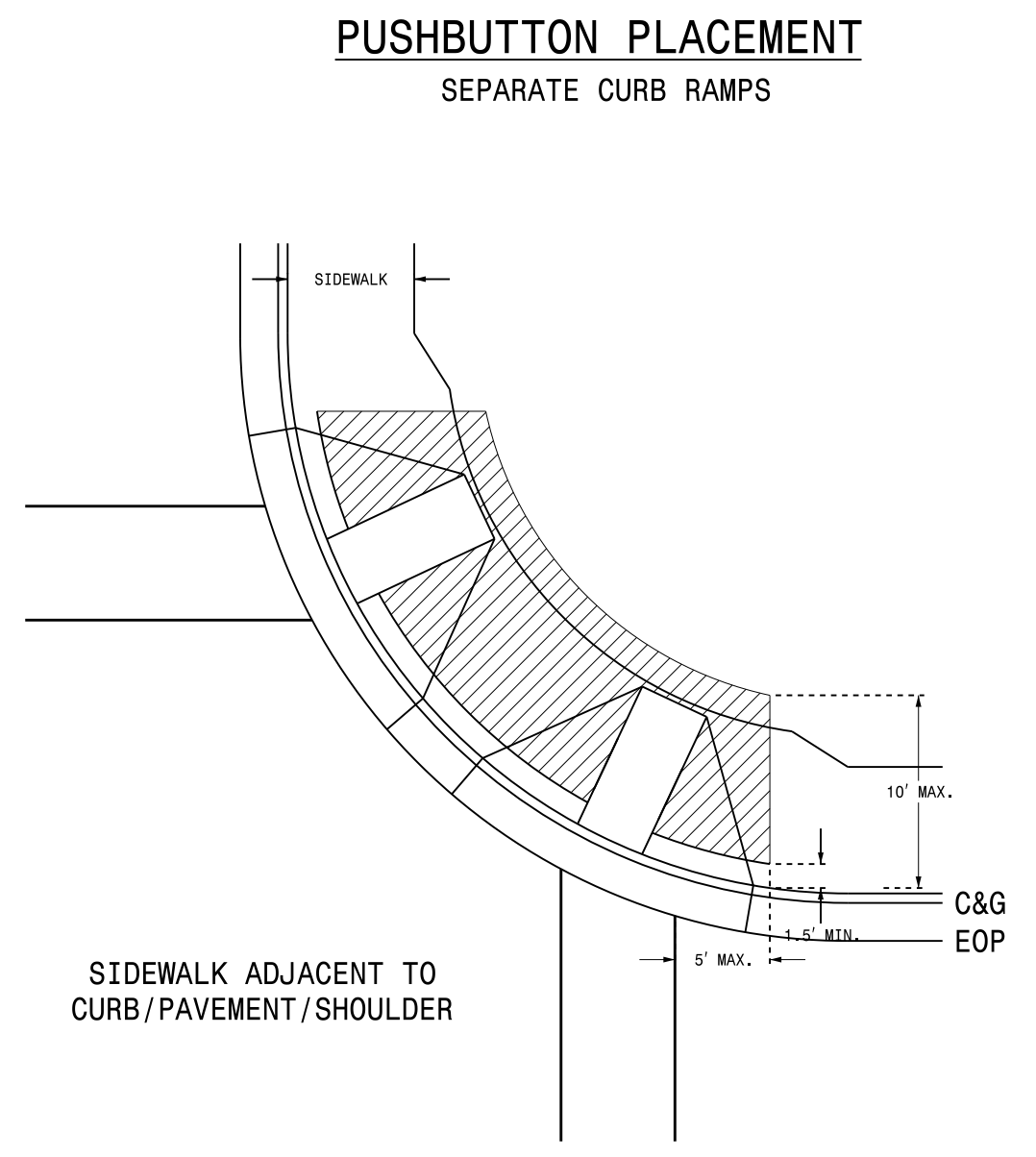
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FINAL UNLESS ALL
SIGNATURES COMPLETED

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

06-14

ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 1 OF 3
1705D01



- NOTES**
1. Pushbutton pedestals should not be located further than 10 feet from the edge of curb, shoulder, or pavement.
 2. The face of the pushbutton should be parallel to the applicable crosswalk.
 3. Separate pushbuttons used on the same corner should be separated by a distance of at least 10 feet.
 4. Pushbuttons shall be installed adjacent to a level surface with a maximum reach distance of 10 inches.
 5. Maintain 4 feet of clearance around pedestal if located in sidewalk.
 6. Refer to section 1705 of the 2012 NCDOT Roadway Standard Drawings for Pushbutton Assembly details.
 7. Refer to section 1743 of the 2012 NCDOT Roadway Standard Drawings for Pedestal details.
 8. Contact Division Traffic Engineer for pushbutton location approval prior to installation.
 9. Curb ramps are for symbolic use only and may not reflect actual design or field conditions.

PROPOSED

	Signal Pole
	Type I Pushbutton Post
	Type II Signal Pedestal
	Pushbutton & Sign
	Pedestrian Signal Head
	Curb Ramp
	Pushbutton Location Area

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

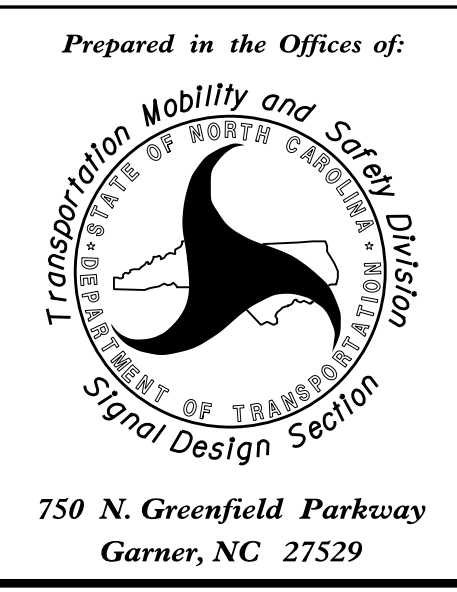
06-14

ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 1 OF 3
1705D01

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See Plate for Title



Prepared in the Offices of:

SEAL

DocuSigned by:
Robert J. Ziemba
6/17/2014
DATE

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

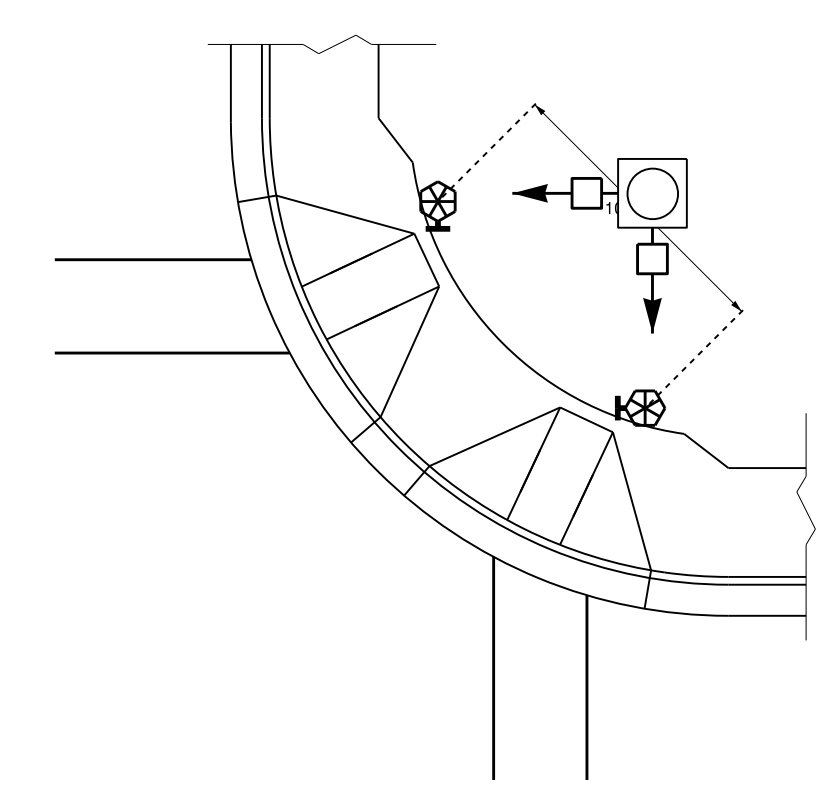
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ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

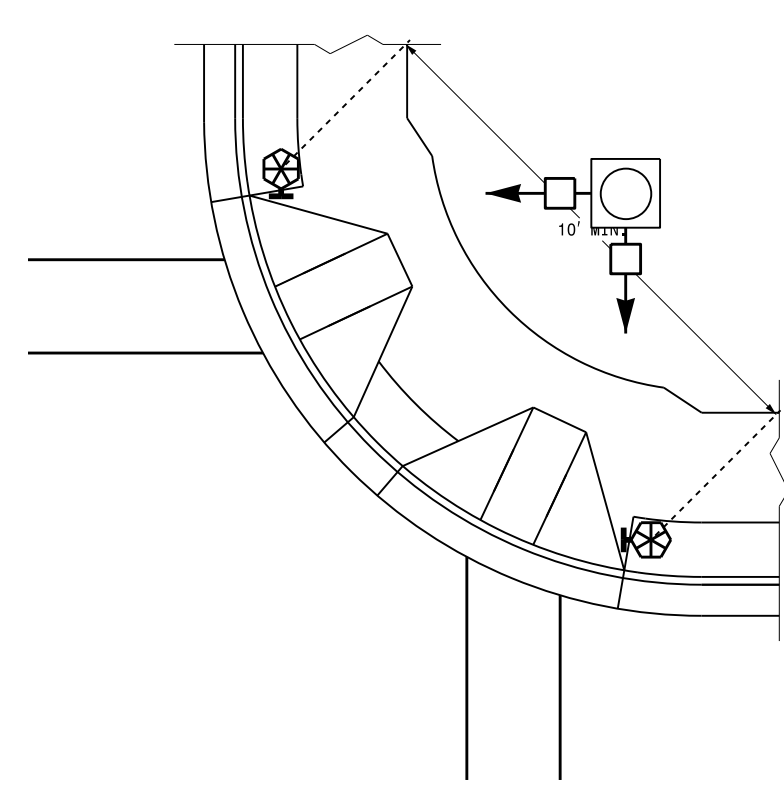
SHEET 2 OF 3
1705D01

TYPICAL PUSHBUTTON LOCATIONS (CASE I)

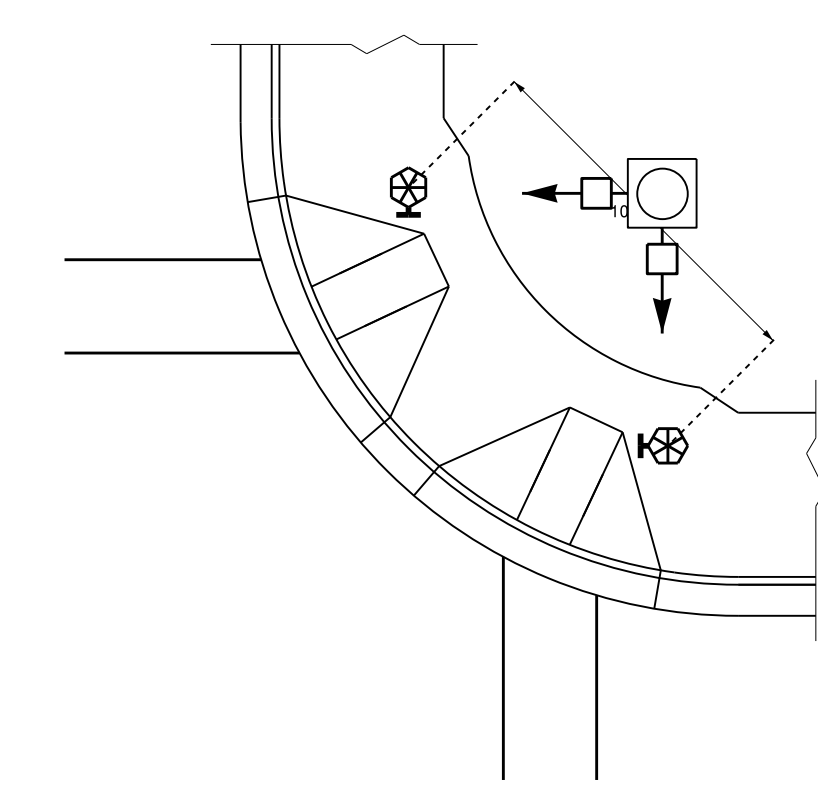
SEPARATE CURB RAMPS W/ TYPE I PEDESTALS



BACK OF SIDEWALK IS WITHIN 10'
OF CURB OR PAVEMENT/SHOULDER



GRASS STRIP PLACEMENT IF BACK
OF SIDEWALK EXCEEDS 10' FROM
CURB OR PAVEMENT/SHOULDER



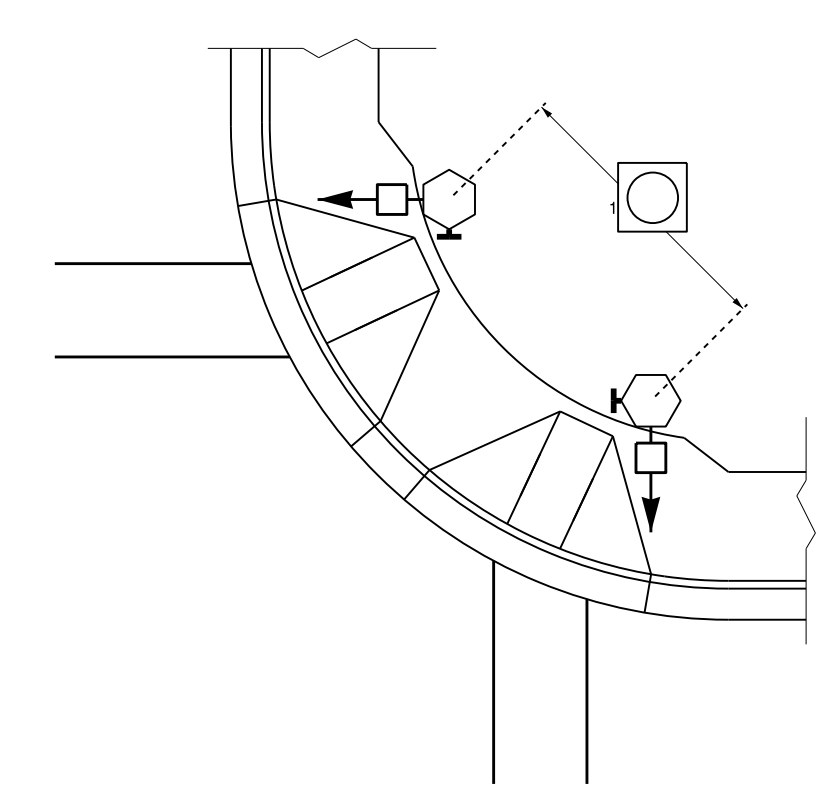
PUSHBUTTON PLACEMENT
IN WIDE SIDEWALK

- PROPOSED**
- Signal Pole
 - Type I Pushbutton Post
 - Type II Signal Pedestal
 - Pushbutton & Sign
 - Pedestrian Signal Head
 - Curb Ramp
 - Pushbutton Location Area

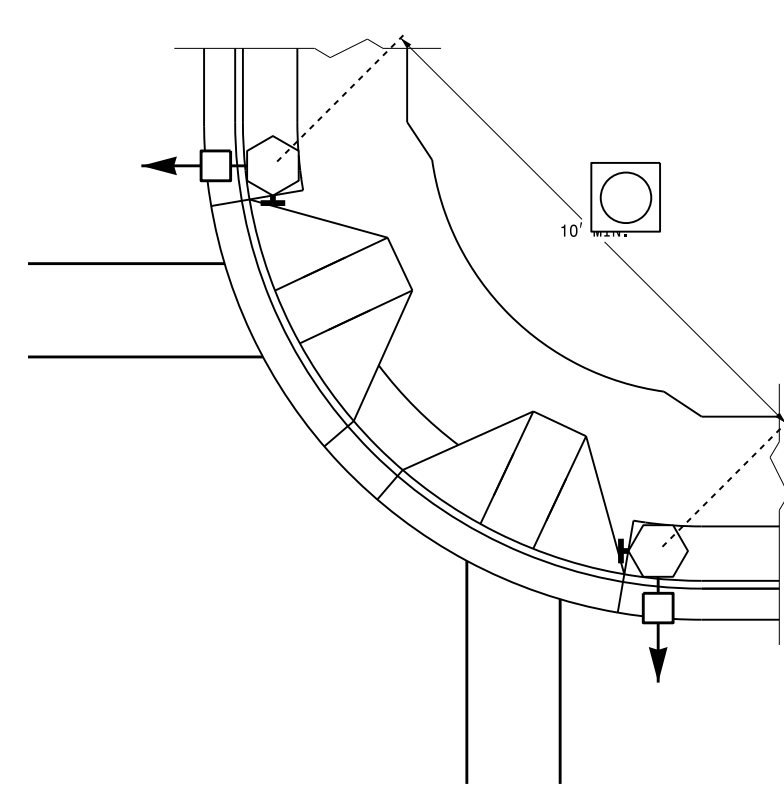
LEGEND

TYPICAL PUSHBUTTON LOCATIONS (CASE II)

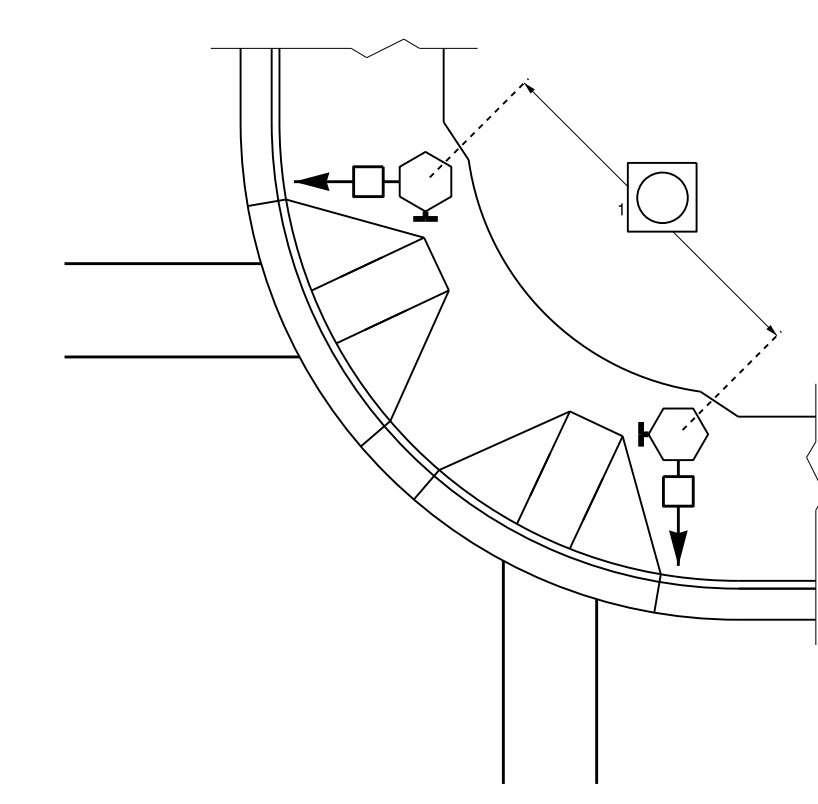
SEPARATE CURB RAMPS W/ TYPE II PEDESTALS



BACK OF SIDEWALK IS WITHIN 10'
OF CURB OR PAVEMENT/SHOULDER



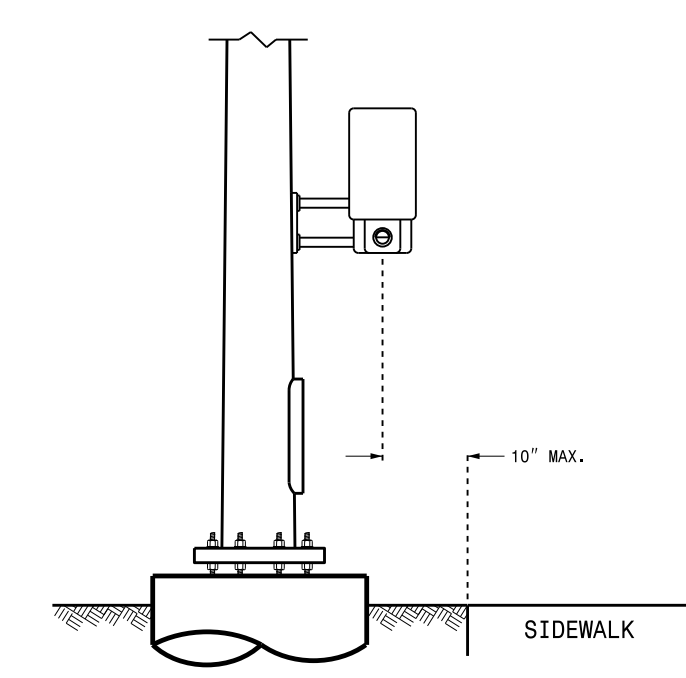
GRASS STRIP PLACEMENT IF BACK
OF SIDEWALK EXCEEDS 10' FROM
CURB OR PAVEMENT/SHOULDER



PUSHBUTTON PLACEMENT
IN WIDE SIDEWALK

OPTIONAL PUSHBUTTON EXTENSION

FACE OF PUSHBUTTON PARALLEL TO
APPLICABLE CROSSWALK



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DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

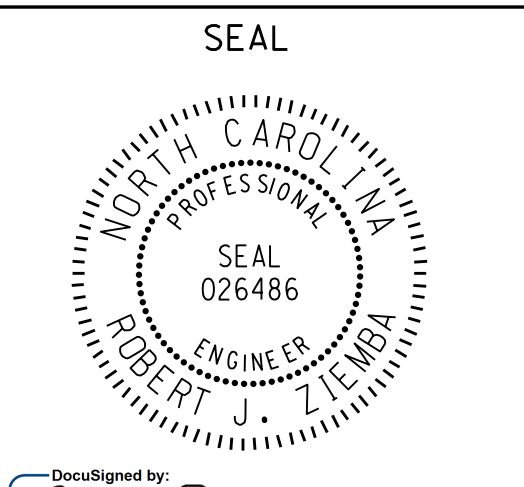
ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 2 OF 3
1705D01

See Plate for Title



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750 N. Greenfield Parkway
Garner, NC 27529



DocuSigned by:
Robert J. Ziemba
6/17/2014
DATE

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

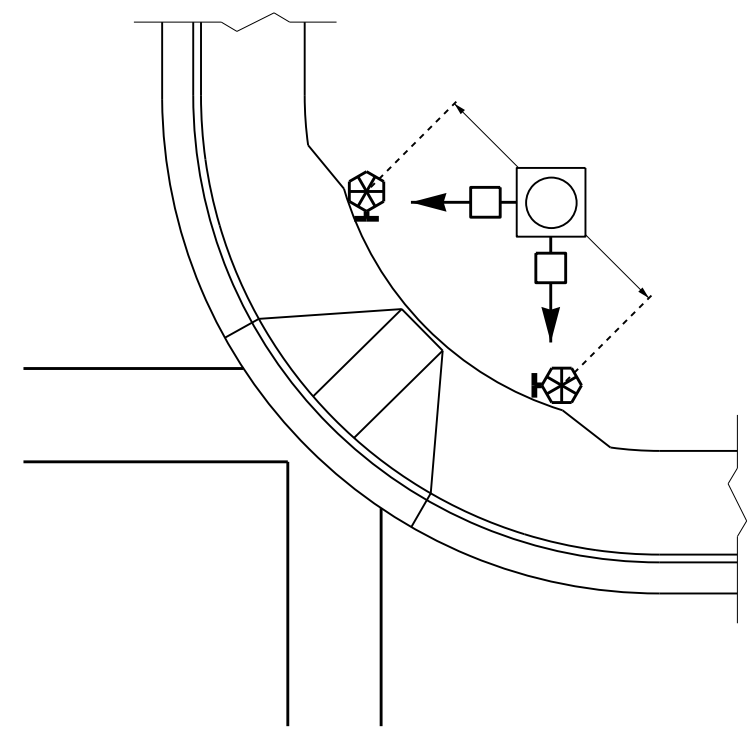
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ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

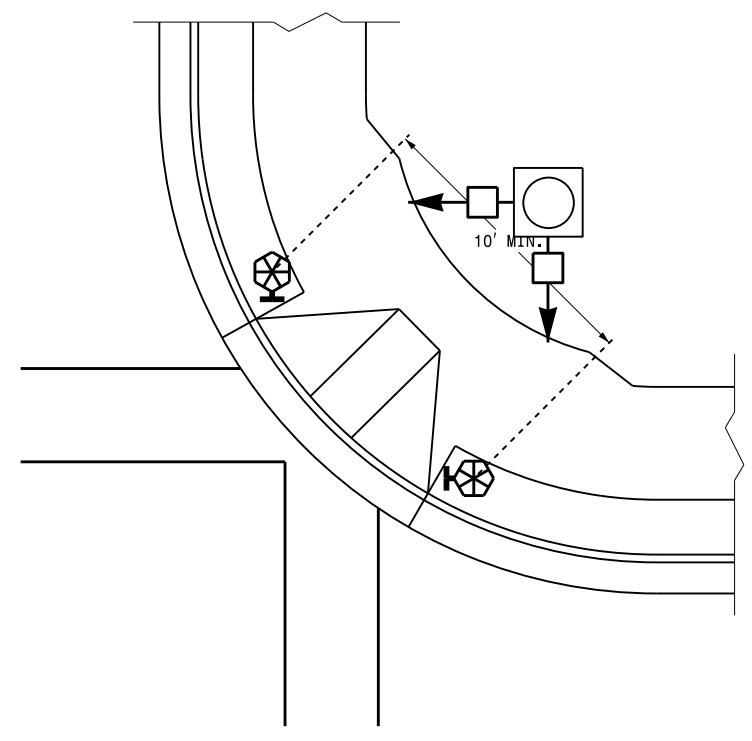
SHEET 3 OF 3
1705D01

TYPICAL PUSHBUTTON LOCATIONS (CASE III)

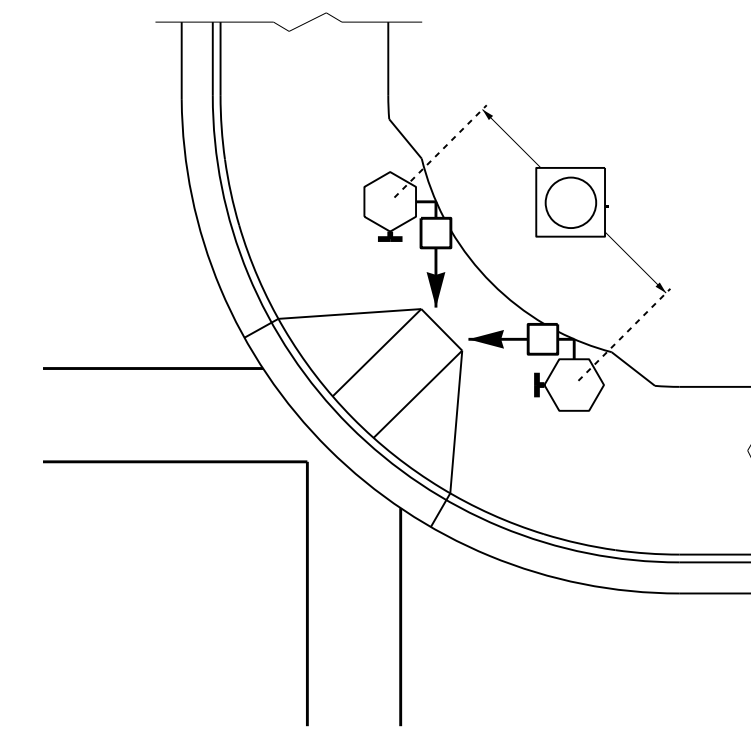
SHARED CURB RAMPS



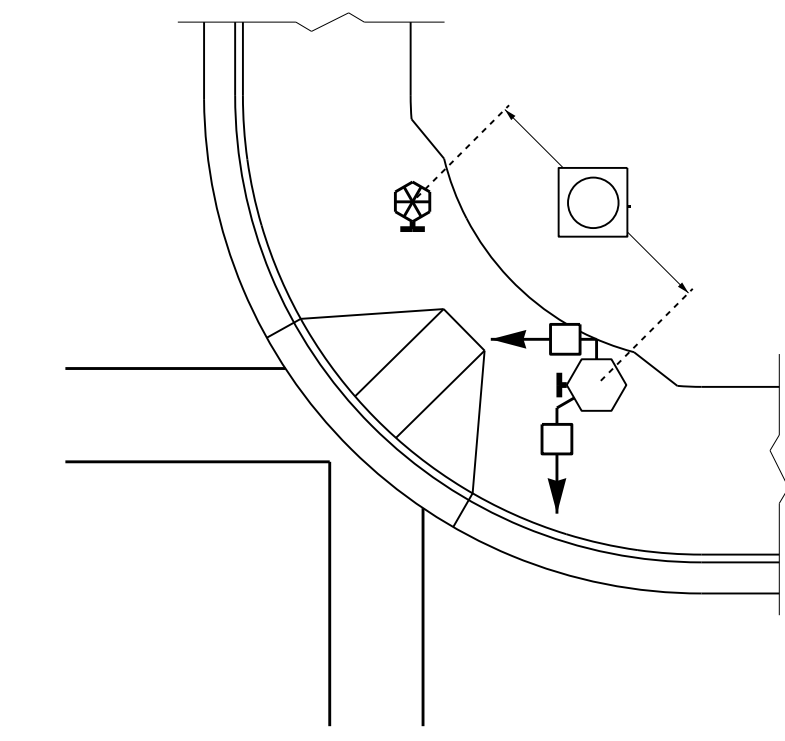
BACK OF SIDEWALK IS WITHIN 10' OF CURB OR PAVEMENT/SHOULDER



GRASS STRIP PLACEMENT IF BACK OF SIDEWALK EXCEEDS 10' FROM CURB OR PAVEMENT/SHOULDER

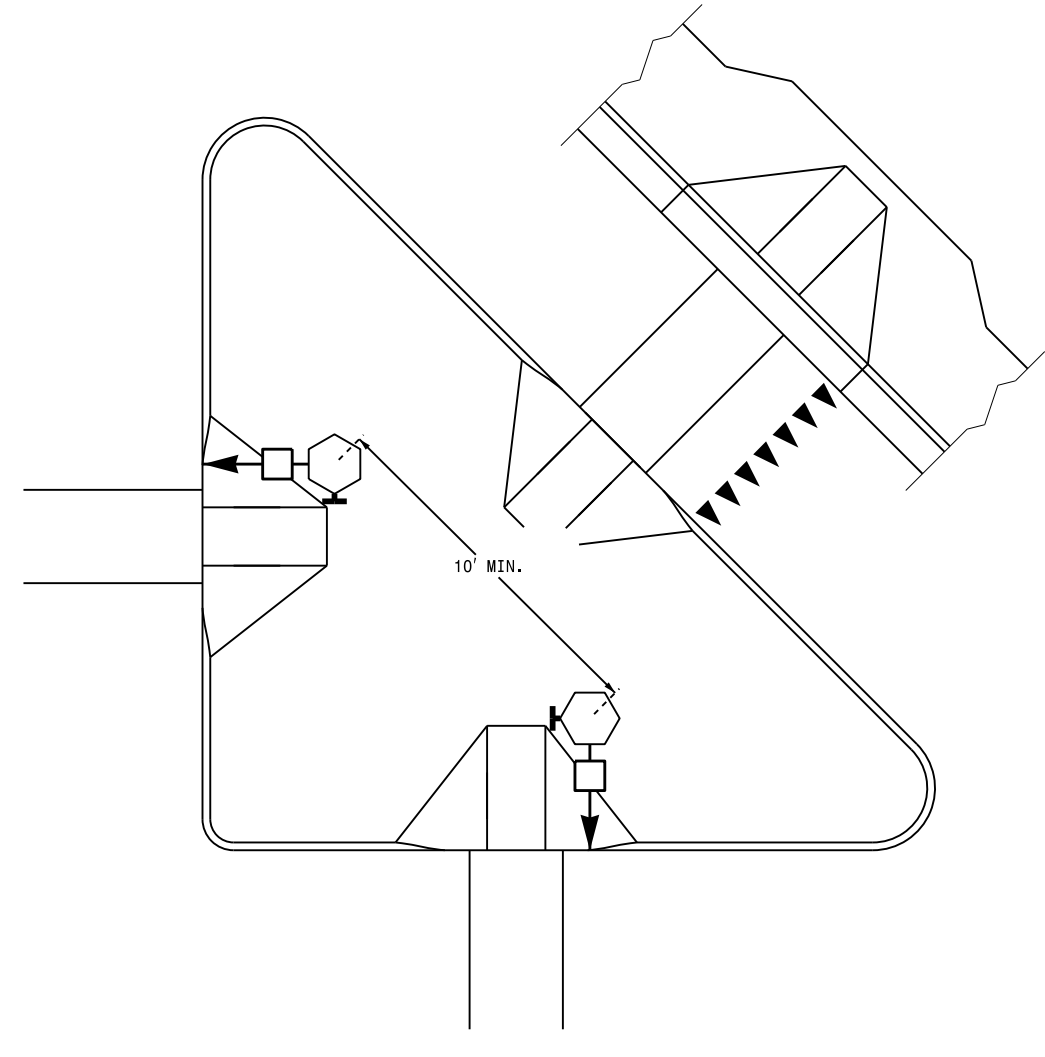


PUSHBUTTON PLACEMENT IN WIDE SIDEWALK (CORRESPONDING PUSHBUTTONS AND SIGNAL HEADS ON DIFFERENT PEDESTALS)

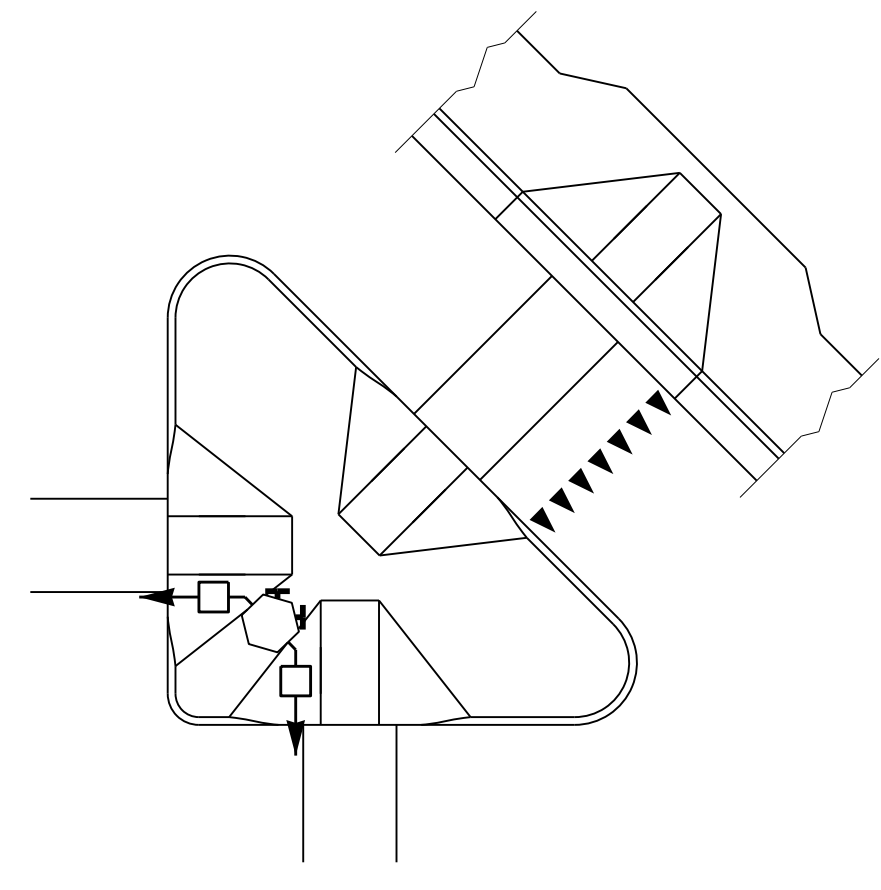


PUSHBUTTON PLACEMENT WITH SHARED TYPE II SIGNAL PEDESTAL AND TYPE I PUSHBUTTON POST

TRAFFIC ISLAND PUSHBUTTON LOCATIONS



PUSHBUTTON PLACEMENT IN LARGE "PORK CHOP ISLAND" WITH SEPARATE PEDESTALS



PUSHBUTTON PLACEMENT IN SMALL "PORK CHOP ISLAND" WITH SHARED PEDESTAL

PUSHBUTTON PLACEMENT IN MEDIAN

TYPE II PEDESTAL (FOR STAGED OR MULTI-PHASE CROSSING)

TYPE I PEDESTAL (FOR COMPLETE CROSSING CURB TO CURB WITH OPTIONAL REFUGE)

PROPOSED

	Signal Pole
	Type I Pushbutton Post
	Type II Signal Pedestal
	Pushbutton & Sign
	Pedestrian Signal Head
	Curb Ramp
	Pushbutton Location Area

LEGEND

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

06-14

ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 3 OF 3
1705D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

ROBERT J. ZIEMBA
ENGINEER

DocuSigned by:

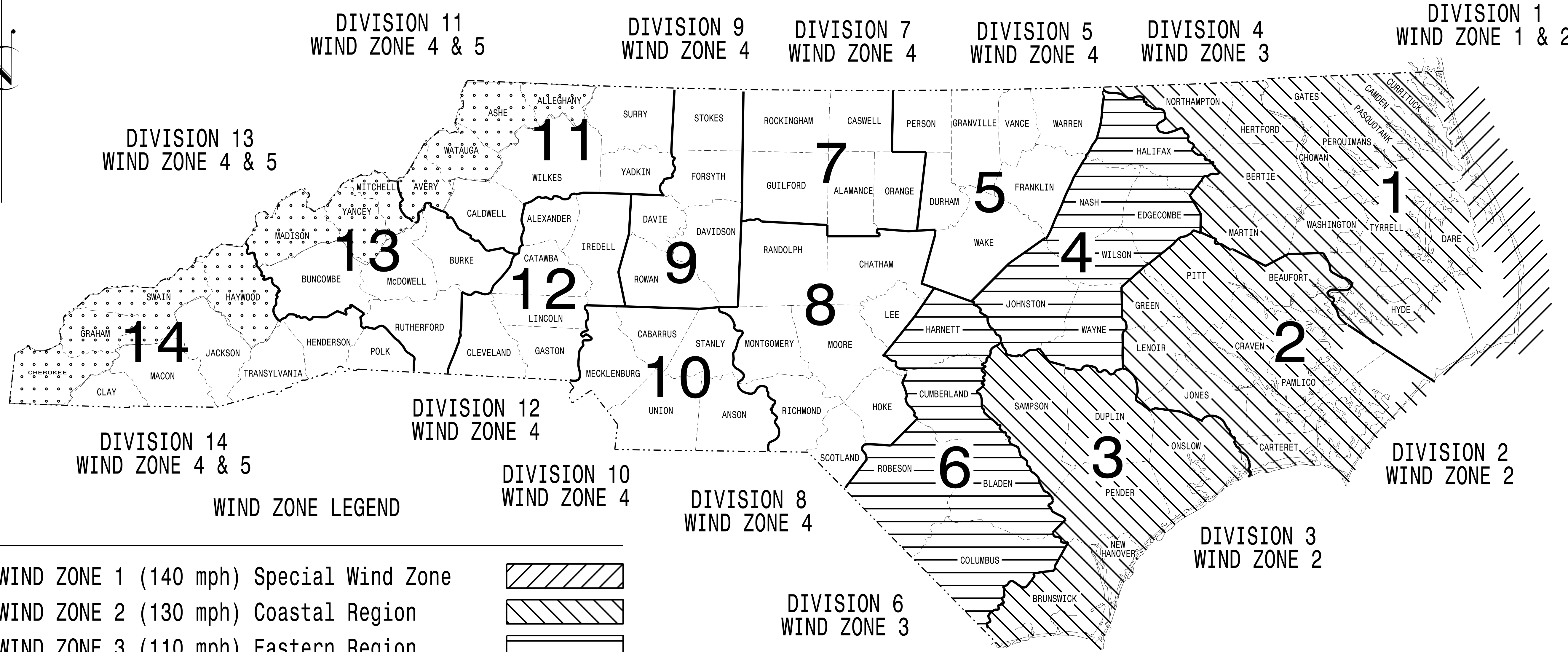
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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT I.D. NO. U-5606	SHEET NO. Sig.M1
----------------------------	---------------------

STANDARD DRAWINGS FOR ALL METAL POLES



WIND ZONE LEGEND

WIND ZONE 1 (140 mph) Special Wind Zone	
WIND ZONE 2 (130 mph) Coastal Region	
WIND ZONE 3 (110 mph) Eastern Region	
WIND ZONE 4 (90 mph) Central & Mtn. Region	
WIND ZONE 5 (120 mph) Special Wind Zone	

<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
2015 Interim to the
6th Edition 2013
AASHTO
Standard Specifications for
Structural Supports for
Highway Signs, Luminaires,
and Traffic Signals

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

NC DOT CONTACTS:

MOBILITY AND SAFETY DIVISION - ITS AND SIGNALS UNIT

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

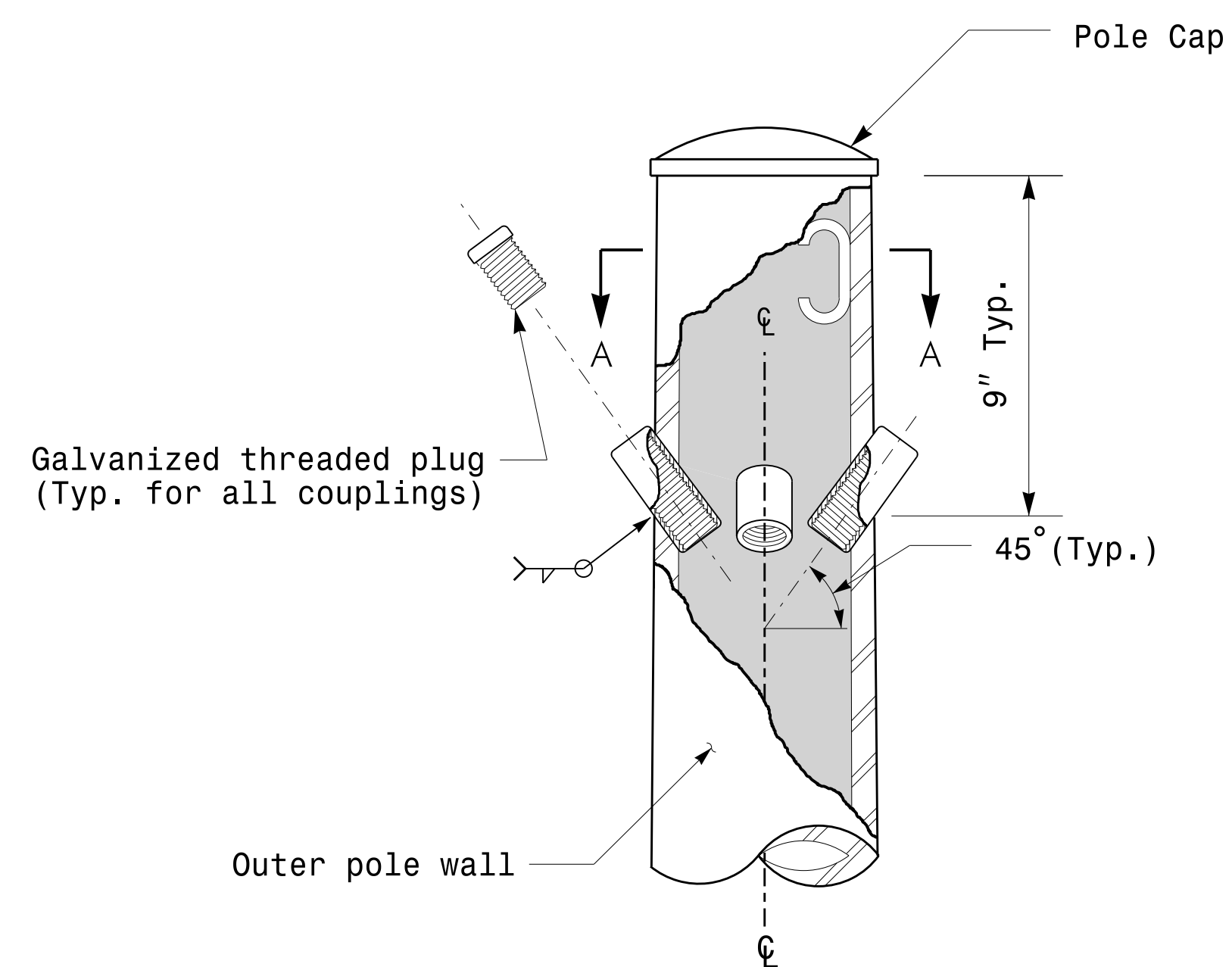
J.P. GALLOWAY, P.E. - STATE SIGNALS ENGINEER

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

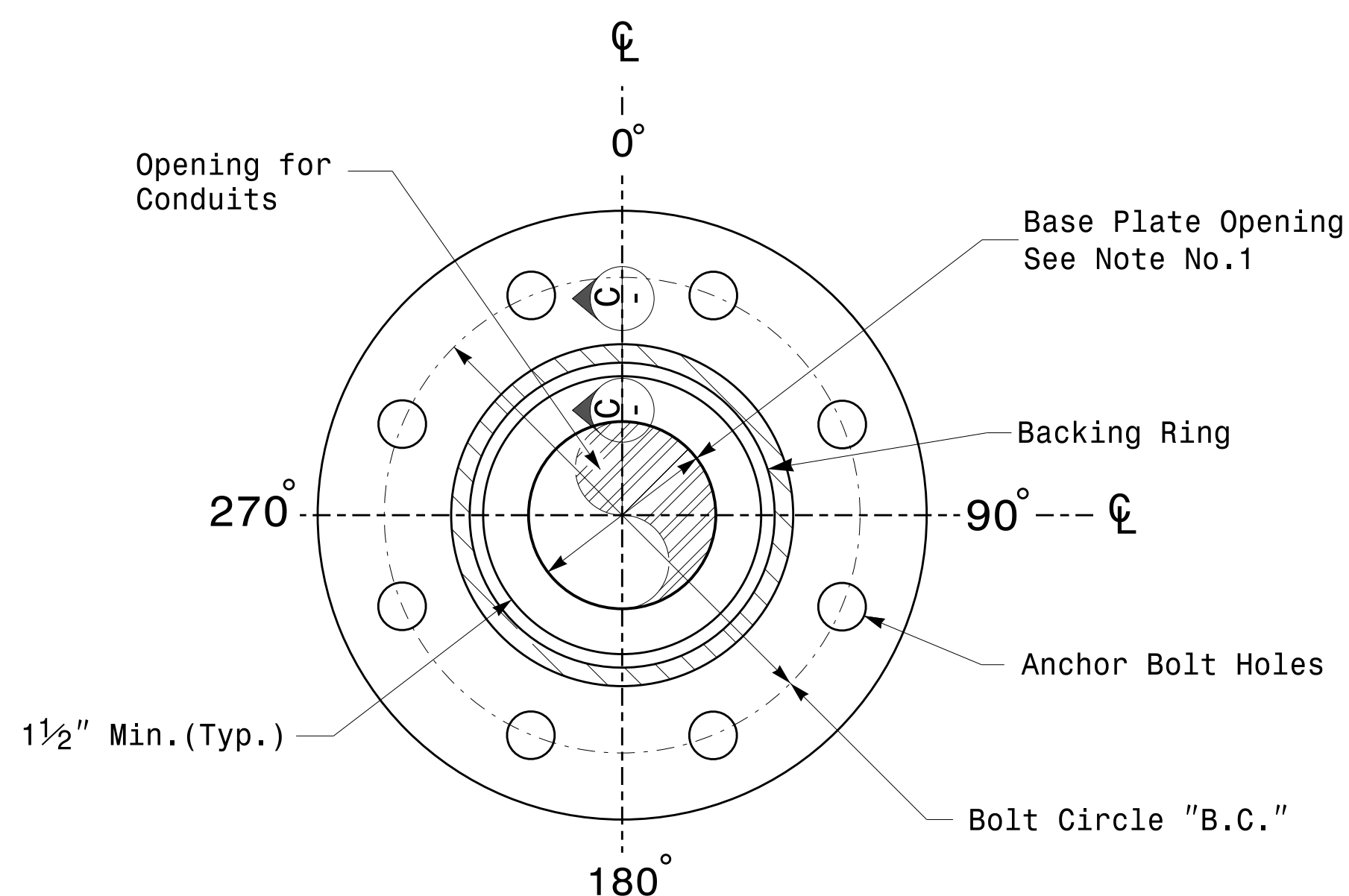
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DocuSigned by:
Debesh C. Sarkar
DATE 10/11/2017

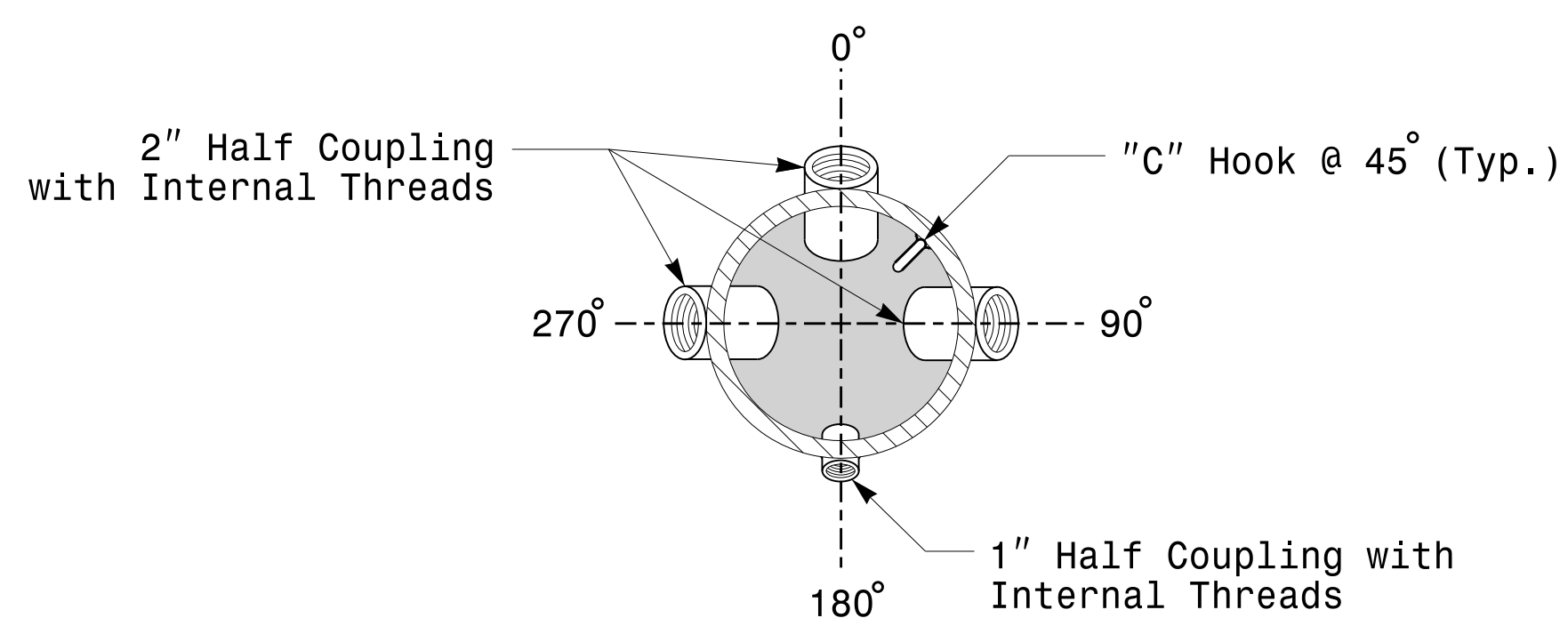
Note:
 1. Opening in pole base plate shall be equal to pole base inside diameter minus 3 1/2" but shall not be less than 8 1/2".



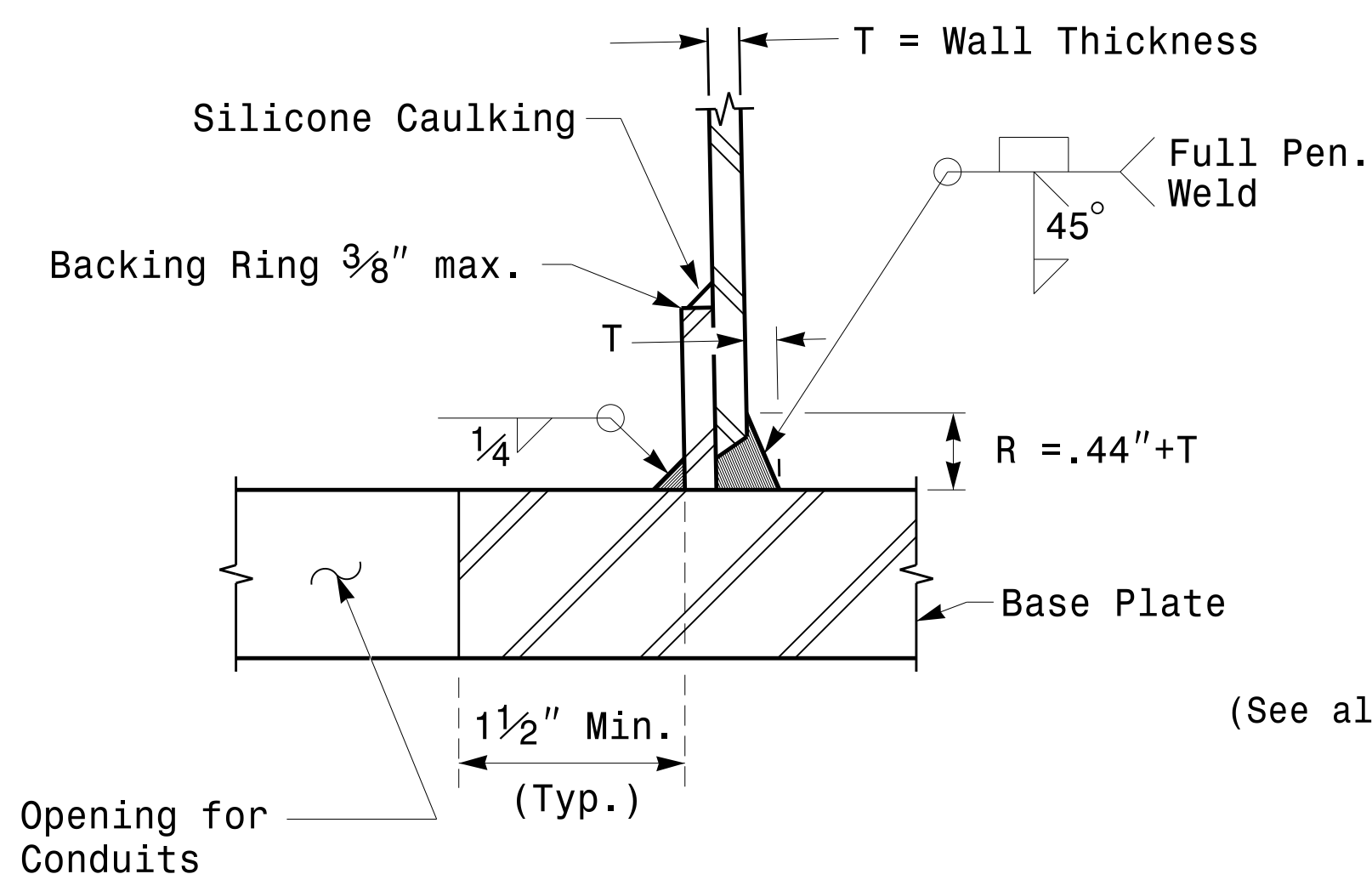
Cable Entrances at Top of Pole



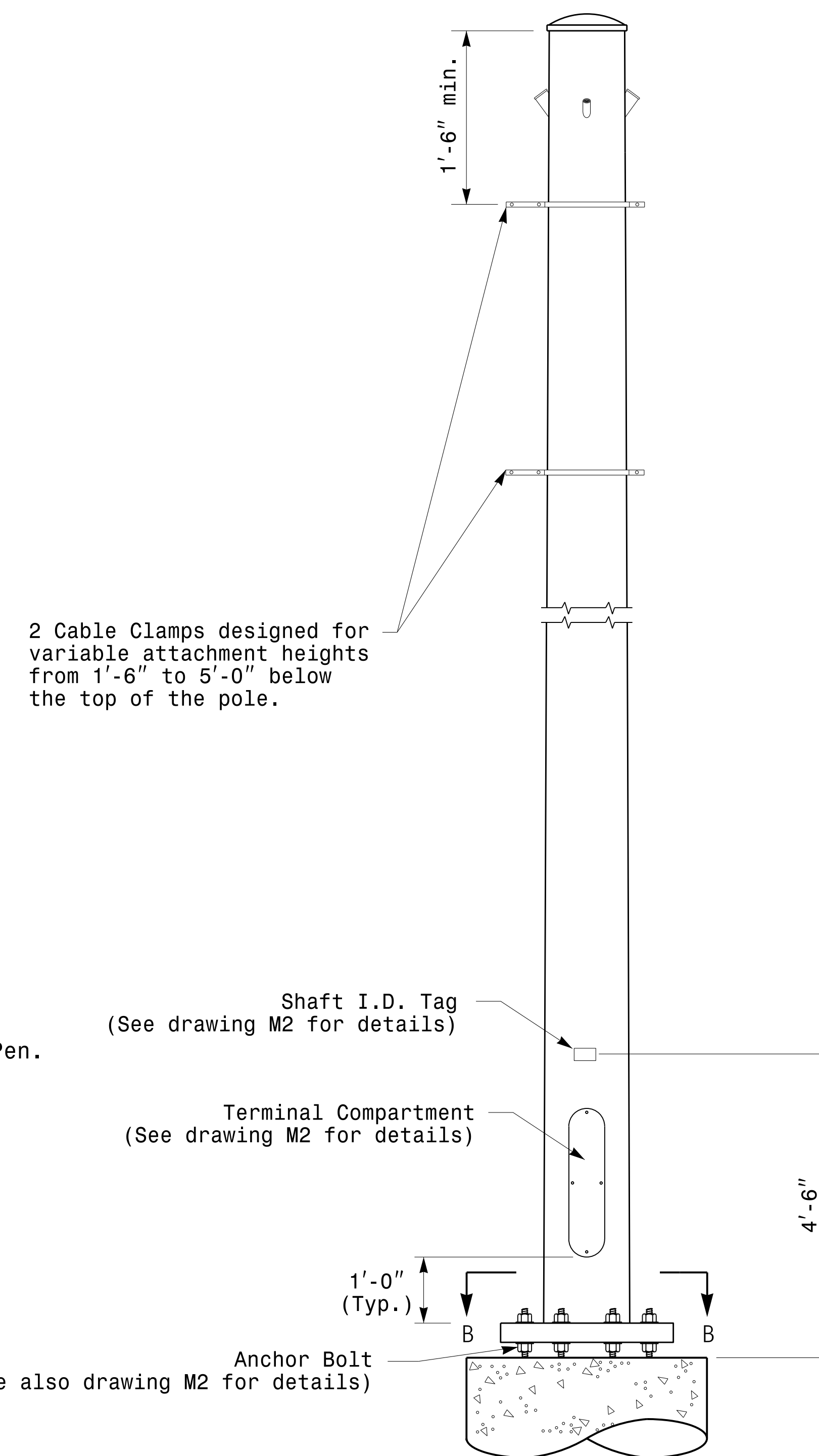
Section B-B
Pole Base Plate Details
(8 and 12 Bolt Pattern)



Section A-A
Radial Orientation for 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. Greenleaf Pkwy, Garner, NC 27529

SCALE: 0 NA NONE

Typical Fabrication Details For Strain Poles

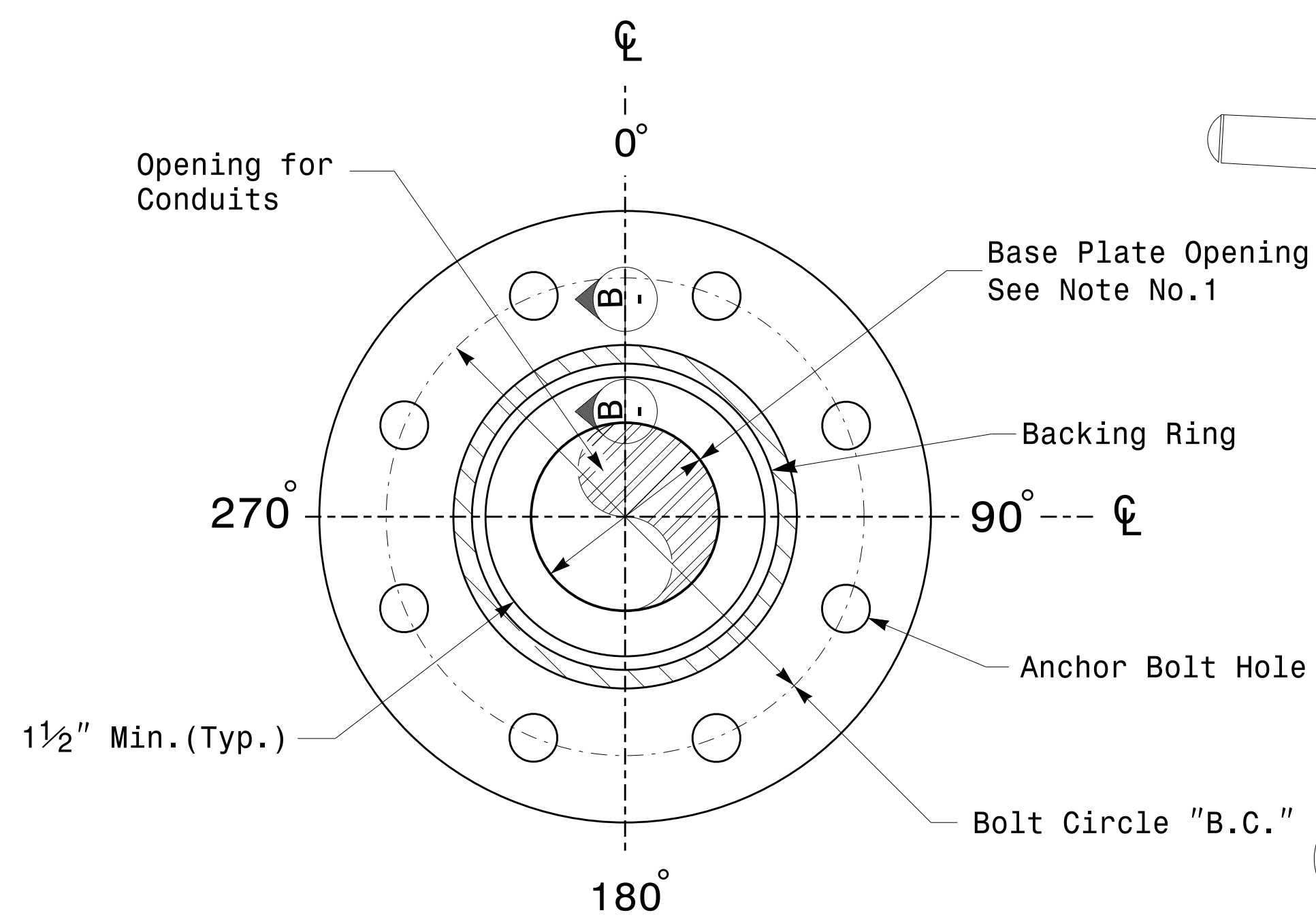
PLAN DATE: OCTOBER 2017	DESIGNED BY: K.C. DURIGON
PREPARED BY: N. BITTING	REVIEWED BY: D.C. SARKAR
REVISIONS	INIT. DATE

SEAL

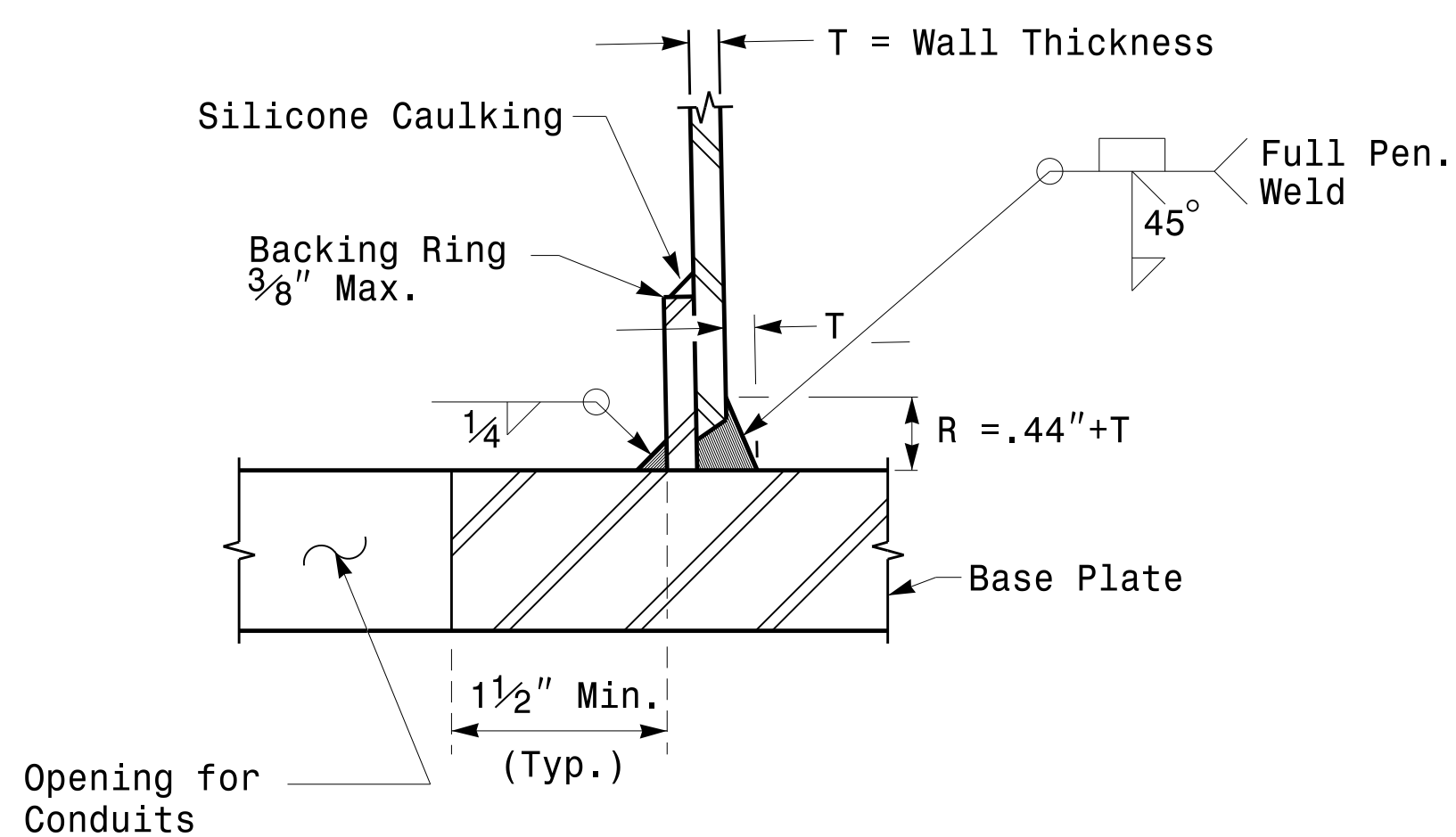
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 10/11/2017
 DATE

Fabrication Details – Strain Poles

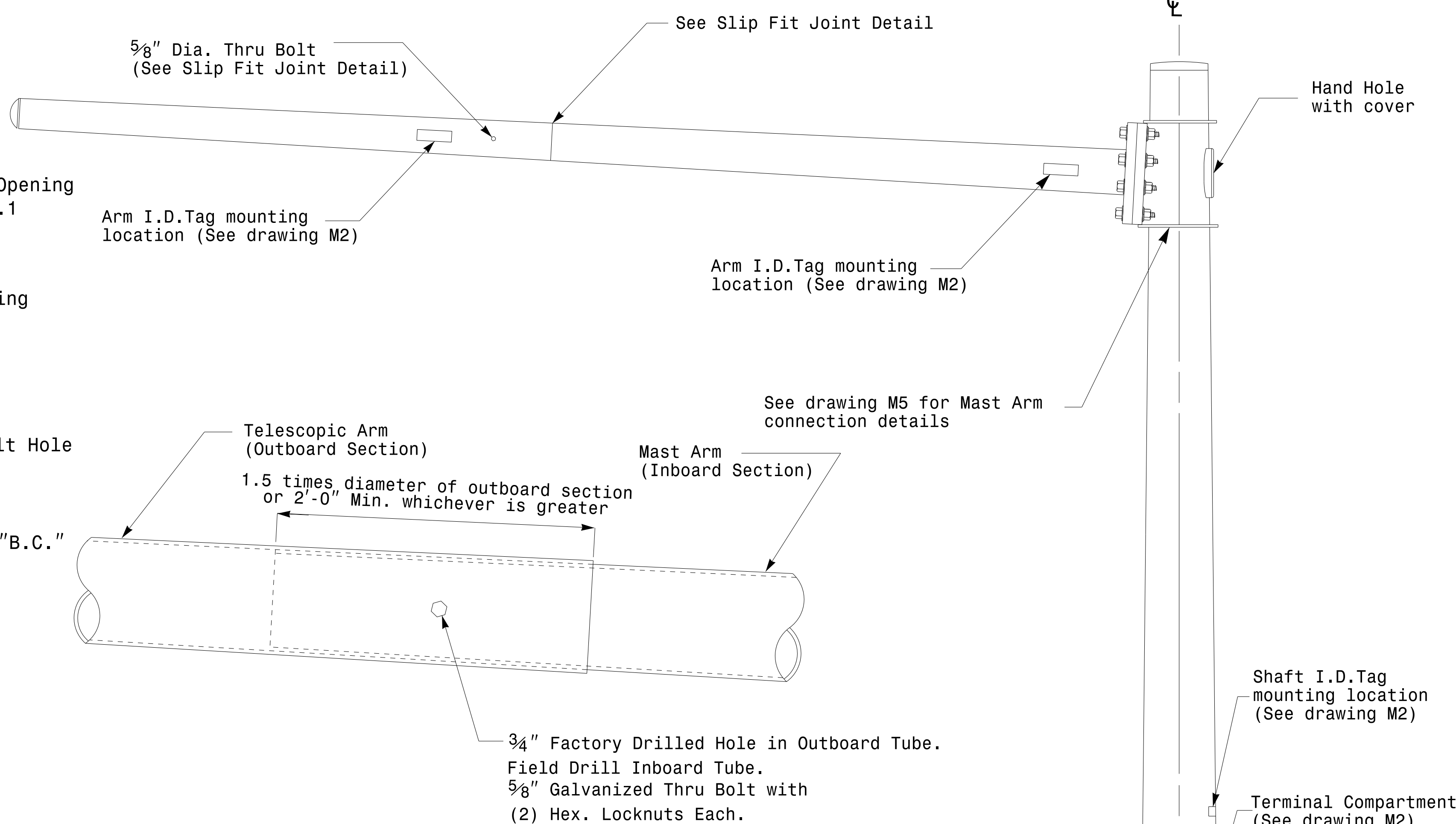
Note:
 1. Opening in pole base plate shall be equal to pole base inside diameter minus 3 1/2" but shall not be less than 8 1/2".



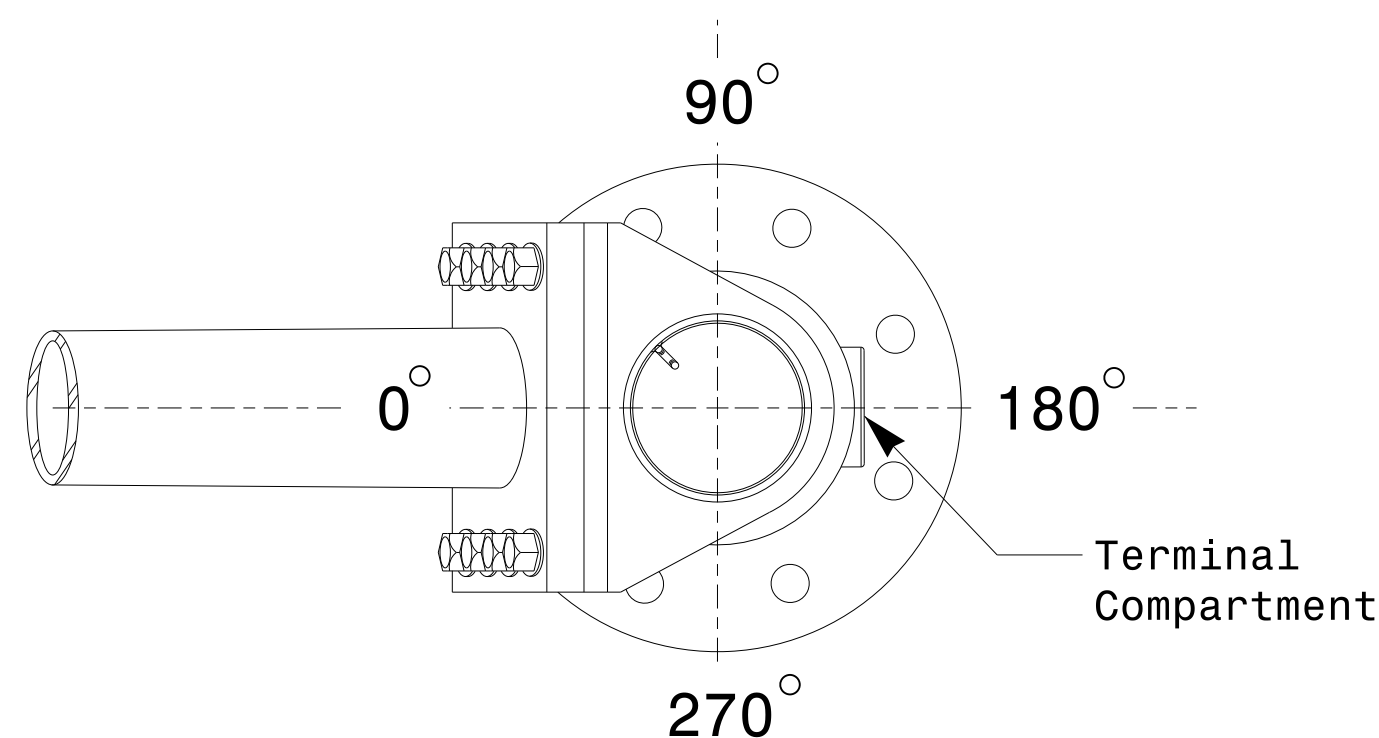
Section A-A
 Pole Base Plate Details



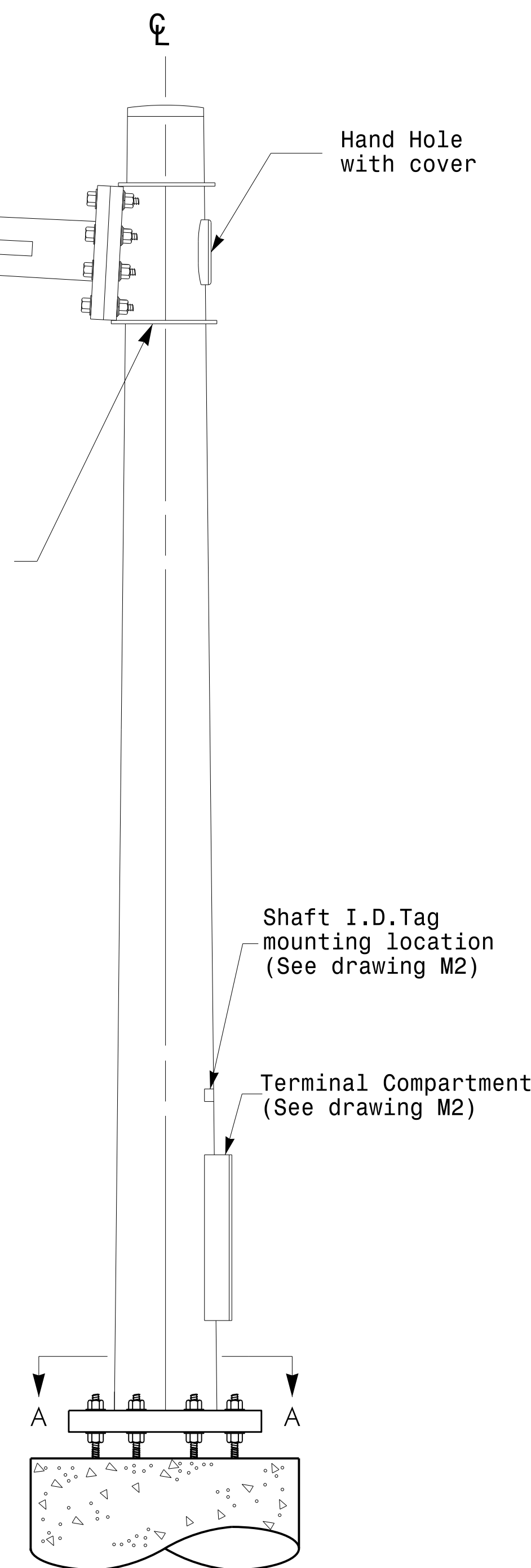
Section B-B
 (Pole Attachment to Base Plate)
 Full-Penetration Groove Weld Detail



Slip Fit Joint Detail for Mast Arm



Mast Arm Radial Orientation



Mast Arm Pole

Fabrication Details - Mast Arm Poles

	Typical Fabrication Details For Mast Arm Poles		SEAL
	PLAN DATE: OCTOBER 2017 PREPARED BY: N. BITTING	DESIGNED BY: K.C. DURIGON REVIEWED BY: D.C. SARKAR	
SCALE: 0 NA NONE	DocuSigned by: Dinesh C. Sarkar		10/11/2017 DATE

11-OCT-2017 08:33 136560115 Signal Design Section Eastern Region\m4 Sheets\2016\2014 Sig.M4 Std. Fabrication Detail-Mast Arm Poles.dgn

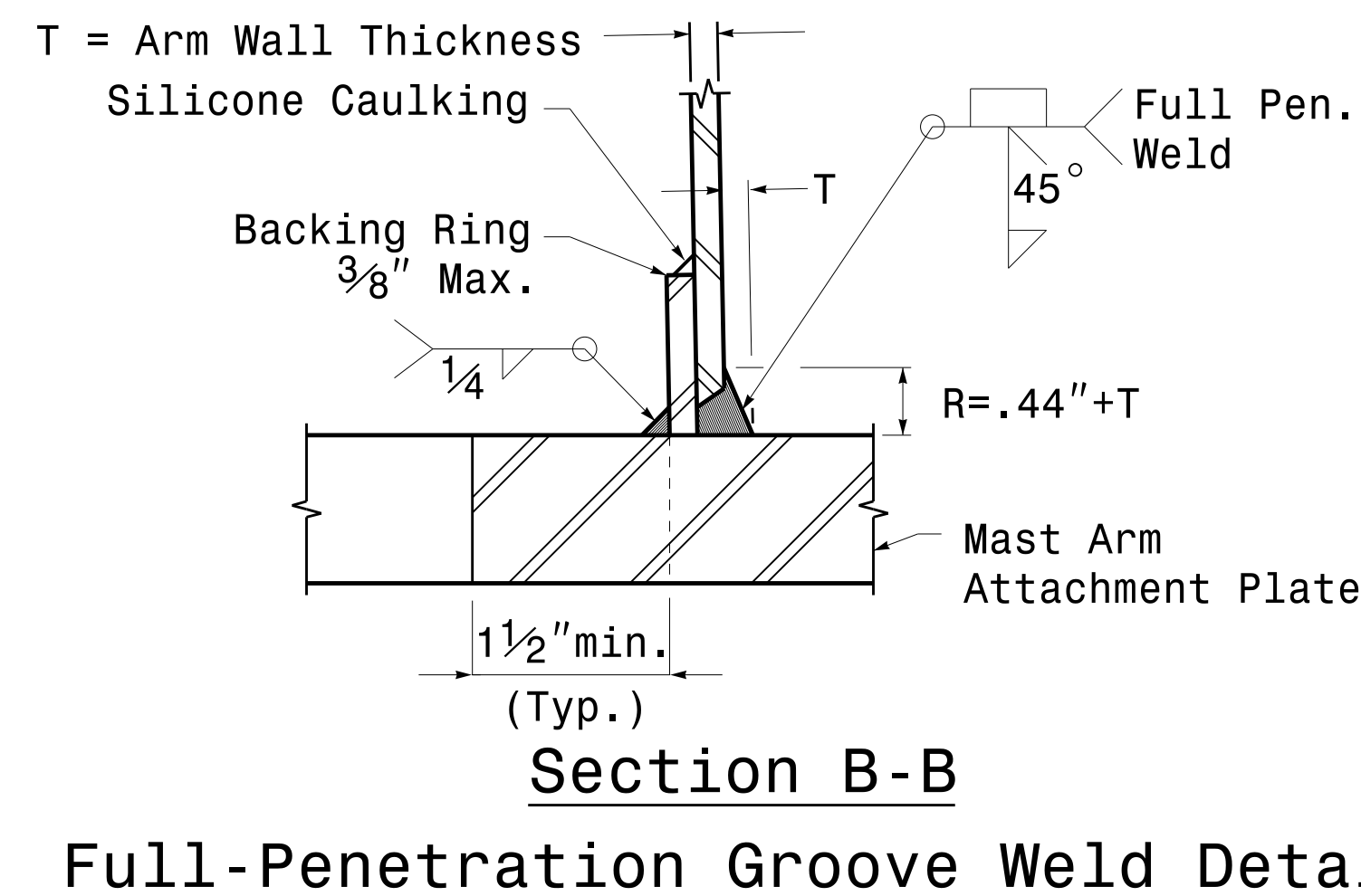
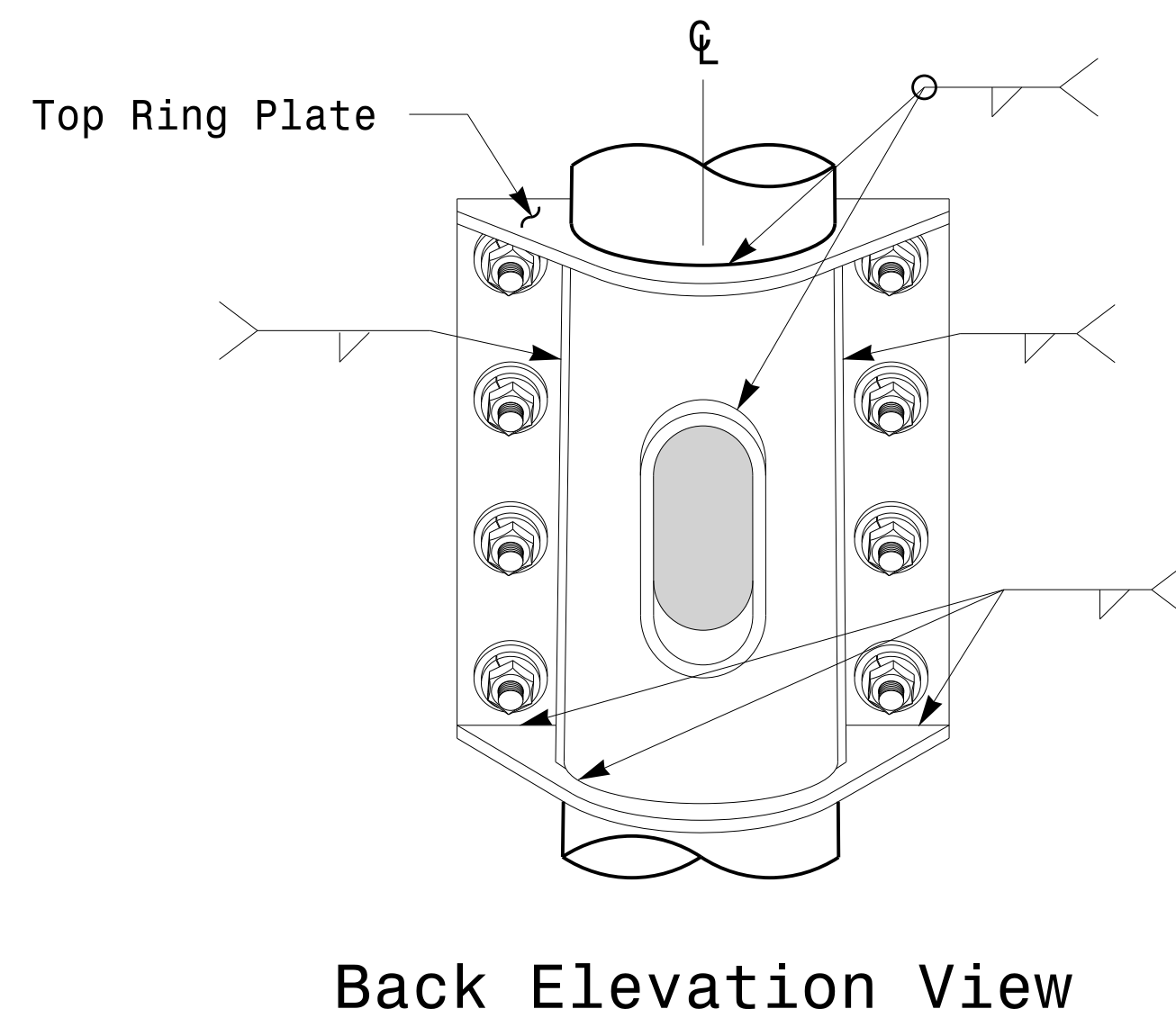
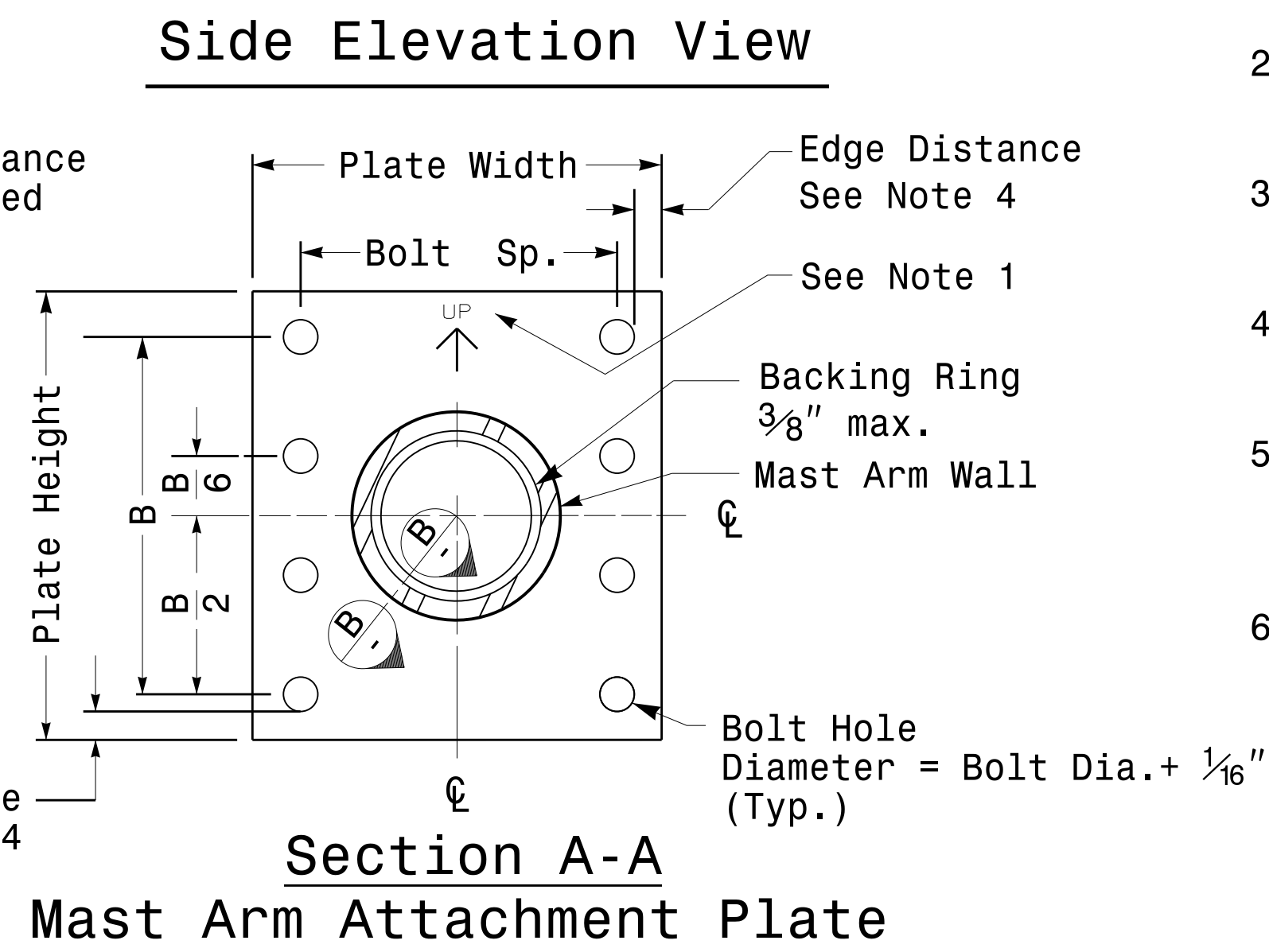
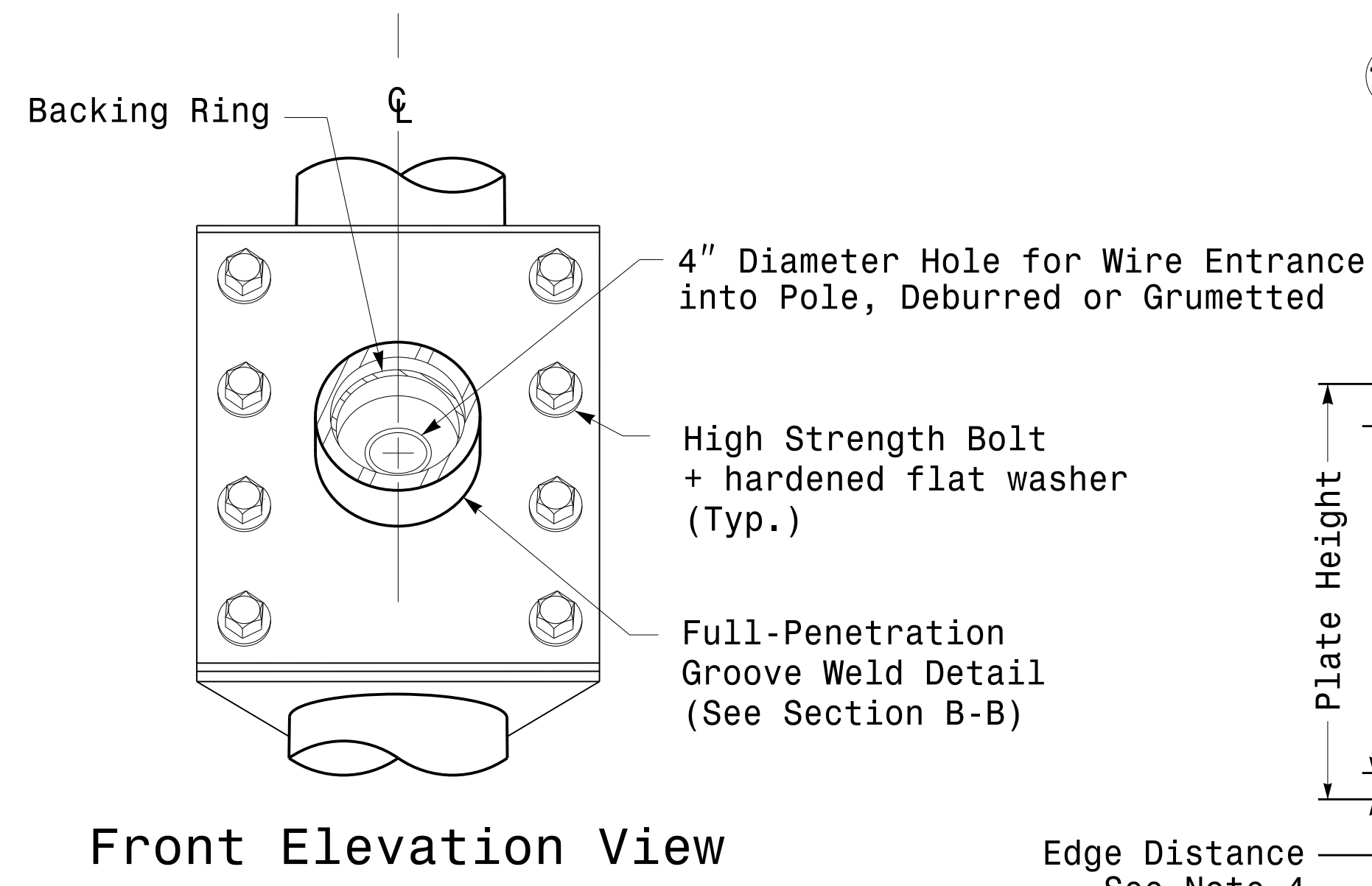
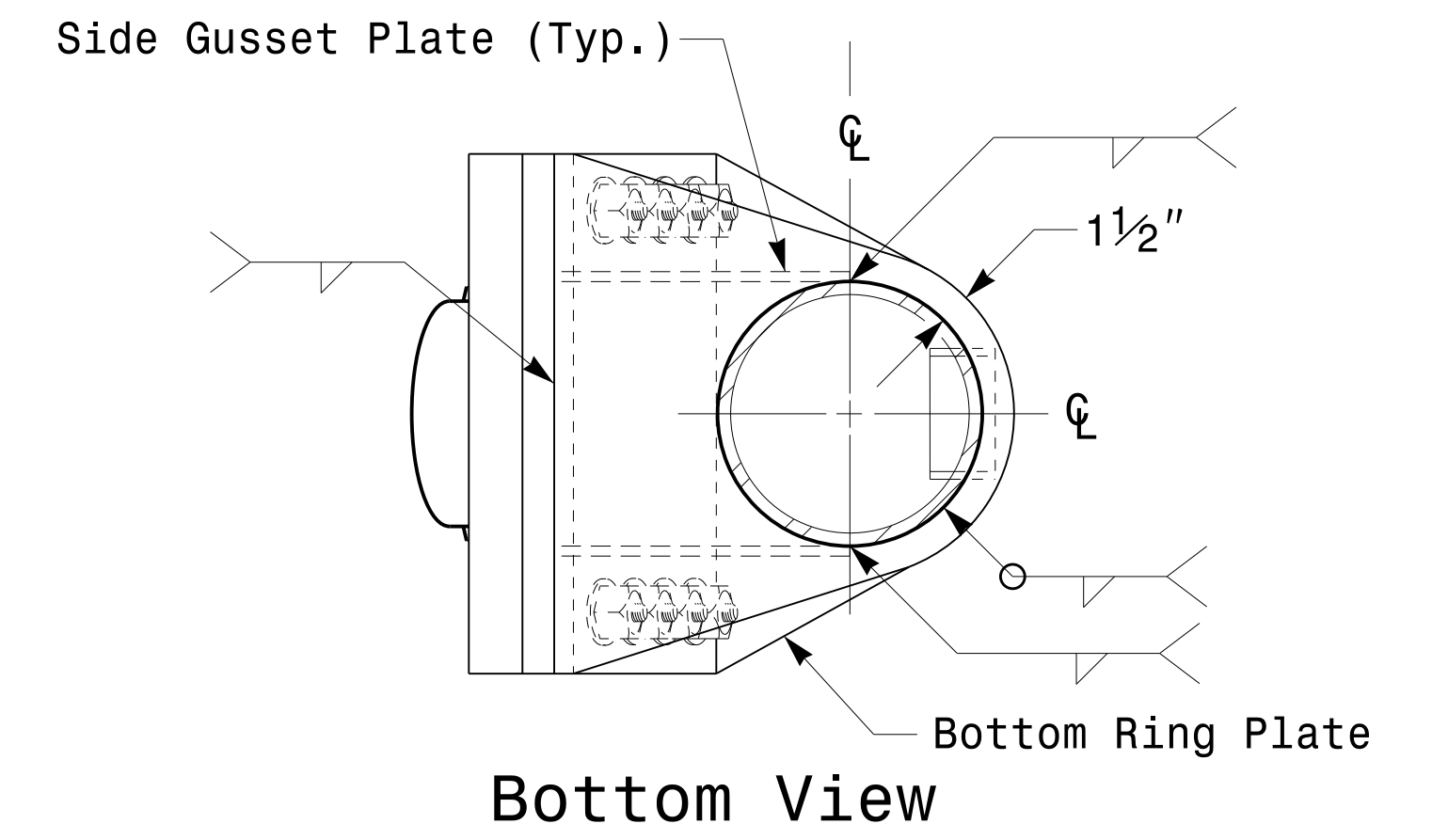
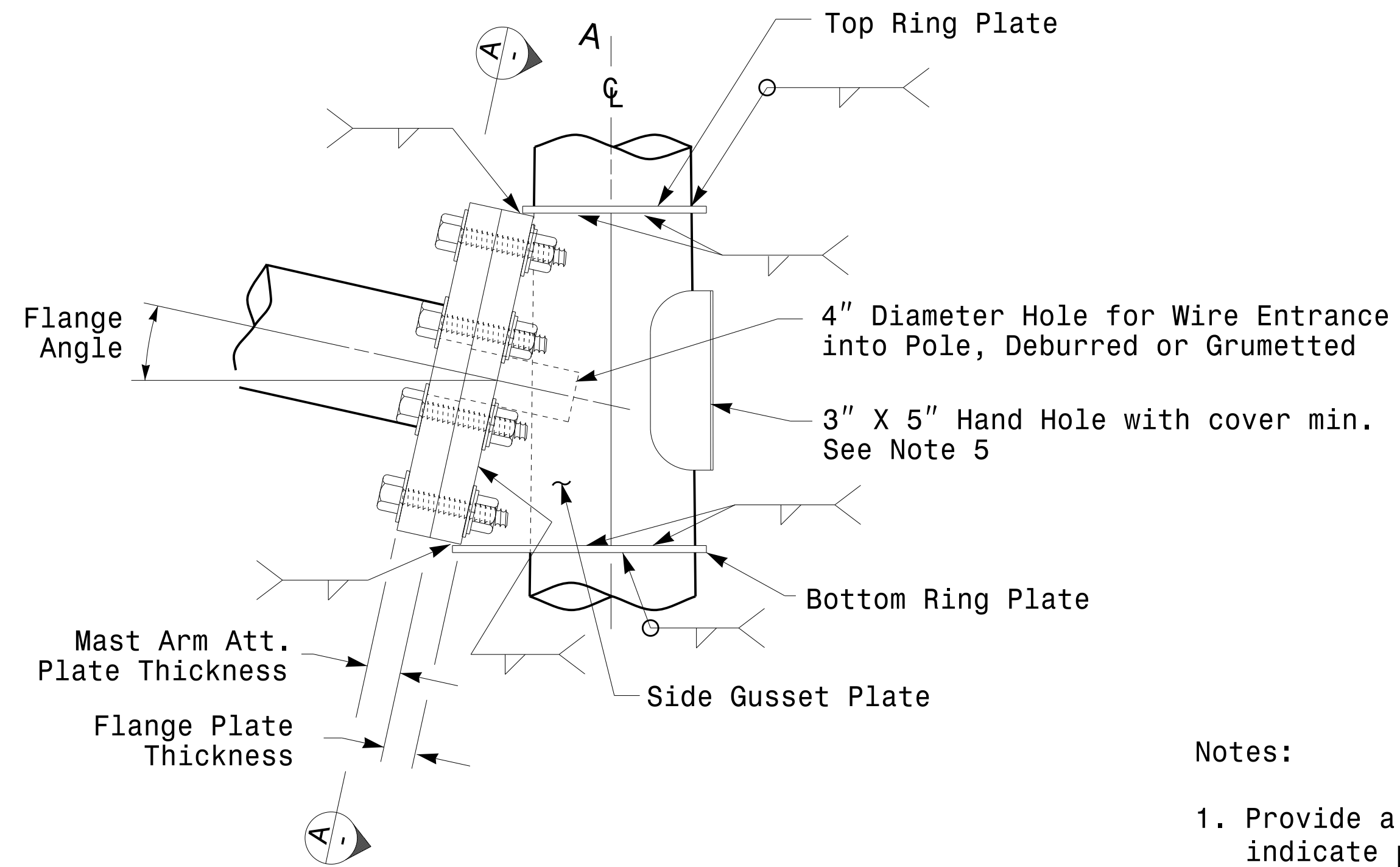
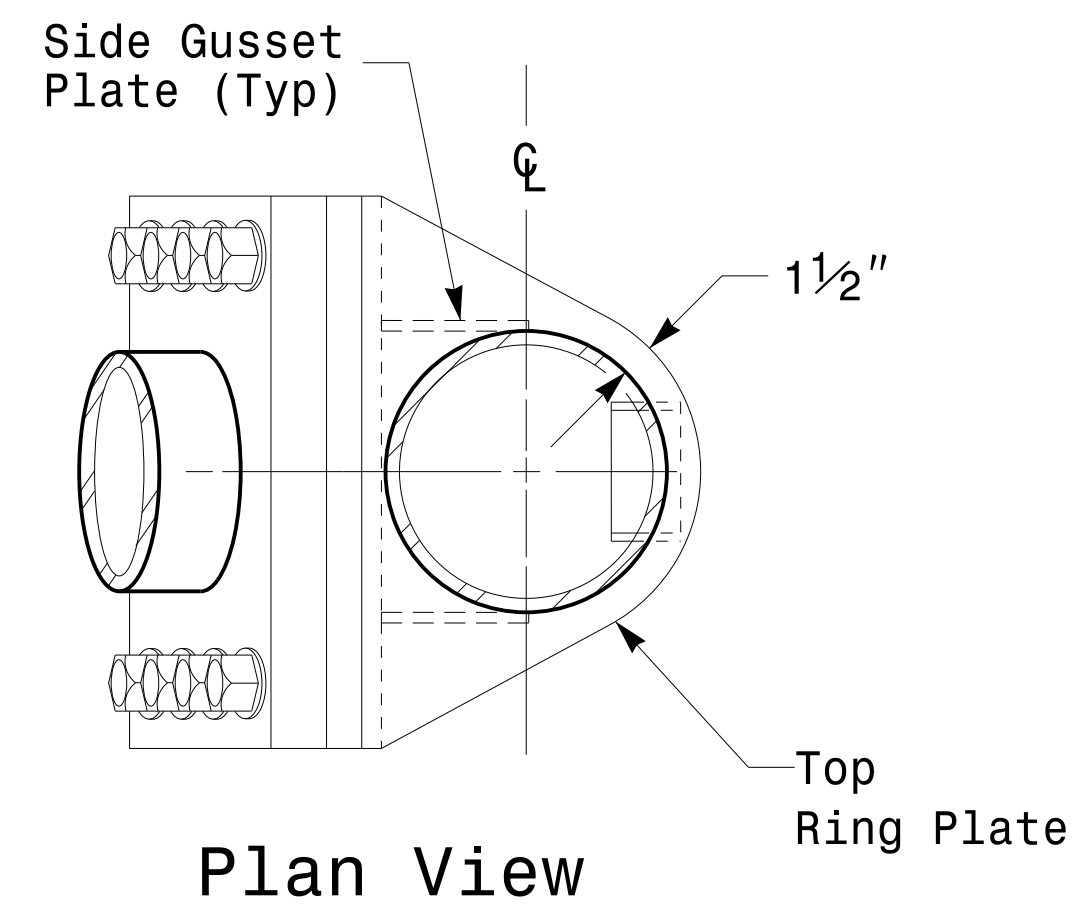
Welded Ring Stiffened Mast Arm Connection

PROJECT ID. NO.

SHEET NO.

U-5606

Sig.M5



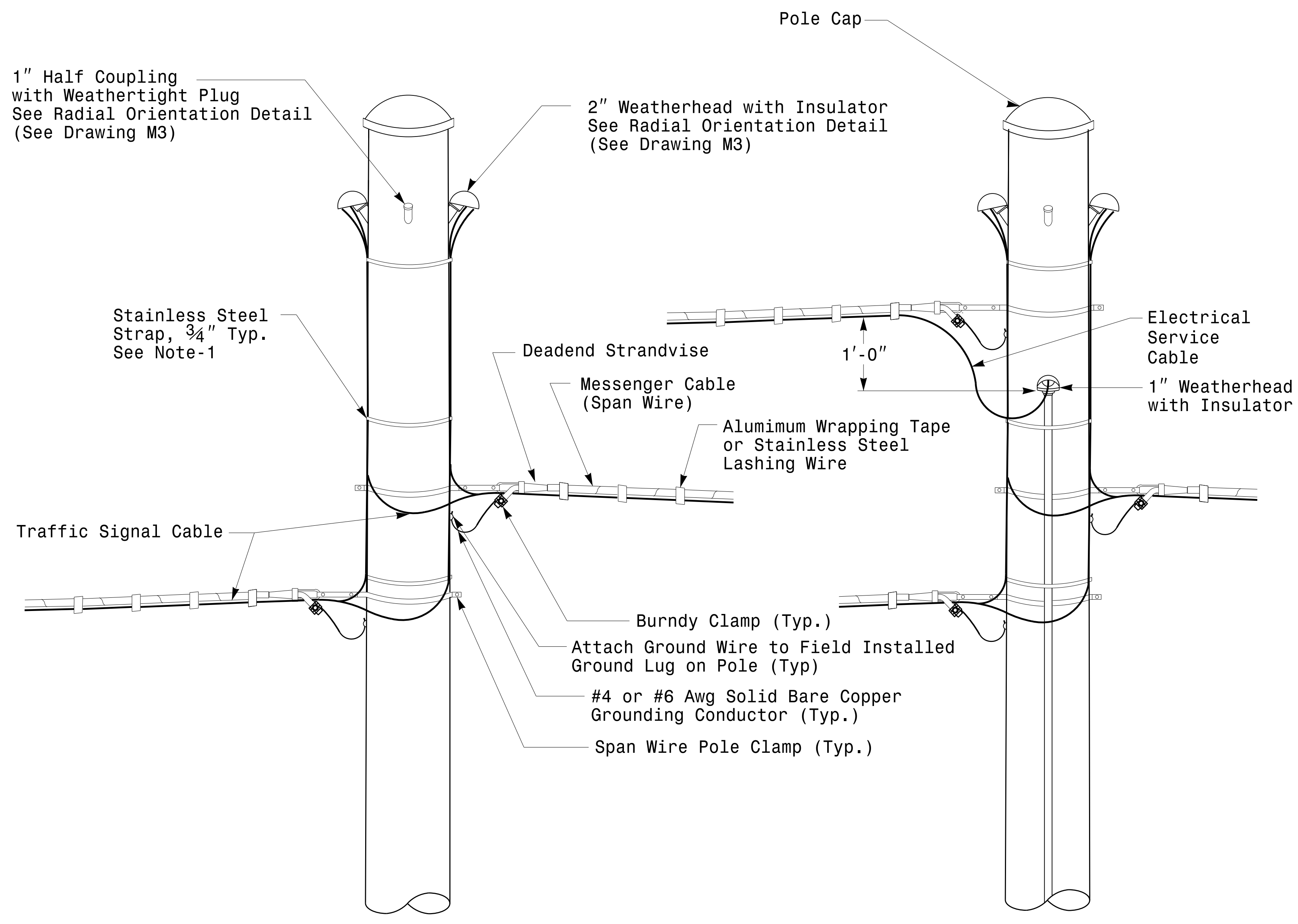
Notes:

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

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

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 Design Section\Eastern Region\44 Sheets\2016\2014_Sig.M5_S1d - Connection Fabrication Detail\1-Mast Arm Poles.dgn
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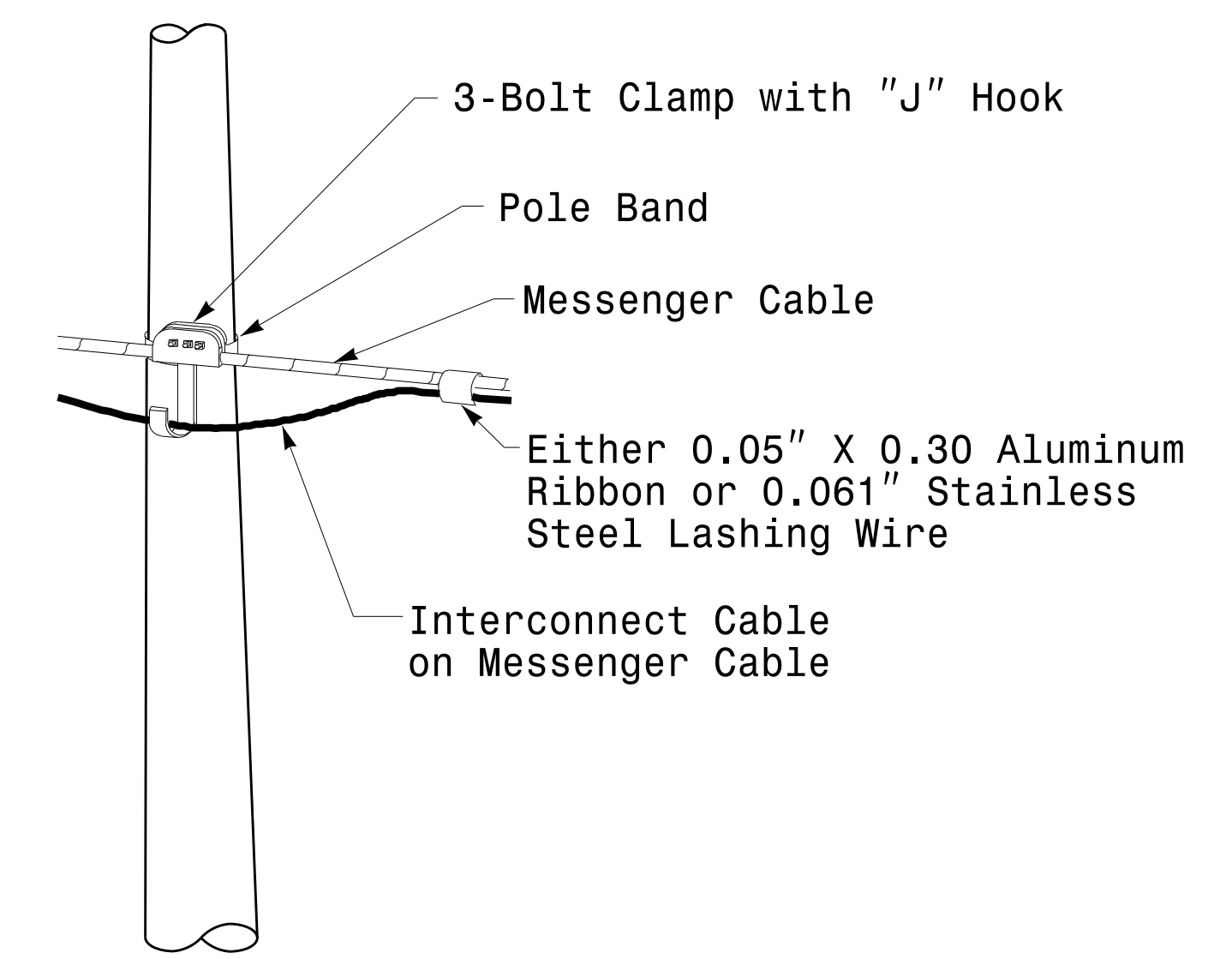
Fabrication Details - Mast Arm Connection



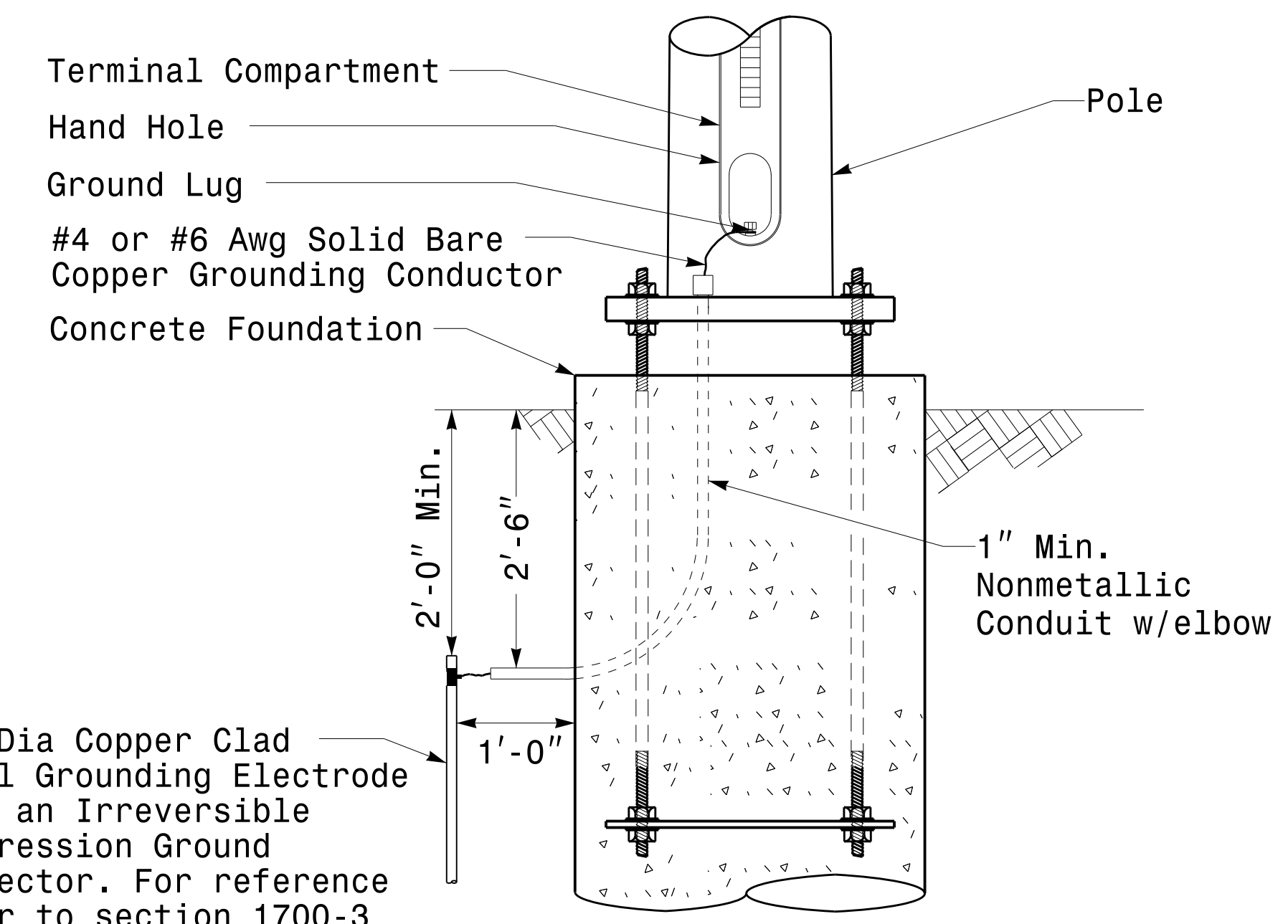
Strain Pole Attachments

NOTE:

1. Strap all signal cables to the side of the pole with 3/4" stainless steel straps when the distance between the spanwire attachment clamp and the weatherheads exceeds 3'-0".
2. Provide minimum two spanwire 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 2018.



Attachment of Cable to Intermediate Metal Pole



5/8" Dia Copper Clad Steel Grounding Electrode with an Irreversible Compression Ground Connector. For reference refer to section 1700-3 K and L for electrical grounding and bonding requirements, See Note 4.

Metal Pole Grounding Detail For Strain Pole and Mast Arm

11-0CT-2017-08:36 135604115 StrainPole.dgn Design Section Eastern Region 11/16/2014 Sig.M6 Std. Fabrication Detail: Strain Poles.dgn

	<p>Typical Fabrication Details For Strain Pole Attachments</p>		
	<p>PLAN DATE: OCTOBER 2017</p>	<p>DESIGNED BY: C.F. ANDREWS</p>	
<p>750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>SCALE: 0 NA NONE</p>	<p>REVISIONS</p>	<p>INIT. DATE</p>
<p>DocuSigned by: <i>Deshi C. Sarkar</i></p>		<p>10/11/2017</p>	

- 1 INSTALL REA, PE - 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
- 2 INSTALL COAX CABLE
- 3 INSTALL ETHERNET CABLE
- 4 INSTALL SMFO CABLE
- 5 INSTALL MMFO 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 MODIFY EXISTING INTERCONNECT CENTER /SPLICE ENCLOSURE
- 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 INSTALL POLE MOUNTED SPLICE CABINET
- 32 INSTALL BASE MOUNTED SPLICE CABINET
- 33 REMOVE EXISTING 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 36" 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 TELEPHONE SERVICE
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52A INSTALL DELINEATOR MARKER
- 52B INSTALL JUNCTION BOX MARKER
- 53 STORE 20 FEET OF 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 ETHERNET EDGE SWITCH
- 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
- 66 SLACK SPAN

LEGEND

	NEW FIBER OPTIC COMMUNICATIONS CABLE		NEW CABLE STORAGE RACKS (SNOW SHOES)
	NEW TWISTED PAIR COMMUNICATIONS CABLE		EXISTING CABLE STORAGE RACK (SNOW SHOE)
	EXISTING COMMUNICATIONS CABLE		EXISTING CONTROLLER AND CABINET
	EXISTING COMMUNICATIONS CABLE TO BE REMOVED		NEW CCTV CABINET
	NEW AERIAL GUY ASSEMBLY		EXISTING SPLICE CABINET
	NEW CONDUIT		NEW SPLICE CABINET
	EXISTING CONDUIT		SP
	NEW DIRECTIONAL DRILLED CONDUIT		SIGNAL POLE
	NEW BORED AND JACKED CONDUIT		FLAT PANEL ANTENNA (SINGLE)
	NEW JUNCTION BOX		YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION
	EXISTING JUNCTION BOX		YAGI ANTENNA (SINGLE)
	NEW WOOD POLE		OMNI ANTENNA
	EXISTING WOOD POLE		
	AERIAL SPLICE ENCLOSURE		
	UNDERGROUND SPLICE ENCLOSURE		
	NEW METAL POLE		
	EXISTING METAL POLE		
	NEW CCTV ASSEMBLY		
	NEW STANDARD GUY ASSEMBLY		
	NEW SIDEWALK GUY ASSEMBLY		
	SIGNAL INVENTORY NUMBER		

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)

NUMBER OF CABLE(S) NUMBER OF FIBERS/TWISTED PAIRS

NEW/EXISTING CABLE

REMOVE/MODIFY CABLE

CONDUIT/RISER

NUMBER OF RISER(S)/CONDUIT(S) DIAMETER OF RISER(S)/CONDUIT(S) (INCH)

ATTACHMENT POINT:

DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT

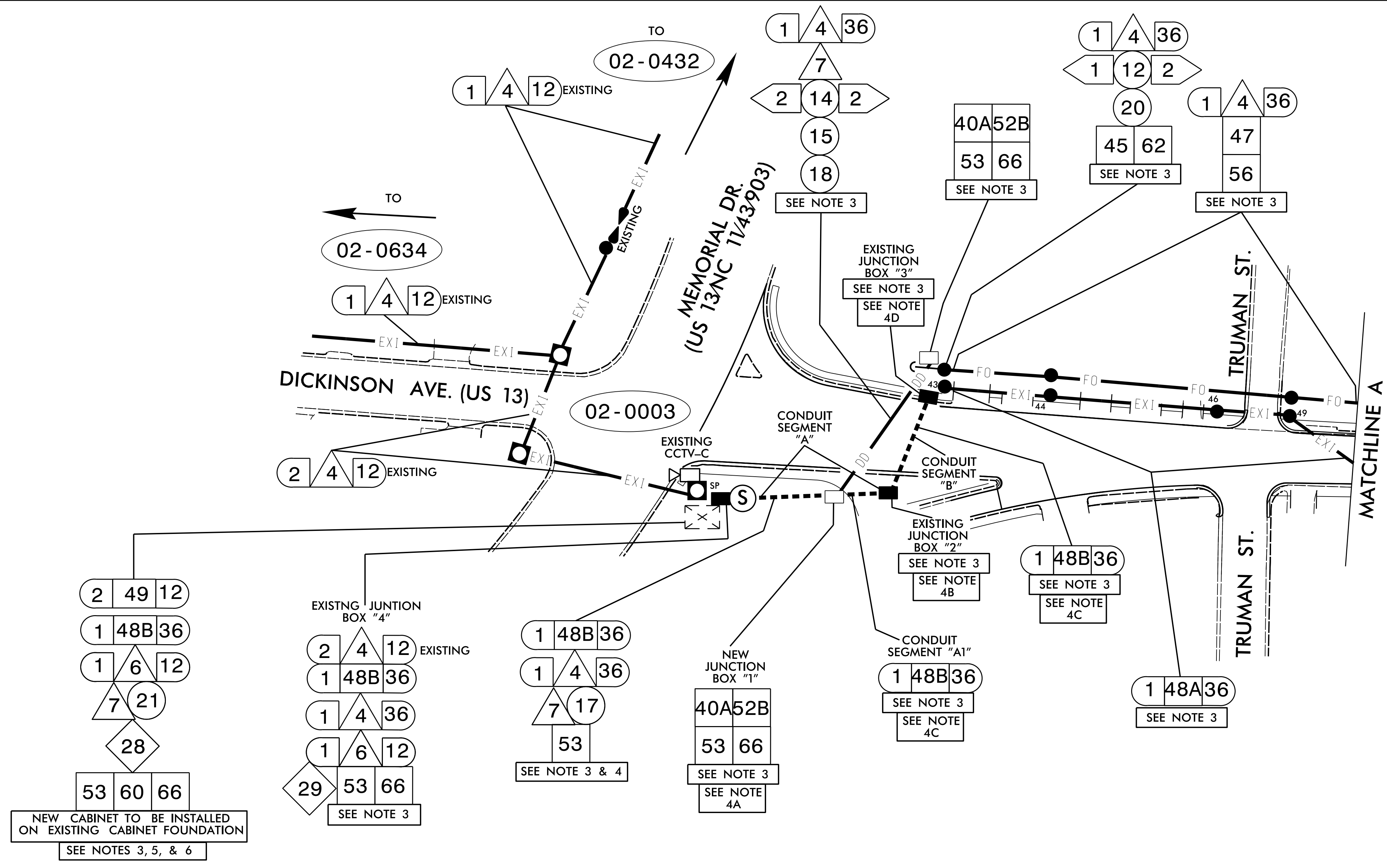
REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT

"SS" REFERENCE LOCATION

FS = FRONT SIDE OF POLE
BS = BACK SIDE OF POLE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

	<p>CONSTRUCTION NOTES</p> <p>DIVISION 02 PITT COUNTY GREENVILLE</p> <p>PLAN DATE: FEBRUARY 2018 REVIEWED BY: <i>I. N. Asami</i></p> <p>PREPARED BY: H.T. BERGGREN, EIT</p>		
	<p>REVISIONS</p> <p>INIT. DATE</p>	<p>DocuSigned by:</p> <p><i>M.A. Asami</i></p> <p>3/5/2018</p>	



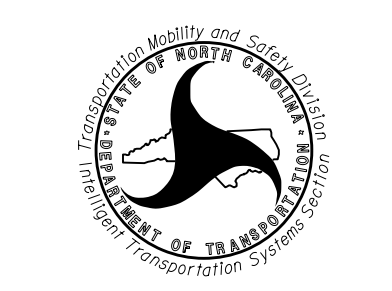
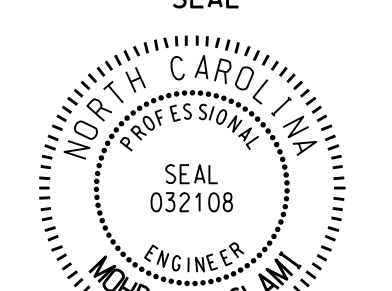
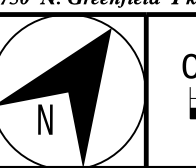
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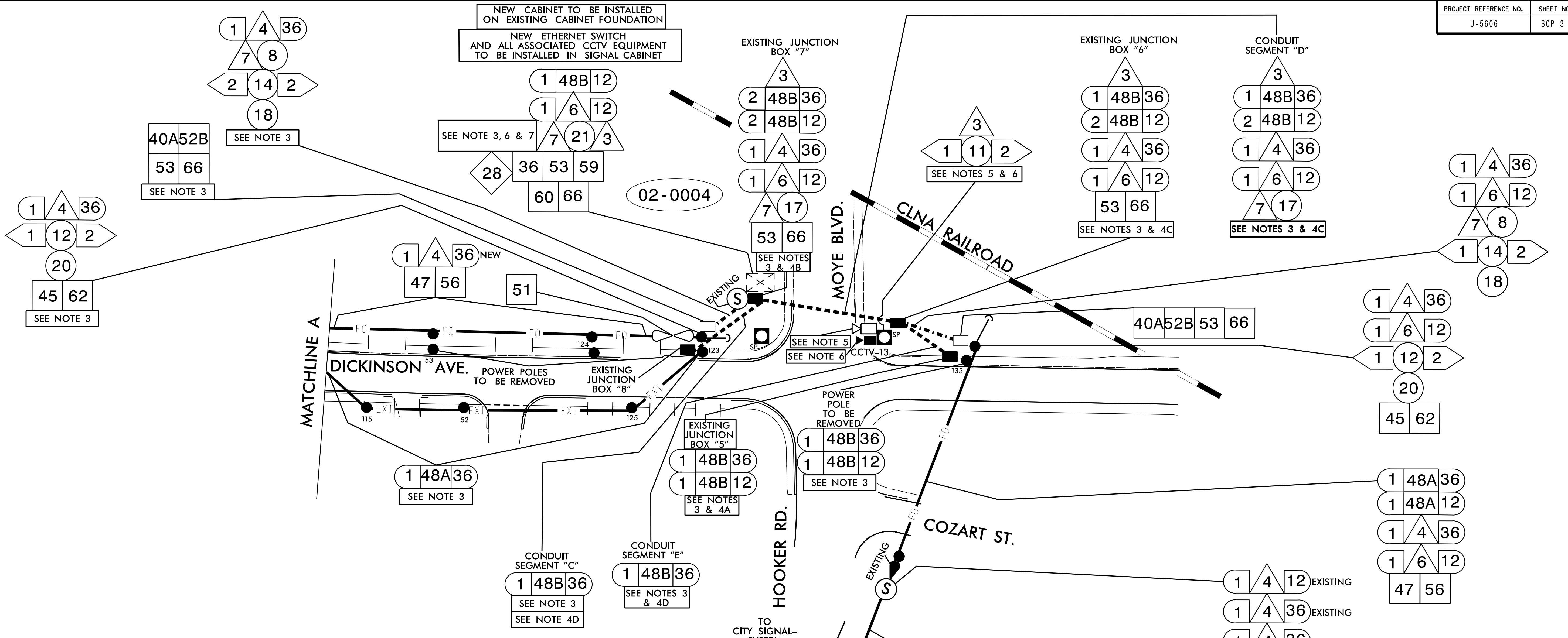
- 1) NOTIFY THE CITY OF GREENVILLE ASSISTANT TRAFFIC ENGINEER, STACEY PIGFORD, AT (252) 329-4678 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE ASSISTANT TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL 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) AFTER THE INSTALLATION OF NEW 36-FIBER CABLE, ALL DROP CABLES, AND ALL ASSOCIATED EQUIPMENT BETWEEN SIN #02-0003 (DICKINSON AVE. AND MEMORIAL DR.) TO SIN #02-0004 (DICKINSON AVE. AND HOOKER RD. / MOYE BLVD.) BEGIN REMOVAL OF EXISTING 36-FIBER CABLE, EXISTING DROP CABLES, AND EXISTING CCTV-13 AT SIN #02-0004 AND PERFORM TERMINATIONS AT THE SPLICE CENTERS. NOTE THAT THE 36-FIBER CABLE IS A TRUNK CABLE, ROUTED FROM THE CITY OF GREENVILLE'S PUBLIC WORKS DEPARTMENT, AND PROVIDES COMMUNICATIONS TO MANY CHANNELS OF THE CITY'S TRAFFIC SIGNAL SYSTEM. CONTRACTOR SHALL TAKE SPECIAL NOTICE OF NCDOT ITS ICT.
- 4) LOCATE EXISTING CONDUIT SEGMENTS "A", "B", EXISTING JUNCTION BOXES "2", "3", AND "4".
 - A) CUT CONDUIT SEGMENT "A" AND INSTALL NEW JUNCTION BOX "1."
 - B) REMOVE EXISTING JUNCTION BOX "2" AND BACKFILL WITH APPROVED SUBGRADE MATERIAL.
 - C) CONDUIT SEGMENTS "B" AND "A1" ARE TO BE ABANDONED IN PLACE.
 - D) EXISTING JUNCTION BOX "3" WILL BE REMOVED WITH SIDEWALK RESTORATION UNDER THIS PROJECT.
- 5) REUSE EXISTING CCTV EQUIPMENT IN NEW SIGNAL CABINET.
- 6) REUSE EXISTING TRANSCEIVER.

CONTRACTOR SHALL TAKE SPECIAL NOTICE OF NCDOT ITS ICT.

TMP PHASE 1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

 Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529	COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS		SEAL  M. A. ISLAMI ENGINEER 032108
	DIVISION 02 PITT COUNTY GREENVILLE	PLAN DATE: FEBRUARY 2018 REVIEWED BY: <i>I. N. Avery</i> PREPARED BY: H. T. BERGGREN, EIT	
	SCALE 0 50 1" = 50'	REVISIONS _____ _____ _____	INIT. DATE _____ _____
		DocuSigned by: <i>Mohd. Islami</i> 3/5/2018	



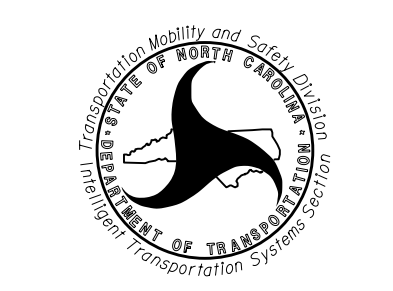
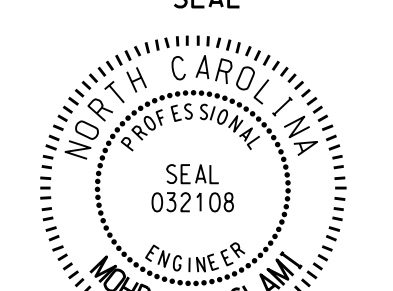

NOTES:

- 1) NOTIFY THE CITY OF GREENVILLE ASSISTANT TRAFFIC ENGINEER, STACEY PIGFORD, AT (252) 329-4678 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE ASSISTANT TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL 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) AFTER THE INSTALLATION OF NEW 36-FIBER CABLE, ALL DROP CABLES, AND ALL ASSOCIATED EQUIPMENT BETWEEN SIN #02-0003 (DICKINSON AVE. AND MEMORIAL DR.) TO SIN #02-0004 (DICKINSON AVE. AND HOOKER RD. / MOYE BLVD.) BEGIN REMOVAL OF EXISTING 36-FIBER CABLE, EXISTING DROP CABLES, AND EXISTING CCTV-13 AT SIN #02-0004 AND PERFORM TERMINATIONS AT THE SPLICE CENTERS. NOTE THAT THE 36-FIBER CABLE IS A TRUNK CABLE, ROUTED FROM THE CITY OF GREENVILLE'S PUBLIC WORKS DEPARTMENT, AND PROVIDES COMMUNICATIONS TO MANY CHANNELS OF THE CITY'S TRAFFIC SIGNAL SYSTEM. CONTRACTOR SHALL TAKE SPECIAL NOTICE OF NCDOT ITS ICT.
- 4) LOCATE EXISTING CONDUIT SEGMENTS "C", "D", AND "E" AND EXISTING JUNCTION BOXES "5", "6", "7", AND "8."
 - A) JUNCTION BOXES "5" AND "8" TO BE REMOVED WITH SIDEWALK RESTORATION UNDER THIS PROJECT.
 - B) REMOVE AND DISCARD EXISTING UNDERGROUND SPLICE ENCLOSURE IN EXISTING JUNCTION BOX "7". SPLICE ENCLOSURE WILL BE REPLACED WITH NEW AERIAL SPLICE ENCLOSURE AT HOOKER RD. AND COZART DR. AS SHOWN.
 - C) REUSE EXISTING JUNCTION BOX "6", EXISTING CONDUIT SEGMENT "D", AND EXISTING JUNCTION BOX "7" TO REROUTE NEW 36-FIBER CABLE AND DROP CABLES TO SIGNAL CABINET AND NEW CCTV-13.
 - D) CONDUIT SEGMENTS "C" AND "E" ARE TO BE ABANDONED IN PLACE.
- 5) REMOVE EXISTING CCTV AND ASSOCIATED EQUIPMENT AND DELIVER TO STACEY PIGFORD, GREENVILLE ASSISTANT TRAFFIC ENGINEER, AT THE CITY OF GREENVILLE PUBLIC WORKS DEPARTMENT AT 1500 BEATTY STREET, BUILDING E, GREENVILLE NC, 27834. SEE CONTACT NUMBER ABOVE.
- 6) INSTALL NEW CCTV-13 WITH ASSOCIATED EQUIPMENT IN EXISTING SIGNAL CABINET (SIN #02-0004). MOUNT NEW CCTV AT THE EXISTING ATTACHMENT HEIGHT, ON EXISTING SIGNAL POLE IN NE QUADRANT.
- 7) REUSE EXISTING TRANSCEIVER.

CONTRACTOR SHALL TAKE SPECIAL NOTICE OF NCDOT ITS ICT.

TMP PHASE 1

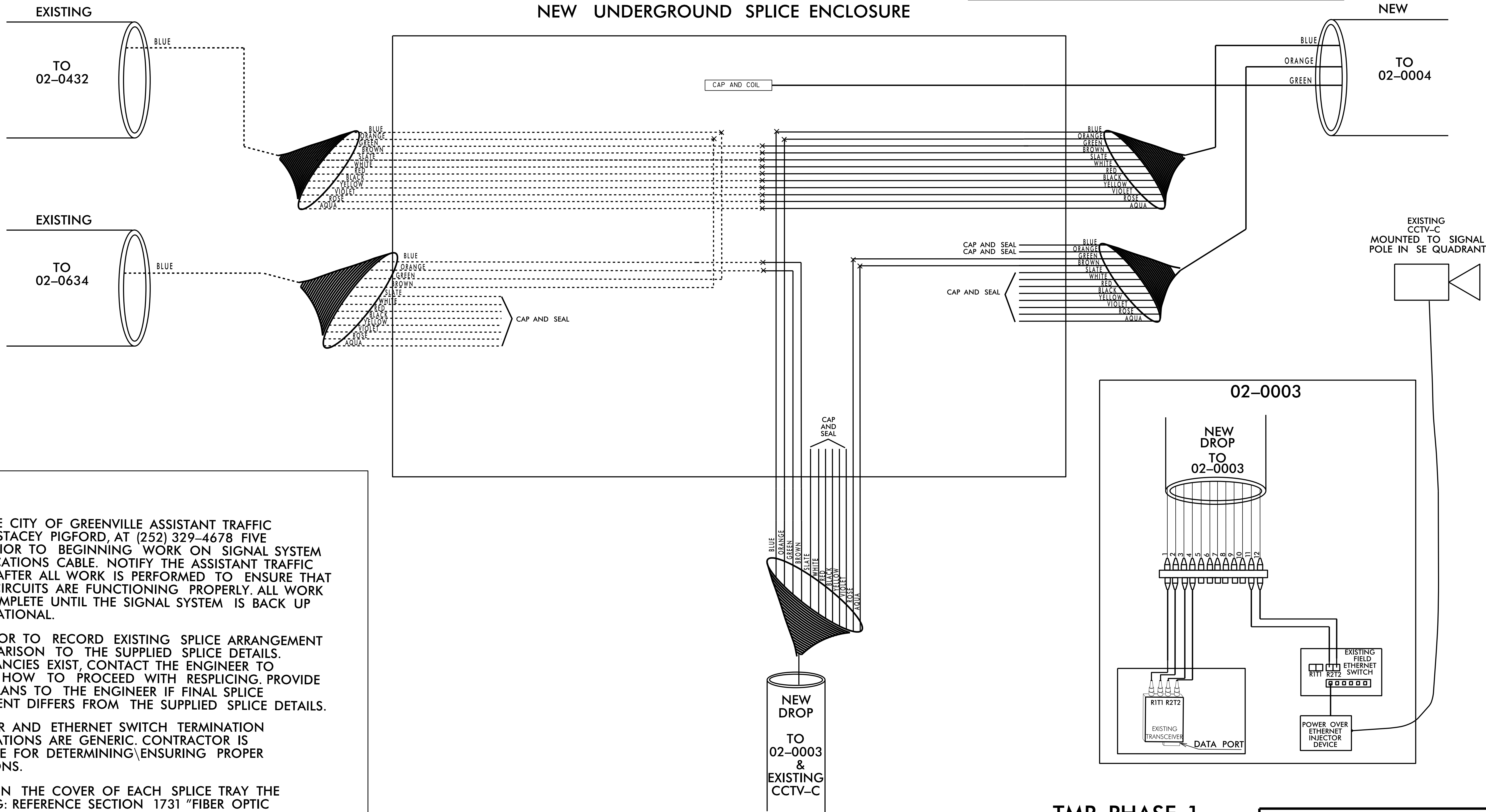
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

 Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529	<p>COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS</p> <p>DIVISION 02 PITT COUNTY GREENVILLE</p> <p>PLAN DATE: FEBRUARY 2018 REVIEWED BY: <i>I. N. Avery</i></p> <p>PREPARED BY: H. T. BERGGREN, EIT</p>	 SEAL NORTH CAROLINA PROFESSIONAL ENGINEER MOHAMMAD A. ISLAMI
	SCALE 50 1" = 50'	DocuSigned by: <i>Mohammad A. Islami</i> 3/5/2018

NEW UNDERGROUND SPLICE ENCLOSURE AT 02-0003

NOTE:
 1. UNLESS OTHERWISE NOTED, CAP AND STORE UNUSED FIBERS.
 2. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE TRAY.

COLOR CODE TIA/EIA 598-A		LEGEND	
(1) BLUE	(7) RED	X	FUSION SPLICE INDIVIDUAL FIBER
(2) ORANGE	(8) BLACK	[]	SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED
(3) GREEN	(9) YELLOW	[]	BUFFER TUBE
(4) BROWN	(10) VIOLET		
(5) SLATE	(11) ROSE		
(6) WHITE	(12) AQUA		



NOTES:

- 1) NOTIFY THE CITY OF GREENVILLE ASSISTANT TRAFFIC ENGINEER, STACEY PIGFORD, AT (252) 329-4678 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE ASSISTANT TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL 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) TRANSCEIVER AND 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.

CONTRACTOR SHALL TAKE SPECIAL NOTICE OF NCDOT ITS ICT.

TMP PHASE 1

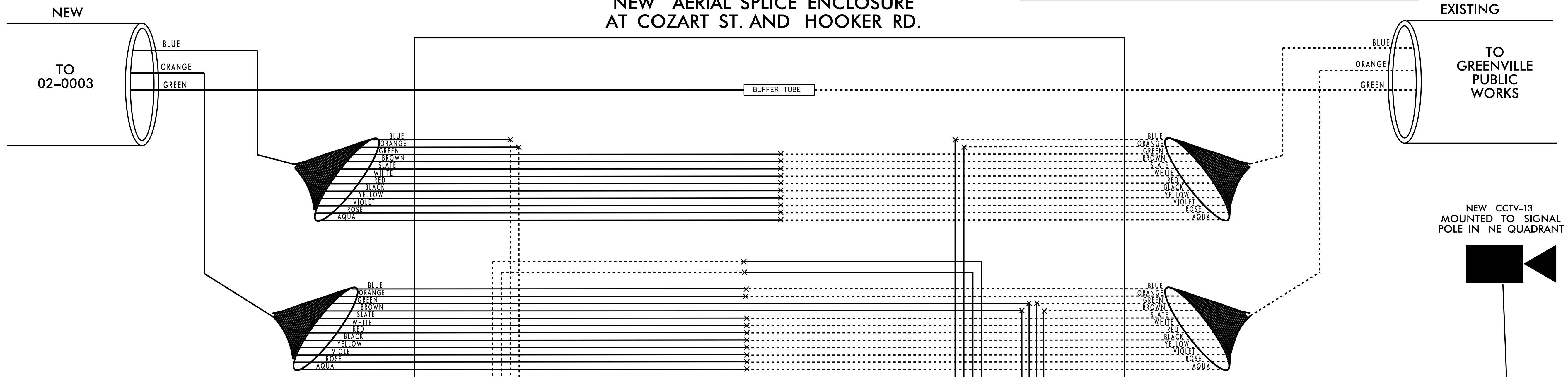
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<p>750 N. Greenfield Pkwy., Garner, NC 27529</p>	<p>SPLICE PLANS</p>		
	<p>DIVISION 02 PITT COUNTY GREENVILLE</p> <p>PLAN DATE: FEBRUARY 2018 REVIEWED BY: <i>I. N. Imani</i></p> <p>PREPARED BY: H.T. BERGGREN, EI</p>	<p>INIT. DATE</p>	
<p>SCALE N/A</p>	<p>REVISIONS</p>	<p>INIT. DATE</p>	<p>DATE</p>

**DICKINSON AVENUE AT
HOOKER RD/MOYE BLVD.
AT 02-0004**

NOTE:
1. UNLESS OTHERWISE NOTED, CAP AND STORE UNUSED FIBERS.
2. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE TRAY.

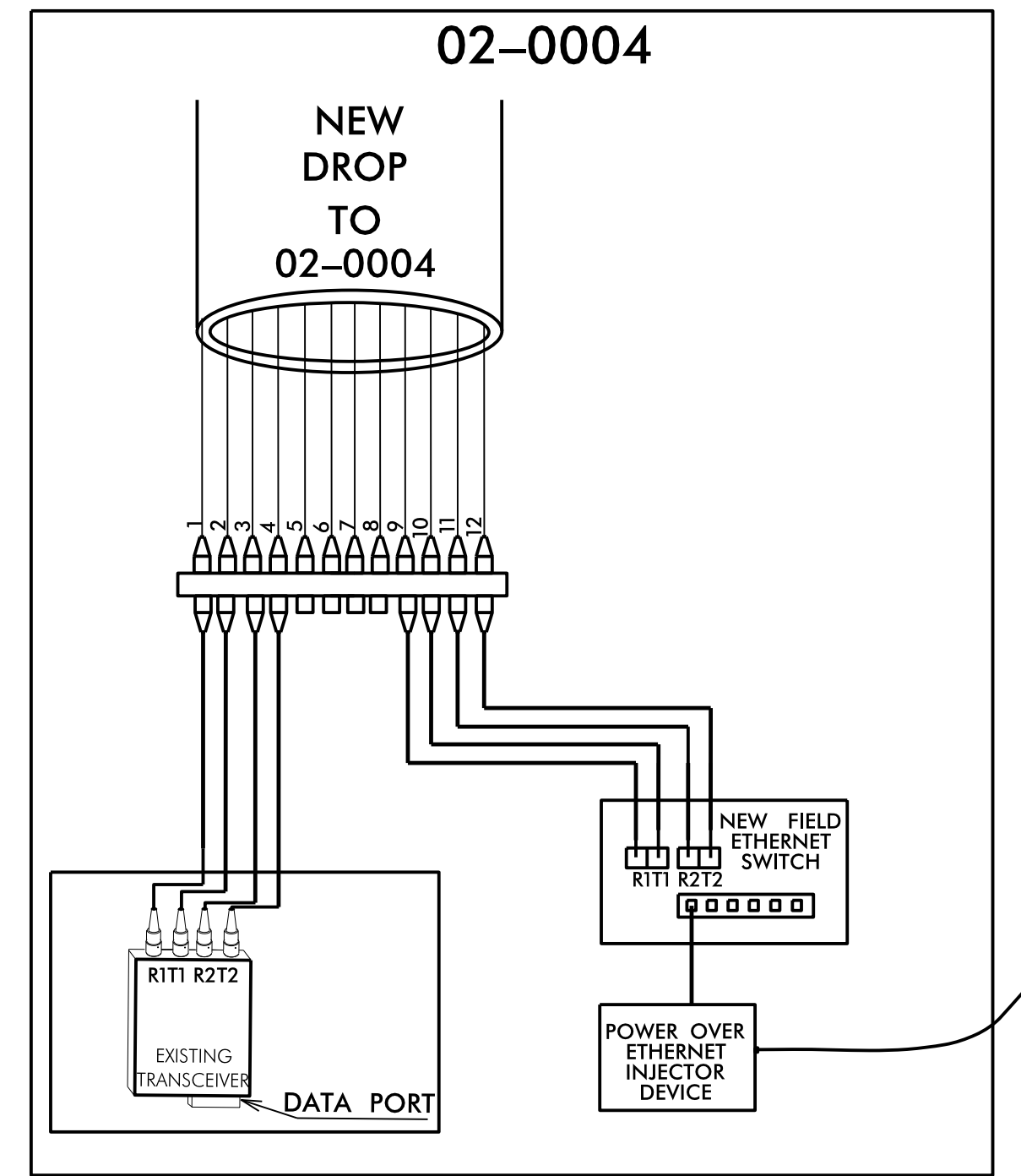
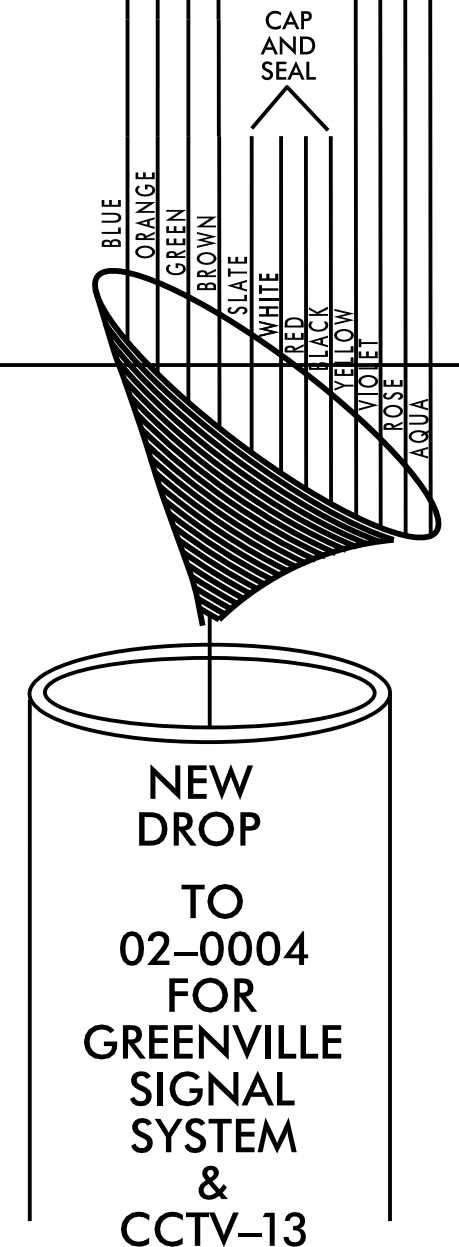
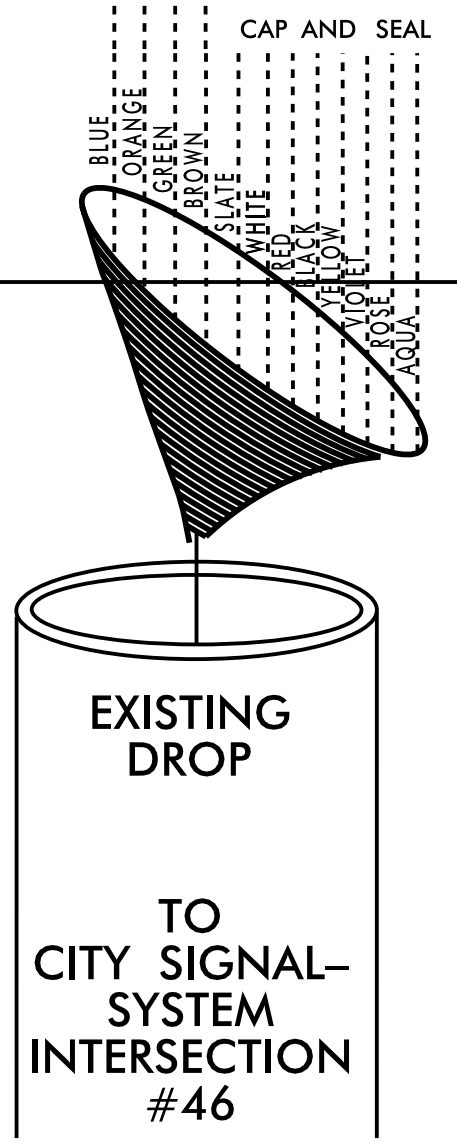
COLOR CODE TIA/EIA 598-A		LEGEND	
(1) BLUE	(7) RED	X	FUSION SPLICE INDIVIDUAL FIBER
(2) ORANGE	(8) BLACK	[BUFFER TUBE]	SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED
(3) GREEN	(9) YELLOW		
(4) BROWN	(10) VIOLET		
(5) SLATE	(11) ROSE		
(6) WHITE	(12) AQUA		



NOTES:

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 - 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.

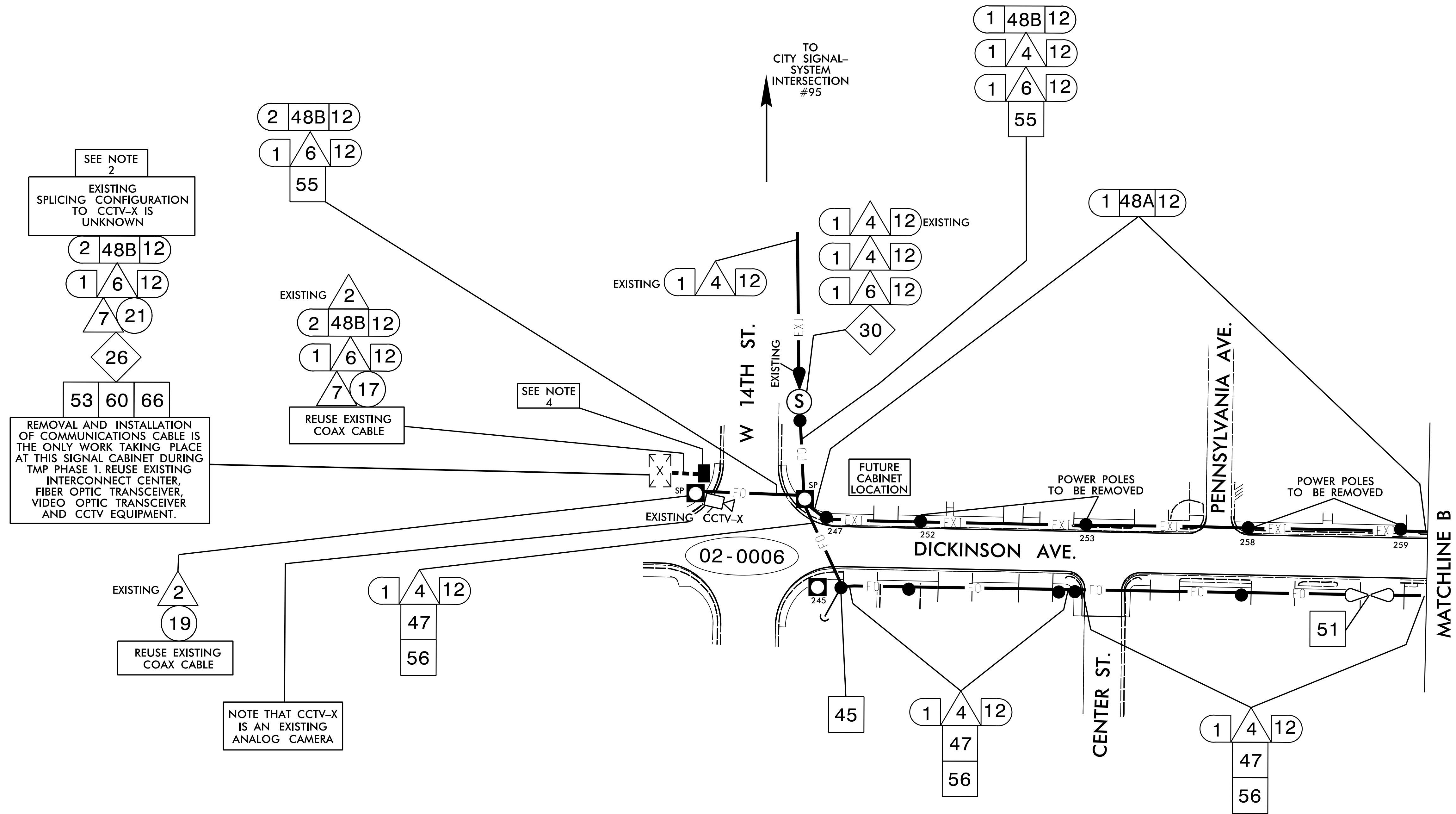


**CONTRACTOR SHALL TAKE
SPECIAL NOTICE OF NCDOT ITS ICT.**

TMP PHASE 1

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

<p>750 N. Greenfield Pkwy., Garner, NC 27529</p>	<p>SPLICE PLANS</p>		
	<p>DIVISION 02 PITT COUNTY GREENVILLE</p> <p>PLAN DATE: FEBRUARY 2018 REVIEWED BY: <i>I. N. Avery</i></p> <p>PREPARED BY: H. T. BERGGREN, EIT</p>	<p>SCALE: 0 N/A</p>	



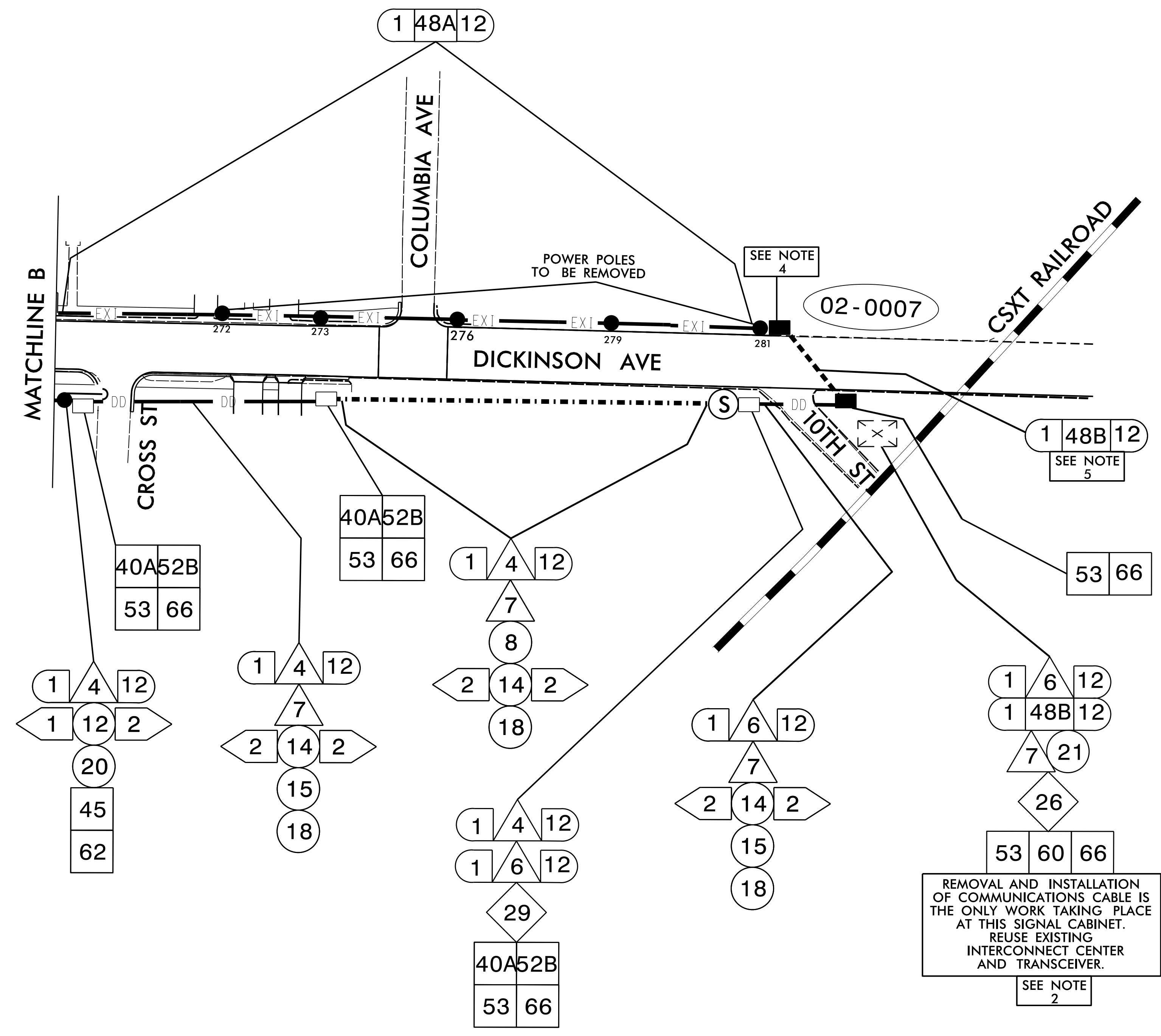
NOTES:

- 1) NOTIFY THE CITY OF GREENVILLE ASSISTANT TRAFFIC ENGINEER, STACEY PIGFORD, AT (252) 329-4678 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE ASSISTANT TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
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- 3) ALL CABLE ATTACHMENT POINTS ON NEW POWER POLES IS 40" BELOW POWER, FRONT SIDE OF POLE.
- 4) STORE 60 FEET OF NEW 12-FIBER DROP CABLE.

TMP PHASE 1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

	<p>COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS</p>	
	<p>DIVISION 02 PITT COUNTY GREENVILLE</p> <p>PLAN DATE: FEBRUARY 2018</p> <p>PREPARED BY: H. T. BERGGREN, EIT</p>	<p>REVIEWED BY: <i>I. N. Avery</i></p> <p>INIT. DATE</p>
<p>750 N. Greenfield Pkwy., Garner, NC 27529</p> <p>SCALE 0 50</p> <p>1" = 50'</p>	<p>REVISIONS</p>	<p>DocuSigned by: <i>Mohammad A. Islami</i></p> <p>3/5/2018</p>



NOTES:

- 1) NOTIFY THE CITY OF GREENVILLE ASSISTANT TRAFFIC ENGINEER, STACEY PIGFORD, AT (252) 329-4678 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE ASSISTANT TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
- 2) CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT PRIOR TO DISCONNECTING EXISTING 12-FIBER CABLE IN THE SIGNAL CABINET #02-0007. RESPLICE ACCORDING TO EXISTING SPLICE CONFIGURATION.
- 3) ALL CABLE ATTACHMENT POINTS ON NEW POWER POLES IS 40" BELOW POWER, FRONT SIDE OF POLE.
- 4) JUNCTION BOX TO BE REMOVED WITH SIDEWALK RESTORATION UNDER THIS PROJECT.
- 5) CONDUIT TO BE ABANDONED IN PLACE.

TMP PHASE 1

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

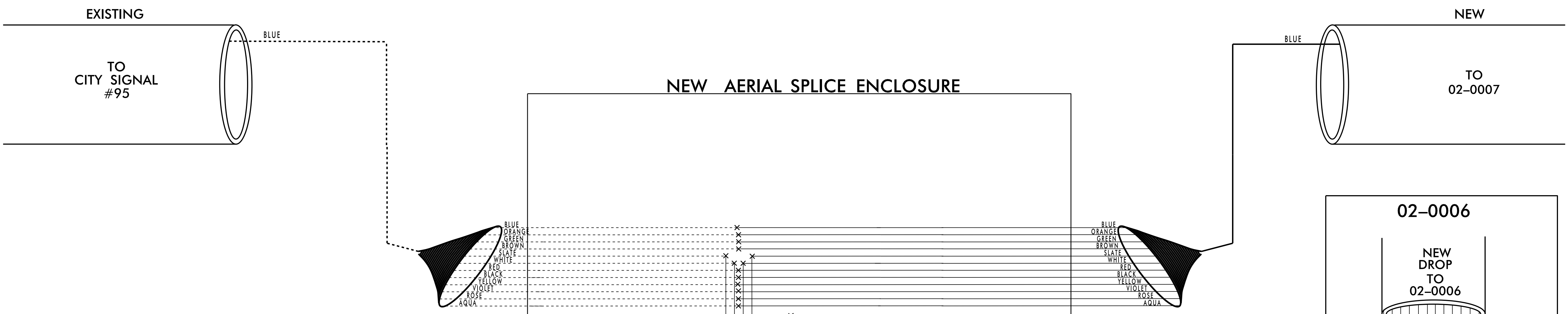
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	DIVISION 02 PITT COUNTY GREENVILLE PLAN DATE: FEBRUARY 2018 PREPARED BY: H. T. BERGGREN, EI	REVIEWED BY: <i>L. N. Avery</i> DATE:
SCALE 0 50 1" = 50'	REVISIONS INIT. DATE	SEAL M. A. ISLAMI DATE: 3/5/2018

**W. 14TH ST. AND
DICKINSON AVE.
AT 02-0006**

NOTE:
1. UNLESS OTHERWISE NOTED, CAP AND STORE UNUSED FIBERS.
2. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE TRAY.

LEGEND

COLOR CODE TIA/EIA 598-A		X - FUSION SPLICE INDIVIDUAL FIBER
(1) BLUE	(7) RED	
(2) ORANGE	(8) BLACK	[BUFFER TUBE] SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED
(3) GREEN	(9) YELLOW	
(4) BROWN	(10) VIOLET	
(5) SLATE	(11) ROSE	
(6) WHITE	(12) AQUA	

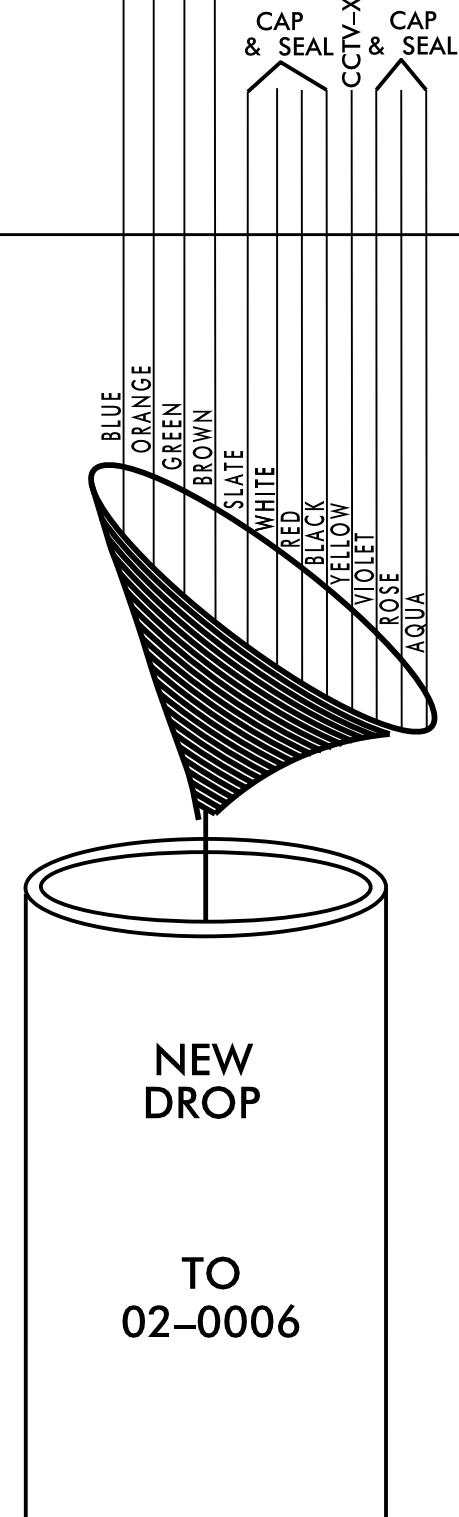


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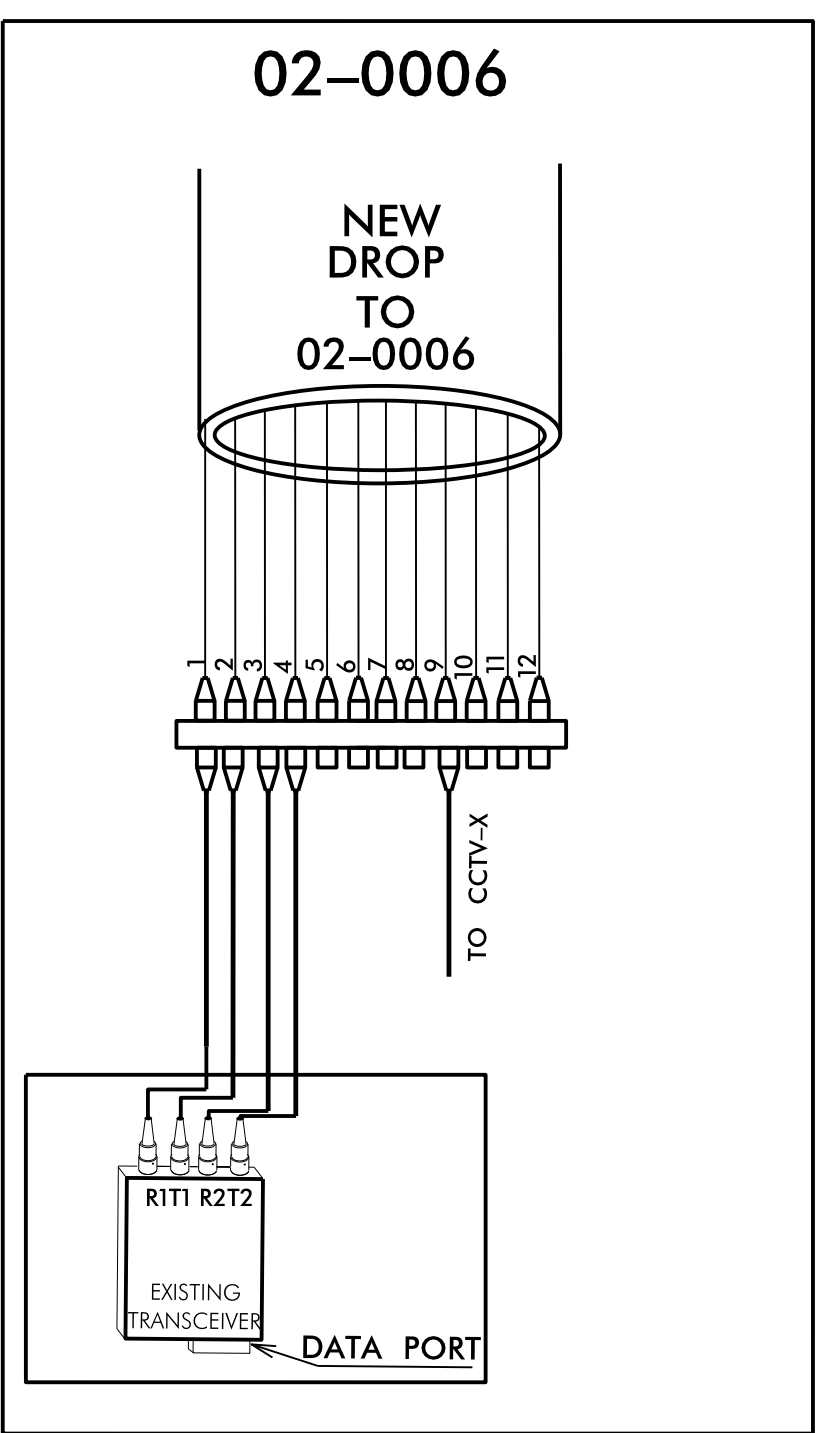
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- 3) TRANSCEIVER TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATIONS.
- 4) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING: REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"

- 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.



SEE NOTE 2
EXISTING
SPLICING CONFIGURATION
TO CCTV-X IS
UNKNOWN



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

TMP PHASE 1

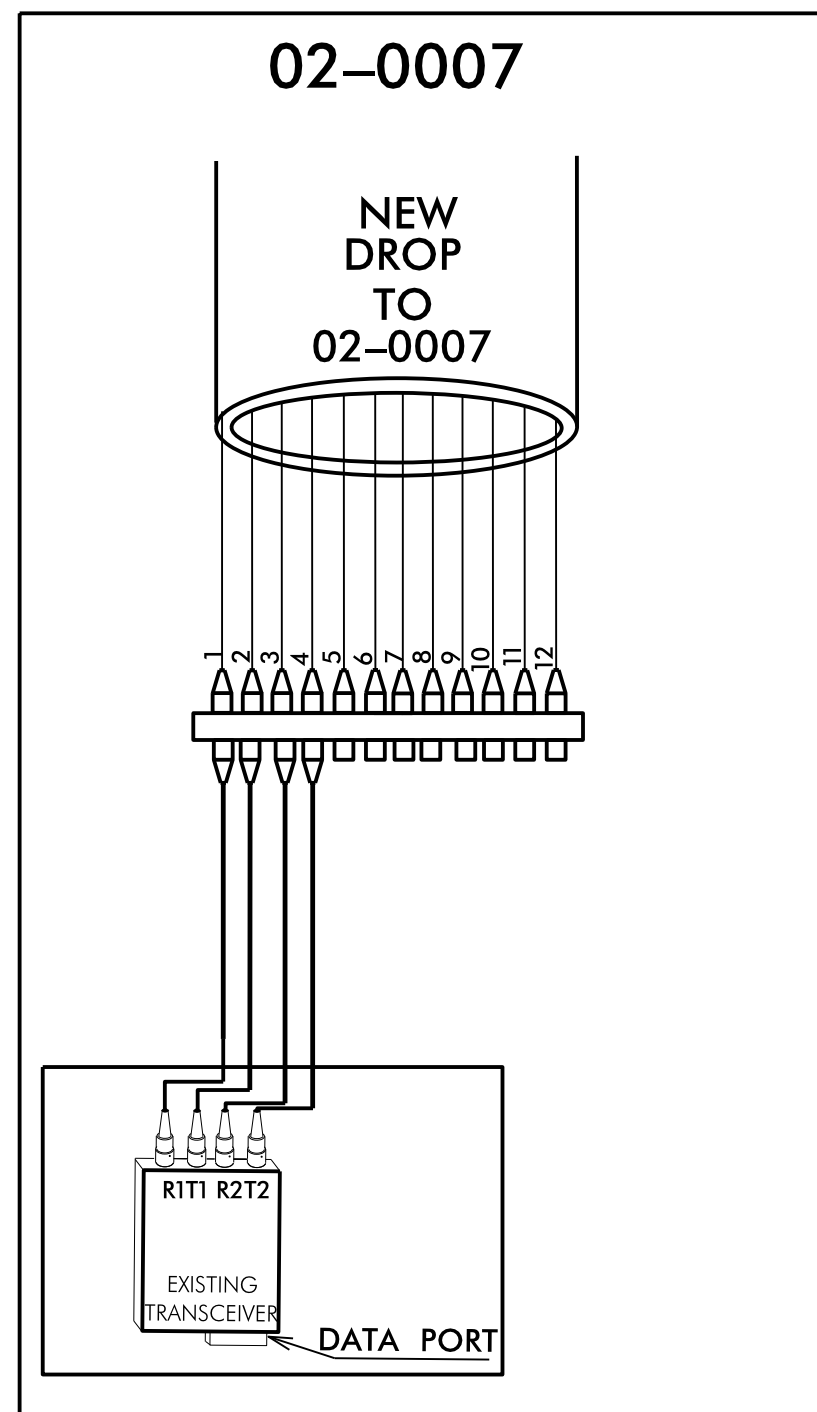
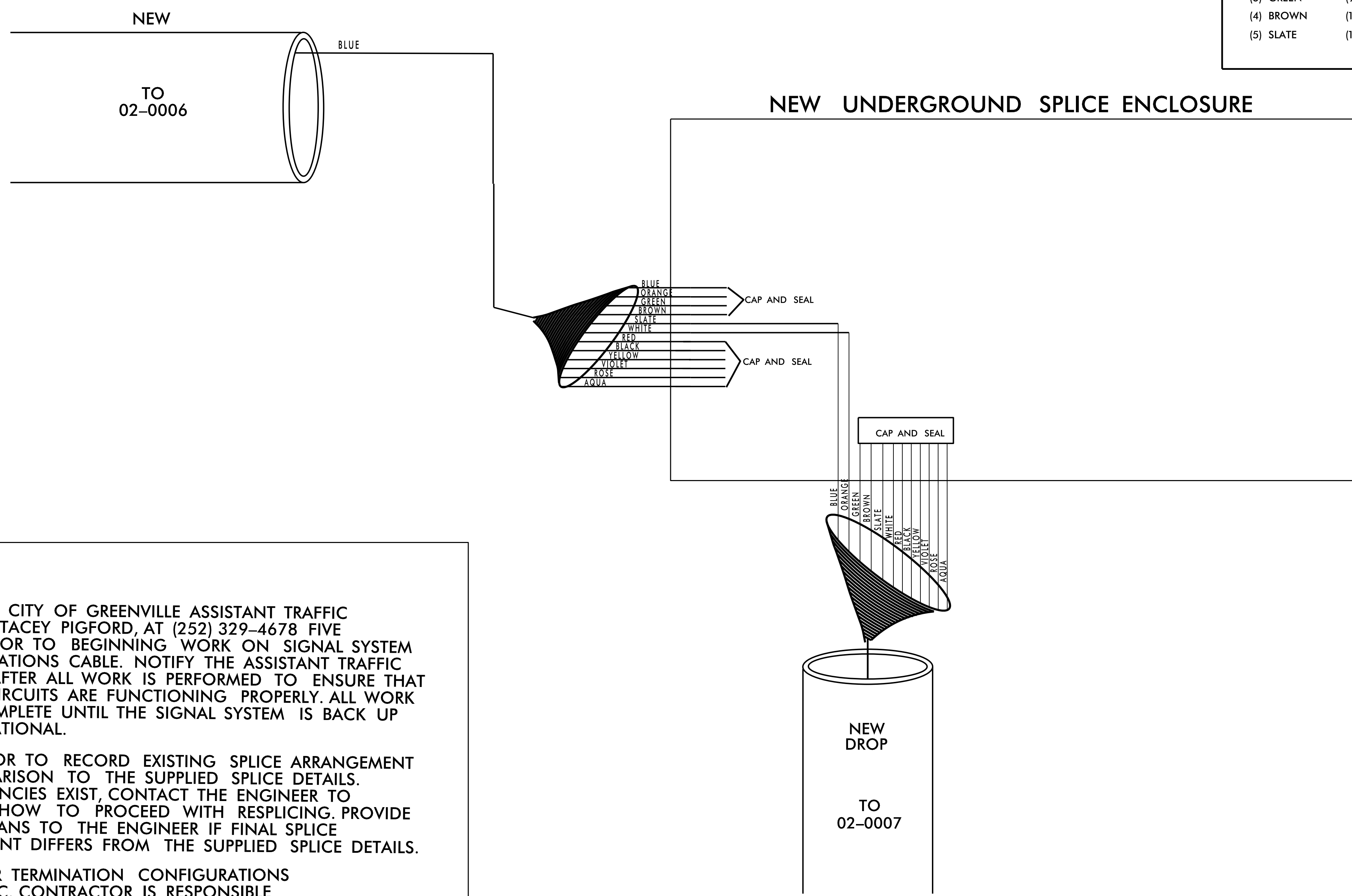
	SPLICE PLANS		
	DIVISION 02 PITT COUNTY GREENVILLE		
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE: 0 N/A N/A	PLAN DATE: FEBRUARY 2018 PREPARED BY: H. T. BERGGREN, EI	REVIEWED BY: <i>I. N. Avery</i> DATE:	SEAL 032108 M. A. ISLAMI 3/5/2018 DATE

**10TH STREET AND
DICKINSON AVE.
AT 02-0007**

NOTE:
1. UNLESS OTHERWISE NOTED, CAP AND STORE UNUSED FIBERS.
2. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE TRAY.

LEGEND

COLOR CODE TIA/EIA 598-A		
(1) BLUE	(7) RED	X - FUSION SPLICE INDIVIDUAL FIBER
(2) ORANGE	(8) BLACK	
(3) GREEN	(9) YELLOW	
(4) BROWN	(10) VIOLET	
(5) SLATE	(11) ROSE	
		BUFFER TUBE SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED



NOTES:

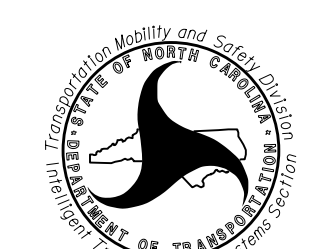
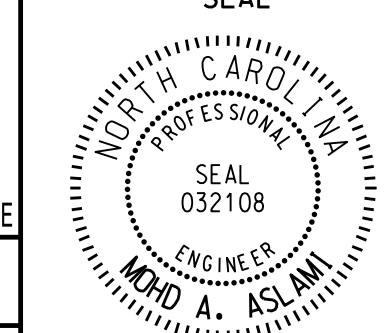
- 1) NOTIFY THE CITY OF GREENVILLE ASSISTANT TRAFFIC ENGINEER, STACEY PIGFORD, AT (252) 329-4678 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE ASSISTANT TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL 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) TRANSCEIVER 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"

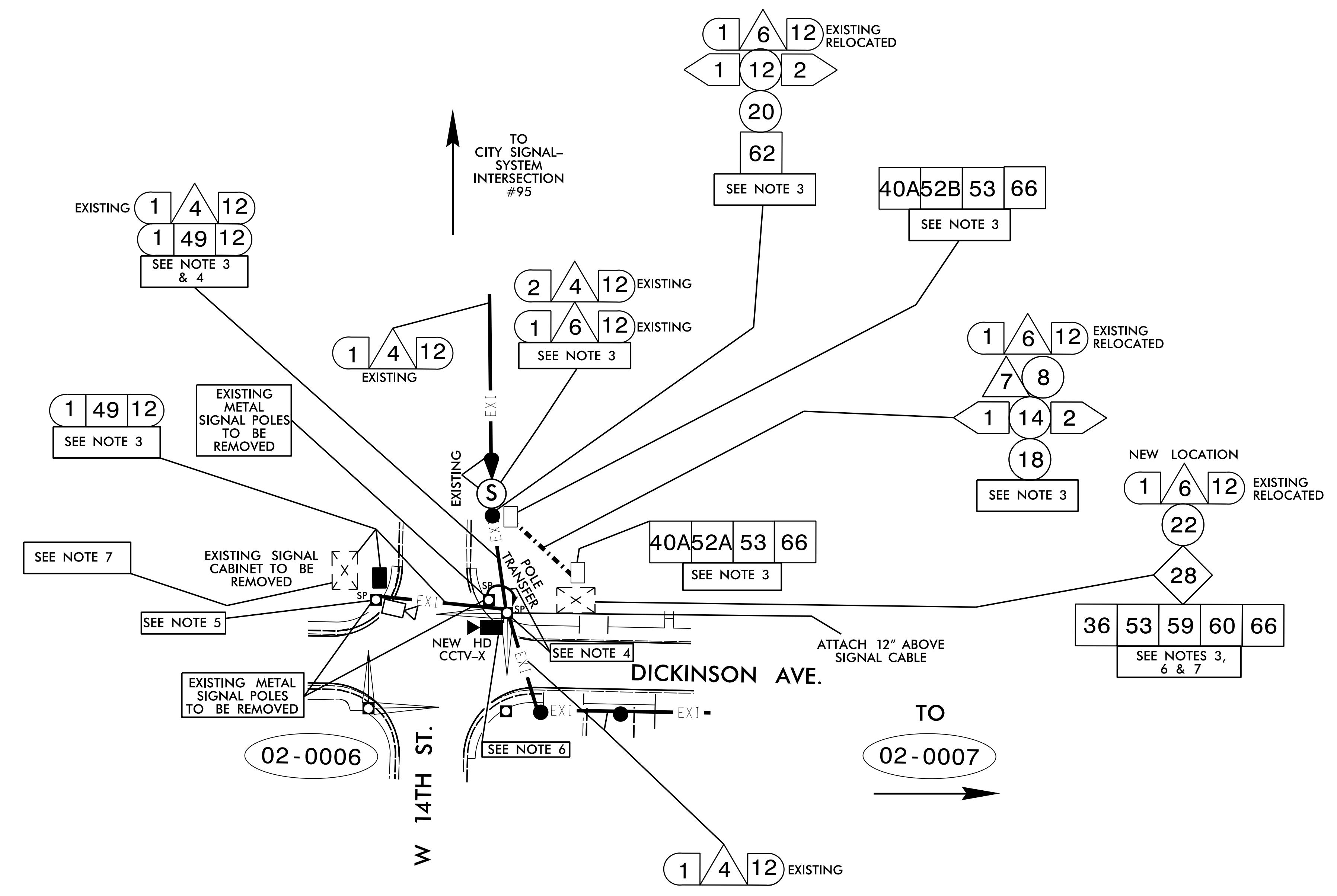
1) SPLICE LOCATION
2) DATE
3) COMPANY NAME
4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

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.

TMP PHASE 1

*DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED*

 <small>750 N. Greenfield Pkwy., Garner, NC 27529</small>	SPLICE PLANS		SEAL 						
	<small>DIVISION 02 PITT COUNTY GREENVILLE</small> <small>PLAN DATE: FEBRUARY 2018</small> <small>PREPARED BY: H. T. BERGGREN, EI</small>	<small>REVIEWED BY: I. N. Avery</small> <small>DATE: _____</small>	<small>INIT. DATE</small> <small>DATE: _____</small>	<small>3/5/2018</small> <small>DATE</small>					
<small>SCALE</small> <table style="margin: auto;"> <tr> <td style="border: 1px solid black; padding: 2px;">0</td> <td style="border: 1px solid black; padding: 2px;">N/A</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">N/A</td> <td style="border: 1px solid black; padding: 2px;">N/A</td> </tr> </table>	0	N/A	N/A	N/A	<small>REVISIONS</small> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> </table>				
0	N/A								
N/A	N/A								



NOTES:

- 1) NOTIFY THE CITY OF GREENVILLE ASSISTANT TRAFFIC ENGINEER, STACEY PIGFORD, AT (252) 329-4678 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE ASSISTANT TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL 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) DELASH AND BACKPULL 12-FIBER DROP FROM EXISTING SIGNAL CABINET AND ROUTE TO TO NEW SIGNAL CABINET.
- 4) TRANSFER 12-FIBER CABLE ROUTED TO SIGNAL CABINET (SIN #02-0007) TO NEW METAL POLE WITH MAST ARM.
- 5) REMOVE EXISTING CCTV AND ASSOCIATED EQUIPMENT AND DELIVER TO STACEY PIGFORD, GREENVILLE ASSISTANT TRAFFIC ENGINEER, AT THE CITY OF GREENVILLE PUBLIC WORKS DEPARTMENT AT 1500 BEATTY STREET, BUILDING E, GREENVILLE NC, 27834. SEE CONTACT NUMBER ABOVE.
- 6) INSTALL NEW CCTV WITH ASSOCIATED EQUIPMENT AT NEW SIGNAL CABINET LOCATION. MOUNT NEW CCTV-X, ON NEW METAL POLE, IN NE QUADRANT, 6" ABOVE RELOCATED 12-FIBER COMMUNICATIONS CABLE.
- 7) RELOCATE AND REUSE EXISTING TRANSCEIVER.

FINAL PHASE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

	COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS		
	DIVISION 02 PITT COUNTY GREENVILLE PLAN DATE: FEBRUARY 2018 REVIEWED BY: <i>L. N. Avery</i> PREPARED BY: H. T. BERGGREN, EIT		
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE 0 50 1" = 50'	REVISIONS INIT. DATE	DocuSigned by: <i>Mohd. Islami</i> 3/5/2018	DATE