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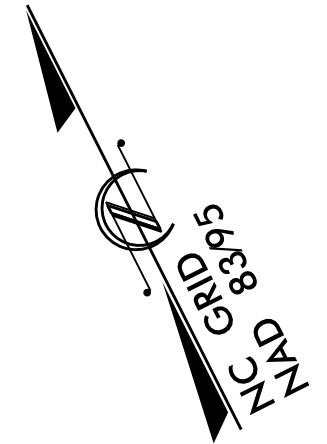
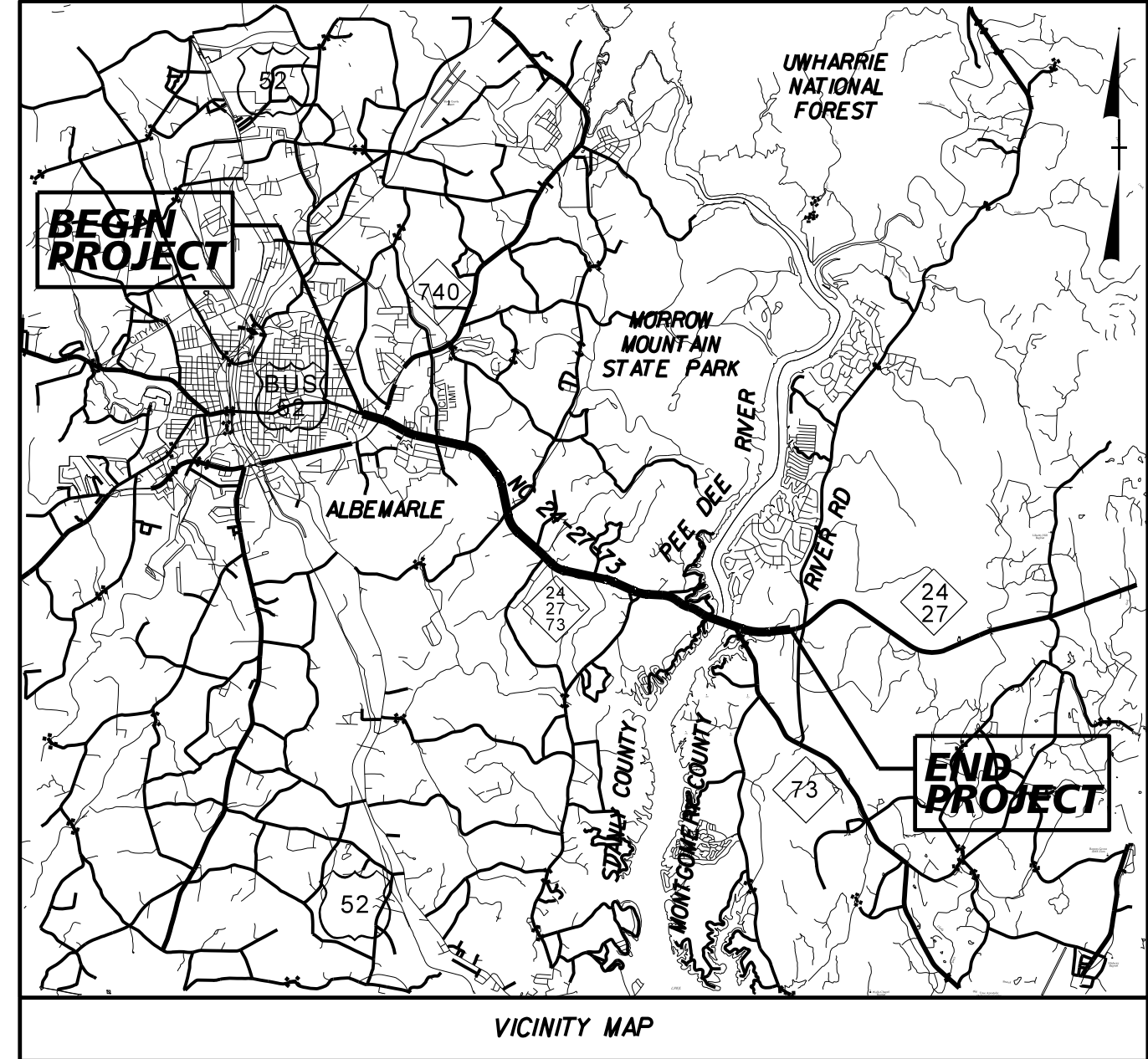
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**STANLY & MONTGOMERY COUNTIES**

LOCATION: NC 24-27 FROM NC 740 IN ALBEMARLE TO  
EAST OF THE PEE DEE RIVER

TYPE OF WORK: TRAFFIC SIGNALS

Project: R-2530B



BEGIN TIP PROJECT R-2530B  
-L- STA 19+61.00

END TIP PROJECT  
R-2530B  
-L- STA 396+23.00

-L- SR 1625  
(E MAIN ST)

-YI- NC 740  
(SPAULDING ST)

-L- NC 24-27

-YI- NC 24-27-73-740  
(SPAULDING ST)

10-0591

10-0731

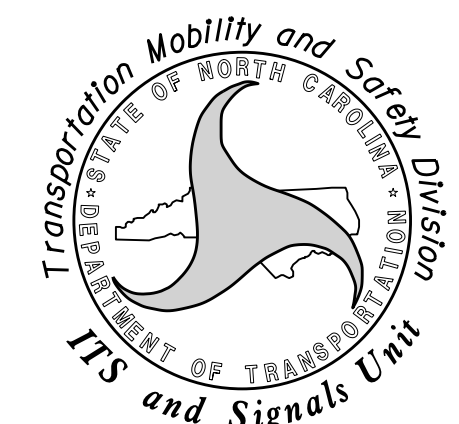
Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.

Sheet #	Reference #	Index of Plans	Location/Description
Sig. 1.0	-----	Title Sheet	
Sig. 2.0-6.1	10-0591	NC 24-27-73 (Bypass East) at NC 740 Bypass/SR 1625 (East Main St.)	
Sig. 7.0-8.1	10-0731	NC 24-27-73 (Bypass East) at Eastgate Shopping Center/Albemarle Mall Entrance	
Sig. 9.0-10.0	-----	Revised Standard Drawings	
Sig. M1-M8	-----	Metal Pole Standard Drawings	
SCP: 1-5	-----	Signal Communication Plans	

**INTELLIGENT TRANSPORTATION AND SIGNALS UNIT**  
Contacts:

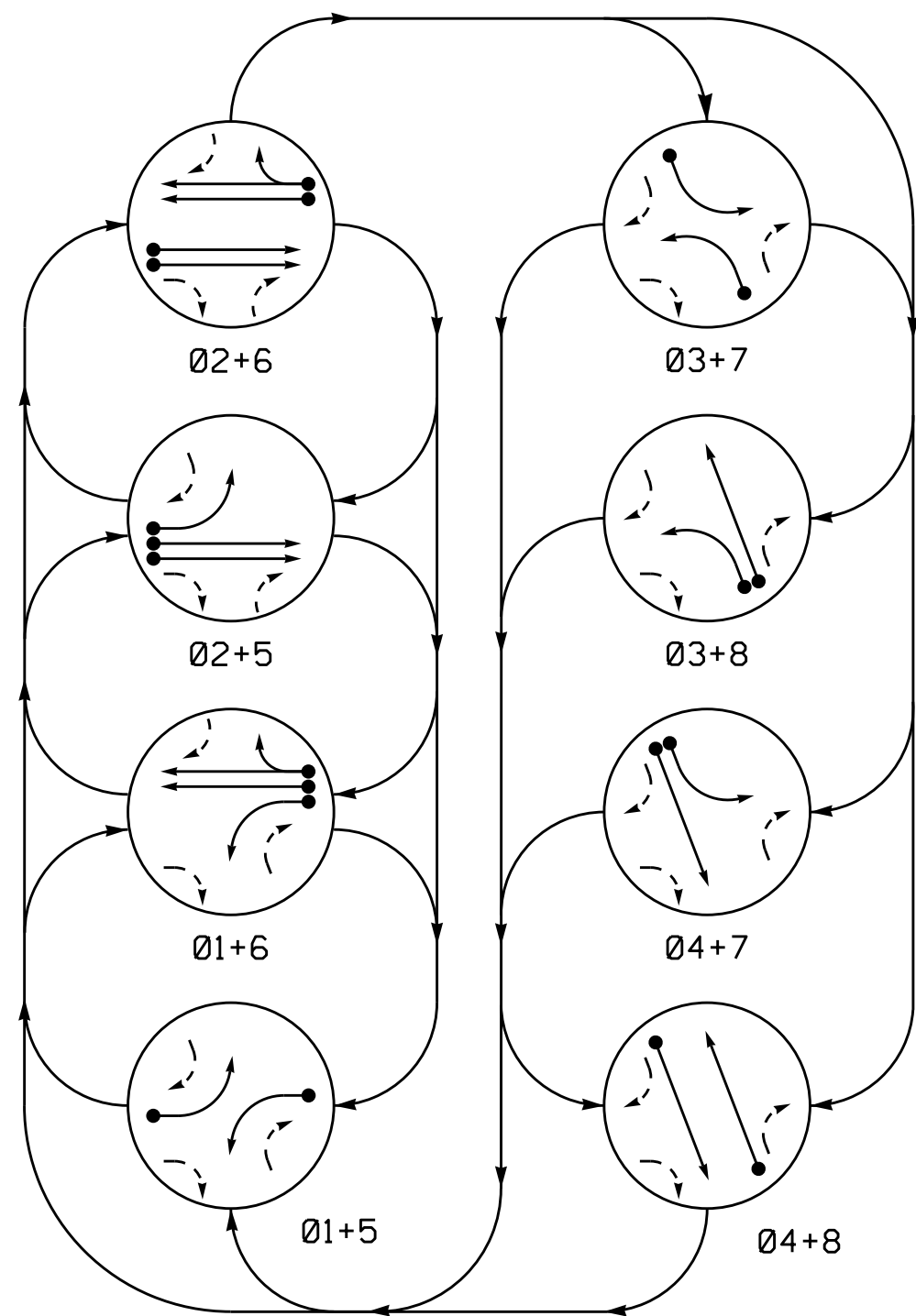
Timothy J. Williams, PE - Western Region Signals Engineer  
Keith M. Mims, PE - Signal Equipment Design Engineer  
Neil Avery - Intelligent Transportation Systems Engineer

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



G:\PFC\2018\1427\SS\15\2018\15\_Signals\Signal\_Design\Section\Western\_Region\Div-10\N-2530B\N-2530B.sig\_tsh.dgn

PHASING DIAGRAM



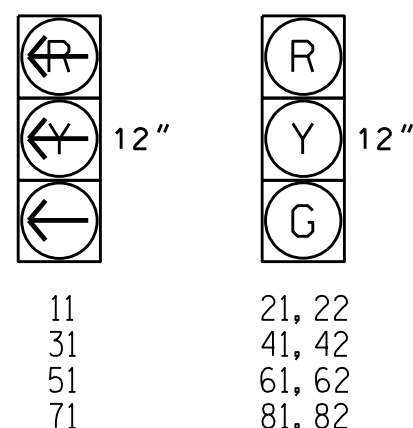
PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+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	G
51	—	—	—	—	—	—	—	—
61, 62	R	G	R	G	R	R	R	Y
71	—	—	—	—	—	—	—	—
81, 82	R	R	R	R	R	G	R	G

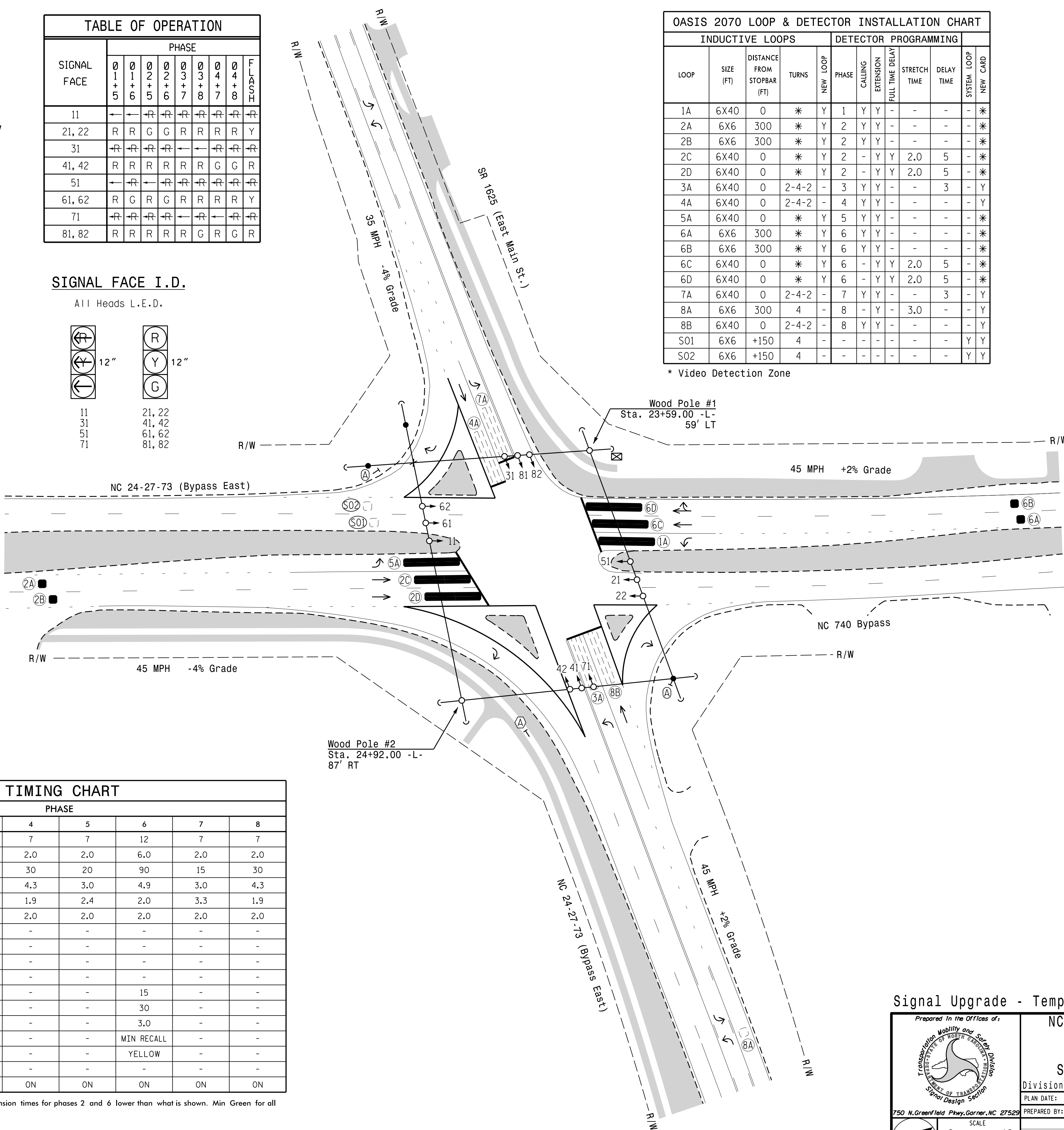
SIGNAL FACE I.D.

All Heads L.E.D.



LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING					SYSTEM LOOP	NEW CARD
					PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME		
1A	6X40	0	*	Y	1	Y	Y	-	-	-	*
2A	6X6	300	*	Y	2	Y	Y	-	-	-	*
2B	6X6	300	*	Y	2	Y	Y	-	-	-	*
2C	6X40	0	*	Y	2	-	Y	Y	2.0	5	-
2D	6X40	0	*	Y	2	-	Y	Y	2.0	5	-
3A	6X40	0	2-4-2	-	3	Y	Y	-	-	3	-
4A	6X40	0	2-4-2	-	4	Y	Y	-	-	-	-
5A	6X40	0	*	Y	5	Y	Y	-	-	-	-
6A	6X6	300	*	Y	6	Y	Y	-	-	-	-
6B	6X6	300	*	Y	6	Y	Y	-	-	-	-
6C	6X40	0	*	Y	6	-	Y	Y	2.0	5	-
6D	6X40	0	*	Y	6	-	Y	Y	2.0	5	-
7A	6X40	0	2-4-2	-	7	Y	Y	-	-	3	-
8A	6X6	300	4	-	8	-	Y	-	3.0	-	-
8B	6X40	0	2-4-2	-	8	Y	Y	-	-	-	-
S01	6X6	+150	4	-	-	-	-	-	-	-	Y
S02	6X6	+150	4	-	-	-	-	-	-	-	Y

\* Video Detection Zone

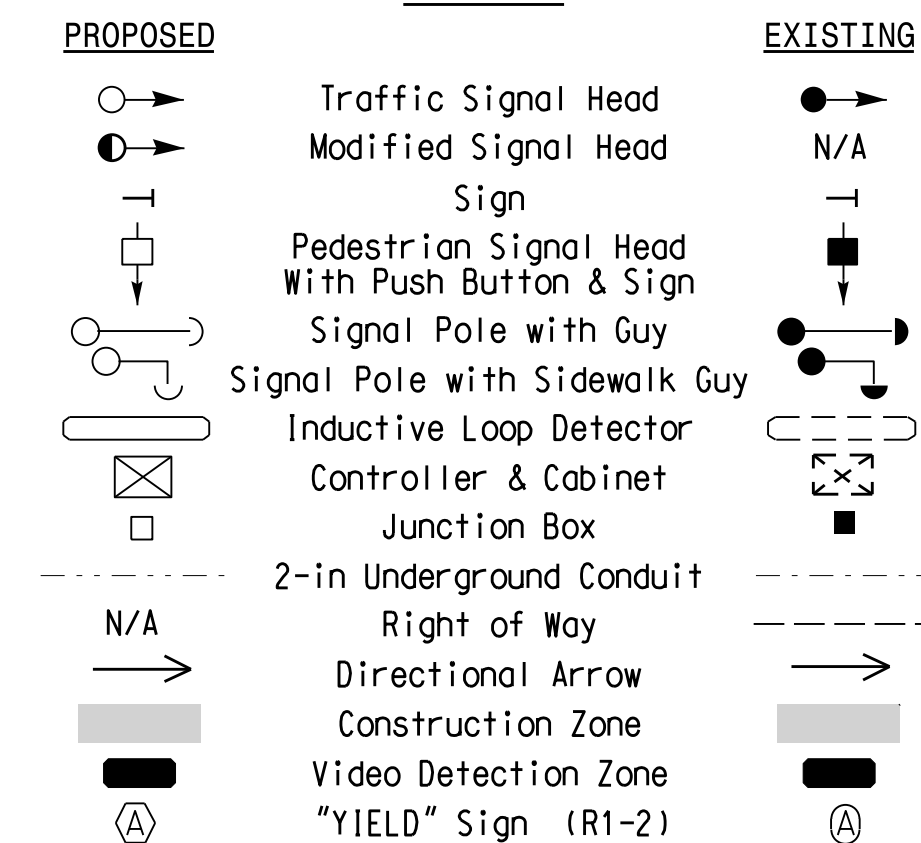


8 Phase Fully Actuated NC 24-27-73 (Bypass East) CLS

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.
- The cabinet should be designed to include an Auxiliary Output file for future use.
- Pavement markings are existing.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Controller Asset #: 0591.

LEGEND



OASIS 2070 TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green 1 *	7	12	7	7	7	12	7	7
Extension 1 *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max Green 1 *	20	90	15	30	20	90	15	30
Yellow Clearance	3.0	4.9	3.0	4.3	3.0	4.9	3.0	4.3
Red Clearance	2.1	2.0	3.1	1.9	2.4	2.0	3.3	1.9
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	15	-	-
Time Before Reduction *	-	15	-	-	-	-	-	-
Time To Reduce *	-	30	-	-	-	30	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

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

Signal Upgrade - Temporary Design 1 - Phase 1

NC 24-27-73 (Bypass East)  
at  
NC 740 Bypass/  
SR 1625 (East Main St.)

Division 10 Stanly County Albemarle

PLAN DATE: October 2018 REVIEWED BY: T.J. Williams

PREPARED BY: R.N. Zinser REVIEWED BY:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

750 N. Greenfield Pkwy, Garner, NC 27529

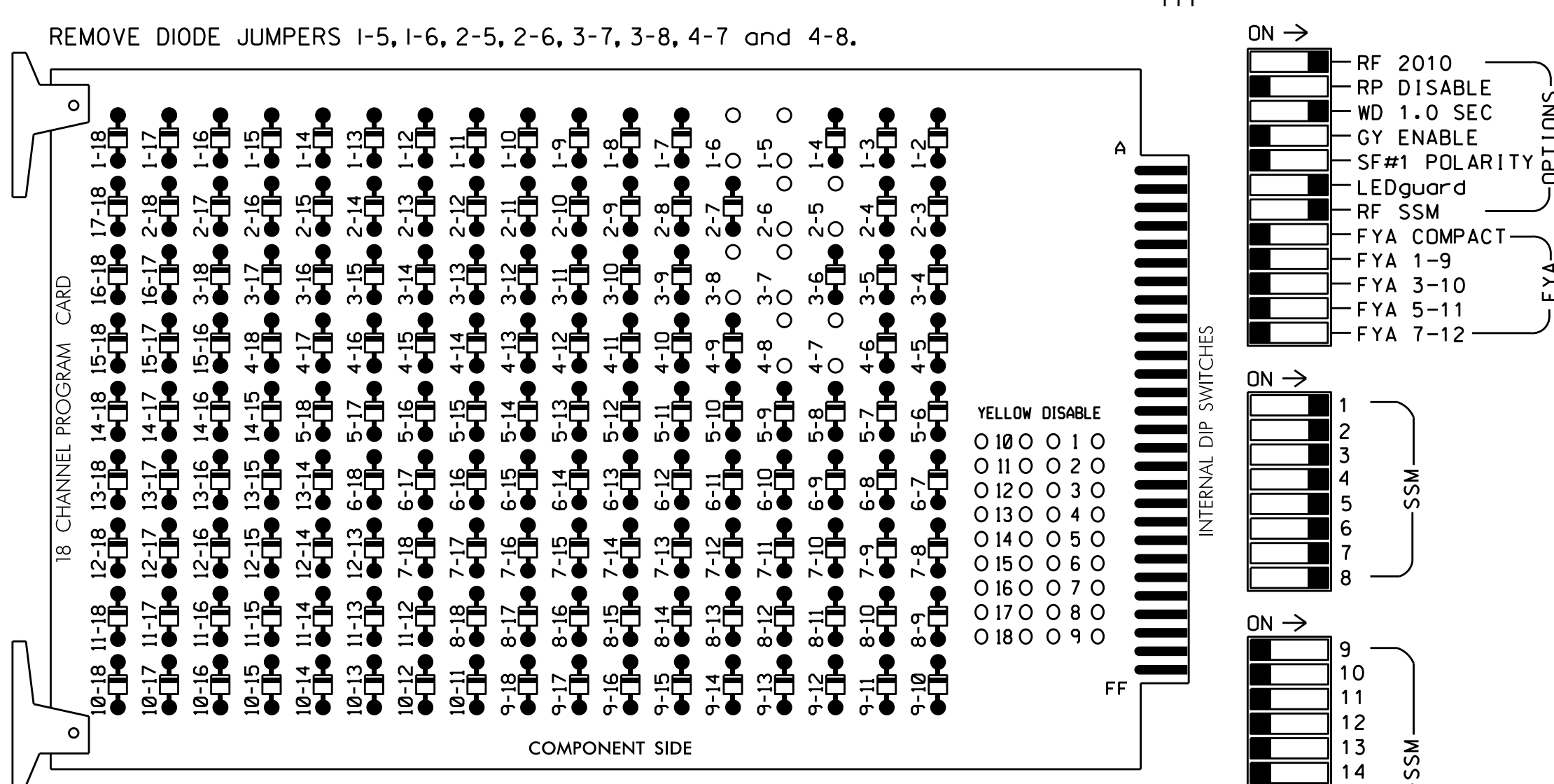
SCALE: 0 40  
1" = 40'

REVISIONS	INIT.	DATE

DATE: 11/2/2018  
SIC. INVENTORY NO. 10-0591 T1

**EDI MODEL 2018ECLIP-NC CONFLICT MONITOR  
PROGRAMMING DETAIL**

(remove jumpers and set switches as shown)



- REMOVE DIODE JUMPERS 1-5, 1-6, 2-5, 2-6, 3-7, 3-8, 4-7 and 4-8.
- REMOVE JUMPERS AS SHOWN
- NOTES:
1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
  2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
  3. Ensure that Red Enable is active at all times during normal operation.
  4. Integrate monitor with Ethernet network in cabinet.

**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. Enable Simultaneous Gap-Out for all Phases.
3. Program phases 2 and 6 for Gap Reduction.
4. Program phases 2 and 6 for Startup In Green.
5. Program phases 2 and 6 for Yellow Flash.
6. The cabinet and controller are part of the NC 24-27-73 (Bypass East) Closed Loop System.

**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	NU	31	41,42	NU	51	61,62	NU	71	81,82	NU	NU	NU	NU	NU	NU	NU
RED		128			101			134				107						
YELLOW					102			135				108						
GREEN					103			136				109						
RED ARROW	125				116			131				122						
YELLOW ARROW	126				117			132				123						
GREEN ARROW	127				118			133				124						

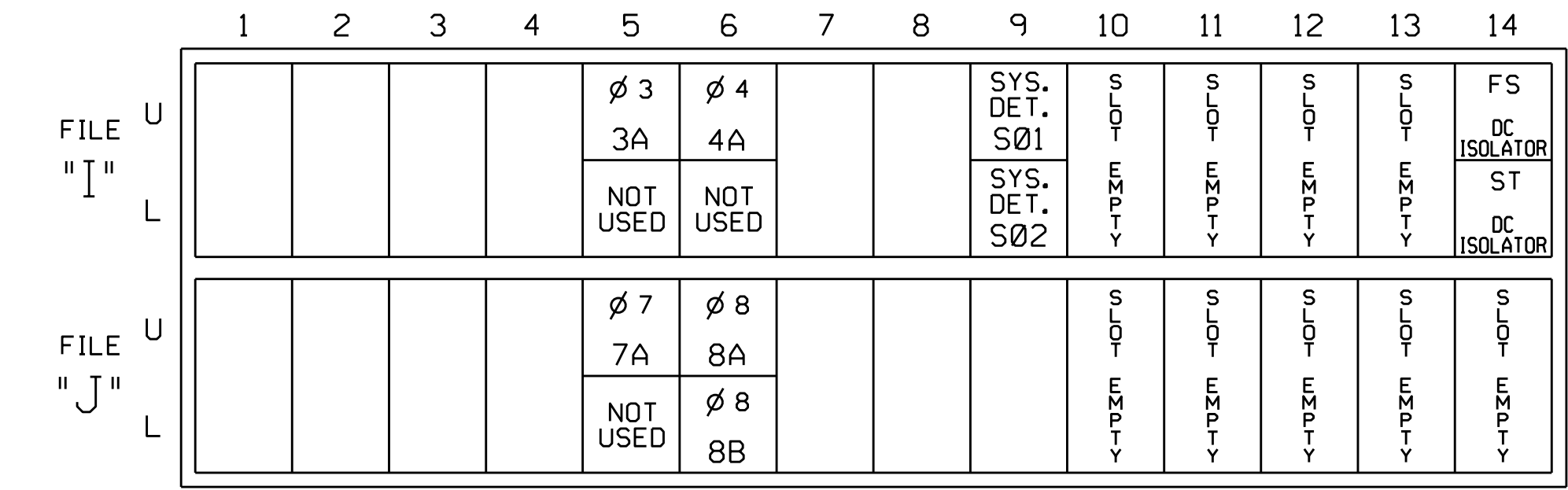
NU = Not Used

**EQUIPMENT INFORMATION**

CONTROLLER.....2070  
 CABINET.....332 W/ AUX  
 SOFTWARE.....ECONOLITE OASIS  
 CABINET MOUNT.....BASE  
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE  
 LOAD SWITCHES USED.....S1,S2,S4,S5,S7,S8,S10,S11  
 PHASES USED.....1,2,3,4,5,6,7,8  
 OVERLAP "A".....NOT USED  
 OVERLAP "B".....NOT USED  
 OVERLAP "C".....NOT USED  
 OVERLAP "D".....NOT USED

**INPUT FILE POSITION LAYOUT**

(front view)



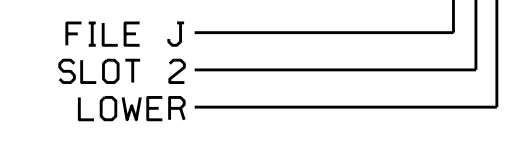
EX.: 1A, 2A, ETC. = LOOP NO.'S  
 FS = FLASH SENSE  
 ST = STOP TIME

**INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			3
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			
7A	TB5-5,6	J5U	57	19	7	7	Y	Y			3
8A	TB5-9,10	J6U	42	4	8	8		Y		3.0	
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			
*S01	TB6-9,10	I9U	60	22	11	SYS					
*S02	TB6-11,12	I9L	62	24	13	SYS					

\* System detector only. Remove the vehicle phase assigned to this detector in the default programming.

**INPUT FILE POSITION LEGEND: J2L**



**SPECIAL DETECTOR NOTE**

For phases 1, 2, 5 and 6 install a video 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: 10-0591 T1  
 DESIGNED: October 2018  
 SEALED: 11/2/2018  
 REVISED:

Electrical Detail - Temp 1

Electrical and Programming Details for: **NC 24-27-73 (Bypass East) at NC 740 Bypass/ SR 1625 (East Main St.)**

Division 10 Stanly County Albemarle

PLAN DATE: October 2018 REVIEWED BY: T. Joyce

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS: \_\_\_\_\_ INIT. DATE

DocuSigned by: **D. Todd Joyce** 11/5/2018

750 N. Greenfield Pkwy, Garner, NC 27529

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL: SEAL 031001 ENGINEER TODD JOYCE

SIG. INVENTORY NO. 10-0591 T1

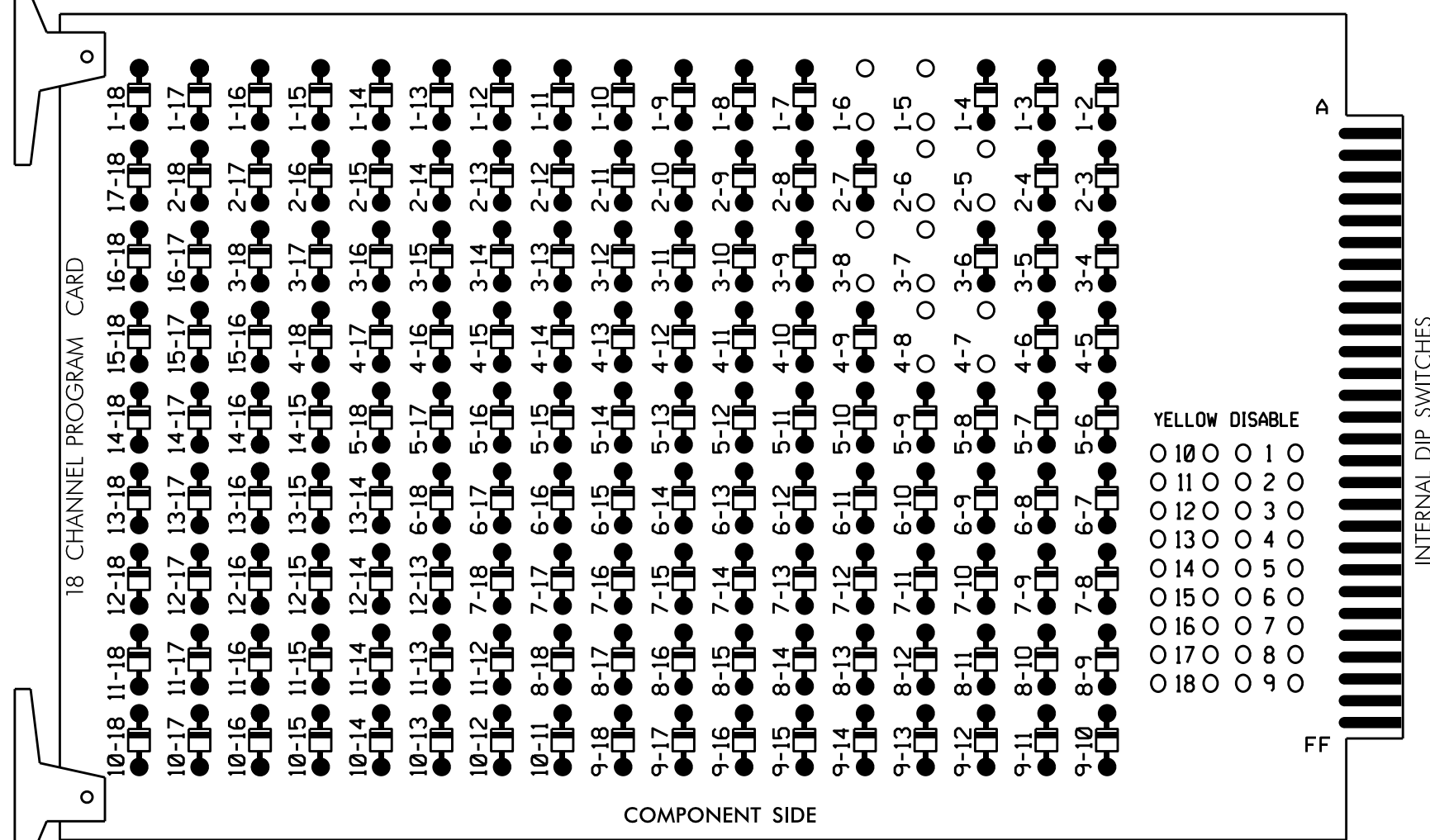
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**EDI MODEL 2018EClip-NC CONFLICT MONITOR  
PROGRAMMING DETAIL**

(remove jumpers and set switches as shown)

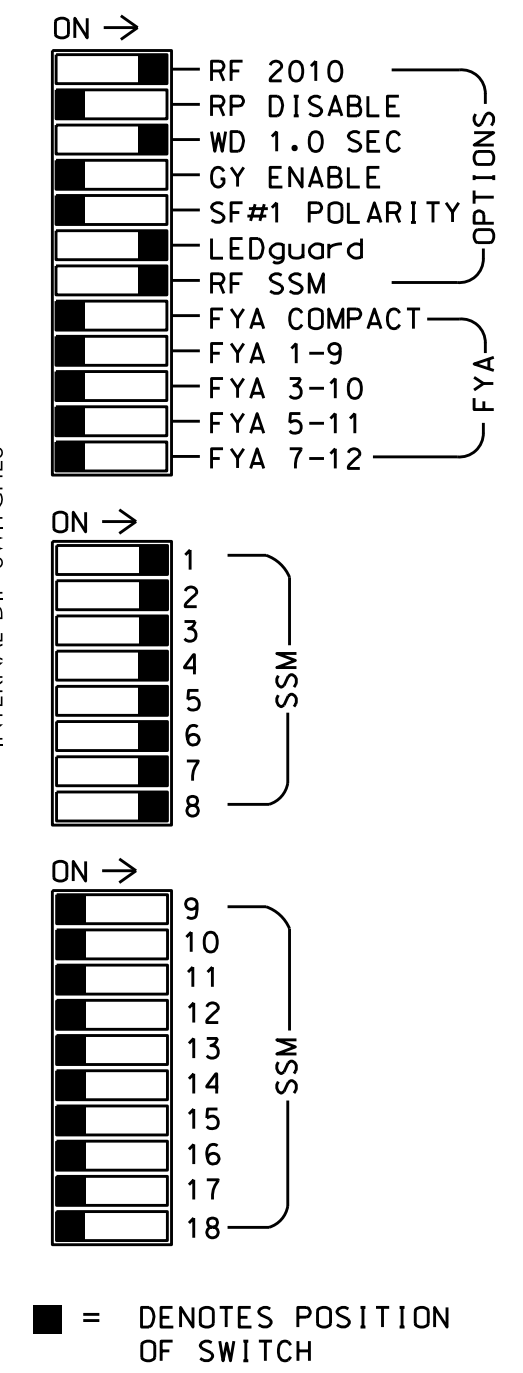
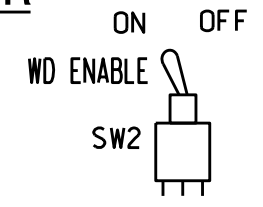
REMOVE DIODE JUMPERS 1-5, 1-6, 2-5, 2-6, 3-7, 3-8, 4-7 and 4-8.



REMOVE JUMPERS AS SHOWN

**NOTES:**

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



**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. Enable Simultaneous Gap-Out for all Phases.
3. Program phases 2 and 6 for Gap Reduction.
4. Program phases 2 and 6 for Startup In Green.
5. Program phases 2 and 6 for Yellow Flash.
6. The cabinet and controller are part of the NC 24-27-73 (Bypass East) Closed Loop System.

**EQUIPMENT INFORMATION**

CONTROLLER.....2070  
 CABINET.....332 W/ AUX  
 SOFTWARE.....ECONOLITE OASIS  
 CABINET MOUNT.....BASE  
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE  
 LOAD SWITCHES USED.....S1,S2,S4,S5,S7,S8,S10,S11  
 PHASES USED.....1,2,3,4,5,6,7,8  
 OVERLAP "A".....NOT USED  
 OVERLAP "B".....NOT USED  
 OVERLAP "C".....NOT USED  
 OVERLAP "D".....NOT USED

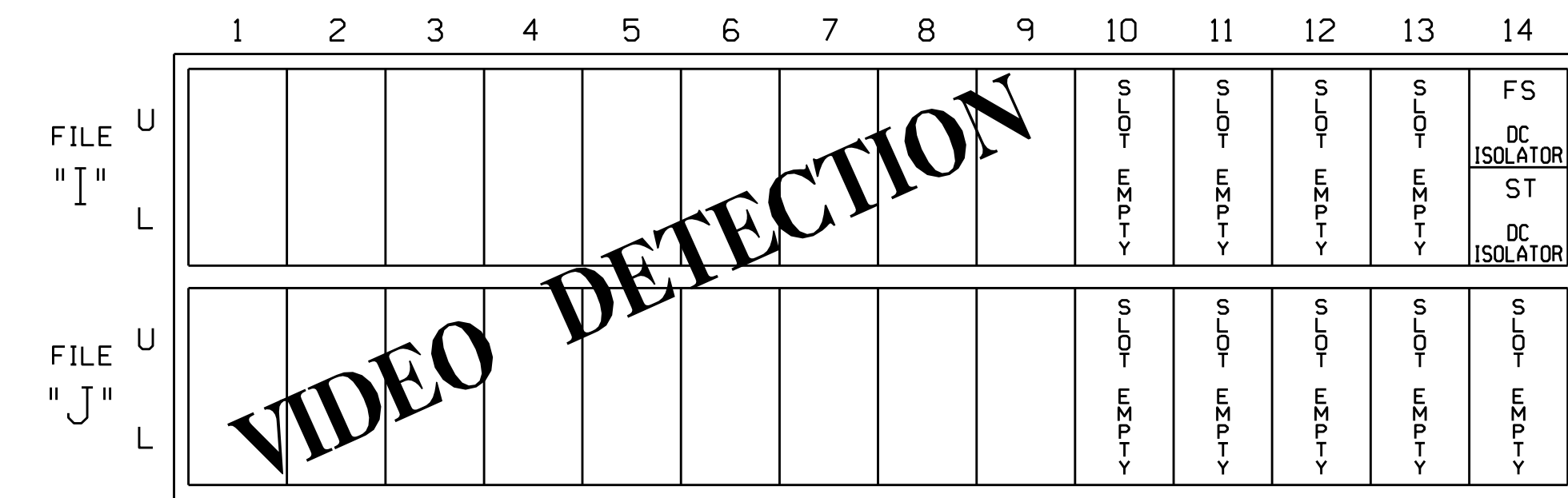
**SIGNAL HEAD HOOK-UP CHART**

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	NU	22	31	41,42	NU	51	61,62	NU	62	71	81,82	NU	NU	NU	NU	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	117			132			123	123						
GREEN ARROW	127			118	118			133			124	124						

NU = Not Used

**INPUT FILE POSITION LAYOUT**

(front view)



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

FS = FLASH SENSE  
 ST = STOP TIME

**SPECIAL DETECTOR NOTE**

Install a video 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: 10-0591 T2  
 DESIGNED: October 2018  
 SEALED: 11/2/2018  
 REVISED:

Electrical Detail - Temp 2

Electrical and Programming Details For: **NC 24-27-73 (Bypass East) at NC 740 Bypass/ SR 1625 (East Main St.)**

Prepared In the Offices of:  
  
 750 N. Greenfield Pkwy, Garner, NC 27529

PLAN DATE: October 2018	REVIEWED BY: T. Joyce
PREPARED BY: C. Strickland	REVIEWED BY:
REVISIONS	INIT. DATE

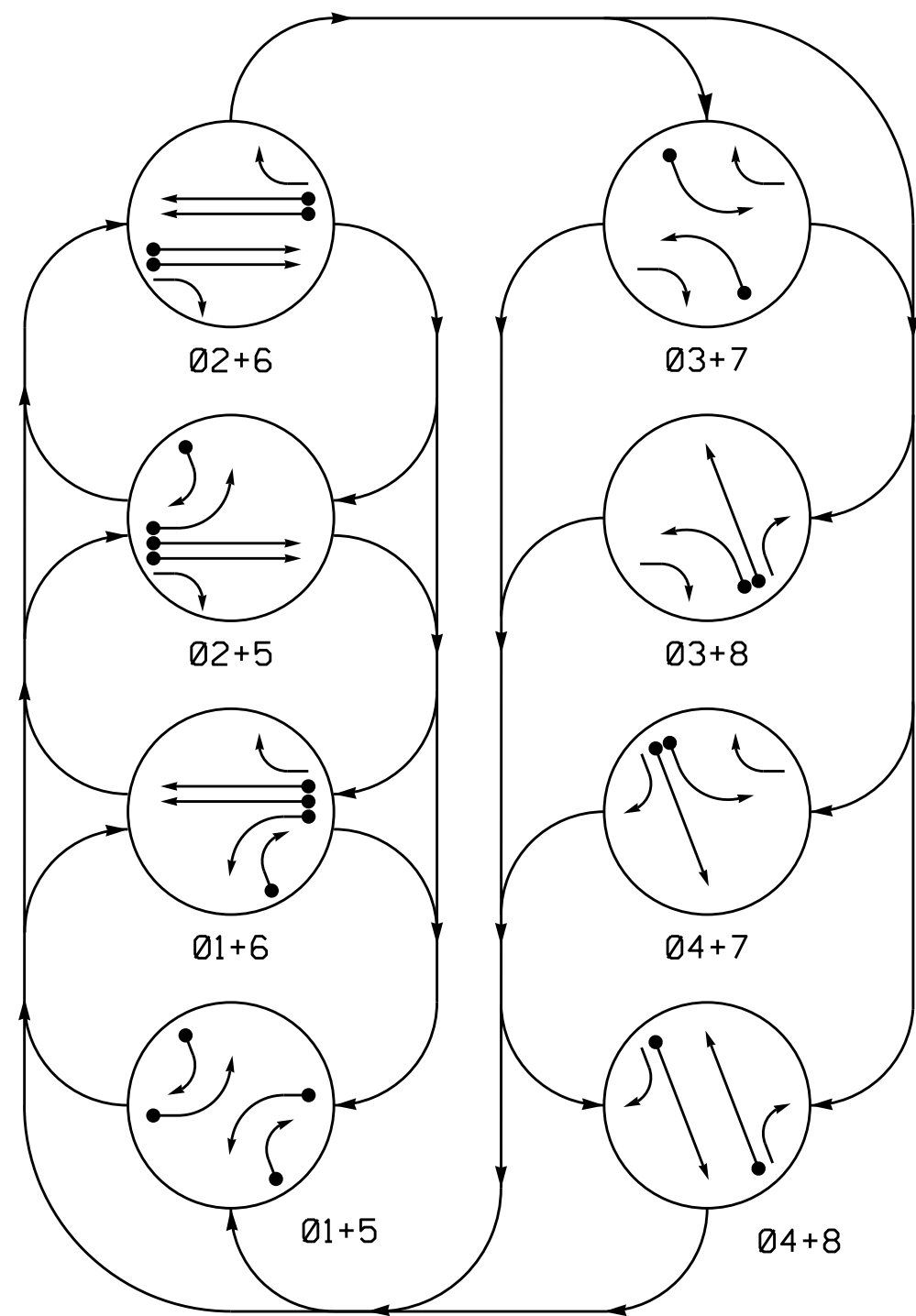
Division 10 Stanly County Albemarle

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 031001  
 TODD JOYCE  
 11/5/2018  
 DATE  
 SIG. INVENTORY NO. 10-0591 T2

05-1004-2018\_08:16  
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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+7	03+8	04+7	04+8
11	---	---	---	---	---	---	---	---
21	R	R	G	G	R	R	R	Y
22	R	R	G	G	R	R	R	Y
31	---	---	---	---	---	---	---	---
41, 43	R	R	R	R	R	R	G	G
42	R	R	R	R	R	R	G	G
51	---	---	---	---	---	---	---	---
61	R	G	R	G	R	R	R	Y
62	R	G	R	G	R	R	R	Y
71	---	---	---	---	---	---	---	---
81	R	R	R	R	R	G	R	G
82	R	R	R	R	R	G	R	G

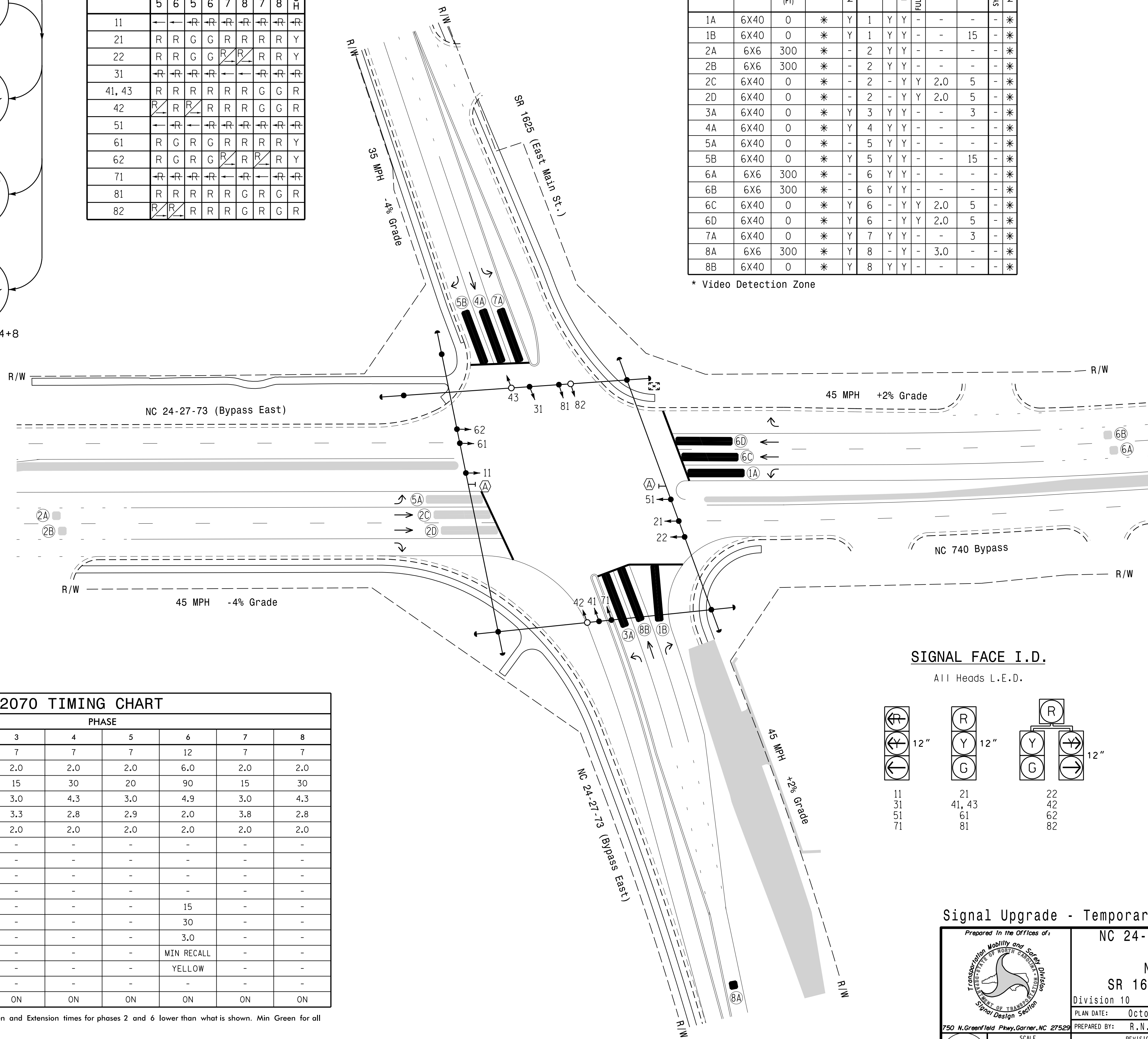
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	PULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	*	Y	1	Y	Y	-	-	-	-	*
1B	6X40	0	*	Y	1	Y	Y	-	-	15	-	*
2A	6X6	300	*	-	2	Y	Y	-	-	-	-	*
2B	6X6	300	*	-	2	Y	Y	-	-	-	-	*
2C	6X40	0	*	-	2	-	Y	Y	2.0	5	-	*
2D	6X40	0	*	-	2	-	Y	Y	2.0	5	-	*
3A	6X40	0	*	Y	3	Y	Y	-	-	3	-	*
4A	6X40	0	*	Y	4	Y	Y	-	-	-	-	*
5A	6X40	0	*	-	5	Y	Y	-	-	-	-	*
5B	6X40	0	*	Y	5	Y	Y	-	-	15	-	*
6A	6X6	300	*	-	6	Y	Y	-	-	-	-	*
6B	6X6	300	*	-	6	Y	Y	-	-	-	-	*
6C	6X40	0	*	Y	6	-	Y	Y	2.0	5	-	*
6D	6X40	0	*	Y	6	-	Y	Y	2.0	5	-	*
7A	6X40	0	*	Y	7	Y	Y	-	-	3	-	*
8A	6X6	300	*	Y	8	-	Y	-	3.0	-	-	*
8B	6X40	0	*	Y	8	Y	Y	-	-	-	-	*

\* Video Detection Zone

8 Phase Fully Actuated NC 24-27-73 (Bypass East) CLS

NOTES

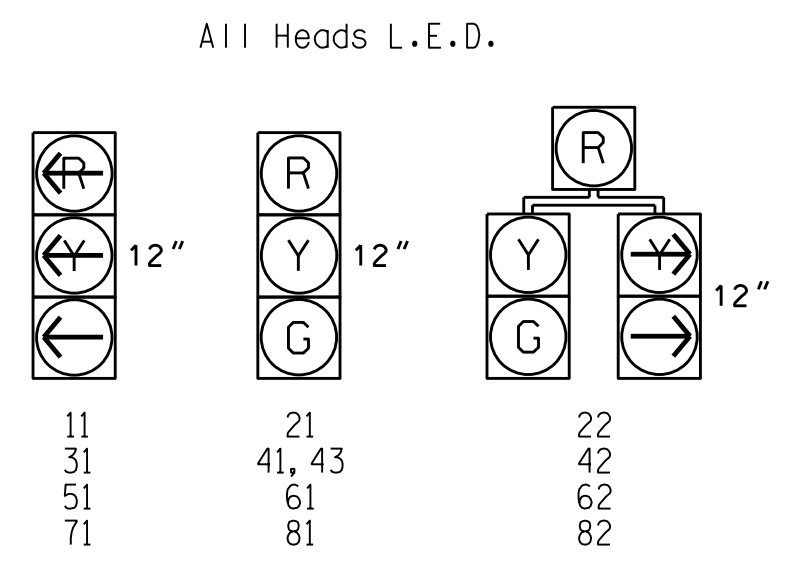
- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Reposition all existing signal heads as shown.
- Renumber existing loop 8C to 1B.
- Set all detector units to presence mode.
- See Pavement Marking Plans for proposed stop bar locations.
- Remove existing "YIELD" Sign (R1-2).
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Controller Asset #: 0591.



FEATURE	OASIS 2070 TIMING CHART							
	1	2	3	4	5	6	7	8
Min Green 1 *	7	12	7	7	7	12	7	7
Extension 1 *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max Green 1 *	20	90	15	30	20	90	15	30
Yellow Clearance	3.0	4.9	3.0	4.3	3.0	4.9	3.0	4.3
Red Clearance	3.2	2.0	3.3	2.8	2.9	2.0	3.8	2.8
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	15	-	-	-	15	-	-
Time To Reduce *	-	30	-	-	-	30	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

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

SIGNAL FACE I.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    |
| ○ Signal Pole with Guy                           | ○ N/A    |
| ○ Signal Pole with Sidewalk Guy                  | ○ 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    |
| █ Construction Zone                              | █ N/A    |
| █ Video Detection Zone                           | █ N/A    |
| ⊙ "U-TURN YIELD TO RIGHT TURN" Sign (R10-16)     | ⊙ N/A    |

Signal Upgrade - Temporary Design 3 - Phase 3

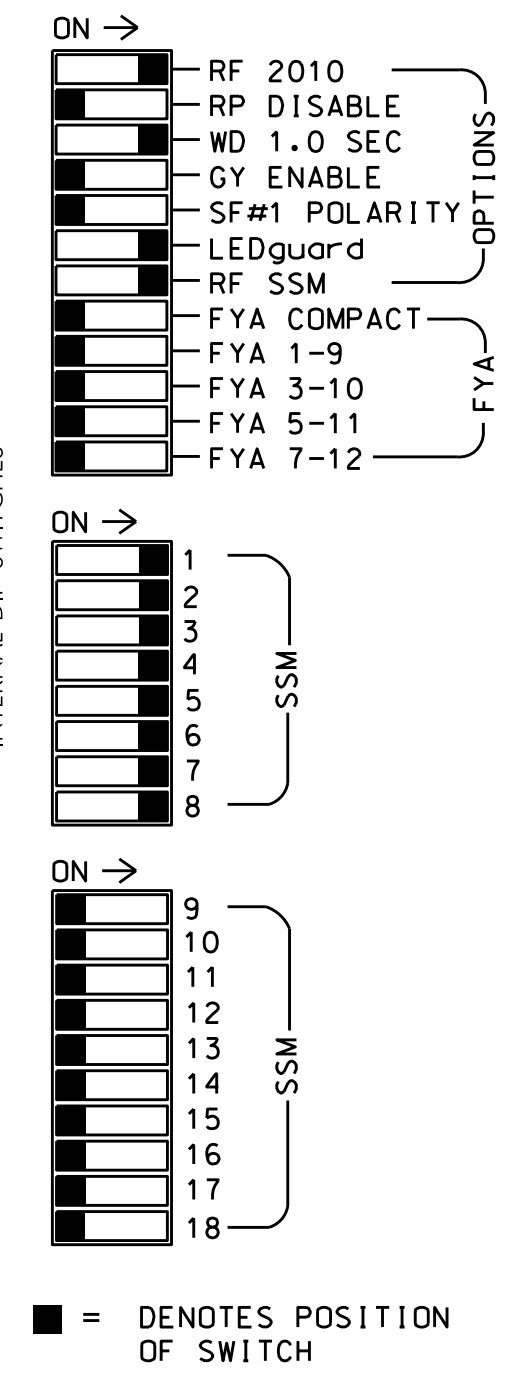
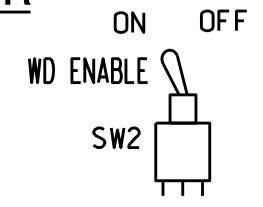
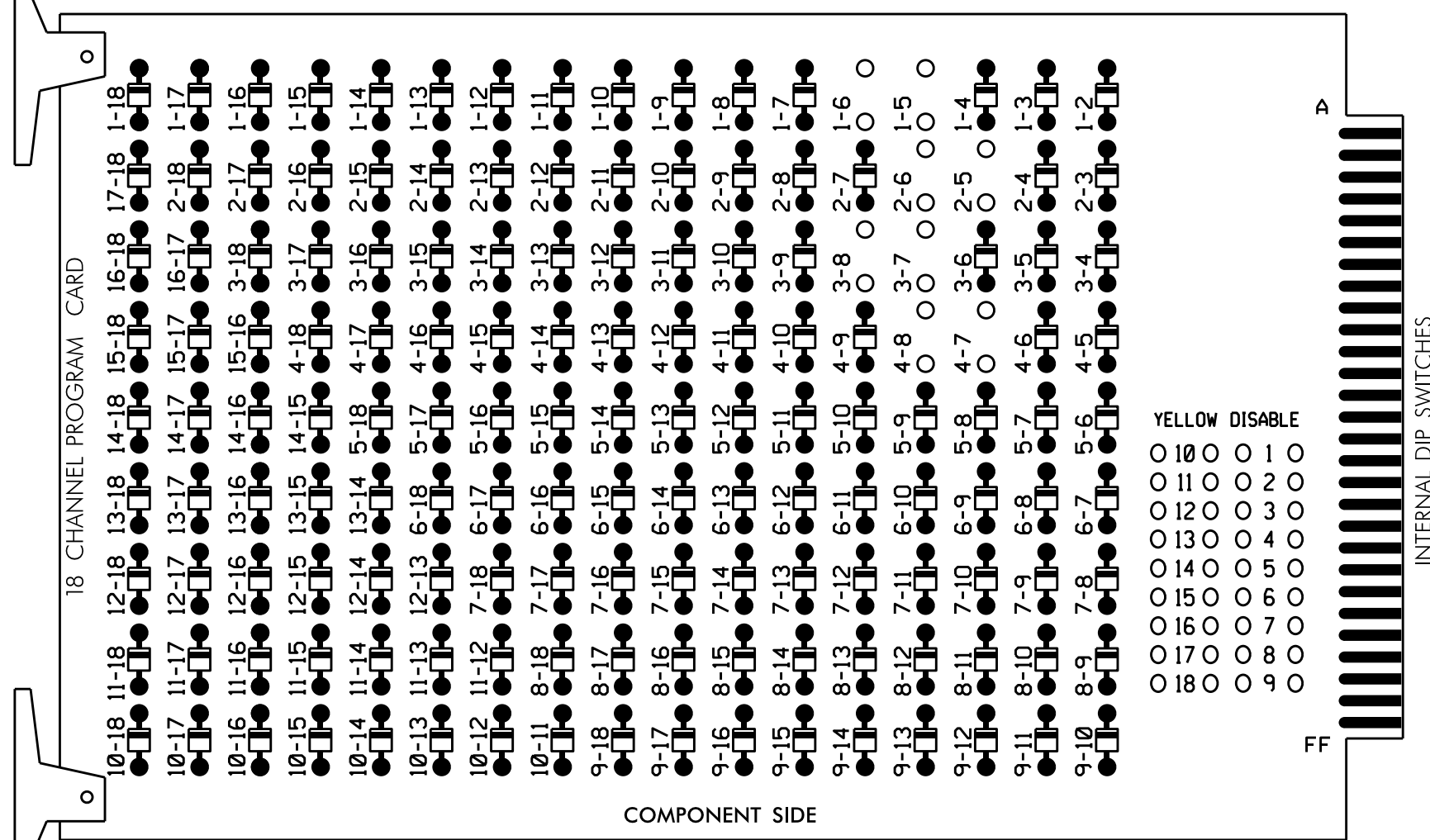
	NC 24-27-73 (Bypass East) at NC 740 Bypass/ SR 1625 (East Main St.)		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER RICHARD N. ZINSER License No. 043914
	Division 10 Stanly County Albemarle PLAN DATE: October 2018 REVIEWED BY: T.J. Williams PREPARED BY: R.N. Zinser REVIEWED BY:	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED Date Signed: 11/2/2018 Signature: R. N. Zinser Date:	

06-DEC-2018 10:10 S:\TSS\UM\TSS\Sig\16\Signal\16\Sig\16\16-2530B\16-0591\16-0591T3.dwg (a.dwg, 2018.mxd) dgm rnz:lnsr

**EDI MODEL 2018ECLIP-NC CONFLICT MONITOR PROGRAMMING DETAIL**

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-5, 1-6, 2-5, 2-6, 3-7, 3-8, 4-7 and 4-8.



REMOVE JUMPERS AS SHOWN

**NOTES:**

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

**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. Enable Simultaneous Gap-Out for all phases.
3. Program phases 2 and 6 for Gap Reduction.
4. Program phases 2 and 6 for Start Up In Green.
5. Program phases 2 and 6 for Yellow Flash.
6. The cabinet and controller are part of the NC 24-27-73 (Bypass East) Closed Loop System.

**EQUIPMENT INFORMATION**

CONTROLLER.....2070  
 CABINET.....332 W/ AUX  
 SOFTWARE.....ECONOLITE OASIS  
 CABINET MOUNT.....BASE  
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE  
 LOAD SWITCHES USED.....S1,S2,S4,S5,S7,S8,S10,S11  
 PHASES USED.....1,2,3,4,5,6,7,8  
 OVERLAP "A".....NOT USED  
 OVERLAP "B".....NOT USED  
 OVERLAP "C".....NOT USED  
 OVERLAP "D".....NOT USED

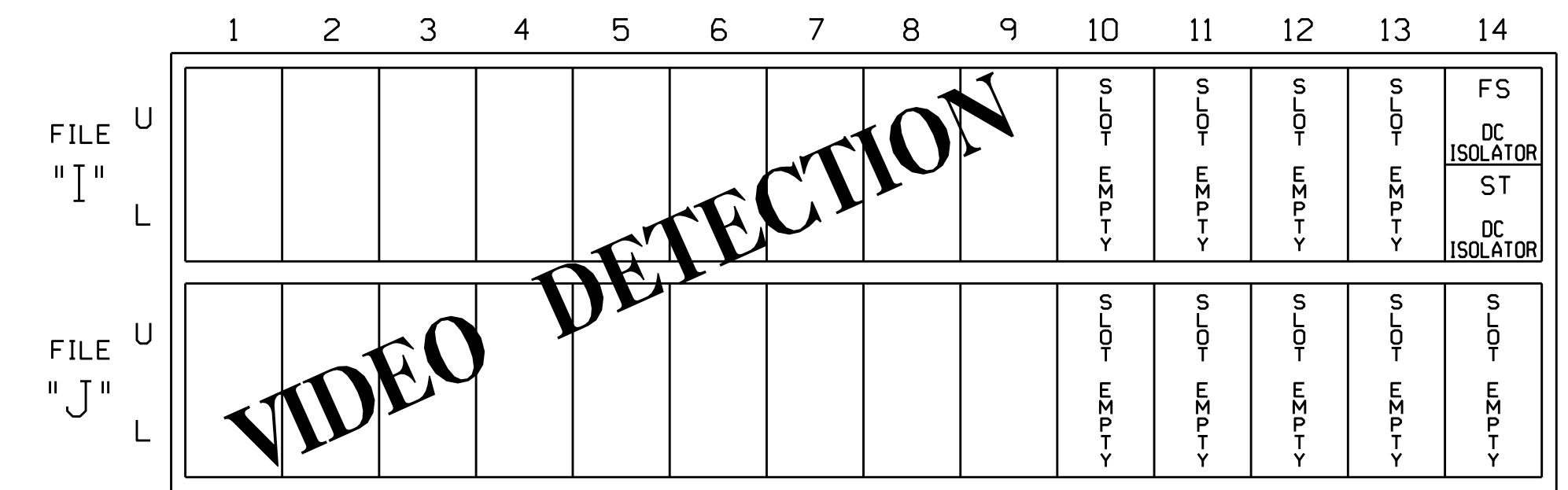
**SIGNAL HEAD HOOK-UP CHART**

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	82	21,22	22	31	41, 42,43	42	51	61,62	62	71	81,82	NU	NU	NU	NU	NU	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	126		117	117			132	132		123	123						
GREEN ARROW	127	127		118	118			133	133		124	124						

NU = Not Used

**INPUT FILE POSITION LAYOUT**

(front view)



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

FS = FLASH SENSE  
 ST = STOP TIME

**SPECIAL DETECTOR NOTE**

Install a video 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: 10-0591 T3  
 DESIGNED: October 2018  
 SEALED: 11/2/2018  
 REVISED:

Electrical Detail - Temp 3

ELECTRICAL AND PROGRAMMING DETAILS FOR:  Prepared In the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529	NC 24-27-73 (Bypass East) at NC 740 Bypass/ SR 1625 (East Main St.)		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031001 D. Todd Joyce 11/5/2018
	Division 10 PLAN DATE: October 2018 PREPARED BY: C. Strickland	Stanly County REVIEWED BY: T. Joyce REVIEWED BY:	

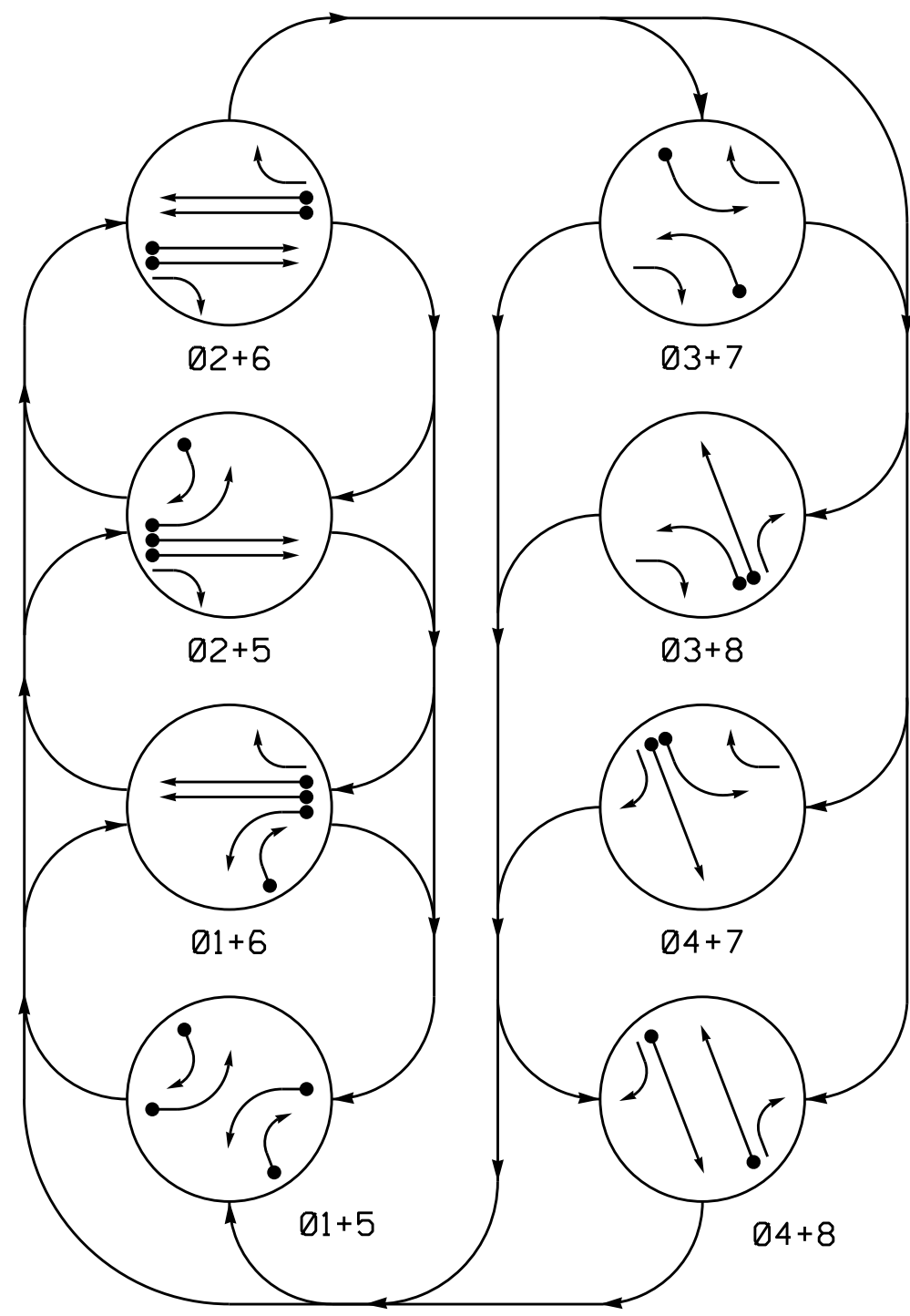
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIG. INVENTORY NO. 10-0591 T3



PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE								FLIGHT
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	
11	---	---	---	---	---	---	---	---	---
21	R	R	G	G	R	R	R	R	Y
22	R	R	G	G	R	R	R	R	Y
31	---	---	---	---	---	---	---	---	---
41, 43	R	R	R	R	R	R	G	G	R
42	R	R	R	R	R	R	G	G	R
51	---	---	---	---	---	---	---	---	---
61	R	G	R	G	R	R	R	R	Y
62	R	G	R	G	R	R	R	R	Y
71	---	---	---	---	---	---	---	---	---
81	R	R	R	R	R	G	R	G	R
82	R	R	R	R	R	G	R	G	R

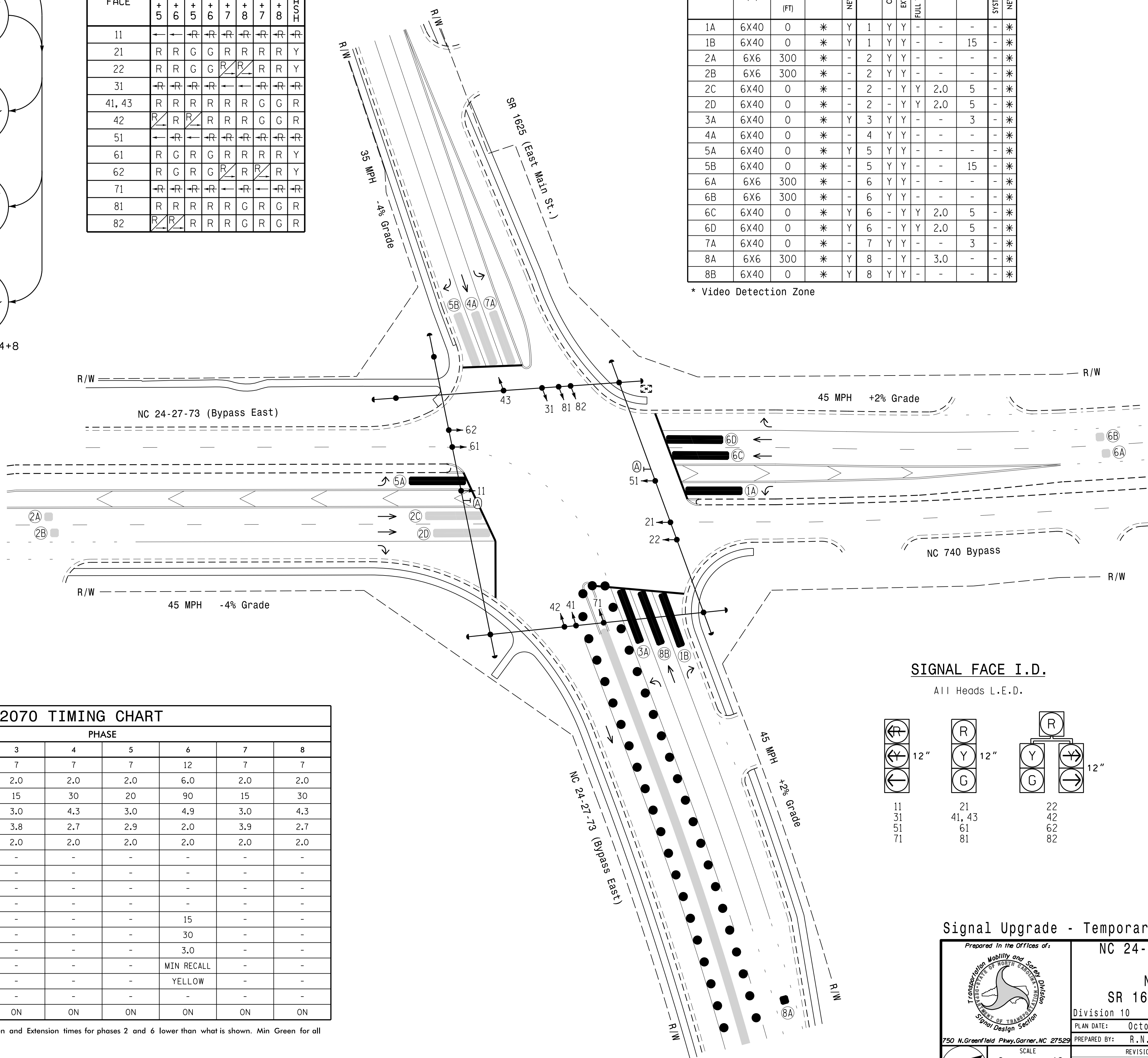
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DEAT	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	*	Y	1	Y	Y	-	-	-	-	*
1B	6X40	0	*	Y	1	Y	Y	-	-	15	-	*
2A	6X6	300	*	-	2	Y	Y	-	-	-	-	*
2B	6X6	300	*	-	2	Y	Y	-	-	-	-	*
2C	6X40	0	*	-	2	-	Y	Y	2.0	5	-	*
2D	6X40	0	*	-	2	-	Y	Y	2.0	5	-	*
3A	6X40	0	*	Y	3	Y	Y	-	-	3	-	*
4A	6X40	0	*	-	4	Y	Y	-	-	-	-	*
5A	6X40	0	*	Y	5	Y	Y	-	-	-	-	*
5B	6X40	0	*	-	5	Y	Y	-	-	15	-	*
6A	6X6	300	*	-	6	Y	Y	-	-	-	-	*
6B	6X6	300	*	-	6	Y	Y	-	-	-	-	*
6C	6X40	0	*	Y	6	-	Y	Y	2.0	5	-	*
6D	6X40	0	*	Y	6	-	Y	Y	2.0	5	-	*
7A	6X40	0	*	-	7	Y	Y	-	-	3	-	*
8A	6X6	300	*	Y	8	-	Y	-	3.0	-	-	*
8B	6X40	0	*	Y	8	Y	Y	-	-	-	-	*

\* Video Detection Zone

8 Phase Fully Actuated NC 24-27-73 (Bypass East) CLS

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.
- Reposition all existing signal heads as shown.
- Set all detector units to presence mode.
- See Pavement Marking Plans for proposed stop bar locations.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Controller Asset #: 0591.

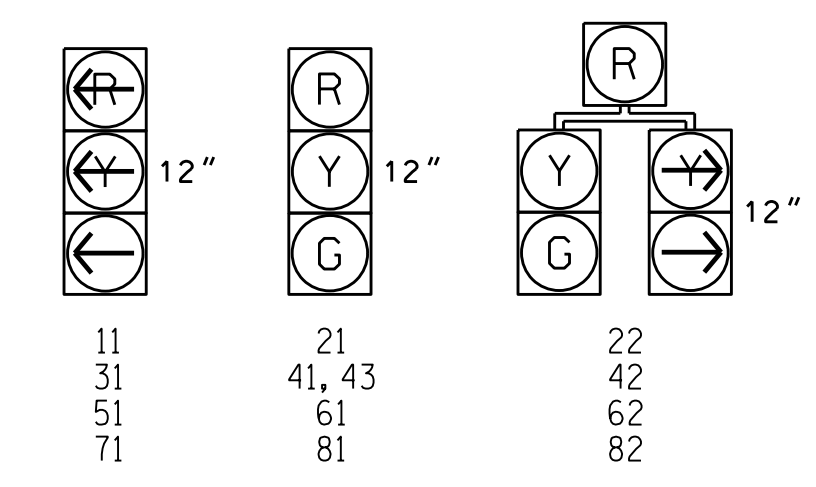


OASIS 2070 TIMING CHART								
FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green 1 *	7	12	7	7	7	12	7	7
Extension 1 *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max Green 1 *	20	90	15	30	20	90	15	30
Yellow Clearance	3.0	4.9	3.0	4.3	3.0	4.9	3.0	4.3
Red Clearance	3.3	2.0	3.8	2.7	2.9	2.0	3.9	2.7
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	15	-	-	-	15	-	-
Time To Reduce *	-	30	-	-	-	30	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

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

SIGNAL FACE I.D.

All Heads L.E.D.

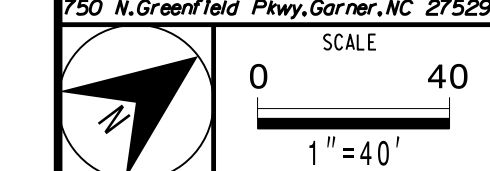


LEGEND

- | PROPOSED   | EXISTING |
|--|----------|
| ○ Traffic Signal Head                            | ● N/A    |
| ○ Modified Signal Head                           | ○ N/A    |
| □ Sign   | □ N/A    |
| □ Pedestrian Signal Head With Push Button & Sign | □ N/A    |
| □ Signal Pole with Guy                           | □ N/A    |
| □ Signal Pole with Sidewalk Guy                  | □ 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    |
| ▬ Construction Zone                              | ▬ N/A    |
| ▬ Video Detection Zone                           | ▬ N/A    |
| ● Construction Zone Drums                        | ● N/A    |
| ⊙ "U-TURN YIELD TO RIGHT TURN" Sign (R10-16)     | ⊙ N/A    |

Signal Upgrade - Temporary Design 4 - Phase 4

	NC 24-27-73 (Bypass East) at NC 740 Bypass/ SR 1625 (East Main St.) Division 10 Stanly County Albemarle		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER RICHARD N. ZINSER 043914
	PLAN DATE: October 2018 PREPARED BY: R.N. Zinser	REVIEWED BY: T.J. Williams REVIEWED BY:	

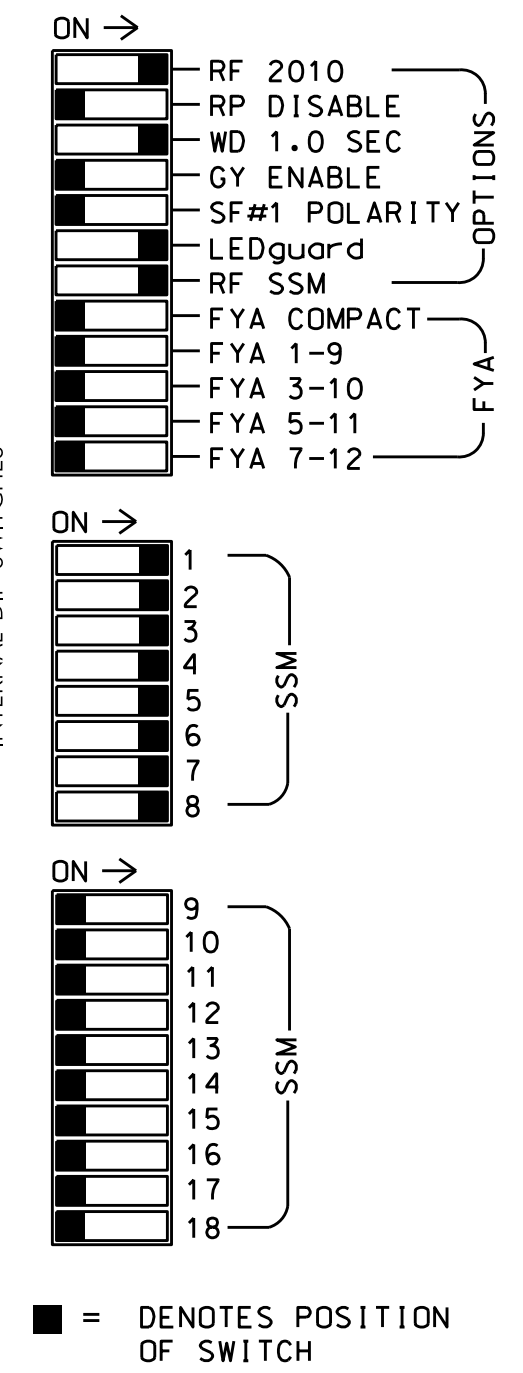
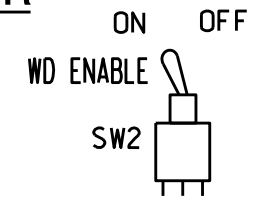
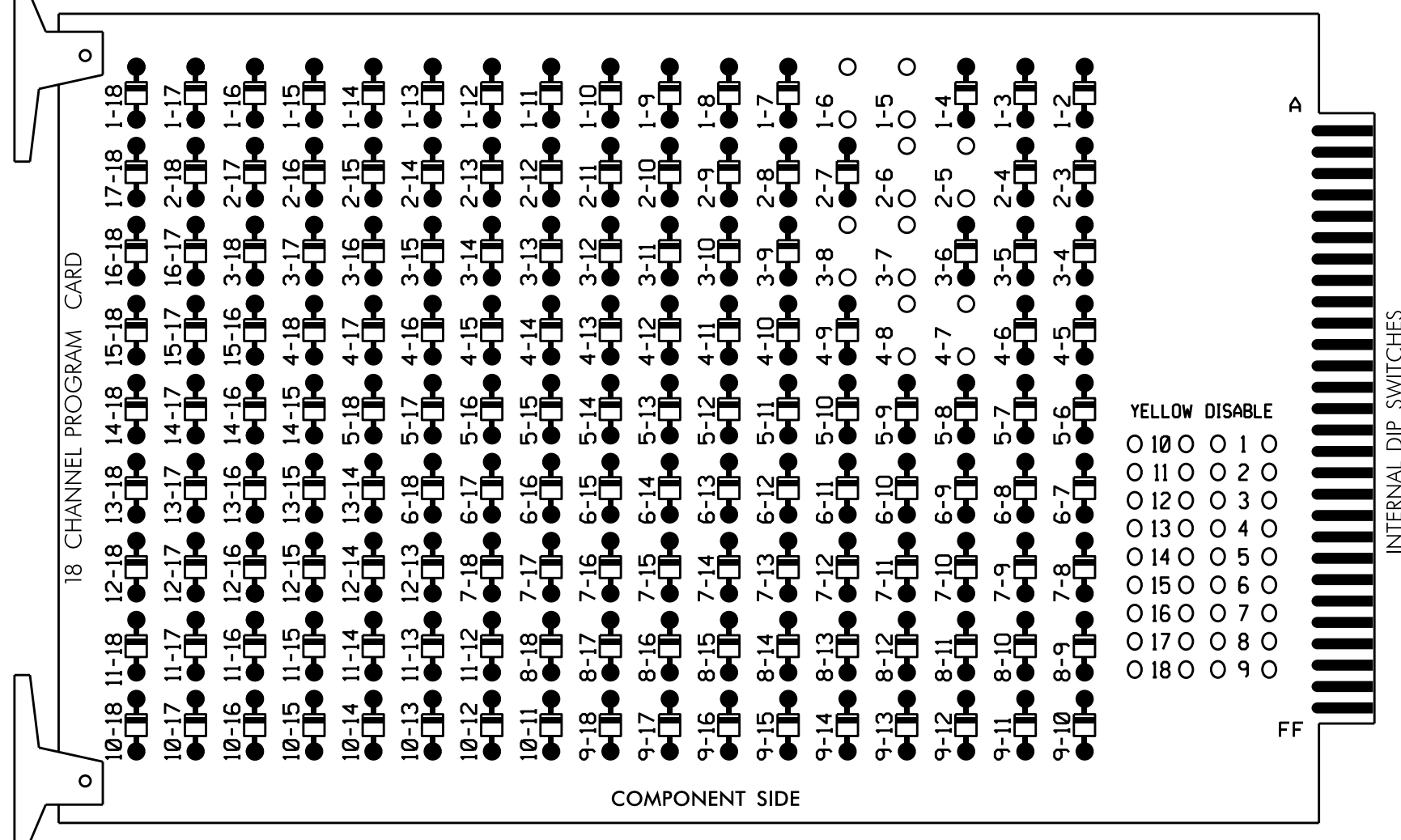


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**EDI MODEL 2018ECLIP-NC CONFLICT MONITOR PROGRAMMING DETAIL**

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-5, 1-6, 2-5, 2-6, 3-7, 3-8, 4-7 and 4-8.



REMOVE JUMPERS AS SHOWN

**NOTES:**

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

**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. Enable Simultaneous Gap-Out for all phases.
3. Program phases 2 and 6 for Gap Reduction.
4. Program phases 2 and 6 for Start Up In Green.
5. Program phases 2 and 6 for Yellow Flash.
6. The cabinet and controller are part of the NC 24-27-73 (Bypass East) Closed Loop System.

**EQUIPMENT INFORMATION**

CONTROLLER.....2070  
 CABINET.....332 W/ AUX  
 SOFTWARE.....ECONOLITE OASIS  
 CABINET MOUNT.....BASE  
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE  
 LOAD SWITCHES USED.....S1,S2,S4,S5,S7,S8,S10,S11  
 PHASES USED.....1,2,3,4,5,6,7,8  
 OVERLAP "A".....NOT USED  
 OVERLAP "B".....NOT USED  
 OVERLAP "C".....NOT USED  
 OVERLAP "D".....NOT USED

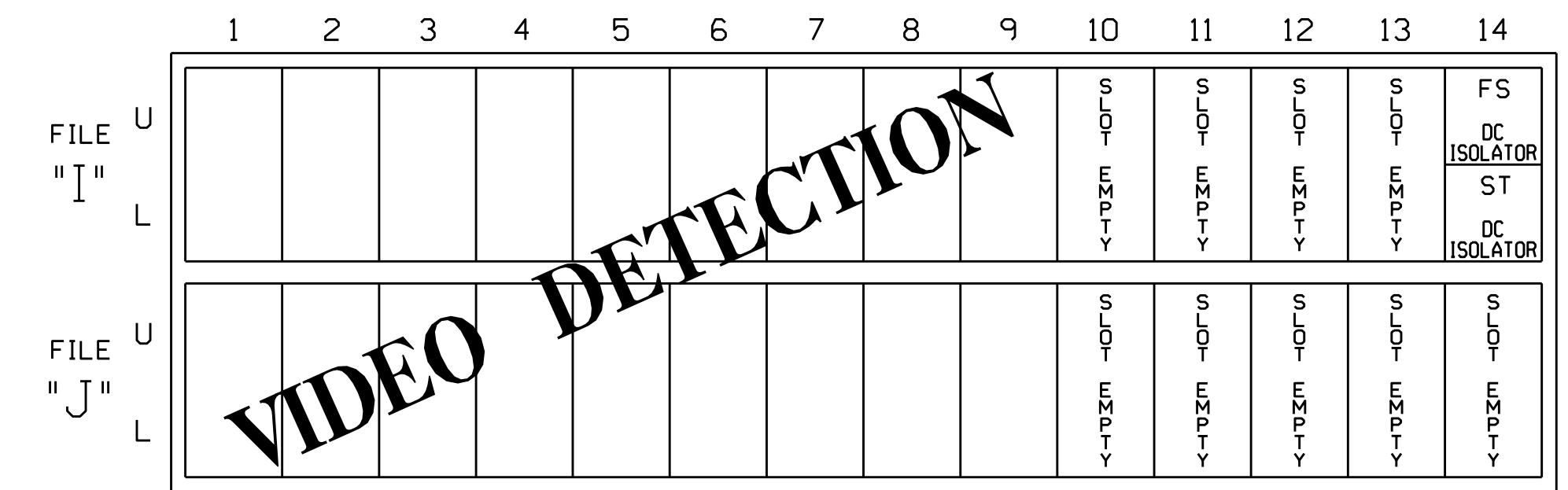
**SIGNAL HEAD HOOK-UP CHART**

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	82	21,22	22	31	41, 42,43	42	51	61,62	62	71	81,82	NU	NU	NU	NU	NU	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	126		117	117			132	132		123	123						
GREEN ARROW	127	127		118	118			133	133		124	124						

NU = Not Used

**INPUT FILE POSITION LAYOUT**

(front view)



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

FS = FLASH SENSE  
 ST = STOP TIME

**SPECIAL DETECTOR NOTE**

Install a video 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: 10-0591 T4  
 DESIGNED: October 2018  
 SEALED: 11/2/2018  
 REVISED:

Electrical Detail - Temp 4

Electrical and Programming Details for: **NC 24-27-73 (Bypass East) at NC 740 Bypass/ SR 1625 (East Main St.)**

Prepared In the Offices of:  
  
 750 N. Greenfield Pkwy, Garner, NC 27529

Division 10 Stanly County Albemarle

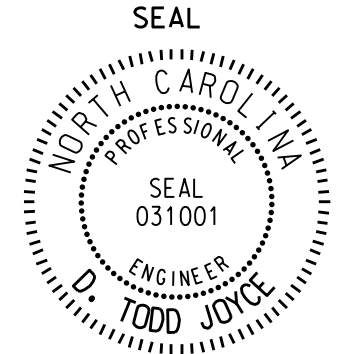
PLAN DATE: October 2018 REVIEWED BY: T. Joyce  
 PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS: \_\_\_\_\_ INIT. DATE

DocuSigned by: *D. Todd Joyce* 11/5/2018

SIG. INVENTORY NO. 10-0591 T4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



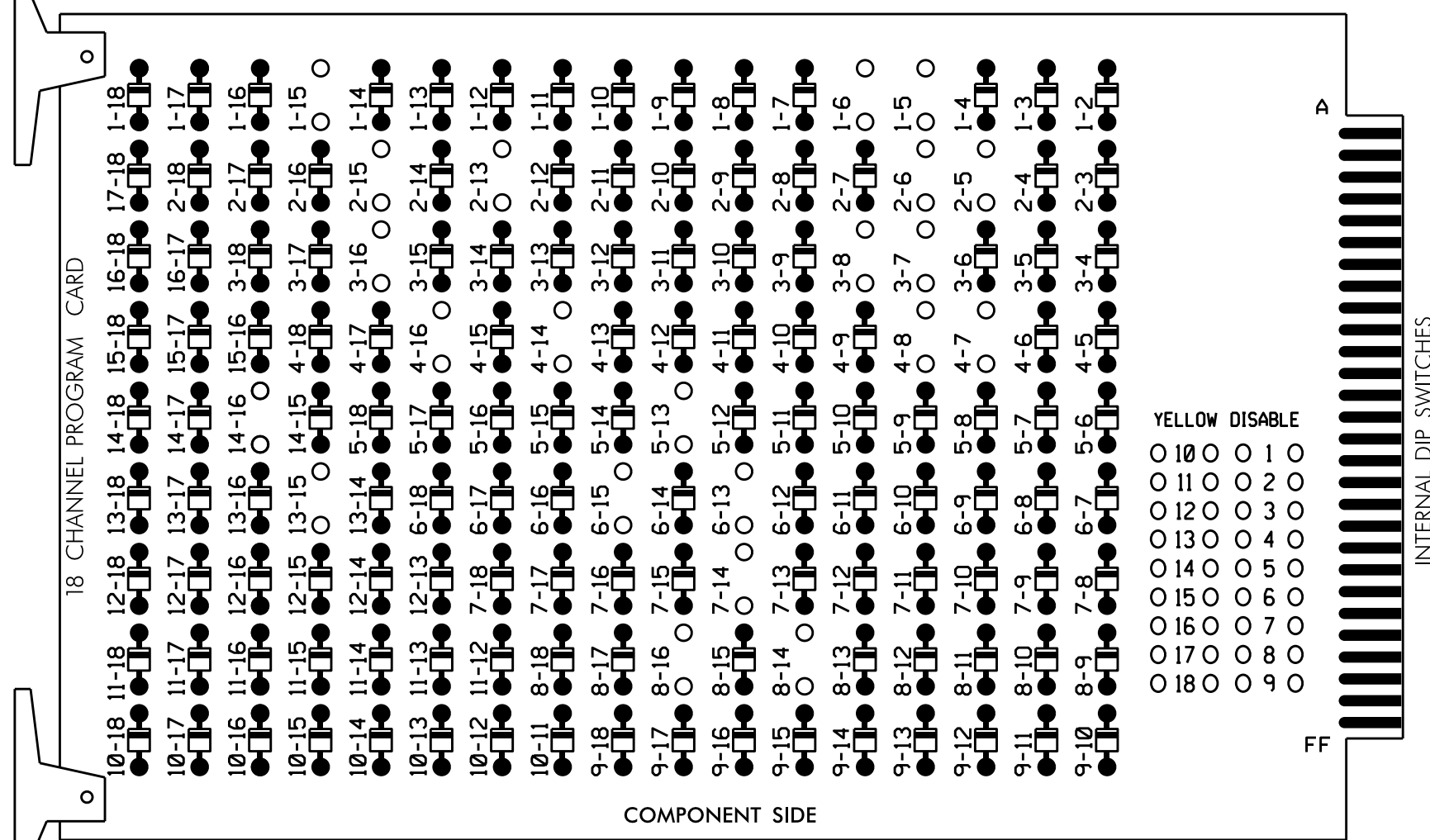
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**EDI MODEL 2018ECLIP-NC CONFLICT MONITOR PROGRAMMING DETAIL**

(remove jumpers and set switches as shown)

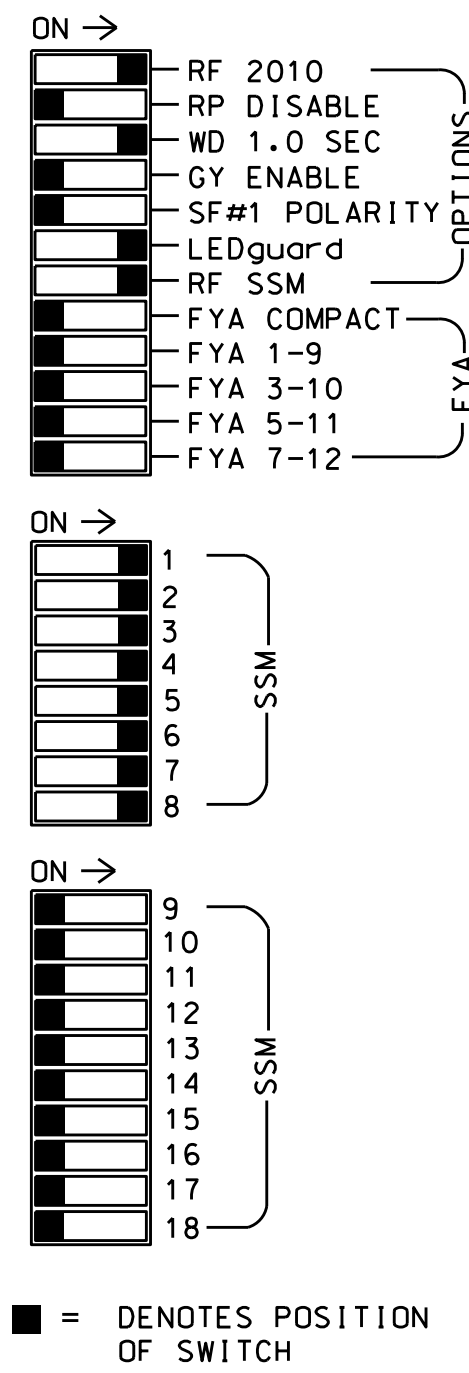
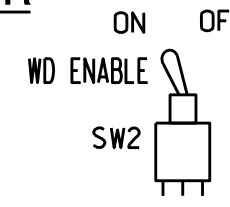
REMOVE DIODE JUMPERS 1-5, 1-6, 1-15, 2-5, 2-6, 2-13, 2-15, 3-7, 3-8, 3-16, 4-7, 4-8, 4-14, 4-16, 5-13, 6-13, 6-15, 7-14, 8-14, 8-16, 13-15 and 14-16.



REMOVE JUMPERS AS SHOWN

**NOTES:**

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



**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. Enable Simultaneous Gap-Out for all phases.
3. Program phases 2 and 6 for Variable Initial and Gap Reduction.
4. Program phases 2 and 6 for Start Up In Green.
5. Program phases 2, 4, 6 and 8 for 'STARTUP PED CALL'.
6. Program phases 2 and 6 for Yellow Flash.
7. The cabinet and controller are part of the NC 24-27-73 (Bypass East) Closed Loop System.

**EQUIPMENT INFORMATION**

CONTROLLER.....2070  
 CABINET.....332 W/ AUX  
 SOFTWARE.....ECONOLITE OASIS  
 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  
 PHASES USED.....1,2,2 PED,3,4,4 PED,5,6,  
 6 PED,7,8,8 PED  
 OVERLAP "A".....NOT USED  
 OVERLAP "B".....NOT USED  
 OVERLAP "C".....NOT USED  
 OVERLAP "D".....NOT USED

**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
CHU 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	82	21, 22,23	P21, P22	31,32	41, 42,43	P41, P42	42	51	61, 62,63	P61, P62	62	71	81, 82,83	P81, P82	NU	NU	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	126		117			132	132		123	123							
GREEN ARROW	127	127		118			133	133		124	124							
Hand icon				113			104			119			110					
Person icon				115			106			121			112					

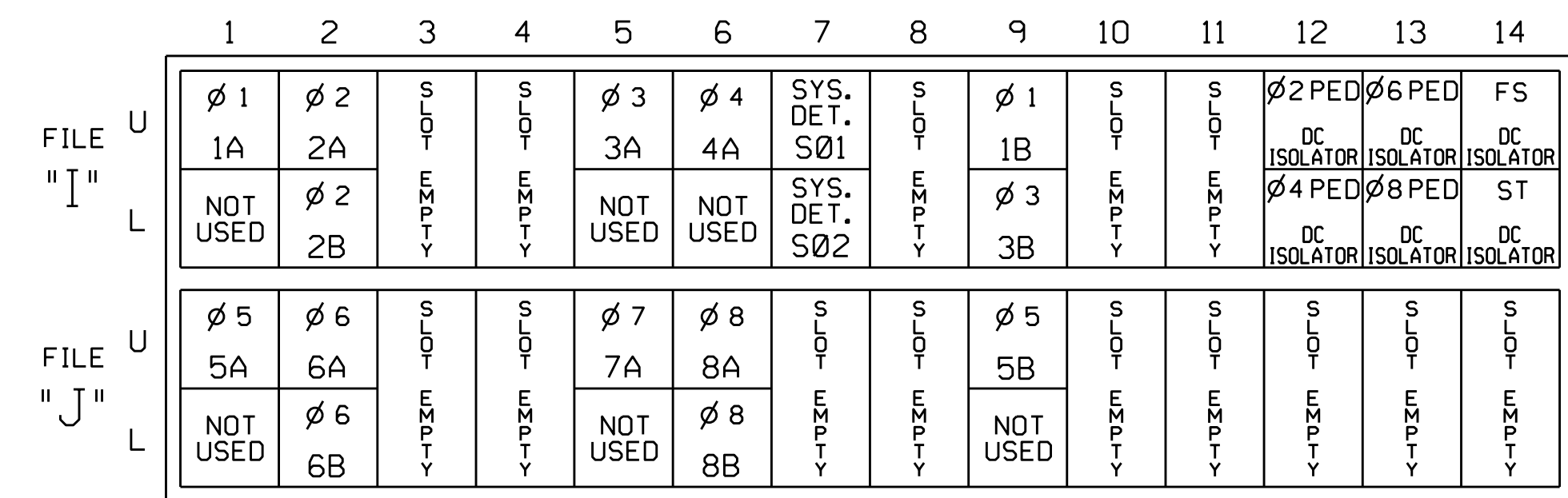
NU = Not Used

**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.

**INPUT FILE POSITION LAYOUT**

(front view)



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

FS = FLASH SENSE  
 ST = STOP TIME

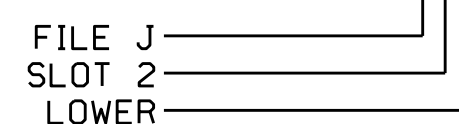
**INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB2-1,2	I1U	56	18	1	1	Y	Y			
1B	TB6-9,10	I9U	60	22	11	1	Y	Y			15
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y			
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			3
3B	TB6-11,12	I9L	62	24	13	3	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			
5A	TB3-1,2	J1U	55	17	5	5	Y	Y			
5B	TB7-9,10	J9U	59	21	15	5	Y	Y			15
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
7A	TB5-5,6	J5U	57	19	7	7	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3.0
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			
*S01	TB6-1,2	I7U	65	27	34	SYS					
*S02	TB6-3,4	I7L	78	40	44	SYS					
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P41,P42	TB8-5,6	I12L	69	31	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	32	PED 8	8 PED					

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

\* System detector only. Remove the vehicle phase assigned to this detector in the default programming.

INPUT FILE POSITION LEGEND: J2L



**Electrical Detail**

Electrical and Programming Details for:  
 Prepared in the Offices of:  
  
 750 N. Greenfield Pkwy, Garner, NC 27529

NC 24-27-73 (Bypass East) at NC 740 Bypass/ SR 1625 (East Main St.)

Division 10	Stanly County	Albemarle
PLAN DATE: October 2018	REVIEWED BY: T. Joyce	
PREPARED BY: C. Strickland	REVIEWED BY:	
REVISIONS	INIT.	DATE

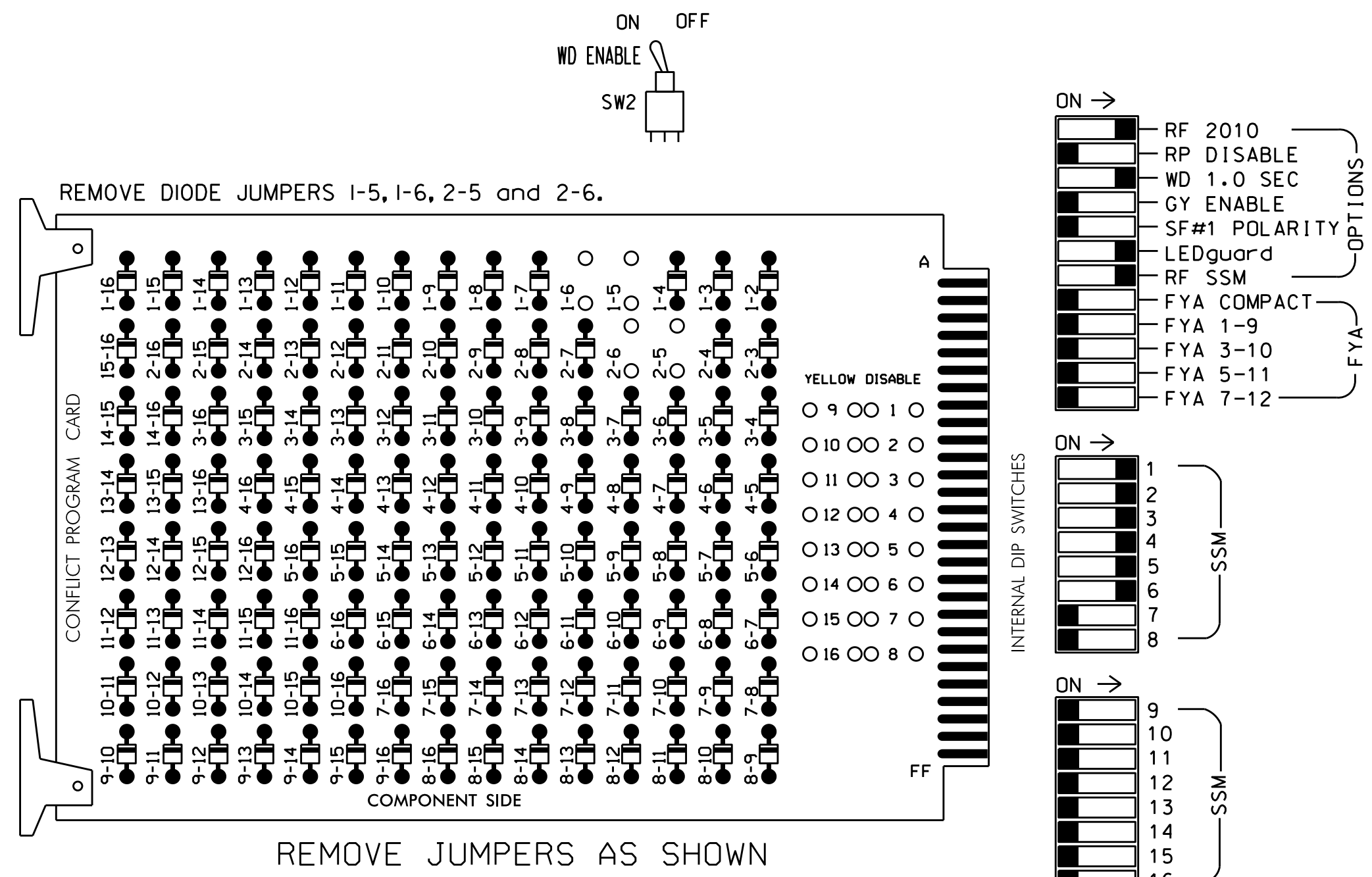
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SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 031001  
 ENGINEER  
 TODD JOYCE  
 DocuSigned by:  
 D. Todd Joyce 11/5/2018  
 DATE  
 SIG. INVENTORY NO. 10-0591



**EDI MODEL 2010ECL-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. Make sure jumpers SEL2-SEL5 are present on the monitor board.

■ = 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. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 7,8,9,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
3. Enable Simultaneous Gap-Out for all phases.
4. Program phase 2 for Variable Initial and phases 2 and 6 for Gap Reduction.
5. Program phases 2 and 6 for Start Up In Green.
6. Program phases 2 and 6 for Yellow Flash.
7. The cabinet and controller are part of the NC 24-27-73 (Bypass East) Closed Loop System.

**EQUIPMENT INFORMATION**

CONTROLLER.....2070  
 CABINET.....332 W/ AUX  
 SOFTWARE.....ECONOLITE OASIS  
 CABINET MOUNT.....BASE  
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE  
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6  
 PHASES USED.....1,2,3,4,5,6  
 OVERLAP "A".....NOT USED  
 OVERLAP "B".....NOT USED  
 OVERLAP "C".....NOT USED  
 OVERLAP "D".....NOT USED

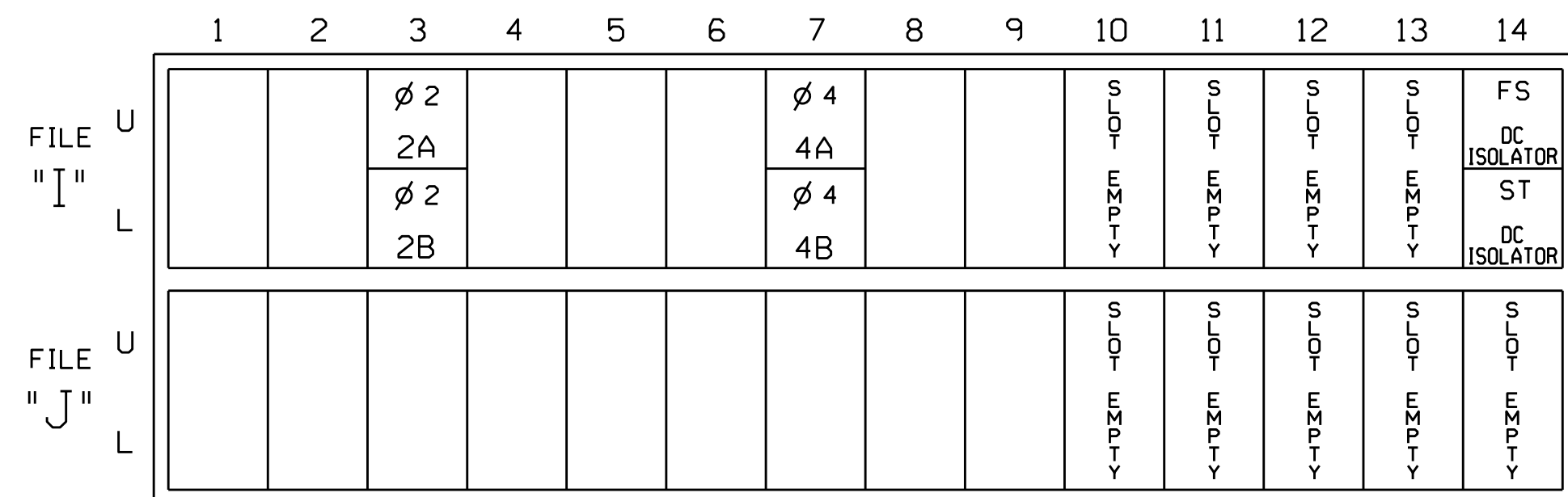
**SIGNAL HEAD HOOK-UP CHART**

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
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	32	21,22	22	31	32	41	42	NU	51	61,62	NU	NU	NU	NU	NU	NU	NU
RED			128		116	116	101	101			134							
YELLOW			129		117	117	102	102			135							
GREEN			130		118	118	103	103			136							
RED ARROW	125										131							
YELLOW ARROW	126	126		117							132							
GREEN ARROW	127	127		118	118		103				133							

NU = Not Used

**INPUT FILE POSITION LAYOUT**

(front view)



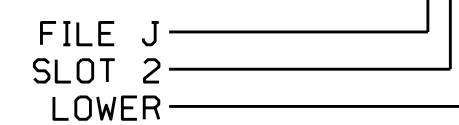
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE  
 ST = STOP TIME

**INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A	TB2-9,10	I3U	63	25	32	2	Y	Y			
2B	TB2-11,12	I3L	76	38	42	2	Y	Y			
4A	TB6-1,2	I7U	65	27	34	4	Y	Y			3
4B	TB6-3,4	I7L	78	40	44	4	Y	Y			10

INPUT FILE POSITION LEGEND: J2L



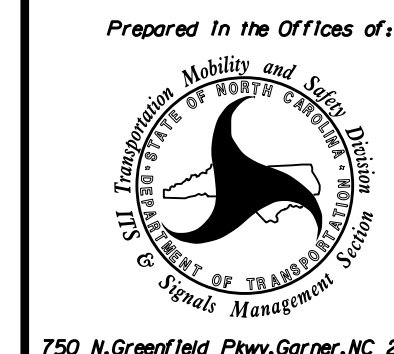
**SPECIAL DETECTOR NOTE**

For phases 1, 3, 5 and 6 install a video 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: 10-0731 T  
 DESIGNED: October 2018  
 SEALED: 11/2/2018  
 REVISED:

Electrical Detail - Temp

ELECTRICAL AND PROGRAMMING DETAILS FOR:



750 N. Greenfield Pkwy, Garner, NC 27529

NC 24-27-73 (Bypass East) at Eastgate Shopping Center/ Albemarle Mall Entrance

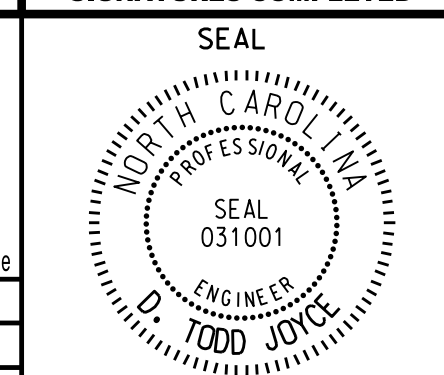
Division 10 Stanly County Albemarle

PLAN DATE: October 2018 REVIEWED BY: T. Joyce

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DocuSigned by: D. Todd Joyce 11/5/2018

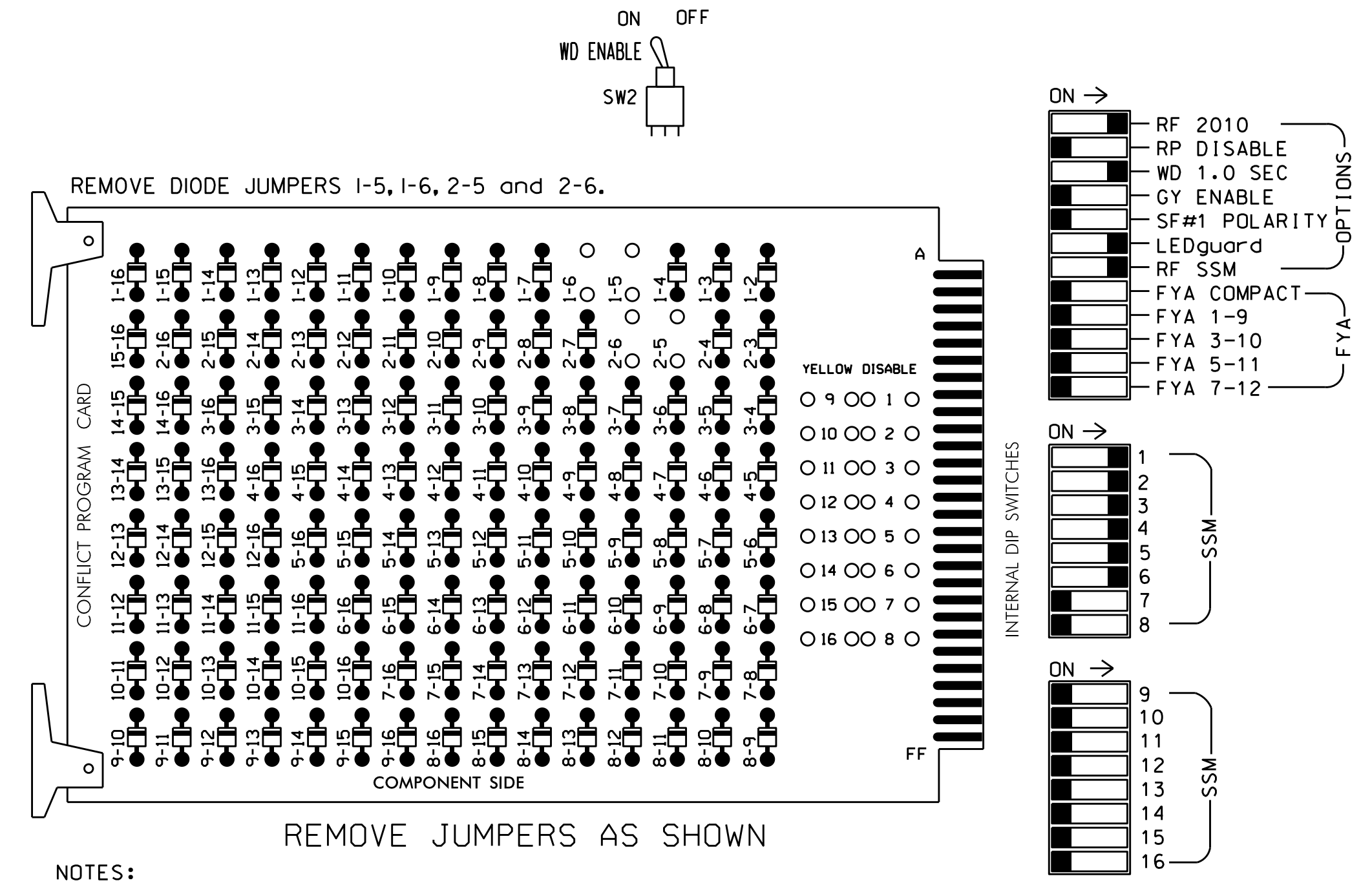
SIG. INVENTORY NO. 10-0731 T



**EDI MODEL 2010ECL-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. Make sure jumpers SEL2-SEL5 are present on the monitor board.

■ = 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. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 7,8,9,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
3. Enable Simultaneous Gap-Out for all phases.
4. Program phases 2 and 6 for Variable Initial and Gap Reduction.
5. Program phases 2 and 6 for Start Up In Green.
6. Program phases 2 and 6 for Yellow Flash.
7. The cabinet and controller are part of the NC 24-27-73 (Bypass East) Closed Loop System.

**EQUIPMENT INFORMATION**

CONTROLLER.....2070  
 CABINET.....332 W/ AUX  
 SOFTWARE.....ECONOLITE OASIS  
 CABINET MOUNT.....BASE  
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE  
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6  
 PHASES USED.....1,2,3,4,5,6  
 OVERLAP "A".....NOT USED  
 OVERLAP "B".....NOT USED  
 OVERLAP "C".....NOT USED  
 OVERLAP "D".....NOT USED

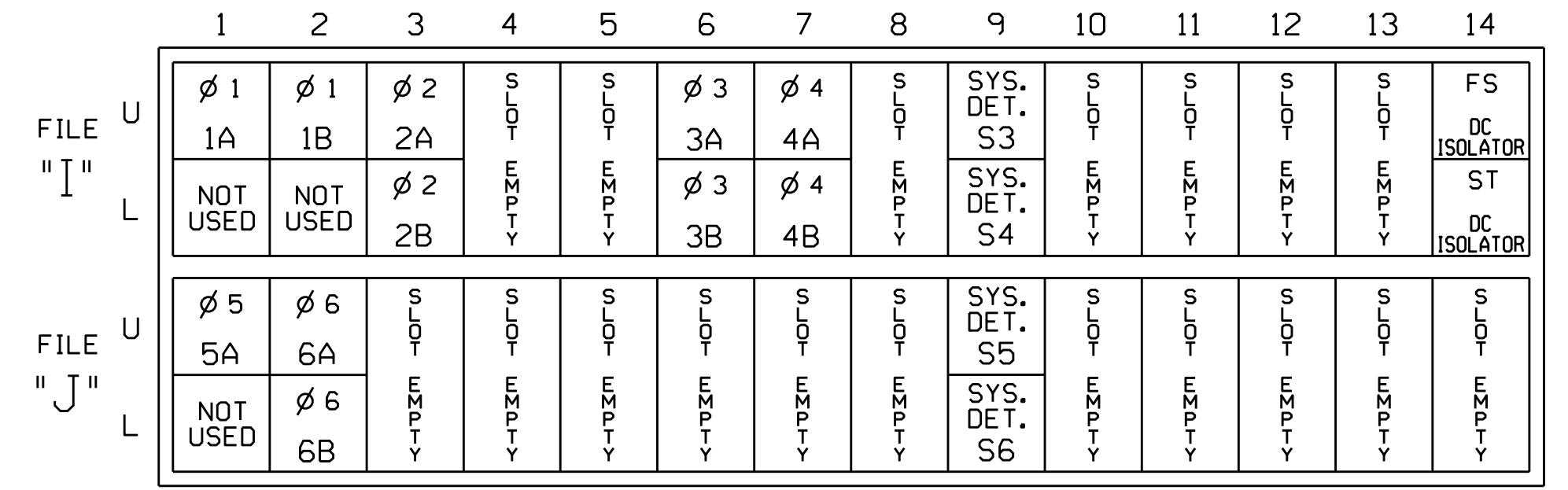
**SIGNAL HEAD HOOK-UP CHART**

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
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	32	21,22	22	31	32	41	42	NU	51	61,62	NU	NU	NU	NU	NU	NU	NU
RED			128		116	116	101	101			134							
YELLOW			129		117	117	102	102			135							
GREEN			130		118	118	103	103			136							
RED ARROW	125										131							
YELLOW ARROW	126	126			117						132							
GREEN ARROW	127	127			118	118		103			133							

NU = Not Used

**INPUT FILE POSITION LAYOUT**

(front view)



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

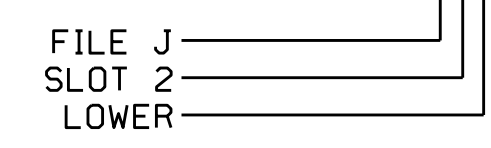
FS = FLASH SENSE  
 ST = STOP TIME

**INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB2-1,2	I1U	56	18	1	1	Y	Y			
1B	TB2-5,6	I2U	39	1	2	1	Y	Y			15
2A	TB2-9,10	I3U	63	25	32	2	Y	Y			
2B	TB2-11,12	I3L	76	38	42	2	Y	Y			
3A	TB4-9,10	I6U	41	3	4	3	Y	Y			
3B	TB4-11,12	I6L	45	7	14	3	Y	Y			
4A	TB6-1,2	I7U	65	27	34	4	Y	Y			3
4B	TB6-3,4	I7L	78	40	44	4	Y	Y			10
5A	TB3-1,2	J1U	55	17	5	5	Y	Y			
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
* S3	TB6-9,10	I9U	60	22	11	SYS					
* S4	TB6-11,12	I9L	62	24	13	SYS					
* S5	TB7-9,10	J9U	59	21	15	SYS					
* S6	TB7-11,12	J9L	61	23	17	SYS					

\* System detector only. Remove the vehicle phase assigned to this detector in the default programming.

INPUT FILE POSITION LEGEND: J2L



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 10-0731  
 DESIGNED: October 2018  
 SEALED: 11/2/2018  
 REVISED:

**Electrical Detail**

ELECTRICAL AND PROGRAMMING DETAILS FOR:  
 Prepared In the Offices of:  
  
 750 N. Greenfield Pkwy, Garner, NC 27529

NC 24-27-73 (Bypass East)  
 at  
 Eastgate Shopping Center/  
 Albemarle Mall Entrance

Division 10	Stanly County	Albemarle
PLAN DATE: October 2018	REVIEWED BY: T. Joyce	
PREPARED BY: C. Strickland	REVIEWED BY:	
REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL  
  
 SEAL 031001  
 ENGINEER  
 TODD JOYCE

DocuSigned by:  
 D. Todd Joyce  
 11/8/2018  
 DATE  
 SIG. INVENTORY NO. 10-0731

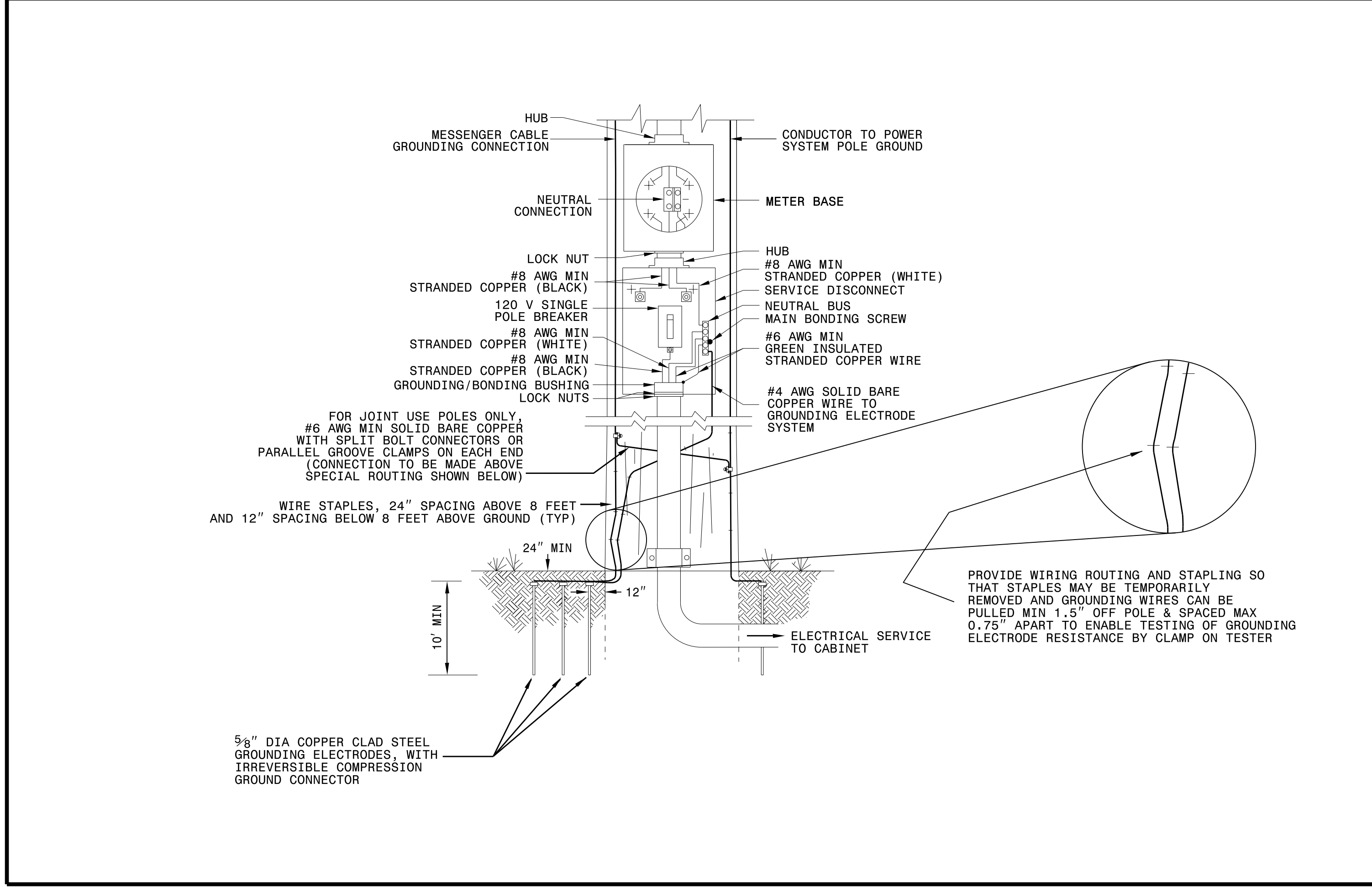
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1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**ELECTRICAL SERVICE GROUNDING**  
GROUNDING AND BONDING

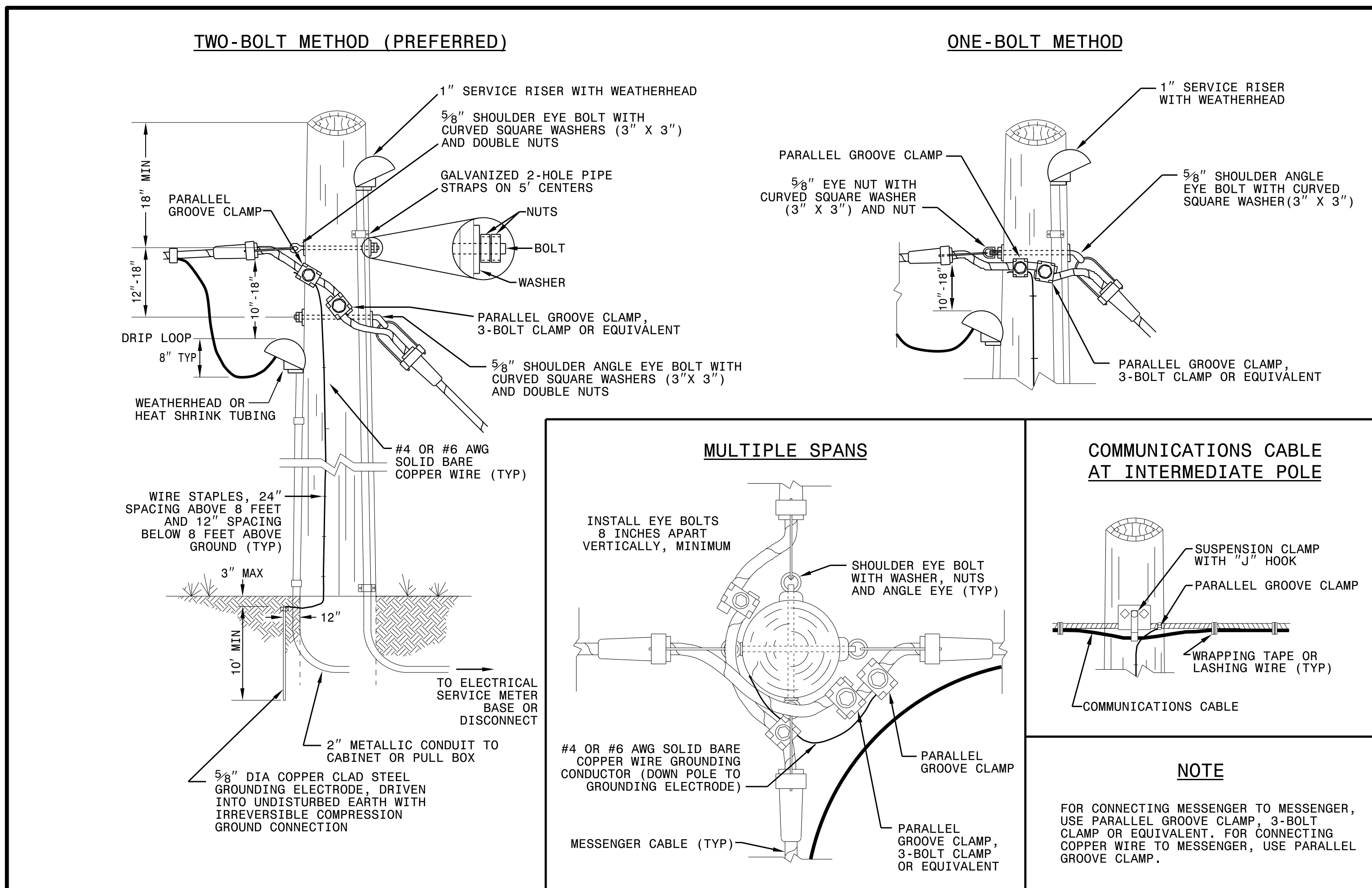
SHEET 1 OF 1  
**1700D01**



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**



DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

See Plate for Title

Prepared in the Offices of:

SEAL

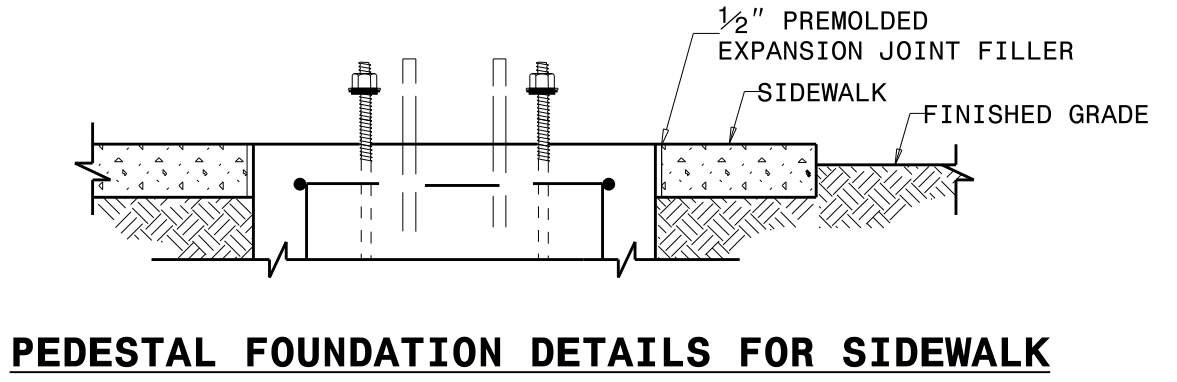
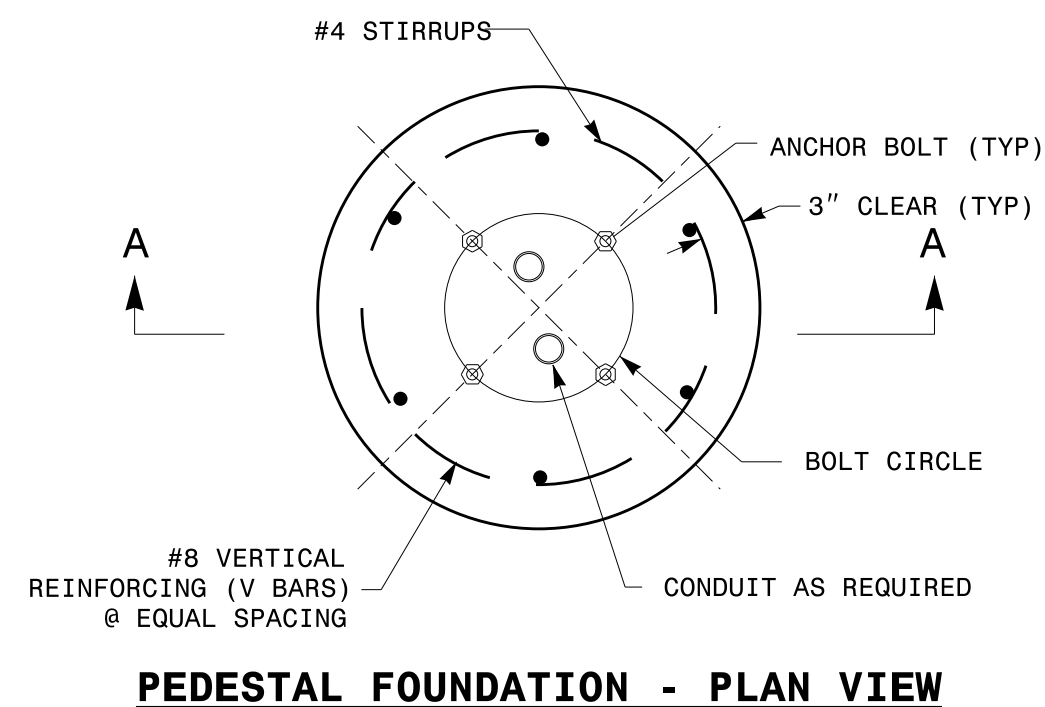
DocuSigned by:  
Mohd Aslami

10/11/2017

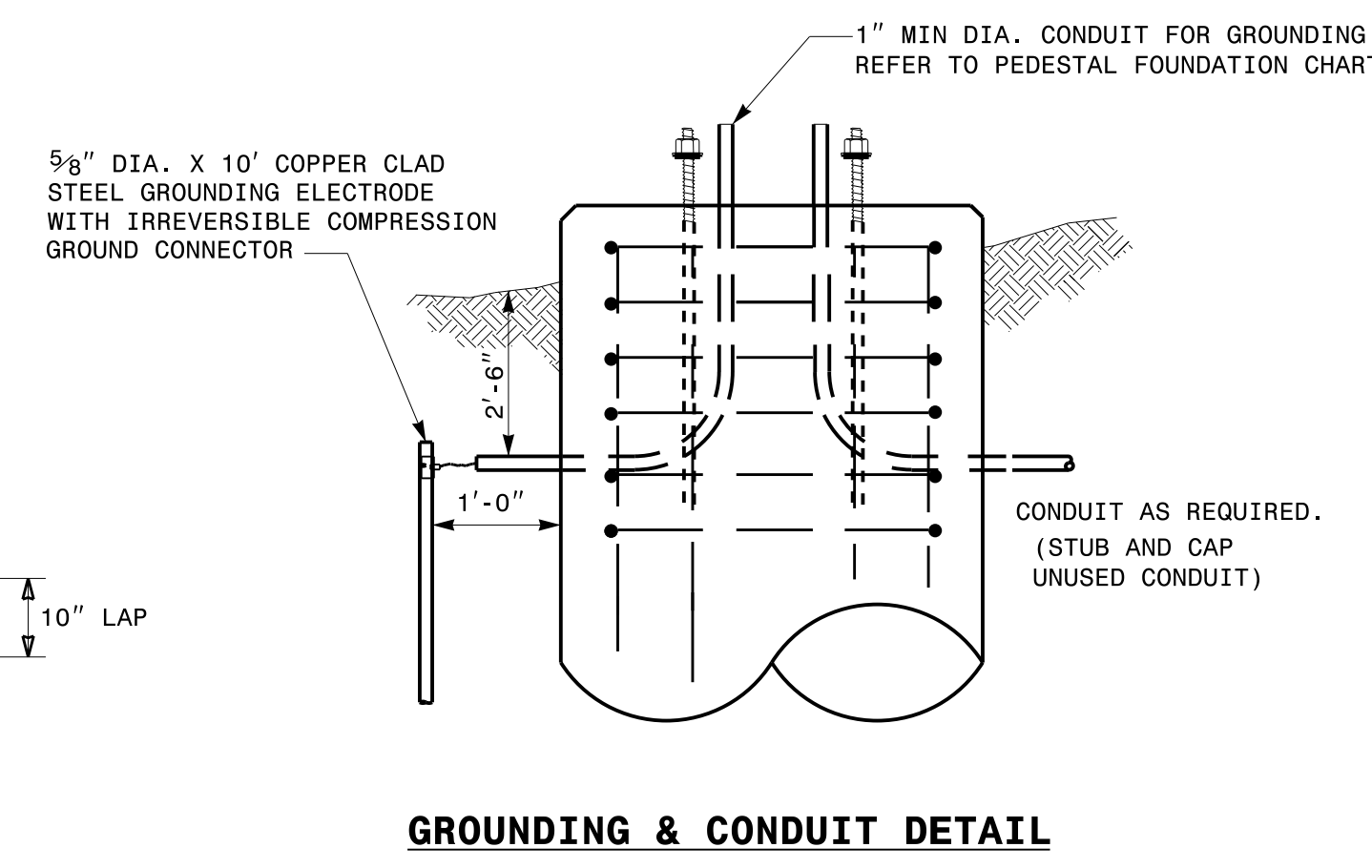
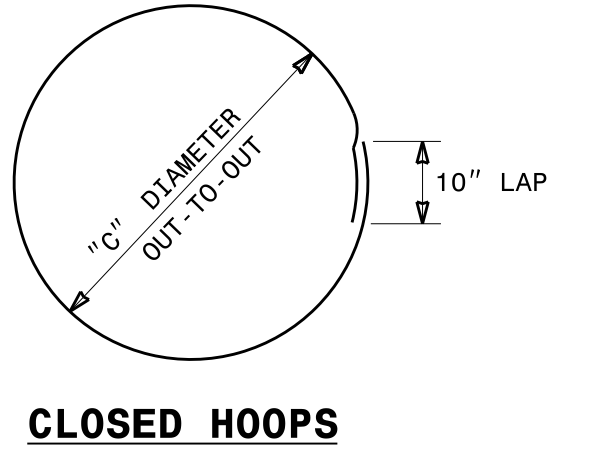
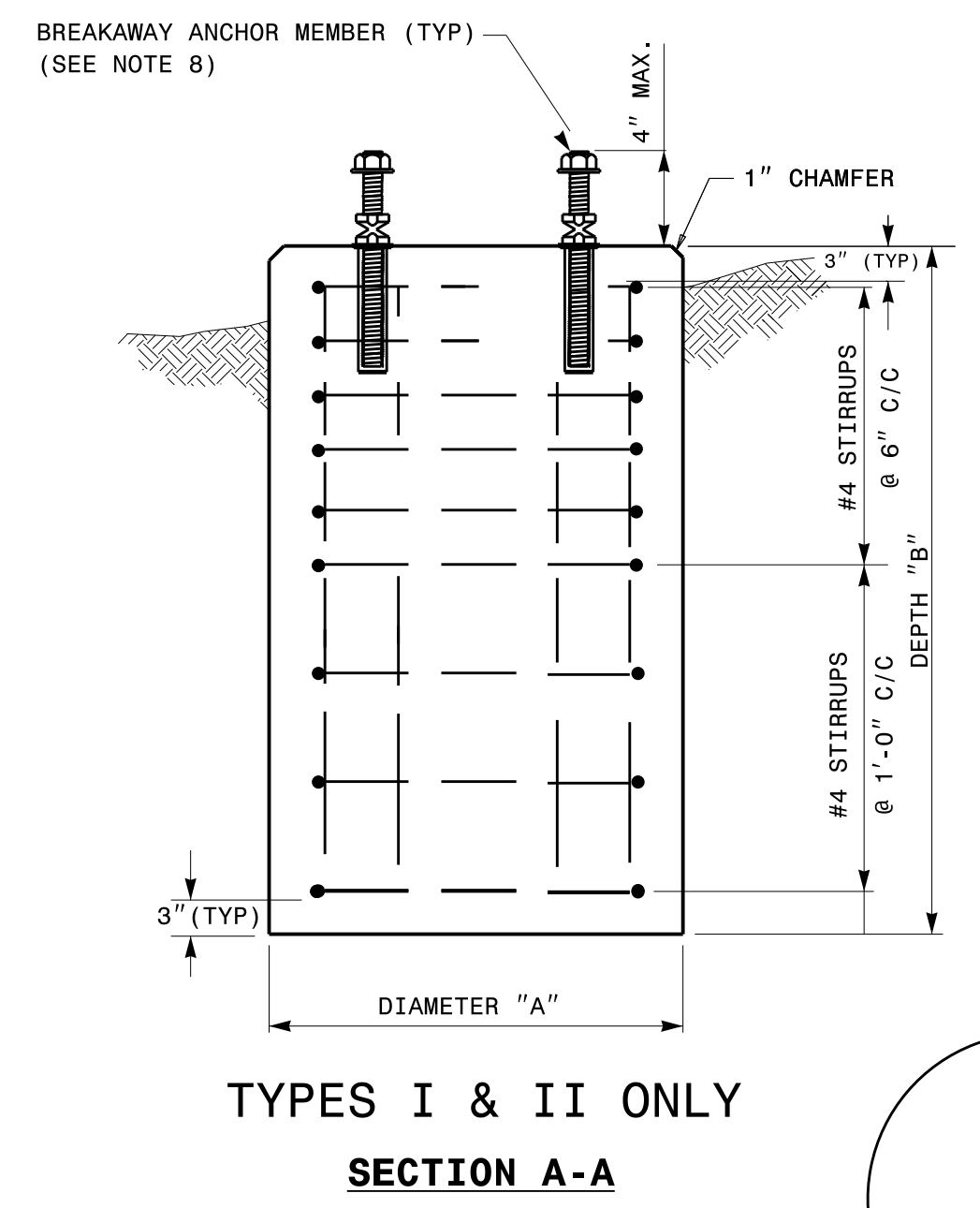
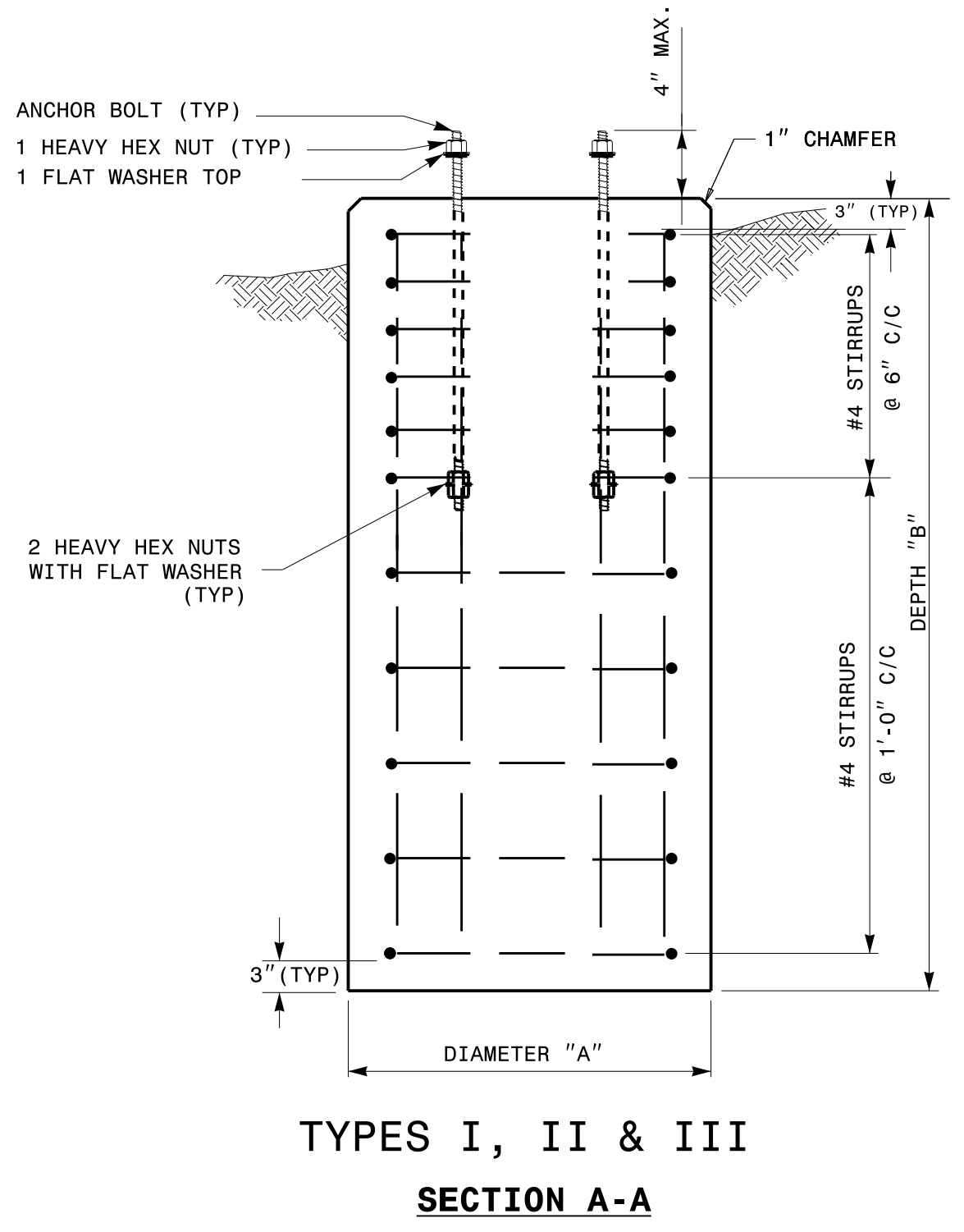
750 N. Greenfield Parkway  
Garner, NC 27529

DATE

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- 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

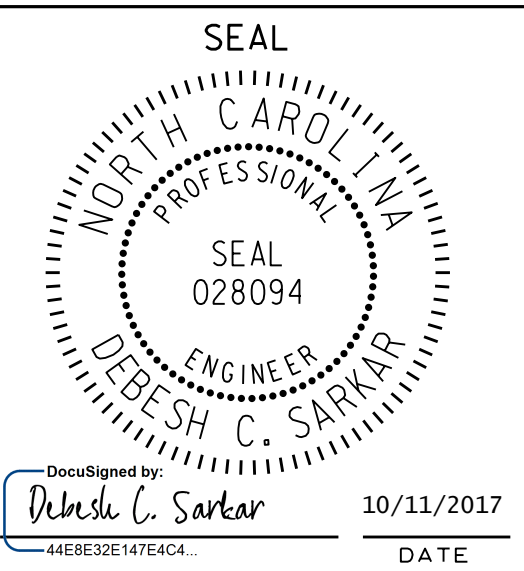
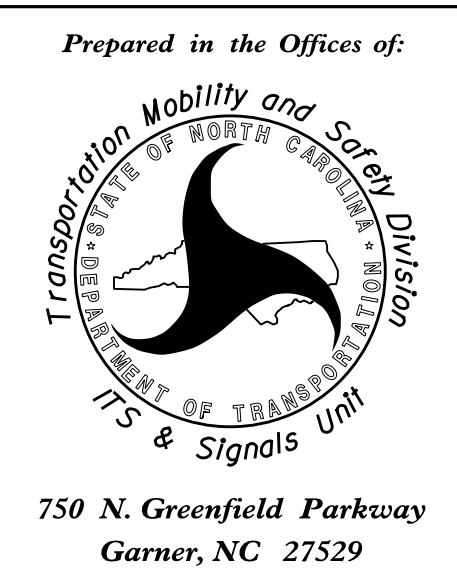
REINFORCING STEEL SCHEDULE													
TYPE	V-BAR				STIRRUP								
	SIZE #	QTY	LENGTH	WEIGHT LBS	SIZE #	QUANTITY			LENGTH	DIAMETER "C" FT	OVERLAP MIN.	WEIGHT LBS	TOTAL STEEL WEIGHT LBS
						VERTICAL ON 6" CENTERS	ON 12" CENTERS	TOTAL					
I	8	6	3'-0"	56	4	0	4	4	5'-7"	1'-6"	0'-10"	15	71
II	8	6	4'-6"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



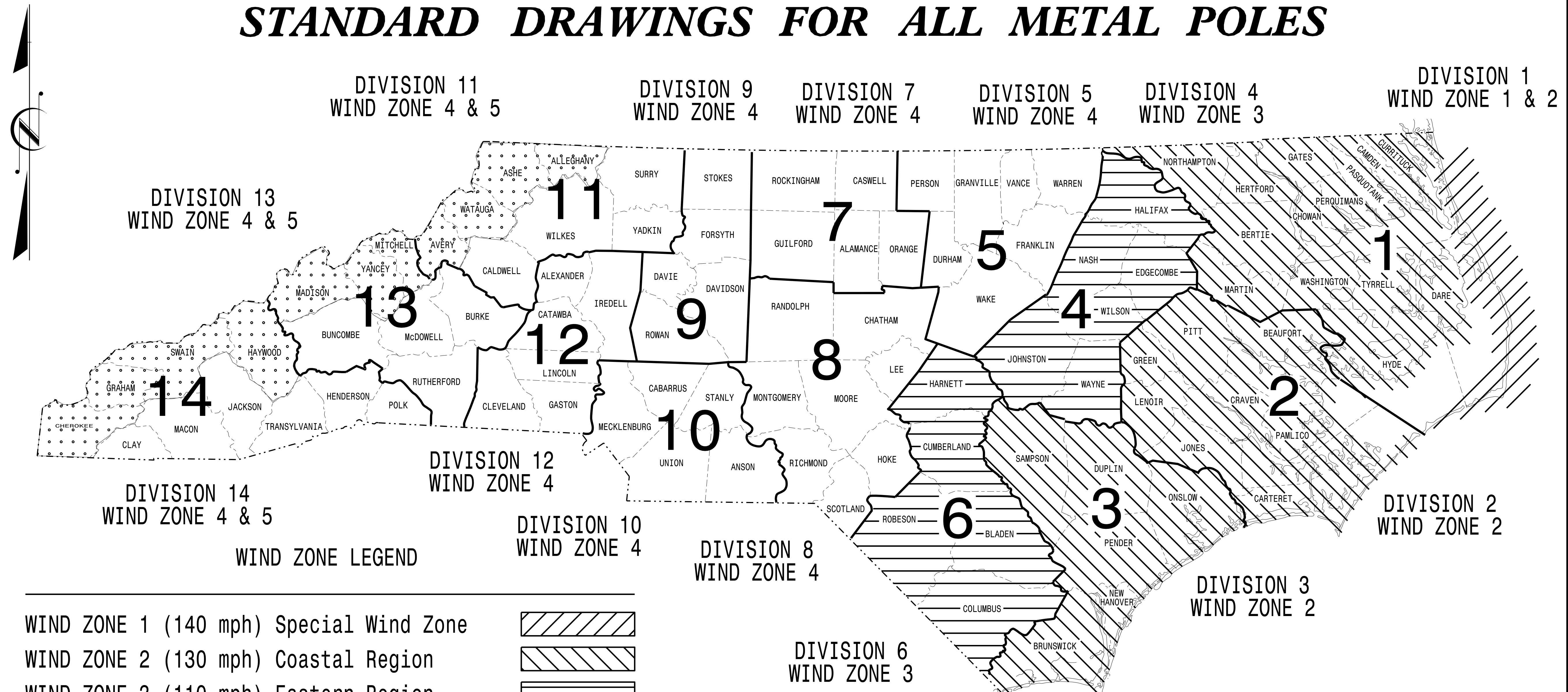
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SIGNATURES COMPLETED

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# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT I.D. NO.	SHEET NO.
<b>R-2530B</b>	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**

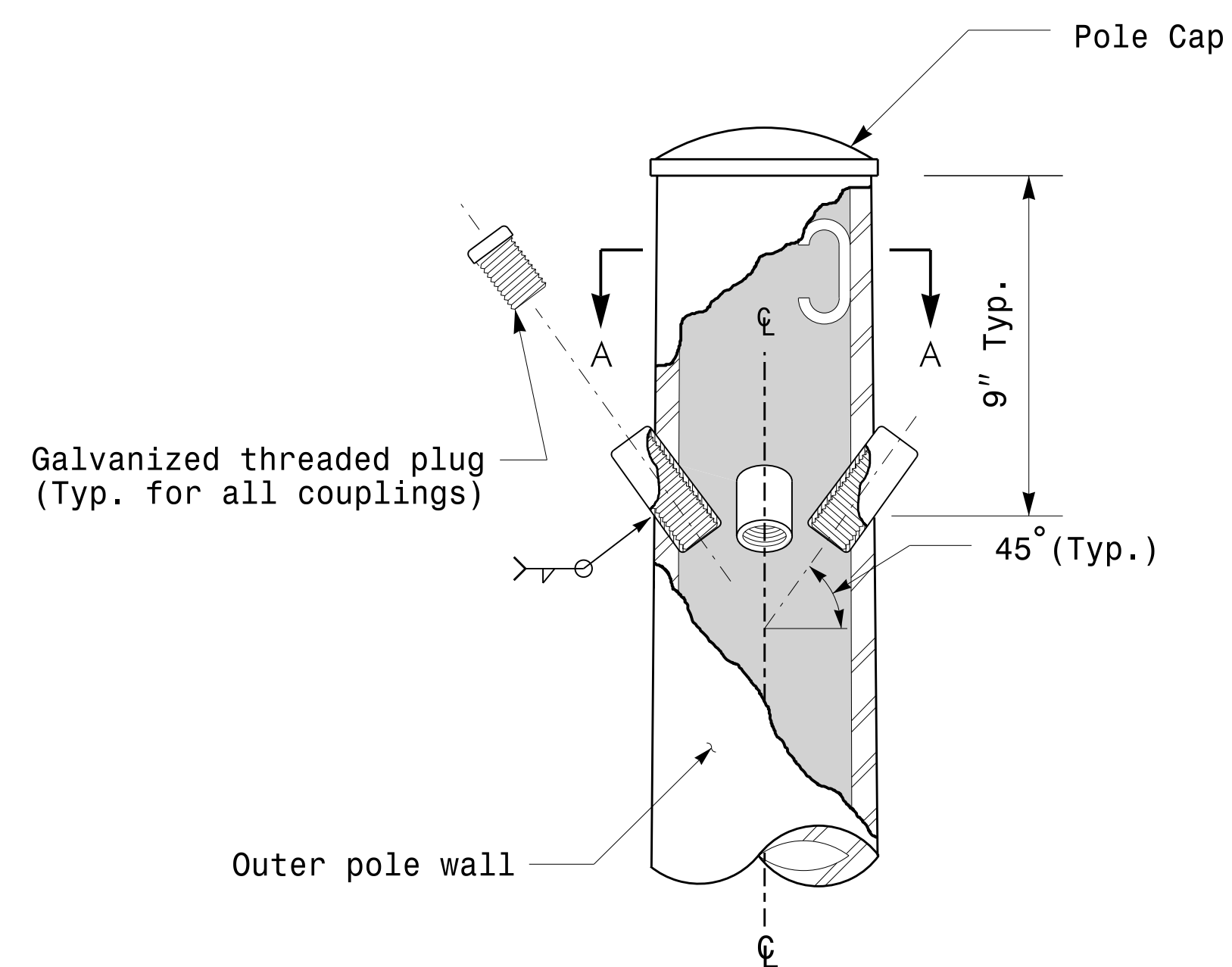
**D.C. SARKAR, P.E. - ITS AND SIGNALS SENIOR STRUCTURAL ENGINEER**

SEAL

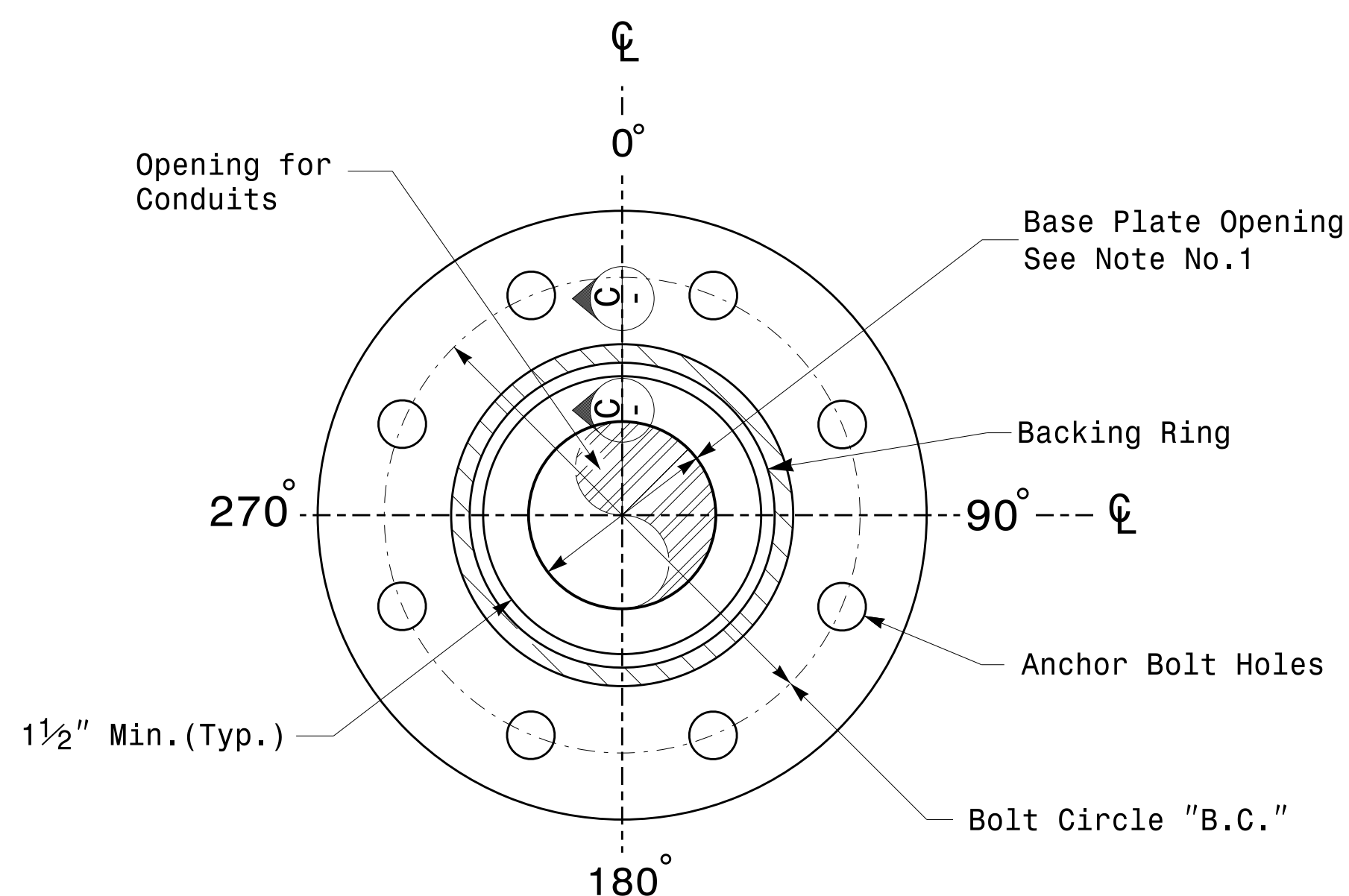
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*Debesh C. Sarkar*  
DATE: 10/11/2017



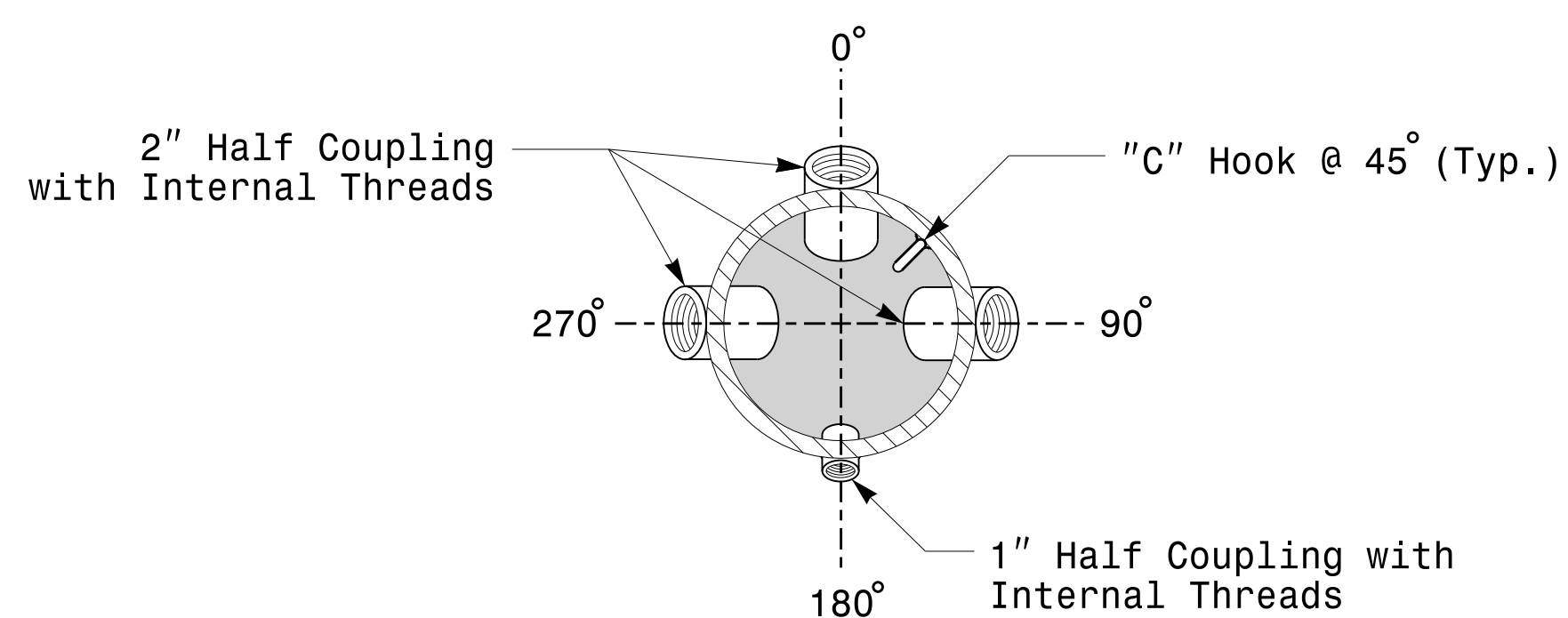
Note:  
 1. Opening in pole base plate shall be equal to pole base inside diameter minus 3 1/2" but shall not be less than 8 1/2".



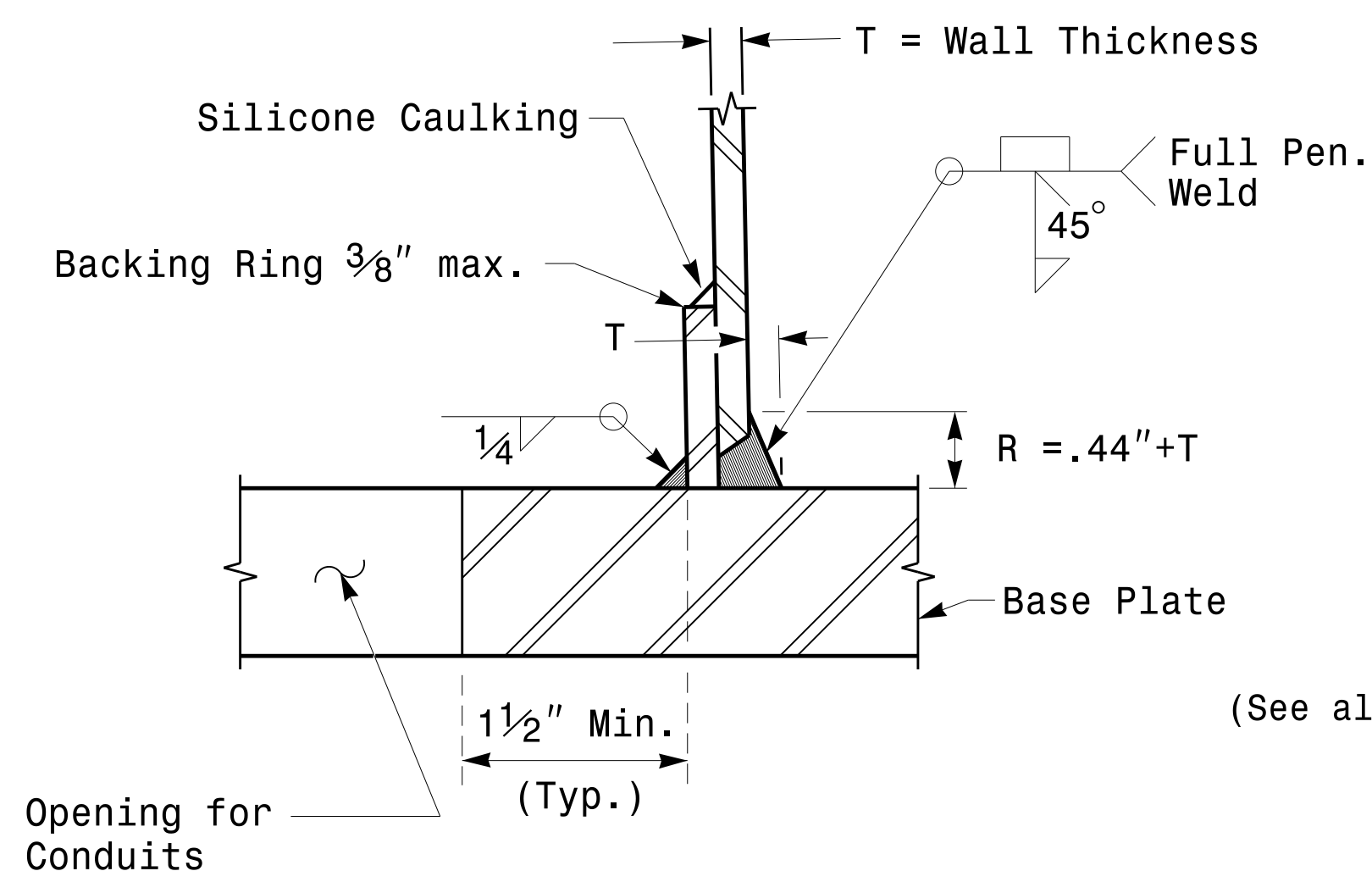
Cable Entrances at Top of Pole



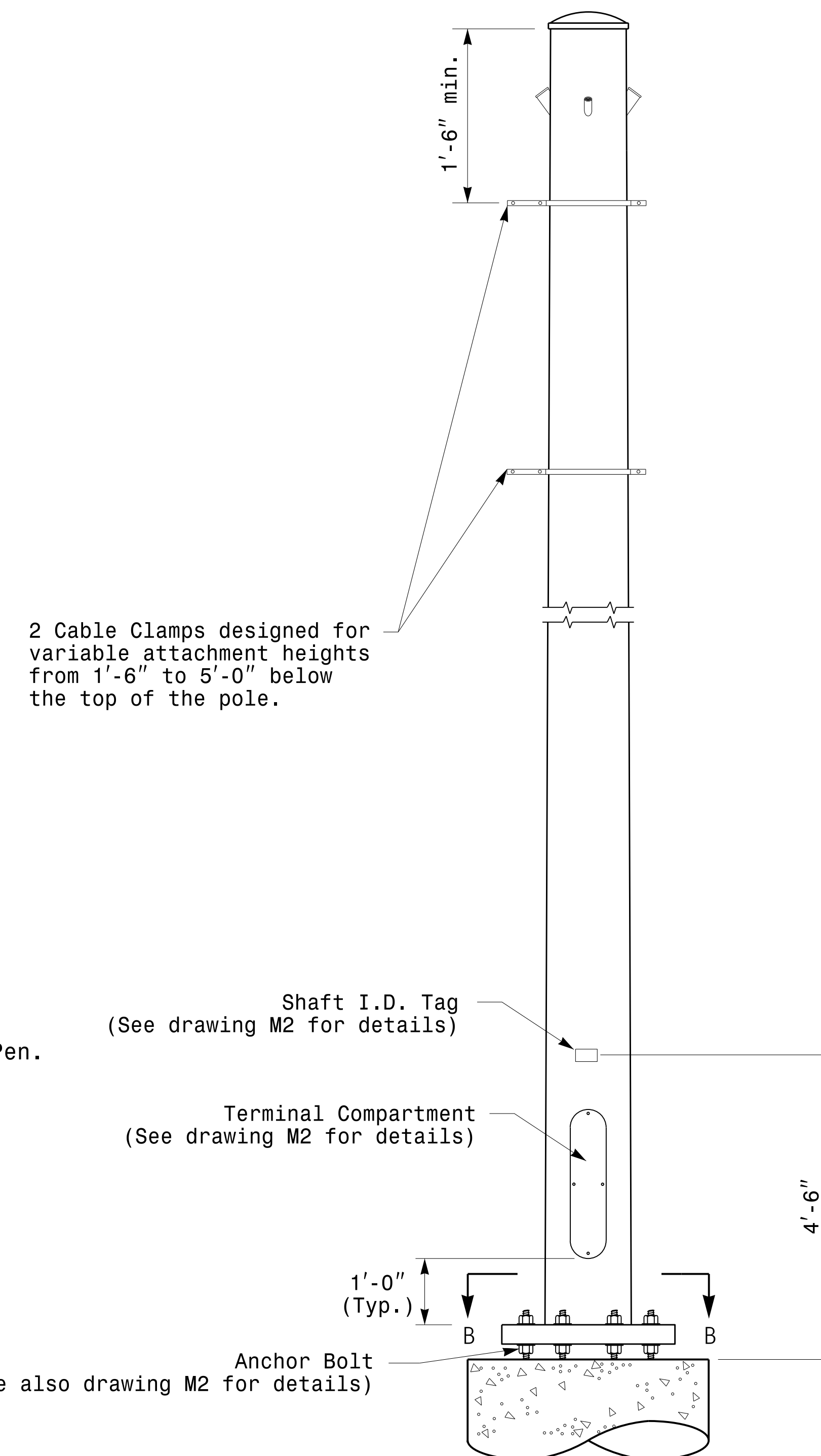
Section B-B Pole Base Plate Details (8 and 12 Bolt Pattern)



Section A-A Radial Orientation for Factory Installed Accessories at Top of Pole



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



Monotube Strain Pole

Prepared in the Offices of:  
  
 750 N. Greenleaf Pkwy, Garner, NC 27529

Typical Fabrication Details For Strain Poles

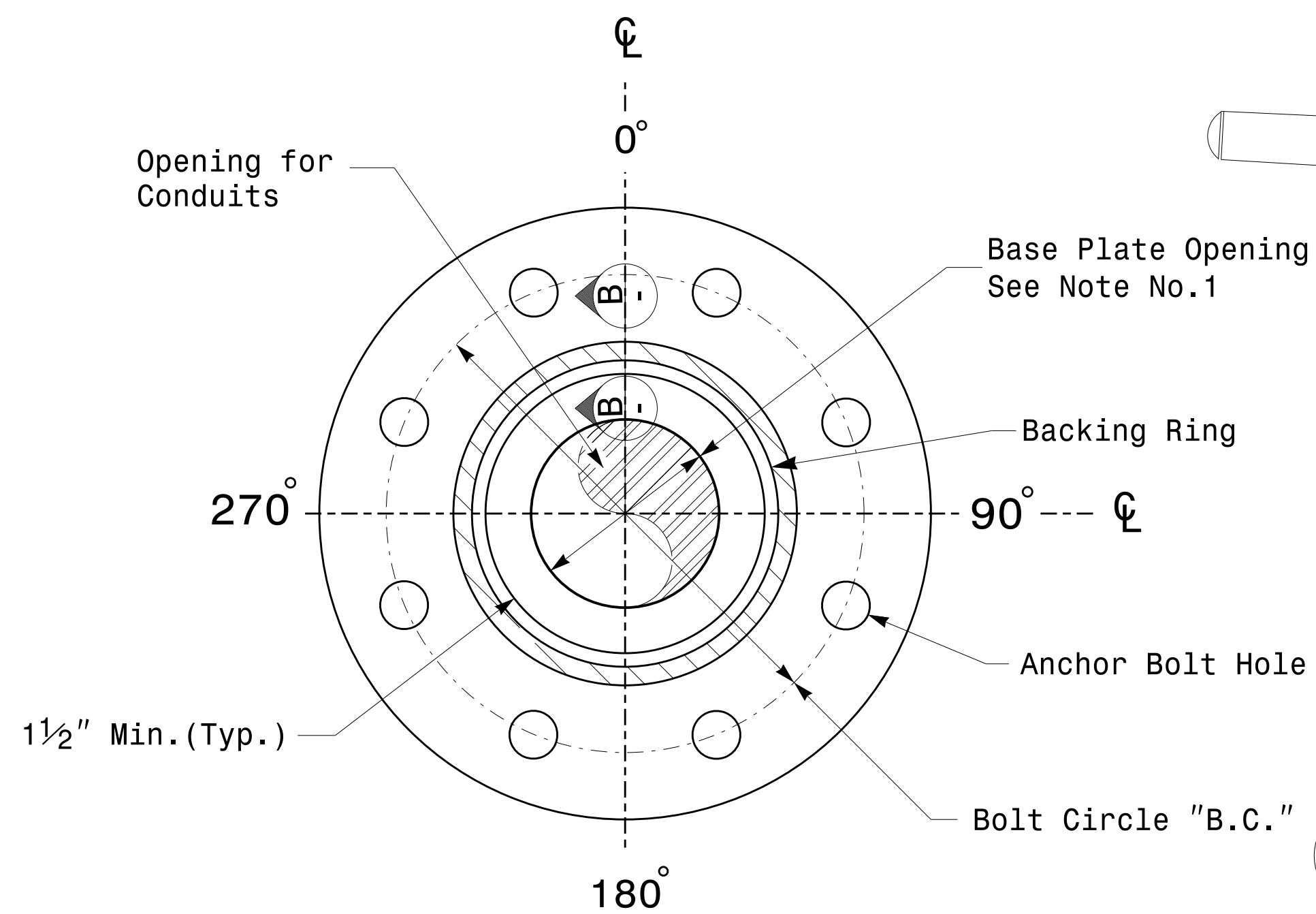
PLAN DATE: OCTOBER 2017	DESIGNED BY: K.C. DURIGON
PREPARED BY: N. BITTING	REVIEWED BY: D.C. SARKAR
REVISIONS	INIT. DATE

SEAL  
  
 DocuSigned by: Debesh C. Sarkar  
 44EB87816FA4F49E  
 10/11/2017  
 DATE

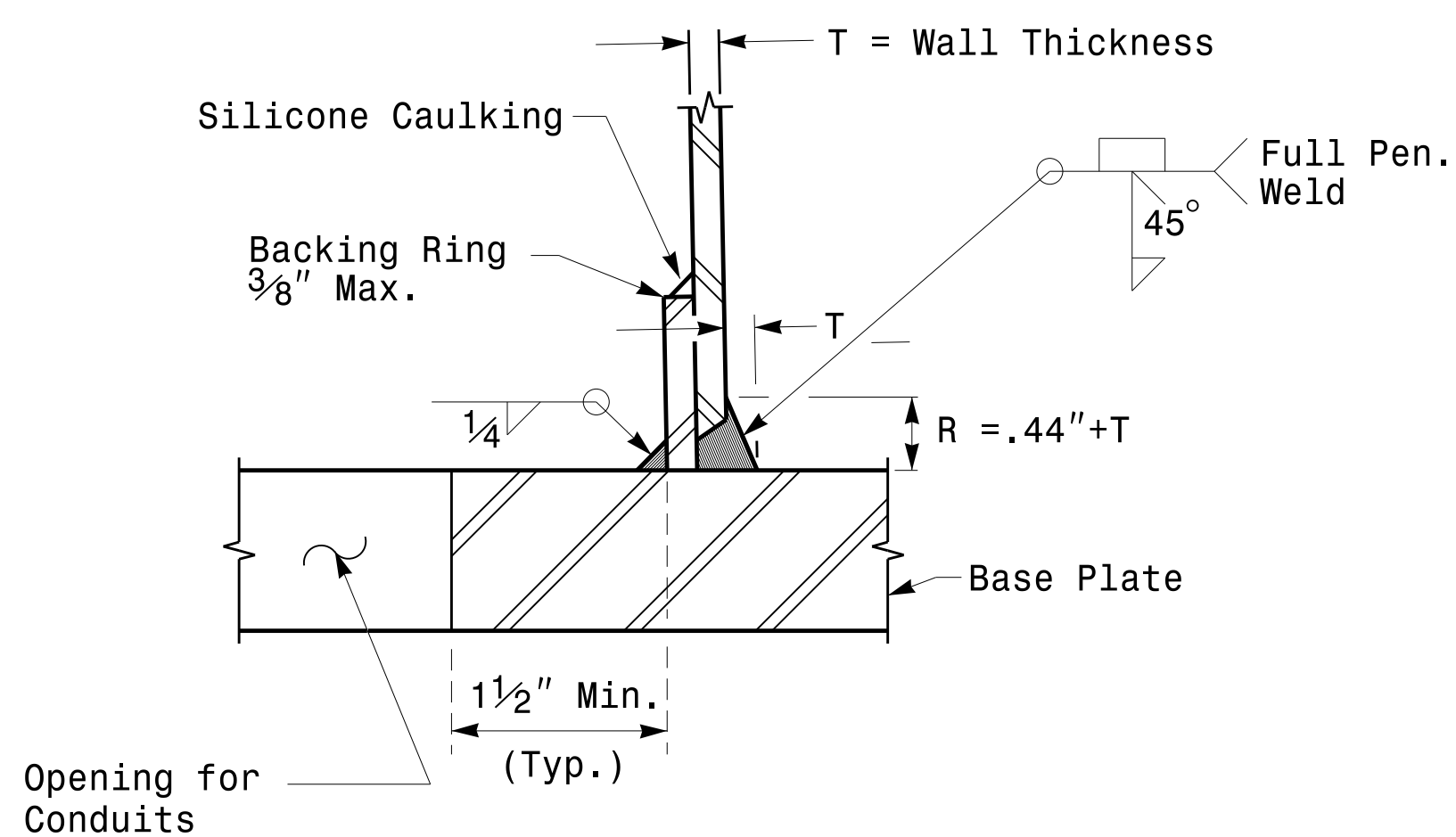
Fabrication Details - Strain Poles

11-0CT-2017 08:25 136504115 Signal.svk:gnrc Design Section Eastern Region\m3 Sheets\2016\2014 Sig.M3 Std. Fabrication Details-Strain Poles.dgn

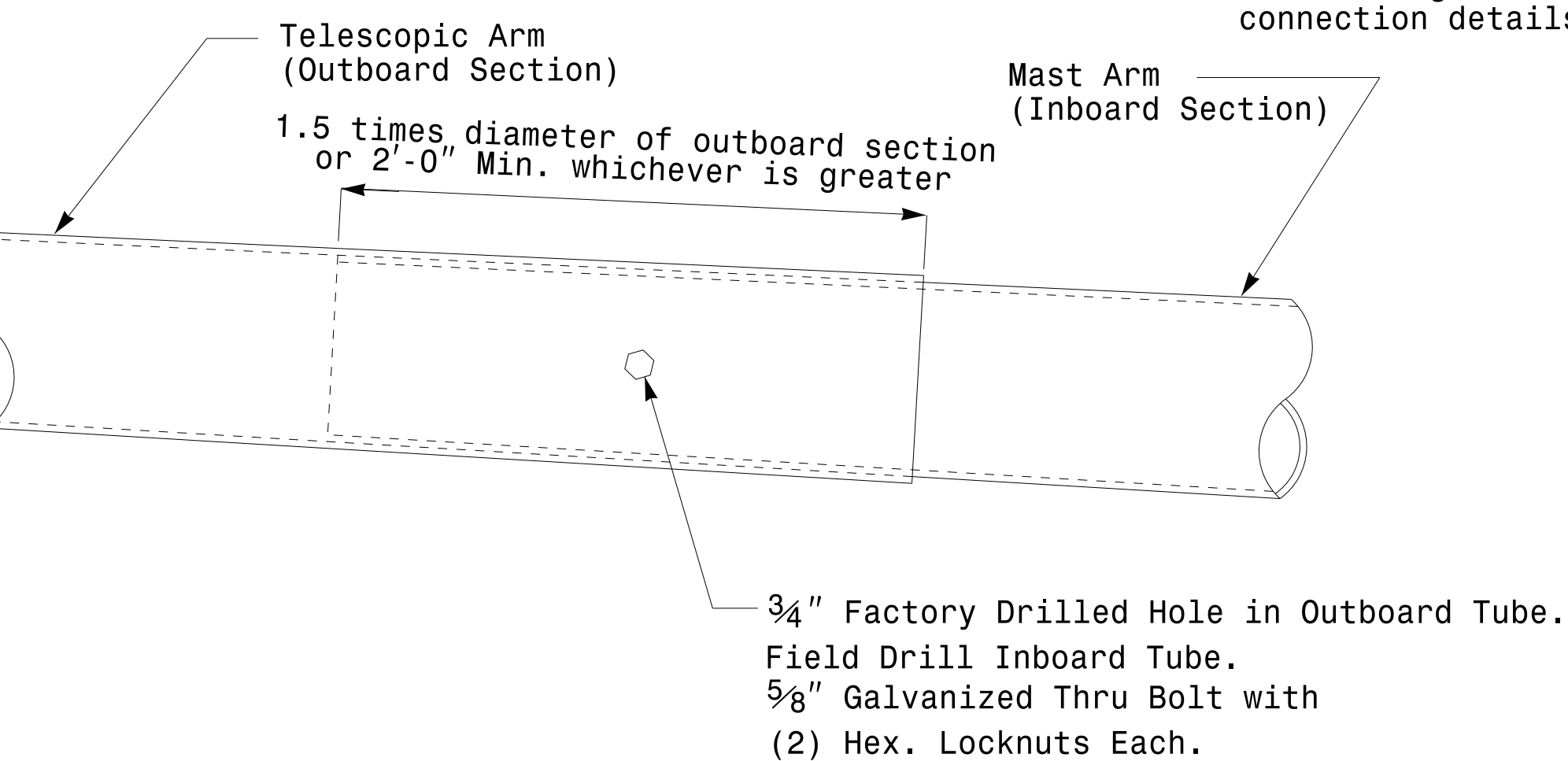
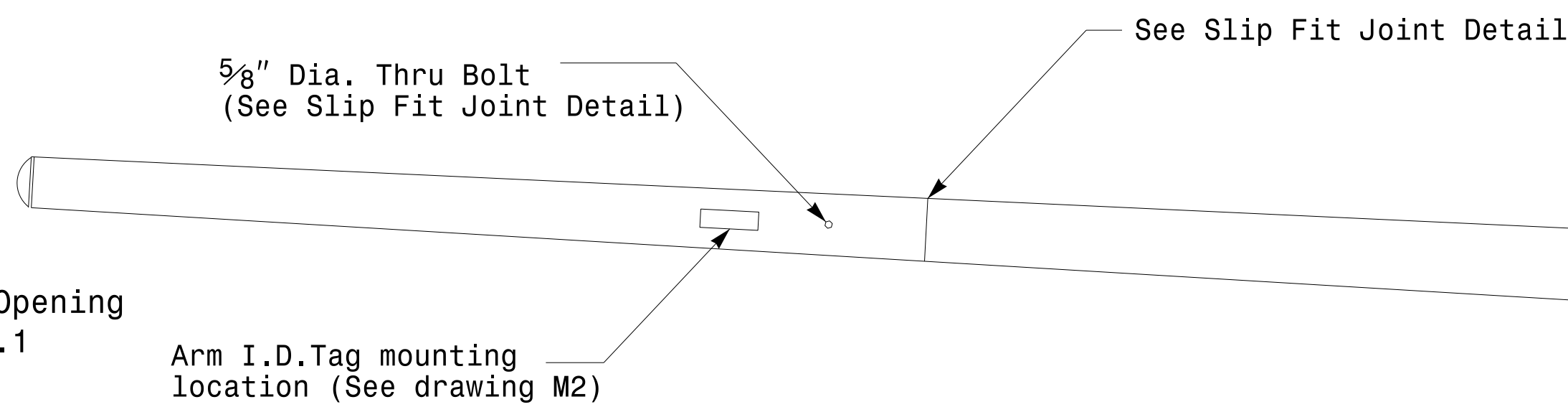
Note:  
 1. Opening in pole base plate shall be equal to pole base inside diameter minus 3 1/2" but shall not be less than 8 1/2".



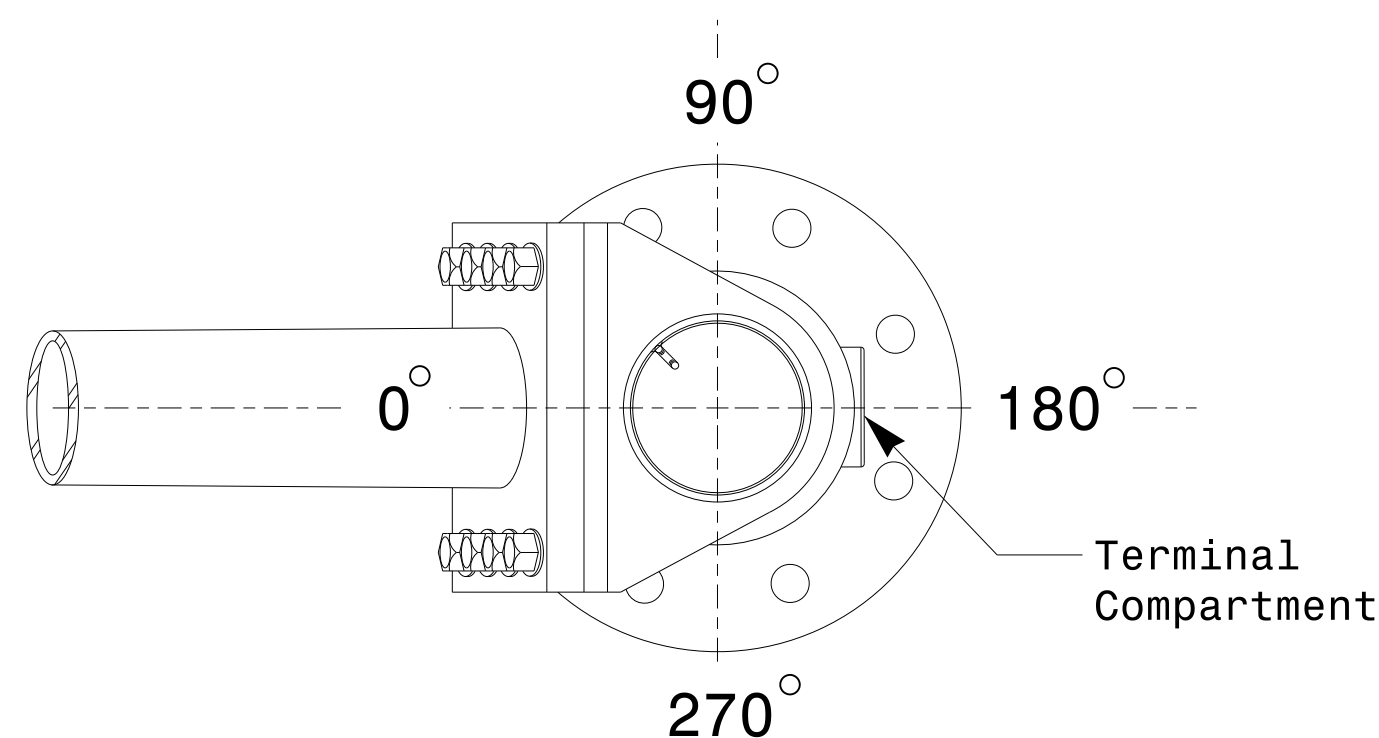
Section A-A  
 Pole Base Plate Details



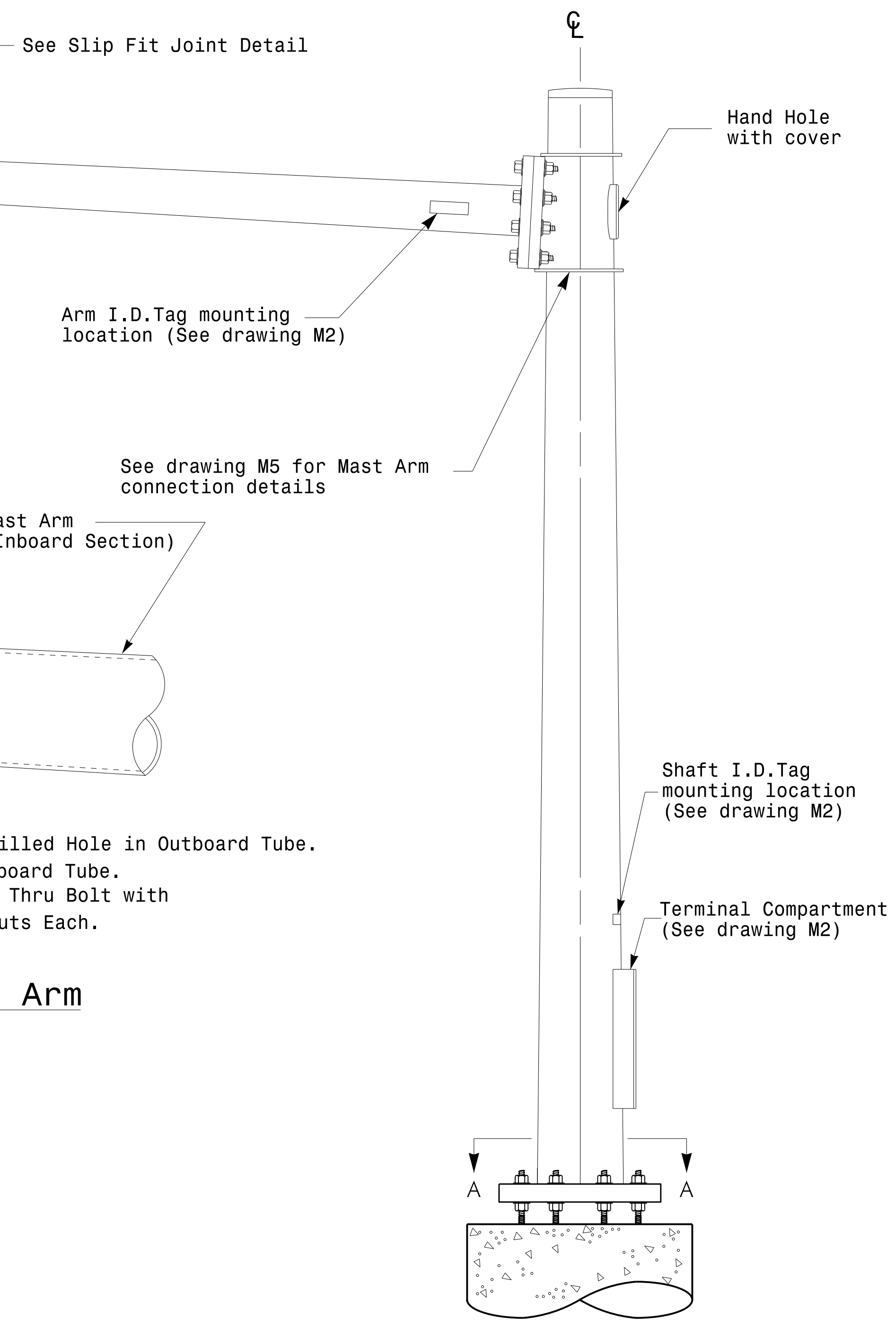
Section B-B  
 (Pole Attachment to Base Plate)  
 Full-Penetration Groove Weld Detail



Slip Fit Joint Detail for Mast Arm



Mast Arm Radial Orientation



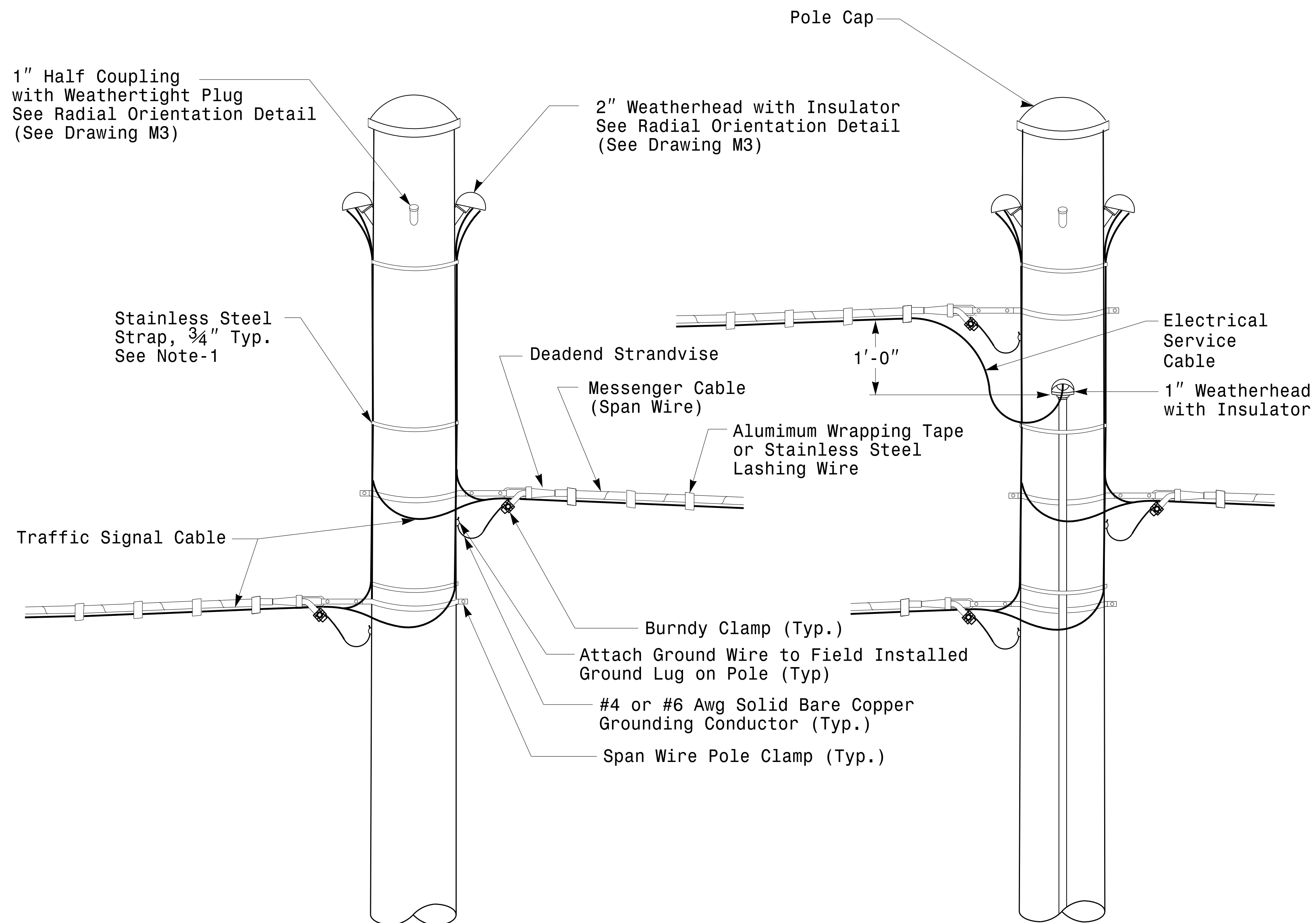
Mast Arm Pole

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: 		10/11/2017 DATE

11-OCT-2017 08:33 136504115 Signal Design Section Regional Design Section Eastern Region M4 Sheets 2016 2014 Sig.M4 Std. Fabrication Detail - Mast Arm Poles.dgn

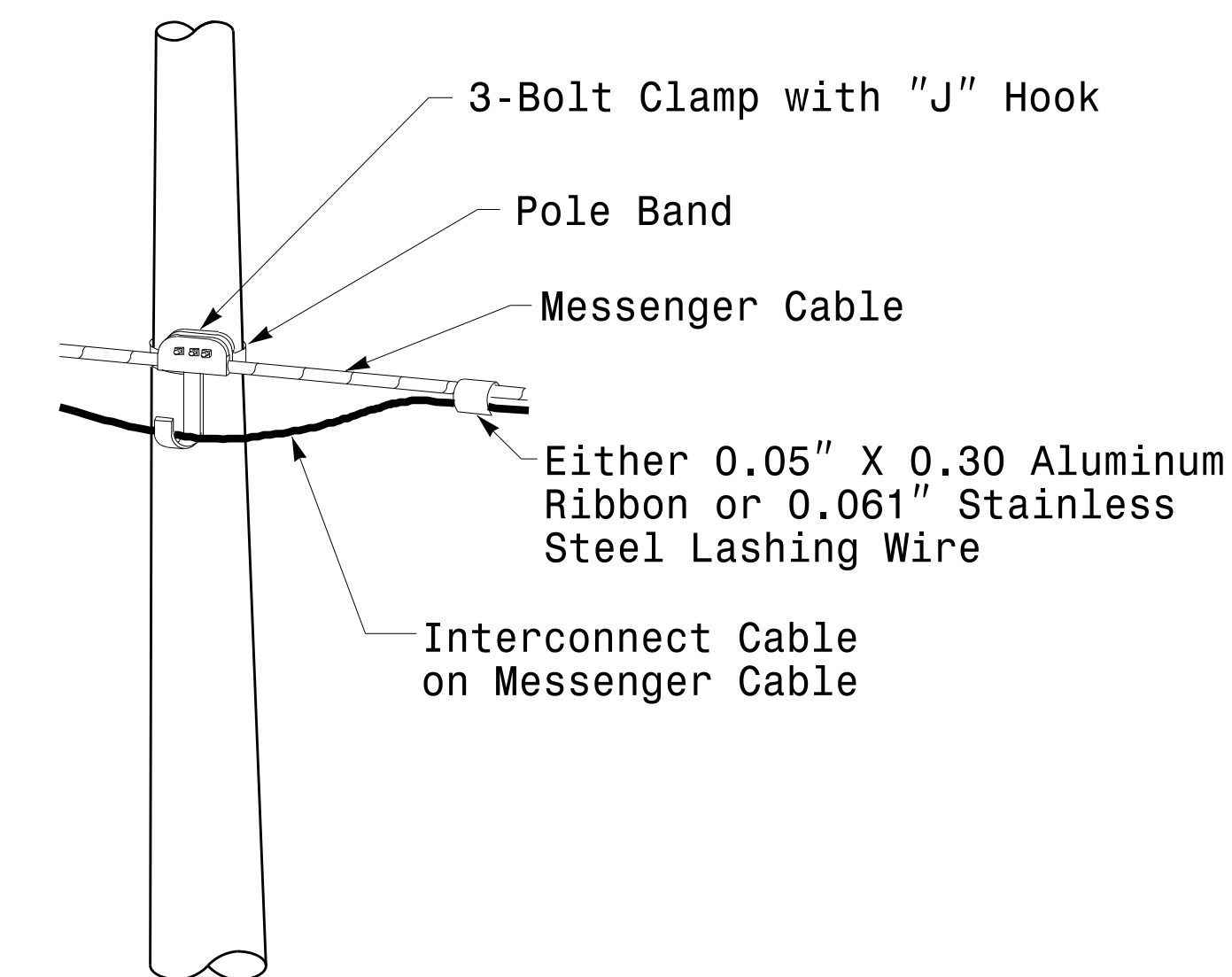




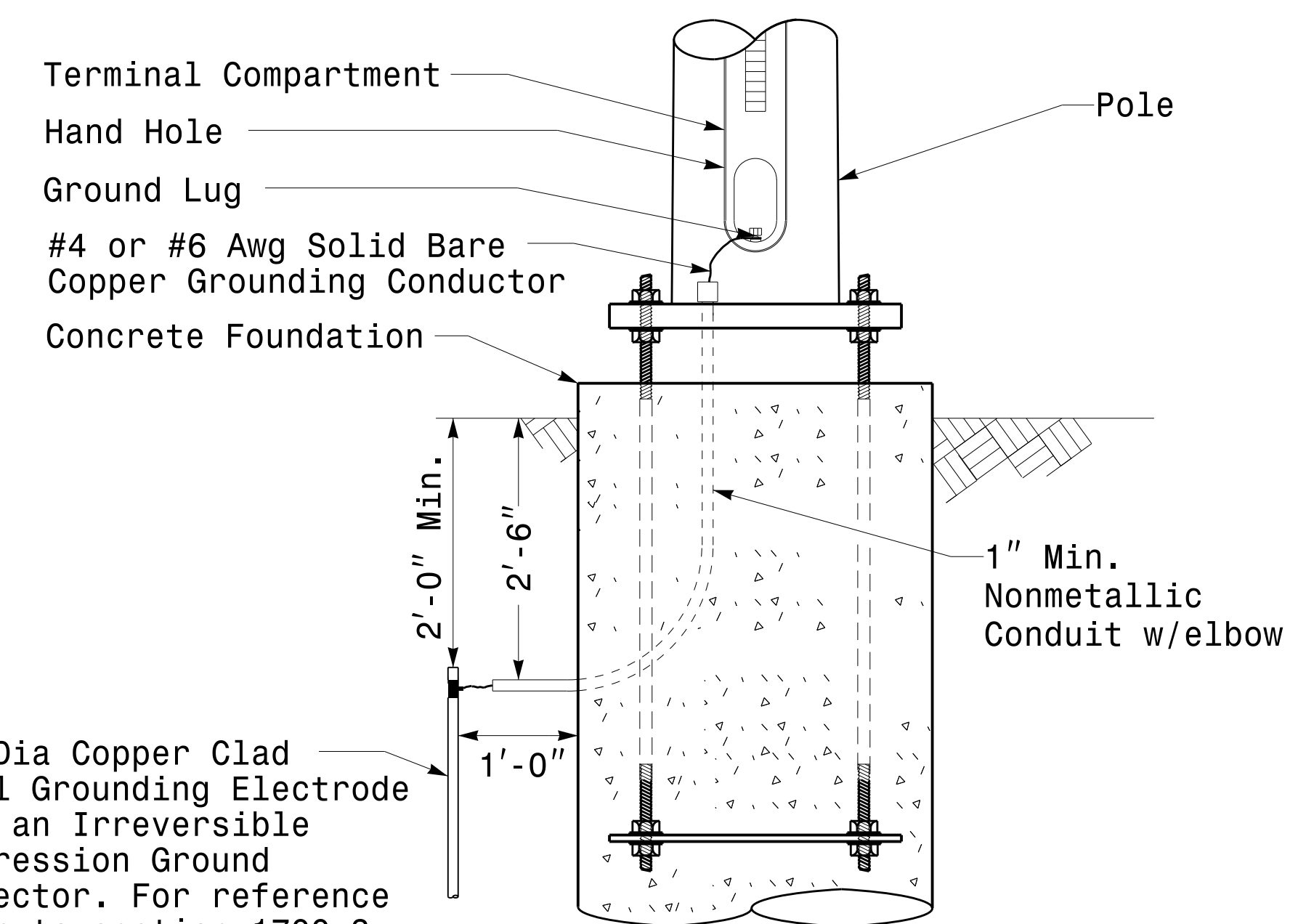
**Strain Pole Attachments**

**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**

Prepared in the Offices of:



750 N. Greenfield Pkwy, Garner, NC 27529

SCALE

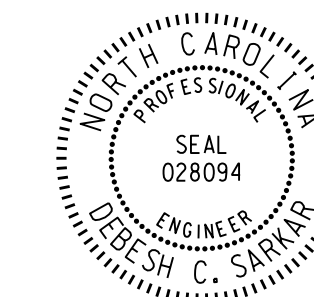
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NONE

**Typical Fabrication Details For Strain Pole Attachments**

PLAN DATE: OCTOBER 2017 DESIGNED BY: C.F. ANDREWS  
PREPARED BY: N. BITTING REVIEWED BY: D.C. SARKAR

REVISIONS	INIT.	DATE

SEAL



DocuSigned by: D. C. Sarkar

10/11/2017  
DATE







- 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		SIGNAL POLE
	NEW DIRECTIONAL DRILLED CONDUIT		SP
	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		
	EXISTING CCTV ASSEMBLY		
	NEW STANDARD GUY ASSEMBLY		
	NEW SIDEWALK GUY ASSEMBLY		
	SIGNAL INVENTORY NUMBER		

**CONSTRUCTION NOTE SYMBOLOGY KEY**

XX INDICATES NUMBER OF CABLES, LOOPS, ETC.

XX INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.

XX INDICATES NUMBER OF RISER(S)/CONDUIT(S)

XX INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)

**ATTACHMENT POINT:**

XX''SS  
YYY DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT

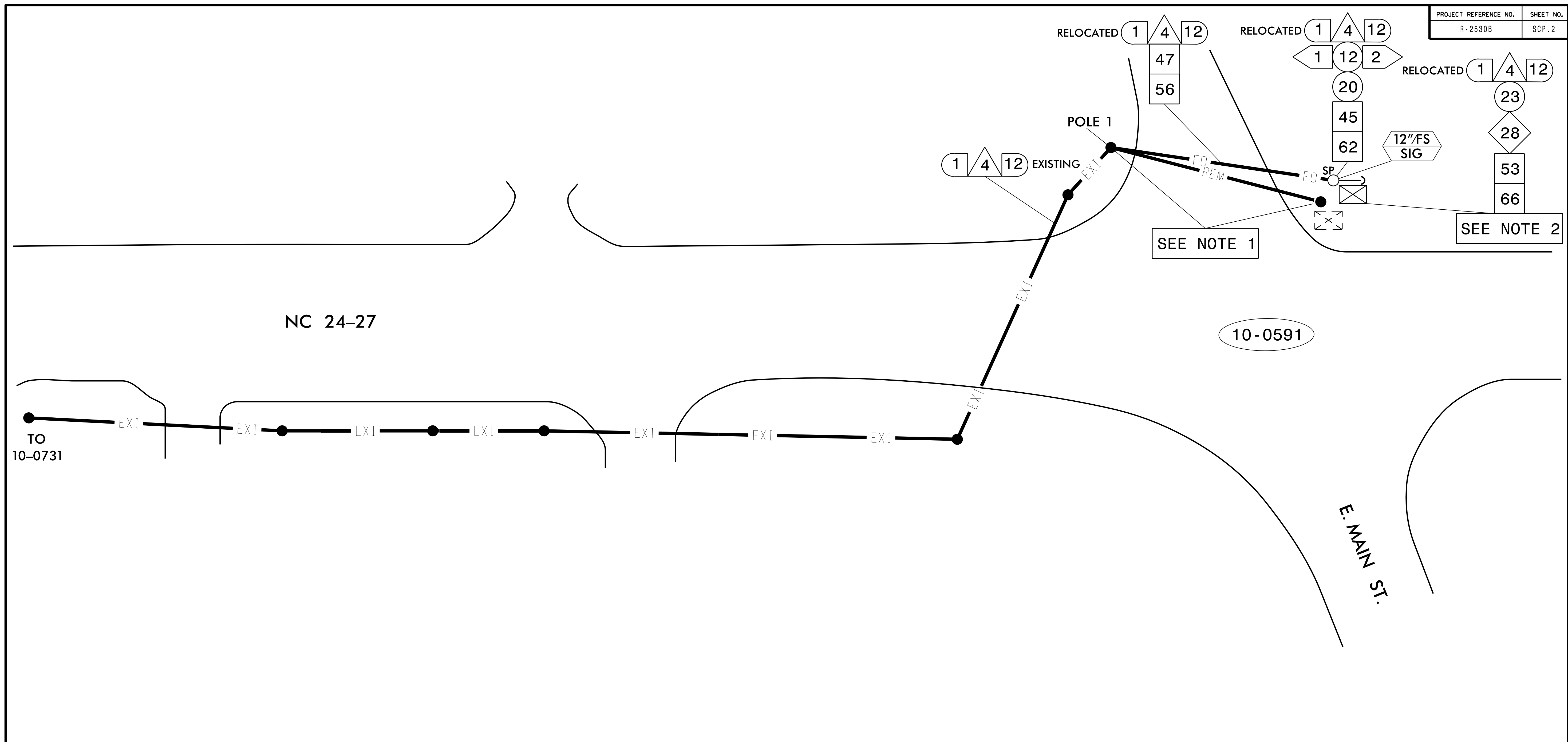
YYY  
XX''SS REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT

"SS" REFERENCE LOCATION

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

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

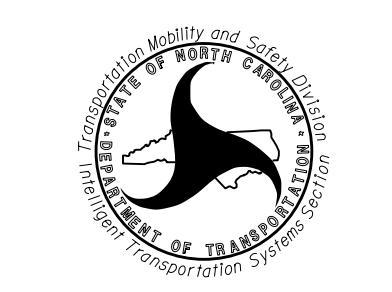
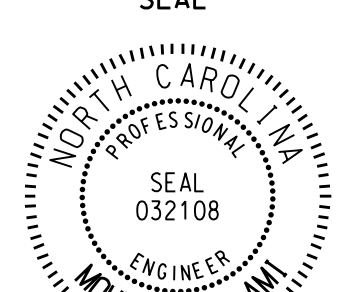

	<b>COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS</b>		SEAL
	DIVISION 10 STANLY COUNTY ALBEMARLE PLAN DATE: NOVEMBER 2018 REVIEWED BY: <i>Greg Allen</i> PREPARED BY: A. J. SKUCE		ENGINEER <b>MOHAMMAD A. ASLAM</b> 11/8/2018 DATE
750 N. Greenfield Pkwy., Garner, NC 27529		REVISIONS	INIT. DATE

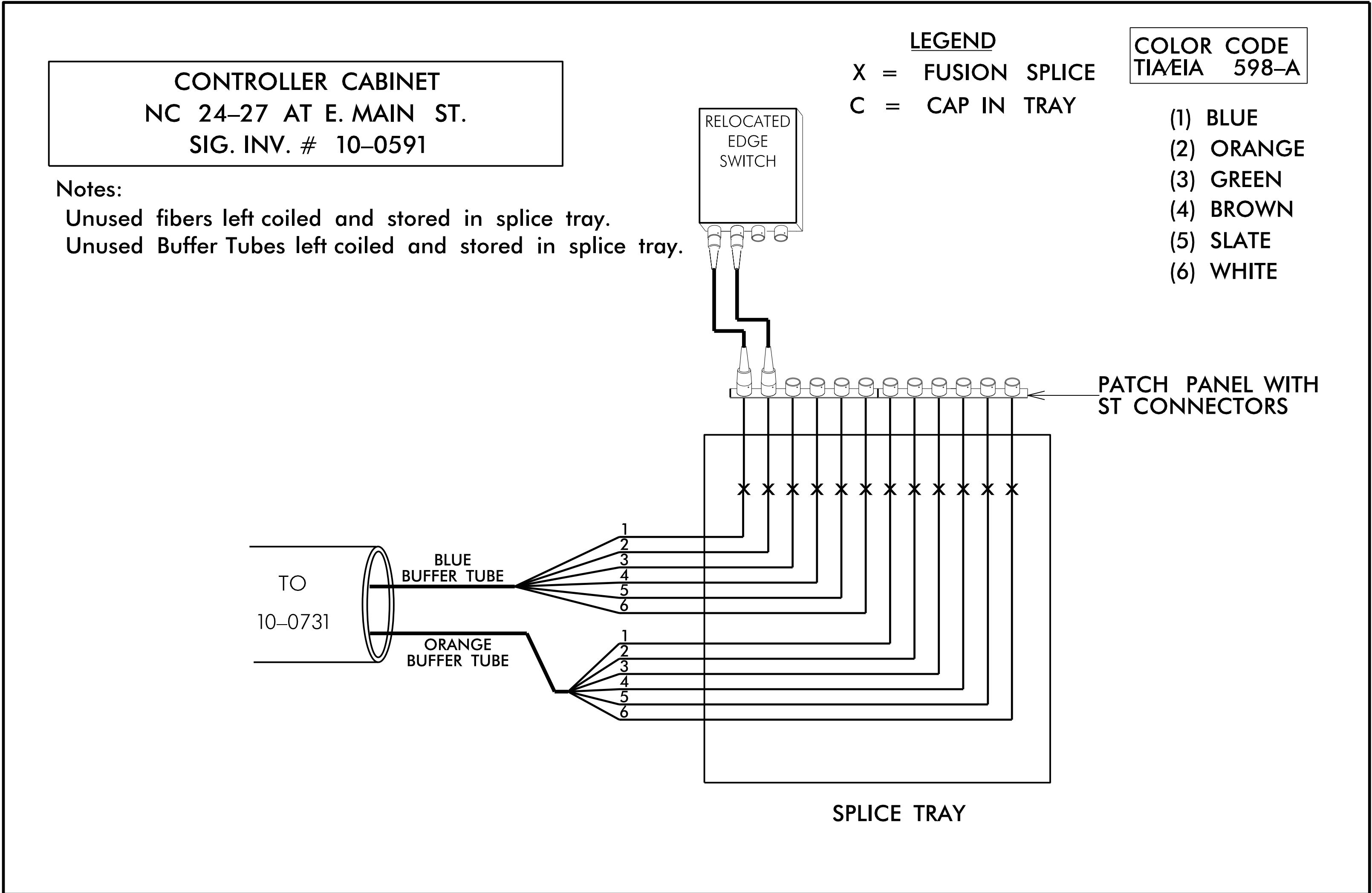


- 1) BACKPULL EXISTING 12-FIBER CABLE FROM EXISTING SIGNAL CABINET TO "POLE 1". LASH EXISTING CABLE TO NEW MESSENGER AS SHOWN ABOVE. INSTALL EXISTING CABLE INTO NEW RISER AND NEW SIGNAL CABINET AND SPLICE IN ACCORDANCE WITH THESE PLANS.
- 2) RELOCATE EXISTING ETHERNET SWITCH FROM EXISTING SIGNAL CABINET TO NEW SIGNAL CABINET.
- 3) 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.
- 4) NOTIFY THE DIVISION 10 TRAFFIC ENGINEER, TONY TAGLIAFERRI, AT (704) 983-4400 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE DIVISION 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.

TMP PHASE 1

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

 750 N. Greenfield Pkwy., Garner, NC 27529	<b>COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS</b>		SEAL  MOHD A. ASLAMANI ENGINEER 032108
	DIVISION 10 STANLY COUNTY PLAN DATE: NOVEMBER 2018 PREPARED BY: A. J. SKUCE	REVIEWED BY: <i>Greg Allen</i> <small>DPF0000770504FA</small>	
SCALE: 1" = 30' 	REVISIONS: _____ INIT.: _____ DATE: _____	DATE: 11/8/2018	DATE: _____



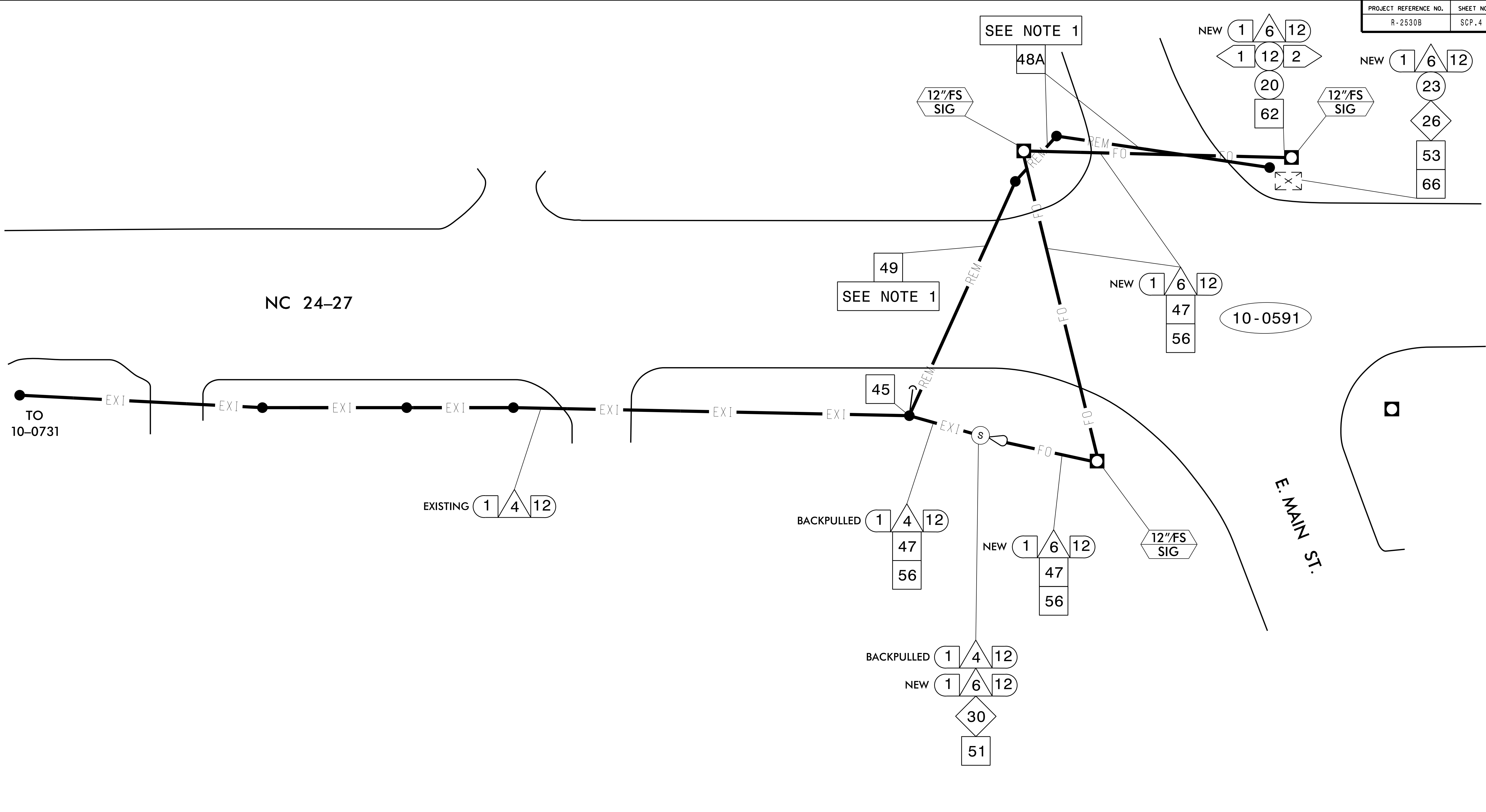
- 1) NOTIFY THE DIVISION 10 TRAFFIC ENGINEER, TONY TAGLIAFERRI, AT (704) 983-4400 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL WORK IS NOT COMPLETE 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) EDGE 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.

TMP PHASE 1

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

	<b>SPLICE DETAILS</b>	SEAL
	DIVISION 10 STANLY COUNTY PLAN DATE: NOVEMBER 2018 PREPARED BY: A. J. SKUCE REVISIONS: _____ INIT.: _____ DATE: _____	REVIEWED BY: <i>Greg Allen</i> (Professional Engineer Seal)
SCALE: 0 NA	DocuSigned by: <i>Mohd A. Aslami</i> 5D9B6A6C0B96495...	



- 1) CUT AND BACKPULL THE EXISTING 12-FIBER CABLE TO PROVIDE SPARE CABLE FOR SPLICING AND STORAGE ON A NEW AERIAL SPLICE ENCLOSURE. REMOVE EXISTING MESSENGER CABLE.
- 2) NOTIFY THE DIVISION 10 TRAFFIC ENGINEER, TONY TAGLIAFERRI, AT (704) 983-4400 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE DIVISION 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.

TMP FINAL

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

	<b>COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS</b>		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER M. A. ASLAMI License No. 032108
	DIVISION 10 STANLY COUNTY PLAN DATE: NOVEMBER 2018 PREPARED BY: A. J. SKUCE	REVIEWED BY: <i>Craig Green</i> <small>DPF000070504FA</small>	ALBEMARLE DATE: 11/8/2018
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE: 1" = 30' 	REVISIONS:	INIT.:	DATE:

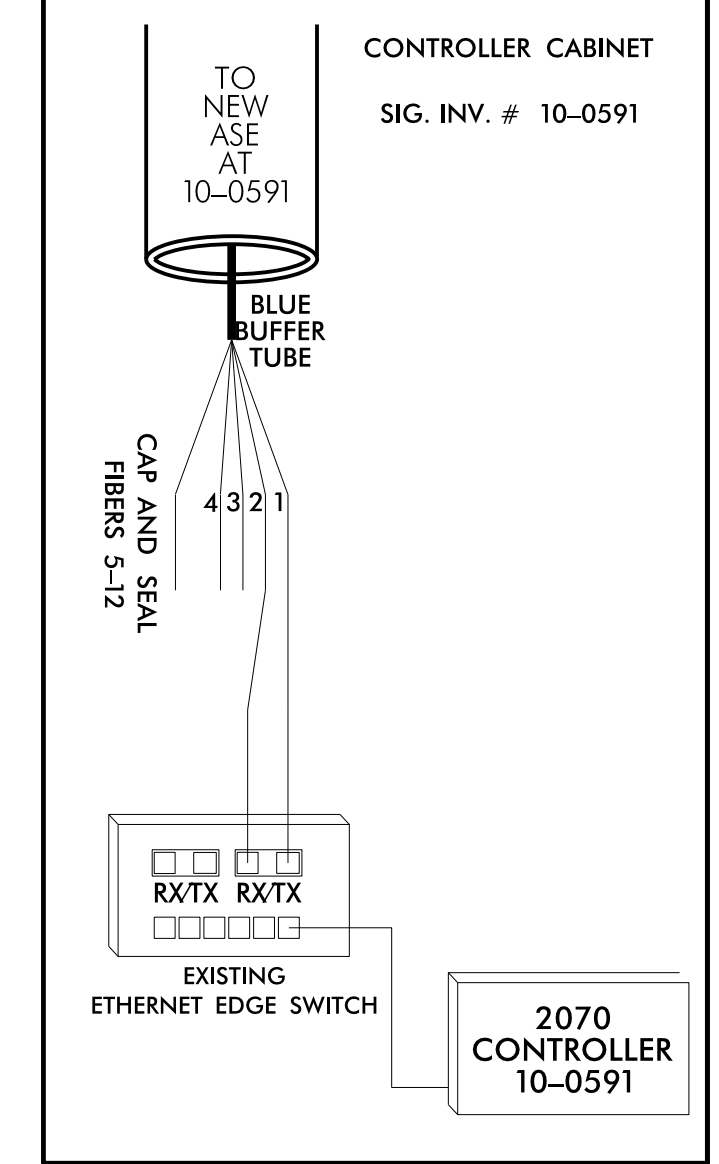
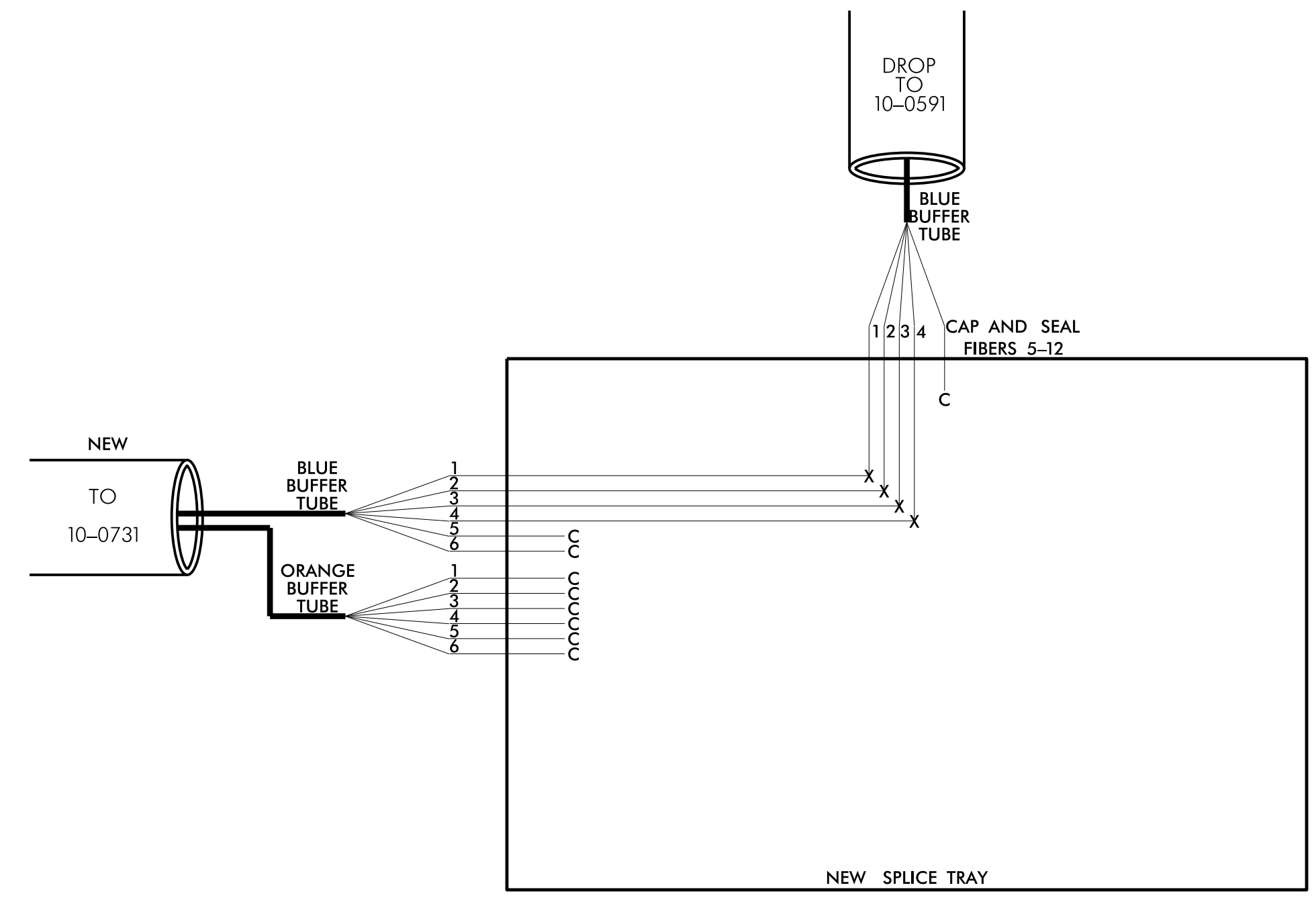
NEW AERIAL SPLICE ENCLOSURE  
 NC 24-27 AT E. MAIN ST.  
 SIG. INV. # 10-0591

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

COLOR CODE  
 TIA/EIA 598-A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

LEGEND  
 X = FUSION SPLICE  
 C = CAP IN TRAY



- 1) NOTIFY THE DIVISION 10 TRAFFIC ENGINEER, TONY TAGLIAFERRI, AT (704) 983-4400 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE DIVISION 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) EDGE 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.

TMP FINAL

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

	<b>SPLICE DETAILS</b>		SEAL 032108 M. A. ASLAMI ENGINEER 11/8/2018 DATE
	DIVISION 10 STANLY COUNTY PLAN DATE: NOVEMBER 2018 PREPARED BY: A. J. SKUCE	REVIEWED BY: <i>Greg Allen</i> (Signature) (Stamp: 09F8888ET705A4FA)	
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE: 0 NA			