

09/08/99

Project No.	Sheet No.
U-4753	Sig. 1.0

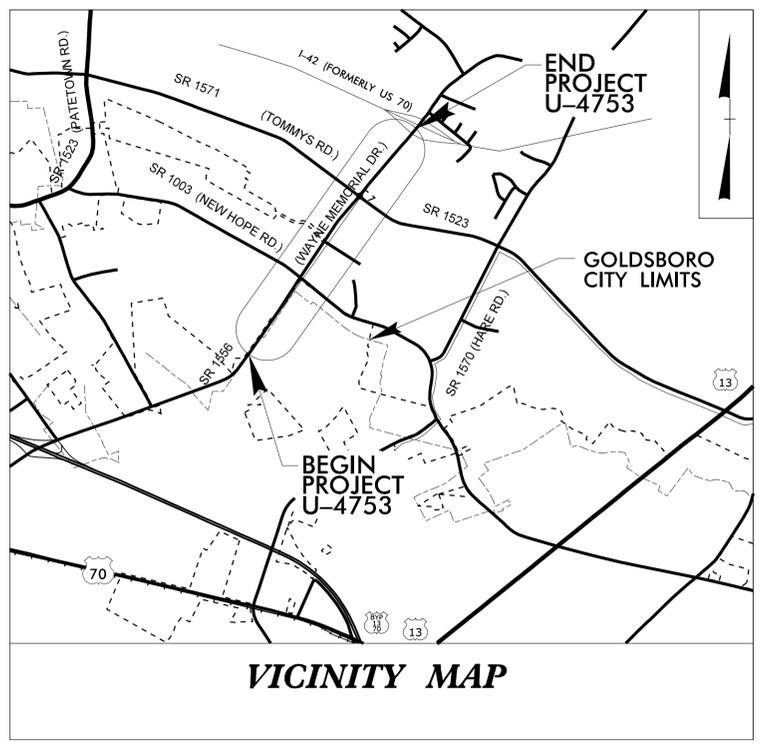
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL AND SIGNAL COMMUNICATIONS PLAN
WAYNE COUNTY

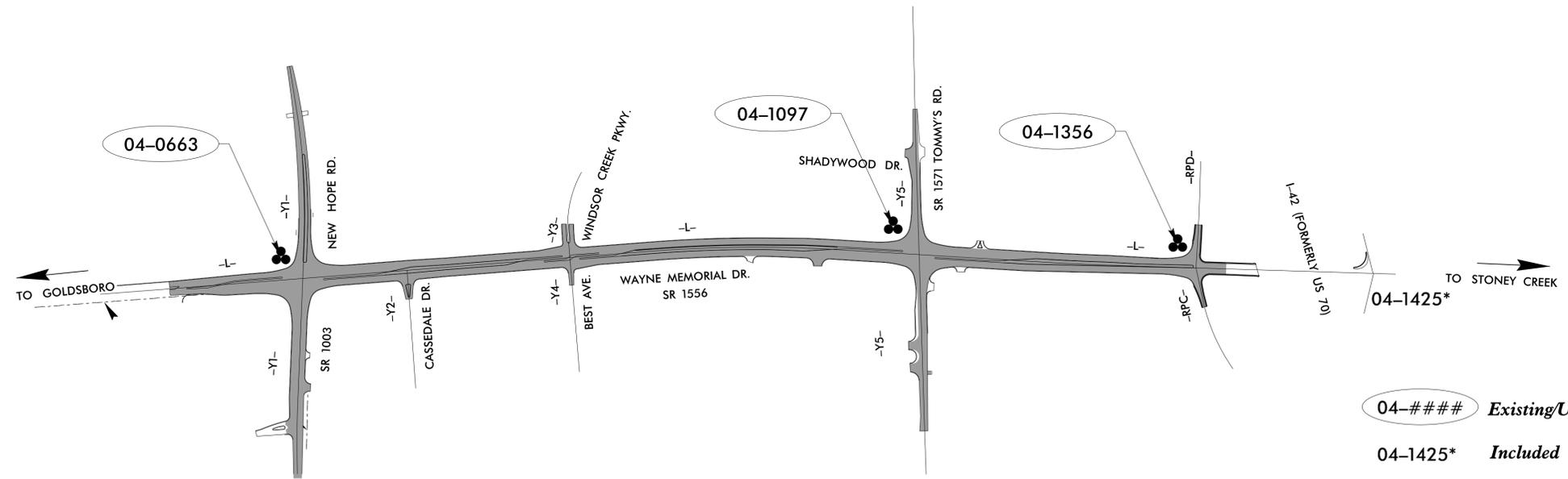
LOCATION: SR 1556 (WAYNE MEMORIAL DR.) FROM SOUTH-
WEST OF SR 1003 (NEW HOPE RD.) TO I-42 (FORMERLY US 70)

TYPE OF WORK: TRAFFIC SIGNALS AND TRAFFIC SIGNAL COMMUNICATIONS

TIP PROJECT: U-4753



VICINITY MAP



04-#### Existing/Upgraded Signal

04-1425* Included with SCP only

CONTRACT:

INDEX OF PLANS		
SHEET NUMBER	SIGNAL INV. NUMBER	LOCATION /DESCRIPTION
Sig. 1.0	-	Title Sheet
Sig. 2.0 - Sig. 3.3	04-0663	SR 1556 (Wayne Memorial Drive) at SR 1003 (New Hope Road)
Sig. 4.0 - Sig. 5.4	04-1097	SR 1556 (Wayne Memorial Drive) at SR 1571 (Tommy's Road)
Sig. 6.0 - Sig. 7.3	04-1356	SR 1556 (Wayne Memorial Drive) at I-42 (Old US 70 Pyp) EB Ramps
MIA - M9	-	NCDOT 2024 Metal Pole Standard Drawing Sheets
SCPI - SCP9	-	Signal Communications Plans



G.G. Murr, Jr., P.E. - Signals Project Engineer
J.T. Rowe, Jr. P.E.- Electrical Engineer
N. Degbotse, EI - Signal Design Engineer

Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and Standard Specifications for Roads and Structures" dated January 2024

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

Zachary M. Little, P.E. - Eastern Region Signals Project Engineer
Keith M. Mims, P.E.- Signal Equipment Design Engineer
Gregg Green - Signal Communications Project Engineer

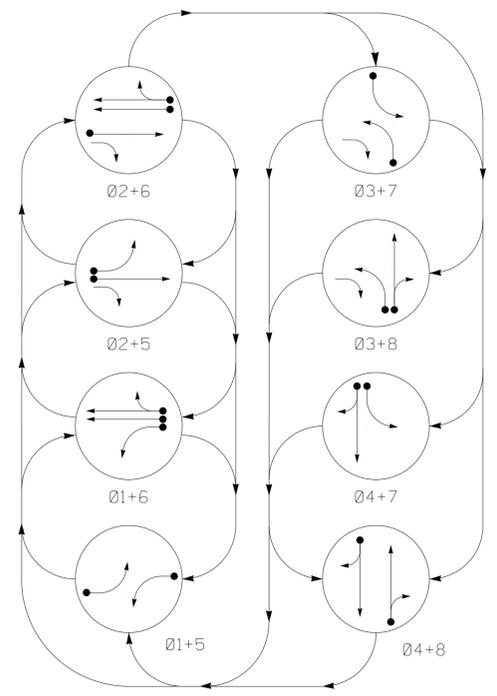
Prepared for the Office of:
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY AND SAFETY
DIVISION
Transportation Systems Management & Operations Unit



750 N. Greenfield Parkway, Garner, NC 27529

9/5/2025
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USER:deTouff

PHASING DIAGRAM



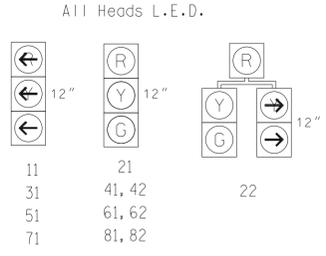
PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATION

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

SIGNAL FACE I.D.



MAXTIME DETECTOR INSTALLATION CHART

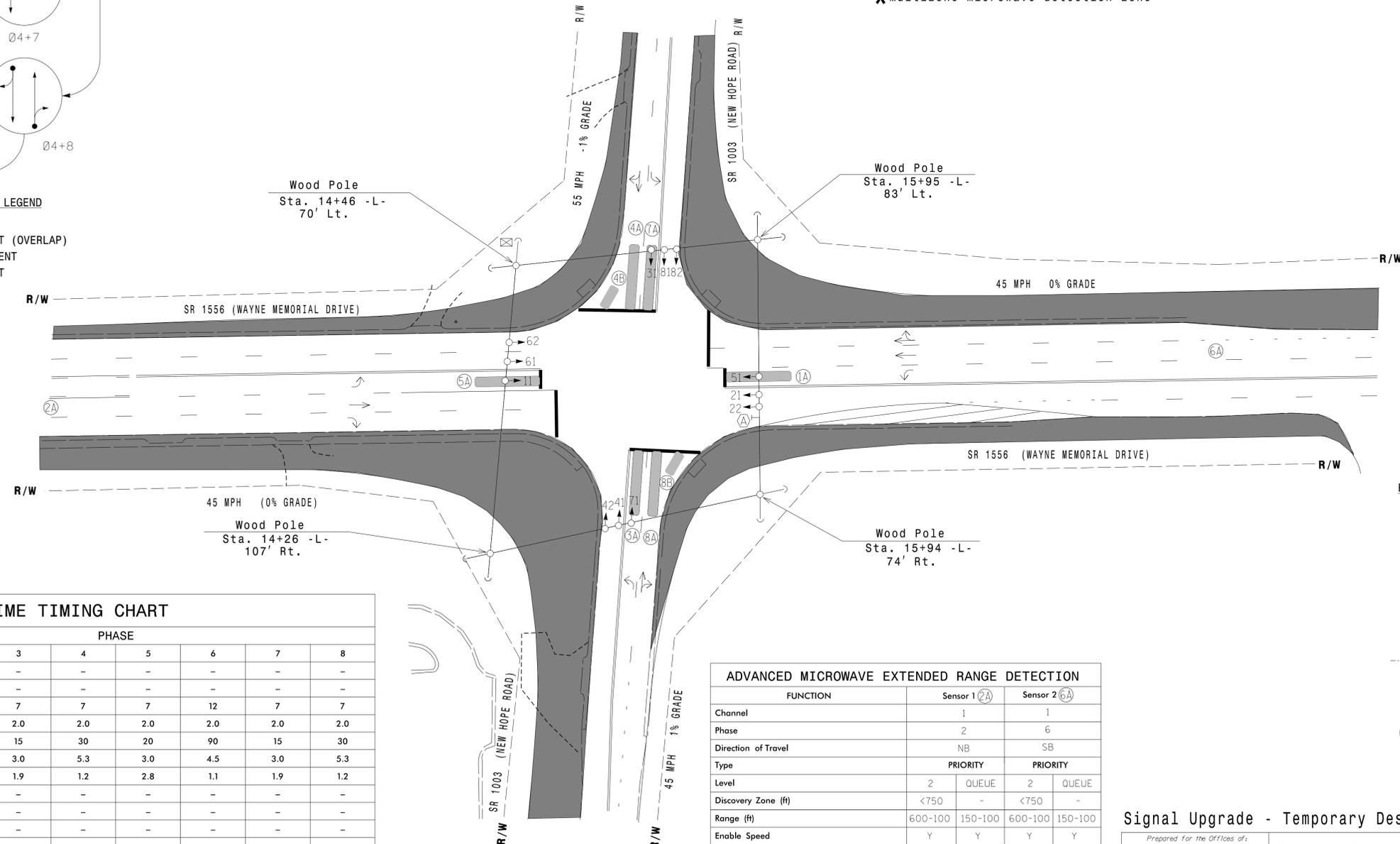
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	INITIAL	CALL	DELAY DURING GREEN	NEW CARD
1A	*	0	*	X	1	3	-	X	-	X	-	*
3A	*	0	*	X	3	3	-	X	-	X	-	*
4A	*	0	*	X	4	10	-	X	-	X	-	*
4B	*	0	*	X	4	15	-	X	-	X	-	*
5A	*	0	*	X	5	3	-	X	-	X	-	*
7A	*	0	*	X	7	3	-	X	-	X	-	*
8A	*	0	*	X	8	10	-	X	-	X	-	*
8B	*	0	*	X	8	15	-	X	-	X	-	*

*Multizone microwave detection zone

8 Phase Fully Actuated (Goldsboro Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 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.
- Pavement markings are existing.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



MAXTIME TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Walk *	-	-	-	-	-	-	-	-
Ped Clear	-	-	-	-	-	-	-	-
Min Green *	7	12	7	7	7	12	7	7
Passage *	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Max 1 *	20	90	15	30	20	90	15	30
Yellow Change	3.0	4.5	3.0	5.3	3.0	4.5	3.0	5.3
Red Clear	2.4	1.1	1.9	1.2	2.8	1.1	1.9	1.2
Added Initial *	-	-	-	-	-	-	-	-
Maximum Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Advance Walk	-	-	-	-	-	-	-	-
Non Lock Detector	X	-	X	X	X	-	X	X
Vehicle Recall	-	MIN RECALL	-	-	-	MIN 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 Passage times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

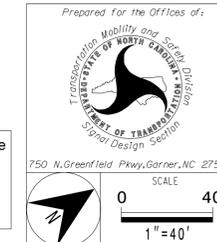
ADVANCED MICROWAVE EXTENDED RANGE DETECTION

FUNCTION	Sensor 1 (2A)		Sensor 2 (6A)	
	2	QUEUE	2	QUEUE
Channel	1		1	
Phase	2		6	
Direction of Travel	NB		SB	
Type	PRIORITY		PRIORITY	
Level	2	QUEUE	2	QUEUE
Discovery Zone (ft)	<750	-	<750	-
Range (ft)	600-100	150-100	600-100	150-100
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	1-35	35-100	1-35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5-6.5	-	2.5-6.5	-

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 |
| □ Controller & Cabinet | □ N/A |
| □ Junction Box | □ N/A |
| --- 2-in Underground Conduit | --- N/A |
| N/A Right of Way | N/A |
| → Directional Arrow | → N/A |
| ■ Construction Zone | ■ N/A |
| ■ Detection Zone | ■ N/A |
| Ⓐ Right Arrow "ONLY" Sign (R3-SR) | Ⓐ |

Signal Upgrade - Temporary Design 1



SR 1556 (Wayne Memorial Drive) at SR 1003 (New Hope Road)

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.

PREPARED BY: Nadia Degbotse REVIEWED BY:

REVISIONS

INIT. DATE

Signed by: Gene E. Murr, Jr.

AAFP507RCB4CF

10/5/2025

SIG. INVENTORY NO. 04-0663T1

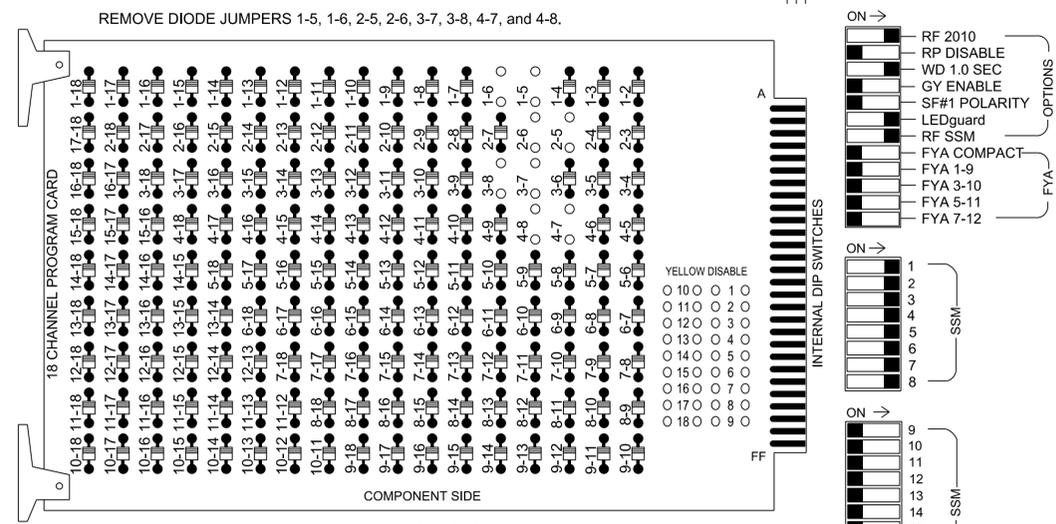


TRANSYSTEMS

1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
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License: F-0453

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches 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 the Red Enable is active at all times during normal operation.
 - Integrate monitor with Ethernet network in cabinet.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Green No Walk and 6 Green No 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 Goldsboro Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
 Cabinet.....332 w/ Aux
 Software.....Q-Free MAXTIME
 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 "1".....NOT USED
 Overlap "2".....NOT USED
 Overlap "3".....NOT USED
 Overlap "4".....NOT USED

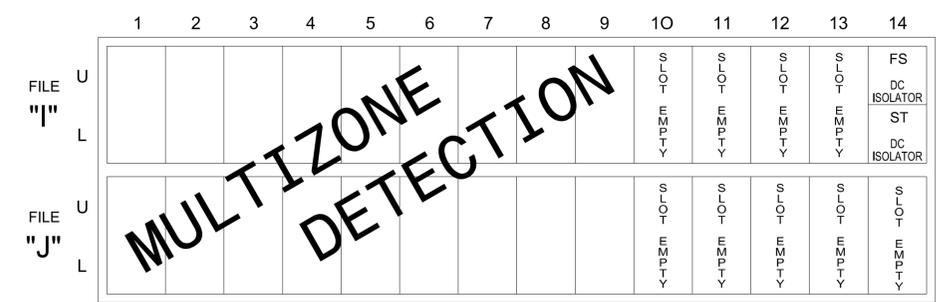
SIGNAL HEAD HOOK-UP CHART

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	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11	21,22	NU	31	22	41,42	NU	51	61,62	NU	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			117	117			132			123							
GREEN ARROW	127			118	118			133			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 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: 04-0663T1
 DESIGNED: October 2025
 SEALED: 10-05-2025
 REVISED: N/A

Electrical Detail - Sheet 1 of 2

Electrical and Programming Details For: **SR 1556 (Wayne Memorial Drive) at SR 1003 (New Hope Road)**

Prepared in the Offices of: **TRANSYSTEMS**
 1 Glenwood Avenue, Raleigh, NC 27603
 Tel: 919.789.9977, Fax: 919.789.9591, License: F-0453

Division 4, Wayne County, Goldsboro
 PLAN DATE: October 2025, REVIEWED BY: JT Rowe
 PREPARED BY: JT Rowe, REVIEWED BY: [Signature]

Seal: **JOHN T. ROWE, P.E.**, License No. 008453, State of North Carolina Professional Engineer

DATE: 10/6/2025, PRODUCT: 1E1AF34D1, SIG. INVENTORY NO.: 04-0663T1

10/5/2025 10:06:31 AM \\sm.le.2025\jtyy-dgn USER: de-fout

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

StartUp Clearance Hold
6

Unit Flash Parameters

All Red Flash Exit Time
6

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

Web Interface
Home >Controller >Advanced IO>Channels>Channel Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

NOTICE CHANNEL 2 FLASHES RED →

NOTICE CHANNEL 6 FLASHES RED →

NOTICE CHANNEL 9 FLASHES RED →

NOTICE CHANNEL 11 FLASHES RED →

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-0663T1
DESIGNED: October 2025
SEALED: 10-05-2025
REVISED: N/A

Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

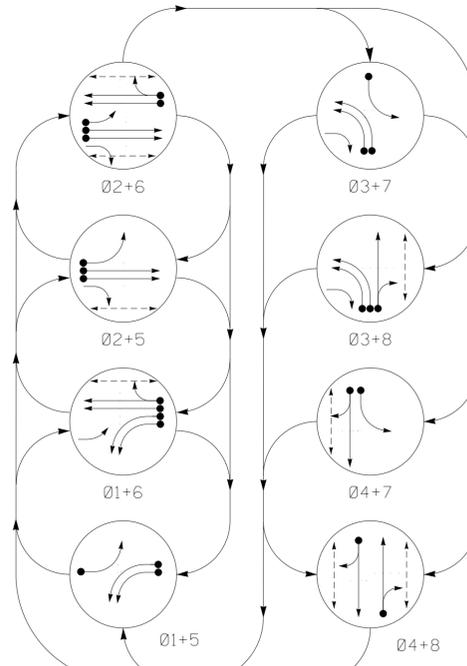
Prepared in the Offices of:  TRANSYSTEMS 750 N. Greenfield Pkwy, Garner, NC 27529	SR 1556 (Wayne Memorial Drive) at SR 1003 (New Hope Road)		
	Division 4 PLAN DATE: October 2025 PREPARED BY: JT Rowe	Wayne County REVIEWED BY: JT Rowe	

TRANSYSTEMS

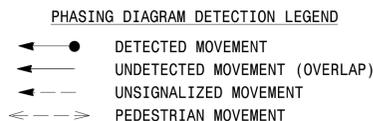
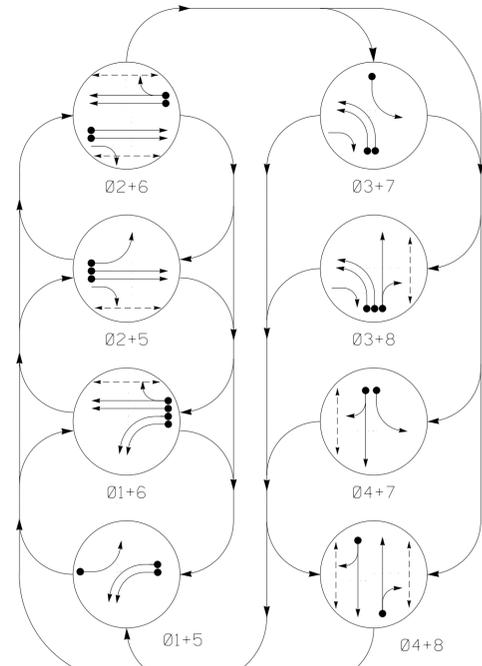
1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

Signed by: *John T. Rowe, Jr.*
10/6/2025
DATE
SIG. INVENTORY NO. 04-0663T1

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



DEFAULT TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8
11,12	←	←	←	←	←	←	←	←
21,22,24	R	R	G	G	R	R	R	R
23	R	R	←	←	←	←	←	←
31,32	←	←	←	←	←	←	←	←
41,42,43	R	R	R	R	R	G	G	R
51	←	←	←	←	←	←	←	←
61,62,63	R	G	R	G	R	R	R	R
71	←	←	←	←	←	←	←	←
81,82,83	R	R	R	R	G	R	G	R
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	W	DW	W	DRK

ALTERNATE TABLE OF OPERATION

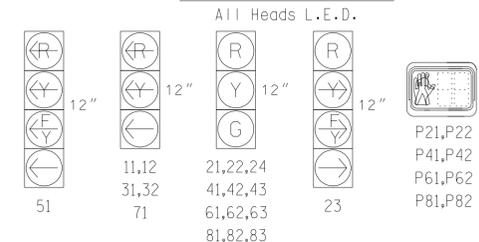
SIGNAL FACE	PHASE							
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8
11,12	←	←	←	←	←	←	←	←
21,22,24	R	R	G	G	R	R	R	R
23	R	R	←	←	←	←	←	←
31,32	←	←	←	←	←	←	←	←
41,42,43	R	R	R	R	R	G	G	R
51	←	←	←	←	←	←	←	←
61,62,63	R	G	R	G	R	R	R	R
71	←	←	←	←	←	←	←	←
81,82,83	R	R	R	R	G	R	G	R
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P41,P42	DW	DW	DW	DW	DW	DW	W	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DW	W	DRK

MAXTIME DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING						
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL CALL	DELAY DURING GREEN	NEW CARD
1A	*	0	*	X	1	-	-	X	X	-	*
1B	*	0	*	X	1	-	-	X	X	-	*
3A	*	0	*	X	3	-	-	X	X	-	*
3B	*	0	*	X	3	-	-	X	X	-	*
4A	*	0	*	X	4	10	-	X	X	-	*
4B	*	0	*	X	4	15	-	X	X	-	*
5A	*	0	*	X	5	15#	-	X	X	-	*
7A	*	0	*	X	7	-	-	X	X	-	*
8A	*	0	*	X	8	10	-	X	X	-	*
8B	*	0	*	X	8	15	-	X	X	-	*

Disable delay during Alternate Phasing Operation.
Disable phase calls for loop(s) during Alternate Phasing Operation.
* Multizone microwave detection zone

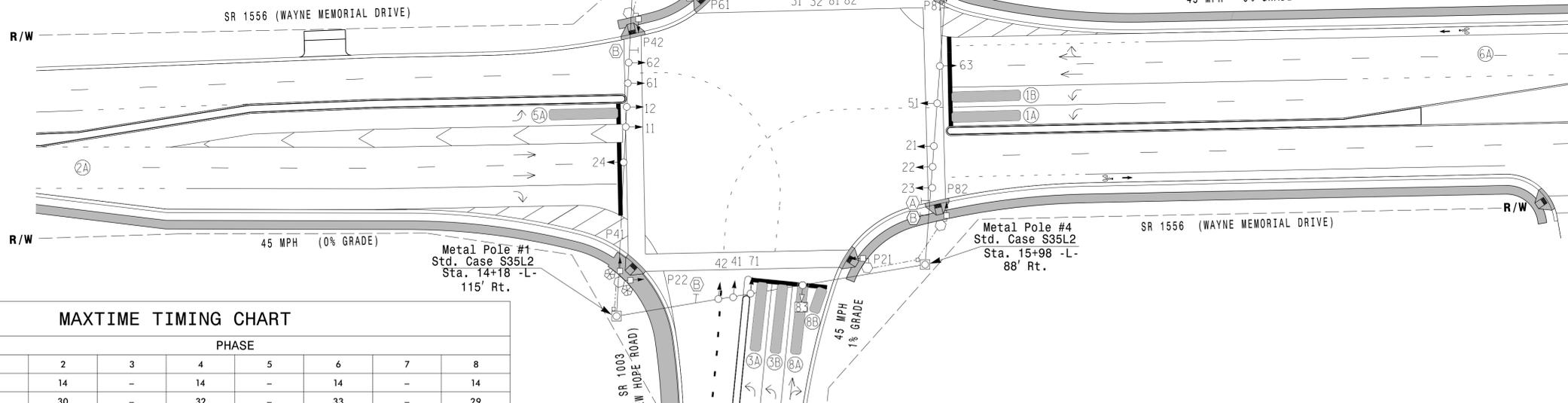
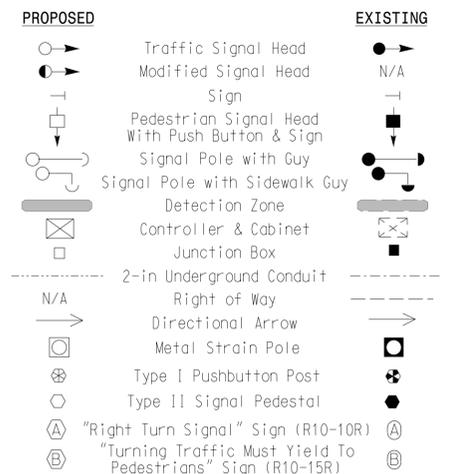
SIGNAL FACE I.D.



8 Phase Fully Actuated Goldsboro Signal System NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Set all detector units to presence mode.
- Refer to the Pavement Marking Plans for pavement marking details.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- To provide a LPI on phase 2, program FYA head 23 to delay for 7s after the start of the phase 2 Walk Interval. See electrical details for programming.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND



MAXTIME TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Walk *	-	14	-	14	-	14	-	14
Ped Clear	-	30	-	32	-	33	-	29
Min Green *	7	12	7	7	7	12	7	7
Passage *	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Max I *	20	90	15	30	20	90	15	30
Yellow Change	3.0	4.5	3.0	5.3	3.0	4.5	3.0	5.3
Red Clear	4.4	2.8	4.2	2.5	3.9	2.8	3.8	2.5
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Added Initial *	-	-	-	-	-	-	-	-
Maximum Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Advance Walk	-	#	-	7	-	7	-	7
Non Lock Detector	X	-	X	X	X	-	X	X
Vehicle Recall	-	MIN RECALL	-	-	-	MIN 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 Passage times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.
See Note 8

ADVANCED MICROWAVE EXTENDED RANGE DETECTION

FUNCTION	Sensor 1 (2A)	Sensor 2 (6A)
Channel	1	1
Phase	2	6
Direction of Travel	NB	SB
Type	PRIORITY	PRIORITY
Level	2	2
Discovery Zone (ft)	<750	<750
Range (ft)	600-100	150-100
Enable Speed	Y	Y
Speed Range (mph)	35-100	1-35
Enable Estimated Time of Arrival	Y	N
Estimated Time of Arrival (sec)	2.5-6.5	2.5-6.5

Signal Upgrade - Final Design

SR 1556 (Wayne Memorial Drive) at SR 1003 (New Hope Road)

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.

PREPARED BY: Nadia Degbotse REVIEWED BY:

REVISIONS: _____

INIT. DATE

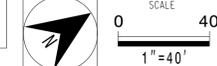
Signed by: G.G. Murr, Jr. 10/09/2025

SIG. INVENTORY NO. 04-0663

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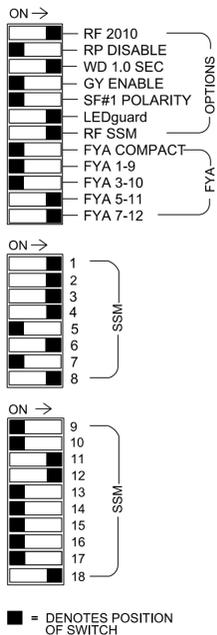
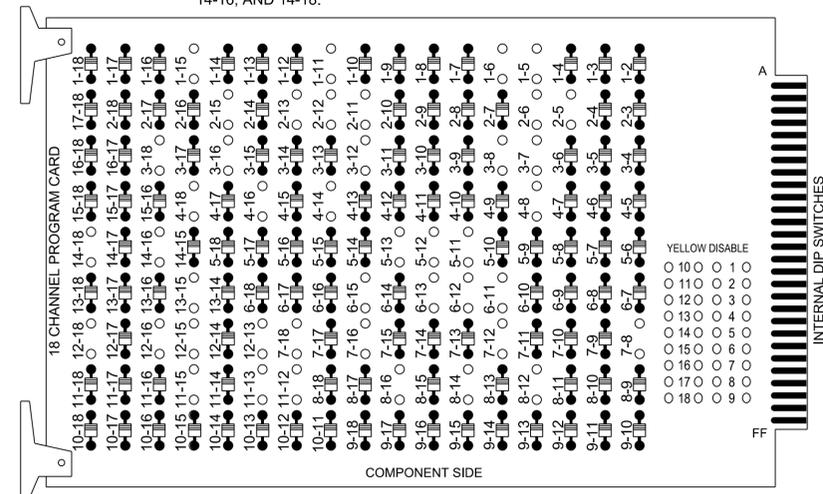
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18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)
 REMOVE DIODE JUMPERS 1-5, 1-6, 1-11, 1-15, 2-5, 2-6, 2-11, 2-12, 2-13, 2-15, 3-7, 3-8, 3-12, 3-16, 3-18, 4-8, 4-14, 4-16, 4-18, 5-11, 5-12, 5-13, 6-11, 6-12, 6-13, 6-15, 7-8, 7-12, 7-16, 7-18, 8-12, 8-14, 8-16, 11-12, 11-13, 11-15, 12-13, 12-15, 12-16, 12-18, 13-15, 14-16, AND 14-18.



- 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 the Red Enable is active at all times during normal operation.
 - Integrate monitor with Ethernet network in cabinet.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Green No Walk and 6 Green No 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 Goldsboro Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
 Cabinet.....332 w/ Aux
 Software.....Q-Free MAXTIME
 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 S4, AUX S5, AUX S6
 Phases Used.....1, 2, 2 PED, 3, 4, 4 PED, 5, 6, 6 PED, 7**, 8, 8 PED
 Overlap "1".....NOT USED
 Overlap "2".....NOT USED
 Overlap "3".....*
 Overlap "4".....*
 Overlap "5".....NOT USED
 Overlap "6".....*
 Overlap "7".....*

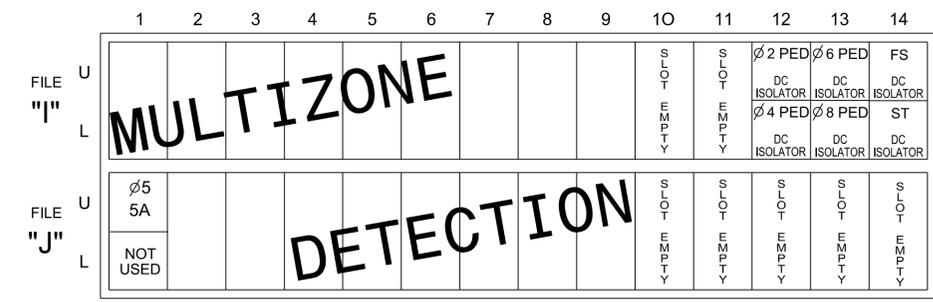
*See overlap programming detail on sheet 2.
 ** Phase used for timing purposes only.

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	OL7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	OL6
SIGNAL HEAD NO.	11,12	21,22,24	P21, P22	31,32	41,42,43	P41, P42	51	61,62,63	P61, P62	23	81,82,83	P81, P82	NU	NU	NU	51	23	71
RED		128			101			134			107							
YELLOW		129			102		*	135		*	108							
GREEN		130			103			136			109							
RED ARROW	125			116												A114	A101	A104
YELLOW ARROW	126			117												A115	A102	A105
FLASHING YELLOW ARROW																A116	A103	
GREEN ARROW	127			118			133			124								A106
Hand			113			104			119		110							
Walking			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

SPECIAL DETECTOR NOTE

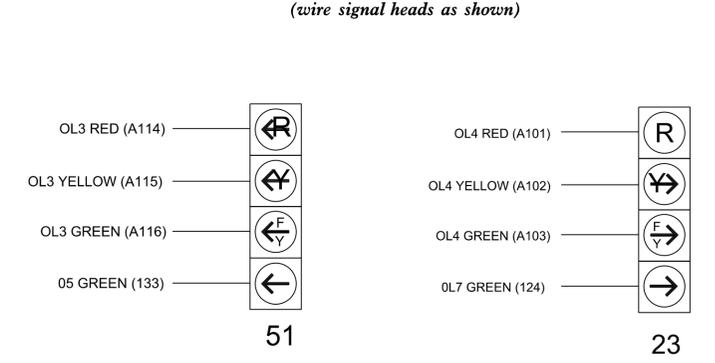
Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.
 For detection zone 5A, detector card placement is typical for a NCDOT installation. Inputs associated with these slots are compatible with time of day instructions located on Sheet 2 of this electrical detail.

INPUT FILE CONNECTION & PROGRAMMING CHART

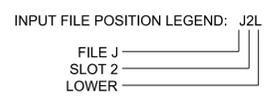
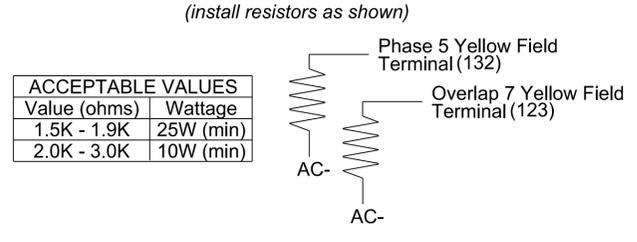
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
5A	TB3-1,2	J1U	55	17	15 *	5	15		X		X	
				-	31 *	2			X		X	
PED PUSH BUTTONS												
P21,P22	TB8-4,6	I12U	67	33	2	PED 2						
P41,P42	TB8-5,6	I12L	69	35	4	PED 4						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						
P81,P82	TB8-8,9	I13L	70	36	8	PED 8						

* For the detectors to work as shown on the signal design plan, see the Detector Programming Detail for Alternate Phasing on Sheet 2.

FYA SIGNAL WIRING DETAIL



LOAD RESISTOR INSTALLATION DETAIL



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.



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Electrical Detail - Sheet 1 of 3

Prepared in the Offices of:
 Transportation Mobility and Safety Division
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 STATE OF NORTH CAROLINA
 Division 4 Wayne County Goldsboro
SR 1556 (Wayne Memorial Drive) at SR 1003 (New Hope Road)
 PLAN DATE: October 2025 REVIEWED BY: JT Rowe
 PREPARED BY: JT Rowe REVIEWED BY:
 REVISIONS INT. DATE
 Signed by: *John T. Rowe, Jr.* 10/6/2025
 SEAL NORTH CAROLINA PROFESSIONAL ENGINEER JOHN T. ROWE, JR. SEAL 008453
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
 SIG. INVENTORY NO. 04-0663

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-0663
 DESIGNED: October 2025
 SEALED: 10-06-2025
 REVISED: N/A

10/6/2025 6:40:06 AM sm.dj e...2025kxyy-5dp USER:08fau11

MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	1	2	3	4	5	6	7
Type	Off	Off	FYA 4 - Section	FYA 4 - Section	Off	Normal	Normal
Included Phases	-	-	6	2	-	7	3
Modifier Phases	-	-	5	3	-	-	-
Modifier Overlaps	-	-	-	-	-	-	-
Trail Green	0	0	0	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FYA Ped Delay	0.0	0.0	0.0	7.0	0.0	0.0	0.0

MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

Overlap Plan 2

Overlap	1	2	3	4	5	6	7
Type	Off	Off	FYA 4 - Section	FYA 4 - Section	Off	Normal	Normal
Included Phases	-	-	-	2	-	7	3
Modifier Phases	-	-	5	3	-	-	-
Modifier Overlaps	-	-	-	-	-	-	-
Trail Green	0	0	0	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FYA Ped Delay	0.0	0.0	0.0	7.0	0.0	0.0	0.0

NOTICE REMOVED INCLUDED PHASE

MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOP 5A

Front Panel
Main Menu >Controller >Detector >Veh Det Plans

Web Interface
Home >Controller >Detector Configuration >Vehicle Detectors

In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes.

Plan 2

Detector	Call Phase	Delay
15	5	0.0
31	0	0.0

5A

MAXTIME ALTERNATE PHASING PATTERN PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Coordination >Patterns

Web Interface
Home >Controller >Coordination >Patterns

Pattern Parameters

Pattern	Veh Det Plan	Overlap Plan
*	2	2

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

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

Web Interface
Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Overlap	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

NOTICE CHANNEL 2 FLASHES RED

NOTICE CHANNEL 6 FLASHES RED
NOTICE CHANNEL 7 CHANGED TO OVERLAP

NOTICE CHANNEL 9 FLASHES RED

NOTICE CHANNEL 11 FLASHES RED

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

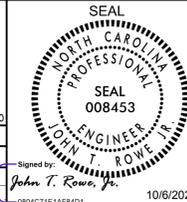
StartUp Clearance Hold	6
------------------------	---

Unit Flash Parameters

All Red Flash Exit Time	6
-------------------------	---

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-0663
DESIGNED: October 2025
SEALED: 10-06-2025
REVISED: N/A

Electrical Detail - Sheet 2 of 3

Prepared in the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529	Electrical and Programming Details For:	SR 1556 (Wayne Memorial Drive) at SR 1003 (New Hope Road)	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED 
	Division 4 Wayne County Goldsboro	PLAN DATE: October 2025 REVIEWED BY: JT Rowe	PREPARED BY: JT Rowe REVIEWED BY:
REVISIONS INIT. DATE		SIG. INVENTORY NO. 04-0663	



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FLASHER CIRCUIT MODIFICATION DETAIL

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

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

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

MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2. A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

PHASING	OVERLAP PLAN	VEH DET PLAN
ACTIVE PLAN REQUIRED TO <u>RUN DEFAULT PHASING</u>	1	1
ACTIVE PLAN REQUIRED TO <u>RUN ALTERNATE PHASING</u>	2	2

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP PLAN 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAP PLAN 2: Modifies overlap included phases for head 51 to run protected turns only.

VEH DET PLAN 2: Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 0 seconds.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-0663
 DESIGNED: October 2025
 SEALED: 10-06-2025
 REVISED: N/A

Electrical Detail - Sheet 3 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Electrical and Programming Details For: Prepared in the Offices of:  TRANSYSTEMS 750 N. Greenfield Pkwy, Garner, NC 27529	SR 1556 (Wayne Memorial Drive) at SR 1003 (New Hope Road)		 SEAL JOHN T. ROWE, JR. ENGINEER 008453 NORTH CAROLINA PROFESSIONAL SEAL
	Division 4 PLAN DATE: October 2025 PREPARED BY: JT Rowe	Wayne County REVIEWED BY: JT Rowe REVIEWED BY:	

10/6/2025
 10:06:33 am etl (e-2025-xx) yj-5gn
 USER: dbrfault

8 Phase Fully Actuated Goldsboro Signal System

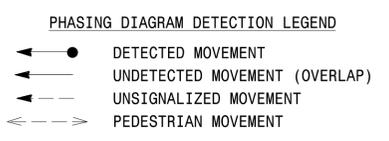
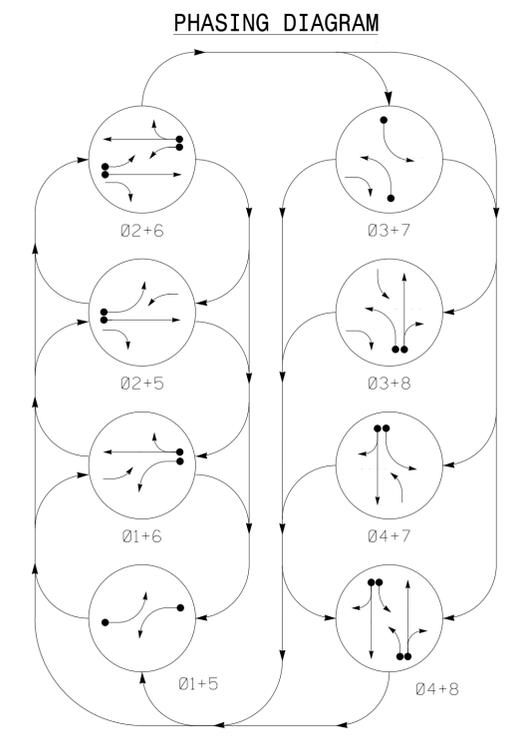
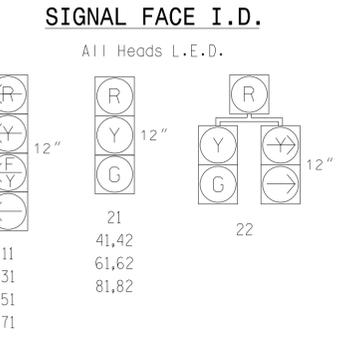


TABLE OF OPERATION

SIGNAL FACE	PHASE								FLASH
	Ø 1+5	Ø 1+6	Ø 2+5	Ø 2+6	Ø 3+7	Ø 3+8	Ø 4+7	Ø 4+8	
11	←	←	←	←	←	←	←	←	
21	R	R	G	G	R	R	R	R	
22	R	R	G	G	R	R	R	R	
31	←	←	←	←	←	←	←	←	
41,42	R	R	R	R	R	R	G	G	R
51	←	←	←	←	←	←	←	←	
61,62	R	G	R	G	R	R	R	R	
71	←	←	←	←	←	←	←	←	
81,82	R	R	R	R	R	G	R	G	R

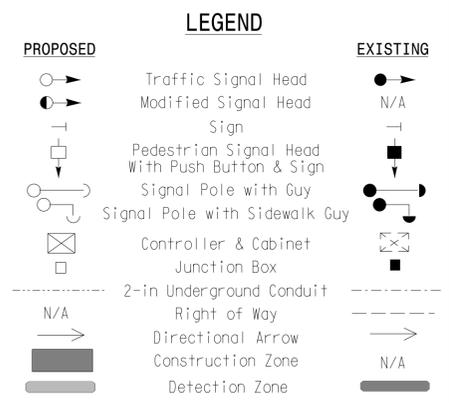
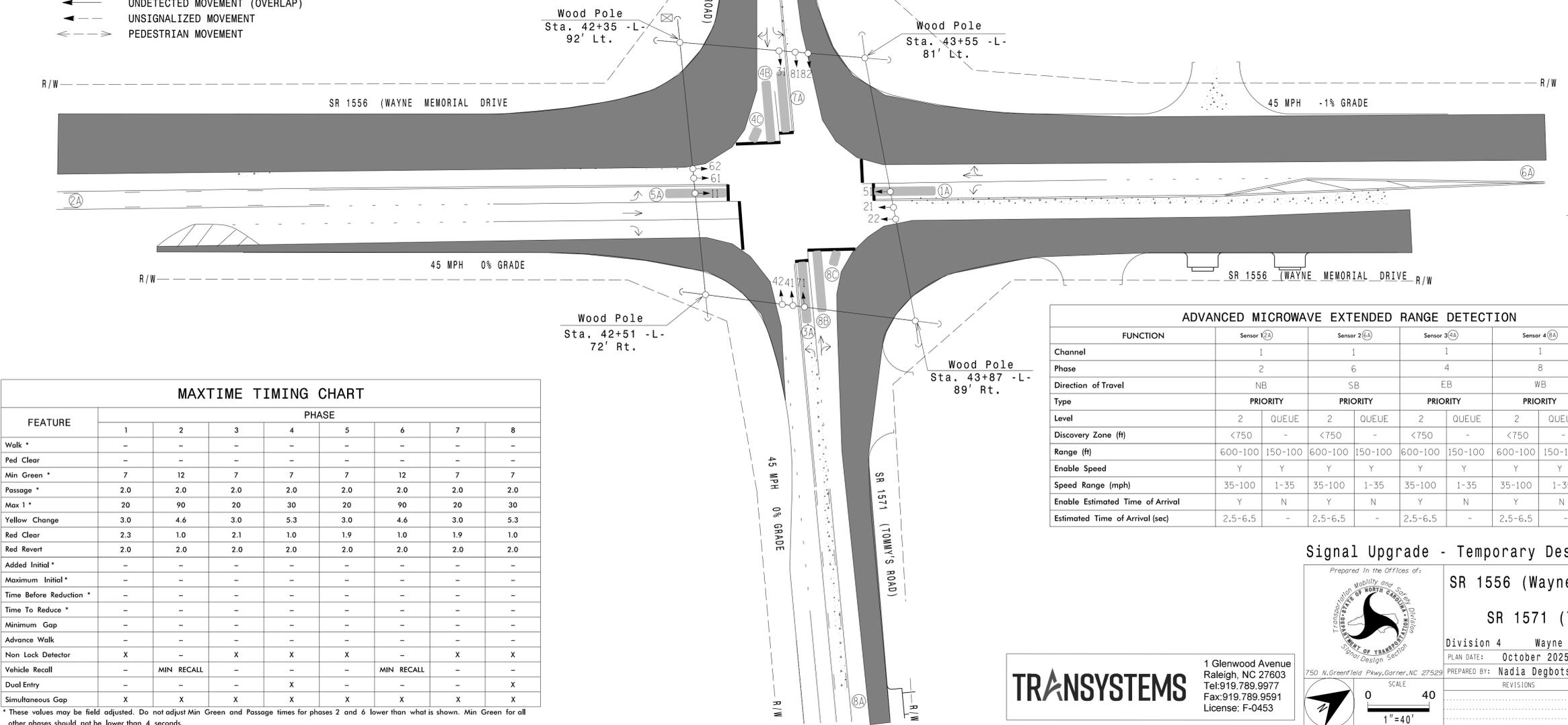


MAXTIME DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
1A	*	0	*	X	1 6	15 -	-	X	-	X	-	*
3A	*	0	*	X	3 8	15 3	-	X	-	X	-	*
4B	*	0	*	X	4 4	10 -	-	X	-	X	-	*
4C	*	0	*	X	4 4	10 -	-	X	-	X	-	*
5A	*	0	*	X	5 2	15 -	-	X	-	X	-	*
7A	*	0	*	X	7 4	15 3	-	X	-	X	-	*
8B	*	0	*	X	8 8	10 -	-	X	-	X	-	*
8C	*	0	*	X	8 8	10 -	-	X	-	X	-	*

*Multizone microwave detection zone

- NOTES**
- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
 - Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
 - Phase 1 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.
 - Pavement markings are existing.
 - This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
 - Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



MAXTIME TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Walk *	-	-	-	-	-	-	-	-
Ped Clear	-	-	-	-	-	-	-	-
Min Green *	7	12	7	7	7	12	7	7
Passage *	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Max 1 *	20	90	20	30	20	90	20	30
Yellow Change	3.0	4.6	3.0	5.3	3.0	4.6	3.0	5.3
Red Clear	2.3	1.0	2.1	1.0	1.9	1.0	1.9	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Added Initial *	-	-	-	-	-	-	-	-
Maximum Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Advance Walk	-	-	-	-	-	-	-	-
Non Lock Detector	X	-	X	X	X	-	X	X
Vehicle Recall	-	MIN RECALL	-	-	-	MIN 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 Passage times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

ADVANCED MICROWAVE EXTENDED RANGE DETECTION

FUNCTION	Sensor 2(A)	Sensor 2(B)	Sensor 3(A)	Sensor 4(B)
Channel	1	1	1	1
Phase	2	6	4	8
Direction of Travel	NB	SB	EB	WB
Type	PRIORITY	PRIORITY	PRIORITY	PRIORITY
Level	2	2	2	2
Discovery Zone (ft)	<750	<750	<750	<750
Range (ft)	600-100	150-100	600-100	150-100
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	1-35	35-100	1-35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5-6.5	-	2.5-6.5	-

Signal Upgrade - Temporary Design 1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SR 1556 (Wayne Memorial Drive) at SR 1571 (Tommy's Road)

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.

PREPARED BY: Nadia Degbotse REVIEWED BY:

REVISIONS: _____

INIT. DATE

Signed by: *Gene B. Murr, Jr.* 10/5/2025

SEAL: 14543

SCALE: 1"=40'

1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9591 License: F-0453

750 N. Greenfield Pkwy, Garner, NC 27529

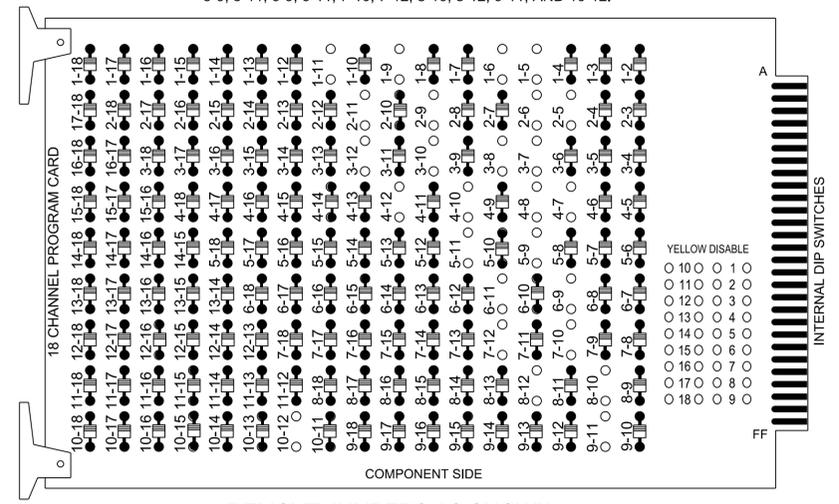
TRANSYSTEMS

10/3/2025
***410971_sig.dgn_2024xxxx.dgn
USER: r.mdegbotse

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 2-5, 2-6, 2-9, 2-11, 3-7, 3-8, 3-10, 3-12, 4-7, 4-8, 4-10, 4-12, 5-9, 5-11, 6-9, 6-11, 7-10, 7-12, 8-10, 8-12, 9-11, AND 10-12.



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 the Red Enable is active at all times during normal operation.
 - Integrate monitor with Ethernet network in cabinet.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Green No Walk and 6 Green No 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 Goldsboro Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
 Cabinet.....332 w/ Aux
 Software.....Q-Free MAXTIME
 Cabinet Mount.....Base
 Output File Positions.....18 With Aux. Output File
 Load Switches Used.....S1, S2, S4, S5, S7, S8, S10, S11, AUX S1, AUX S2, AUX S4, AUX S5
 Phases Used.....1, 2, 3, 4, 5, 6, 7, 8
 Overlap "1".....*
 Overlap "2".....*
 Overlap "3".....*
 Overlap "4".....*

*See overlap programming detail on sheet 2.

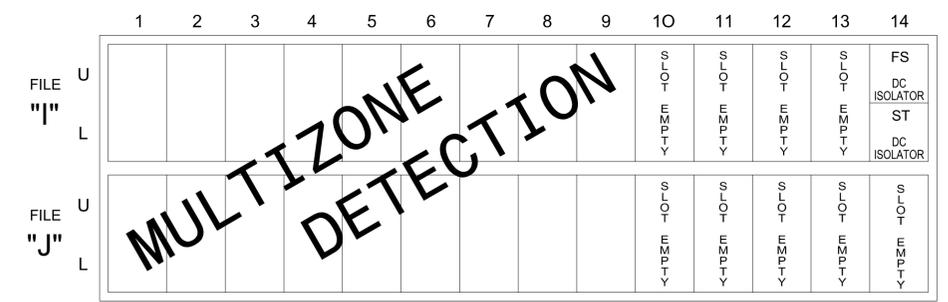
SIGNAL HEAD HOOK-UP CHART

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	OL1	OL2	SPARE	OL3	OL4	SPARE	
SIGNAL HEAD NO.	11*	21,22	NU	31*	22	41,42	NU	51*	61,62	NU	71*	81,82	NU	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						117								A122	A125		A115	A102	
FLASHING YELLOW ARROW														A123	A126		A116	A103	
GREEN ARROW	127			118	118				133			124							

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)

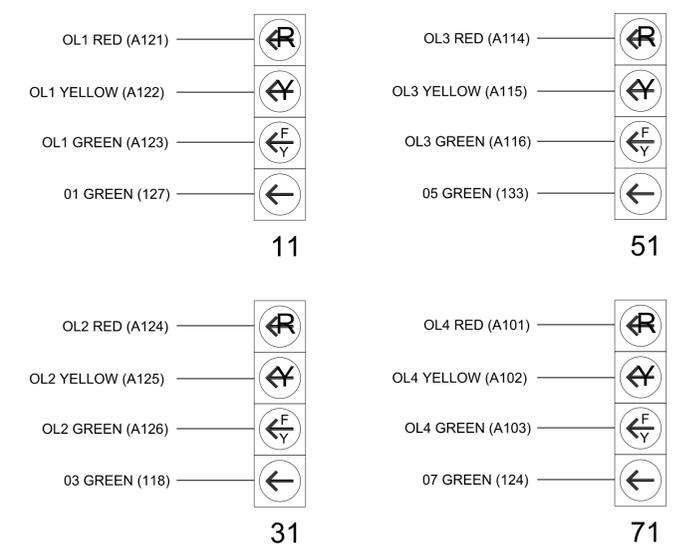


SPECIAL DETECTOR NOTE

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.

FYA SIGNAL WIRING DETAIL

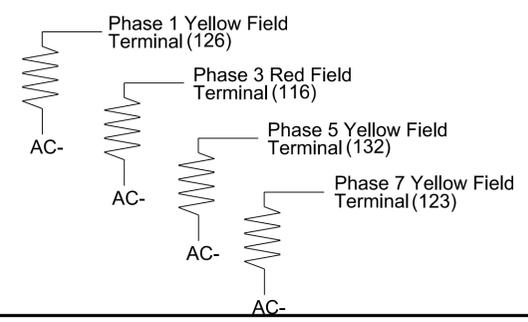
(wire signal heads as shown)



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)

ACCEPTABLE VALUES	
Value (ohms)	Wattage
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-1097T1
 DESIGNED: October 2025
 SEALED: 10-05-2025
 REVISED: N/A

Electrical Detail - Sheet 1 of 2

Prepared in the Offices of:

 1 Glenwood Avenue
 Raleigh, NC 27603
 Tel: 919.789.9977
 Fax: 919.789.9591
 License: F-0453

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
 JOHN T. ROWE, JR.
 PROFESSIONAL ENGINEER
 STATE OF NORTH CAROLINA
 SEAL 008453

Signed by: **John T. Rowe, Jr.** DATE: 10/6/2025

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: JT Rowe

PREPARED BY: JT Rowe REVIEWED BY:

REVISIONS INIT. DATE

SIG. INVENTORY NO. 04-1097T1

OVERLAP PROGRAMMING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps
Overlap Plan 1

Overlap	1	2	3	4
Type	FYA 4 - Section			
Included Phases	2	4	6	8
Modifier Phases	1	3	5	7
Modifier Overlaps	-	-	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

StartUp Clearance Hold
6

Unit Flash Parameters

All Red Flash Exit Time
6

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

Web Interface
Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
	1	Phase Vehicle	1		X	X	1
NOTICE CHANNEL 2 FLASHES RED →	2	Phase Vehicle	2		X		2
	3	Phase Vehicle	3		X	X	3
	4	Phase Vehicle	4		X		4
	5	Phase Vehicle	5		X		5
NOTICE CHANNEL 6 FLASHES RED →	6	Phase Vehicle	6		X	X	6
	7	Phase Vehicle	7		X		7
	8	Phase Vehicle	8		X	X	8
NOTICE CHANNEL 9 FLASHES RED →	9	Overlap	1		X	X	9
	10	Overlap	2		X	X	10
NOTICE CHANNEL 11 FLASHES RED →	11	Overlap	3		X		11
	12	Overlap	4		X		12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
	15	Phase Ped	6				15
	16	Phase Ped	8				16
	17	Overlap	5		X	X	17
	18	Overlap	6		X		18

FLASHER CIRCUIT MODIFICATION DETAIL

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

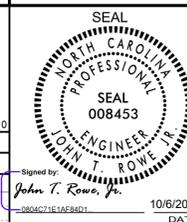
1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

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

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-1097T1
DESIGNED: October 2025
SEALED: 10-05-2025
REVISED: N/A

Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

Prepared in the Offices of: 	SR 1556 (Wayne Memorial Drive) at SR 1571 (Tommy's Road)		
	Division 4 PLAN DATE: October 2025 PREPARED BY: JT Rowe	Wayne County REVIEWED BY: JT Rowe REVIEWED BY:	

TRANSYSTEMS

1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

750 N. Greenfield Pkwy, Garner, NC 27529

SIG. INVENTORY NO. 04-1097T1

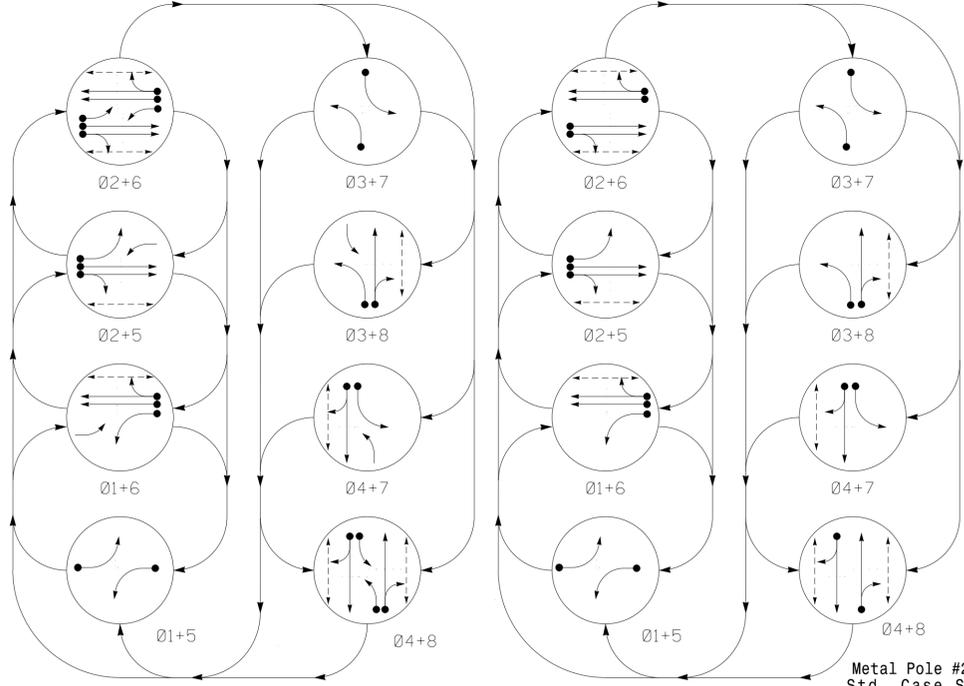
8 Phase Fully Actuated Goldsboro Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Set all detector units to presence mode.
- Refer to the Pavement Marking Plans for pavement marking details.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

DEFAULT PHASING DIAGRAM

ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

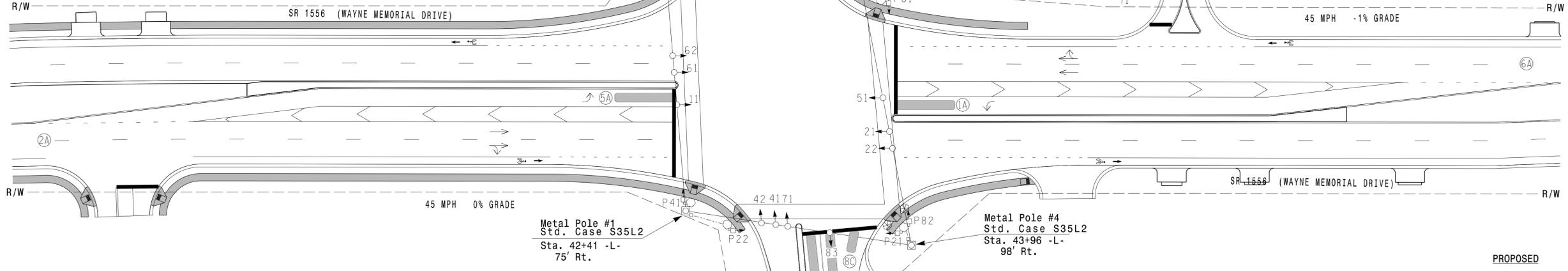
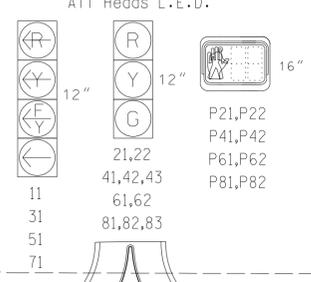
DEFAULT TABLE OF OPERATION

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	R
31	←	←	←	←	←	←	←	←
41,42,43	R	R	R	R	R	R	G	G
51	←	←	←	←	←	←	←	←
61,62	R	G	R	G	R	R	R	R
71	←	←	←	←	←	←	←	←
81,82,83	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	W	W	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DW	W	DRK

ALTERNATE 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	R
31	←	←	←	←	←	←	←	←
41,42,43	R	R	R	R	R	R	G	G
51	←	←	←	←	←	←	←	←
61,62	R	G	R	G	R	R	R	R
71	←	←	←	←	←	←	←	←
81,82,83	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	W	W	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DW	W	DRK

SIGNAL FACE I.D.

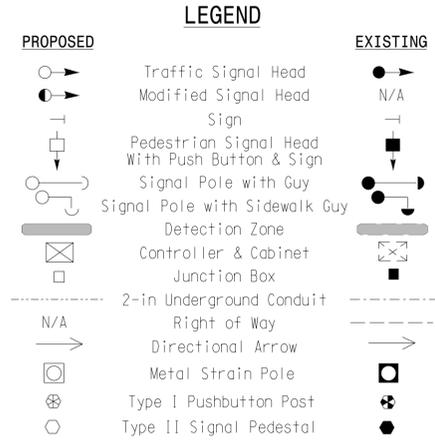


MAXTIME TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Walk *	-	14	-	14	-	14	-	14
Ped Clear	-	25	-	31	-	22	-	33
Min Green *	7	12	7	7	7	12	7	7
Passage *	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Max I *	20	90	20	30	20	90	30	20
Yellow Change	3.0	4.6	3.0	5.3	3.0	4.6	3.0	5.3
Red Clear	3.3	2.2	3.9	2.5	3.4	2.2	3.9	2.5
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Added Initial *	-	-	-	-	-	-	-	-
Maximum Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Advance Walk	-	7	-	7	-	7	-	7
Non Lock Detector	X	-	X	X	X	-	X	X
Vehicle Recall	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Dual Entry	-	-	-	X	-	-	-	X
Simultaneous Gap	X	X	X	X	X	X	X	X

ADVANCED MICROWAVE EXTENDED RANGE DETECTION

FUNCTION	Sensor 1(2A)	Sensor 2(6A)	Sensor 3(4A)	Sensor 4(8A)
Channel	1	1	1	1
Phase	2	6	4	8
Direction of Travel	NB	SB	EB	WB
Type	PRIORITY	PRIORITY	PRIORITY	PRIORITY
Level	2	2	2	2
Discovery Zone (ft)	<750	<750	<750	<750
Range (ft)	600-100	150-100	600-100	150-100
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	1-35	35-100	1-35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5-6.5	-	2.5-6.5	-



Signal Upgrade-Final Design-Sheet 1 of 2

SR 1556 (Wayne Memorial Drive) at SR 1571 (Tommy's Road)

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.

PREPARED BY: Nadia Degbotse REVIEWED BY:

SCALE: 1"=40'

1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9591 License: F-0453

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER Nadia Degbotse

10/13/2025
 ***401097.s1g.dsn_2024xxxx.dgn
 USER:ndegbotse

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 and/or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. Refer to the Pavement Marking Plans for pavement marking details.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. The Division Traffic Engineer will determine the hours of use for each phasing plan.
10. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

MAXTIME DETECTOR INSTALLATION CHART												
DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	INITIAL	CALL	DELAY DURING GREEN	NEW CARD
1A	*	0	*	X	1	15#	-	X	-	X	-	*
					6##	-	-	X	-	X	-	*
3A	*	0	*	X	3	15#	-	X	-	X	-	*
					8##	-	-	X	-	X	-	*
4B	*	0	*	X	4	10	-	X	-	X	-	*
4C	*	0	*	X	4	15	-	X	-	X	-	*
5A	*	0	*	X	5	15#	-	X	-	X	-	*
					2##	-	-	X	-	X	-	*
7A	*	0	*	X	7	15#	-	X	-	X	-	*
					4##	-	-	X	-	X	-	*
8B	*	0	*	X	8	10	-	X	-	X	-	*
8C	*	0	*	X	8	15	-	X	-	X	-	*

Disable delay during Alternate Phasing Operation.
 ## Disable phase calls for loops(s) during Alternate Phasing Operation.
 *Multizone microwave detection zone

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	
	Sign	
	Pedestrian Signal Head	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Detection Zone	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
	Right of Way	
	Directional Arrow	
	Metal Strain Pole	
	Type I Pushbutton Post	
	Type II Signal Pedestal	

Signal Upgrade-Final Design-Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<p>Prepared in the Offices of: TRANSPORTATION MOBILITY AND SAFETY DIVISION DEPARTMENT OF TRANSPORTATION STATE OF NORTH CAROLINA SIGNAL DESIGN SECTION 750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>SR 1556 (Wayne Memorial Drive) at SR 1571 (Tommy's Road)</p>		<p>SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14543 GENE C. MURR, JR.</p>						
	<p>Division 4 Wayne County Goldsboro</p> <p>PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.</p> <p>PREPARED BY: Nadia Degbotse REVIEWED BY:</p>	<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>		NO.	DESCRIPTION	INIT.	DATE		
NO.	DESCRIPTION	INIT.	DATE						

TRANSYSTEMS

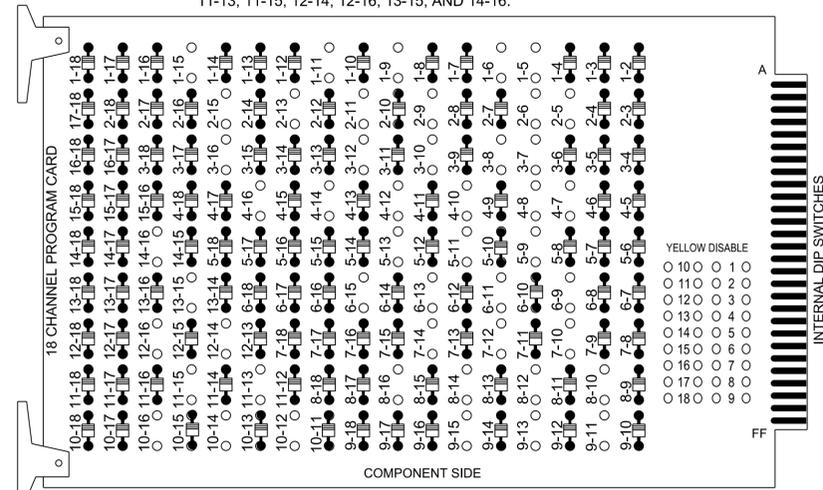
1 Glenwood Avenue
 Raleigh, NC 27603
 Tel: 919.789.9977
 Fax: 919.789.9591
 License: F-0453

SCALE
 0 40
 1" = 40'

10/17/2025
 ***451097.s1g.dsn_2024xxxx.dgn
 USER: dcfou11

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

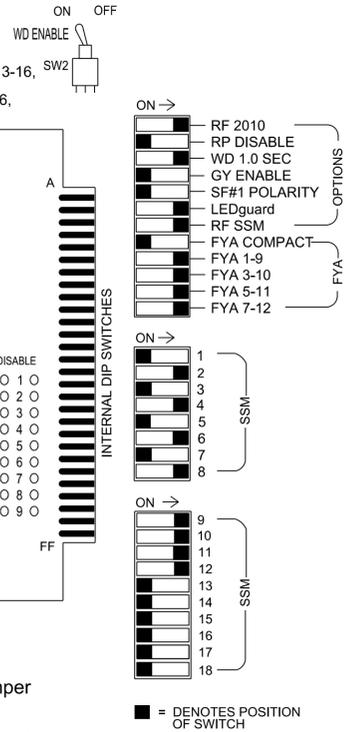
(remove jumpers and set switches as shown)
 REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 3-7, 3-8, 3-10, 3-12, 3-16, 4-7, 4-8, 4-10, 4-12, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 7-10, 7-12, 7-14, 8-10, 8-12, 8-14, 8-16, 9-11, 9-13, 9-15, 10-12, 10-14, 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 the Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.



NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Green No Walk and 6 Green No 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 Goldsboro Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
 Cabinet.....332 w/ Aux
 Software.....Q-Free MAXTIME
 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, 2 PED, 3, 4, 4 PED, 5, 6, 6 PED, 7, 8, 8 PED

Overlap "1".....*
 Overlap "2".....*
 Overlap "3".....*
 Overlap "4".....*

*See overlap programming detail on sheet 2.

SIGNAL HEAD HOOK-UP CHART

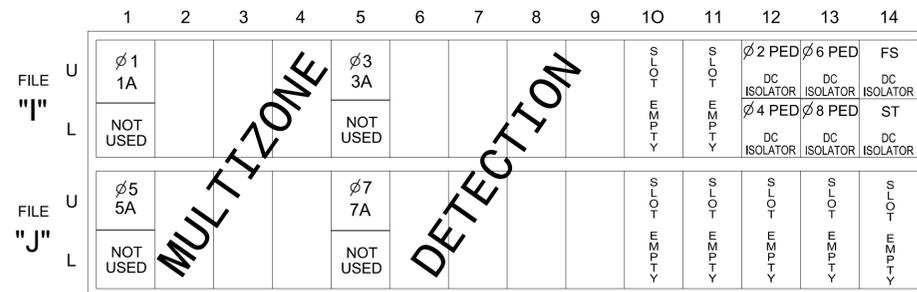
LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11	21,22	P21, P22	31	41,42	P41, P42	51	61,62	P61, P62	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			113			104			119			110						
Walking				115			106			121								

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

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.

For detection zones 1A, 3A, 5A, and 7A, detector card placement is typical for a NCDOT installation. Inputs associated with these slots are compatible with time of day instructions located on Sheet 2 of this electrical detail.

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
1A	TB2-1,2	I1U	56	18	1 *	1	15		X		X	
				-	29 *	6			X		X	
3A	TB4-5,6	I5U	58	20	7 *	3	15		X		X	
					30 *	8			X		X	
5A	TB3-1,2	J1U	55	17	15 *	5	15		X		X	
					31 *	2			X		X	
7A	TB5-5,6	J5U	57	19	21 *	7	15		X		X	
					32 *	4			X		X	
PED PUSH BUTTONS												
P21,P22	TB8-4,6	I12U	67	33	2	PED 2						
P41,P42	TB8-5,6	I12L	69	35	4	PED 4						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						
P81,P82	TB8-8,9	I13L	70	36	8	PED 8						

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

INPUT FILE POSITION LEGEND: J2L

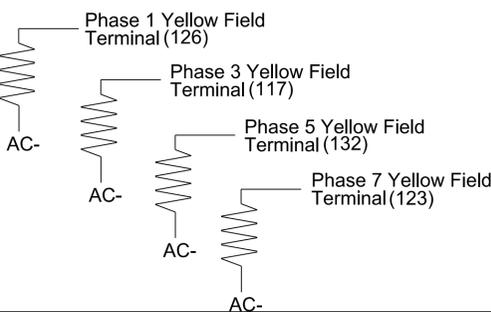


* For the detectors to work as shown on the signal design plan, see the Detector Programming Detail for Alternate Phasing on Sheet 2.

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)

ACCEPTABLE VALUES	
Value (ohms)	Wattage
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)

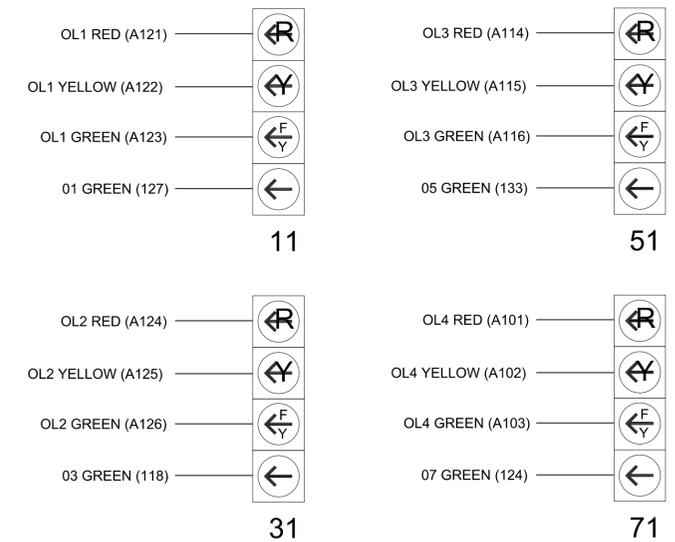


COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-1097
 DESIGNED: October 2025
 SEALED: 10-05-2025
 REVISED: N/A

Electrical Detail - Sheet 1 of 3

Electrical and Programming Details For: SR 1556 (Wayne Memorial Drive) at SR 1571 (Tommy's Road)

Division 4 Wayne County Goldsboro

Prepared by: JT Rowe

Reviewed by: JT Rowe

PLANNED BY: JT Rowe

REVISIONS

INIT. DATE

Seal: JOHN T. ROWE, JR., PROFESSIONAL ENGINEER, SEAL 008453

10/6/2025

SIG. INVENTORY NO. 04-1097

OVERLAP PROGRAMMING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps
Overlap Plan 1

Overlap	1	2	3	4
Type	FYA 4 - Section			
Included Phases	2	4	6	8
Modifier Phases	1	3	5	7
Modifier Overlaps	-	-	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

Overlap Plan 2

Overlap	1	2	3	4
Type	FYA 4 - Section			
Included Phases	-	-	-	-
Modifier Phases	1	3	5	7
Modifier Overlaps	-	-	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

NOTICE INCLUDED PHASES CHANGES

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

StartUp Clearance Hold	6
------------------------	---

Unit Flash Parameters

All Red Flash Exit Time	6
-------------------------	---

MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOPS 1A, 3A, 5A & 7A

Front Panel
Main Menu >Controller >Detector >Veh Det Plans

Web Interface
Home >Controller >Detector Configuration >Vehicle Detectors

In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes.

Plan 2

1A

Detector	Call Phase	Delay
1	1	0.0
29	0	0.0

3A

Detector	Call Phase	Delay
7	3	0.0
30	0	0.0

5A

Detector	Call Phase	Delay
15	5	0.0
31	0	0.0

7A

Detector	Call Phase	Delay
21	7	0.0
32	0	0.0

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

Web Interface
Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

NOTICE CHANNEL 2 FLASHES RED

NOTICE CHANNEL 6 FLASHES RED

NOTICE CHANNEL 9 FLASHES RED

NOTICE CHANNEL 11 FLASHES RED

MAXTIME ALTERNATE PHASING PATTERN PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Coordination >Patterns

Web Interface
Home >Controller >Coordination >Patterns

Pattern Parameters

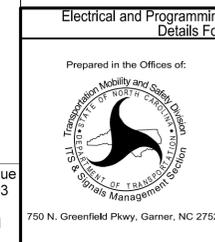
Pattern	Veh Det Plan	Overlap Plan
*	2	2

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-1097
DESIGNED: October 2025
SEALED: 10-05-2025
REVISED: N/A

Electrical Detail - Sheet 2 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SR 1556 (Wayne Memorial Drive)
at
SR 1571 (Tommy's Road)

Division 4	Wayne County	Goldsboro
PLAN DATE: October 2025	REVIEWED BY: JT Rowe	
PREPARED BY: JT Rowe	REVIEWED BY:	
REVISIONS	INT.	DATE



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Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

750 N. Greenfield Pkwy, Garner, NC 27529

SIG. INVENTORY NO. 04-1097

MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2.
A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

FLASHER CIRCUIT MODIFICATION DETAIL

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

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

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

<u>PHASING</u>	<u>OVERLAP PLAN</u>	<u>VEH DET PLAN</u>
ACTIVE PLAN REQUIRED TO <u>RUN DEFAULT PHASING</u>	1	1
ACTIVE PLAN REQUIRED TO <u>RUN ALTERNATE PHASING</u>	2	2

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP PLAN 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAP PLAN 2: Modifies overlap included phases for heads 11, 31, 51, and 71 to run protected turns only.

VEH DET PLAN 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 0 seconds.

Disables phase 8 call on loop 3A and reduces delay time for phase 3 call on loop 3A to 0 seconds.

Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 0 seconds.

Disables phase 4 call on loop 7A and reduces delay time for phase 7 call on loop 7A to 0 seconds.

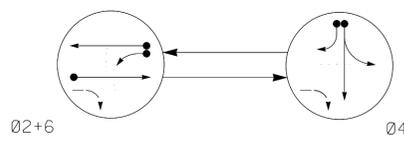
THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-1097
DESIGNED: October 2025
SEALED: 10-05-2025
REVISED: N/A

Electrical Detail - Sheet 3 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529	SR 1556 (Wayne Memorial Drive) at SR 1571 (Tommy's Road) Division 4 Wayne County Goldsboro	
Prepared by: JT Rowe Reviewed by: JT Rowe	PLAN DATE: October 2025 REVIEWED BY: JT Rowe PREPARED BY: JT Rowe REVIEWED BY:	Signed by: <i>John T. Rowe, Jr.</i> 10/6/2025 DATE
TRANSYSTEMS 1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9591 License: F-0453	REVISIONS INIT. DATE	PROJECT FILE # DATE SIG. INVENTORY NO. 04-1097

PHASING DIAGRAM



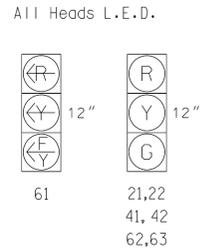
PHASING DIAGRAM DETECTION LEGEND

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

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE		
	02+6	04	FLASH
21,22	G	R	R
41,42	R	G	R
61	F	R	R
62,63	G	R	R

SIGNAL FACE I.D.



MAXTIME DETECTOR INSTALLATION CHART

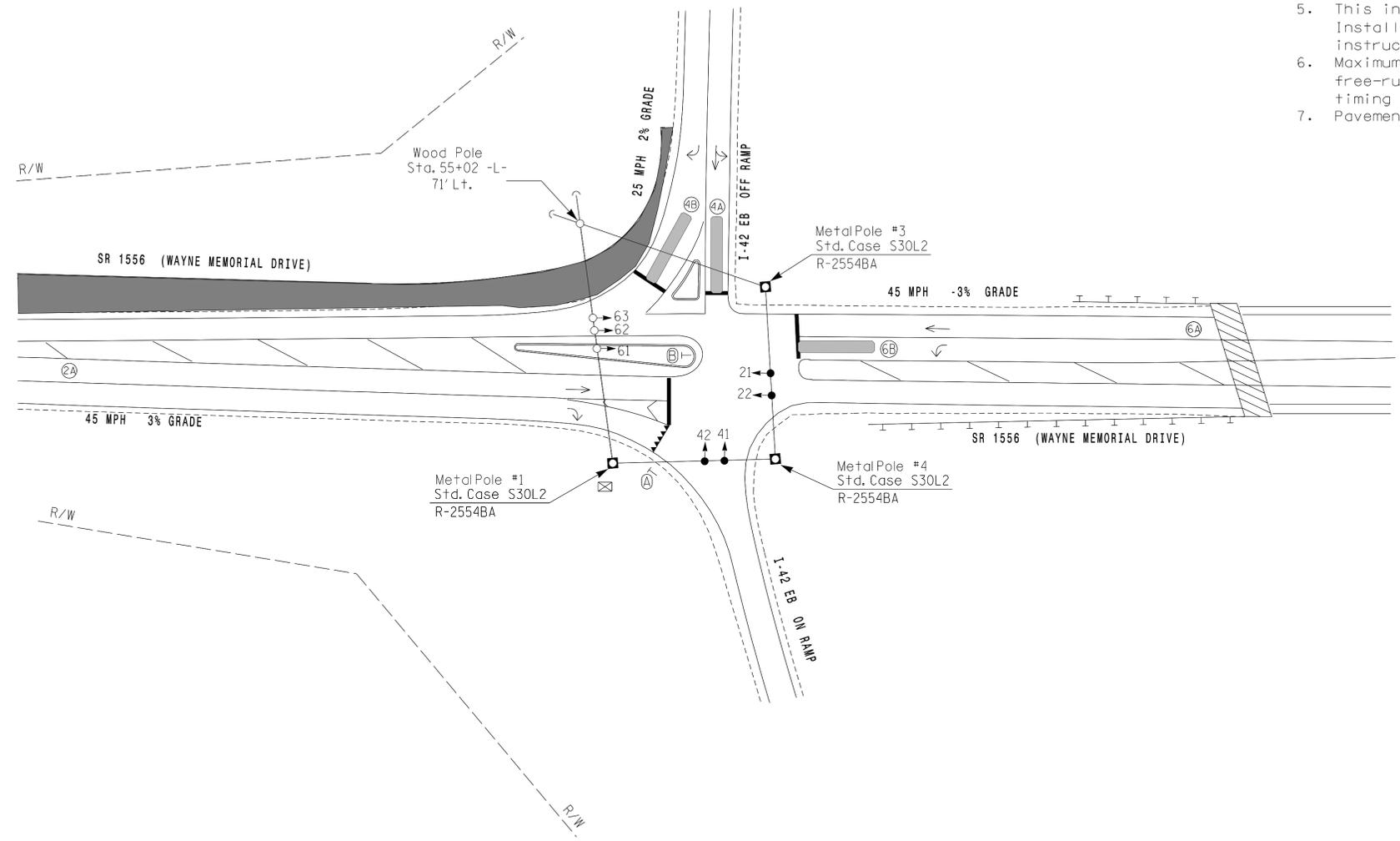
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	PROGRAMMING								
				NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
4A	*	0	*	X	4	-	-	X	-	X	-	*
4B	*	0	*	X	4	15	-	X	-	X	-	*
6B	*	0	*	X	6	-	-	X	-	X	-	*

*Multizone microwave detection zone

2 Phase Fully Actuated Goldsboro Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Pavement markings are existing.



MAXTIME TIMING CHART

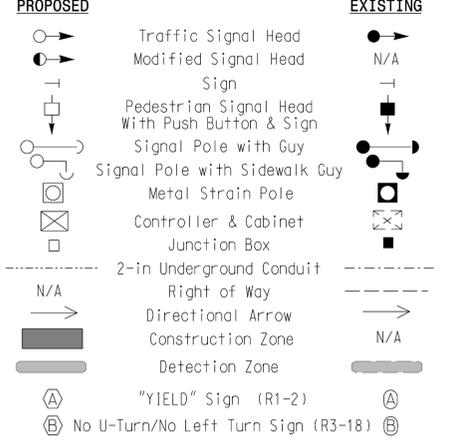
FEATURE	PHASE		
	2	4	6
Walk *	-	-	-
Ped Clear	-	-	-
Min Green *	12	7	12
Passage *	2.0	2.0	2.0
Max I *	90	30	90
Yellow Change	4.8	3.1	4.8
Red Clear	1.4	1.7	1.4
Red Revert	2.0	2.0	2.0
Added Initial *	-	-	-
Maximum Initial *	-	-	-
Time Before Reduction *	-	-	-
Time To Reduce *	-	-	-
Minimum Gap	-	-	-
Advance Walk	-	-	-
Non Lock Detector	-	X	-
Vehicle Recall	MIN RECALL	-	MIN RECALL
Dual Entry	-	-	-
Simultaneous Gap	X	X	X

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

ADVANCED MICROWAVE EXTENDED RANGE DETECTION

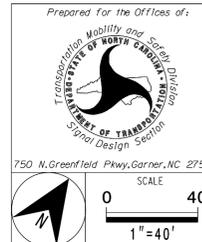
FUNCTION	Sensor 1 (2A)		Sensor 2 (6A)	
	1	1	2	6
Channel	1	1	2	6
Phase	NB	SB	-	-
Direction of Travel	NB	SB	-	-
Type	PRIORITY	PRIORITY	-	-
Level	2	2	2	2
Discovery Zone (ft)	<750	-	<750	-
Range (ft)	600-100	150-100	600-100	150-100
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	1-35	35-100	1-35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5-6.5	-	2.5-6.5	-

LEGEND



Signal Upgrade - Temporary Design 1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SR 1556 (Wayne Memorial Drive) at I-42 EB Ramps

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.

PREPARED BY: Nadia Degbotse REVIEWED BY:

REVISIONS

INIT. DATE

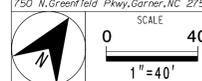
Signed by: *Nadia Degbotse* 10/5/2025

SIG. INVENTORY NO. 04-1356T1



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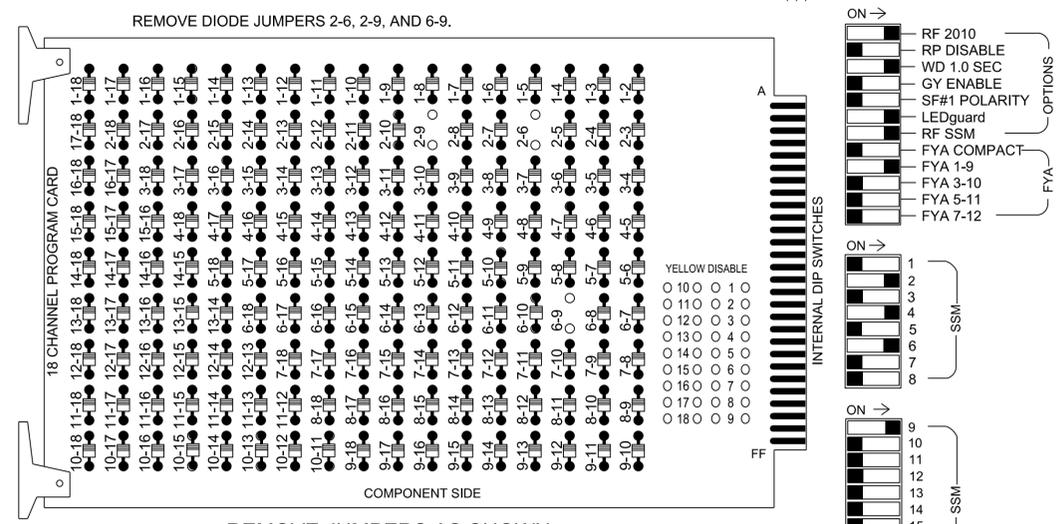
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10/13/2025
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USER:ndegbotse

18 CHANNEL IP 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 the 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 vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
2. Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.
3. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
4. The cabinet and controller are part of the Goldsboro Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
 Cabinet.....332 w/ Aux
 Software.....Q-Free MAXTIME
 Cabinet Mount.....Base
 Output File Positions.....18 With Aux. Output File
 Load Switches Used.....S2, S5, S8, AUX S1
 Phases Used.....2, 4, 6
 Overlap "1".....*
 Overlap "2".....NOT USED
 Overlap "3".....NOT USED
 Overlap "4".....NOT USED

*See overlap programming detail on sheet 2.

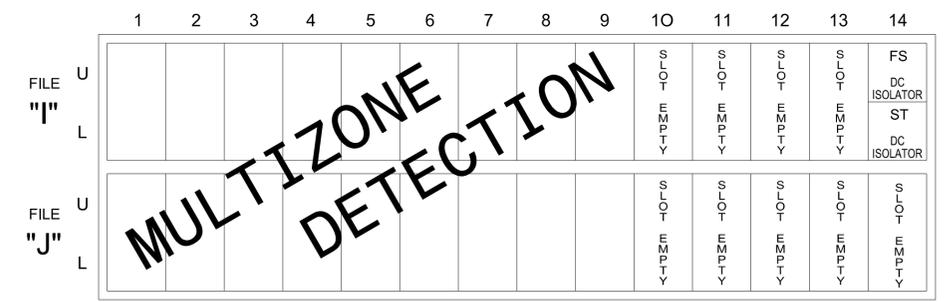
SIGNAL HEAD HOOK-UP CHART

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	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42	NU	NU	62,63	NU	NU	NU	NU	61*	NU	NU	NU	NU	NU
RED		128			101			134										
YELLOW		129			102			135										
GREEN		130			103			136										
RED ARROW													A121					
YELLOW ARROW													A122					
FLASHING YELLOW ARROW													A123					
GREEN ARROW																		

NU = Not Used
 *See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(front view)

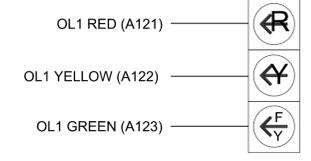


SPECIAL DETECTOR NOTE

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.

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



61

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-1356T1
 DESIGNED: October 2025
 SEALED: 10-05-2025
 REVISED: N/A

Electrical Detail - Sheet 1 of 2

Electrical and Programming Details For: Prepared in the Offices of: 	SR 1556 (Wayne Memorial Drive) at I-42 EB Ramps		SEAL
	Division 4 PLAN DATE: October 2025 PREPARED BY: JT Rowe	Wayne County REVIEWED BY: JT Rowe REVIEWED BY:	

SIG. INVENTORY NO. 04-1356T1

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 Fax: 919.789.9591
 License: F-0453

10/16/2025
 ...\\041356T1...sm.le_2025xxxx.dgn
 USER: dbrfou11

OVERLAP PROGRAMMING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps
Overlap Plan 1

Overlap	1	2	3	4
Type	FYA 4 - Section	Off	Off	Off
Included Phases	2	-	-	-
Modifier Phases	-	-	-	-
Modifier Overlaps	-	-	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

StartUp Clearance Hold
6

Unit Flash Parameters

All Red Flash Exit Time
6

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

Web Interface
Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

NOTICE CHANNEL 2 FLASHES RED →

NOTICE CHANNEL 6 FLASHES RED →

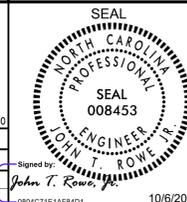
NOTICE CHANNEL 9 FLASHES RED →

NOTICE CHANNEL 11 FLASHES RED →

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-1356T1
DESIGNED: October 2025
SEALED: 10-05-2025
REVISED: N/A

Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED
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Electrical and Programming Details For: Prepared in the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529 1 Glenwood Avenue Raleigh, NC 27603 Tel: 919.789.9977 Fax: 919.789.9591 License: F-0453	SR 1556 (Wayne Memorial Drive) at I-42 EB Ramps		SEAL  SEAL 008453 JOHN T. ROWE, P.E. ENGINEER
	Division 4 PLAN DATE: October 2025 PREPARED BY: JT Rowe	Wayne County REVIEWED BY: JT Rowe DATE:	

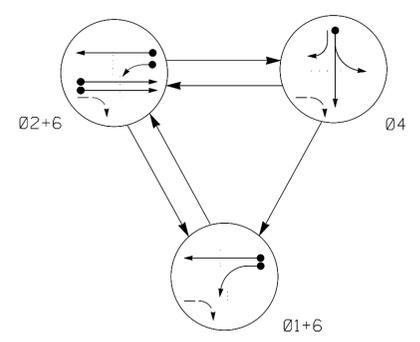
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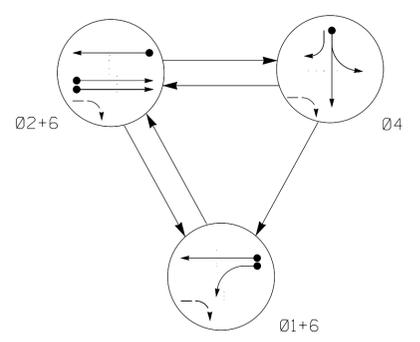
750 N. Greenfield Pkwy, Garner, NC 27529

Signed by: *John T. Rowe, P.E.*
0804C71E1AF84D1
10/6/2025
DATE
SIG. INVENTORY NO. 04-1356T1

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE			
	01+6	02+6	04	FLASH
11	←	→	←	→
21	R	↑	R	R
22	R	G	R	R
41,42	R	R	G	R
61	G	G	R	R
62	↑	↑	R	R

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE			
	01+6	02+6	04	FLASH
11	←	→	←	→
21	R	↑	R	R
22	R	G	R	R
41,42	R	R	G	R
61	G	G	R	R
62	↑	↑	R	R

MAXTIME DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL CALL	DELAY DURING GREEN	NEW CARD	
1A	*	0	*	X	1	15#	-	X	-	X	-	*
4A	*	0	*	X	6##	-	-	X	-	X	-	*

Disable delay during Alternate Phasing Operation.
Disable phase calls for loop(s) during Alternate Phasing Operation.
*Multizone microwave detection zone

3 Phase Fully Actuated Goldsboro Signal System

NOTES

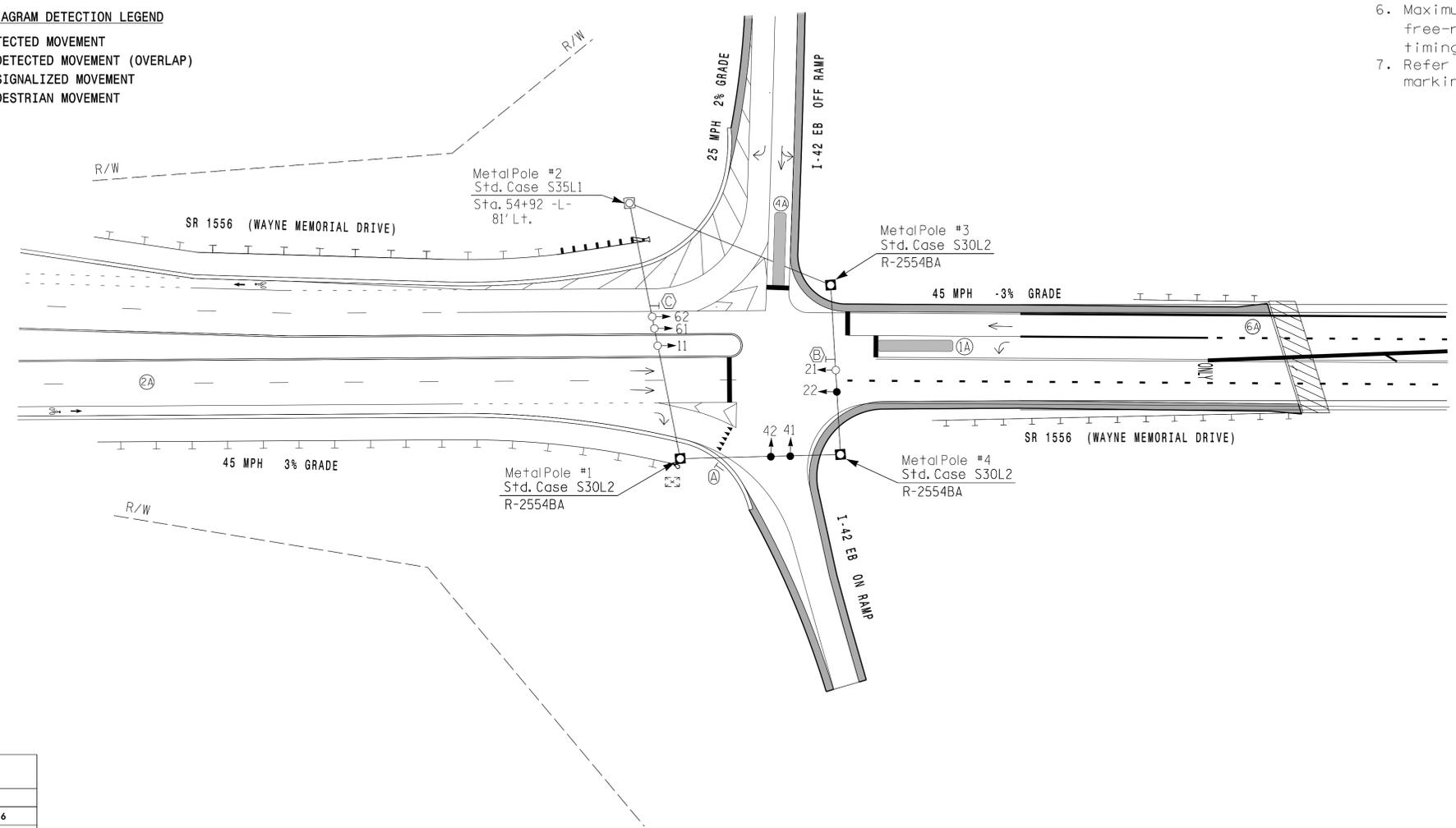
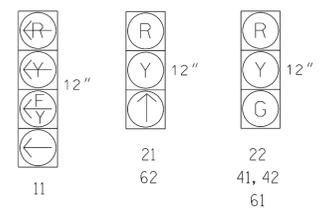
- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Refer to the Pavement Marking Plans for pavement marking details.

PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE I.D.

All Heads L.E.D.



MAXTIME TIMING CHART

FEATURE	PHASE			
	1	2	4	6
Walk *	-	-	-	-
Ped Clear	-	-	-	-
Min Green *	7	12	7	12
Passage *	2.0	2.0	2.0	2.0
Max 1 *	30	90	30	90
Yellow Change	3.0	4.8	3.1	4.8
Red Clear	2.9	1.1	1.7	1.1
Red Revert	2.0	2.0	2.0	2.0
Added Initial *	-	-	-	-
Maximum Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Advance Walk	-	-	-	-
Non Lock Detector	X	-	X	-
Vehicle Recall	-	MIN RECALL	-	MIN RECALL
Dual Entry	-	-	-	-
Simultaneous Gap	X	X	X	X

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

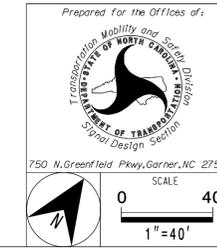
ADVANCED MICROWAVE EXTENDED RANGE DETECTION

FUNCTION	Sensor 1 (A)	Sensor 2 (A)
Channel	1	1
Phase	2	6
Direction of Travel	NB	SB
Type	PRIORITY	PRIORITY
Level	2	2
Discovery Zone (ft)	QUEUE	QUEUE
Range (ft)	<750	<750
Range (ft)	600-100	150-100
Enable Speed	Y	Y
Speed Range (mph)	35-100	1-35
Enable Estimated Time of Arrival	Y	N
Estimated Time of Arrival (sec)	2.5-6.5	2.5-6.5

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 |
| ○ → Signal Pole with Guy | ○ → Signal Pole with Guy |
| ○ → Signal Pole with Sidewalk Guy | ○ → Signal Pole with Sidewalk Guy |
| ⊠ Metal Strain Pole | ⊠ Metal Strain Pole |
| ⊠ Detection Zone | ⊠ Detection Zone |
| ⊠ Controller & Cabinet | ⊠ Controller & Cabinet |
| ⊠ Junction Box | ⊠ Junction Box |
| ⊠ 2-in Underground Conduit | ⊠ 2-in Underground Conduit |
| N/A Right of Way | --- Right of Way |
| → Directional Arrow | → Directional Arrow |
| (A) "YIELD" Sign (R1-2) | (A) "YIELD" Sign (R1-2) |
| (B) No U-Turn/No Left Turn Sign (R3-18) | (B) No U-Turn/No Left Turn Sign (R3-18) |
| (C) No Right Turn Sign (R3-1) | (C) No Right Turn Sign (R3-1) |

Signal Upgrade - Final Design



SR 1556 (Wayne Memorial Drive) at I-42 EB Ramps

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.

PREPARED BY: Nadia Degbotse REVIEWED BY:

REVISIONS	INIT.	DATE

Signed by: Gene G. Murr, Jr. 10/5/2025

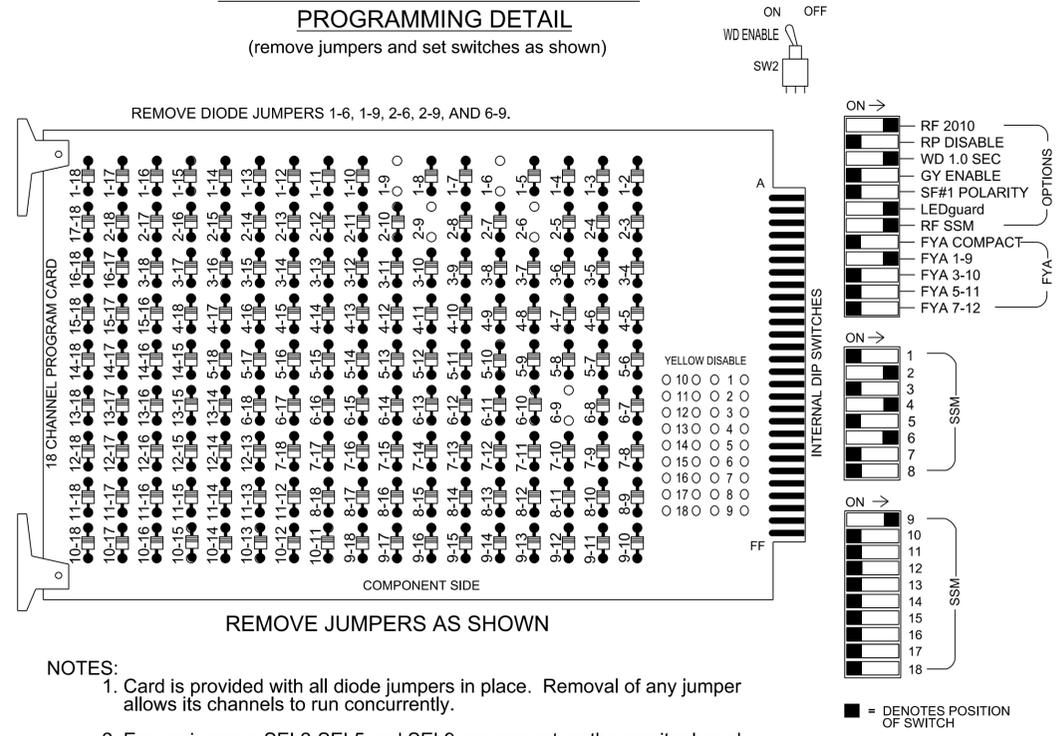
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TRANSYSTEMS

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Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- Program controller to start up in phase 2 Green No Walk and 6 Green No 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 Goldsboro Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
 Cabinet.....332 w/ Aux
 Software.....Q-Free MAXTIME
 Cabinet Mount.....Base
 Output File Positions.....18 With Aux. Output File
 Load Switches Used.....S1, S2, S5, S8, AUX S1
 Phases Used.....1, 2, 4, 6
 Overlap "1".....*
 Overlap "2".....NOT USED
 Overlap "3".....NOT USED
 Overlap "4".....NOT USED

*See overlap programming detail on sheet 2.

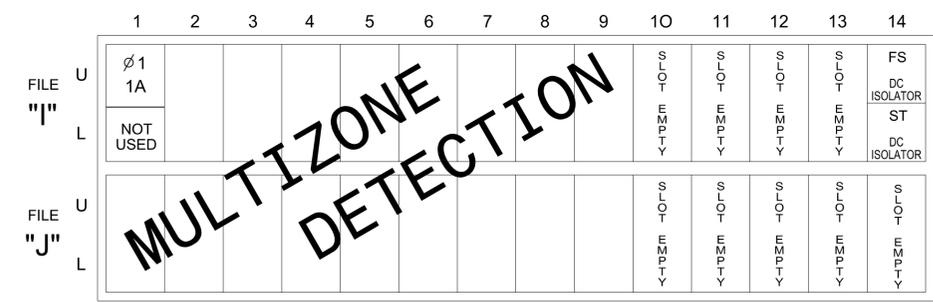
SIGNAL HEAD HOOK-UP CHART

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	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11*	21	22	NU	NU	41,42	NU	NU	61	62	NU	NU	NU	11*	NU	NU	NU	NU
RED		128	128			101			134	134								
YELLOW	*	129	129			102			135	135								
GREEN		130				103			136									
RED ARROW														A121				
YELLOW ARROW														A122				
FLASHING YELLOW ARROW														A123				
GREEN ARROW	127	130							136									

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)



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.

For detection zone 1A, detector card placement is typical for a NCDOT installation. Inputs associated with these slots are compatible with time of day instructions located on Sheet 2 of this electrical detail.

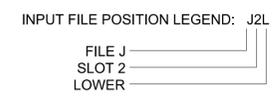
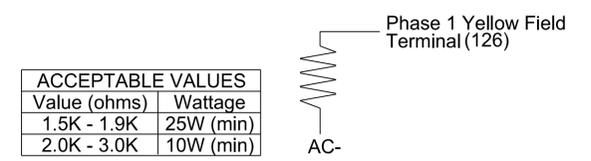
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
1A	TB2-1,2	I1U	56	18	1 *	1	15		X		X	
				-	29 *	6			X		X	

* For the detectors to work as shown on the signal design plan, see the Detector Programming Detail for Alternate Phasing on Sheet 2.

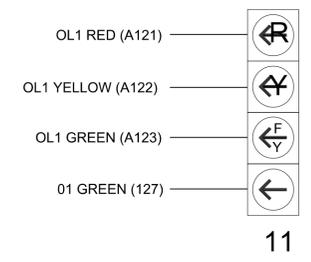
LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown)



FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-1356
 DESIGNED: October 2025
 SEALED: 10-05-2025
 REVISED: N/A

Electrical Detail - Sheet 1 of 3

Electrical and Programming Details For:

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

1 Glenwood Avenue
 Raleigh, NC 27603
 Tel: 919.789.9977
 Fax: 919.789.9591
 License: F-0453

SR 1556 (Wayne Memorial Drive) at I-42 EB Ramps

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: JT Rowe

PREPARED BY: JT Rowe REVIEWED BY:

REVISIONS INT. DATE

10/6/2025

SIG. INVENTORY NO. 04-1356

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER JOHN T. ROWE, JR. SEAL 008453

OVERLAP PROGRAMMING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps
Overlap Plan 1

Overlap	1	2	3	4
Type	FYA 4 - Section	Off	Off	Off
Included Phases	2	-	-	-
Modifier Phases	1	-	-	-
Modifier Overlaps	-	-	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

Overlap Plan 2

Overlap	1	2	3	4
Type	FYA 4 - Section	Off	Off	Off
Included Phases	-	-	-	-
Modifier Phases	1	-	-	-
Modifier Overlaps	-	-	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

NOTICE INCLUDED PHASES CHANGES

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

StartUp Clearance Hold	6
------------------------	---

Unit Flash Parameters

All Red Flash Exit Time	6
-------------------------	---

MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOP 1A

Front Panel
Main Menu >Controller >Detector >Veh Det Plans

Web Interface
Home >Controller >Detector Configuration >Vehicle Detectors

In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes.

1A

Plan 2		
Detector	Call Phase	Delay
1	1	0.0
29	0	0.0

MAXTIME ALTERNATE PHASING PATTERN PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Coordination >Patterns

Web Interface
Home >Controller >Coordination >Patterns

Pattern Parameters

Pattern	Veh Det Plan	Overlap Plan
*	2	2

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

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

Web Interface
Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

NOTICE CHANNEL 2 FLASHES RED →

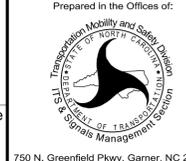
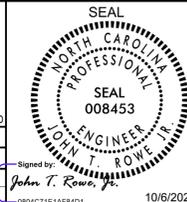
NOTICE CHANNEL 6 FLASHES RED →

NOTICE CHANNEL 9 FLASHES RED →

NOTICE CHANNEL 11 FLASHES RED →

Electrical Detail - Sheet 2 of 3

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-1356
DESIGNED: October 2025
SEALED: 10-05-2025
REVISED: N/A

	Electrical and Programming Details For:		SR 1556 (Wayne Memorial Drive) at I-42 EB Ramps		
	Prepared in the Offices of:		Division 4 Wayne County Goldsboro		
PLAN DATE: October 2025		REVIEWED BY: JT Rowe		Signed by: <i>John T. Rowe, Jr.</i> DATE: 10/6/2025	
PREPARED BY: JT Rowe		REVIEWED BY:		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
REVISIONS		INT. DATE		SIG. INVENTORY NO. 04-1356	

TRANSYSTEMS

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Fax: 919.789.9591
License: F-0453

750 N. Greenfield Pkwy, Garner, NC 27529

MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2.
A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

PHASING	OVERLAP PLAN	VEH DET PLAN
ACTIVE PLAN REQUIRED TO <u>RUN DEFAULT PHASING</u>	1	1
ACTIVE PLAN REQUIRED TO <u>RUN ALTERNATE PHASING</u>	2	2

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP PLAN 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

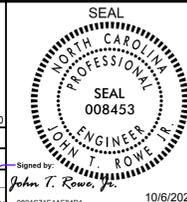
OVERLAP PLAN 2: Modifies overlap included phases for head 11 to run protected turns only.

VEH DET PLAN 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 0 seconds.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-1356
DESIGNED: October 2025
SEALED: 10-05-2025
REVISED: N/A

Electrical Detail - Sheet 3 of 3

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

<p style="font-size: x-small;">Prepared in the Offices of:</p> 	<p>SR 1556 (Wayne Memorial Drive) at I-42 EB Ramps</p> <p style="font-size: x-small;">Division 4 Wayne County Goldsboro</p> <p>PLAN DATE: October 2025 REVIEWED BY: JT Rowe</p> <p>PREPARED BY: JT Rowe REVIEWED BY:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="font-size: x-small;">REVISIONS</th> <th style="font-size: x-small;">INT.</th> <th style="font-size: x-small;">DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISIONS	INT.	DATE										<p style="font-size: x-small;">SEAL</p>  <p style="font-size: x-small;">SIGNED BY: John T. Rowe, Jr. DATE: 10/6/2025</p> <p style="font-size: x-small;">SIG. INVENTORY NO. 04-1356</p>
REVISIONS	INT.	DATE												

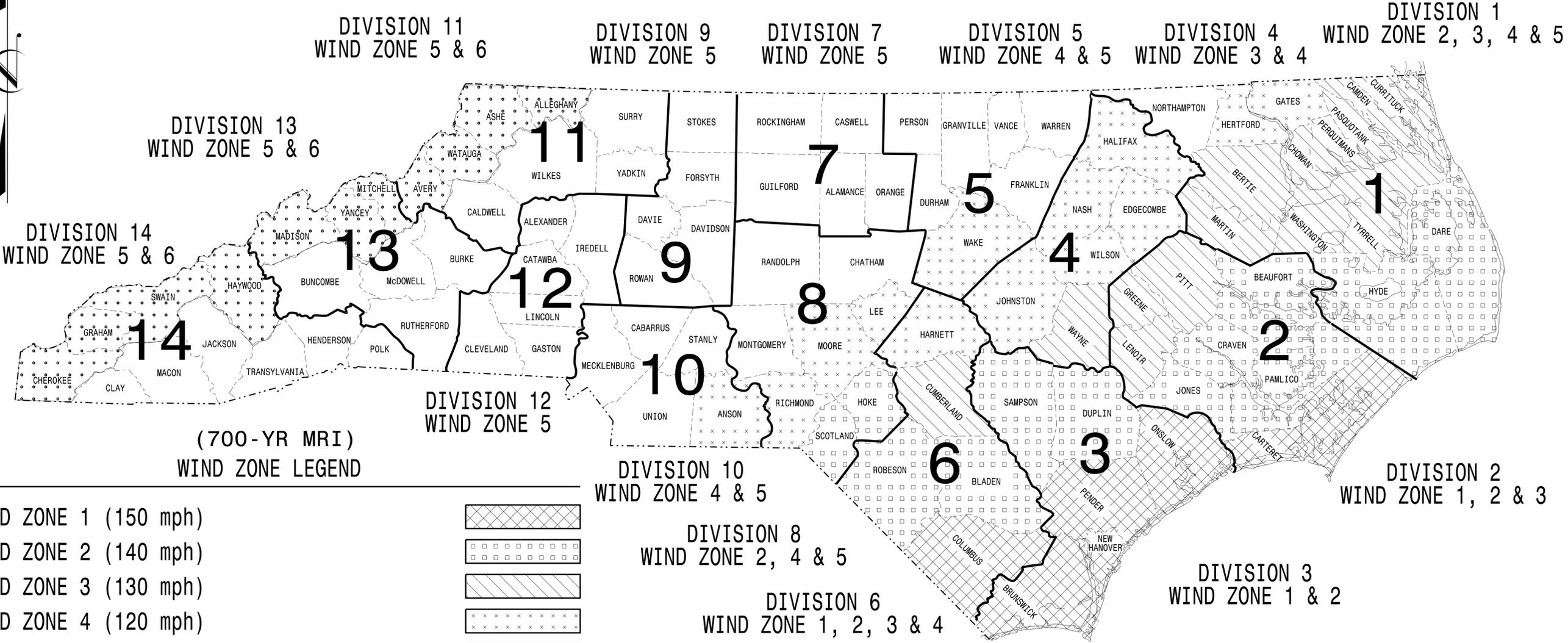
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Tel: 919.789.9977
Fax: 919.789.9591
License: F-0453

750 N. Greenfield Pkwy, Garner, NC 27529

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

STANDARD DRAWINGS FOR ALL METAL POLES (LRFD)



(700-YR MRI)
WIND ZONE LEGEND

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

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

NC DOT METAL POLE STANDARDS

03-001-2023 1P-07
S:\IT\AS\11\115\Sig\Drawings\Drawings\2024\Metal Pole Standards\411\Metal Pole (700-yr MRI).cdm
Kcurtison

Prepared in the Offices of:

750 N. Greenfield Pkwy.
Garner, NC 27529

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

AASHTO LRFD

Standard Specifications for
Highway Signs, Luminaires,
and Traffic Signals

DRAWING NUMBER	INDEX OF PLANS DESCRIPTION
Sig. M 1A	Statewide Wind Zone Map (700-yr MRI)
Sig. M 1B	Statewide Wind Zone Map (10-yr MRI)
Sig. M 2	Typical Fabrication Details-All Metal Poles
Sig. M 3	Typical Fabrication Details-Strain Poles
Sig. M 4	Typical Fabrication Details-Mast Arm Poles
Sig. M 5	Typical Fabrication Details-Mast Arm Connection
Sig. M 6	Typical Fabrication Details-Strain Pole Attachments
Sig. M 7	Construction Details-Foundations
Sig. M 8	Standard Strain Pole Foundation-All Soil Conditions
Sig. M 9	Typical Fabrication Details-CCTV Camera Poles

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

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

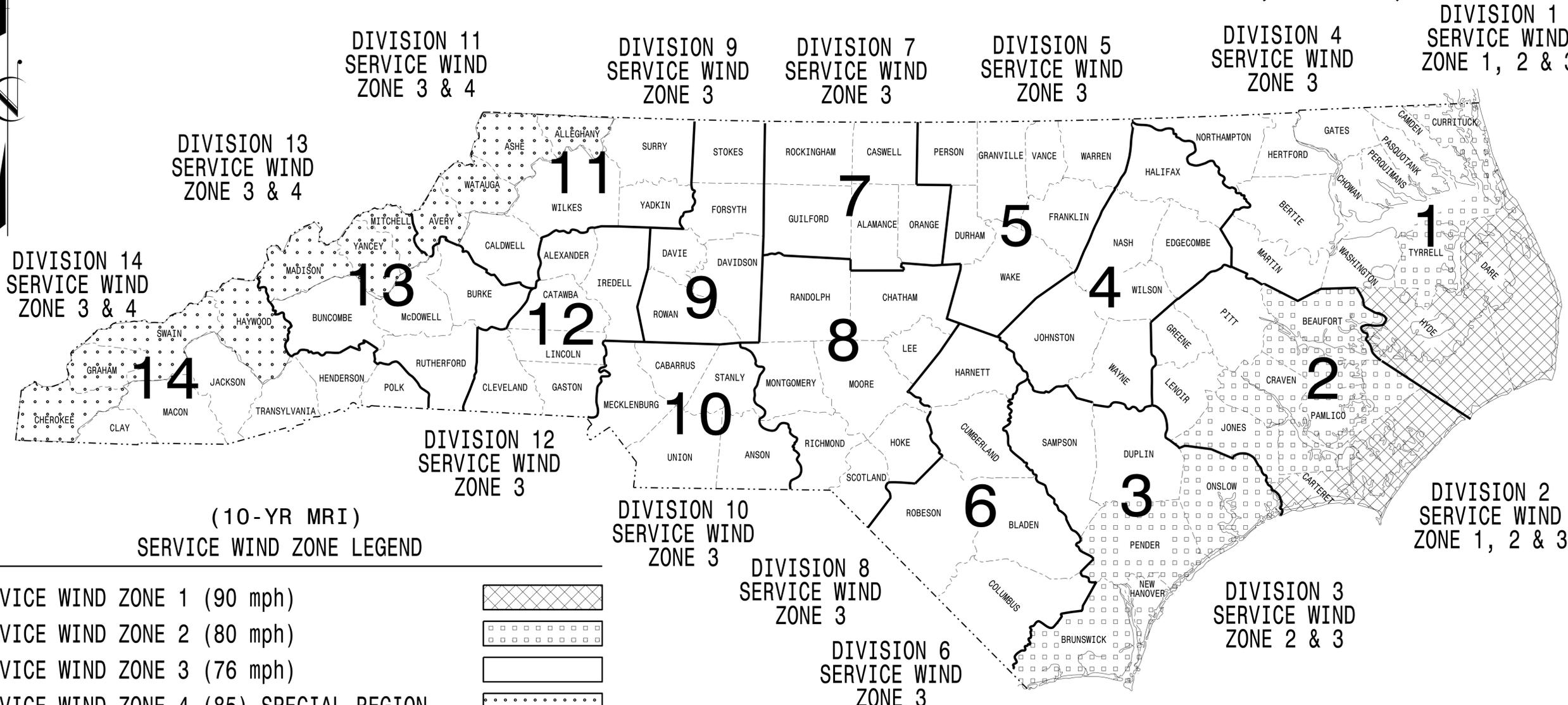
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DocuSigned by:
Kevin Durigon
SIGNATURE
4B23DC79B3764DA

09/21/2023
DATE

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

STANDARD DRAWINGS FOR ALL METAL POLES (LRFD)



(10-YR MRI)
SERVICE WIND ZONE LEGEND

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

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

NC DOT METAL POLE STANDARDS

03-OCT-2023 10:51 S:\M1\AS1\ITS_Signals\Structures\Drawings\2024_Metal_Pole_Standards\10-yr_MRI1.dgn

Prepared in the Offices of:

750 N. Greenfield Pkwy.
Garner, NC 27529

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

AASHTO LRFD

Standard Specifications for Highway Signs, Luminaires, and Traffic Signals

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Sig. M 1A	Statewide Wind Zone Map (700-yr MRI)
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Sig. M 2	Typical Fabrication Details-All Metal Poles
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Sig. M 4	Typical Fabrication Details-Mast Arm Poles
Sig. M 5	Typical Fabrication Details-Mast Arm Connection
Sig. M 6	Typical Fabrication Details-Strain Pole Attachments
Sig. M 7	Construction Details-Foundations
Sig. M 8	Standard Strain Pole Foundation-All Soil Conditions
Sig. M 9	Typical Fabrication Details-CCTV Camera Poles

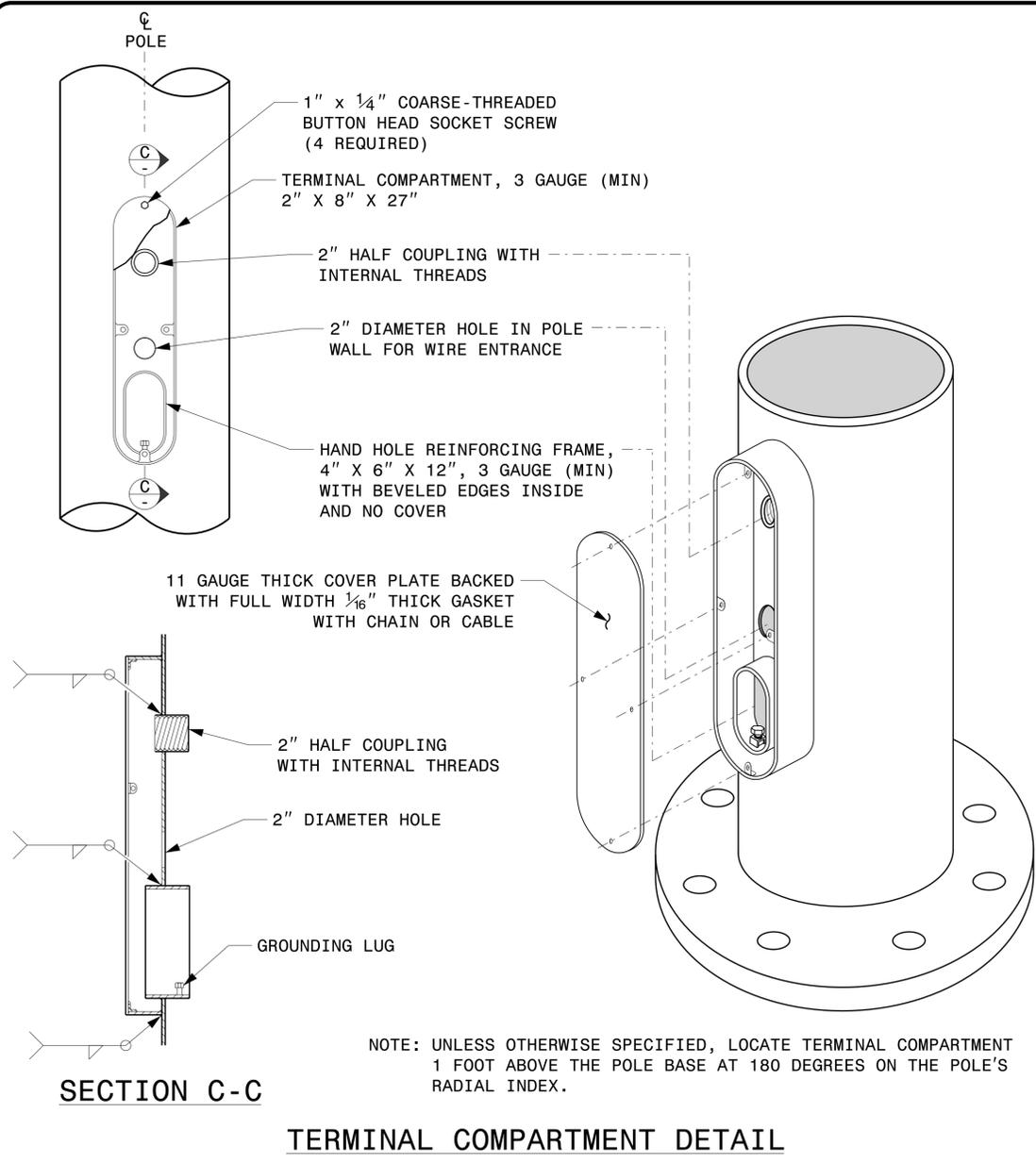
NC DOT CONTACTS:
MOBILITY AND SAFETY DIVISION -
TRANSPORTATION SYSTEMS MANAGEMENT
AND OPERATIONS UNIT

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

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DocuSigned by:
Kevin Durigon
4B23DC78B3784DA

09/21/2023
DATE



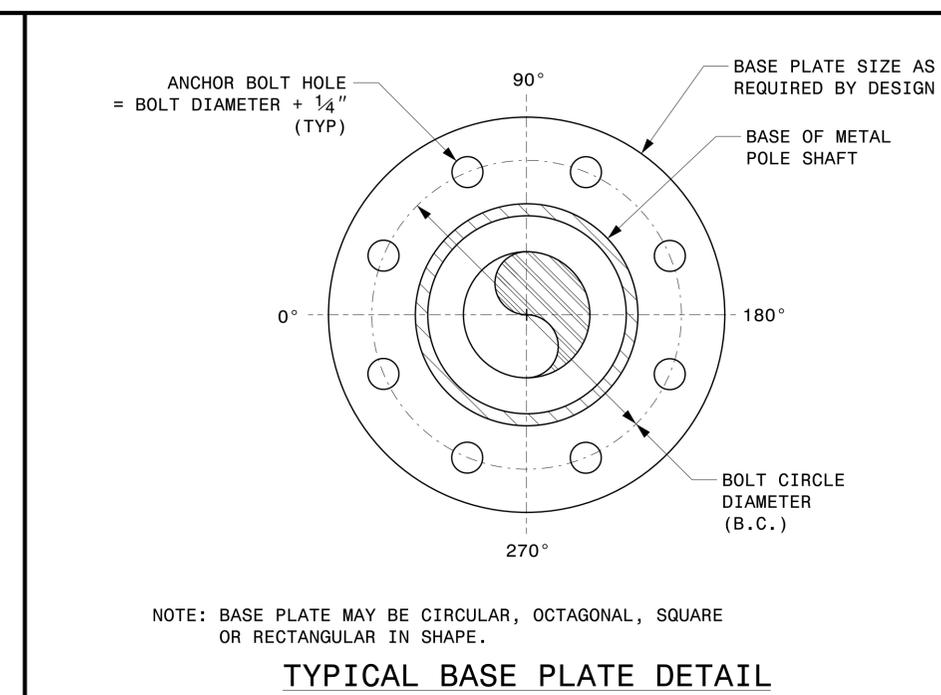
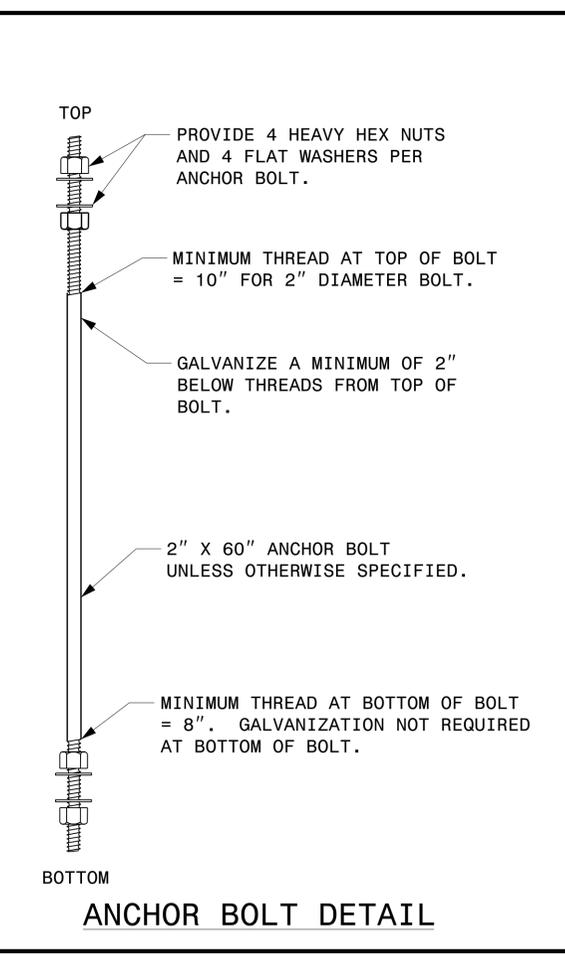
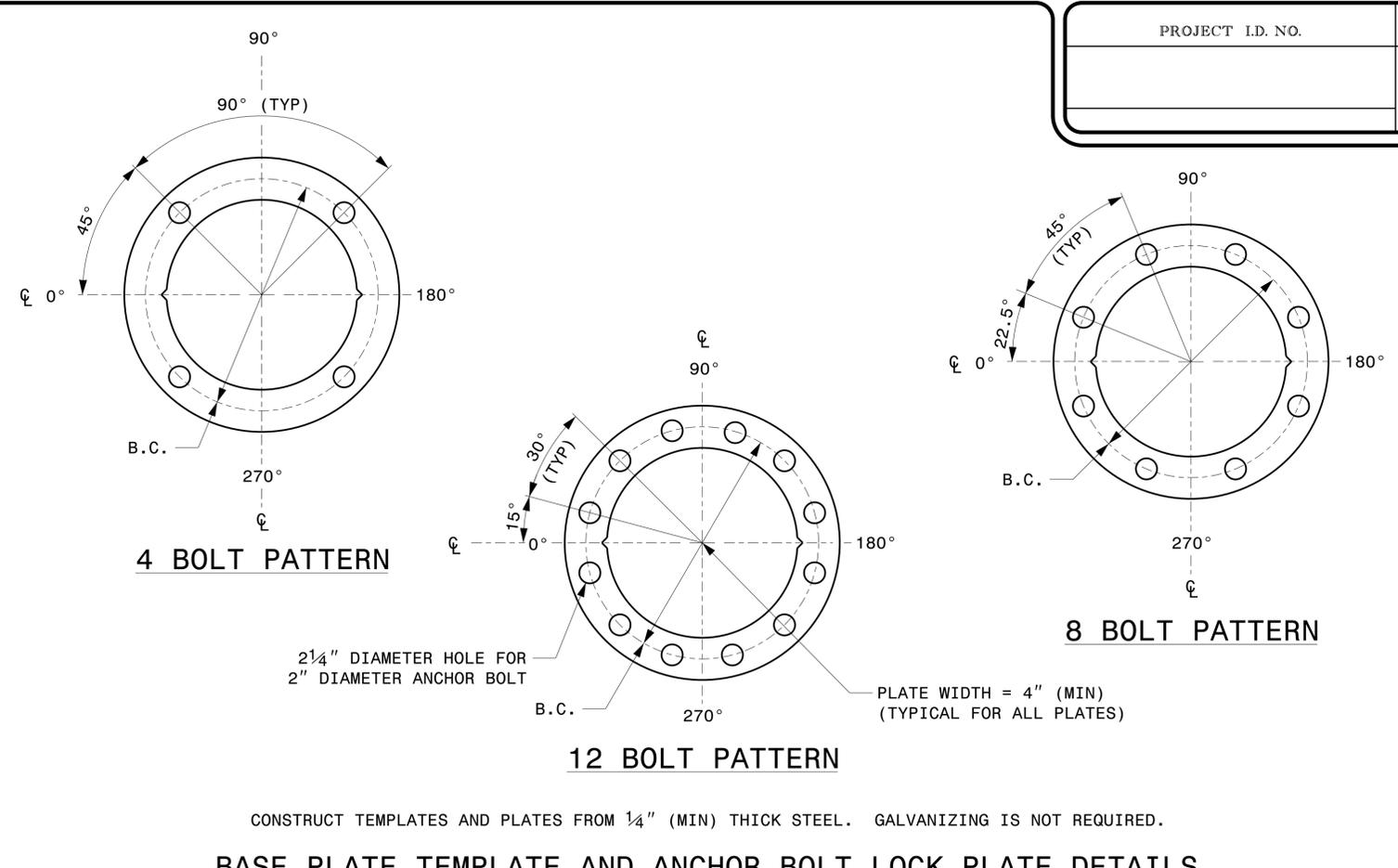
IDENTIFICATION TAG DETAILS

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

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

NOTES:

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



Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

Typical Fabrication Details For All Metal Poles

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

REVISIONS	INIT.	DATE

SCALE: 0 NA NONE

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 036626 ENGINEER KEVIN C. DURIGON

DocuSigned by: Kevin Durigon 09/21/2023 DATE

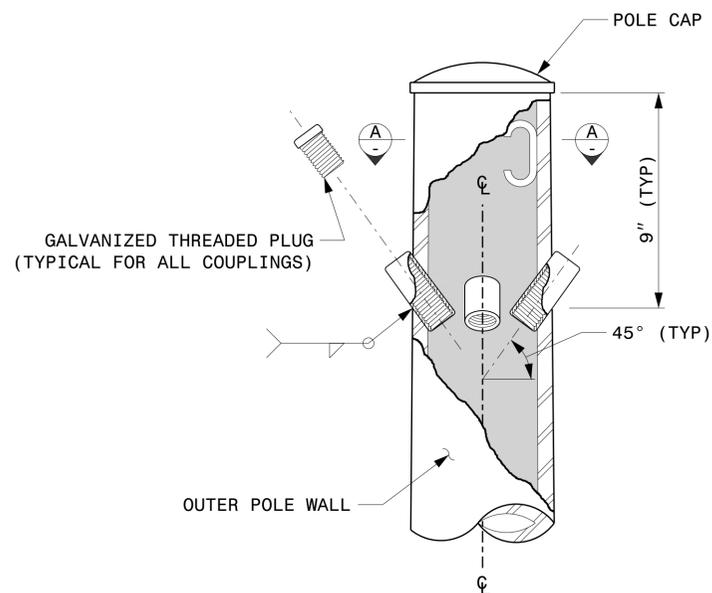
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Fabrication Details – All Metal Poles

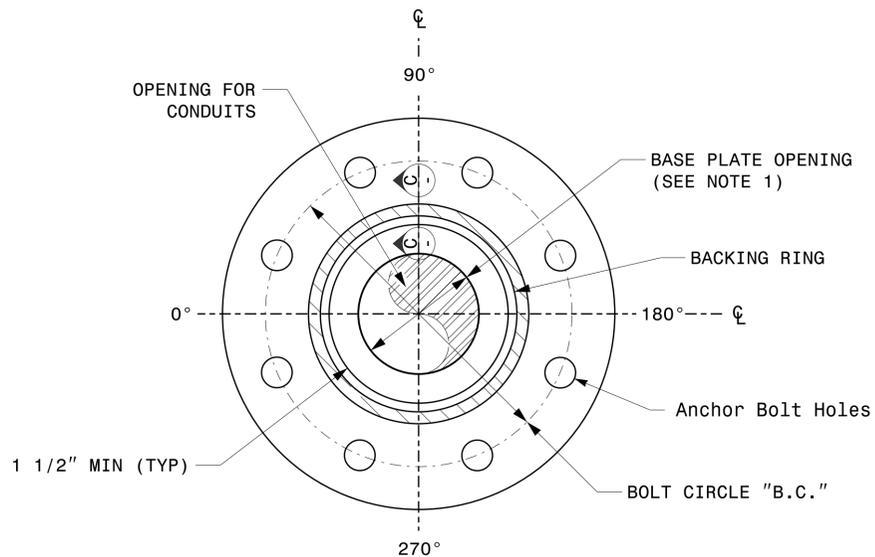
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NOTE:

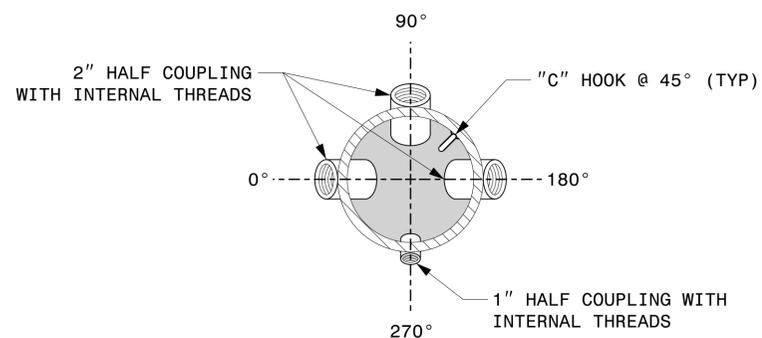
- 1. OPENING IN POLE BASE PLATE SHALL BE EQUAL TO POLE BASE INSIDE DIAMETER MINUS $3\frac{1}{2}$ " BUT SHALL NOT BE LESS THAN $8\frac{1}{2}$ ".



CABLE ENTRANCES AT TOP OF POLE

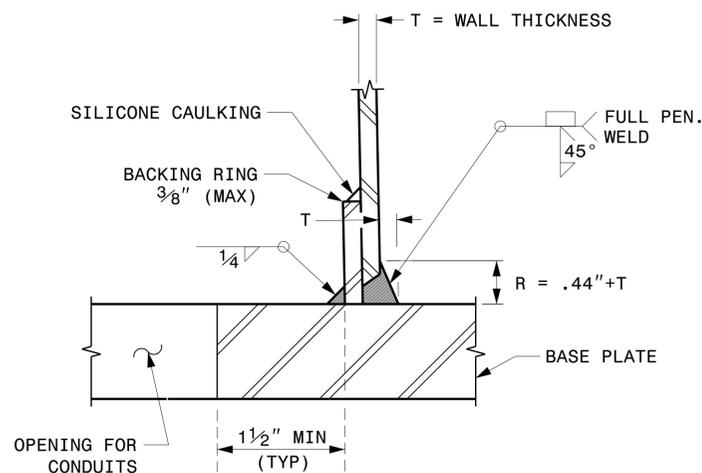


SECTION B-B
POLE BASE PLATE DETAILS
(8 AND 12 BOLT PATTERN)

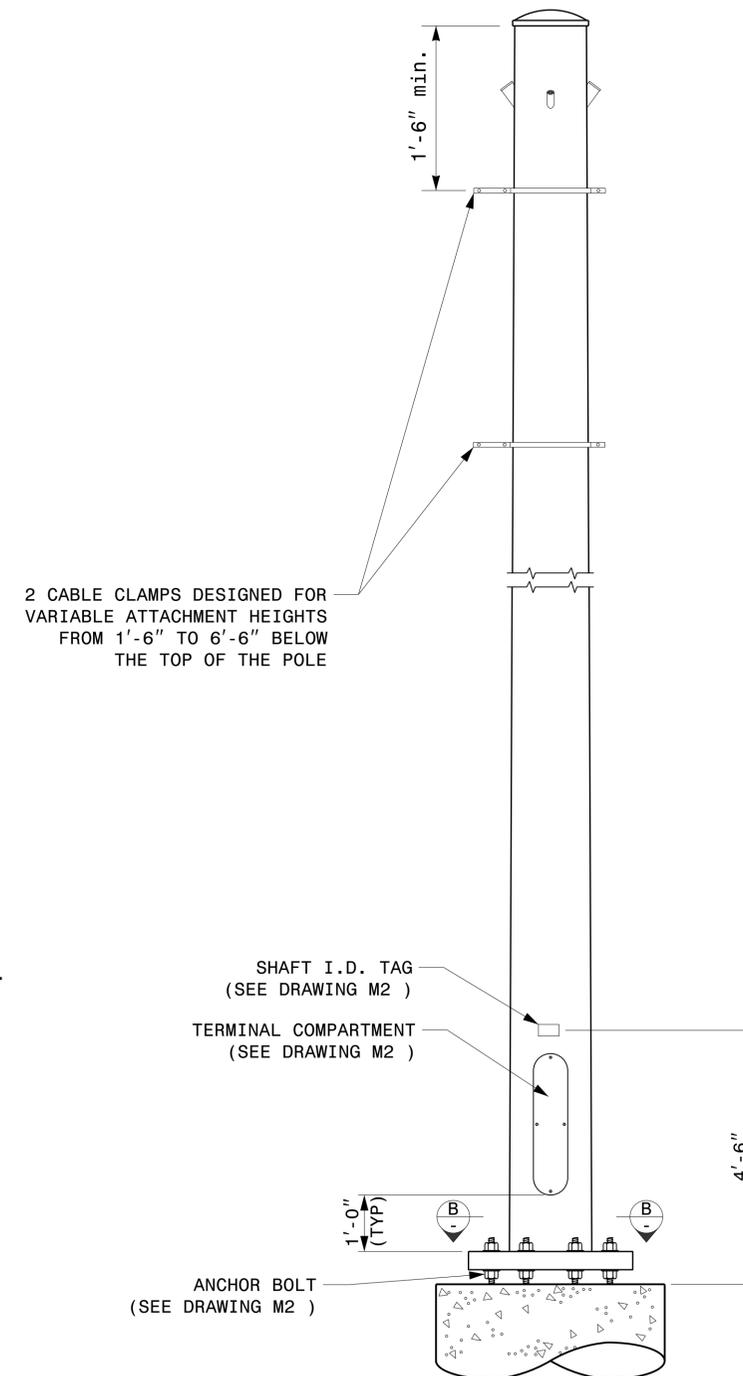


SECTION A-A

RADIAL ORIENTATION OF FACTORY INSTALLED ACCESSORIES AT TOP OF POLE



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



MONOTUBE STRAIN POLE

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: NA
NONE

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

SEAL

DocuSigned by:
Kevin Durigon
SIGNATURE

09/23/2023
DATE

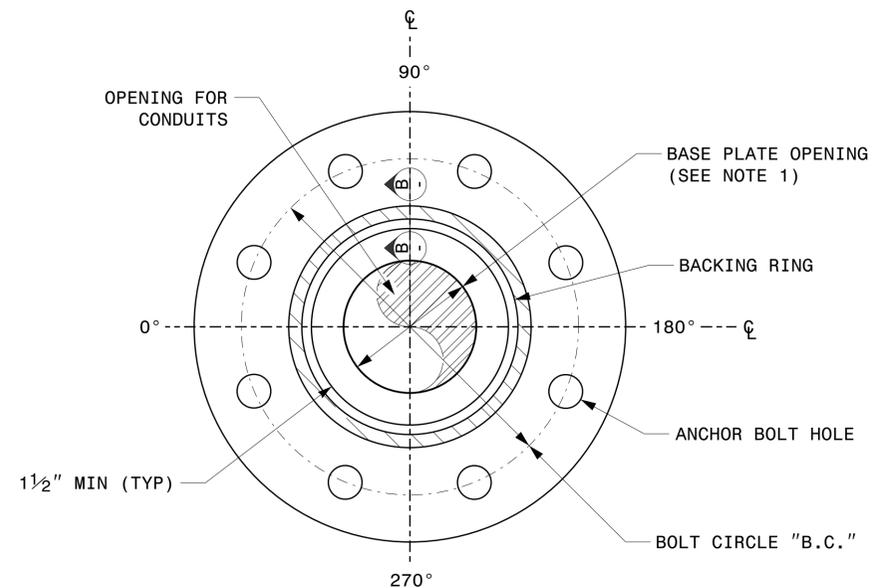
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Kedar Durigon

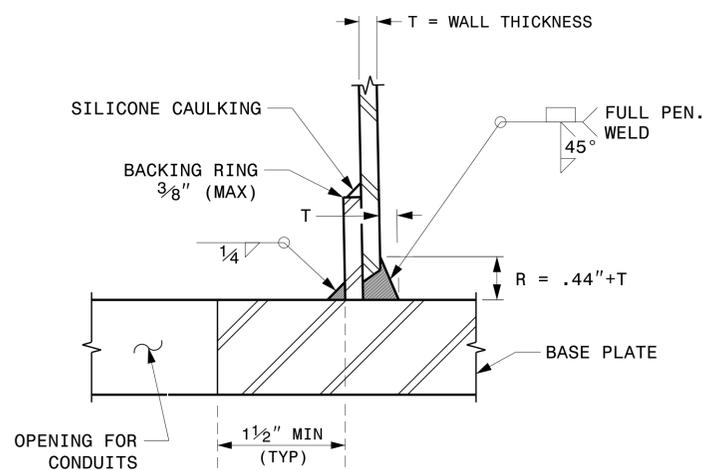
Fabrication Details - Strain Poles

NOTE:

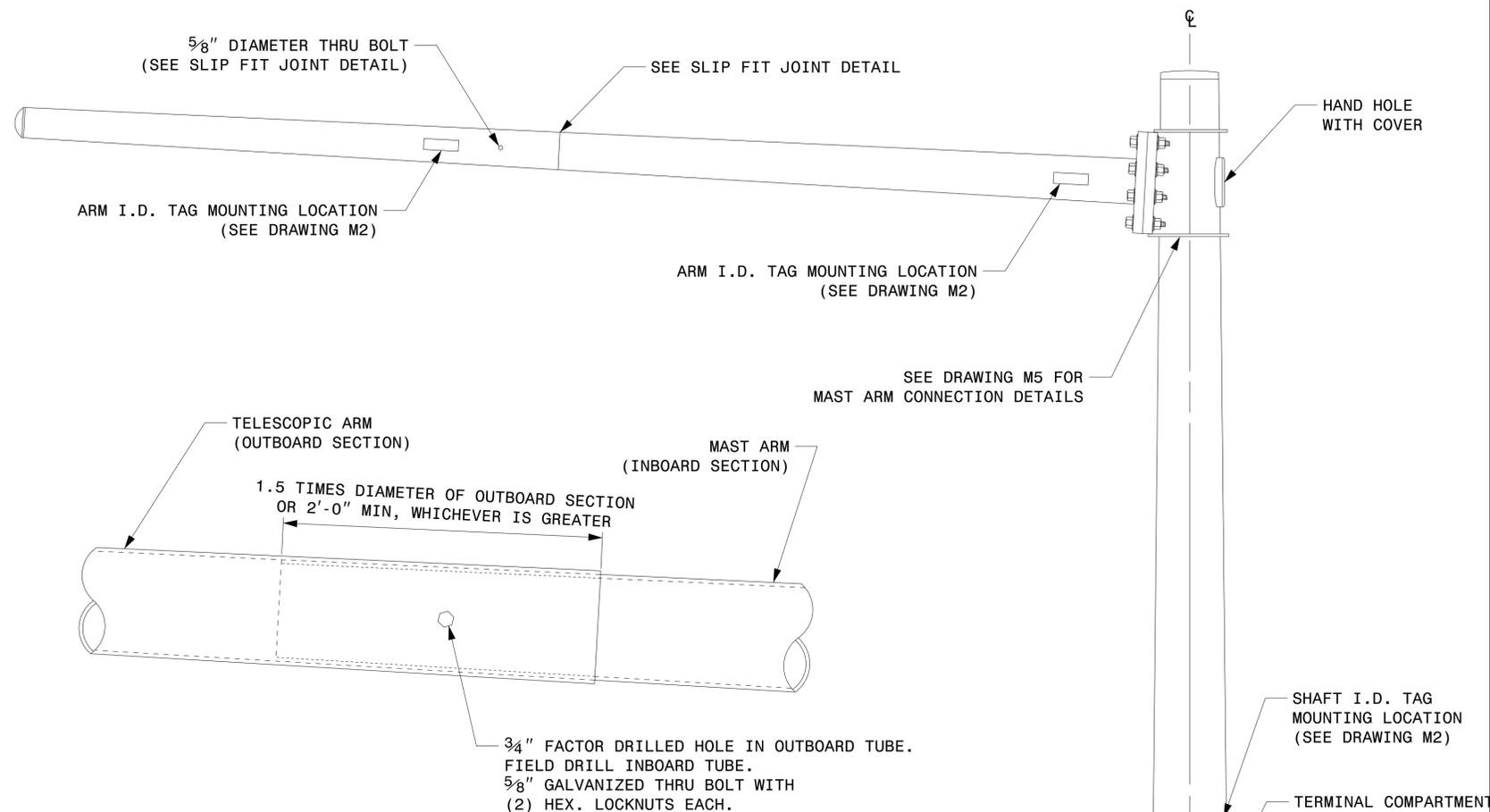
1. OPENING IN POLE BASE PLATE SHALL BE EQUAL TO POLE BASE INSIDE DIAMETER MINUS $3\frac{1}{2}$ " BUT SHALL NOT BE LESS THAN $8\frac{1}{2}$ ".



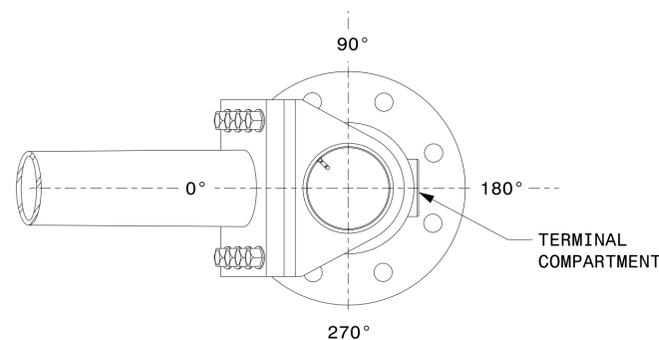
SECTION A-A
POLE BASE PLATE DETAILS



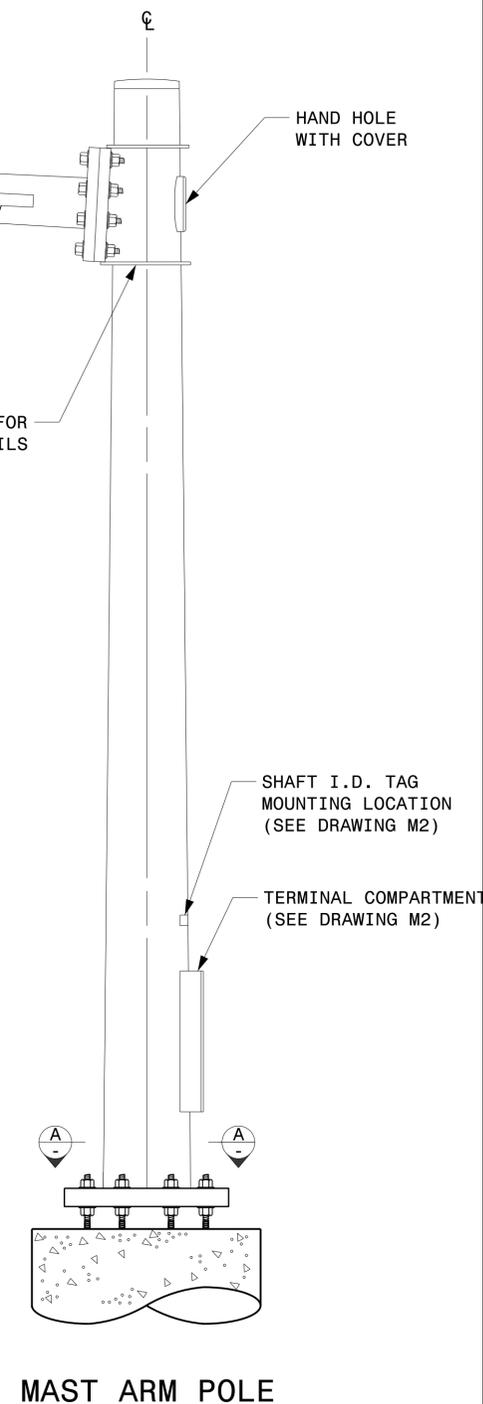
SECTION B-B
(POLE ATTACHMENT TO BASE PLATE)
FULL-PENETRATION
GROOVE WELD DETAIL



SLIP FIT JOINT DETAIL FOR MAST ARM



MAST ARM RADIAL ORIENTATION



MAST ARM POLE

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: NA
NONE

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

SEAL

DocuSigned by:
Kevin Durigon
09/21/2023

09-drt-2023-10-31E
S:\Projects\2023\10-31E\Sig.M4\15-Sig.M4\15-Sig.M4 Stru. Fabrication Details-Mast Arm Poles.dgn
Kedar Durigon

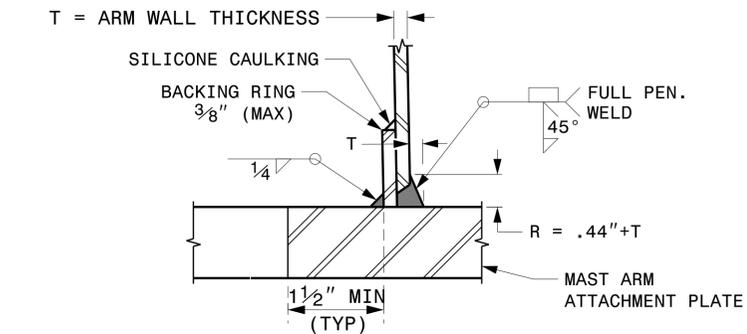
Fabrication Details – Mast Arm Poles

WELDED RING STIFFENED MAST ARM CONNECTION

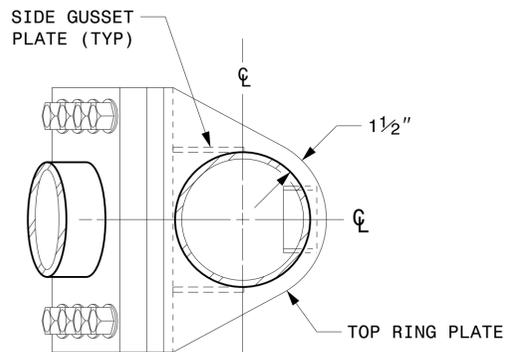
PROJECT I.D. NO.

SHEET NO.

Sig.M5



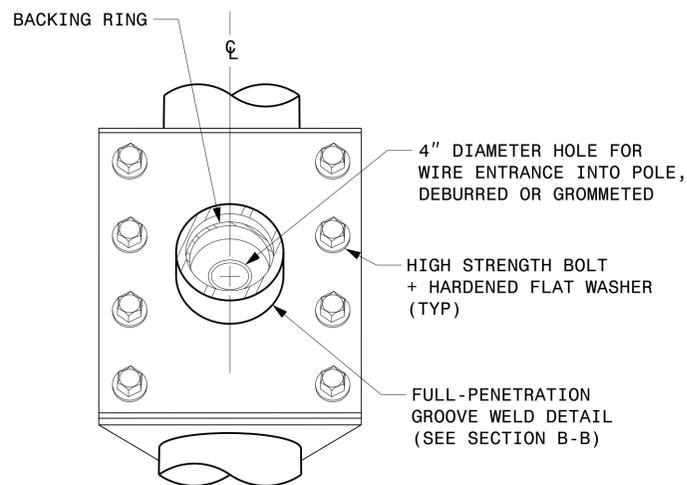
**SECTION B-B
FULL-PENETRATION GROOVE WELD DETAIL**



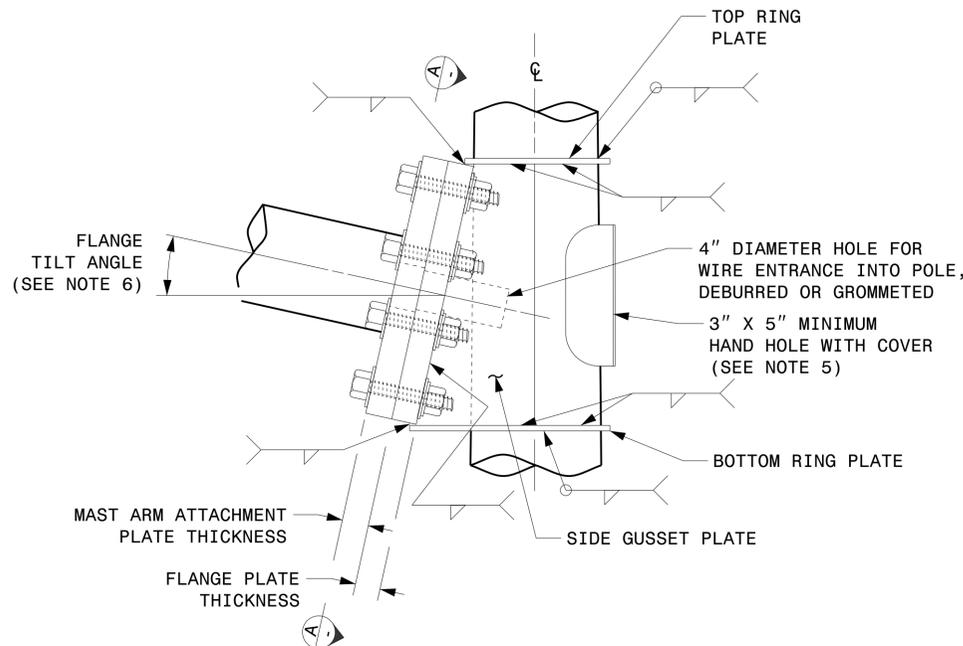
PLAN VIEW

NOTES:

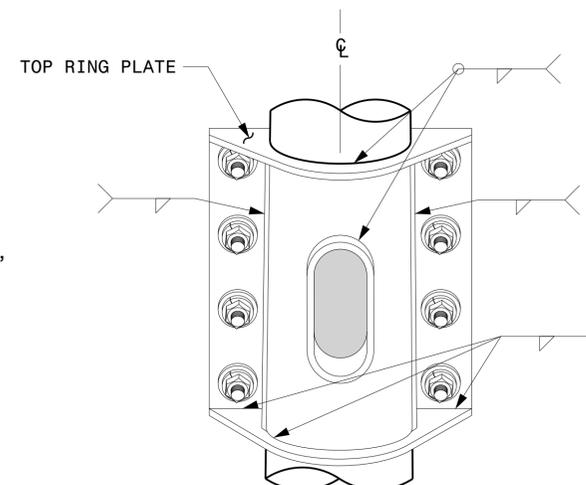
1. PROVIDE A PERMANENT MEANS OF IDENTIFICATION ABOVE THE MAST ARM TO INDICATE PROPER ATTACHMENT ORIENTATION OF THE MAST ARM.
2. DESIGNER WILL DETERMINE THE SIZE OF ALL STRUCTURAL COMPONENTS, PLATES, FASTENERS, AND WELDS SHOWN UNLESS THEY ARE ALREADY SPECIFIED.
3. FABRICATOR IS RESPONSIBLE FOR PROVIDING APPROPRIATE HOLES AT DRAINAGE POINTS TO DRAIN GALVANIZING MATERIALS.
4. FOR MINIMUM EDGE DISTANCE AND NOMINAL BOLT HOLE SIZE, FOLLOW THE LATEST AISC STEEL CONSTRUCTION MANUAL.
5. PROVIDE UPPER HANDHOLE AS NECESSARY WHEN SHAFT EXTENSIONS ARE REQUIRED FOR LUMINAIRE ARMS OR CAMERA. FOR POLES WITHOUT LUMINAIRES/CAMERA, WIRING CAN BE DONE THROUGH THE TOP OF POLE.
6. ALLOWABLE RANGE OF FLANGE TILT ANGLE WILL VARY FROM 0° TO AS REQUIRED.



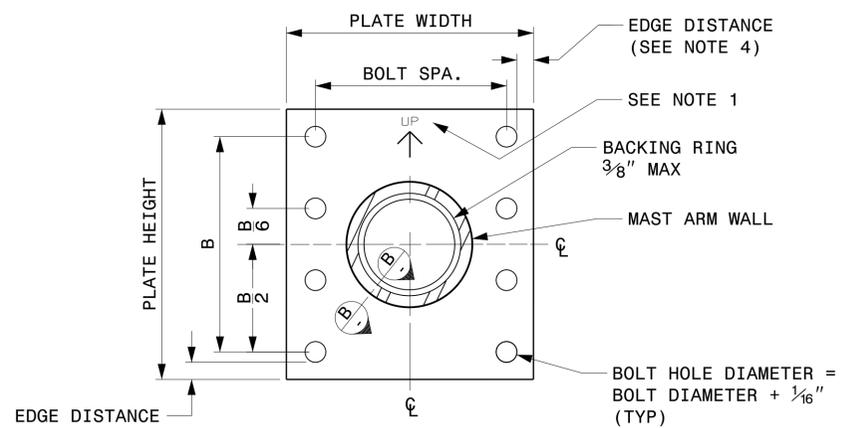
FRONT ELEVATION VIEW



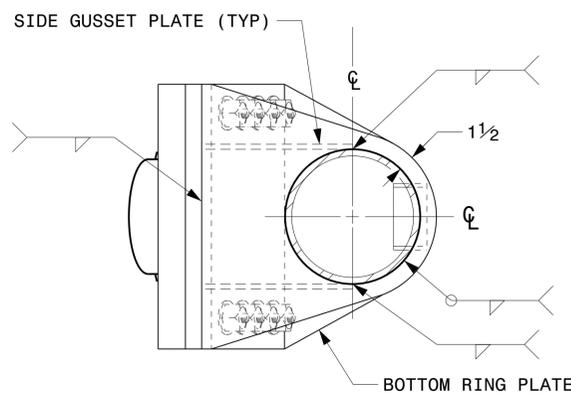
SIDE ELEVATION VIEW



BACK ELEVATION VIEW



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



BOTTOM VIEW

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: NA
NONE

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

SEAL

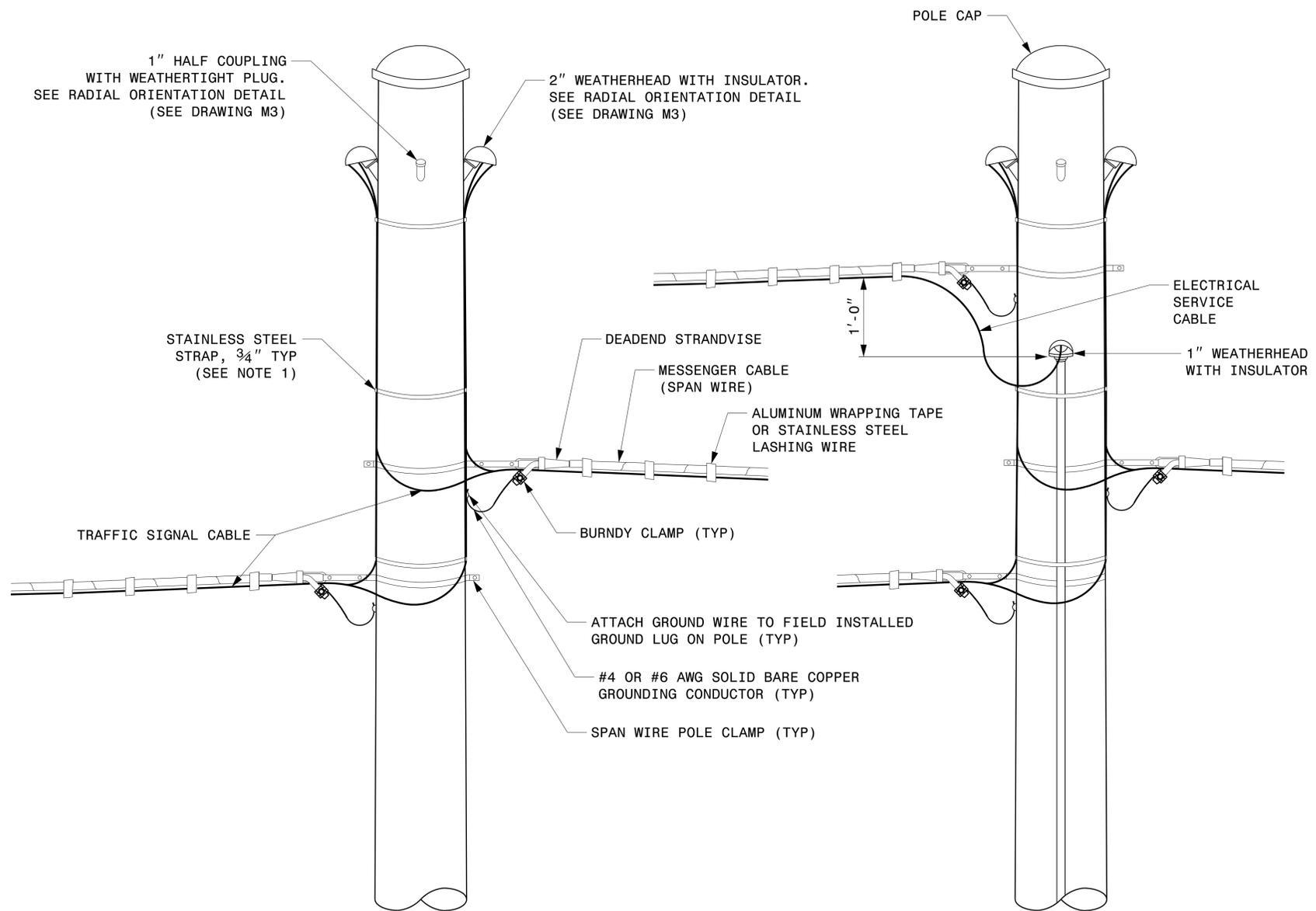
DocuSigned by:
Kevin Durigon
SIGNATURE

4B23DC79B3784DA

09/21/2023
DATE

03-dwt-2023-10-30
S:\Projects\Signal Design\Section\Structures\Drawings\2024\Merlot_Pole_Srd Drawings for LRF\2024_Sig.M5 Str. Connection Fabrication Detail\1-Mast Arm Poles.dgn
Kedar Tagon

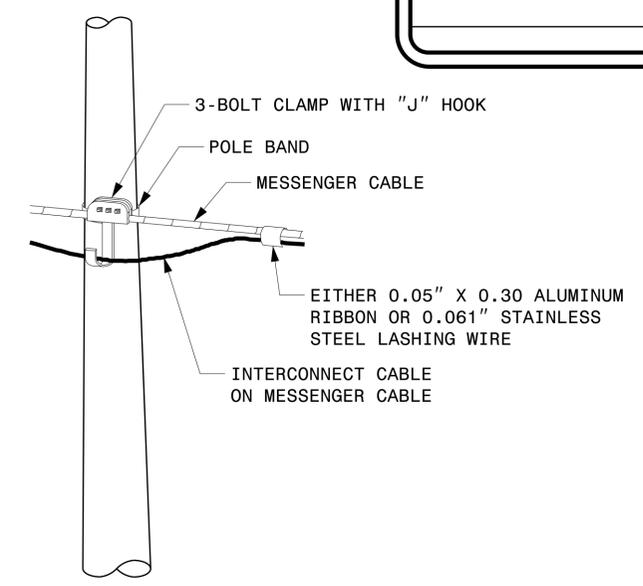
Fabrication Details – Mast Arm Connection



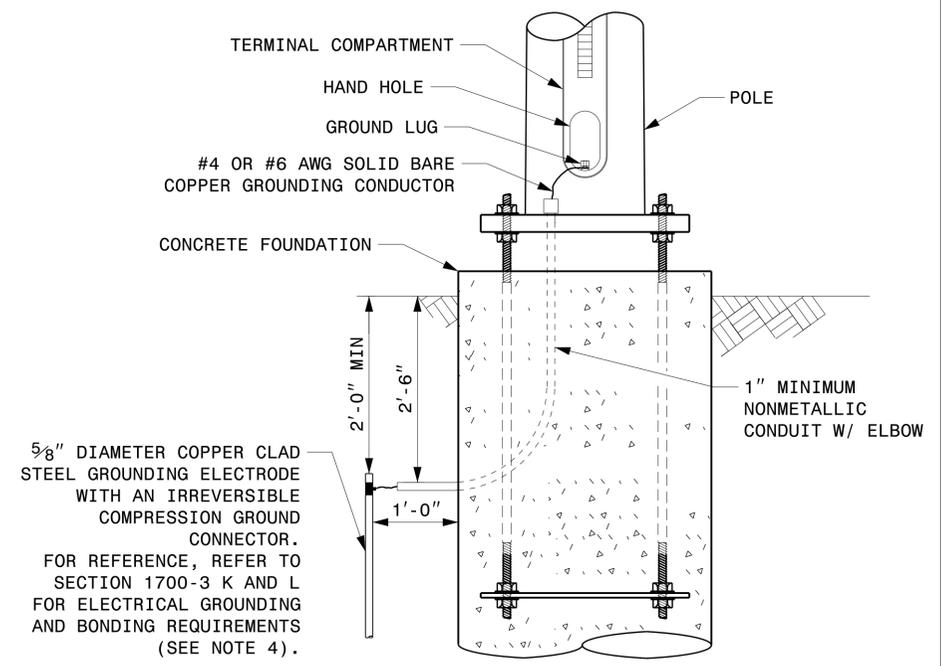
STRAIN POLE ATTACHMENTS

NOTES:

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



ATTACHMENT OF CABLE TO INTERMEDIATE METAL POLE



METAL POLE GROUNDING DETAIL FOR STRAIN POLE AND MAST ARM

03-dpt-2023-10-41
S:\ISS\04115\Sigal\Signal Design\Structures\Drawings\2024\Merol_Pole_Srd Drawings for LRF02024_Sig.M6 Str. Fabrication Details-Strain Poles.dgn
Kedar Tigon

Prepared in the Offices of:

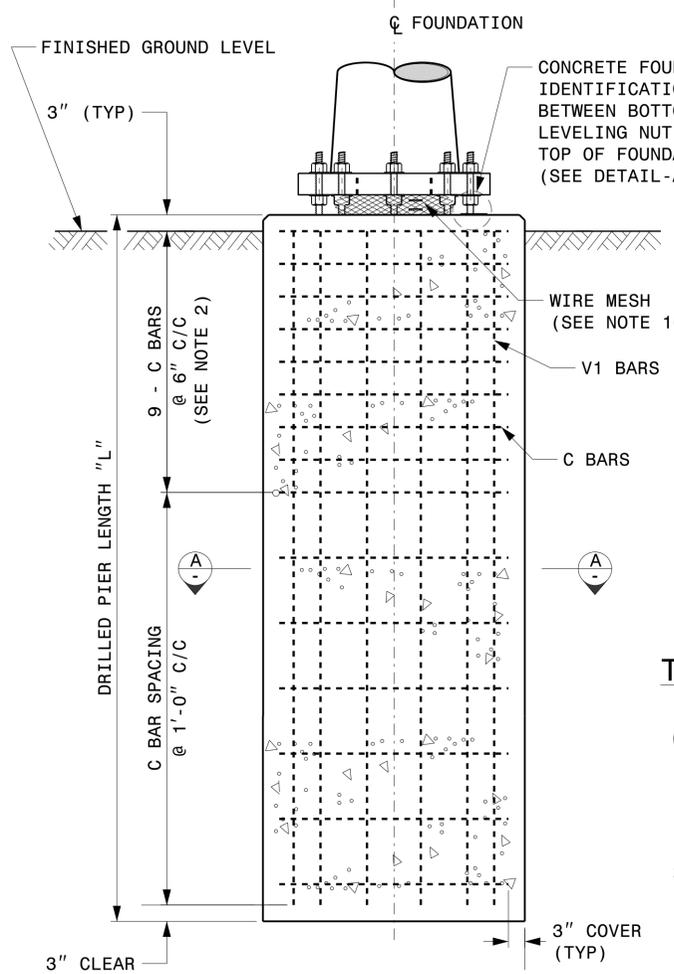
 750 N. Greenfield Pkwy, Garner, NC 27529
 SCALE: 0 NA NONE

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

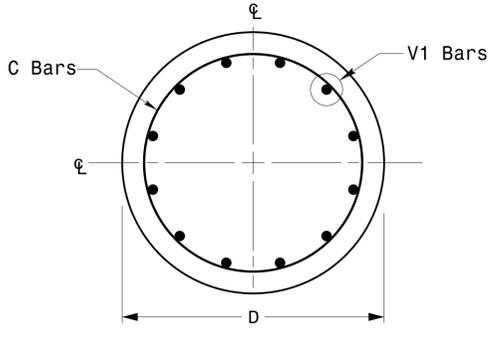
SEAL

 DocuSigned by:
 Kevin Durigon
 4B23DC79B3784DA
 09/21/2023
 DATE

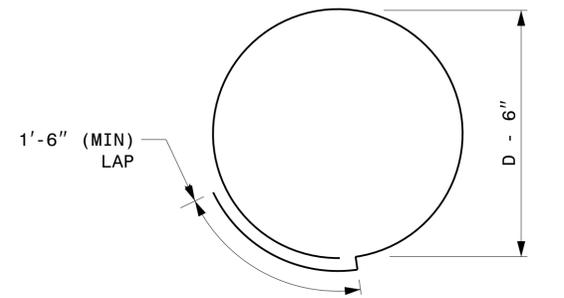
Fabrication Details – Strain Pole Attachments



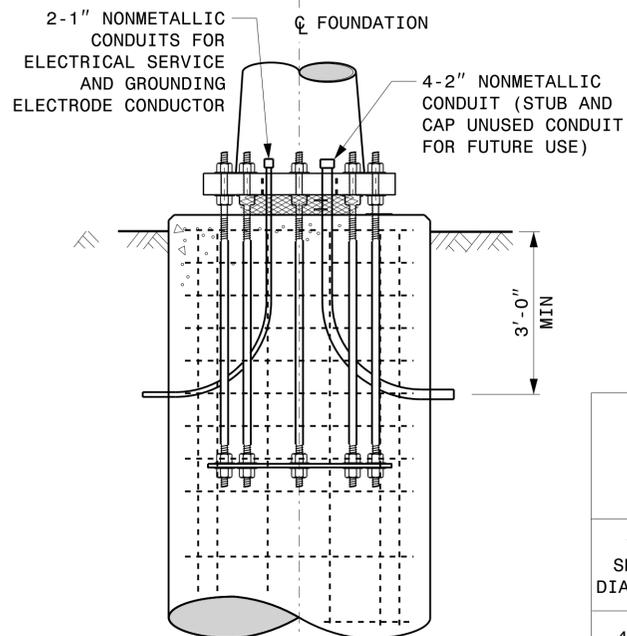
CONCRETE SHAFT ELEVATION



SECTION A-A



TYPICAL "C" BAR DETAIL



TYPICAL FOUNDATION CONDUIT DETAILS

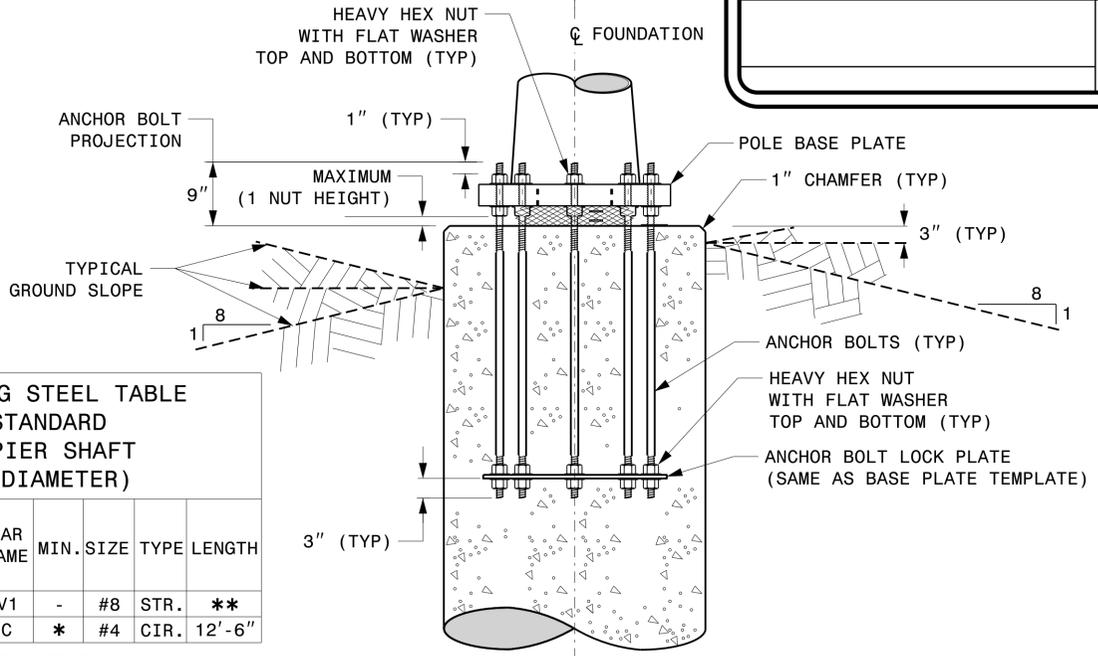
GENERAL NOTES:

- IF ACTUAL SUBSURFACE CONDITIONS DIFFER SIGNIFICANTLY FROM BORING DATA, CONTACT THE ENGINEER BEFORE EXCAVATING OR PLACING CONCRETE.
- CIRCULAR TIE REINFORCING RINGS MAY BE VERTICALLY ADJUSTED BY +/-3" AT A DEPTH BETWEEN 2'-0" AND 3'-0" TO FACILITATE THE INSTALLATION OF ELECTRICAL CONDUIT ENTERING IN THE CAGE.
- FOR STANDARD FOUNDATIONS, SEE SHEET SIG. M8 FOR DETAILS. VERTICAL REINFORCING BARS (V1) MAY BE HORIZONTALLY ADJUSTED BY +/-3" TO FACILITATE THE INSTALLATION OF ELECTRICAL CONDUIT ENTERING INTO THE CAGE.
- PROVIDE 2" TO 5" FOUNDATION PROJECTION ABOVE GROUND LEVEL, DEPENDING ON THE GROUND SLOPE.
- UNLESS OTHERWISE SHOWN, FOUNDATION DESIGNS ARE BASED ON NON-SLOPING LEVEL GROUND SURFACES WITH SLOPE RATIOS OF 8:1 (H:V) OR FLATTER. IF ACTUAL GROUND LINE SLOPES ARE STEEPER, CONTACT THE ENGINEER BEFORE EXCAVATING OR PLACING CONCRETE.
- CONSTRUCT FOUNDATIONS IN ACCORDANCE WITH NCDOT STANDARD PROVISIONS SP09 R005- FOUNDATIONS AND ANCHOR ROD ASSEMBLIES FOR METAL POLES. ALL APPLICABLE 2024 NCDOT STANDARD SPECIFICATIONS ARE REFERENCED IN THIS PROVISION. REFER TO THE NCDOT RESOURCES/SPECIFICATIONS PAGE LOCATED ON THE CONNECT NCDOT WEBSITE.
[https://connect.ncdot.gov/resources/Specifications and Special Provisions.aspx](https://connect.ncdot.gov/resources/Specifications%20and%20Special%20Provisions.aspx)
- USE AIR ENTRAINED AA CONCRETE MIX WITH A COMPRESSION STRENGTH OF $f'c=4500$ psi (MIN) AFTER 28 DAYS.
- USE ASTM A615 GRADE 60 DEFORMED BARS FOR ALL REINFORCING STEEL. MAINTAIN AT LEAST 3" COVER ON ALL REINFORCEMENT.
- LOCATE IDENTIFICATION TAG ON TOP OF THE FOUNDATION, DIRECTLY ABOVE THE CONDUIT'S ENTRY POINT.
- PROVIDE TWO LAYERS OF 4 MESH GALVANIZED WELDED 23 GAUGE (0.025) 6" WIDE AROUND PIPES UNDER THE BASE PLATE AND SECURE IT WITH TIES IF NECESSARY.
- PREFERRED LOCATION FOR THE I.D. TAG IS AS SHOWN IN DETAIL-A: DIRECTLY ABOVE THE CONDUIT ENTERING THE FOUNDATION.

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

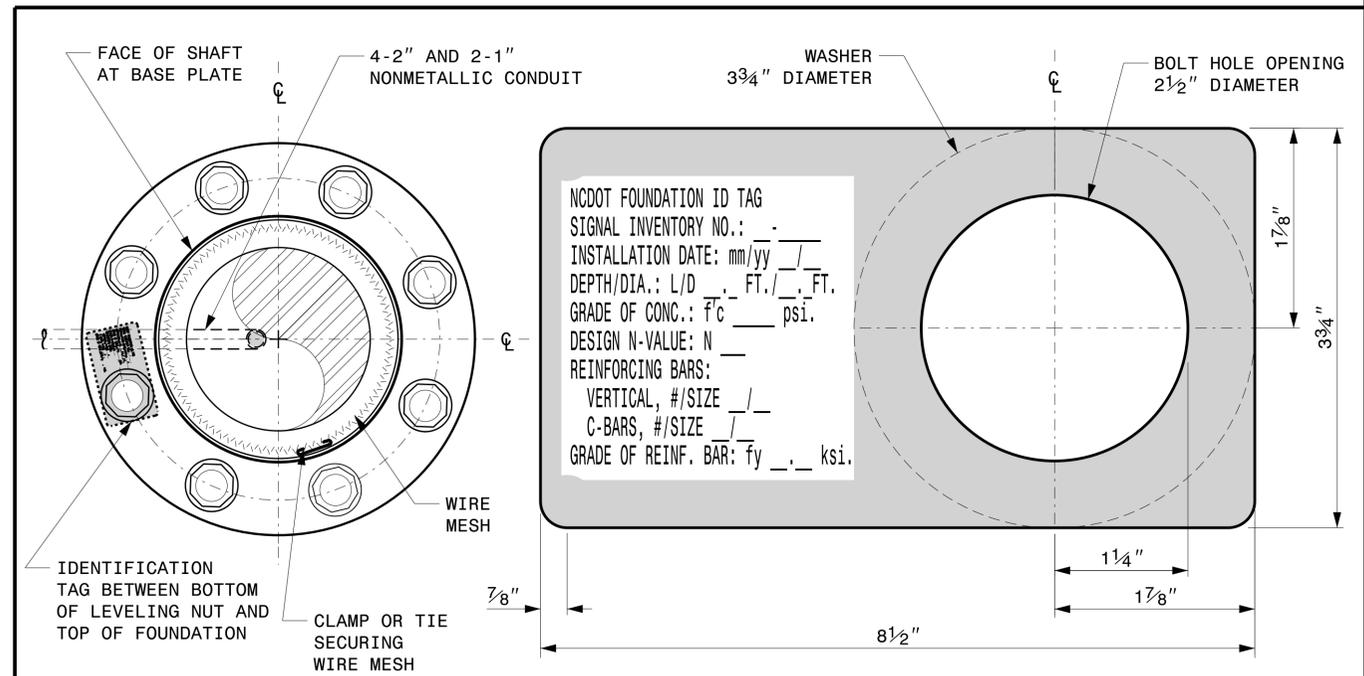
"D" SHAFT DIAMETER	CONCRETE VOLUME (CU. YDS)	BAR NAME	MIN. SIZE	TYPE	LENGTH
4'-0"	.465 X L	V1	#8	STR.	**
		C	#4	CIR.	12'-6"

* SEE NOTE 2
** SEE NOTE 3



TYPICAL FOUNDATION ANCHOR BOLT DETAILS

(REINFORCING CAGE NOT SHOWN FOR CLARITY)



CONCRETE FOUNDATION IDENTIFICATION TAG DETAILS

D = DIAMETER
L = LENGTH / DEPTH
mm = MONTH
yy = YEAR

DETAIL-A

Prepared In the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: NA
NONE

Construction Details For Foundations

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

REVISIONS	INIT.	DATE

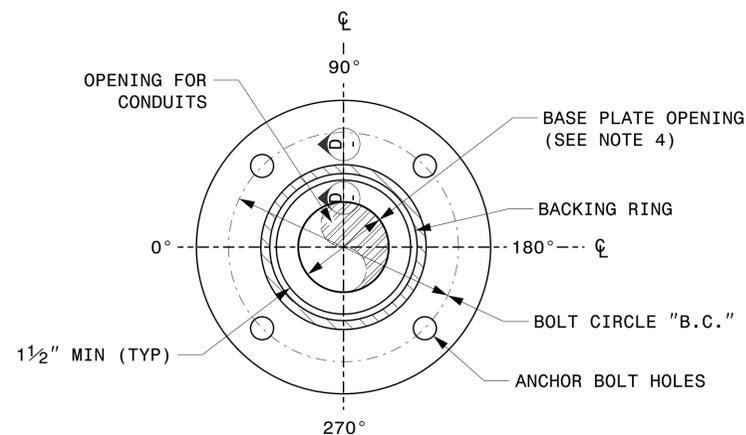
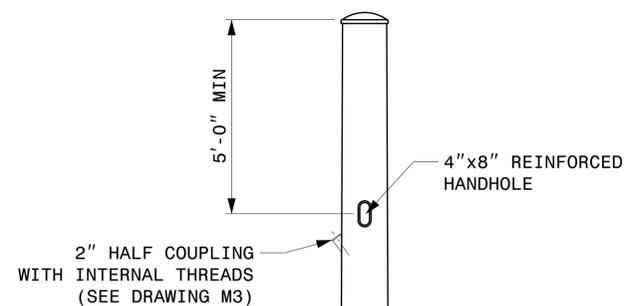
SEAL

DocuSigned by:
Kevin Durigon
4B23DC78F3784DA

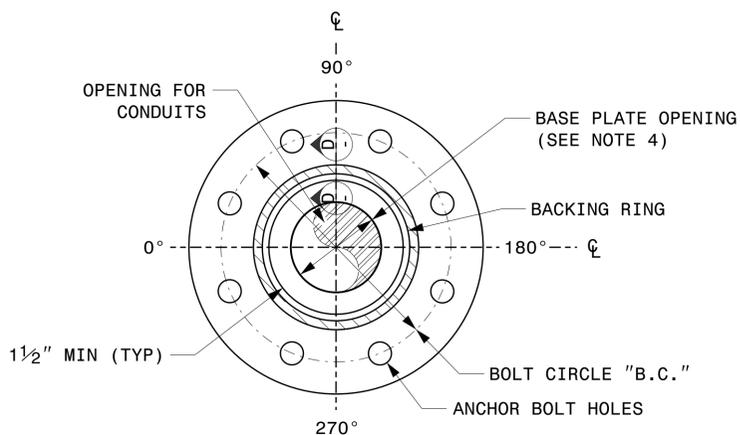
09/21/2023 DATE

03-dt-2023-10-4f S:\SS\0415\Sig.M7.Stu. Construction Details-Strain Poles.dgn Kedar Tigon

Construction Details - Foundations

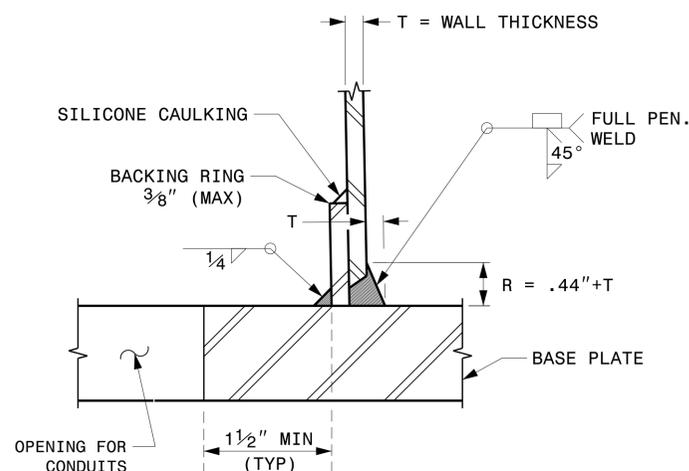


4 BOLT PATTERN FOR POLES UP TO 40'

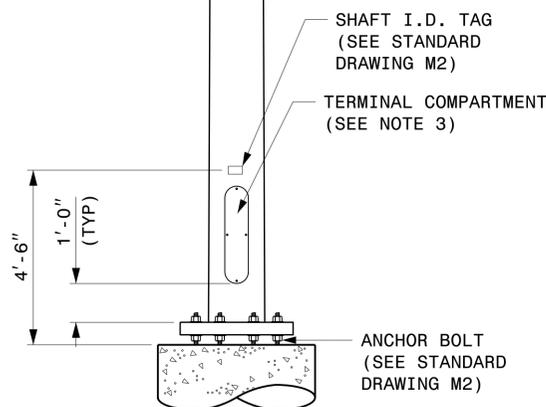


8 BOLT PATTERN FOR POLES TALLER THAN 40'

BASE PLATE DETAILS



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



CCTV CAMERA POLE
(NOT TO SCALE)

NOTES:

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

02-dct-2023-10-151
S:\ISSUES\415 Signal\Signal Design\Structures\Drawings\2024 Merit Pole Std Drawings for LRF02024 Sig.M9 Fabrication Details - CCTV Poles.dgn
Kedar Tigon

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: 0 NA NONE

Typical Fabrication Details For CCTV Poles

PLAN DATE: SEPTEMBER 2023	DESIGNED BY: K.C. DURIGON
PREPARED BY: K.C. DURIGON	REVIEWED BY: C.F. ANDREWS
REVISIONS	INIT. DATE

SEAL

DocuSigned by:
Kevin Durigon
4B23DC79B3784DA

09/21/2023
DATE

Fabrication Details – CCTV Camera Poles

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

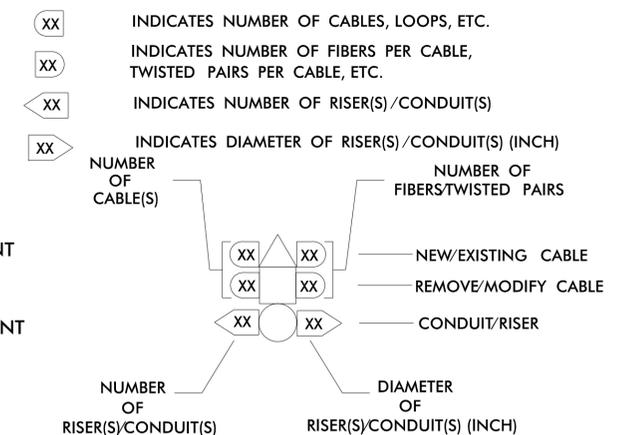
- 34 INSTALL CABINET FOUNDATION
- 35 INSTALL CCTV CAMERA POLE MOUNTED CABINET
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40A INSTALL OVERSIZED JUNCTION BOX
- 40B INSTALL SPECIAL OVERSIZED JUNCTION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

LEGEND

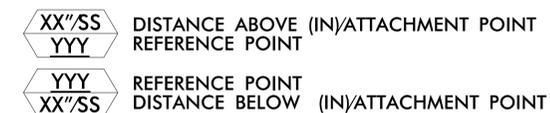
	FO	NEW FIBER OPTIC COMMUNICATIONS CABLE
	EXI	EXISTING COMMUNICATIONS CABLE
	REM	EXISTING COMMUNICATIONS CABLE TO BE REMOVED
		NEW AERIAL GUY ASSEMBLY
		NEW CONDUIT
		EXISTING CONDUIT
	DD	NEW DIRECTIONAL DRILLED CONDUIT

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

CONSTRUCTION NOTE SYMBOLOGY KEY



ATTACHMENT POINT:



"SS" REFERENCE LOCATION
 FS = FRONT SIDE OF POLE
 BS = BACK SIDE OF POLE

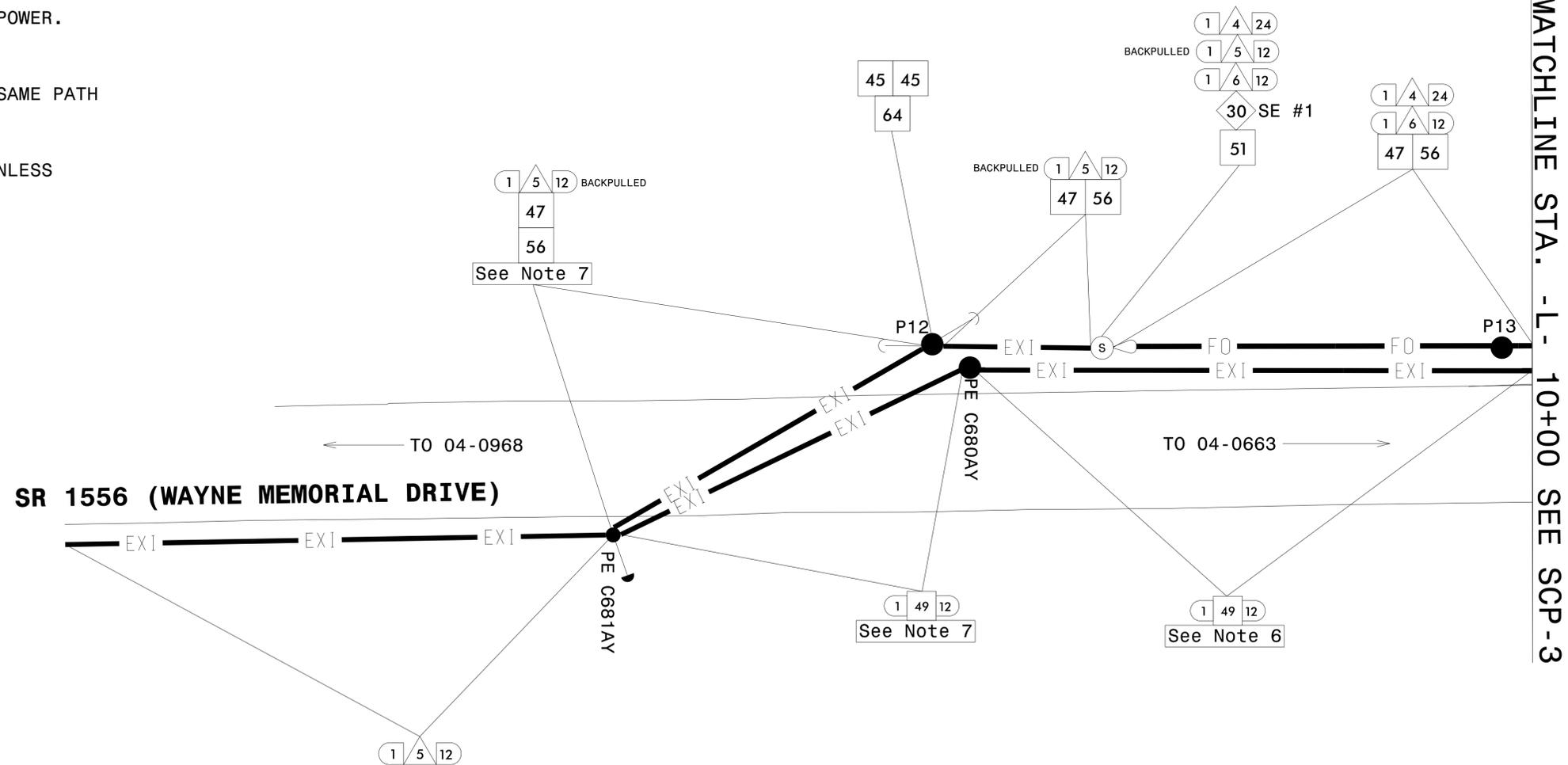
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

	Goldsboro Signal System CONSTRUCTION NOTES		
	Division 4 Wayne County Goldsboro	PLAN DATE: October 2025 REVIEWED BY: G. G. Murr, Jr.	
PREPARED BY: Nadia Degbotse		REVISIONS INIT. DATE	
750 N. Greenfield Pkwy., Garner, NC 27529		Signed by: <i>Gene G. Murr, Jr.</i> 10/3/2025	

Notes

1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE DIVISION 4 DEPUTY DIVISION TRAFFIC ENGINEER AT (252)640-6500 IN CASE IT BECOMES NECESSARY TO RE-PROGRAM THE EXISTING FIELD ETHERNET SWITCHES WITH THE NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE ENGINEER AFTER ALL WOK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL. THE SYSTEM MUST BE BACK UP AND OPERATIONAL IN 48 HOURS.
2. INSTALL NEW MESSENGER CABLE AND NEW FIBER OPTIC CABLES BEFORE TAKING EXISTING FIBER OPTIC CABLES OUT OF SERVICE.
3. UNLESS OTHERWISE NOTED:
 - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
 - ATTACH ON FRONT SIDE (FS) OF POLE.
4. FOR NEW FIBER OPTIC CABLES, FOLLOW THE SAME PATH AS DUKE ENERGY POWER LINES.
5. ALL POLES SHOWN ARE DUKE ENERGY POLES UNLESS LABELLED OTHERWISE.

6. CUT EXISTING 12-FIBER CABLE NEAR POLE P13, DELASH FROM EXISTING STUBBED OUT POLE PE C680AY, BACKPULL, AND COIL AT THE TOP OF NEW DUKE ENERGY POLE P12. REMOVE OLD MESSENGER CABLE AFTER 12-FIBER CABLE HAS BEEN TRANSFERRED TO NEW POLE.
7. ATTACH NEW MESSENGER CABLE FROM DUKE ENERGY POLE P12 TO EXISTING DUKE ENERGY POLE PE C681AY. LASH EXISTING 12-FIBER CABLE TO NEW MESSENGER CABLE CROSSING WAYNE MEMORIAL DRIVE AND REMOVE OLD MESSENGER CABLE AND OLD DUKE ENERGY POLE PE C680AY.



10/3/2025
 C:\DMAIN\CATT\ONSU-4753scp2.dgn
 USER:dbfou11

TRANSYSTEMS
 1 Glenwood Avenue
 Raleigh, NC 27603
 Tel:919.789.9977
 Fax:919.789.9591
 License: F-0453

Prepared for the Offices of:

 750 N. Greenfield Pkwy, Garner, NC 27529
 SCALE: N/A

GOLDSBORO SIGNAL SYSTEM
 Communication Cable
 and Conduit Routing Plan

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.

PREPARED BY: Nadia Degbotse REVIEWED BY:

REVISIONS	INIT.	DATE

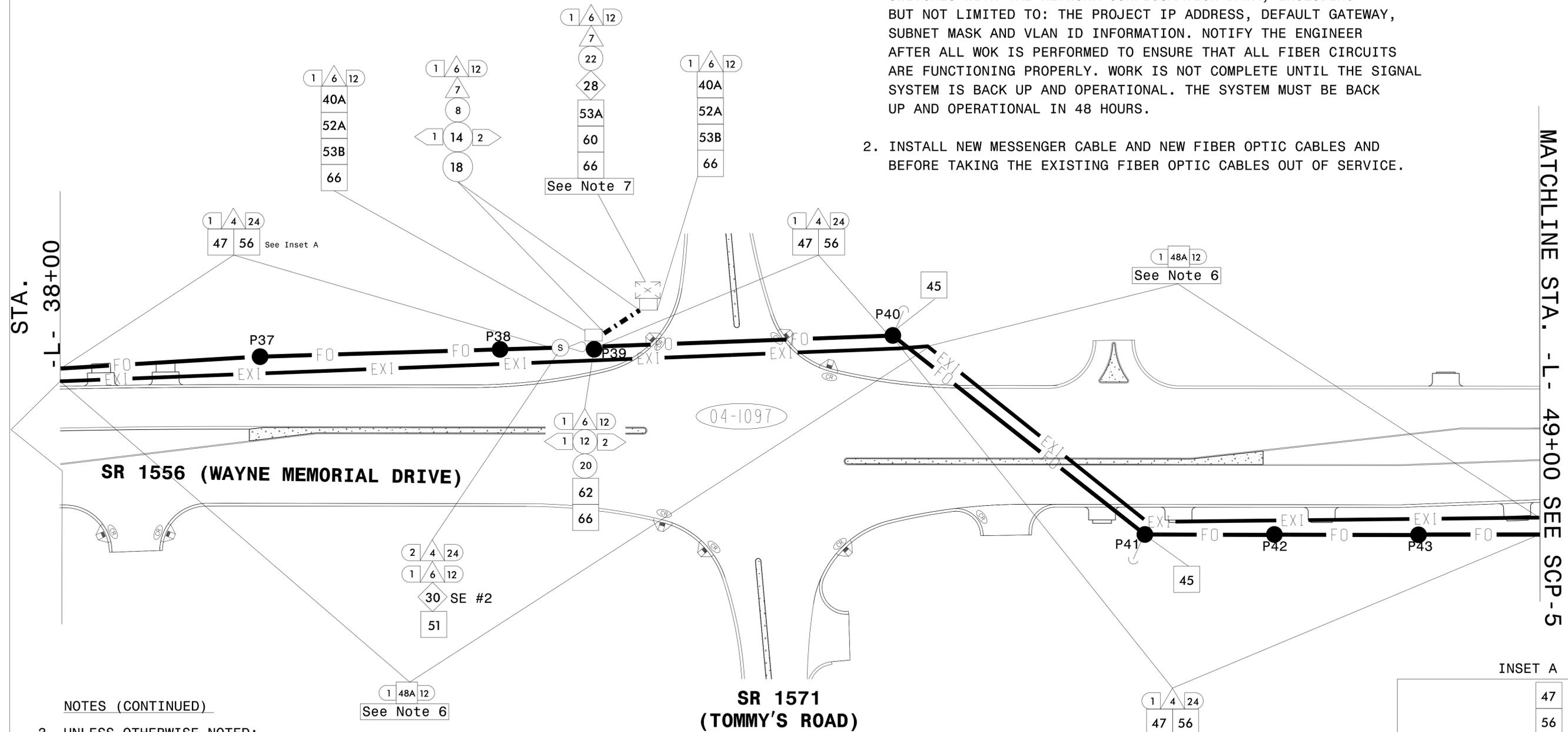
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SEAL
 NORTH CAROLINA
 PROFESSIONAL
 SEAL
 14543
 ENGINEER
 GENE G. MURR, JR.

Signed by: Gene G. Murr, Jr.
 AABF5076CAB34CF 10/3/2025

NOTES

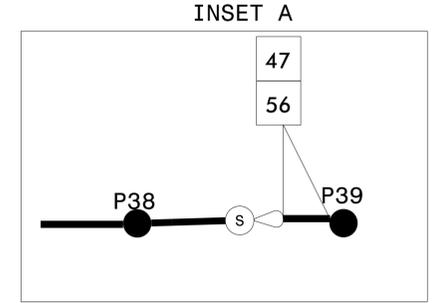
1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE DIVISION 4 DEPUTY DIVISION TRAFFIC ENGINEER AT (252)640-6500 IN CASE IT BECOMES NECESSARY TO RE-PROGRAM THE EXISTING FIELD ETHERNET SWITCHES WITH THE NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE ENGINEER AFTER ALL WOK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL. THE SYSTEM MUST BE BACK UP AND OPERATIONAL IN 48 HOURS.
2. INSTALL NEW MESSENGER CABLE AND NEW FIBER OPTIC CABLES AND BEFORE TAKING THE EXISTING FIBER OPTIC CABLES OUT OF SERVICE.



MATCHLINE STA. -L- 49+00 SEE SCP-5

NOTES (CONTINUED)

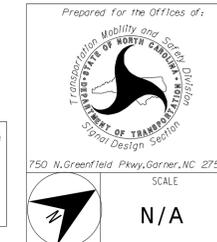
3. UNLESS OTHERWISE NOTED:
 - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
 - ATTACH ON FRONT SIDE (FS) OF POLE.
4. FOR NEW FIBER OPTIC CABLES, FOLLOW THE SAME PATH AS DUKE ENERGY POWER LINES.
5. ALL POLES SHOWN ARE DUKE ENERGY POLES UNLESS LABELLED OTHERWISE.
6. STUBBED OFF DUKE ENERGY POLES TO REMOVED BY OTHERS.
7. REINSTALL EXISTING ETHERNET SWITCH.
8. EXISTING COMMUNICATIONS AND MESSEGENEGER CABLE BETWEEN -L- STA. 21+00 AND -L- STA. 38+00 TO BE REMOVED AND NEW 24" FIBER OPTIC CABLE TO BE INSTALLED ON NEW DUKE ENERGY POLES.



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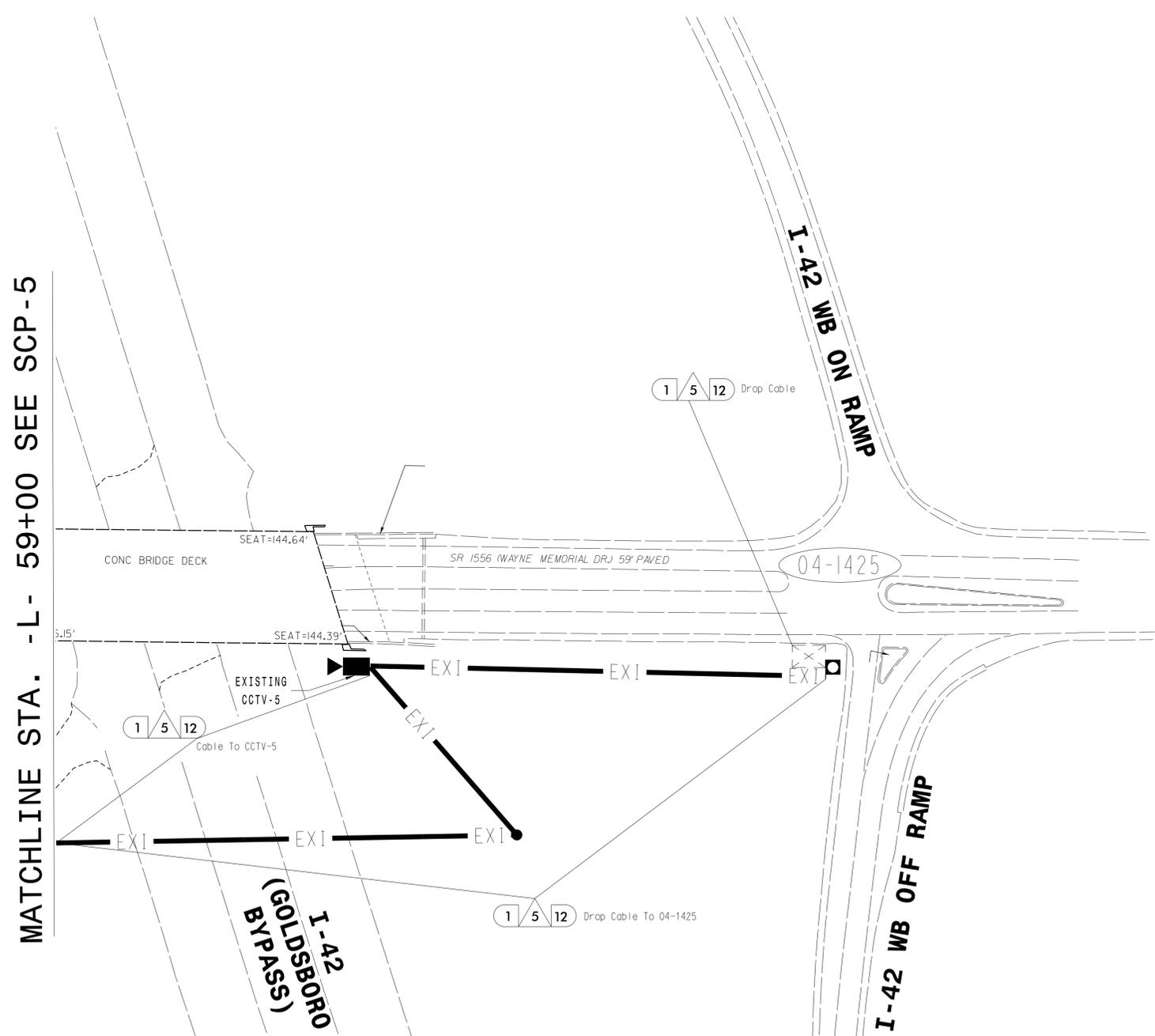
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USER:dbfou11

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License: F-0453



Prepared for the Office of:		GOLDSBORO SIGNAL SYSTEM Communication Cable and Conduit Routing Plan	
Division 4	Wayne County	Goldsboro	
PLAN DATE: October 2025	REVIEWED BY: G.G. Murr, Jr.		
PREPARED BY: Nadia Degbotse	REVIEWED BY:		
REVISIONS	INIT.	DATE	

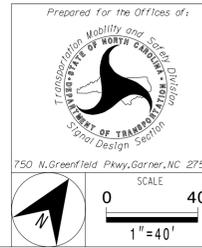
Signed by: *G. G. Murr, Jr.*
10/3/2025



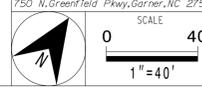
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GOLDSBORO SIGNAL SYSTEM Communication Cable and Conduit Routing Plan	
Division 4	Wayne County
Goldboro	
PLAN DATE: October 2025	REVIEWED BY: G.G. Murr, Jr.
PREPARED BY: Nadia Degbotse	REVIEWED BY:
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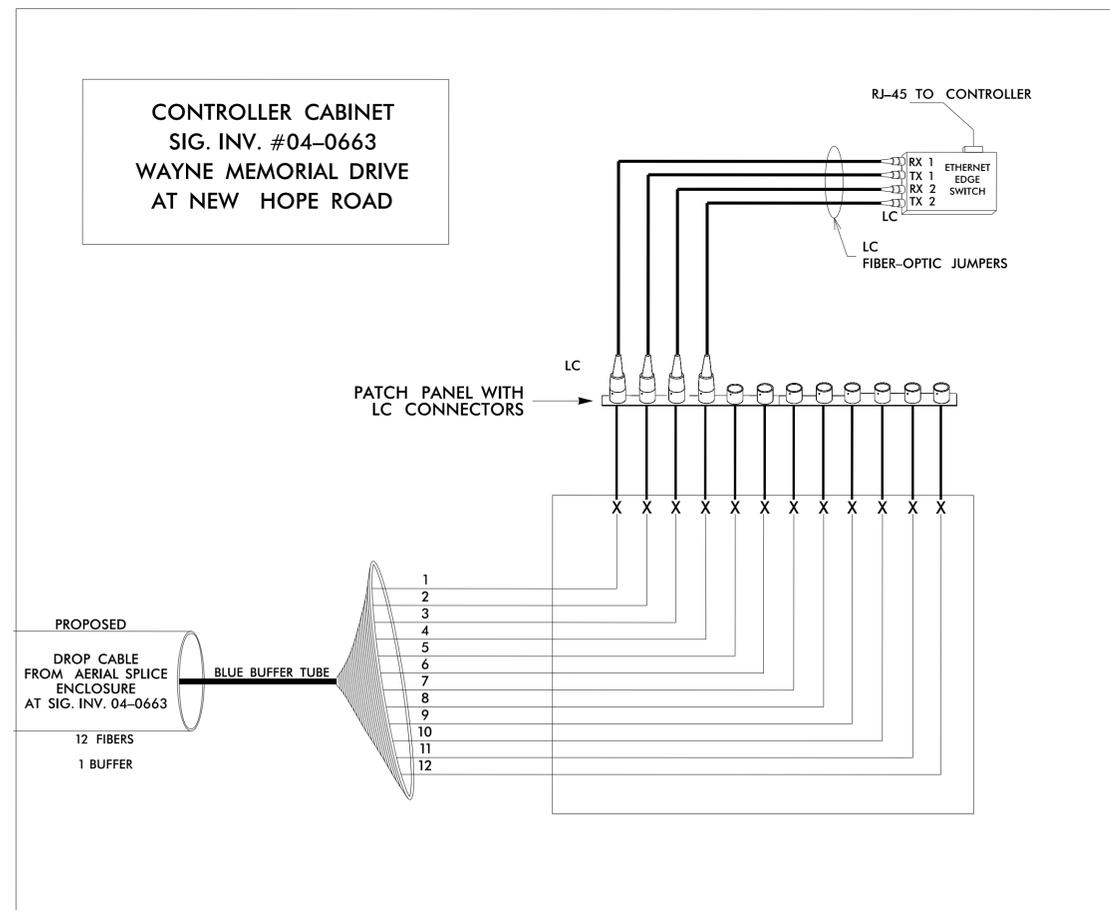
NOTES

- 1) FIVE DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE DIVISION 4 DEPUTY DIVISION TRAFFIC ENGINEER AT (252) 640-6500 TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE DEPUTY DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
- 2) CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.
- 3) ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND ENSURING PROPER TERMINATIONS.
- 4) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING: REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"
 - a) SPLICE LOCATION
 - b) DATE
 - c) COMPANY NAME
 - d) NAME OF INDIVIDUAL PERFORMING THE SPLICING
- 5) 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.
- 6) UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY
- 7) UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE

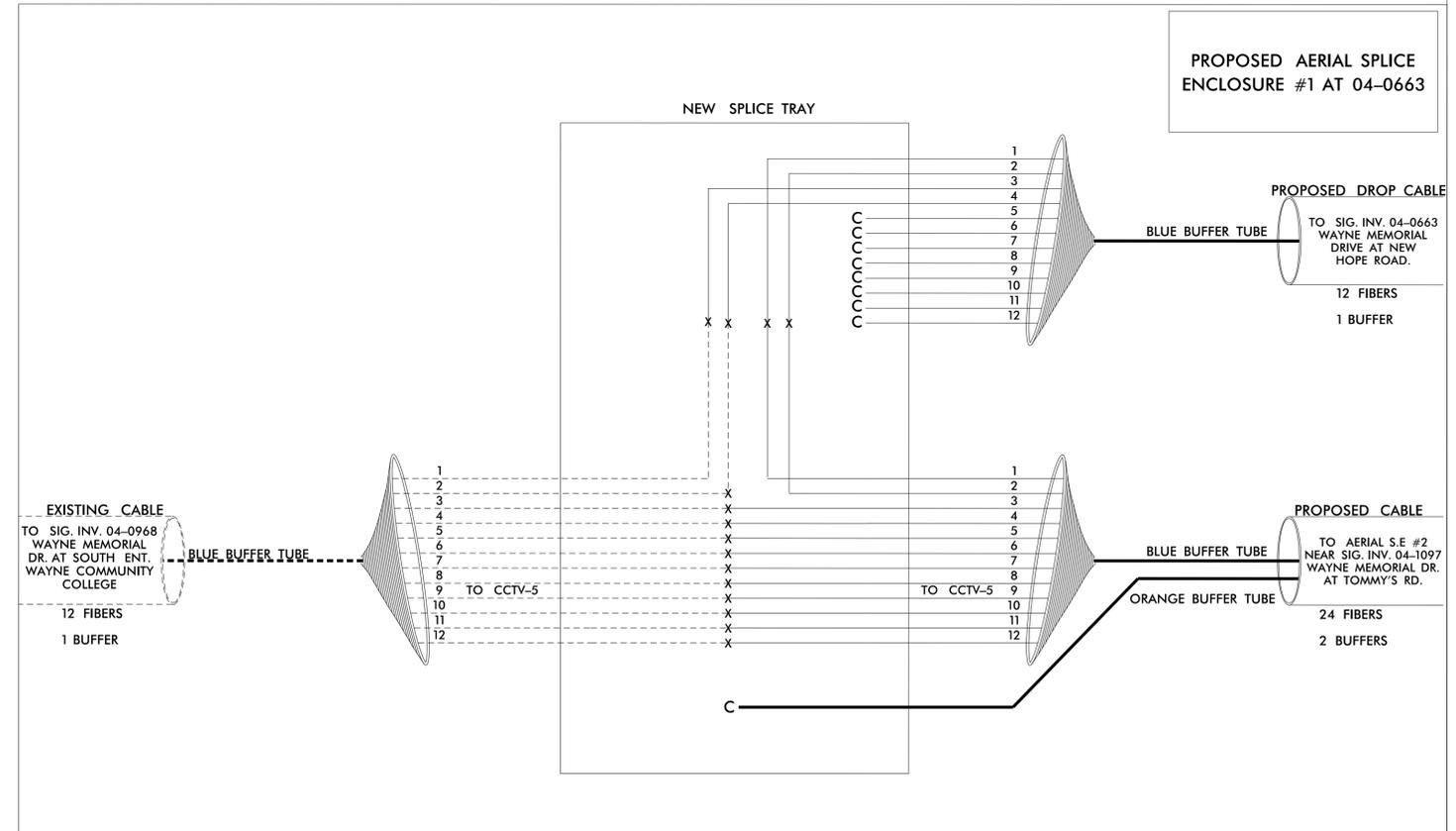
LEGEND

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

- X = FUSION SPLICE INDIVIDUAL FIBER
 C = CAP AND SEAL
- EXPRESS** = EXPRESS ENTIRE BUFFER TUBE /FIBERS THROUGH WITHOUT CUTTING
- BUFFER SPLICE** = SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR



SEE SHEET SCP-2

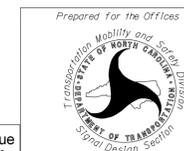


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750 N. Greenfield Pkwy, Garner, NC 27529

SCALE
N/A

GOLDSBORO SIGNAL SYSTEM

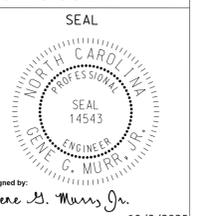
SPLICE DETAILS

Division 4 Wayne County Goldsboro

PLAN DATE: October 2025 REVIEWED BY: G.G. Murr, Jr.

PREPARED BY: Nadia Degbotse REVIEWED BY:

REVISIONS INIT. DATE



Signed by: Gene G. Murr, Jr.
 10/3/2025

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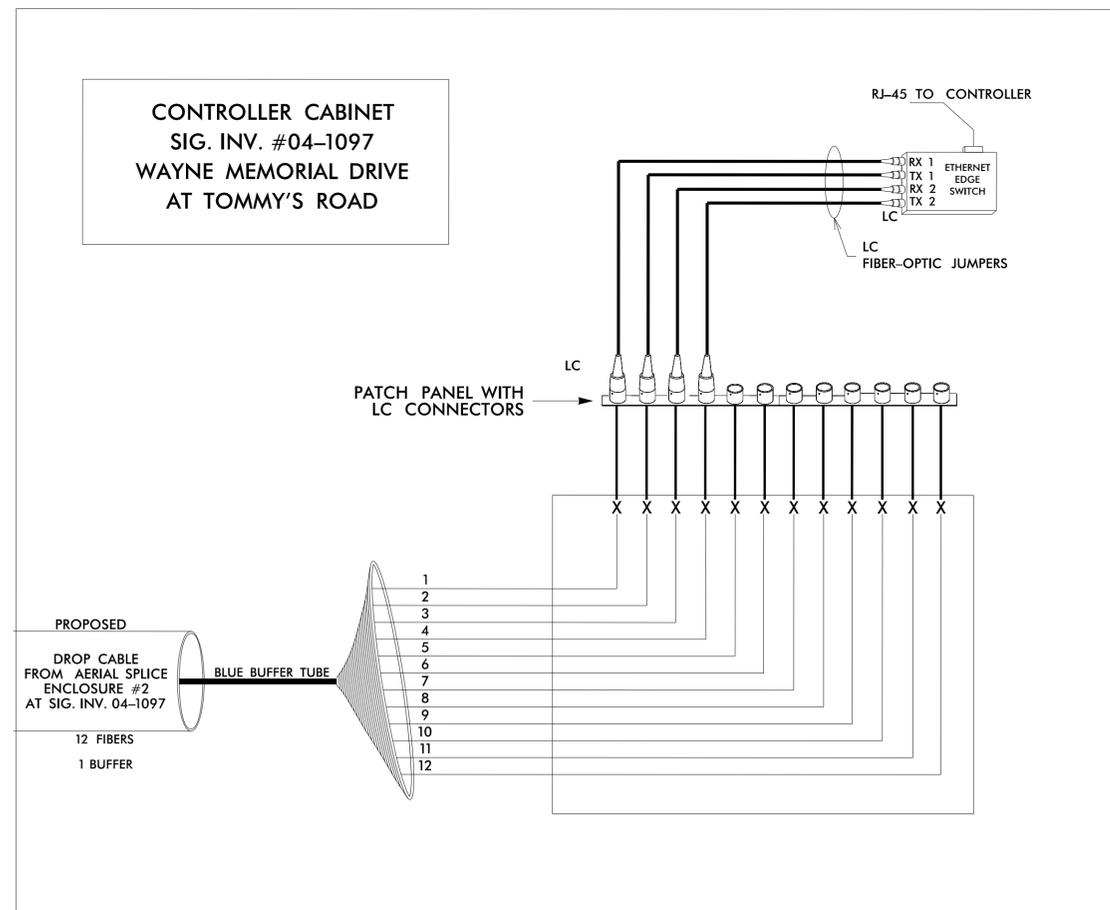
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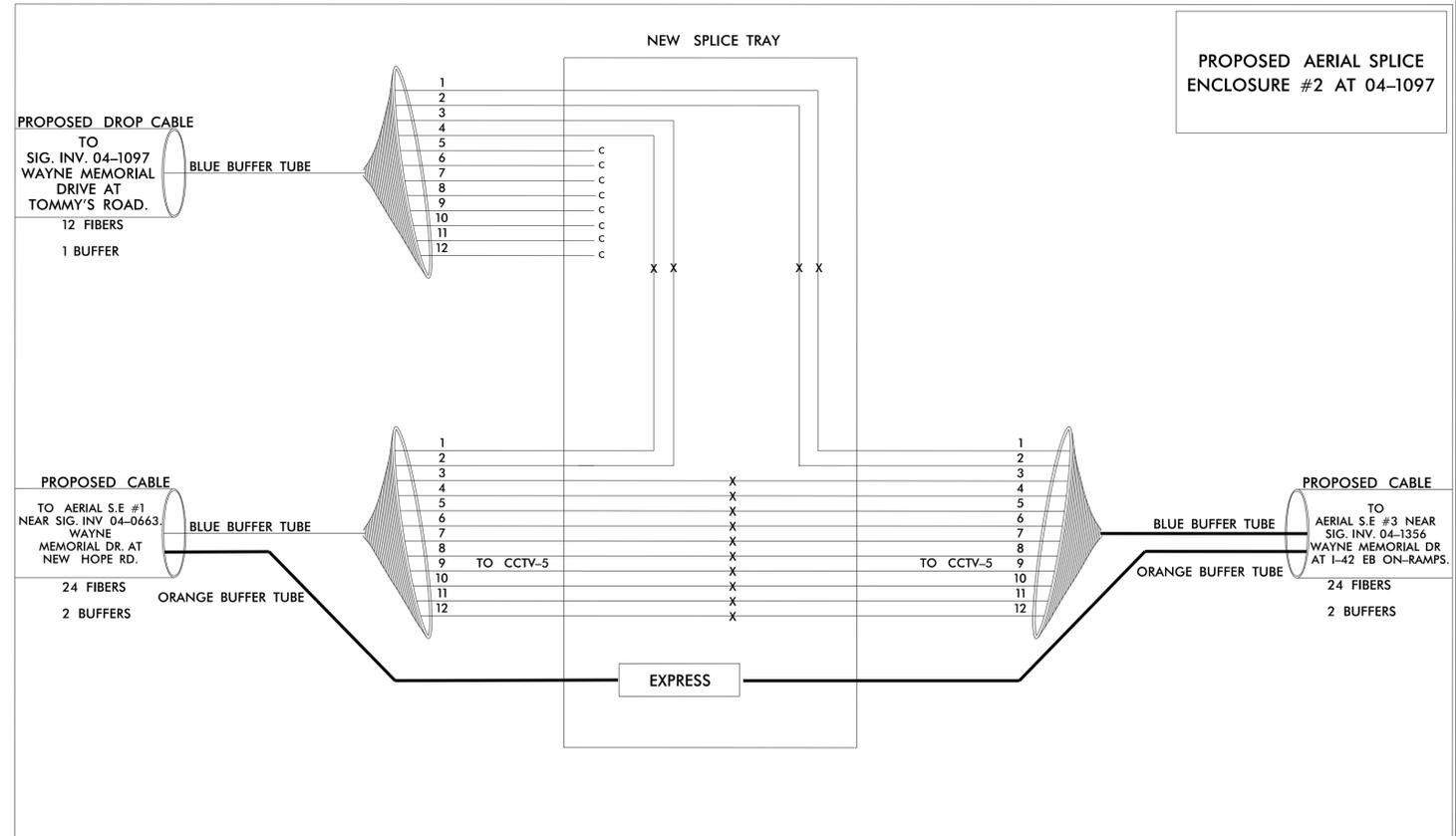
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SEE SHEET SCP-4



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Prepared For the Office of: TRANSPORTATION MOBILITY AND SAFETY DIVISION STATE OF NORTH CAROLINA SIGNAL DESIGN SECTION	GOLDSBORO SIGNAL SYSTEM SPLICE DETAILS		SEAL GENE G. MURR, JR. ENGINEER
	Division 4 PLAN DATE: October 2025 PREPARED BY: Nadia Degbotse	Wayne County REVIEWED BY: G.G. Murr, Jr. REVIEWED BY:	

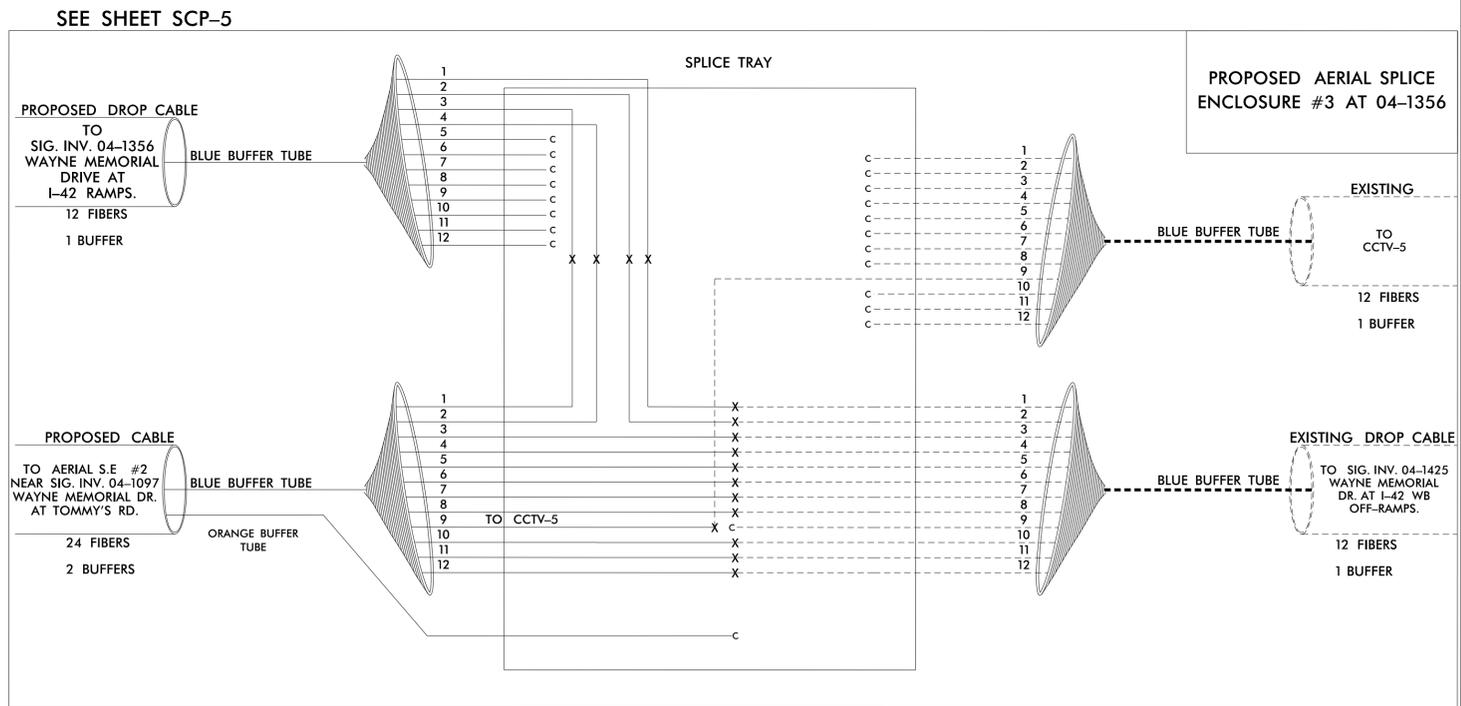
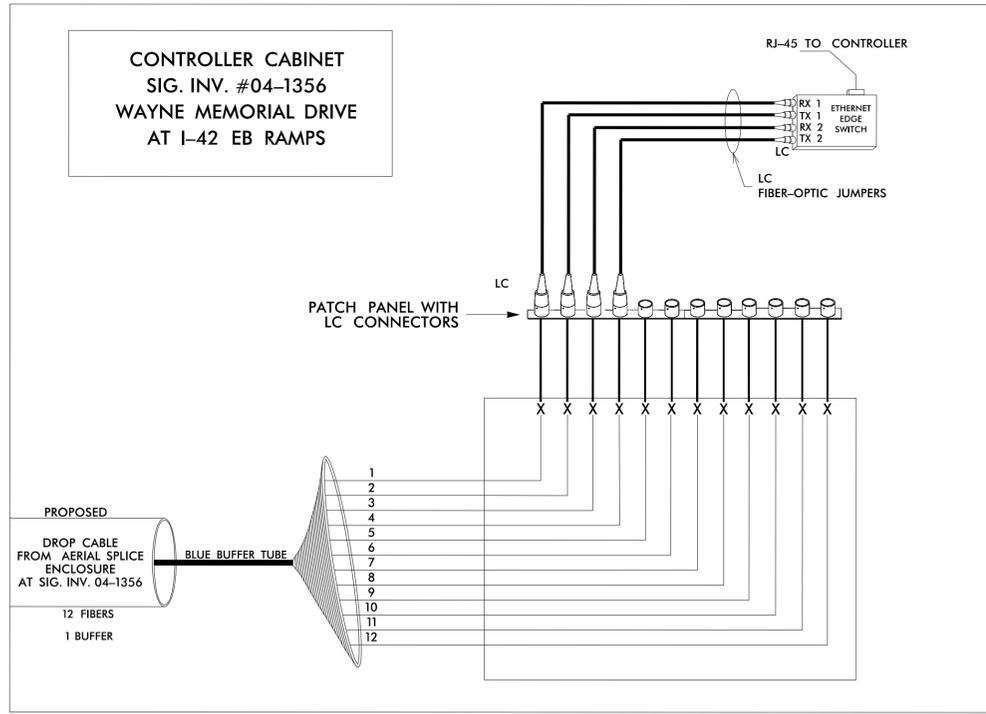
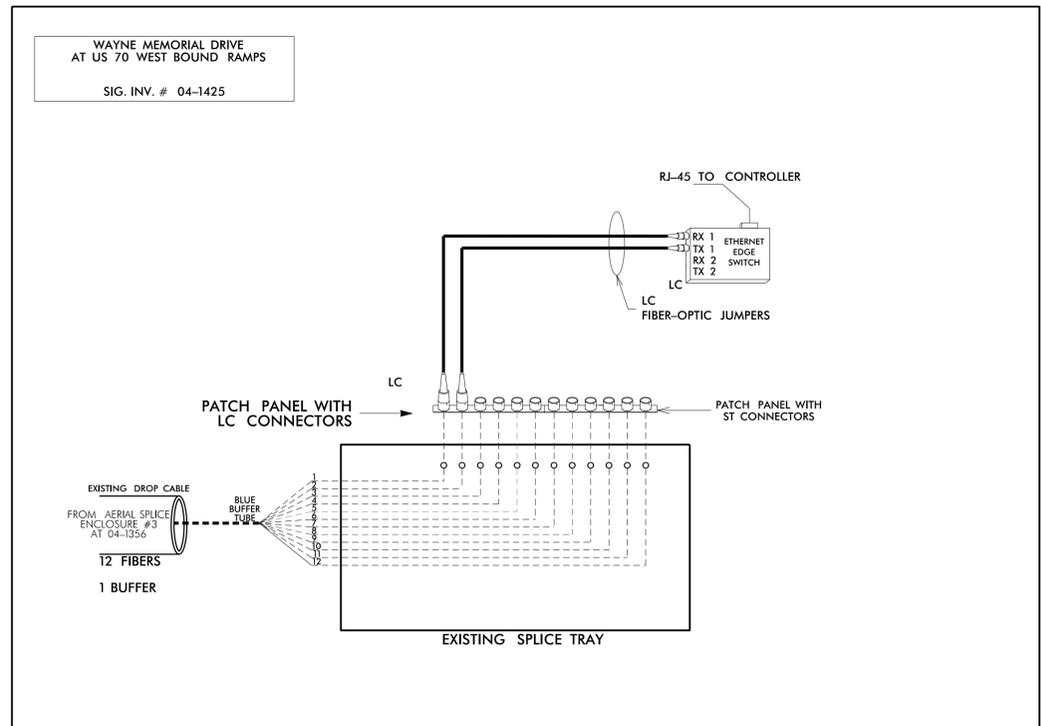
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 SCALE: N/A

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Prepared For the Office of:

GOLDSBORO SIGNAL SYSTEM
SPLICE DETAILS
 Division 4 Wayne County Goldsboro
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 PREPARED BY: Nadia Degbotse REVIEWED BY:
 SCALE: N/A
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 SEAL 14543
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