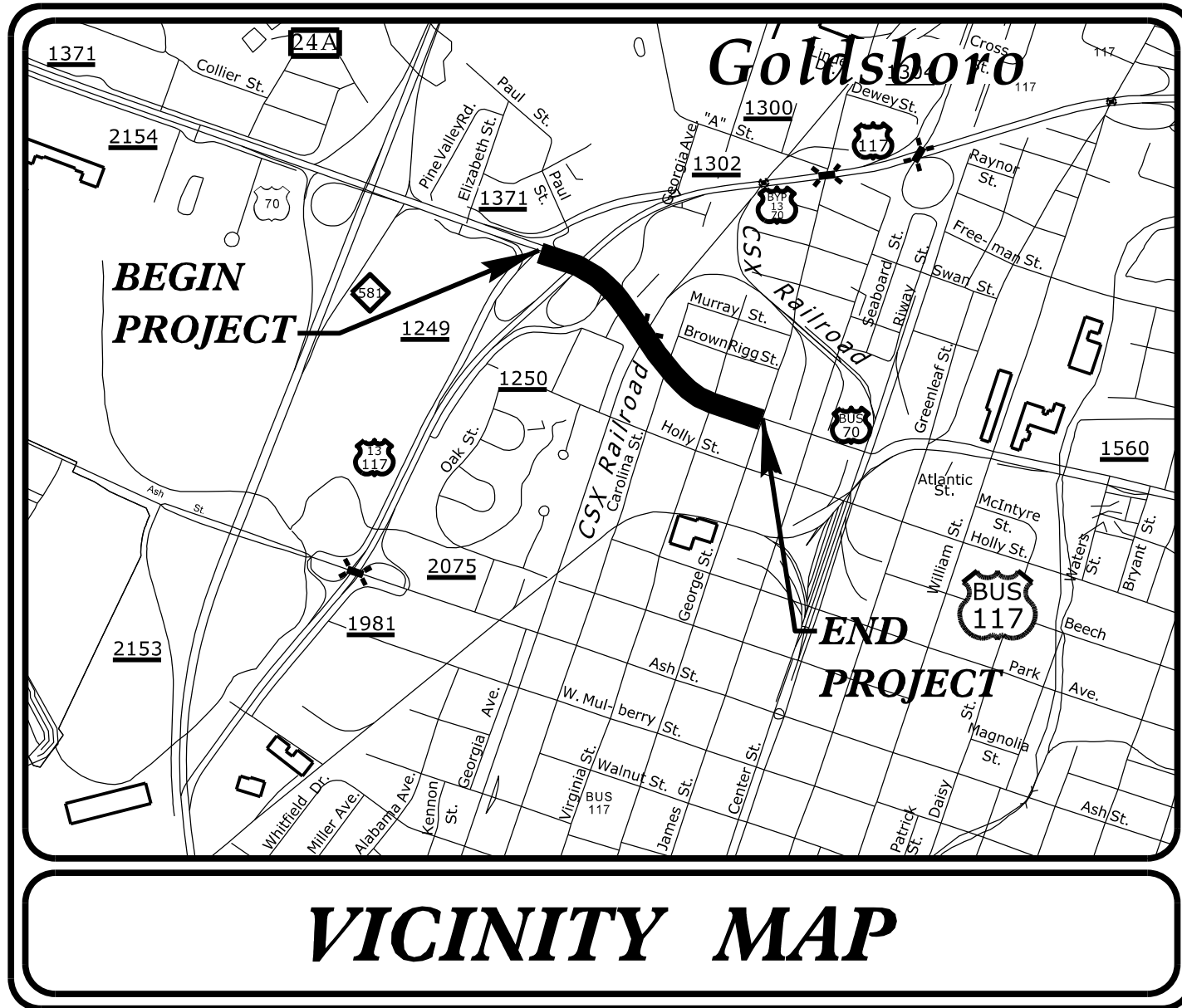


Project: B-4838

CONTRACT: C204814

11/25/2025
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VICINITY MAP

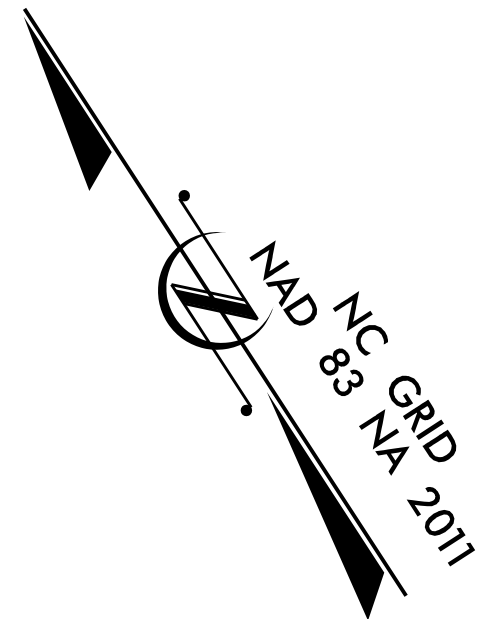
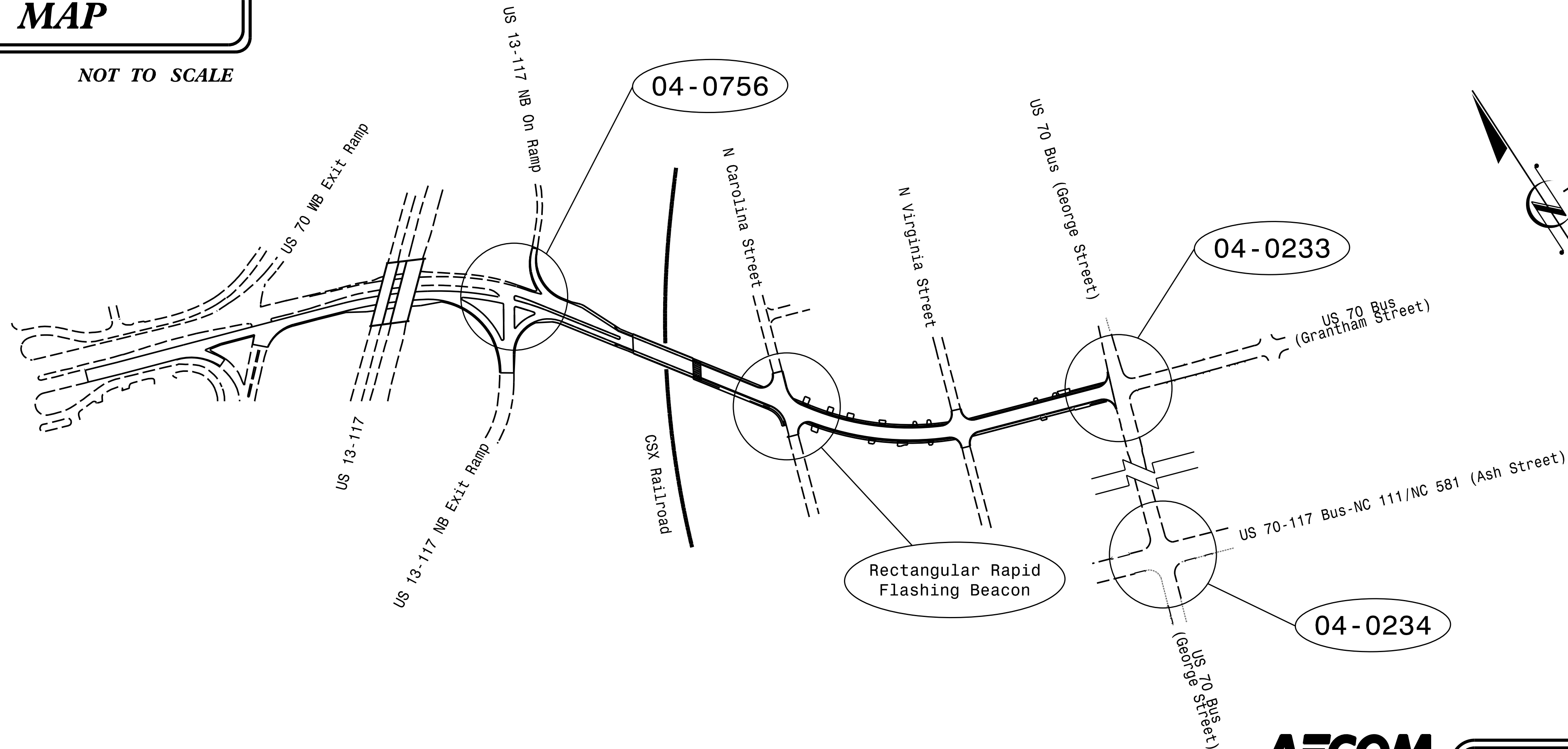
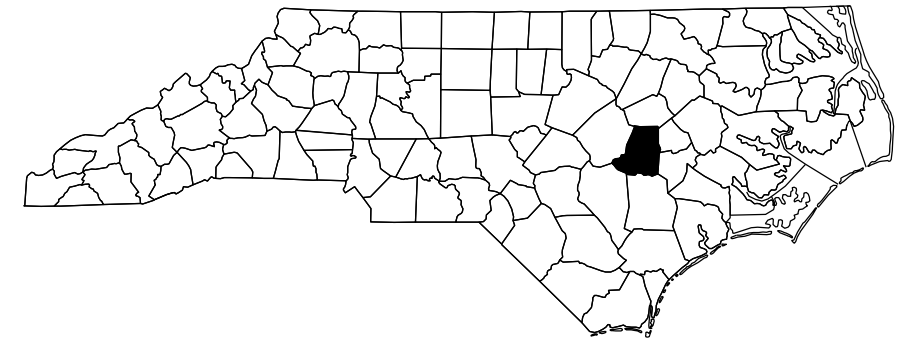
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAYNE COUNTY

LOCATION: BRIDGE NO. 20 ON US 70 BUSINESS (GRANTHAM ST)
OVER CSX RAILROAD

TYPE OF WORK: TRAFFIC SIGNALS AND SIGNAL COMMUNICATIONS



AECOM

NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

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

Index of Plans

Sheet #	Reference #	Location/Description
Sig. 1.0	N/A	Project Titlesheet
Sig. 2.0 - 2.1	04-0756	US 70/US 70 Business (Grantham Street) at US 13-117 Bypass NB Ramp
Sig. 3.0 - 5.2	04-0233	US 70 Business (George Street) at US 70 Business (Grantham Street)
Sig. 6.0 - 6.3	04-0234	US 70-117 Bus-NC 111/NC 581 (Ash Street) at US 70 Business (George Street)
Sig. 7.0	N/A	Standard Drawing for Rectangular Rapid Flashing Beacon
SCP 1 - 8	N/A	Signal Communication Plans and Splice Details

NCDOT TRANSPORTATION SYSTEMS
MANAGEMENT AND OPERATIONS UNIT

Contacts:

Zachary Little, PE - Eastern Region Signals Engineer
Keith M. Mims, PE - Signal Equipment Design Engineer
Gregory A. Green - Signal Communications Project Engineer
Heidi T. Berggren, EI - Signal Communications Design Engineer

AECOM

Contact:

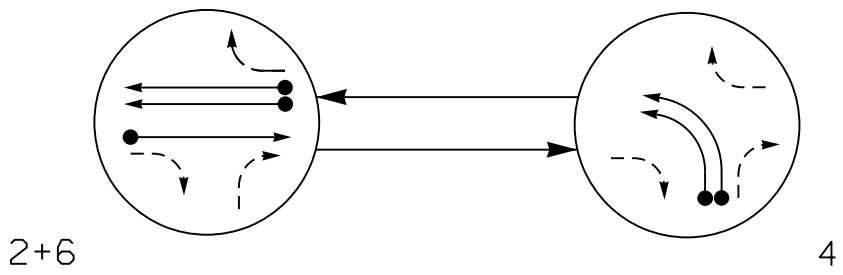
Courtney Kalencik, PE - NC Signals & ITS Lead

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



750 N. Greenfield Parkway, Garner, NC 27529

PHASING DIAGRAM



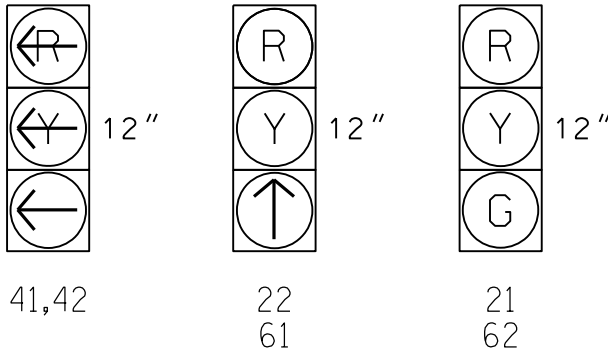
PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE		
	2+6	4	FLASH
21	G	R	R
22	↑	R	R
41,42	←R	←	←R
61	↑	R	R
62	G	R	R

SIGNAL FACE I.D.

All Heads L.E.D.

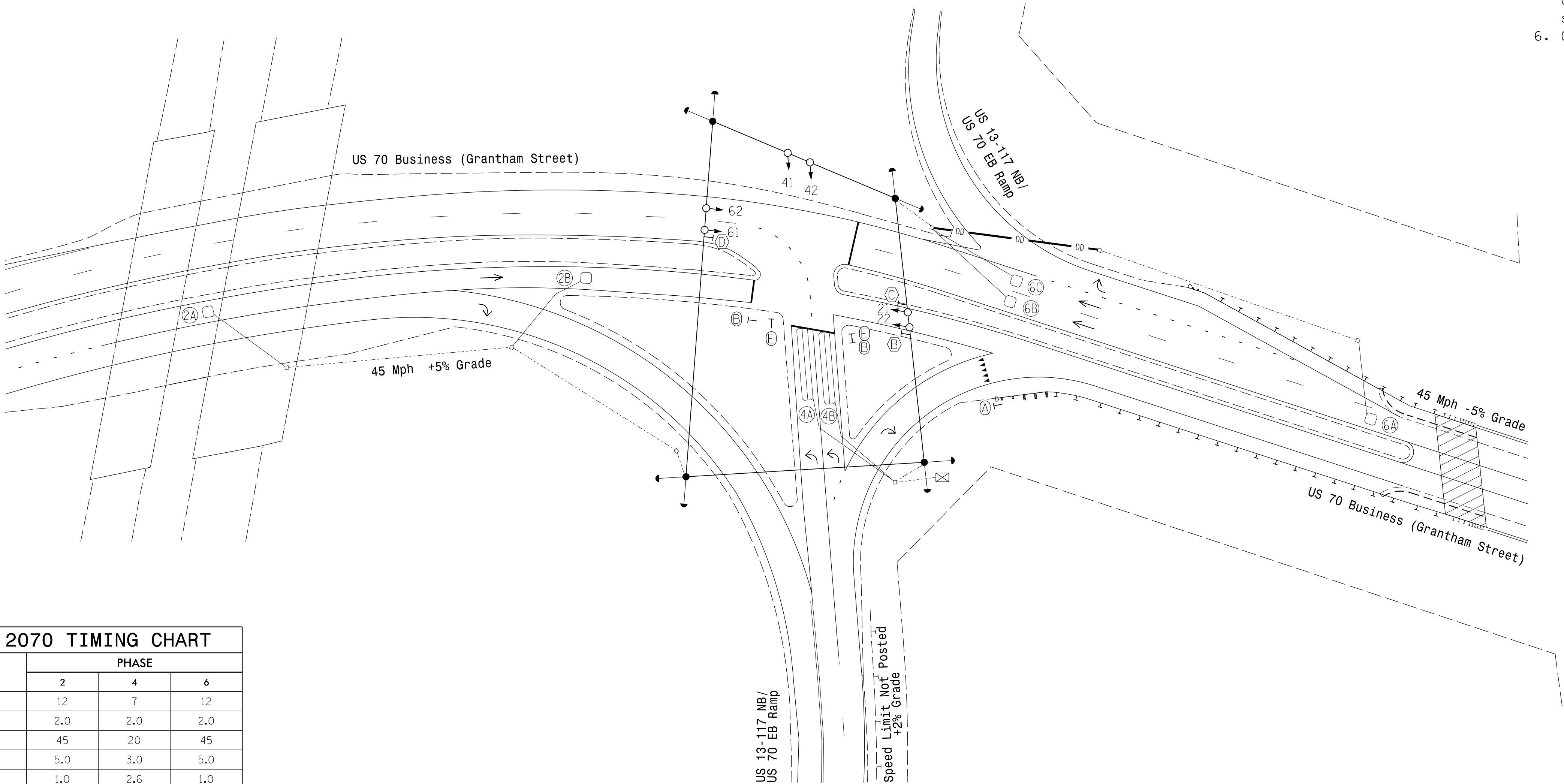


OASIS 2070 LOOP & DETECTOR INSTALLATION CHART									
INDUCTIVE LOOPS					DETECTOR PROGRAMMING				
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME
2A	6X6	300	5	Y	2	Y	Y	-	1.6
2B	6X6	90	4	Y	2	Y	Y	-	-
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-
6A	6X6	300	5	Y	6	Y	Y	-	1.6
6B,6C	6X6	90	4	Y	6	Y	Y	-	-

2 Phase
Fully Actuated
(Goldsboro City 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.
- Reposition existing sign ©.
- Set all detector units to presence mode.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Controller Asset: #0756.



OASIS 2070 TIMING CHART

FEATURE	PHASE		
	2	4	6
Min Green 1 *	12	7	12
Extension 1 *	2.0	2.0	2.0
Max Green 1 *	45	20	45
Yellow Clearance	5.0	3.0	5.0
Red Clearance	1.0	2.6	1.0
Red Revert	2.0	2.0	2.0
Walk 1 *	-	-	-
Don't Walk 1	-	-	-
Seconds Per Actuation *	-	-	-
Max Variable Initial *	-	-	-
Time Before Reduction *	-	-	-
Time To Reduce *	-	-	-
Minimum Gap	-	-	-
Recall Mode	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	YELLOW	-	YELLOW
Dual Entry	-	-	-
Simultaneous Gap	ON	ON	ON

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

LEGEND

PROPOSED	EXISTING

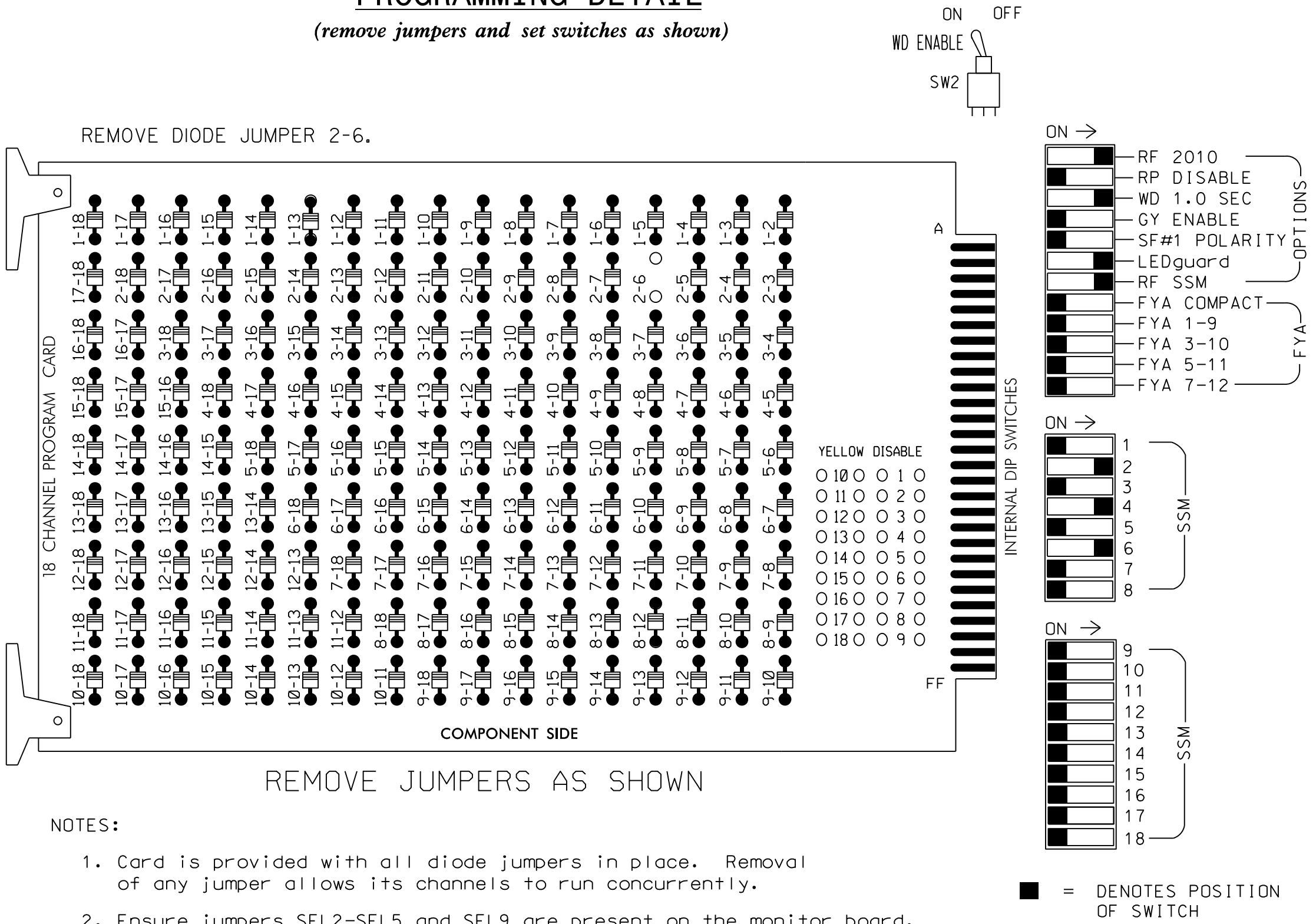
Signal Upgrade

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

Prepared for the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	US 70 Business (Grantham Street) at US 13-117 Bypass NB Ramp Division 4 Wayne County Goldsboro PLAN DATE: February 2025 PREPARED BY: M. Tindal	REVIEWED BY: C.L. Kalencik REVIEWED BY: INIT. DATE	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL DocuSigned by: 3/27/2025 SIGNATURE DATE SIC. INVENTORY NO. 04-0756
--	--	--	--

18 CHANNEL CONFLICT MONITOR
PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



SIGNAL HEAD HOOK-UP CHART

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

NU = Not Used

EQUIPMENT INFORMATION

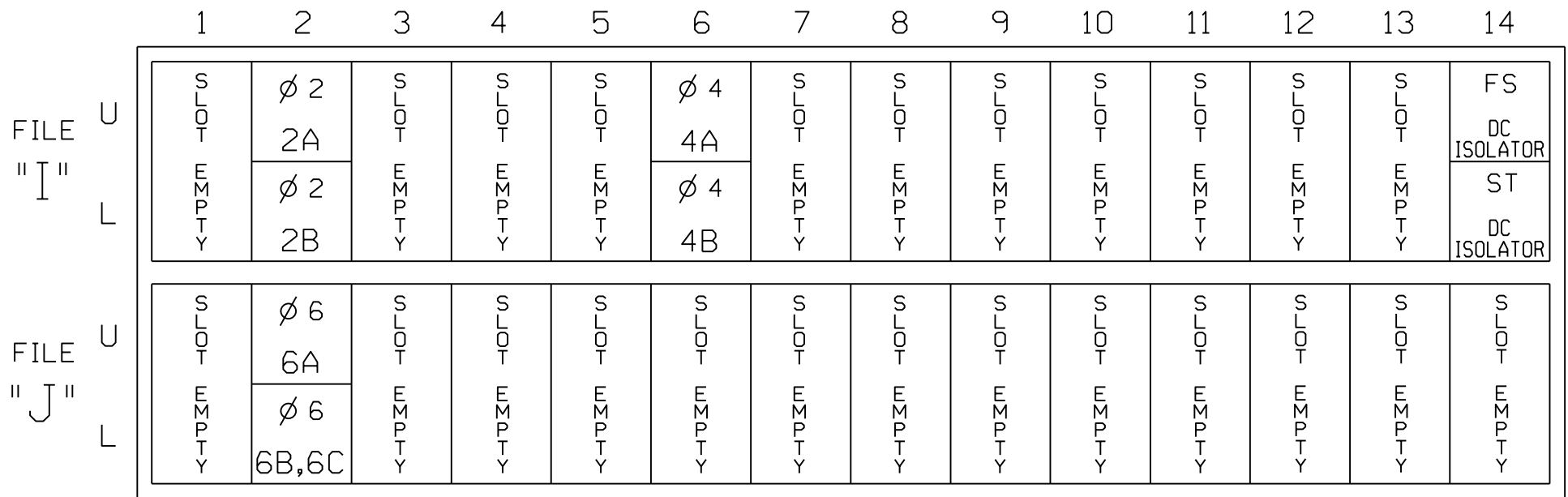
CONTROLLER.....2070LX
CABINET.....332 w/AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S2,S5,S8
PHASES USED.....2,4,6
OVERLAPS.....NONE

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Enable Simultaneous Gap-Out for all Phases.
- Disable all phases for Startup In Green.
- Disable all phases for Yellow Flash.
- Program phases 2 and 6 for First Phases.
- The cabinet and controller are part of the Goldsboro City System.

INPUT FILE POSITION LAYOUT

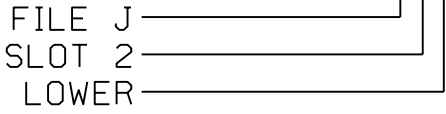
(front view)



INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A	TB2-5,6	I2U	39	1	2	2	Y	Y		1.6	
2B	TB2-7,8	I2L	43	5	12	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			
6A	TB3-5,6	J2U	40	2	6	6	Y	Y		1.6	
6B,6C	TB3-7,8	J2L	44	6	16	6	Y	Y			

INPUT FILE POSITION LEGEND: J2L



Electrical Detail

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Electrical AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:



750 N.Greenfield Pkwy, Garner, NC 27529

US 70 Business (Grantham Street) at US 13-117 Bypass NB Ramp

Division 4 Wayne County Goldsboro

PLAN DATE: February 2025

REVIEWED BY: J O Deaton

PREPARED BY: M W Yalch

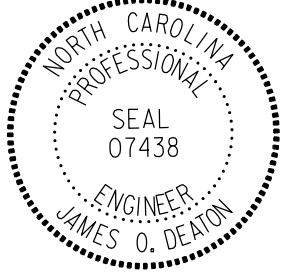
REVIEWED BY:

REVISIONS

INIT.

DATE

SEAL



James O. Deaton
3/27/2025

DocuSigned by:

James O. Deaton

3/27/2025

SIGNATURE

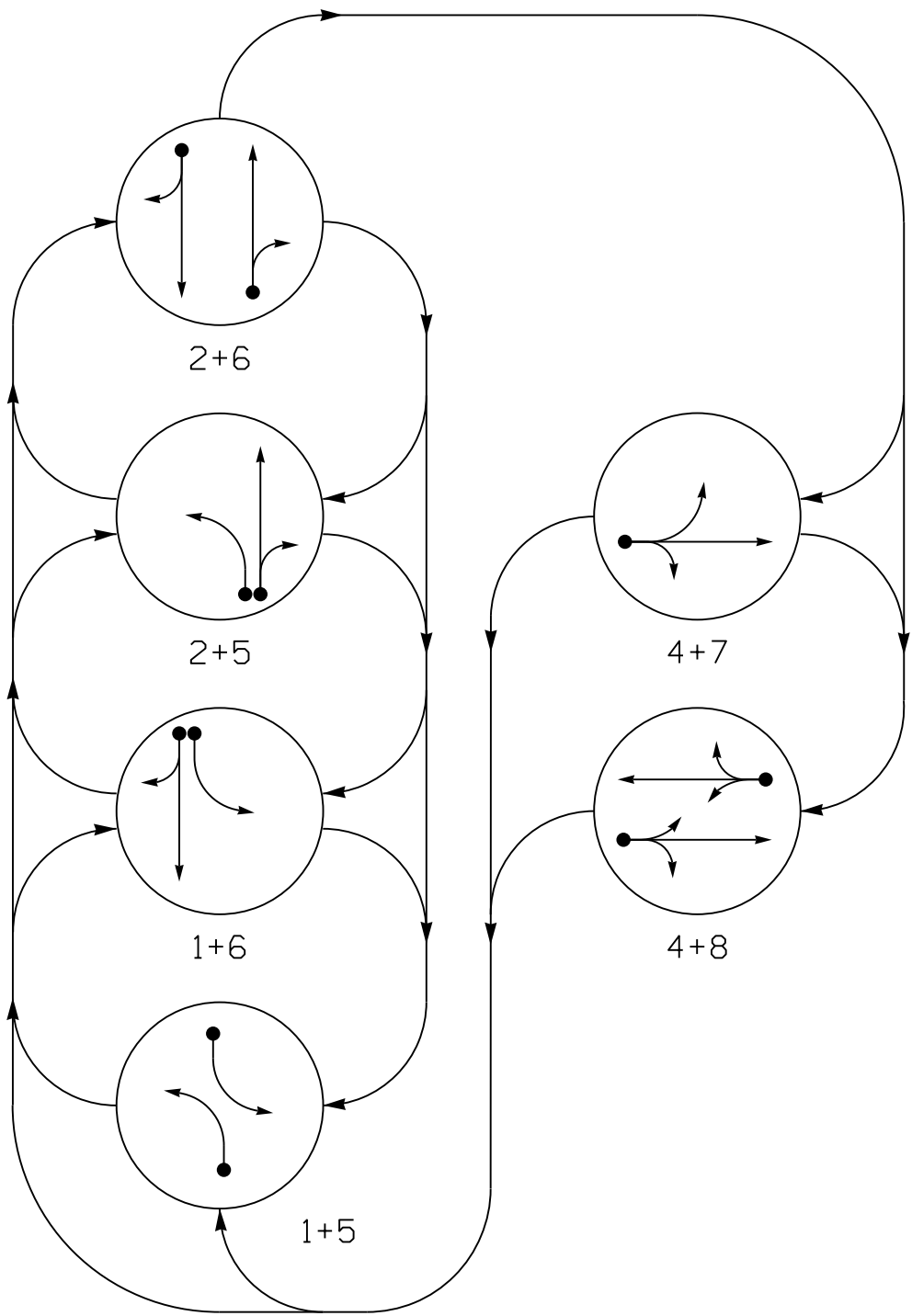
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SIG. INVENTORY NO.

04-0756

3/27/2025
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PHASING DIAGRAM



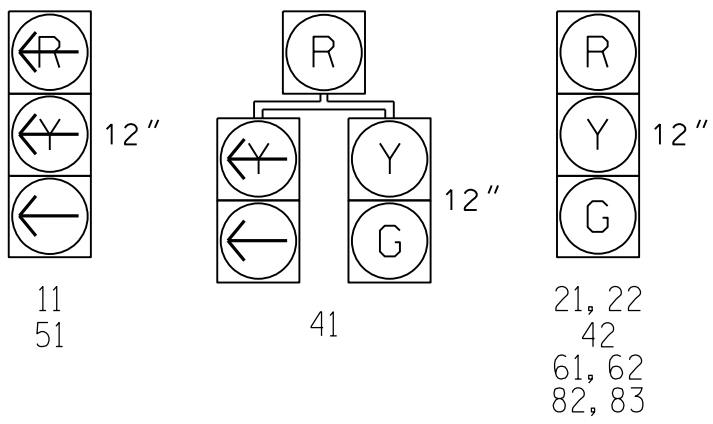
PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE						
	1 + 5	1 + 6	2 + 5	2 + 6	4 + 7	4 + 8	FLIGHT
11	←	←	←	←	←	←	←
21, 22	R	R	G	G	R	R	
41	R	R	R	R	G	G	
42	R	R	R	R	G	G	
51	←	←	←	←	←	←	←
61, 62	R	G	R	G	R	R	
82, 83	R	R	R	R	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



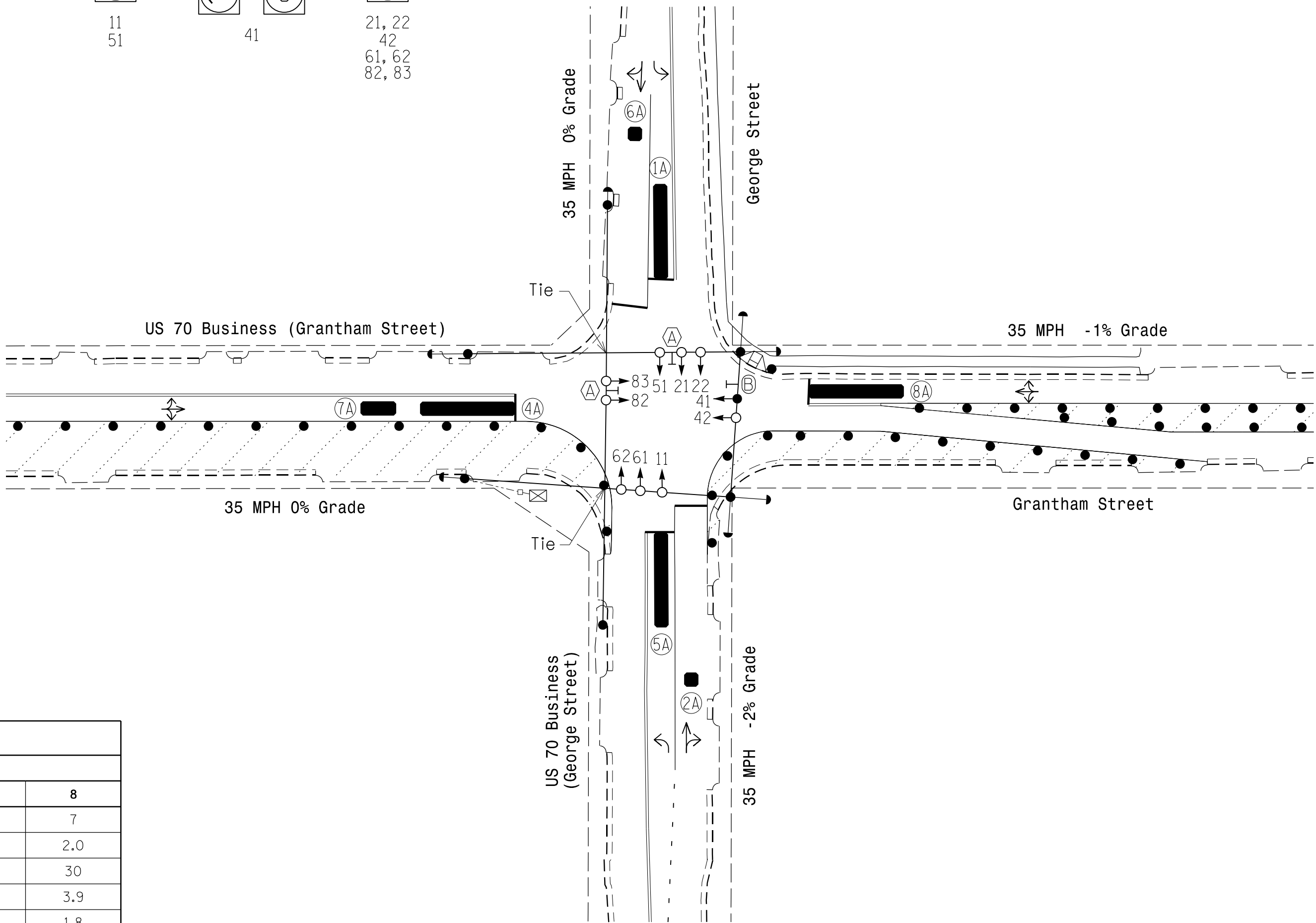
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A *	6X40	0	*	*	1	Y	Y	-	-	3	-	*
2A *	6X6	70	*	*	2	Y	Y	-	-	-	-	*
4A *	6X40	0	*	*	4	Y	Y	-	-	-	-	*
5A *	6X40	0	*	*	5	Y	Y	-	-	3	-	*
6A *	6X6	70	*	*	6	Y	Y	-	-	-	-	*
7A *	6X15	50	*	*	7	Y	Y	-	-	10	-	*
8A *	6X40	0	*	*	8	Y	Y	-	-	10	-	*

* Microwave Detection Zone

6 Phase Fully Actuated (Goldsboro City 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.
- Omit phase 7 during phase 8 on.
- Phase 1 and/or phase 5 may be lagged.
- Reposition existing signal head numbered 41.
- Reposition existing sign ⑥.
- 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.
- Controller Asset: #0233.



LEGEND

- | PROPOSED | EXISTING |
|--|----------|
| Traffic Signal Head | N/A |
| Modified Signal Head | N/A |
| Sign | N/A |
| Pedestrian Signal Head With Push Button & Sign | N/A |
| Signal Pole with Guy | N/A |
| Signal Pole with Sidewalk Guy | N/A |
| Inductive Loop Detector | N/A |
| Controller & Cabinet | N/A |
| Junction Box | N/A |
| 2-in Underground Conduit | N/A |
| Right of Way | N/A |
| Directional Arrow | N/A |
| Non-Intrusive Detection Zone | N/A |
| Construction Zone | N/A |
| Construction Zone Drums | N/A |
| Street Name Sign (D3-1) | N/A |
| "LEFT TURN YIELD ON GREEN" Sign (R10-12) | N/A |

OASIS 2070 TIMING CHART

FEATURE	PHASE							
	1	2	4	5	6	7	8	
Min Green 1 *	7	10	7	7	10	7	7	
Extension 1 *	2.0	3.0	2.0	2.0	3.0	2.0	2.0	
Max Green 1 *	25	110	30	25	110	25	30	
Yellow Clearance	3.0	4.0	3.9	3.0	4.0	3.0	3.9	
Red Clearance	2.1	1.1	1.8	2.3	1.1	2.6	1.8	
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Walk 1 *	-	-	-	-	-	-	-	
Don't Walk 1	-	-	-	-	-	-	-	
Seconds Per Actuation *	-	-	-	-	-	-	-	
Max Variable Initial *	-	-	-	-	-	-	-	
Time Before Reduction *	-	-	-	-	-	-	-	
Time To Reduce *	-	-	-	-	-	-	-	
Minimum Gap	-	-	-	-	-	-	-	
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-	-	
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-	-	
Dual Entry	-	-	ON	-	-	-	ON	
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	

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

Signal Upgrade - Temp Design 1 (TMP Phase II)

Prepared for the Offices of:

Transportation Mobility and Safety Division

DEPARTMENT OF TRANSPORTATION

Signal Design Section

750 N. Greenfield Pkwy, Garner, NC 27529

US 70 Business (George Street) at US 70 Business (Grantham Street)

Division 4 Wayne County Goldsboro

PLAN DATE: February 2025 REVIEWED BY: C.L. Kalencik

PREPARED BY: M. Tindal REVIEWED BY:

REVISIONS

INIT. DATE

SCALE 0 40 1"=40'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

SEAL 040715

COITNEY L. KALENCIK

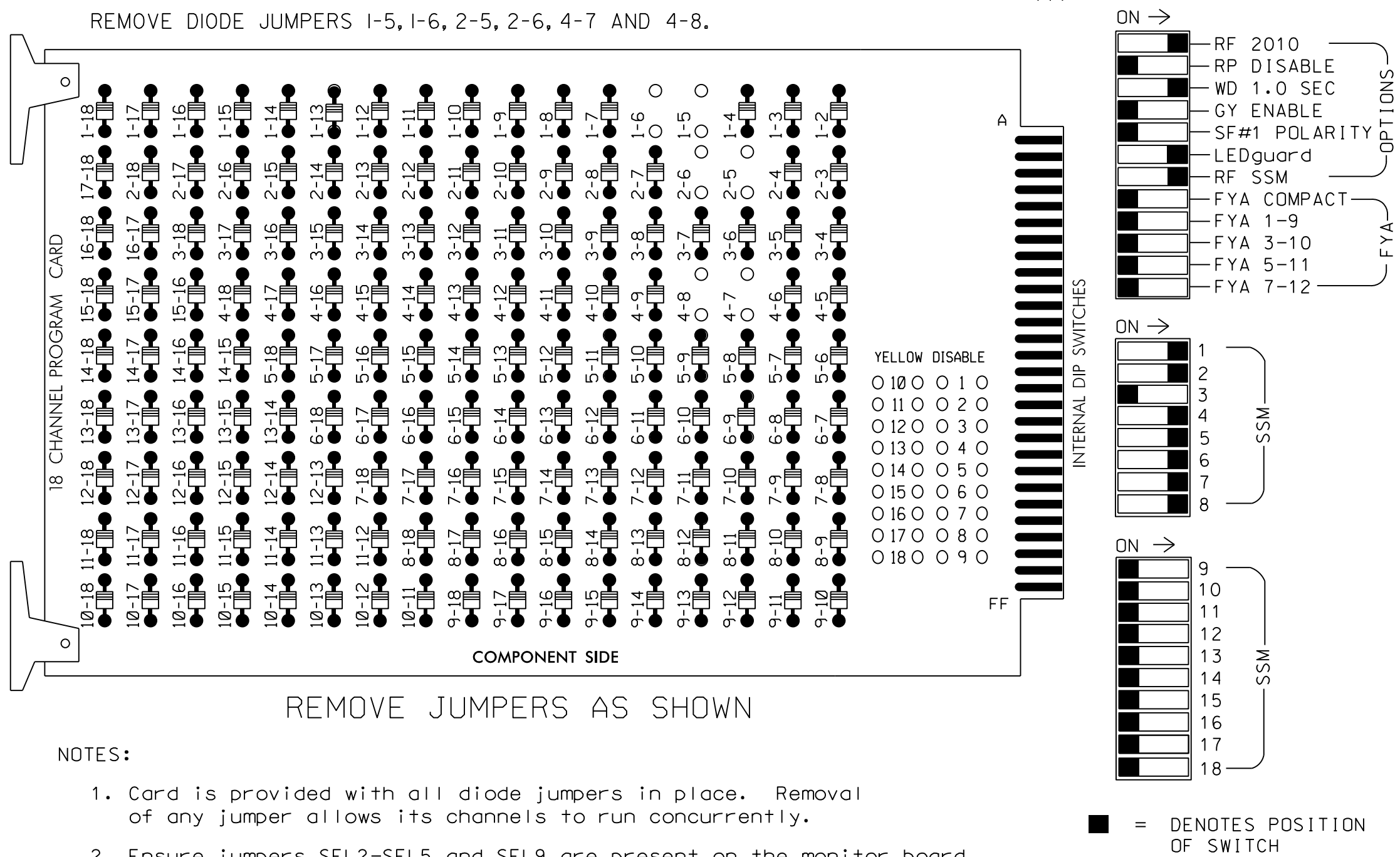
DocuSigned by: C. L. Kalencik 3/27/2025

SIGNATURE DATE

UPD. INVENTORY NO. 04-023311

18 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

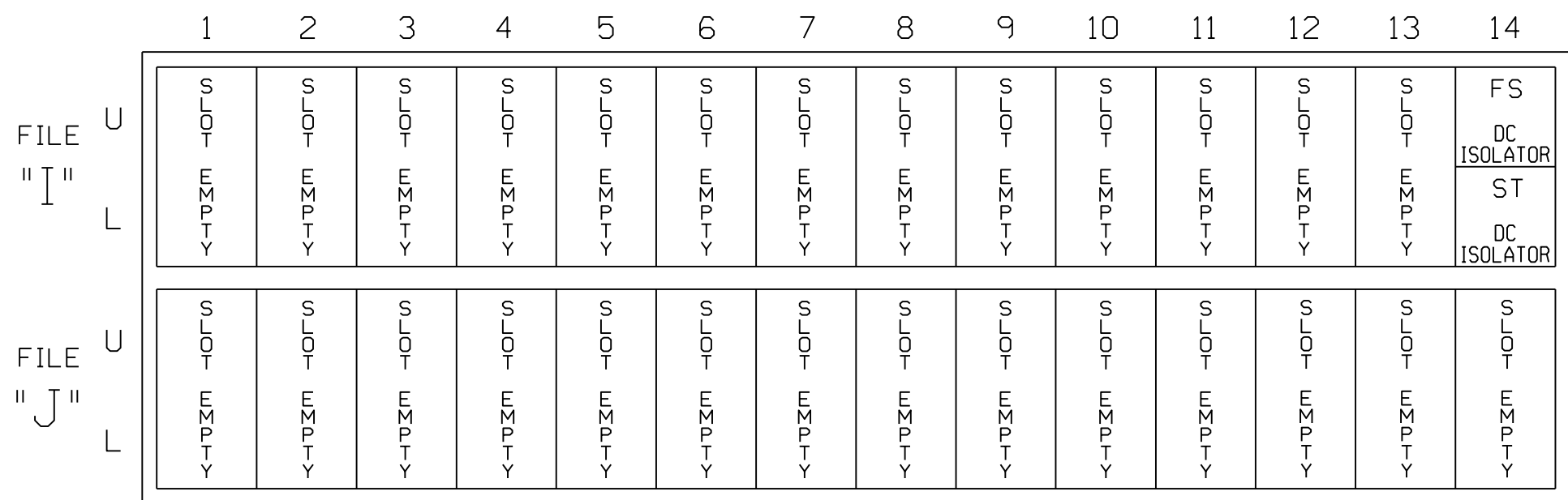


- NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
ST = STOP TIME

ST = STOP TIME

INPUT FILE POSITION LEGEND: J2L

FILE J _____
SLOT 2 _____
LOWER _____

LOWER:

LOWER-

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program phases 4 and 8 for Dual Entry.
3. Enable Simultaneous Gap-Out for all Phases.
4. Disable all phases for Startup In Green.
5. Disable all phases for Yellow Flash.
6. Program phases 2 and 6 for First Phases.
7. The cabinet and controller are part of the Goldsboro City System.

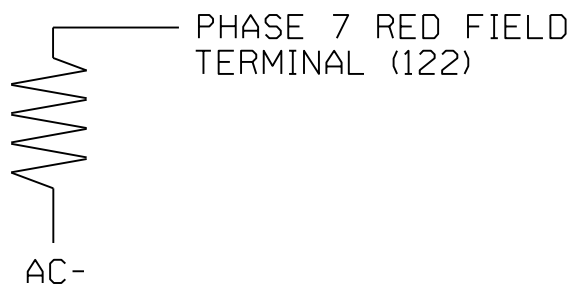
EQUIPMENT INFORMATION

```
CONTROLLER.....2070LX
CABINET.....332 W/AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS..18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S5,S7,S8,S10,S11
PHASES USED.....1,2,4,5,6,7,8
OVERLAPS.....NONE
```

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

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



SPECIAL DETECTOR NOTE

Install a multi-zone 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.

PROJECT REFERENCE NO.	SHEET NO.
B-4838	Sig. 3.1

PROJECT REFERENCE NO.	SHEET NO.
B-4838	Sig. 3.1

SIGNAL HEAD HOOK-UP CHART

[illegible]

NU = Not Used

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

DYNAMIC OMIT CONTROL PROGRAMMING

(program controller as shown below)

1. From Main Menu press '2' (Phase Control), then '1' (Phase Control Functions). Scroll to the bottom of the menu and enable Dynamic/Backup Control Function 1.
2. From Phase Control Functions Menu press '2' (Dynamic/Backup Control Functions).

```

DYNAMIC/BACKUP CONTROL FUNCTION #01
      OVERLAPS: ABCDEFGHIJKLMNOP
IF OVERLAPS ARE ACTIVE :
OR      PHASES: 12345678910111213141516
IF PHASES ARE ON :      X
OMIT PHASES          :      X
CALL PHASES          :

```

BACKUP PROTECTION PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-0233T1
DESIGNED: February 2025
SEALED: 3/27/2025
REVISED:

Temporary Design 1 (TMP Phase II)
Electrical Detail

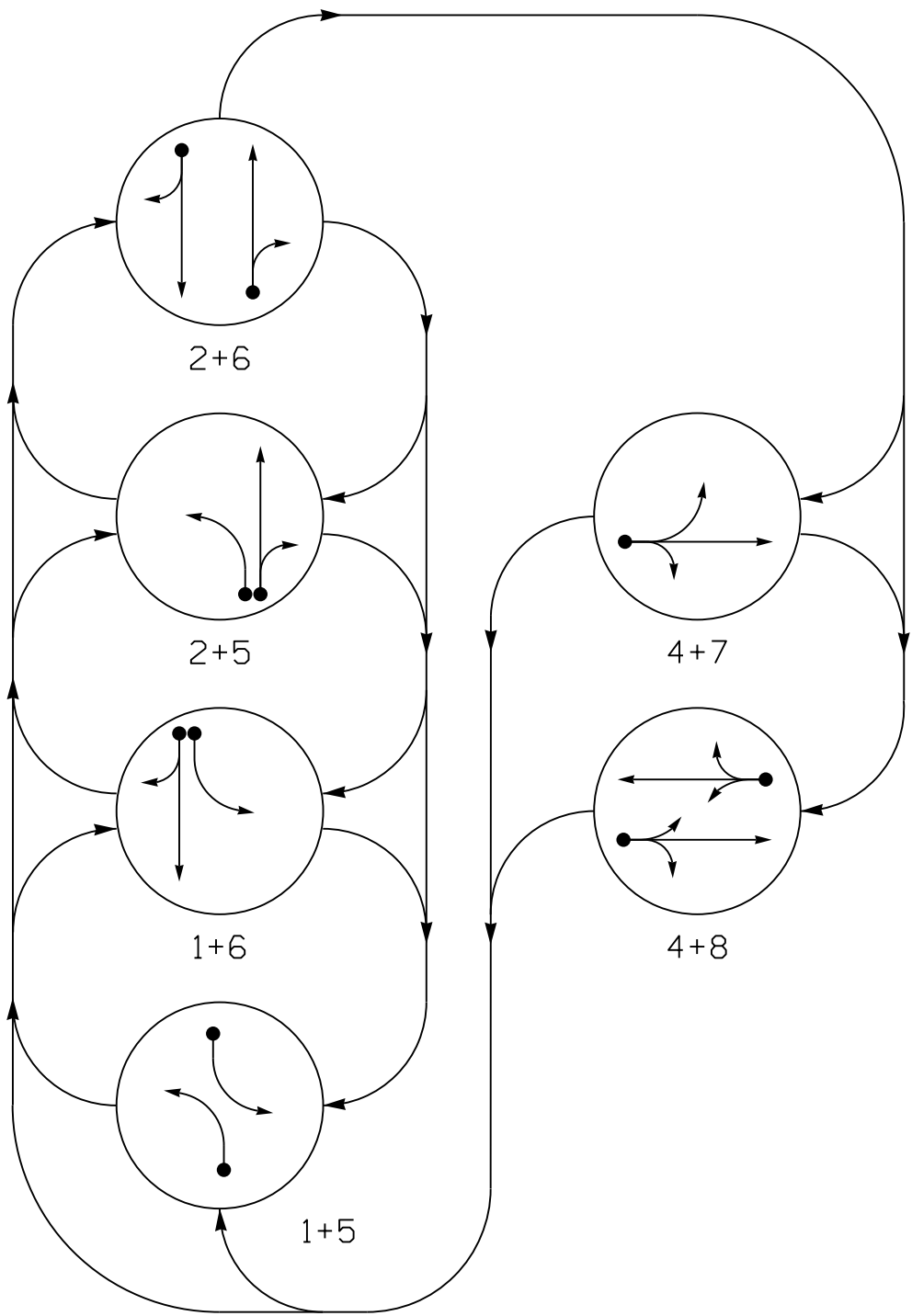
Electrical Detail

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

<

3/27/2025
 pw:***com-na-pw.bentley.com:AE COM_USA_North Carolina Documents*60598150-NC DOT SMU B-4838*900-CAD GIS*910-CAD*70-NC DOT_TTP*Traffic*Signals*040233T1_sm_ele_2025XXXX.dgn

PHASING DIAGRAM



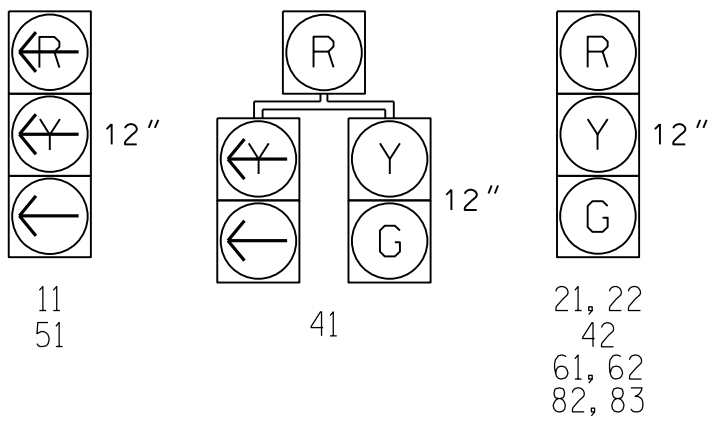
PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE						
	1 + 5	1 + 6	2 + 5	2 + 6	4 + 7	4 + 8	FLUSH
11	←	←	←	←	←	←	←
21, 22	R	R	G	G	R	R	
41	R	R	R	R	G	G	
42	R	R	R	R	G	G	
51	←	←	←	←	←	←	←
61, 62	R	G	R	G	R	R	
82, 83	R	R	R	R	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



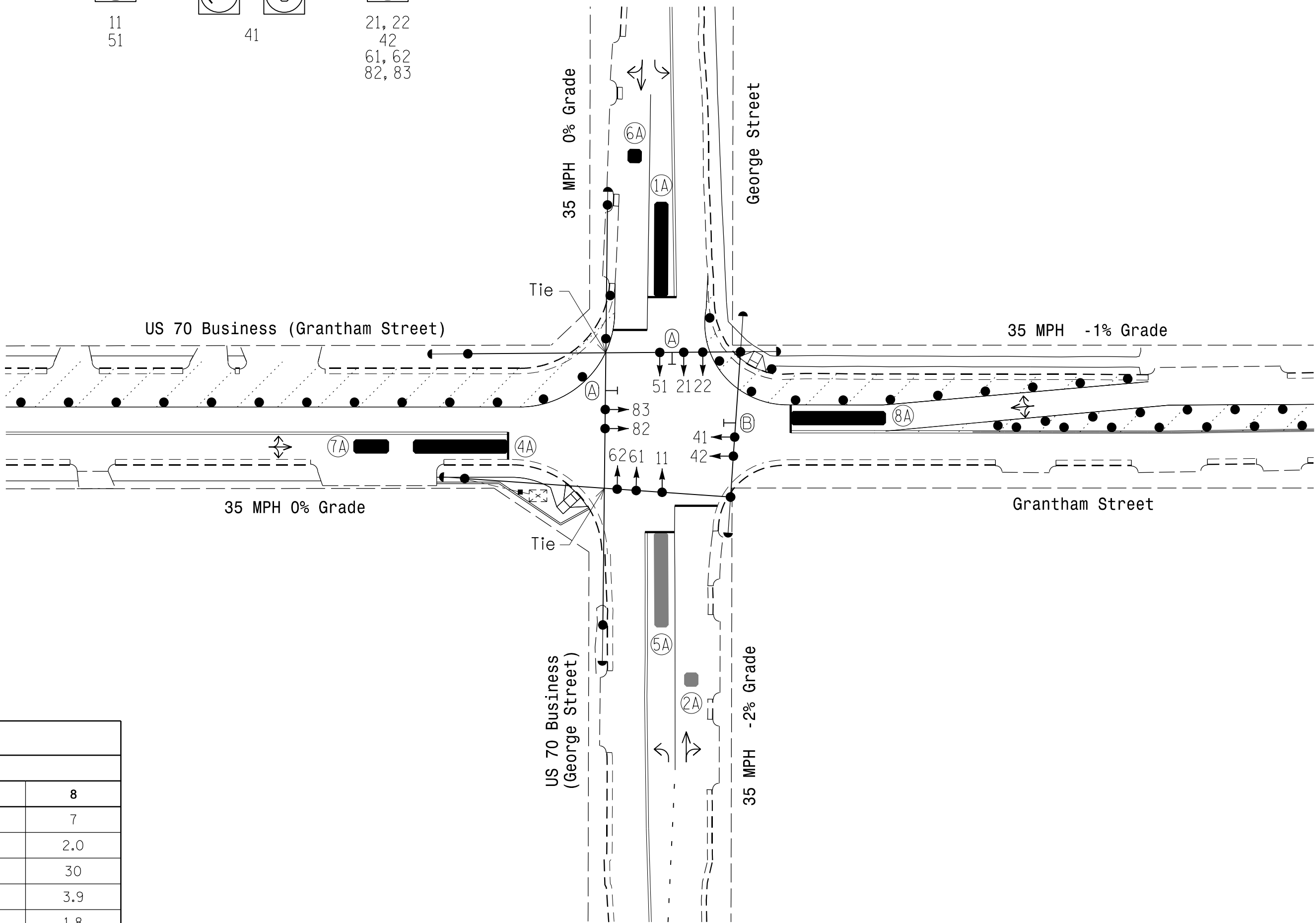
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A *	6X40	0	*	*	1	Y	Y	-	-	3	-	*
2A *	6X6	70	*	*	2	Y	Y	-	-	-	-	*
4A *	6X40	0	*	*	4	Y	Y	-	-	-	-	*
5A *	6X40	0	*	*	5	Y	Y	-	-	3	-	*
6A *	6X6	70	*	*	6	Y	Y	-	-	-	-	*
7A *	6X15	50	*	*	7	Y	Y	-	-	10	-	*
8A *	6X40	0	*	*	8	Y	Y	-	-	10	-	*

* Microwave Detection Zone

6 Phase Fully Actuated (Goldsboro City 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.
- Omit phase 7 during phase 8 on.
- Phase 1 and/or phase 5 may be lagged.
- Reposition existing signal heads numbered 41, 42, 81, and 82.
- Reposition existing signs 8.
- 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.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Controller Asset: #0233.



OASIS 2070 TIMING CHART

FEATURE	PHASE						
	1	2	4	5	6	7	8
Min Green 1 *	7	10	7	7	10	8	7
Extension 1 *	2.0	3.0	2.0	2.0	3.0	3.0	2.0
Max Green 1 *	25	110	30	25	110	25	30
Yellow Clearance	3.0	4.0	3.9	3.0	4.0	3.0	3.9
Red Clearance	2.3	1.1	1.8	1.8	1.2	2.6	1.8
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-	-
Dual Entry	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON

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

LEGEND

- | PROPOSED | EXISTING |
|--|----------|
| Traffic Signal Head | N/A |
| Modified Signal Head | N/A |
| Sign | N/A |
| Pedestrian Signal Head With Push Button & Sign | N/A |
| Signal Pole with Guy | N/A |
| Signal Pole with Sidewalk Guy | N/A |
| Inductive Loop Detector | N/A |
| Controller & Cabinet | N/A |
| Junction Box | N/A |
| 2-in Underground Conduit | N/A |
| Right of Way | N/A |
| Directional Arrow | N/A |
| Non-Intrusive Detection Zone | N/A |
| Construction Zone | N/A |
| Construction Zone Drums | N/A |
| Street Name Sign (D3-1) | N/A |
| "LEFT TURN YIELD ON GREEN" Sign (R10-12) | N/A |

Signal Upgrade - Temp Design 2 (TMP Phase III)

Prepared for the Offices of:

Transportation Mobility and Safety Division
DEPARTMENT OF TRANSPORTATION
SIGNAL DESIGN SECTION

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE
0 40
1"=40'

US 70 Business (George Street)
at
US 70 Business (Grantham Street)

Division 4 Wayne County Goldsboro

PLAN DATE: February 2025 REVIEWED BY: C.L. Kalencik

PREPARED BY: M. Tindal REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

SEAL 040715

COURTNEY L. KALENCIK

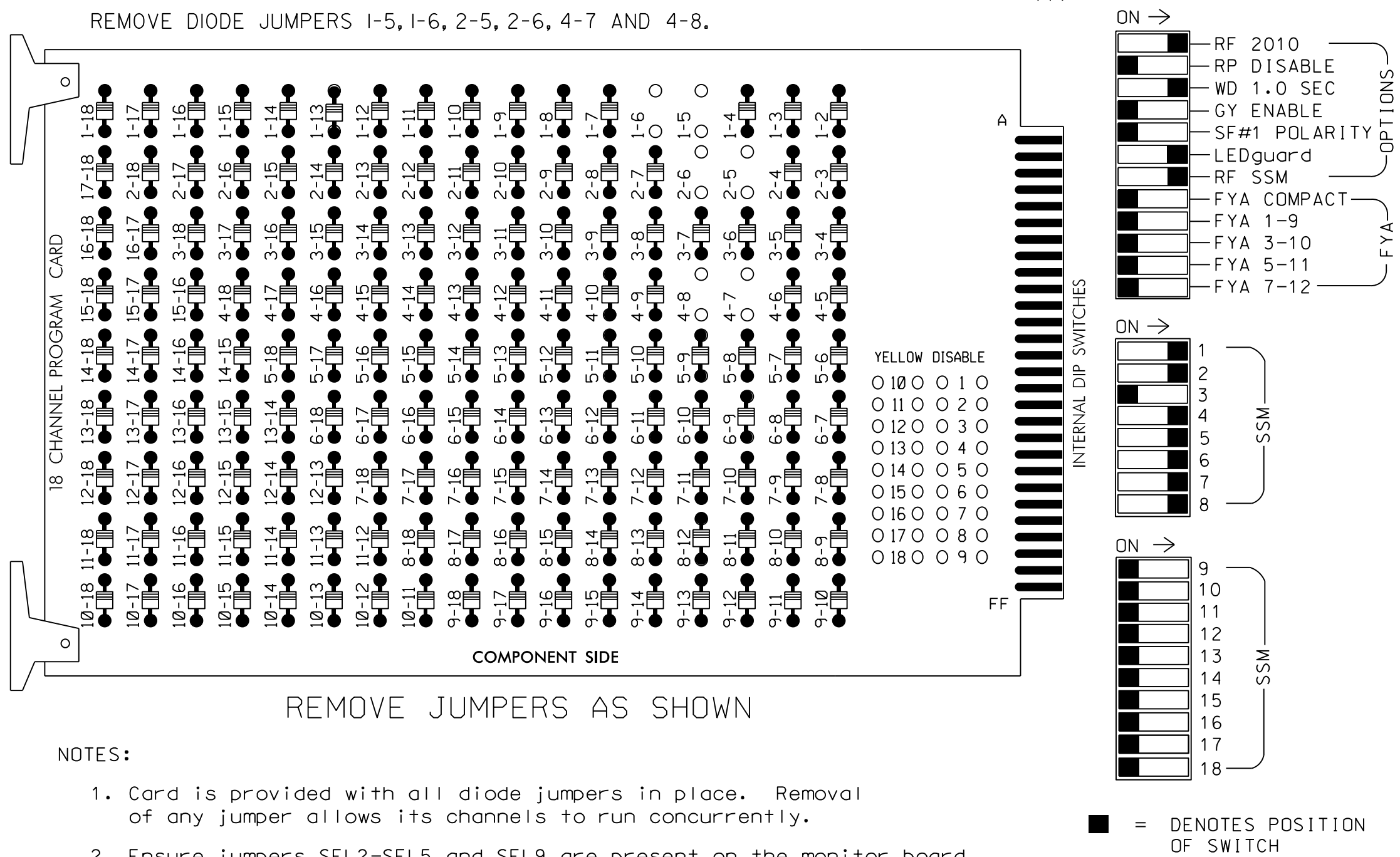
DocuSigned by:
Courtney L. Kalencik
3/27/2025

SIG. INVENTORY NO. 04-023312

18 CHANNEL CONFLICT MONITOR

PROGRAMMING DETAIL

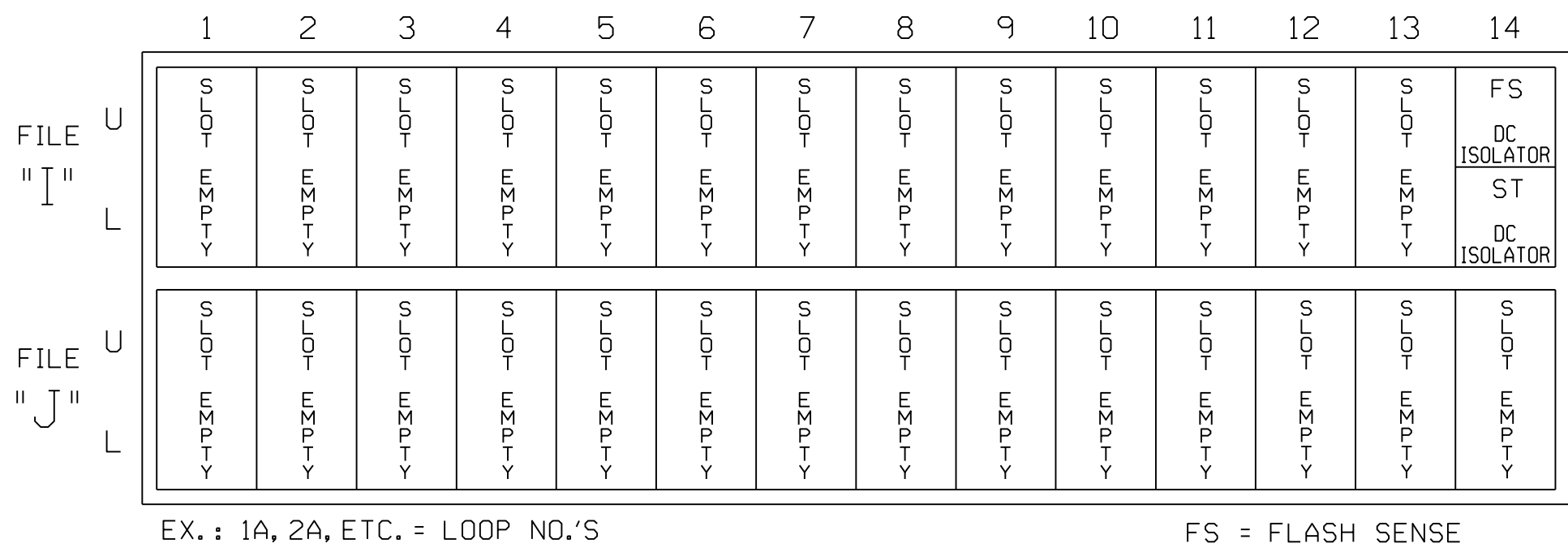
(remove jumpers and set switches as shown)



- NOTES:
1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
 2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
 3. Ensure that Red Enable is active at all times during normal operation.
 4. Connect serial cable from conflict monitor to comm. port 1 of 2700 controller. Ensure conflict monitor communicates with 2700.

INPUT FILE POSITION LAYOUT

(front view)



NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program phases 4 and 8 for Dual Entry.
3. Enable Simultaneous Gap-Out for all Phases.
4. Disable all phases for Startup In Green.
5. Disable all phases for Yellow Flash.
6. Program phases 2 and 6 for First Phases.
7. The cabinet and controller are part of the Goldsboro City System.

EQUIPMENT INFORMATION

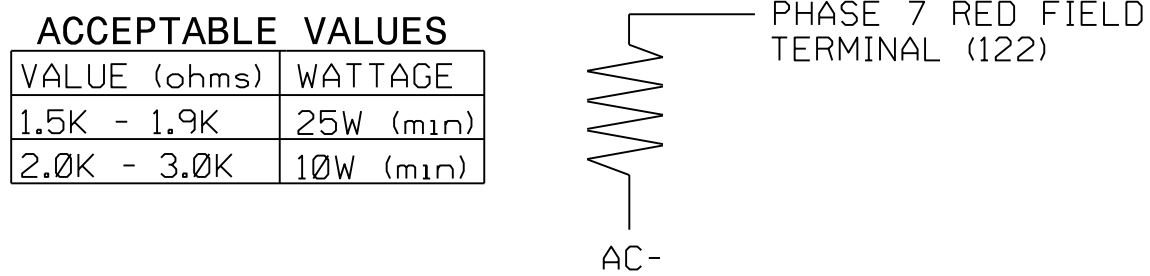
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CONTROLLER.....2070LX
CABINET.....332 W/AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS..18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S5,S7,S8,S10,S11
PHASES USED.....1,2,4,5,6,7,8
OVERLAPS.....NONE

```

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)



SPECIAL DETECTOR NOTE

Install a multi-mode 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.

SIGNAL HEAD HOOK-UP CHART

[illegible]

NU = Not Used

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

DYNAMIC OMIT CONTROL PROGRAMMING

(program controller as shown below)

1. From Main Menu press '2' (Phase Control), then '1' (Phase Control Functions). Scroll to the bottom of the menu and enable Dynamic/Backup Control Function 1.
2. From Phase Control Functions Menu press '2' (Dynamic/Backup Control Functions).

```

DYNAMIC/BACKUP CONTROL FUNCTION #01
                                OVERLAPS:|ABCDEFGHIJKLMNOP
IF OVERLAPS ARE ACTIVE |
OR      PHASES:|12345678910111213141516
IF PHASES ARE ON |           X
OMIT PHASES      |           X
CALL PHASES      |

```

BACKUP PROTECTION PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-0233T2
DESIGNED: February 2025
SEALED: 3/27/2025
REVISED:

Temporary Design 2 (TMP Phase III)
Electrical Detail

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

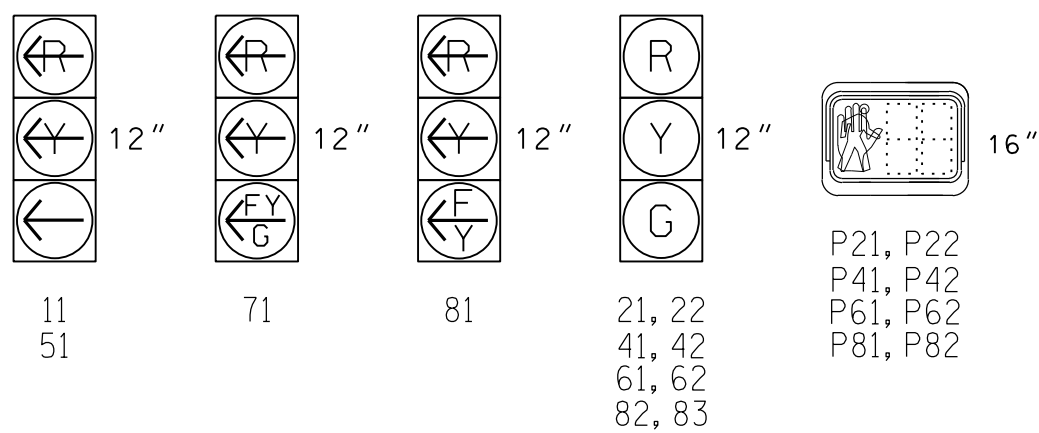
ELECTRICAL AND PROGRAMMING DETAILS FOR:  Prepared for the Offices of: 750 N. Greenfield Pkwy, Garner, NC 27529	US 70 Business (George Street) at US 70 Business (Grantham Street) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Division 4</td> <td style="width: 33%;">Wayne County</td> <td style="width: 33%;">Goldsboro</td> </tr> <tr> <td>PLAN DATE: February 2025</td> <td>REVIEWED BY: J O Deaton</td> <td></td> </tr> <tr> <td>PREPARED BY: M W Yalch</td> <td>REVIEWED BY:</td> <td></td> </tr> <tr> <td style="text-align: center;">REVISIONS</td> <td style="text-align: center;">INIT.</td> <td style="text-align: center;">DATE</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Division 4	Wayne County	Goldsboro	PLAN DATE: February 2025	REVIEWED BY: J O Deaton		PREPARED BY: M W Yalch	REVIEWED BY:		REVISIONS	INIT.	DATE										SEAL 
Division 4	Wayne County	Goldsboro																					
PLAN DATE: February 2025	REVIEWED BY: J O Deaton																						
PREPARED BY: M W Yalch	REVIEWED BY:																						
REVISIONS	INIT.	DATE																					
DocuSigned by: <u>James O. Deaton</u> SIGNATURE <u>3/27/2025</u> DATE SIG. INVENTORY NO. 04-023312																							

	DETECTED MOVEMENT
	UNDETECTED MOVEMENT (OVERLAP)
	UNSIGNALIZED MOVEMENT
	PEDESTRIAN MOVEMENT

SIGNAL FACE	PHASE						
	1 + 5	1 + 6	2 + 5	2 + 6	4 + 7	4 + 8	F L A S H
11	←	←	→	→	→	→	→
21, 22	R	R	G	G	R	R	R
41, 42	R	R	R	R	G	G	R
51	←	→	←	→	→	→	→
61, 62	R	G	R	G	R	R	R
71	→	→	→	→	←	←	→
81	→	→	→	→	←	←	→
82, 83	R	R	R	R	G	G	R
P21, P22	DW	DW	W	W	DW	DW	DRK
P41, P42	DW	DW	DW	DW	W	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DRK

All Heads L.E.D.

$\left(\frac{F_Y}{G} \right) = \text{Bimodal Section}$



FEATURE	PHASE						
	1	2	4	5	6	7	8
Min Green 1 *	7	10	7	7	10	7	7
Extension 1 *	2.0	3.0	2.0	2.0	3.0	2.0	2.0
Max Green 1 *	25	110	30	25	110	25	30
Yellow Clearance	3.0	4.0	3.9	3.0	4.0	3.0	3.9
Red Clearance	2.4	1.3	1.8	2.3	1.3	2.6	1.8
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	13	14	-	14	-	14
Don't Walk 1	-	9	18	-	14	-	17
Advanced Walk	-	6	7	-	7	-	7
Seconds Per Actuation *	-	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-	-
Dual Entry	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON

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

INDUCTIVE LOOPS						DETECTOR PROGRAMMING								
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD		
													1A *	6X40
2A *	6X6	70	*	*	2	Y	Y	-	-	-	-	*		
4A *	6X40	0	*	*	4	Y	Y	-	-	10	-	*		
5A *	6X40	0	*	*	5	Y	Y	-	-	3	-	*		
6A *	6X6	70	*	*	6	Y	Y	-	-	-	-	*		
7A *	6X40	0	*	*	7	Y	Y	-	-	15	-	*		
					4	Y	Y	-	-	3	-	*		
8A *	6X40	0	*	*	8	Y	Y	-	-	3	-	*		
8B *	6X40	0	*	*	8	Y	Y	-	-	10	-	*		
S01*	6X6	+120	*	*	-	-	-	-	-	-	Y	*		

* Microwave Detection Zone

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. Reposition existing signal heads numbered 42, 82, and 83.
5. Set all detector units to presence mode.
6. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrain calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
10. Controller Asset: #0233.

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head	
	Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
-----	2-in Underground Conduit	-----
N/A	Right of Way	-----
	Directional Arrow	
	Non-Intrusive Detection Zone	
	Type I Pushbutton Post	
	Type II Signal Pedestal	
	Street Name Sign (D3-1)	
	Left "TURNING VEHICLES" Yield "T0" Pedestrians Sign (R10-15L)	
	Right "TURNING VEHICLES" Yield "T0" Pedestrians Sign (R10-15R)	

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

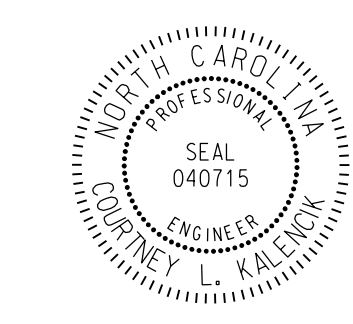
Division 4 Wayne County Goldsboro

PLAN DATE: February 2025	REVIEWED BY: C.L. Kalencik
PREPARED BY: M. Tindal	REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL



DocuSigned by:
Cristina V. Hernandez 3/27/20

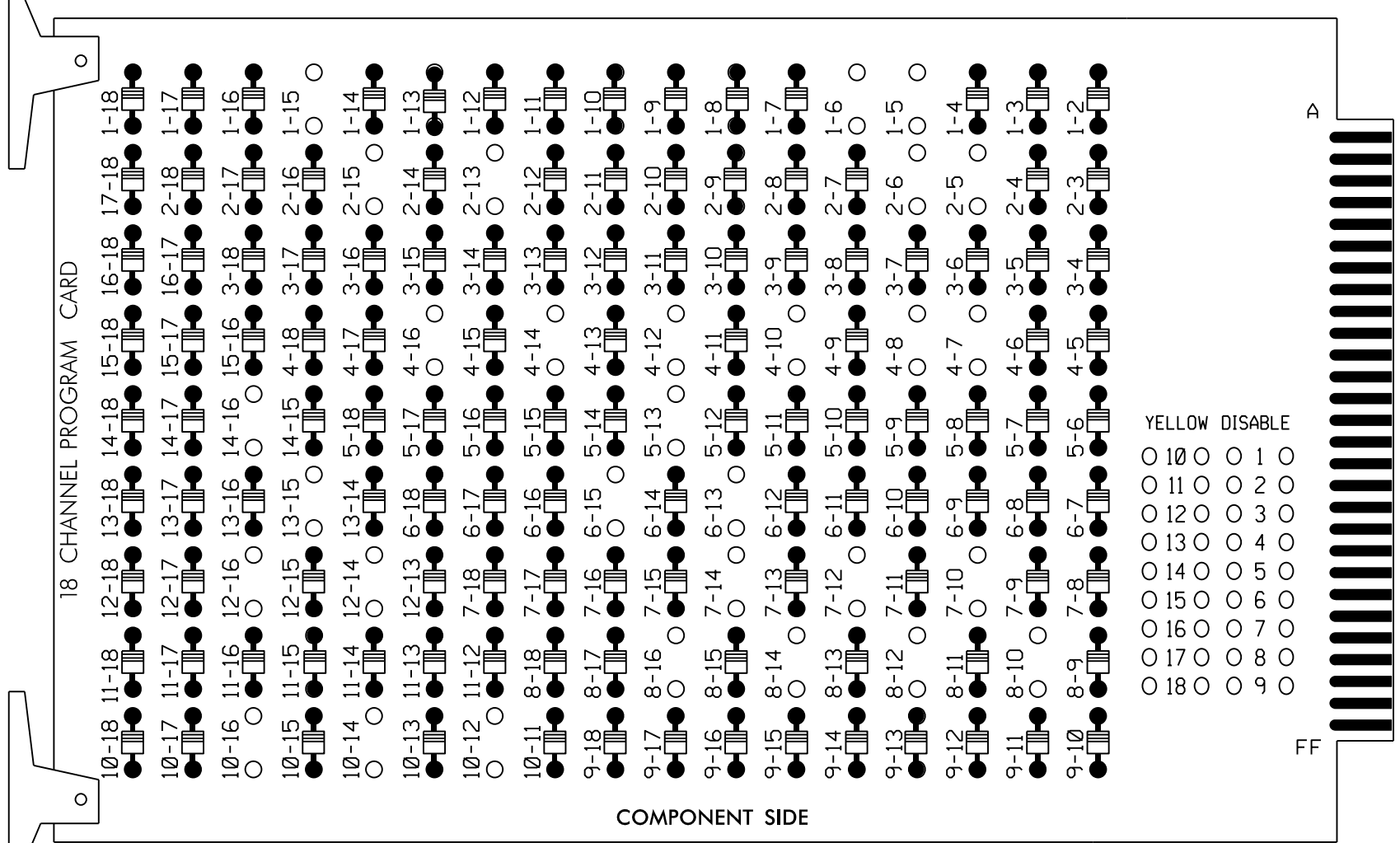
Continuity of Personnel 3/21/2020
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18 CHANNEL CONFLICT MONITOR
PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

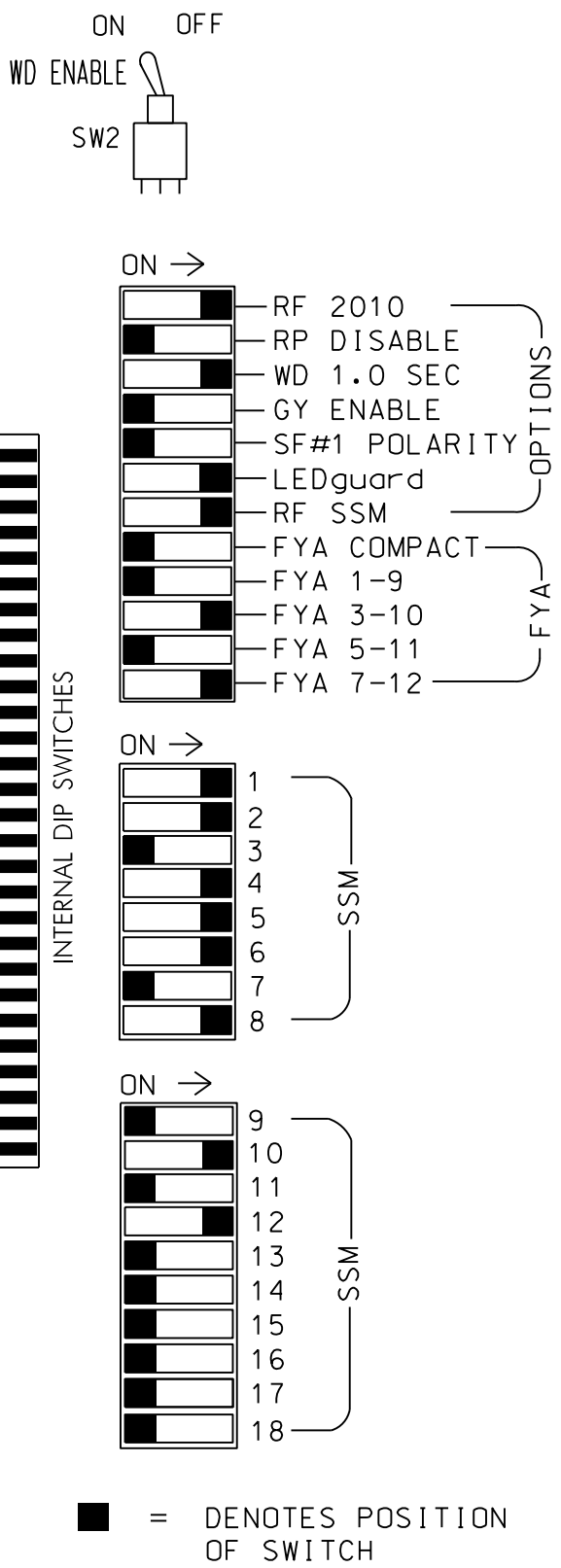
REMOVE DIODE JUMPERS 1-5, 1-6, 1-15, 2-5, 2-6, 2-13, 2-15, 4-7, 4-8, 4-10, 4-12, 4-14, 4-16, 5-13, 6-13, 6-15, 7-10, 7-12, 7-14, 8-10, 8-12, 8-14, 8-16, 10-12, 10-14, 10-16, 12-14, 12-16, 13-15 AND 14-16.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



NOTES

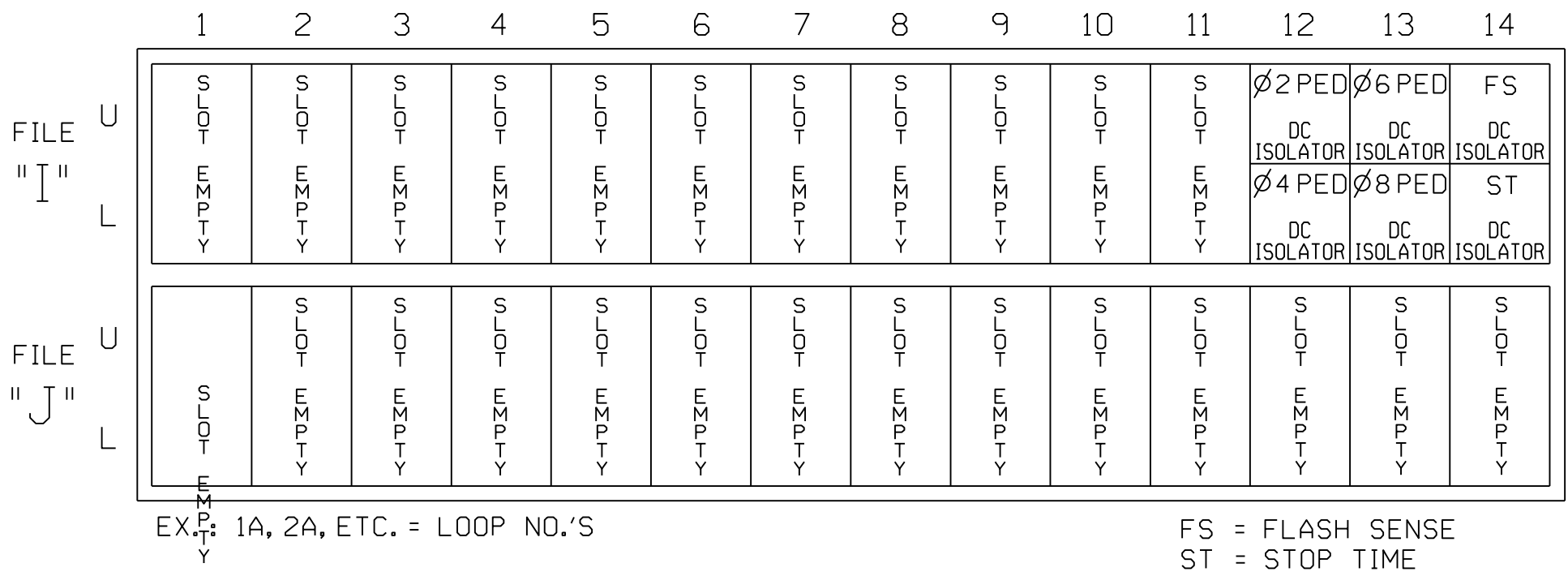
- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all Phases.
- Disable all phases for Startup In Green.
- Disable all phases for Yellow Flash.
- Program phases 2 and 6 for First Phases, and overlap 2 as Wag Overlaps.
- The cabinet and controller are part of the Goldsboro City System.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
CABINET.....332 W/AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S5,S6,S7,S8,S9,S10,S11,S12,
AUX S2,AUX S5
PHASES USED.....1,2,2PED,4,4PED,5,6,6PED,7,8,8PED
OVERLAP "A".....NOTE USED
OVERLAP "B".....*
OVERLAP "C".....NOT USED
OVERLAP "D".....*

* See overlap programming detail on sheet 2

INPUT FILE POSITION LAYOUT
(front view)

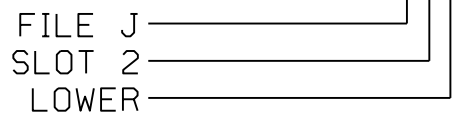


INPUT FILE CONNECTION & PROGRAMMING CHART

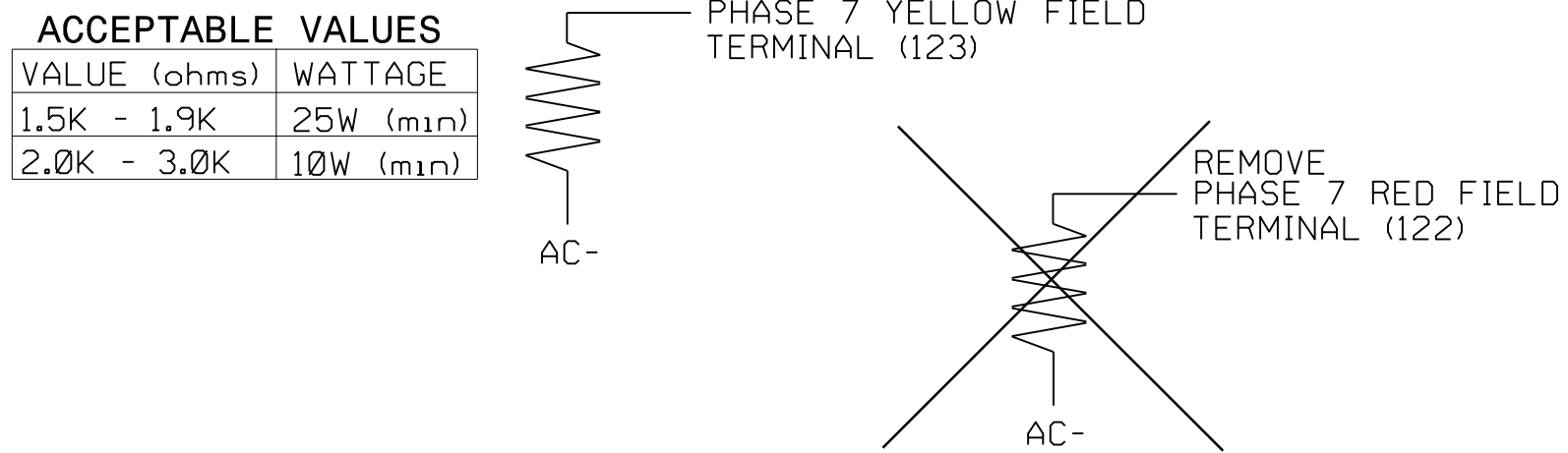
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P41,P42	TB8-5,6	I12L	69	31	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	32	PED 8	8 PED					

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

INPUT FILE POSITION LEGEND: J2L



LOAD RESISTOR INSTALLATION DETAIL
(install and remove resistors as shown)



SPECIAL DETECTOR NOTE

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

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22	P21, P22	NU	41,42	P41, P42	51	61,62	P61, P62	71	81,83	P81, P82	NU	81	NU	NU	71	NU
RED		128			101			134			107							
YELLOW		129			102			135		*	108							
GREEN		130			103			136			109							
RED ARROW	125						131						A124				A101	
YELLOW ARROW	126						132						A125				A102	
FLASHING YELLOW ARROW													A126				A103	
GREEN ARROW	127						133			124								
Hand icon			113			104			119		110							
Walking person icon			115			106			121		112							

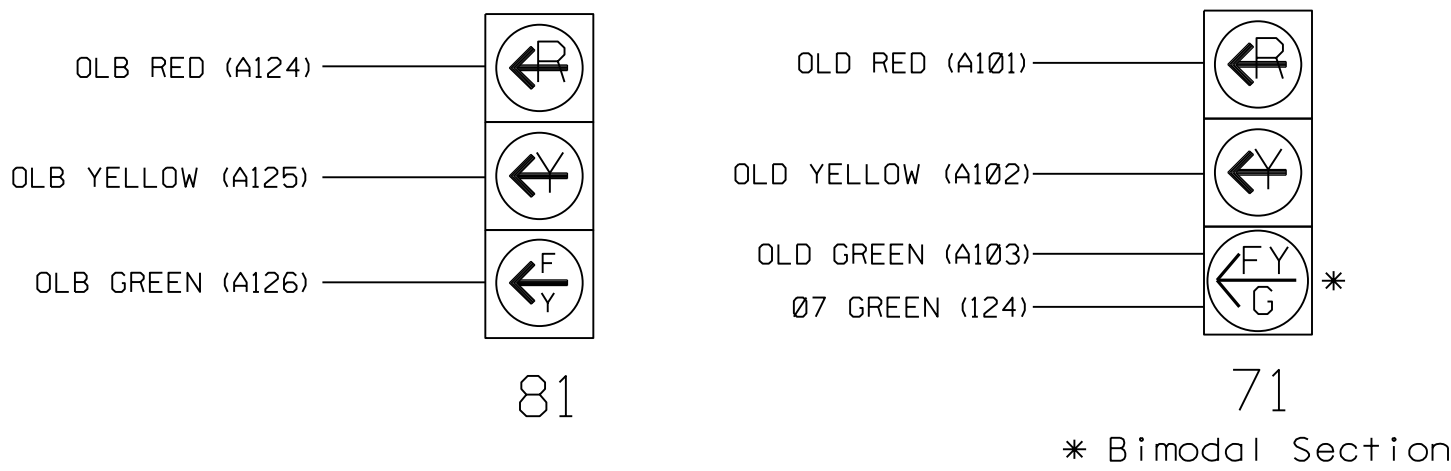
NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

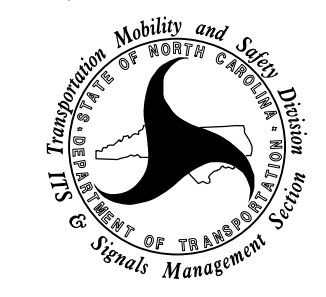
The sequence display for signal head 71 requires special logic programming. See sheet 2 for programming instructions.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-0233
DESIGNED: February 2025
SEALED: 3/27/2025
REVISED:

Final Design
Electrical Detail - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared for the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529		US 70 Business (George Street) at US 70 Business (Grantham Street) Division 4 Wayne County Goldsboro PLAN DATE: February 2025 REVIEWED BY: J O Deaton PREPARED BY: M W Yalch REVIEWED BY: REVISIONS INIT. DATE DocuSigned by: James O. Deaton 3/27/2025 SIGNATURE DATE SIC. INVENTORY NO. 04-0233	

(program controller as shown below)

1. From MAIN MENU press '2' (PHASE CONTROL), then '1' (PHASE CONTROL FUNCTIONS). Scroll to the bottom of the menu and enable act logic commands 1, 2, 3, 4 and 5.
2. From MAIN MENU press '6' (OUTPUTS), then '3' (LOGICAL I/O PROCESSOR).



(program controller as shown below)

From Main Menu press '2' (Phase Control), then '1' (Phase Control Functions). Program phases 2, 4, 6 and 8 for 'Advanced Walk'. Make sure the Advance Walk times shown on the Signal Design plan are programmed in the 'Phase Timing' menu.

(program controller as shown below)

From MAIN MENU press '8' (OVERLAPS), then '1' (VEHICLE OVERLAP SETTINGS). Press '+' once.

```

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
        X
VEH OVL PARENTS:
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?..N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)....0
RED CLEAR (0=PARENT,0.1-25.5 SEC)....0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

```

NOTICE
GREEN
FLASH

PRESS '+' TWICE

```

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 1234567890111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?..N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,0-25.5 SEC)....0
RED CLEAR (0=PARENT,0.1-25.5 SEC)....0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

```

NOTICE
GREEN
FLASH

OVERLAP PROGRAMMING COMPLETE

(program controller as shown below)

1. From Main Menu press '2' (Phase Control), then '1' (Phase Control Functions). Scroll to the bottom of the menu and enable Dynamic/Backup Control Function 1.
2. From Phase Control Functions Menu press '2' (Dynamic/Backup Control Functions).

```

DYNAMIC/BACKUP CONTROL FUNCTION #01
OVERLAPS: ABCDEFGHIJKLMNOP
IF OVERLAPS ARE ACTIVE:
OR PHASES: 12345678910111213141516
IF PHASES ARE ON: X
OMIT PHASES X
CALL PHASES

```

BACKUP PROTECTION PROGRAMMING COMPLETE

NOTE: Remove the Dynamic Omit Control Programming above.

FLASHER CIRCUIT MODIFICATION DETAIL

In order to ensure that signals flash concurrently on the same approach, make the following flasher circuit changes:

1. On rear of PDA - Remove wire from Term. T2-4 and terminate on T2-2.
2. On rear of PDA - Remove wire from Term. T2-5 and terminate on T2-3.
3. Remove Flasher Unit 2.

The changes listed above tie all phases and overlaps to Flasher Unit 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-0233
DESIGNED: February 2025
SEALED: 3/27/2025
REVISED:

Final Design
Electrical Detail - Sheet 2 of 2

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

**ELECTRICAL AND PROGRAMMING
DETAILS FOR:**

750 N.Greenfield Pkwy,Garner,NC 27529

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200, Raleigh, NC 27607
Phone: 919-461-1100

US 70 Business (George Street)
at
US 70 Business (Grantham Street)

Division 4 Wayne County Goldsboro

PLAN DATE: February 2025	REVIEWED BY: J O Deaton
--------------------------	-------------------------

PREPARED BY: M W Yalch	REVIEWED BY:
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REVISIONS	INIT.	
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SEAL

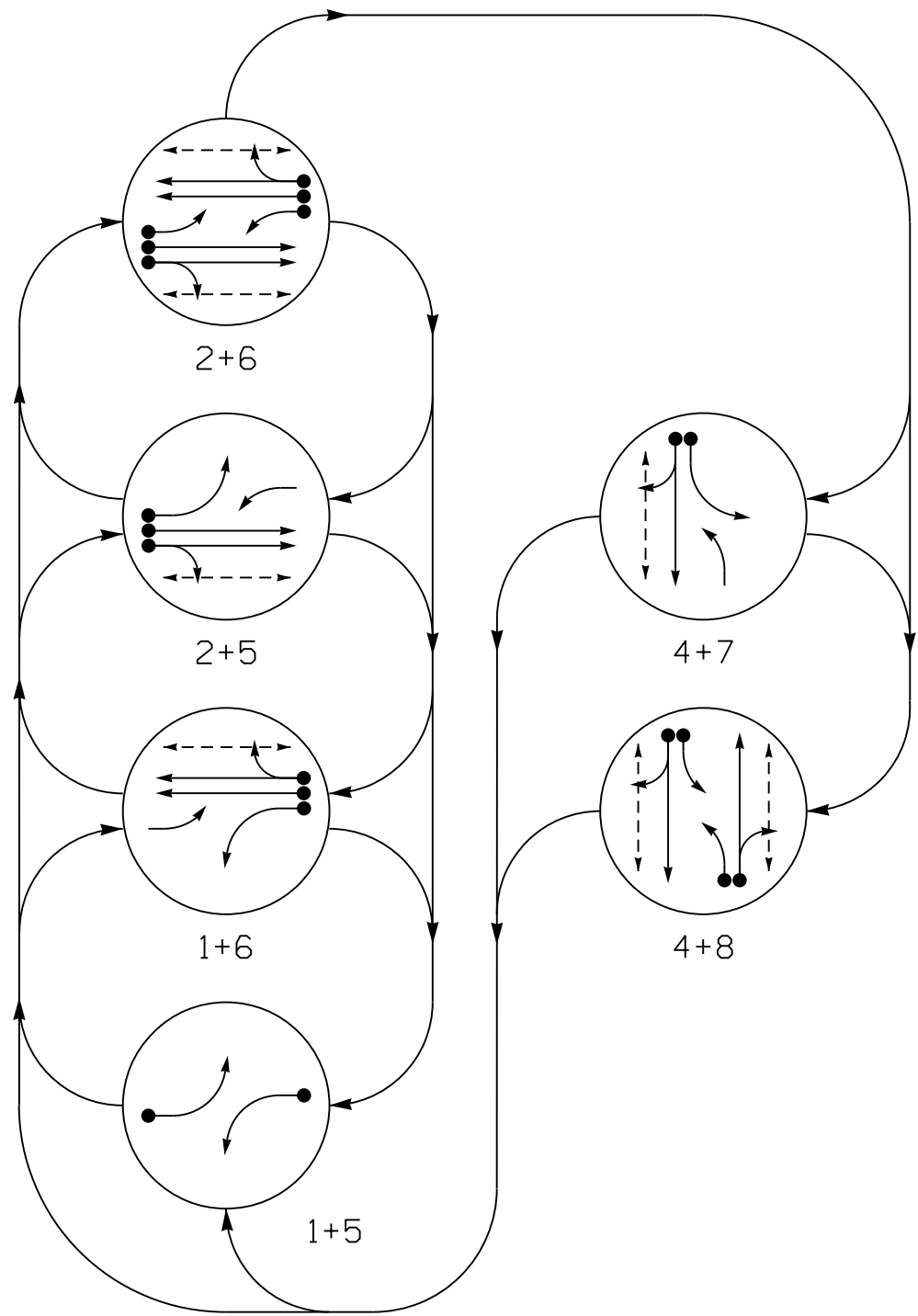
DocuSigned by

James P.

SIGNA
40FF8AC430B1

SIG. INVEN

PHASING DIAGRAM



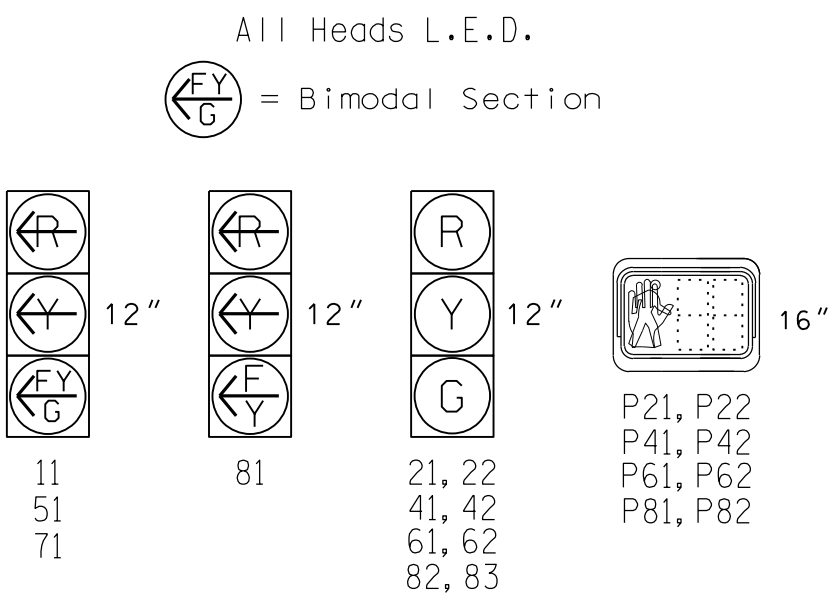
PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATION

SIGNAL FACE	PHASE						
	1 + 5	1 + 6	2 + 5	2 + 6	4 + 7	4 + 8	FLASH
11							
21, 22	R	R	G	G	R	R	
41, 42	R	R	R	R	G	G	R
51							
61, 62	R	G	R	G	R	R	
71							
81	R	R	R	R			
82, 83	R	R	R	R	R	G	R
P21, P22	DW	DW	W	W	DW	DW	DRK
P41, P42	DW	DW	DW	DW	W	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DRK

SIGNAL FACE I.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART													
INDUCTIVE LOOPS							DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM	LOOP	NEW CARD
1A	6X40	0	EXISTING	-	1	Y	Y	-	-	15	-	Y	
2A	6X20	70	EXISTING	-	2	Y	Y	-	-	-	-	Y	
4A	6X40	0	EXISTING	-	4	Y	Y	-	-	10	-	Y	
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	Y	
6A	6X6	70	EXISTING	-	6	Y	Y	-	-	-	-	Y	
6B	6X6	70	EXISTING	-	6	Y	Y	-	-	-	-	Y	
7A	6X40	0	EXISTING	-	7	Y	Y	-	-	15	-	Y	
8A	6X40	0	EXISTING	-	8	Y	Y	-	-	3	-	Y	
8B	6X40	0	EXISTING	-	8	Y	Y	-	-	10	-	Y	

6 Phase Fully Actuated (Goldsboro City 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.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- In the event of loop replacement, refer to the current Signals and Geometrics Design Manual.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pavement markings are existing.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Controller Asset: #0234.

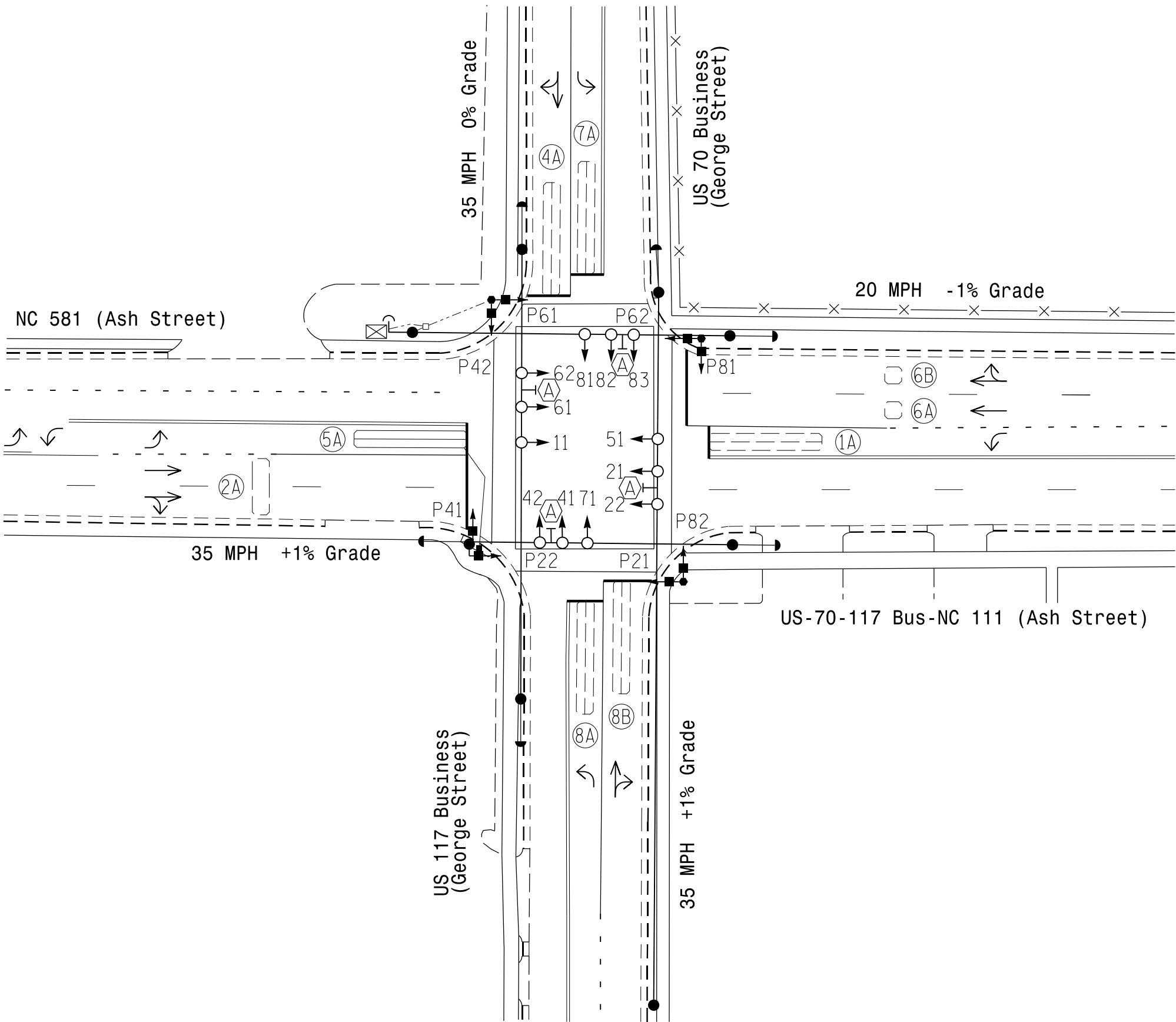
LEGEND

- | PROPOSED | EXISTING |
|--|----------|
| Traffic Signal Head | |
| Modified Signal Head Sign | N/A |
| Pedestrian Signal Head With Push Button & Sign | |
| Signal Pole with Guy | |
| Signal Pole with Sidewalk Guy | |
| Inductive Loop Detector | |
| Controller & Cabinet | |
| Junction Box | |
| 2-in Underground Conduit | |
| N/A | |
| Right of Way | |
| Directional Arrow | |
| Type II Signal Pedestal | |
| Street Name Sign (D3-1) | |

OASIS 2070 TIMING CHART

FEATURE	PHASE							
	1	2	4	5	6	7	8	
Min Green 1 *	7	10	7	7	10	7	7	
Extension 1 *	2.0	3.0	2.0	2.0	3.0	2.0	2.0	
Max Green 1 *	20	30	25	20	30	20	25	
Yellow Clearance	3.0	3.8	3.8	3.0	3.8	3.0	3.8	
Red Clearance	2.4	2.4	1.8	2.4	2.4	2.6	1.8	
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Walk 1 *	-	14	14	-	14	-	14	
Don't Walk 1	-	14	22	-	12	-	22	
Advanced Walk	-	7	7	-	7	-	7	
Seconds Per Actuation *	-	-	-	-	-	-	-	
Max Variable Initial *	-	-	-	-	-	-	-	
Time Before Reduction *	-	-	-	-	-	-	-	
Time To Reduce *	-	-	-	-	-	-	-	
Minimum Gap	-	-	-	-	-	-	-	
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-	-	
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-	-	
Dual Entry	-	-	ON	-	-	-	ON	
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	

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



Signal Upgrade

Prepared for the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

US 70-117 Bus-NC 111/NC 581 (Ash St) at US 70/US 117 Business (George St)

Division 4 Wayne County Goldsboro

PLAN DATE: February 2025 REVIEWED BY: C.L. Kalencik

PREPARED BY: M. Tindal REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

DocuSigned by: Courtney L. Kalencik 3/27/2025

SIGNATURE DATE

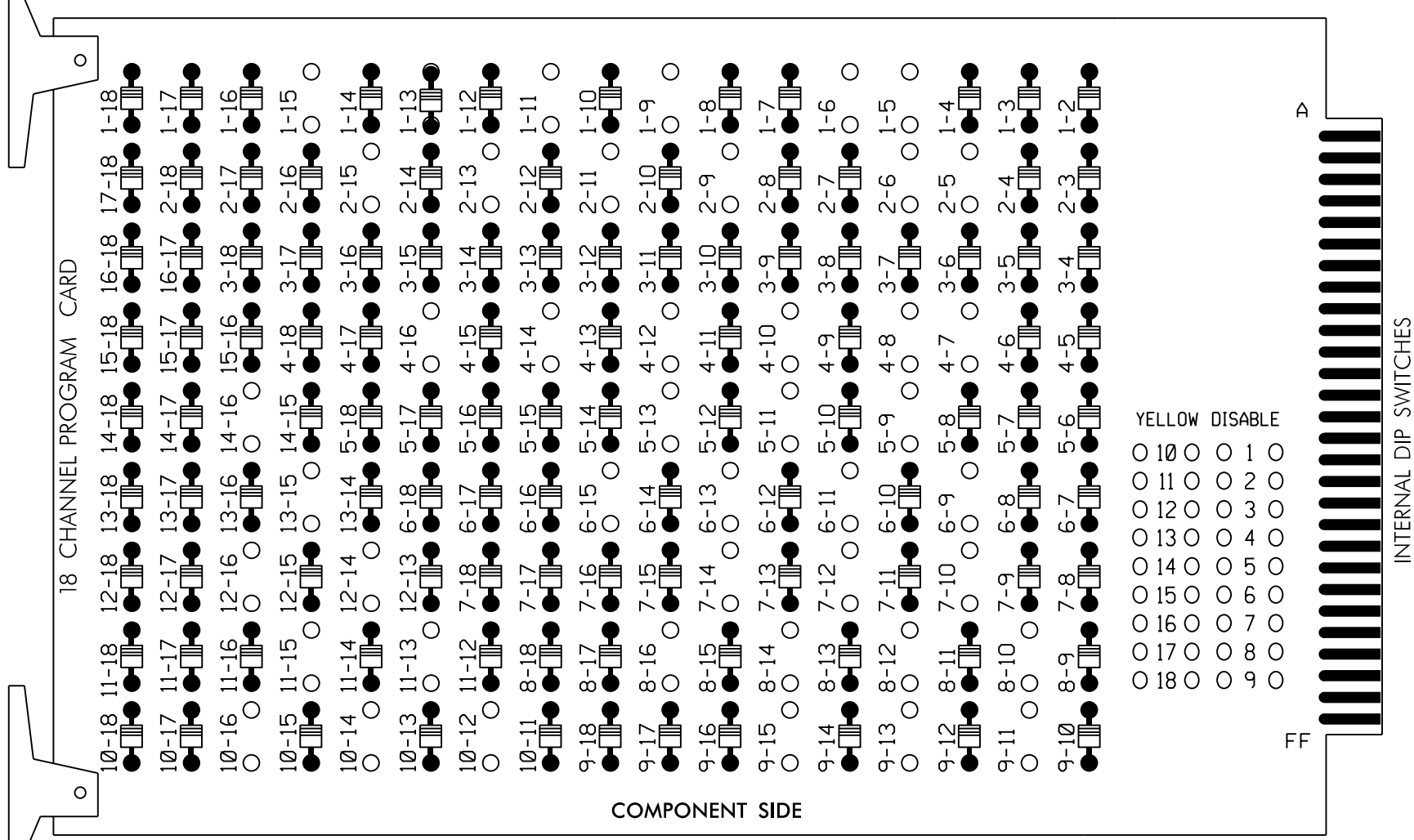
SIG. INVENTORY NO. 04-0234

3/27/2025
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18 CHANNEL 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, 4-7, 4-8, 4-10, 4-12, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 7-10, 7-12, 7-14, 8-10, 8-12, 8-14, 8-16, 9-11, 9-13, 9-15, 10-12, 10-14, 10-16, 11-13, 11-15, 12-14, 12-16, 13-15 AND 14-16.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

NOTES

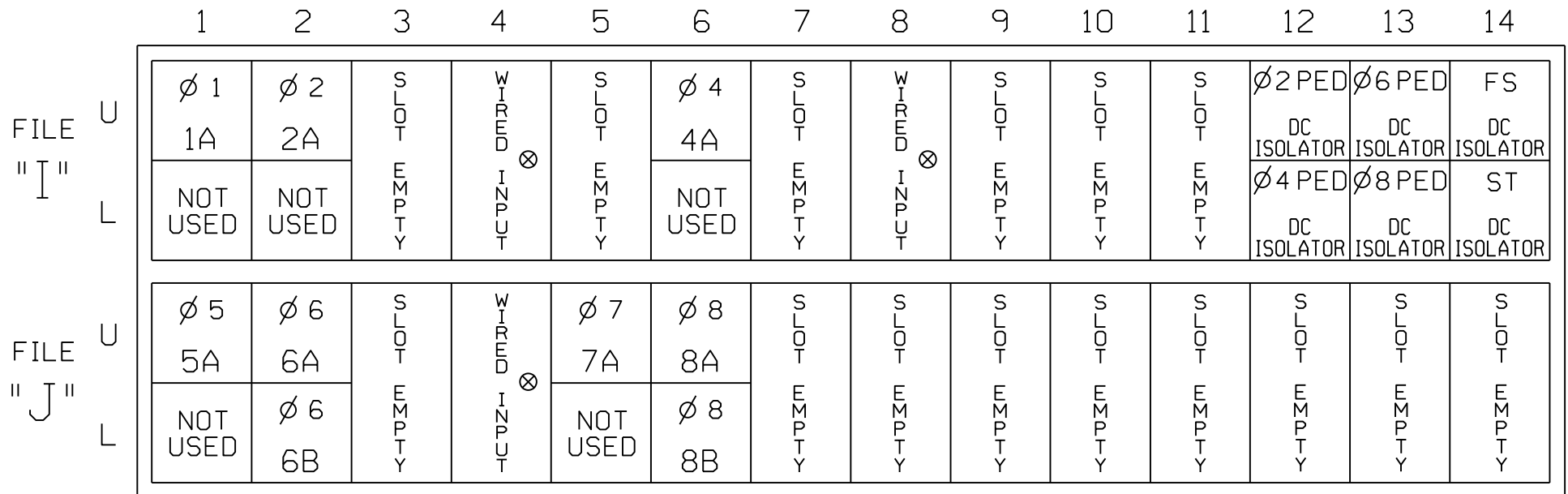
- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all Phases.
- Disable all phases for Startup In Green.
- Disable all phases for Yellow Flash.
- Program phases 2 and 6 for First Phases, and overlaps 1 and 2 as Wag Overlaps.
- The cabinet and controller are part of the Goldsboro City System.

EQUIPMENT INFORMATION

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

* See overlap programming detail on sheet 2

INPUT FILE POSITION LAYOUT
(front view)



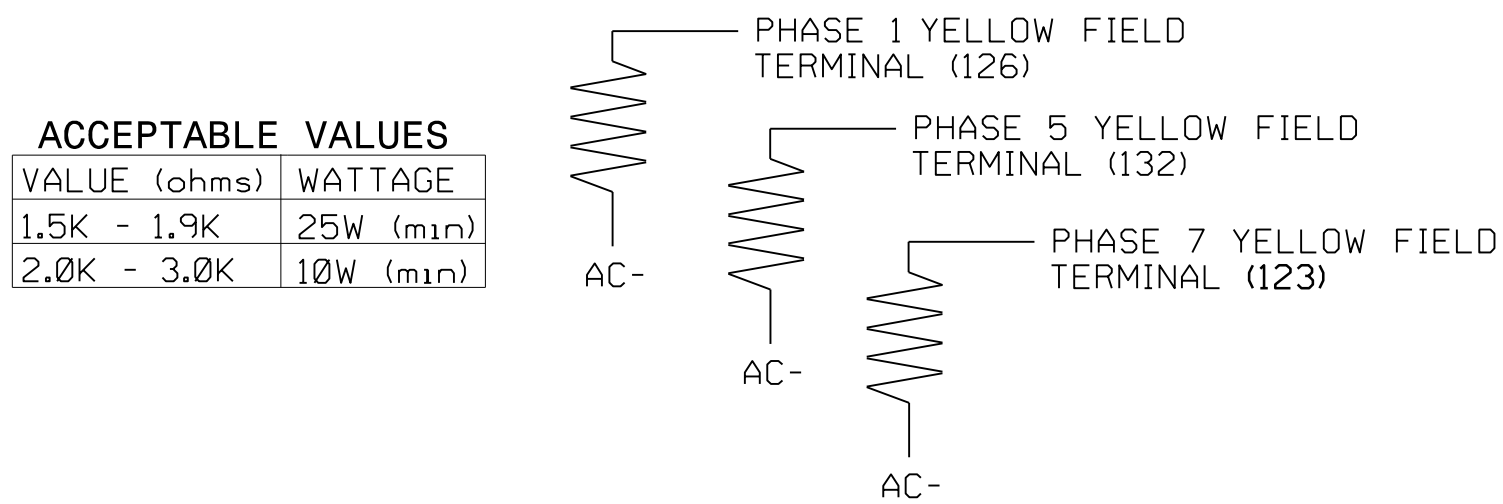
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)



INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
2A	TB2-5,6	J4U	48	10	26	6	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			10
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y			15
6A	-	I4U	47	9	22	2	Y	Y			
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
7A ³	TB5-5,6	J5U	57	19	7	7	Y	Y			15
8A	-	I8U	49	11	24	4	Y	Y			3
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			10
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P41,P42	TB8-5,6	I12L	69	31	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	32	PED 8	8 PED					

- Add jumper from I1-W to J4-W, on rear of input file.
- Add jumper from J1-W to I4-W, on rear of input file.
- Add jumper from J5-W to I8-W, on rear of input file.

INPUT FILE POSITION LEGEND: J2L

FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-0234
DESIGNED: February 2025
SEALED: 3/27/2025
REVISED:

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200, Raleigh, NC 27607
Phone: 919-461-1100

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22	P21, P22	NU	41,42	P41, P42	51	61,62	P61, P62	71	82,83	P81, P82	11	81	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						133			124								
⬇			113			104			119			110						
⬇			115			106			121			112						

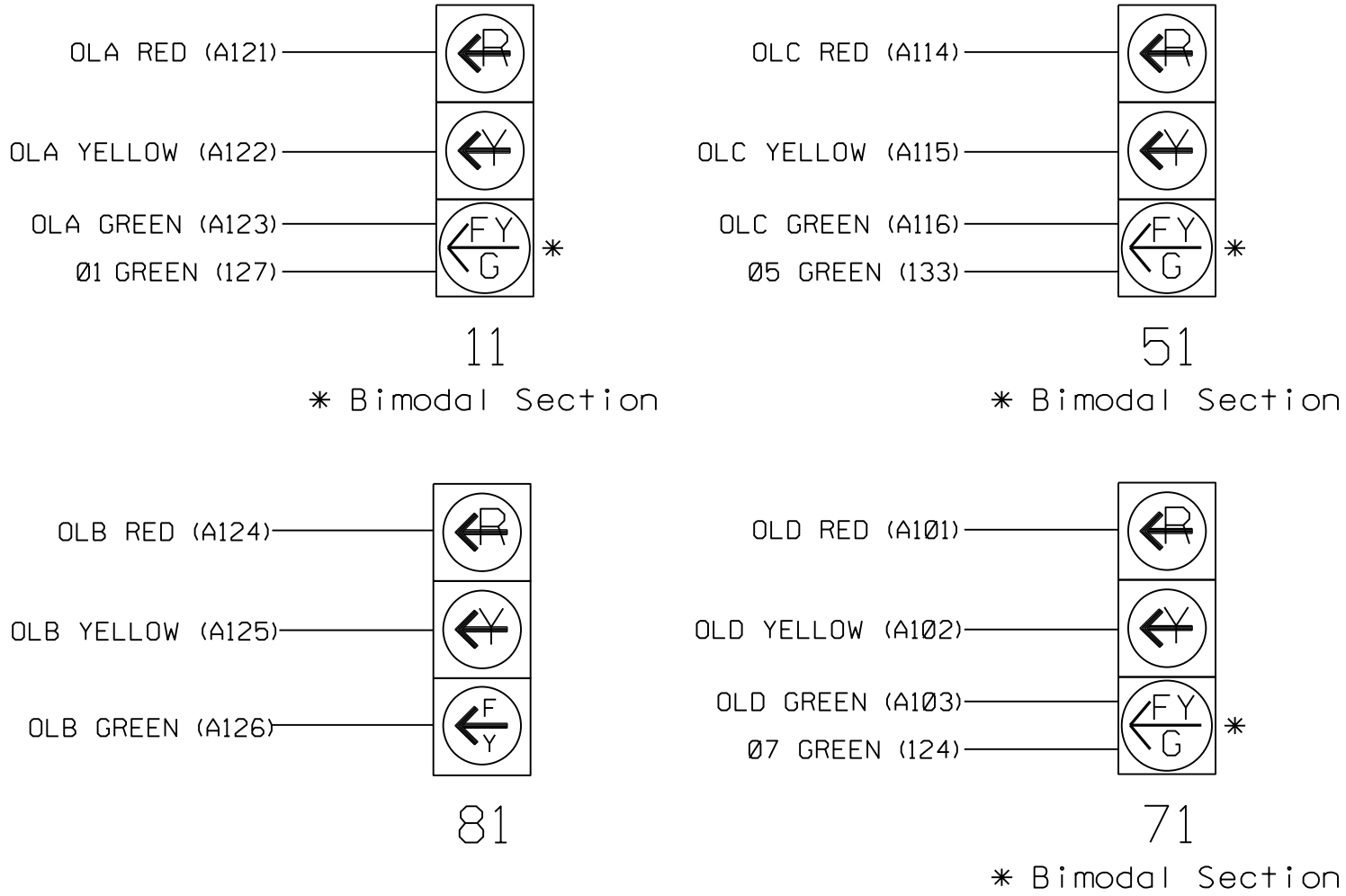
NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for signal heads 11, 51 and 71 requires special logic programming. See sheet 3 for programming instructions.

Electrical Detail - Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:		US 70-117 Bus-NC 111/ NC 581 (Ash St) at US 70/ US 117 Business (George St)		SEAL	
Prepared For the Offices of: 		Division 4 Wayne County Goldsboro			
PLAN DATE: February 2025		REVIEWED BY: J O Deaton		DocuSigned by: James O. Deaton	
PREPARED BY: M W Yalch		REVIEWED BY:		3/27/2025	
REVISIONS		INIT.		DATE	
750 N.Greenfield Pkwy, Garner, NC 27529					
				DATE	
				SIC. INVENTORY NO. 04-0234	

(program controller as shown below)

```

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE:           12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR:   _ RED _ YELLOW _ GREEN
FLASH COLORS:    _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0=255 SEC).....0
YELLOW CLEAR (0=PARENT,3=25.5 SEC)...0.0
RED CLEAR (0=PARENT,0.1=25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1=16)....0

```

PRESS ' + '

```

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

```

PRESS ' + '

```

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?..Y.N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,1-25.5 SEC)....0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

```

PRESS ' + '

```

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 1234567890111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)....0
RED CLEAR (0=PARENT,1-25.5 SEC)....0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

```

← NOTICE
GREEN
FLASH

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.

(program controller as shown below)

From Main Menu press '2' (Phase Control), then '1' (Phase Control Functions). Program phases 2, 4, 6 and 8 for 'Advanced Walk'. Make sure the Walk Advance Time shown on the Signal Design plans are programmed in the 'Phase Timing' menu.

In order to ensure that signals flash concurrently on the same approach, make the following flasher circuit changes:

1. On rear of PDA - Remove wire from Term. T2-4 and terminate on T2-2.
2. On rear of PDA - Remove wire from Term. T2-5 and terminate on T2-3.
3. Remove Flasher Unit 2.

The changes listed above tie all phases and overlaps to Flasher Unit 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 04-0234
DESIGNED: February 2025
SEALED: 3/27/2025
REVISED:

(program controller as shown below)

- Block 1:**
 IF LOGICAL I/O COMMAND #1 (+/-COMMAND#)
 IF ACTIVE PHASE #1 IS ON
 AND RED CLEAR ON PHASE #1 IS ON
 THEN:
 SET OUTPUT ASSIGNMENT #50 ON
 SET OUTPUT ASSIGNMENT #51 OFF
 PRESS '+'
 SCROLL DOWN

Block 2:
 IF LOGICAL I/O COMMAND #2 (+/-COMMAND#)
 IF ACTIVE PHASE #1 IS ON
 THEN:
 SET OUTPUT ASSIGNMENT #52 OFF
 PRESS '+'
 SCROLL DOWN

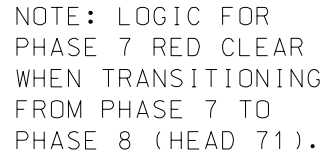
Block 3:
 IF LOGICAL I/O COMMAND #3 (+/-COMMAND#)
 IF YELLOW ON PHASE #1 IS ON
 THEN:
 SET OUTPUT ASSIGNMENT #51 ON
 PRESS '+'
 SCROLL DOWN

Block 4:
 IF LOGICAL I/O COMMAND #4 (+/-COMMAND#)
 IF ACTIVE PHASE #5 IS ON
 AND RED CLEAR ON PHASE #5 IS ON
 THEN:
 SET OUTPUT ASSIGNMENT #42 ON
 SET OUTPUT ASSIGNMENT #43 OFF
 PRESS '+'
 SCROLL DOWN

Block 5:
 IF LOGICAL I/O COMMAND #5 (+/-COMMAND#)
 IF ACTIVE PHASE #5 IS ON
 THEN:
 SET OUTPUT ASSIGNMENT #44 OFF
 PRESS '+'
 SCROLL DOWN

Block 6:
 IF LOGICAL I/O COMMAND #6 (+/-COMMAND#)
 IF YELLOW ON PHASE #5 IS ON
 THEN:
 SET OUTPUT ASSIGNMENT #43 ON
 PRESS '+'
 SCROLL DOWN

Notes:
 NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).
 NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW OFF DURING PHASE 1 (HEAD 11).
 NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).
 NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).
 NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW OFF DURING PHASE 5 (HEAD 51).
 NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).



NOTE: LOGIC TO HOLD
HEAD 81 FYA "OFF"
DURING PED 4 LPI.

NOTE: LOGIC TO HOLD
HEAD 51 FYA "OFF"
DURING PED 6 LPI.

NOTE: LOGIC TO HOLD
HEAD 71 FYA "OFF"
DURING PED 8 LPI.

USE TO INTERPRET LOGIC PROCESSOR

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200, Raleigh, NC 27607
Phone: 919-461-1100

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DocuSigned by:
James O. Deaton 3/27/2021
SIGNATURE DATE
40FF8AC430BD40F—
SIG. INVENTORY NO. 04-0234

DocuSigned by:
D. P. + 3/27/2021

James V. Deaton 5/21/2014
SIGNATURE DATE
40FF8AC430BD40F

SIG. INVENTORY NO. 04-0234

Notes

- Design the RRFB in accordance with the 2023 MUTCD, 11th Edition, Chapter 4L: Rectangular Rapid-Flashing Beacons. The RRFB unit associated with a post-mounted sign and plaque should be located between the pedestrian crossing warning (W11-2) sign and the supplemental downward diagonal arrow plaque (W16-7p).
- If needed, a supplemental RRFB with an "AHEAD" (W16-9P) or distance (W16-2P) plaque may be installed on the approach in advance of the crosswalk. The additional RRFB shall be a supplemental to and not a replacement for the RRFB at the actual crosswalk.
- When practical, the RRFB and mounting post on the right side of the road shall be mounted on the approach side of the crosswalk closest to approaching traffic.
- When practical, the RRFB and mounting post on the left side of the road may be mounted on the back of the post for the opposing approach.
- A RRFB on the left side of the roadway or in the median may be individually mounted on the approach side of the crosswalk closest to approaching traffic, or, when practical, may be mounted back to back on the same post and mounted on either side of the crosswalk in the median.
- Locate push button sign (R10-25) and push button to face crosswalk, even if it is mounted on the back side of the sign.
- All RRFB units associated with a given crosswalk (including those with an advance crossing sign) shall, when actuated, simultaneously commence operation of their rapid-flashing indications and shall cease operation simultaneously.
- For quantitative purposes, a single sided, post mounted RRFB is one assembly unit. A double sided RRFB mounted on the same post is counted as two (2) assemblies.
- For additional information, see Version 24 of the Transportation Systems Management and Operations (TSMO) Unit Project Special Provisions (PSP).

Timing of RRFBs

When actuated, the two yellow indications in each RRFB unit shall flash in a rapidly flashing sequence.

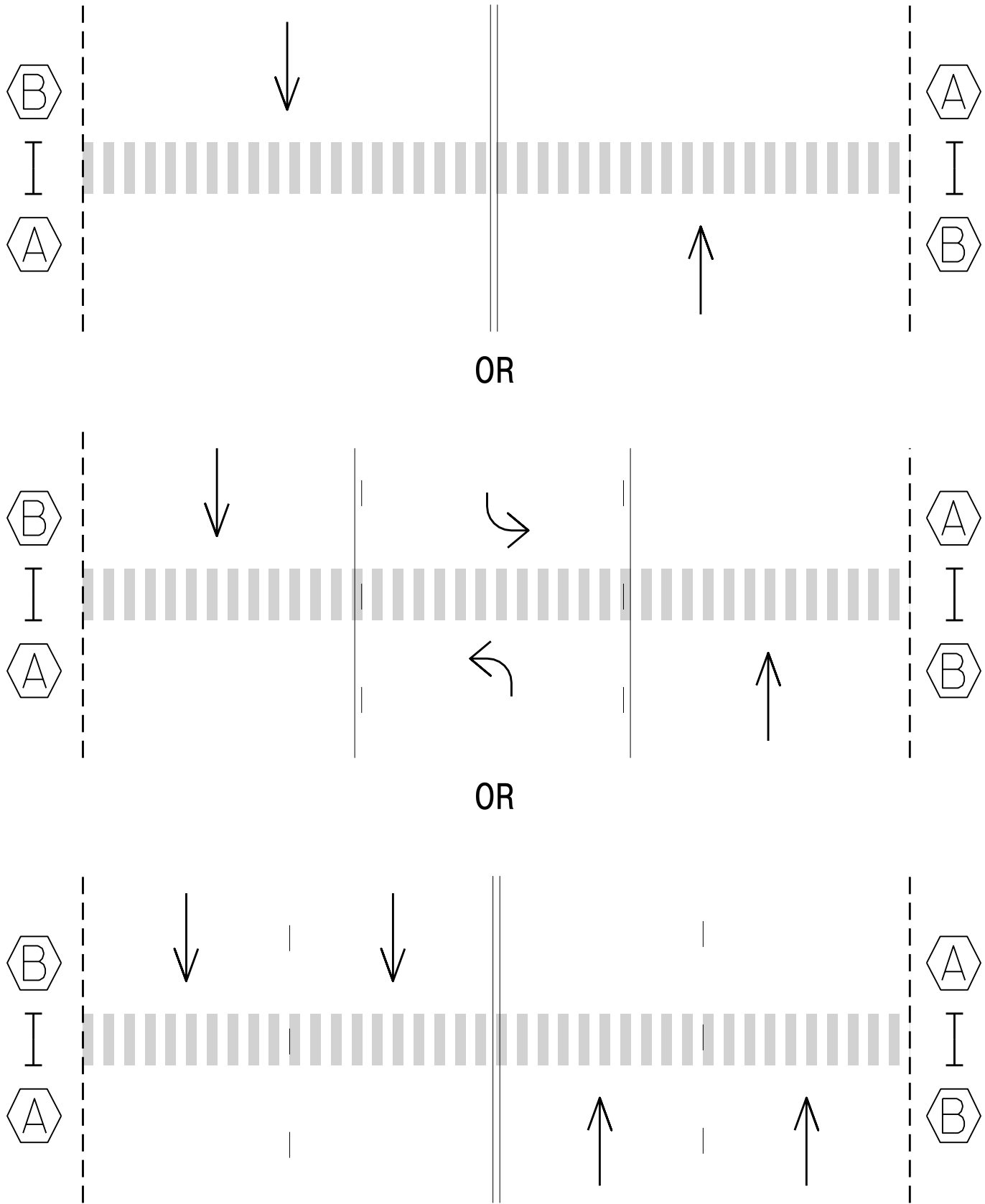
The RRFB shall flashing sequence shall provide enough time for pedestrians to cross from curb to curb. It is recommended to be a minimum of 7 seconds plus the crossing distance (D) divided by 3.5 feet/per sec., rounded up to the next whole second:

Flash Time (sec.) = 7 + D/3.5

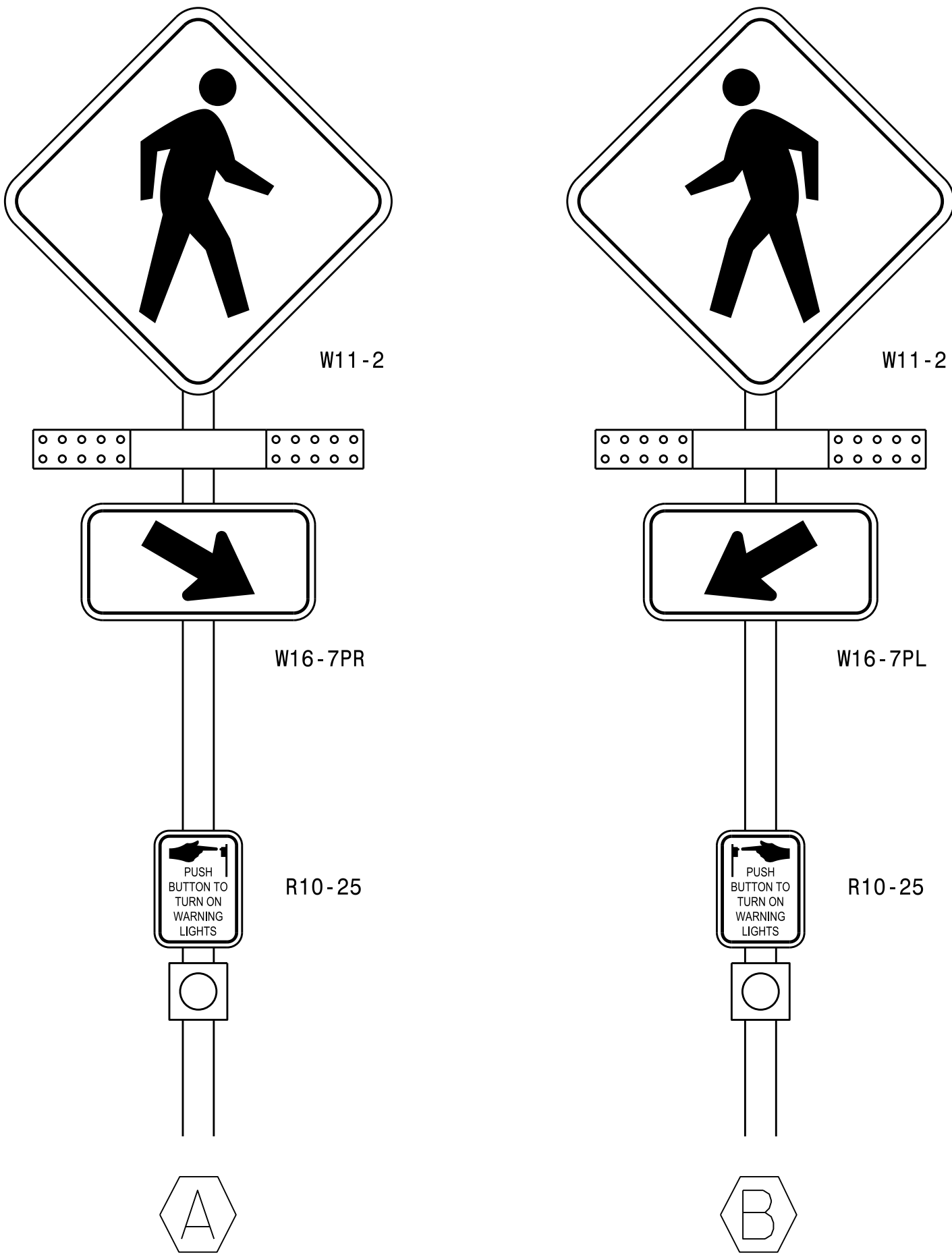
Per Section 4L.03 of the 2023 MUTCD, RRFBs shall provide 75 flashing sequences per minute. During each 800 millisecond flashing sequence, the left and right RRFB indications shall operate using the following sequence:

- The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- Both RRFB indications shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- Both RRFB indications shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 250 milliseconds.

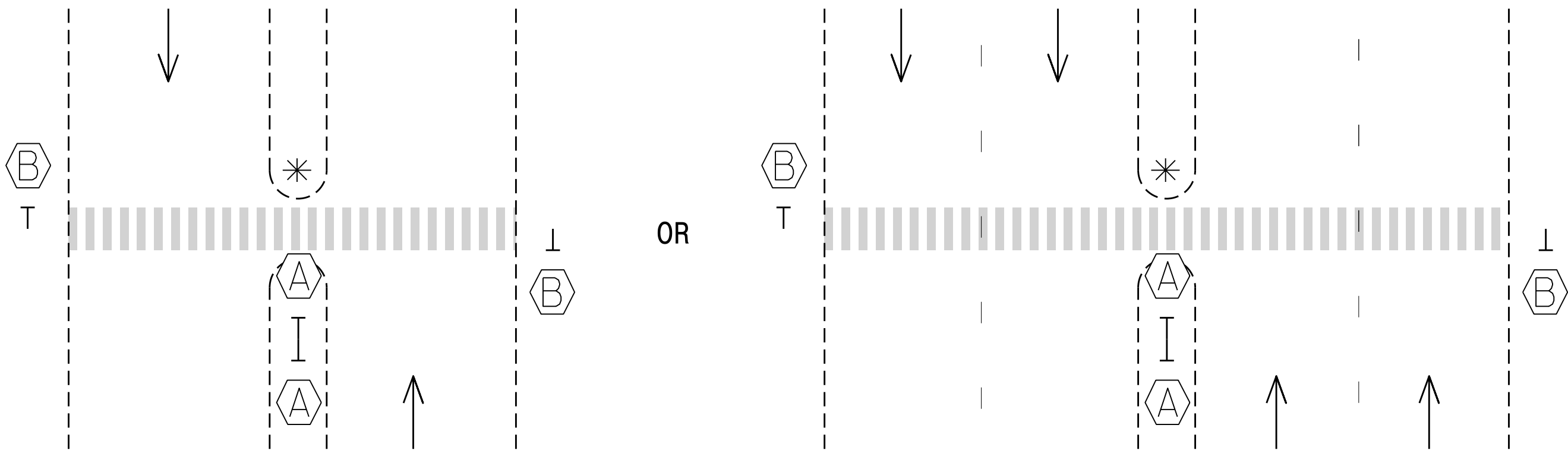
Two to Four Lanes, Undivided



RRFB Sign Detail



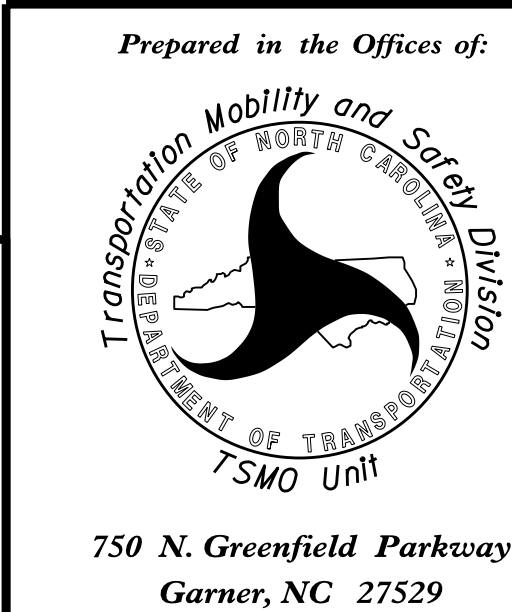
Two or Multi-Lanes, Divided



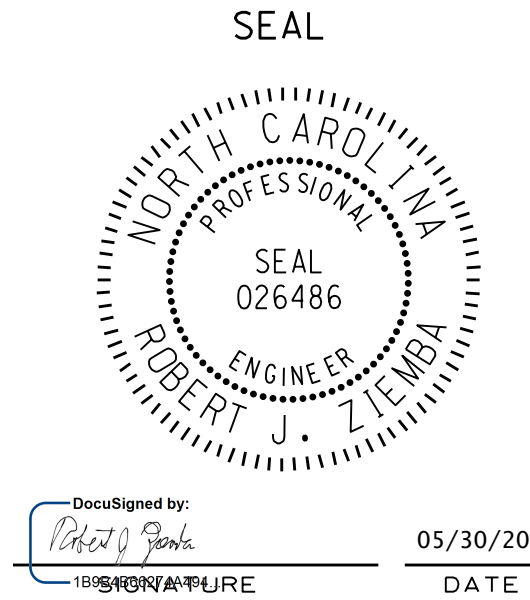
* See Note 5

* See Note 5

Standard Drawing for
Rectangular Rapid
Flashing Beacon



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



DocuSigned by:
Robert J. Ziemba

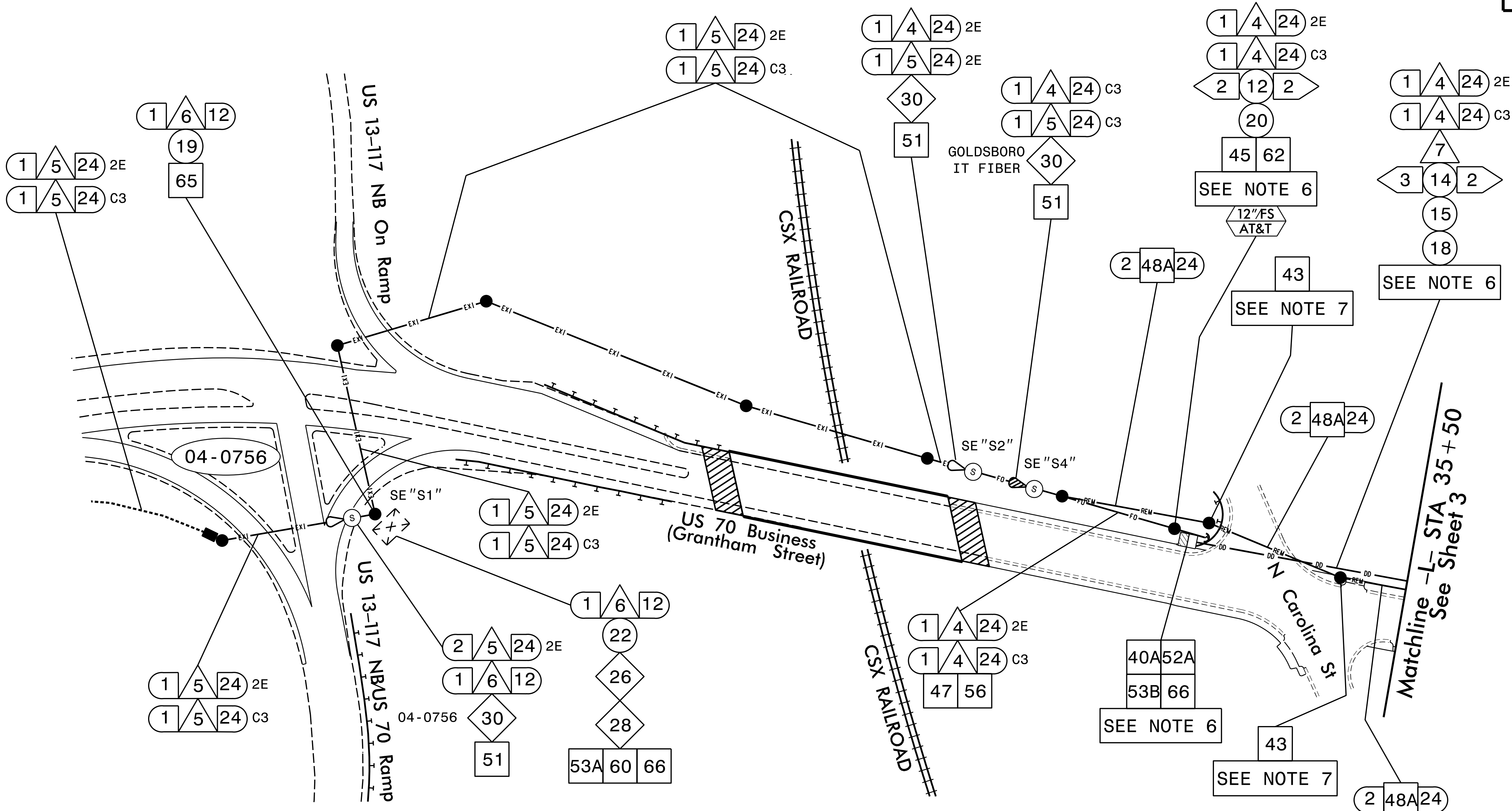
05/30/2024
DATE

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(ES)
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
61	DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS
62	BOND RISER AND MESSENGER CABLE TO POLE GROUND
63	BOND RISER TO POLE GROUND
64	BOND MESSENGER CABLE TO POLE GROUND
65	INSTALL HEAT SHRINK TUBING RETROFIT KIT
66	INSTALL MOLDABLE DUCT SEAL(S)
67	SLACK SPAN

CONSTRUCTION NOTE SYMBOLLOGY KEY

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

<i>Prepared for The Offices of:</i> 		Construction Notes		SEAL 			
		Division 4		Wayne County		Goldsboro	
750 N. Greenfield Pkwy., Garner, NC 27529		PLAN DATE: May 2025		PREPARED BY: M. Tindal			
		PREPARED BY: M.P. Cavenaugh		REVIEWED BY: C. Kalencik			
		REVISIONS		INIT.		DATE	
						DocuSigned by:  Courtney L. Kalencik ENGINEER STATE OF NORTH CAROLINA NO. 040715 COURTNEY L. KALENCIK	
						7/21/2025	
						DATE	
						CADD Filename:	



NOTES:

1. ALL CABLE ATTACHMENT POINTS ARE 12 INCHES BELOW CHARTER, FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED.
2. NOTIFY THE NCDOT DIVISION 4 TRAFFIC OFFICE AT (252) 640-6500, FIVE (5) DAYS PRIOR TO BEGINNING WORK ON COMMUNICATIONS CABLE FOR SIGNAL COMMUNICATIONS. NOTIFY THE TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED. ALL WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS OPERATIONAL.
3. NOTIFY THE CITY OF GOLDSBORO IT OFFICE, SCOTT WILLIAMS, AT (919) 580-4284, FIVE (5) DAYS PRIOR TO BEGINNING WORK.
4. CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE PLANS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGMENT DIFFERS FROM THE SUPPLIED SPLICE PLANS.
5. ONCE THE NEW FIBER OPTIC CABLE HAD BEEN INSTALLED FOR THE GOLDSBORO SIGNAL SYSTEM (FROM SE "S2" TO SE "S3") AND FOR GOLDSBORO IT (FROM SE "S4" TO SE "S5"), CUTTING OVER TO THE NEW FIBER OPTIC CABLE FOR THE GOLDSBORO SIGNAL SYSTEM AND GOLDSBORO IT SHALL NOT EXCEED 24 HOURS FOR THE SIGNAL SYSTEM FIBER AND 4 HOURS FOR THE IT FIBER (SEE ICT). CUTTING OVER TO THE NEW FIBER IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM AND THE IT NETWORK ARE BACK UP AND OPERATIONAL.
6. INSTALL NEW NCDOT FIBER AND CITY IT FIBER IN SEPARATE RISERS/CONDUITS AND SEPARATE JUNCTION BOXES. NOTES APPLY SEPARATELY TO BOTH JUNCTION BOXES (CITY AND NCDOT) BOTH JUNCTION BOXES WILL BE OVERSIZED HEAVY DUTY, WILL REQUIRE INSTALLATION OF 50 FEET OF SPARE FIBER OPTIC CABLE AND MOLDABLE DUCT SEALANT, HOWEVER, ONLY INSTALL ONE DELINEATOR MARKER, WHERE THE JUNCTION BOXES ARE SIDE BY SIDE.
7. THIS POLE WILL ONLY NEED TO BE REMOVED BY THE CONTRACTOR IF THE UTILITY OWNER HAS DEEMED THAT THE DEPARTMENT IS RESPONSIBLE. REFER TO SIGNALS AND INTELLIGENT TRANSPORTATION SYSTEMS PROJECT SPECIAL PROVISIONS SECTION 6 (UTILITY POLE REMOVALS).

LEGEND

CABLE "2E": NCDOT FIBER
CABLE "C3": CITY IT FIBER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of: 250 N. Greenfield Place, Garner, NC 27529	Communications Cable Routing Plans Signal System - City of Goldsboro		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040715 COURTNEY L. KALENCIK	
	Division 4	Wayne County		Goldsboro
	PLAN DATE: May 2025	PREPARED BY: M. Tindal		
	PREPARED BY: M.P. Cavanaugh	REVIEWED BY: C. Kalencik		
	REVISIONS	INIT.	DATE	

DocuSigned by:

SIGNATURE
11/19/2025
DATE
CADD Filename:

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100



NEW AERIAL SPLICE ENCLOSURE SE "S1" 04-0756
US 70/US 70 BUSINESS (GRANTHAM STREET)
AT US 13-117 BYPASS NB RAMP
SIG. INV. # 04-0756

Notes:

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

LEGEND

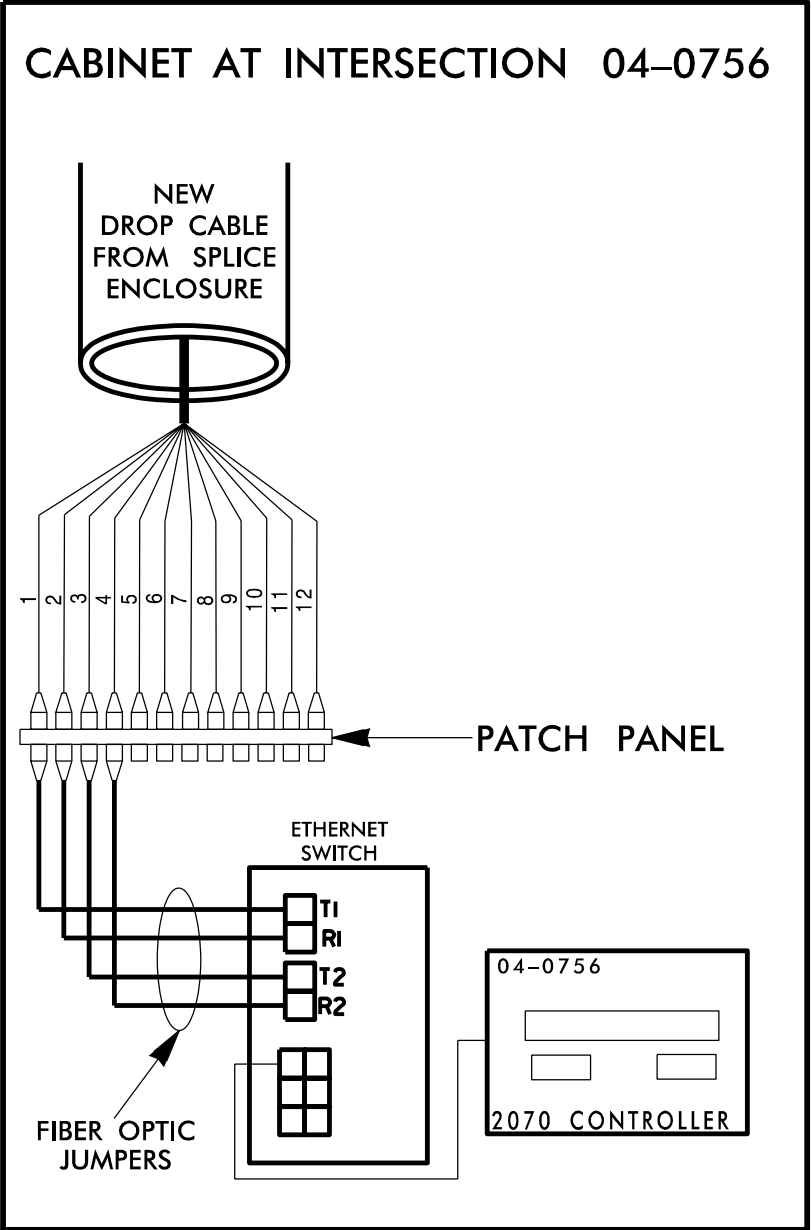
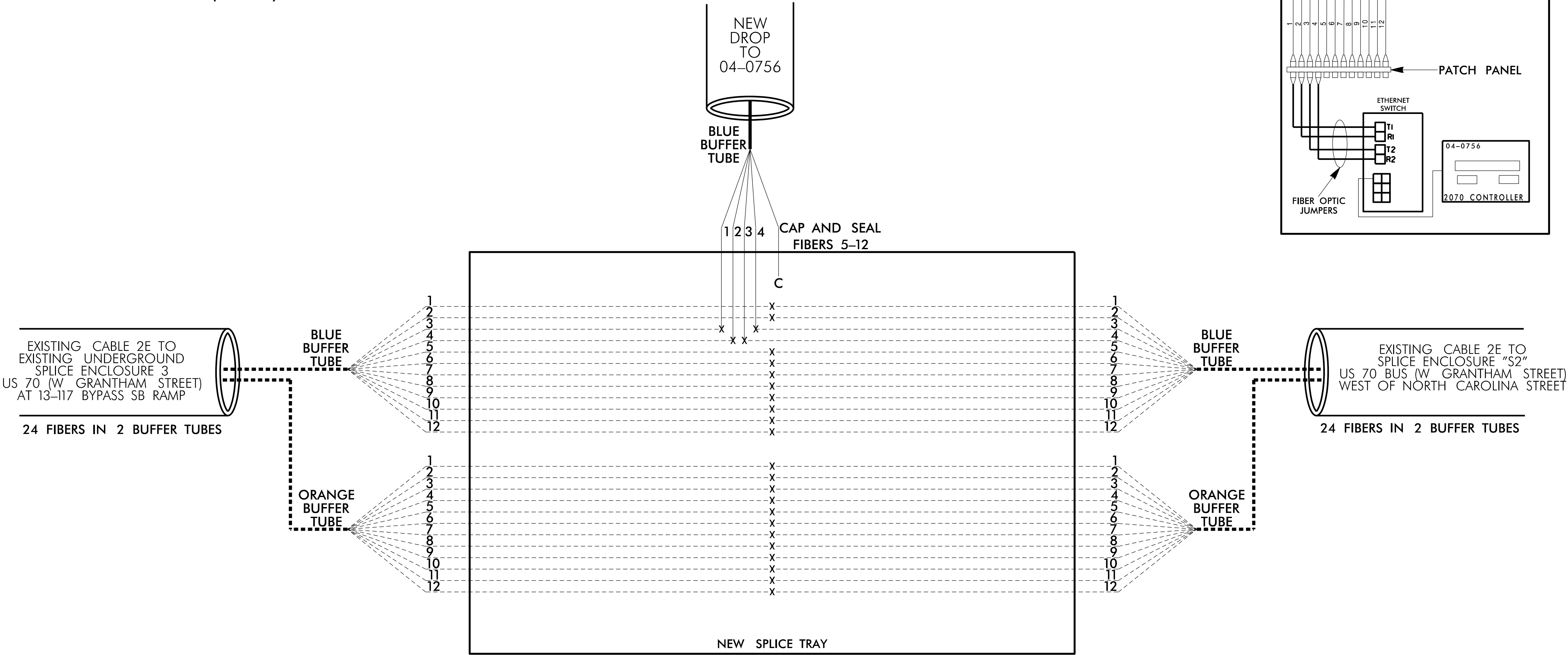
X = FUSION SPLICE
E = EXISTING SPLICE
C = CAP IN TRAY

EXPRESS = EXPRESS ALL FIBERS/
BUFFER TUBES

SPLICE = SPLICE ALL FIBERS/
BUFFER TUBES

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



1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE NCDOT DIVISION 4 TRAFFIC OFFICE AT (252) 640-6500 TO ARRANGE FOR THE TRAFFIC ENGINEER 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 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 \ ENSURING PROPER TERMINATIONS.
4. INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:
REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"

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

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

LEGEND

CABLE "2E": NCDOT FIBER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

 750 N. Greenfield Place, Garner, NC 27529	Goldsboro Signal System Splice Details		 DocuSigned by: <i>Courtney L. Kalencik</i> 7/21/2025 CADD Filename:	
	Division 4	Wayne County		Goldsboro
	PLAN DATE: May 2025	PREPARED BY: M. Tindal		
	PREPARED BY: M.P. Cavanaugh	REVIEWED BY: C. Kalencik		
	REVISIONS	INIT.	DATE	

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

NEW AERIAL SPLICE ENCLOSURE SE "S2"
US 70 BUSINESS (GRANTHAM STREET) WEST
OF NORTH CAROLINA STREET

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

LEGEND

X = FUSION SPLICE

E = EXISTING SPLICE

C = CAP IN TRAY

EXPRESS

= EXPRESS ALL FIBERS/
BUFFER TUBES

SPLICE

= SPLICE ALL FIBERS/
BUFFER TUBES

COLOR CODE

TIA/EIA 598-A

(1) BLUE

(2) ORANGE

(3) GREEN

(4) BROWN

(5) SLATE

(6) WHITE

(7) RED

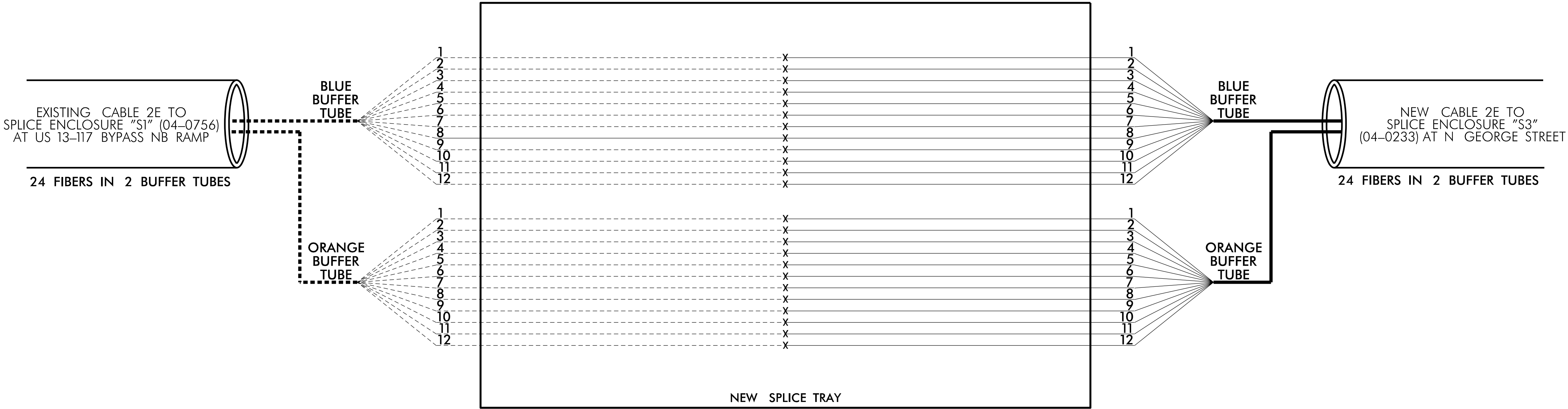
(8) BLACK

(9) YELLOW

(10) VIOLET

(11) ROSE

(12) AQUA



1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE NCDOT DIVISION 4 TRAFFIC OFFICE AT (252) 640-6500 TO ARRANGE FOR THE TRAFFIC ENGINEER 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 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 \ ENSURING PROPER TERMINATIONS.
4. INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:
REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"
 - 1) SPLICE LOCATION
 - 2) DATE
 - 3) COMPANY NAME
 - 4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

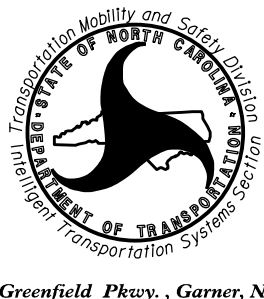
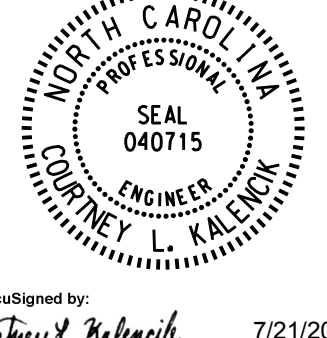
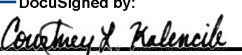
LEGEND

CABLE "2E": NCDOT FIBER

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AECOM

NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

Prepared for the Offices of:  750 N. Greenfield Place, Garner, NC 27529		Goldsboro Signal System Splice Details Division 4 Wayne County Goldsboro PLAN DATE: May 2025 PREPARED BY: M. Tindal PREPARED BY: M.P. Cavanaugh REVIEWED BY: C. Kalencik		SEAL  DocuSigned by:  7/21/2025 DATE CADD Filename:	
REVISIONS		INIT.		DATE	

NEW AERIAL SPLICE ENCLOSURE SE "S3" 04-0233
US 70 BUSINESS (GRANTHAM STREET)
AT US 70 BUSINESS (GEORGE STREET)
SIG. INV. # 04-0233

Notes:

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

LEGEND

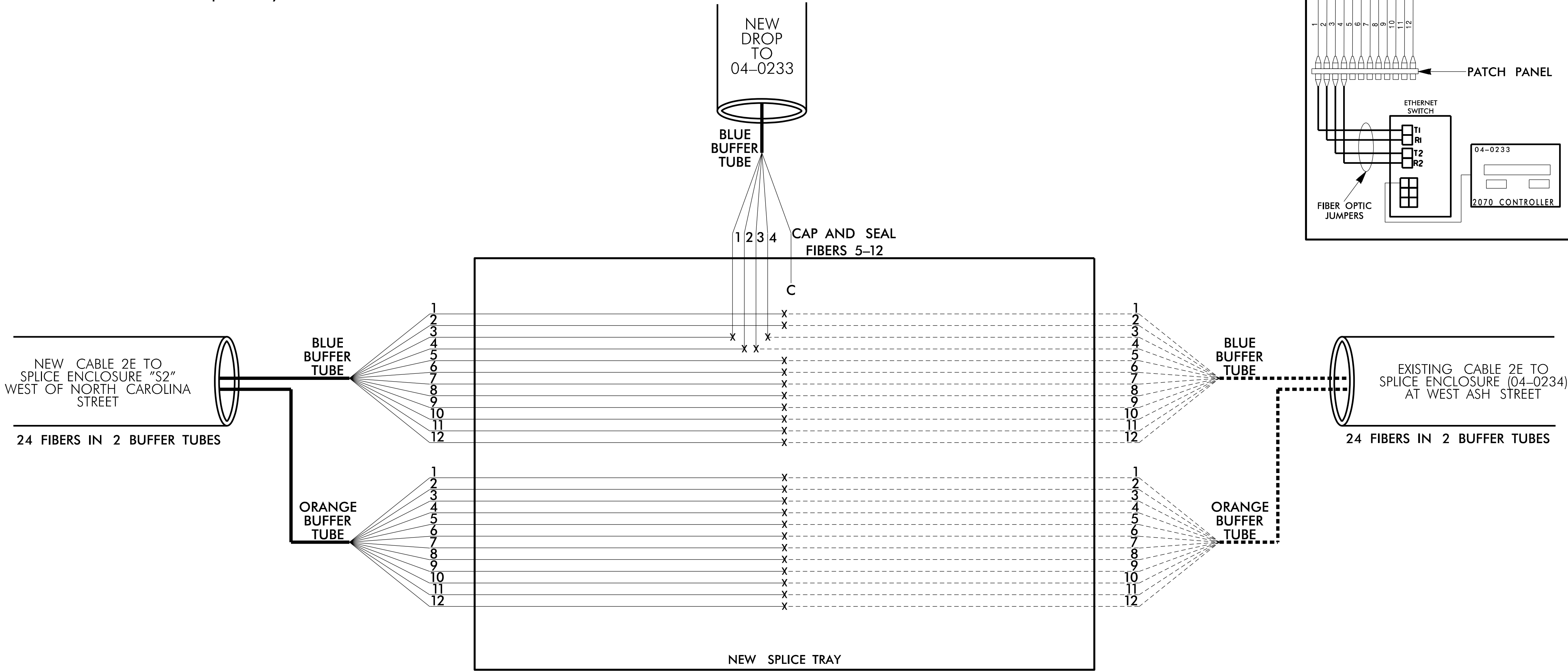
X = FUSION SPLICE
E = EXISTING SPLICE
C = CAP IN TRAY

EXPRESS = EXPRESS ALL FIBERS/
BUFFER TUBES

SPLICE = SPLICE ALL FIBERS/
BUFFER TUBES

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



1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE NCDOT DIVISION 4 TRAFFIC OFFICE AT (252) 640-6500 TO ARRANGE FOR THE TRAFFIC ENGINEER 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 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.
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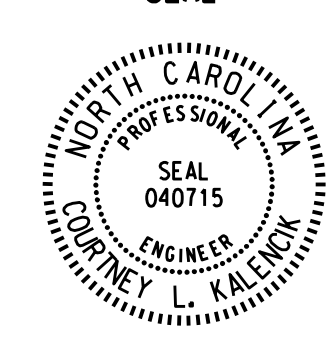
- 1) SPLICE LOCATION
- 2) DATE
- 3) COMPANY NAME
- 4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

LEGEND

CABLE "2E": NCDOT FIBER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of:  750 N. Greenfield Place, Garner, NC 27529	Goldsboro Signal System Splice Details		SEAL  DocuSigned by: <i>Courtney L. Kalencik</i> 7/21/2025																						
	Division 4 Wayne County Goldsboro <table><tr><td>PLAN DATE: May 2025</td><td>PREPARED BY: M. Tindal</td></tr><tr><td>PREPARED BY: M.P. Cavanaugh</td><td>REVIEWED BY: C. Kalencik</td></tr></table> <table><tr><th>REVISIONS</th><th>INIT.</th><th>DATE</th></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	PLAN DATE: May 2025		PREPARED BY: M. Tindal	PREPARED BY: M.P. Cavanaugh	REVIEWED BY: C. Kalencik	REVISIONS	INIT.	DATE										<table><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>						
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REVISIONS	INIT.	DATE																							

AECOM
NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

NEW AERIAL SPLICE ENCLOSURE SE "S4"
US 70 (GRANTHAM STREET)
WEST OF NORTH CAROLINA STREET

LEGEND

X = FUSION SPLICE
E = EXISTING SPLICE
C = CAP IN TRAY

EXPRESS = EXPRESS ALL FIBERS/
BUFFER TUBES

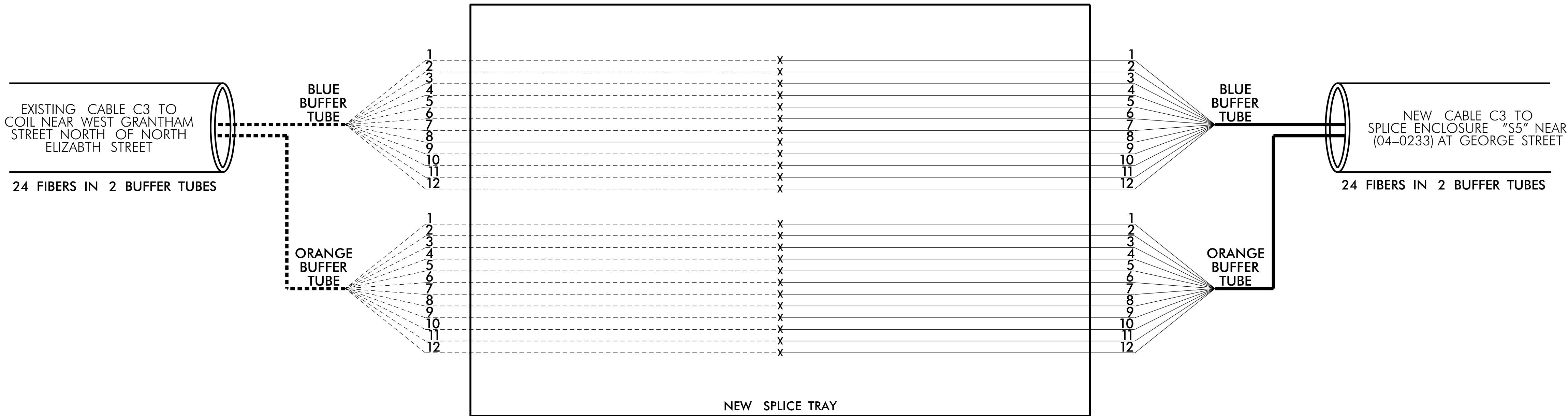
SPLICE = SPLICE ALL FIBERS/
BUFFER TUBES

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

Notes:

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



1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE GOLDSBORO IT OFFICE, SCOTT WILLIAMS, AT (919) 580-4284 TO ARRANGE FOR THE ENGINEER 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 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.
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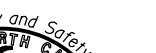
LEGEND

CABLE "C3": CITY IT FIBER

- 1) SPlice LOCATION
- 2) DATE
- 3) COMPANY NAME
- 4) NAME OF INDIVIDUAL PERFORMING THE SPlicing

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.



<i>Prepared for the Offices of:</i>  750 N. Greenfield Pkwy., Garner, NC 27529	Goldsboro Signal System Splice Details City IT	SEAL 
Division 4 Wayne County Goldsboro		
PLAN DATE: May 2025		PREPARED BY: M. Tindal
PREPARED BY: M.P. Cavenaugh		REVIEWED BY: C. Kalenick
REVISIONS		INIT. DATE

NEW AERIAL SPLICE ENCLOSURE SE "S5"
US 70/US 70 BUSINESS (GRANTHAM STREET) AT
GEORGE STREET NEAR 04-0233

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

LEGEND

X = FUSION SPLICE

E = EXISTING SPLICE

C = CAP IN TRAY

EXPRESS

= EXPRESS ALL FIBERS/
BUFFER TUBES

SPLICE

= SPLICE ALL FIBERS/
BUFFER TUBES

COLOR CODE

TIA/EIA 598-A

(1) BLUE

(2) ORANGE

(3) GREEN

(4) BROWN

(5) SLATE

(6) WHITE

(7) RED

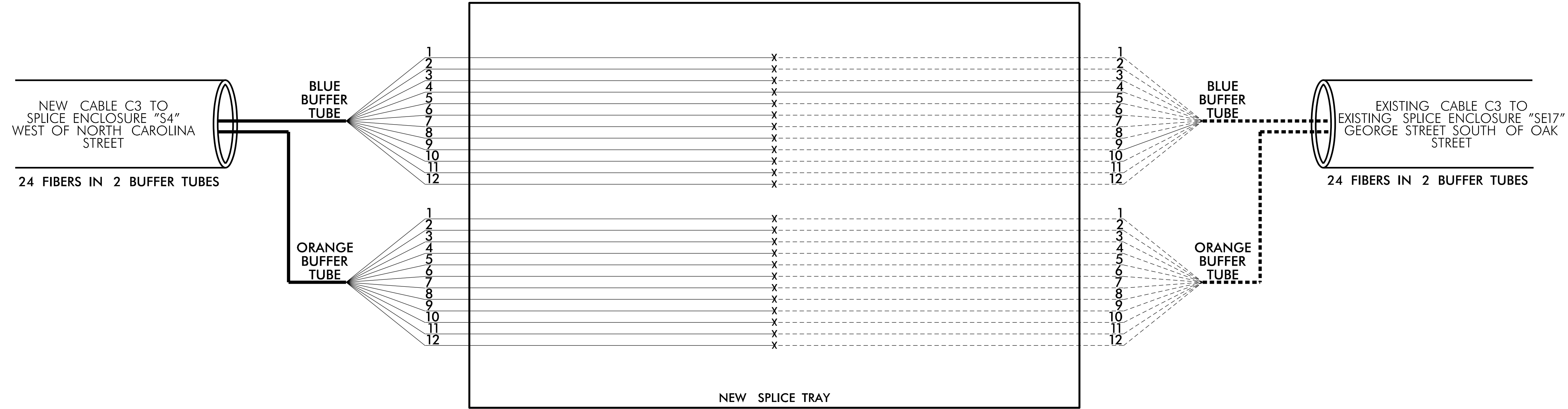
(8) BLACK

(9) YELLOW

(10) VIOLET

(11) ROSE

(12) AQUA



- FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE GOLDSBORO IT OFFICE, SCOTT WILLIAMS, AT (919) 580-4284 TO ARRANGE FOR THE ENGINEER 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 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.
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LEGEND

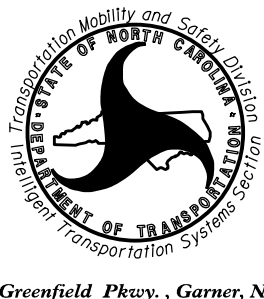
CABLE "C3": CITY IT FIBER

7/21/2025
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T.Tindal

AECOM

NC Firm License No.: F-0342
5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

Prepared for the Offices of:



750 N. Greenfield Place, Garner, NC 27529

Goldsboro Signal System
Splice Details
City IT

Division 4 Wayne County Goldsboro

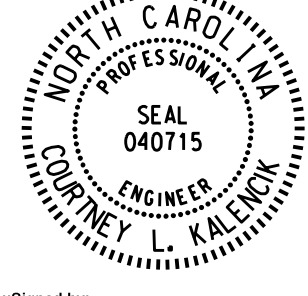
PLAN DATE: May 2025 PREPARED BY: M. Tindal

PREPARED BY: M.P. Cavanaugh REVIEWED BY: C. Kalencik

REVISIONS

INIT. DATE

SEAL



DocuSigned by:
Courtney L. Kalencik
7/21/2025

SIGNATURE DATE

CADD Filename: