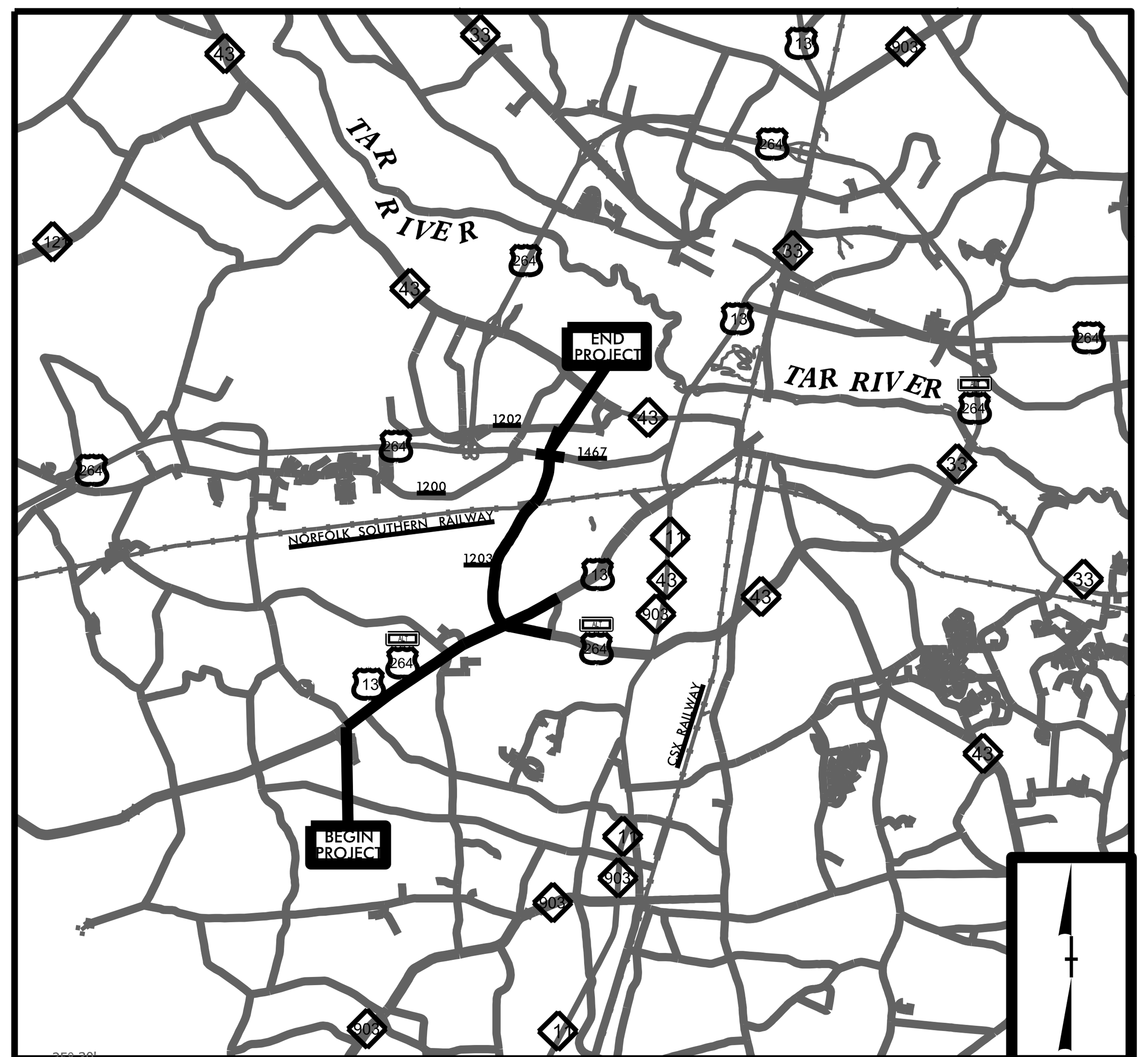
Project No.	Sheet No.
U-5875	Sig. 1.0

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

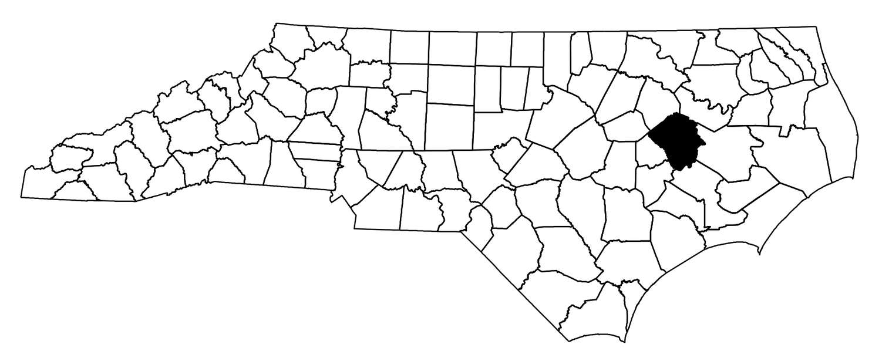
PITT COUNTY

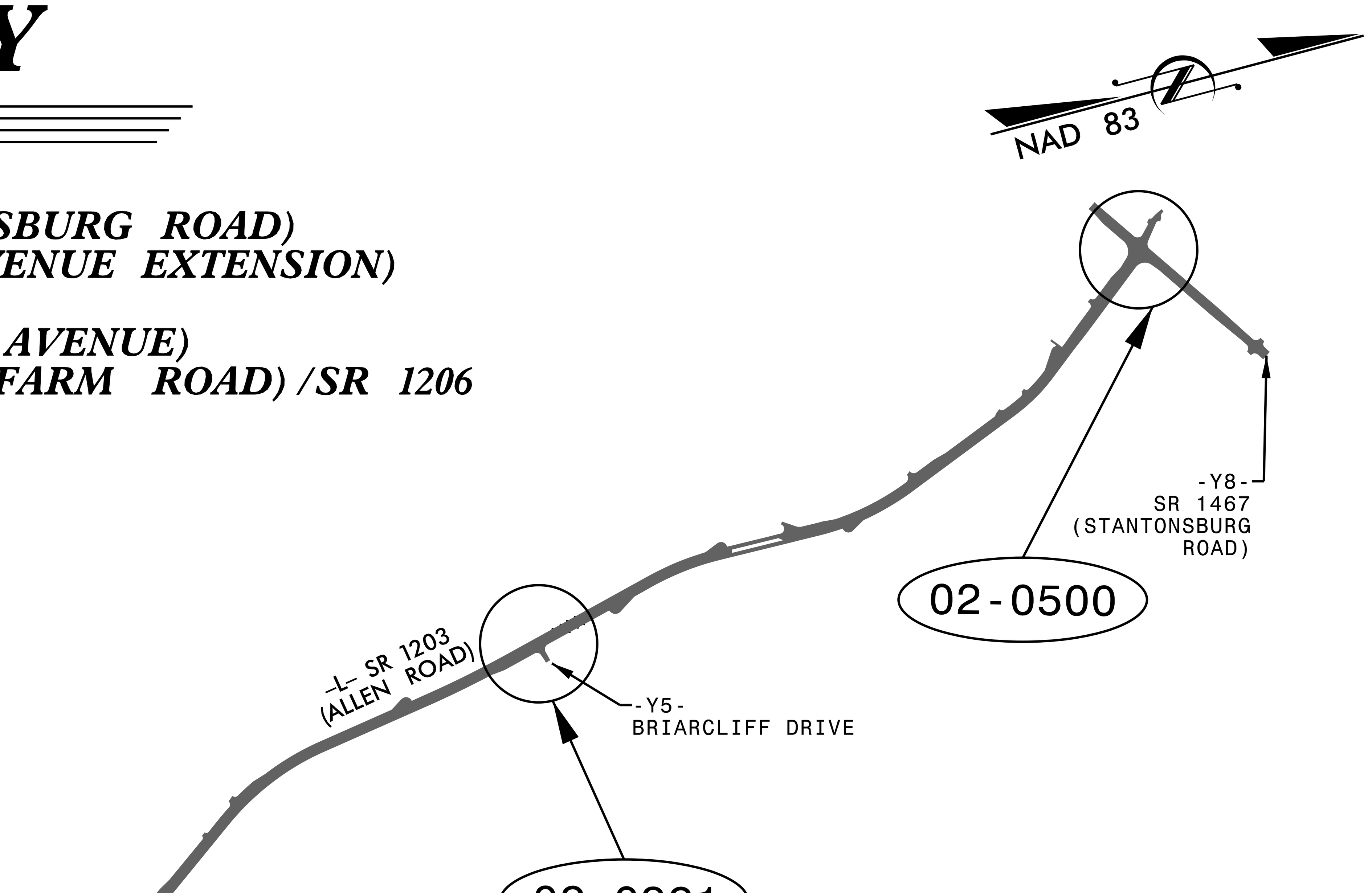
LOCATION: SR 1203 (ALLEN ROAD)
FROM SR 1467 (STANTONSBURG ROAD)
TO US 13 (DICKINSON AVENUE EXTENSION)
AND
US 264A/US 13 (DICKISON AVENUE)
TO SR 1128 (DAVENPORT FARM ROAD) /SR 1206
(BELL ARTHUR ROAD)

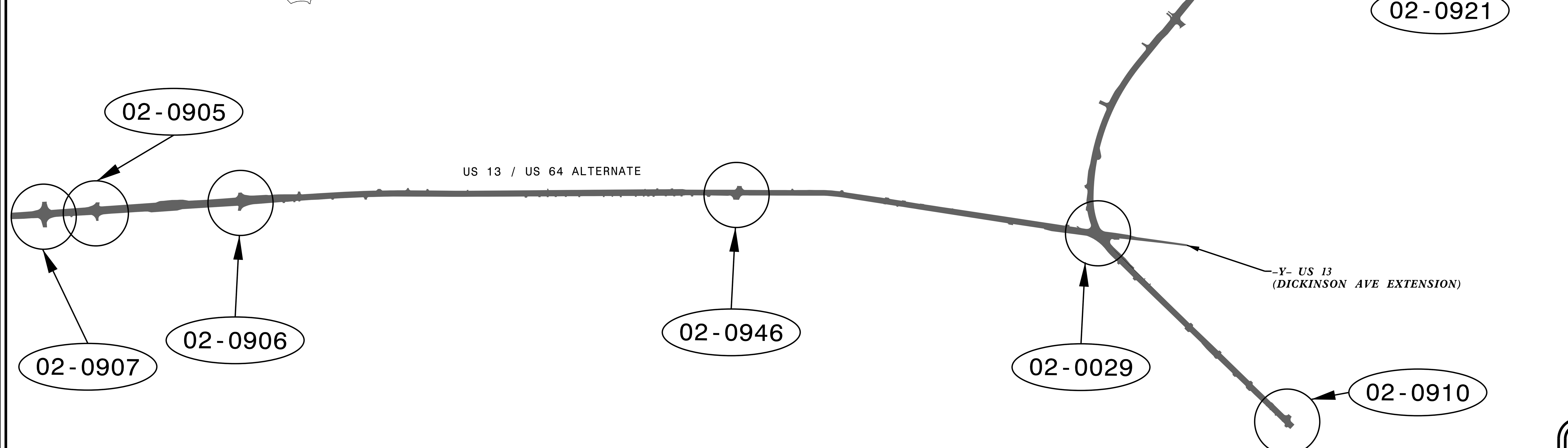
TYPE OF WORK: TRAFFIC SIGNALS



VICINITY MAP *N.T.S.*







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	Title Sheet
Sig. 2.0–2.2	02–0029T1	US 13 (Dickinson Avenue) At SR 1203 (Allen Road) / US 264A (Greenville Boulevard)
Sig. 3.0–3.6	02–0029	US 13 (Dickinson Avenue) At SR 1203 (Allen Road) / US 264A (Greenville Boulevard)
Sig. 4.0–4.2	02–0500T1	SR 1467 (Stantonsburg Road) At SR 1203 (Allen Road)
Sig. 5.0–5.2	02–0500T2	SR 1467 (Stantonsburg Road) At SR 1203 (Allen Road)
Sig. 6.0–6.5	02–0500	SR 1467 (Stantonsburg Road) At SR 1203 (Allen Road)
Sig. 7.0–7.2	02–0905	US 13 / US 264 Alternate At Greenville Southwest Bypass Ramps A/B
Sig. 8.0–8.2	02–0906	US 13 / US 264 Alternate At Greenville Southwest Bypass Ramps C/D
Sig. 9.0–9.2	02–0907	US 13 / US 264 Alternate At SR 1128 (Davenport Farm Road) / SR 1206 (Bell Arthur Road)
Sig. 10.0–10.1	02–0910	US 264A (Greenville Boulevard) At SR 1135 (William Road) / Koinonia Church Exit
Sig. 11.0–11.5	02–0921	SR 1203 (Allen Road) At Briarcliff Drive
Sig. 12.0–12.2	02–0946	US 13 / US 264A (Dickison Avenue) At SR 1127 (Frog Level Road)
Sig. M1A–M9	N/A	Standard Drawings for All Metal Poles
Sig. L1	N/A	Poles With Single Arm Light Luminaire Layout
SCP 1	N/A	Signal Communications Construction Notes
SCP 2	N/A	Signal Communications General Notes / Abbreviations / Roadway Standard Drawings
SCP 3	N/A	Fiber–Optic Ring Schematic
SCP 4–23	N/A	Signal Communications Cable Routing Plans
SCP 24–31	N/A	Signal Communications Splicing Diagrams

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:
Zachary Little, PE – Eastern Region Signals Engineer
D. Todd Joyce, PE – Signal Equipment Design Review Engineer
Gregory A. Green – Signal Equipment Design Engineer
Heidi T. Berggren, EI – Signals Communications Project Design Engineer

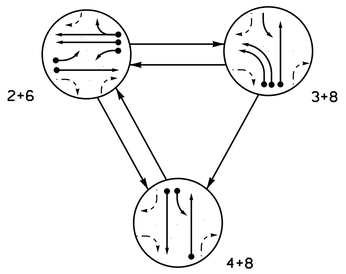
Prepared In the Office of:

Transportation Mobility and Safety Division
ITS and Signals Unit
750 N. Greenfield Parkway, Garner, NC 27529

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 2.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

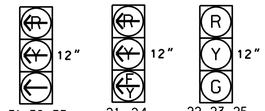
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 2+6	PHASE 3+8	PHASE 4+8	PHASE FLASH
21,24	~~F Y~~	~~R~~	~~R~~	~~R~~
22,23,25	G	R	R	R
31,32,33	~~R~~	—	~~R~~	~~R~~
41,44	~~R~~	~~F Y~~	~~F Y~~	~~R~~
42,43	R	R	G	R
61	~~F Y~~	~~R~~	~~R~~	~~R~~
62,63	G	R	R	R
81,82	R	G	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



31, 32, 33 — 21, 24, 41, 44, 61 — 22, 23, 25, 42, 43, 62, 63, 81, 82

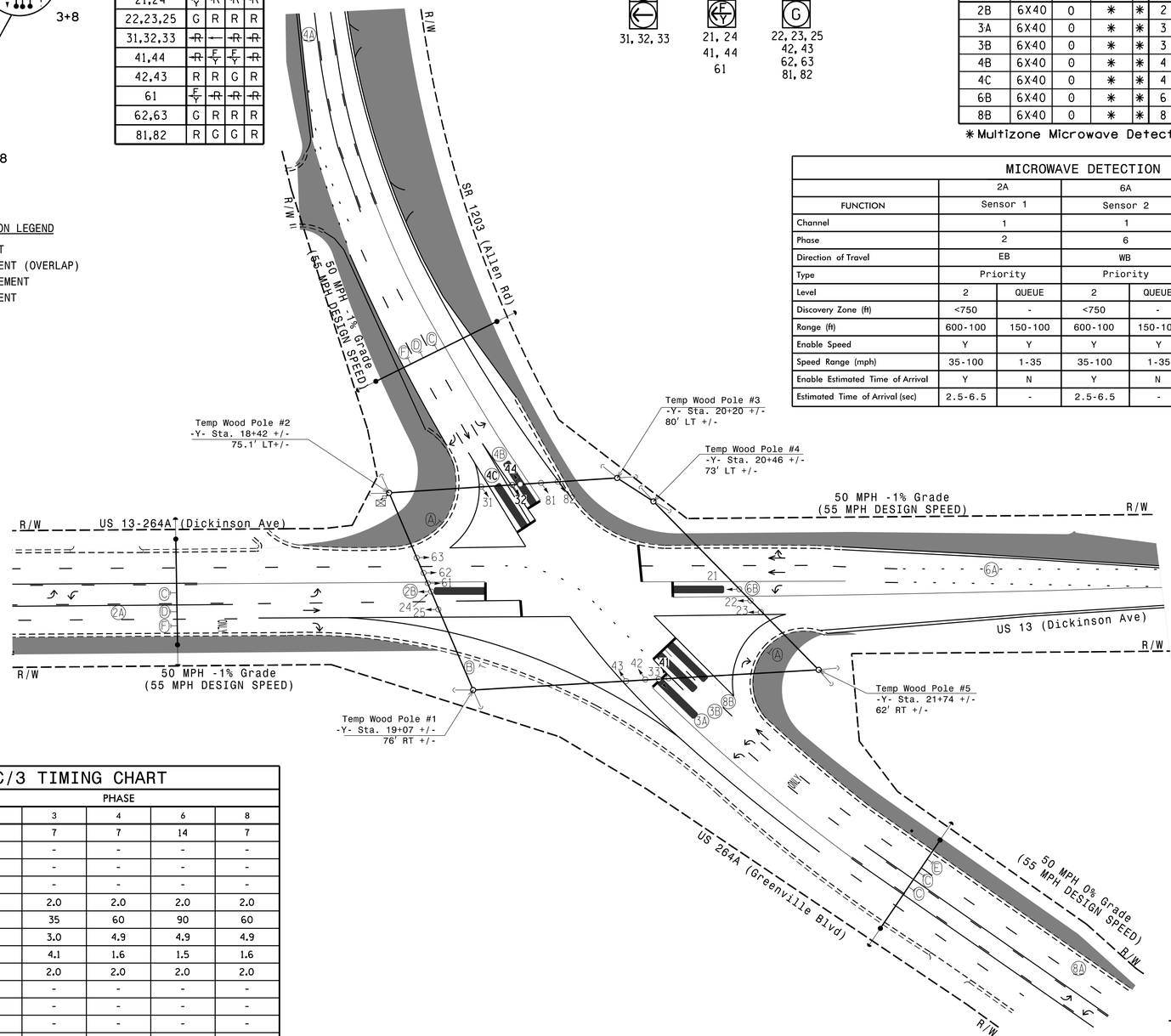
ASC/3 DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	TYPE	SYSTEM LOOP	NEW CARD
2B	6X40	0	*	*	2	Yes	-	-	N	-	*
3A	6X40	0	*	*	3	Yes	-	3	N	-	*
3B	6X40	0	*	*	3	Yes	-	-	N	-	*
4B	6X40	0	*	*	4	Yes	-	3	N	-	*
4C	6X40	0	*	*	4	Yes	-	-	N	-	*
6B	6X40	0	*	*	6	Yes	-	-	N	-	*
8B	6X40	0	*	*	8	Yes	-	-	N	-	*

*Multizone Microwave Detection

MICROWAVE DETECTION

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



ASC/3 TIMING CHART

FEATURE	PHASE 2	3	4	6	8
Min Green *	14	7	7	14	7
Delayed Green *	-	-	-	-	-
Walk *	-	-	-	-	-
Ped Clear	-	-	-	-	-
Veh. Extension *	2.0	2.0	2.0	2.0	2.0
Max 1 *	90	35	60	90	60
Yellow	4.9	3.0	4.9	4.9	4.9
Red Clear	1.5	4.1	1.6	1.5	1.6
Red Revert	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-	-
Seconds /Actuation *	-	-	-	-	-
Max Initial *	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-
Time To Reduce *	-	-	-	-	-
Minimum Gap	-	-	-	-	-
Locking Detector	X	-	-	X	-
Recall Position	VEH. RECALL	-	-	VEH. RECALL	-
Dual Entry	-	-	-	-	X
Simultaneous Gap	X	X	X	X	X

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

3 Phase
Fully Actuated
Greenville Signal System

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 3 may be lagged.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. Pavement markings are existing.
7. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Non-Intrusive Detection Zone	
	Controller & Cabinet	
	Junction Box	
	Oversized Junction Box	
	Type II Signal Pedestal	
	Metal Strain Pole	
	2-in Underground Conduit	
DD	Directional Drill	N/A
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	

SIGNS

PROPOSED		EXISTING
(A)	"YIELD" Sign (R1-2)	(A)
(B)	Left Arrow 'ONLY" Sign (R3-5L)	(B)
(C)	"RIGHT TURN SIGNAL" Sign (R10-10R)	(C)
(D)	Pedestrian Crossing Sign	(D)

Temporary Signal - TMP Phase I & II

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 13 (Dickinson Avenue) / US 264 Alternate at SR 1203 (Allen Road)/US 264 Alternate (Greenville Boulevard)
Division 02 Pitt County Greenville

PLAN DATE:	July 2025	REVIEWED BY:	S.G. Haynie
PREPARED BY:	A.M. Kollar	REVIEWED BY:	

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G HAYNIE
DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

Sig. Inventory No. 02-0029T1

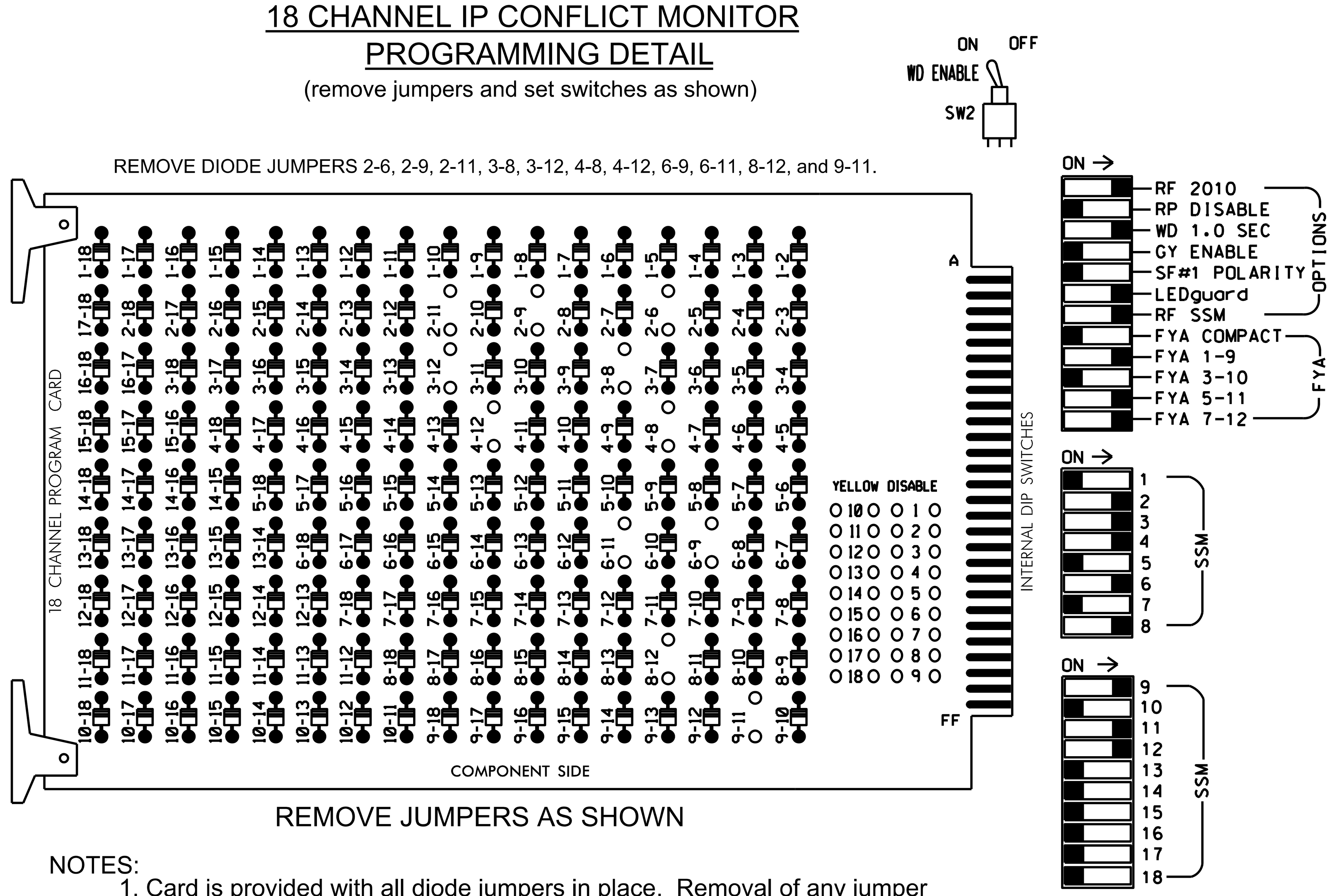
$$$$USERNAME$$$$
$$$$USERNAME$$$$
$$$$SYSTIME$$$$
$$$$SYSTIME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 2.1

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 2-6, 2-9, 2-11, 3-8, 3-12, 4-8, 4-12, 6-9, 6-11, 8-12, and 9-11.



REMOVE JUMPERS AS SHOWN

NOTES:

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

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program phase 8 for Dual Entry.
3. Program controller to start up in phase 2 Green and 6 Green.
4. The cabinet and controller are part of the Greenville Signal 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......S2,S4,S5,S8,S11,AUX S1,AUX S4,AUX S5
PHASES USED.............2,3,4,6,8
OVERLAP "A".............*
OVERLAP "B".............NOT USED
OVERLAP "C".............*
OVERLAP "D".............*

* See overlap programming detail on sheet 2

SIGNAL HEAD HOOK-UP CHART

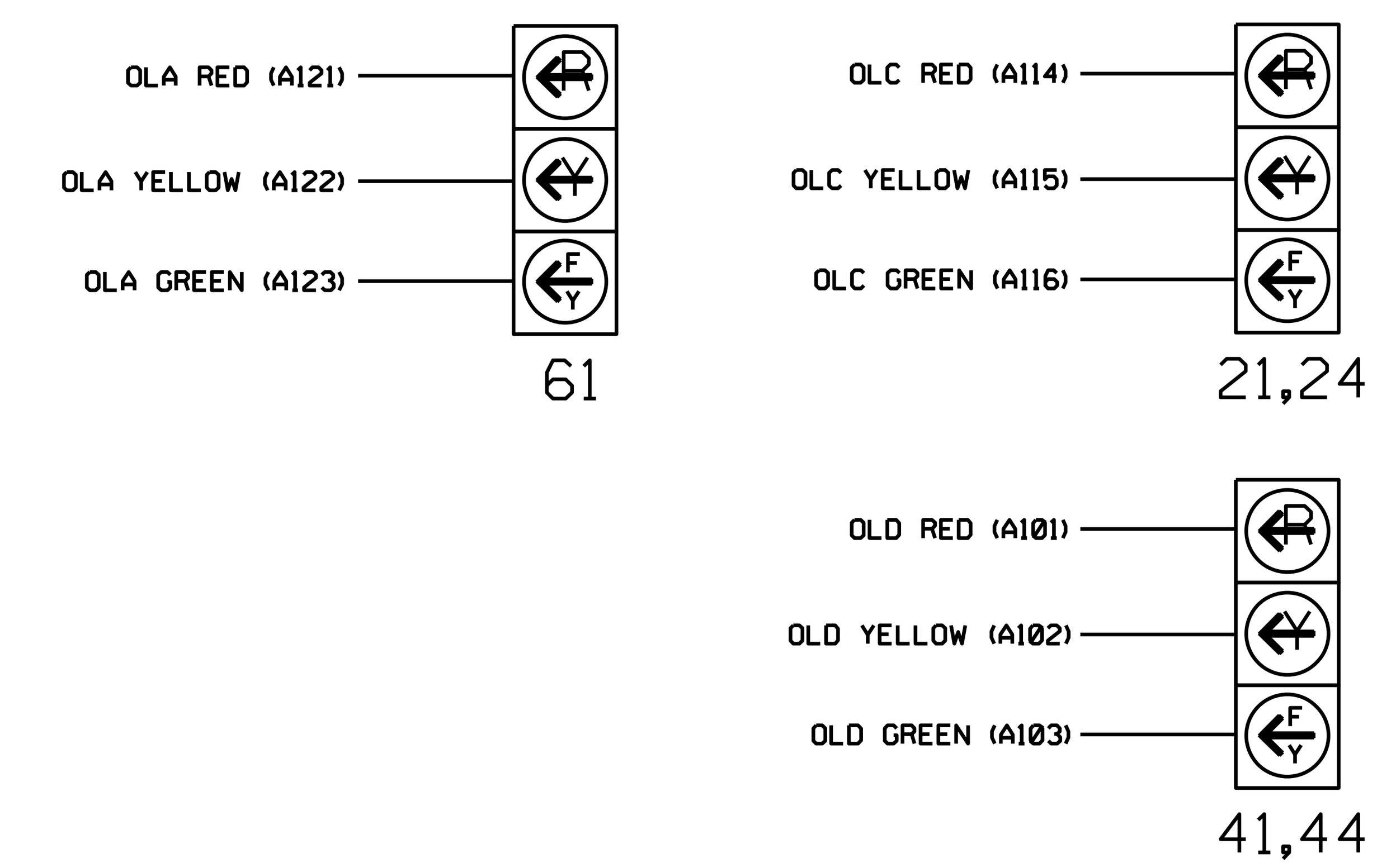
LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	22, 23,25	NU	31, 32,33	42,43	NU	NU	62,63	NU	NU	81,82	NU	61★	NU	NU	21,24★	41,44★	NU
RED		128			101			134			107							
YELLOW		129			102			135			108							
GREEN		130			103			136			109							
RED ARROW				116									A121			A114	A101	
YELLOW ARROW				117									A122			A115	A102	
FLASHING YELLOW ARROW													A123			A116	A103	
GREEN ARROW				118														

NU = Not Used

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

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

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	DETECTOR TYPE

INPUT FILE POSITION LEGEND: J2L

FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0029T1
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

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.

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Temporary Signal - TMP Phase I & II
Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division, ITS & Signals Management Section — State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 13 (Dickinson Avenue)/ US 264 Alt at SR 1203 (Allen Road)/US 264 Alt (Greenville Boulevard)

Division 2 | Pitt County | Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE | DATE

SIG. INVENTORY NO. 02-0029T1

7/12/2025
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PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 2.2

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

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

OVERLAP A

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

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

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
```

Toggle Twice

OVERLAP C

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

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

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
```

Toggle Once

OVERLAP D

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

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

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
```

END PROGRAMMING

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

(program controller as shown)

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

```
START/FLASH DATA
------START UP---------------------------
          1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE       G       G
          A B C D E F G H I J K L M N O P
OVERLAP   X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...   6
PWR START SEQ..  1 MUTCD→ YES    Y- G: NO
```

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

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0029T1
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

FLASHER CIRCUIT MODIFICATION DETAIL

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

1. On rear of PDA - remove wire from Term. T2-4 and terminate on T2-2.
2. On rear of PDA - remove wire from Term. T2-5 and terminate on T2-3.
3. Remove flasher unit 2.

The changes listed above ties all phases and overlaps to flasher unit 1.

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

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

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

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

```
LP#:100  COPY FROM:100  ACTIVE: M   FALSE
IF   LP CIB CODE ON                 331  F

THEN LP  DELAY FOR          1.0 SECONDS
     LP  SET CIB ON         427

ELSE
```

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

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

END PROGRAMMING

Temporary Signal - TMP Phase I & II
Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
State of North Carolina Department of Transportation
750 N.Greenfield Pkwy.Garner,NC 27529

US 13 (Dickinson Avenue)/
US 264 Alt at SR 1203
(Allen Road)/US 264 Alt
(Greenville Boulevard)

Division 2 | Pitt County | Greenville

PLAN DATE:	July 2025	REVIEWED BY:	S.G. Haynie
PREPARED BY:	A.M. Kollar	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by:
Steven G. Haynie 7/15/2025
SIGNATURE | DATE

SIG. INVENTORY NO. 02-0029T1

7/14/2025
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PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 3.0

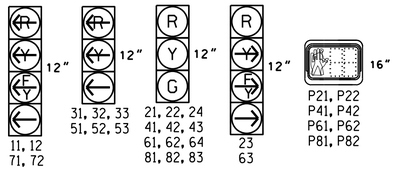
ASC/3 DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	*	X	1	YES	-	15 +	-	N	-	*
					6 @	YES	-	-	-	N	-	*
3A	6X40	0	*	X	3	YES	-	-	-	N	-	*
3B	6X40	0	*	X	3	YES	-	-	-	N	-	*
4B	6X40	0	*	X	4	YES	-	-	-	N	-	*
4C	6X40	0	*	X	4	YES	-	-	-	N	-	*
5A	6X40	0	*	X	5	YES	-	-	-	N	-	*
5B	6X40	0	*	X	5	YES	-	-	-	N	-	*
7A	6X40	0	*	X	7	YES	-	15 +	-	N	-	*
					4 @	YES	-	3	-	N	-	*
8B	6X40	0	*	X	8	YES	-	-	-	N	-	*
8C	6X40	0	*	X	8	YES	-	-	-	N	-	*

* Multizone Microwave Detection
+ Reduce to 3 sec during Alt Phasing Ops
@ Disable phase call during Alt Phasing Ops

SIGNAL FACE I.D.

All Heads L.E.D.



MICROWAVE DETECTION

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

ASC/3 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Min Green *	7	14	7	7	7	14	7	7
Delayed Green *	-	4	-	-	-	6	-	5
Walk *	-	11	-	7	-	13	-	12
Ped Clear	-	18	-	25	-	20	-	21
Veh. Extension *	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Max 1 *	30	60	20	40	30	60	20	40
Yellow	3.0	4.9	3.0	4.9	3.0	4.9	3.0	4.9
Red Clear	3.1	2.2	4.6	2.5	3.3	2.2	4.4	2.5
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-	-	-	-	-
Seconds /Actuation *	-	-	-	-	-	-	-	-
Max Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL	-	-
Dual Entry	-	-	-	-	-	-	-	X
Simultaneous Gap	X	X	X	X	X	X	X	X

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

8 Phase
Fully Actuated
Greenville Signal System

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. Omit "WALK" and flashging "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. See U-5875 PMP for pavement markings.
9. The City 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.

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Non-Intrusive Detection Zone	
	Controller & Cabinet	
	Junction Box	
	Oversized Junction Box	
	Type II Signal Pedestal	
	Metal Strain Pole	
	2-in Underground Conduit	
DD	Directional Drill	N/A
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	

SIGNS

PROPOSED		EXISTING
Ⓐ	"YIELD" Sign (R1-2)	Ⓐ
Ⓑ	Left Arrow 'ONLY" Sign (R3-5L)	Ⓑ
Ⓒ	"RIGHT TURN SIGNAL" Sign (R10-10R)	Ⓒ
Ⓓ	Pedestrian Crossing Sign	Ⓓ

Signal Upgrade - Final

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 13 (Dickinson Avenue) / US 264 Alternate at SR 1203 (Allen Road)/US 264 Alternate (Greenville Boulevard)
Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar REVIEWED BY:

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

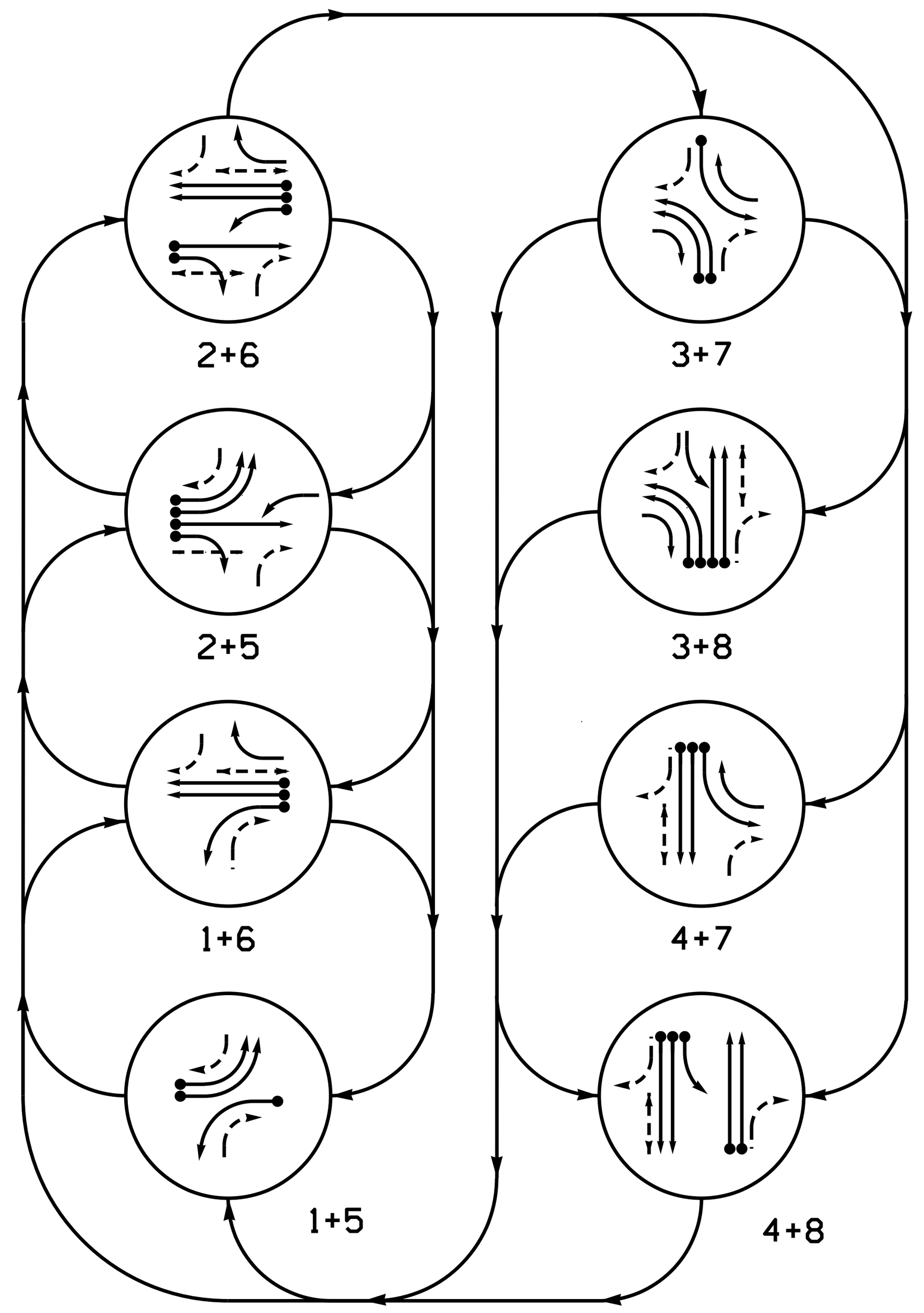
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G HAYNIE
DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

Sig. Inventory No. 02-0029

$$$$USERNAME$$$$ $$$$SIGNATURE$$$$ $$$$SIGNATURE$$$$ $$$$SIGNATURE$$$$ $$$$SIGNATURE$$$$ $$$$SIGNATURE$$$$ $$$$SIGNATURE$$$$ $$$$SIGNATURE$$$$ $$$$SIGNATURE$$$$ $$$$SIGNATURE$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig 3.1

DEFAULT PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

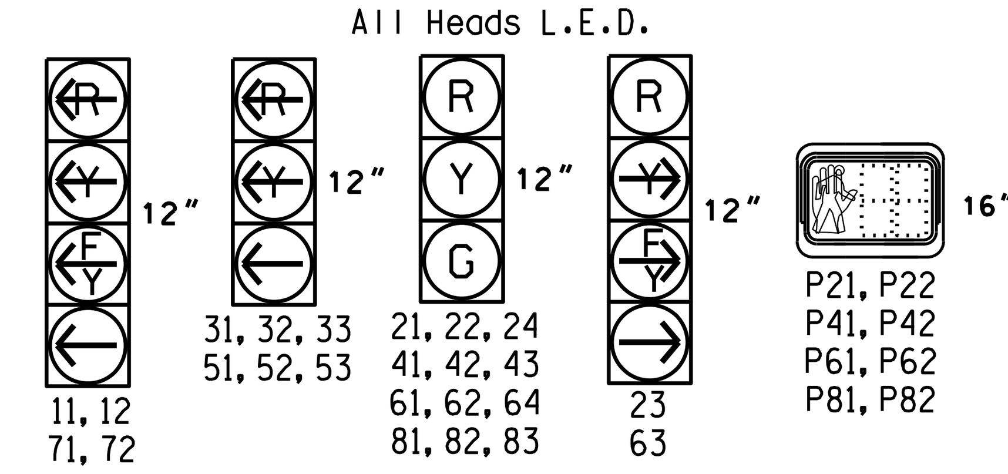
DEFAULT TABLE OF OPERATION

SIGNAL FACE	PHASE 1+5	1+6	2+5	2+6	3+7	3+8	4+7	4+8	FLASH
11, 12	←	←	F/Y ←	F/Y ←	←R	←R	←R	←R	←R
21, 22, 24	R	R	G	G	R	R	R	R	R
23	R	R	F/Y →	F/Y →	→	→	R	R	R
31, 32, 33	←R	←R	←R	←R	←	←	←R	←R	←R
41, 42, 43	R	R	R	R	R	R	G	G	R
51, 52, 53	←	←R	←	←R	←R	←R	←R	←R	←R
61, 62, 64	R	G	R	G	R	R	R	R	R
63	R	F/Y →	R	F/Y →	→	R	→	R	R
71,72	←R	←R	←R	←R	←	F/Y ←	←	F/Y ←	←R
81, 82, 83	R	R	R	R	R	G	R	G	R
P21, P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P41, P42	DW	DW	DW	DW	DW	DW	W	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DW	W	DRK

W - Walk
DW - Don't Walk
DRK - Dark

SIGNAL FACE I.D.

All Heads L.E.D.

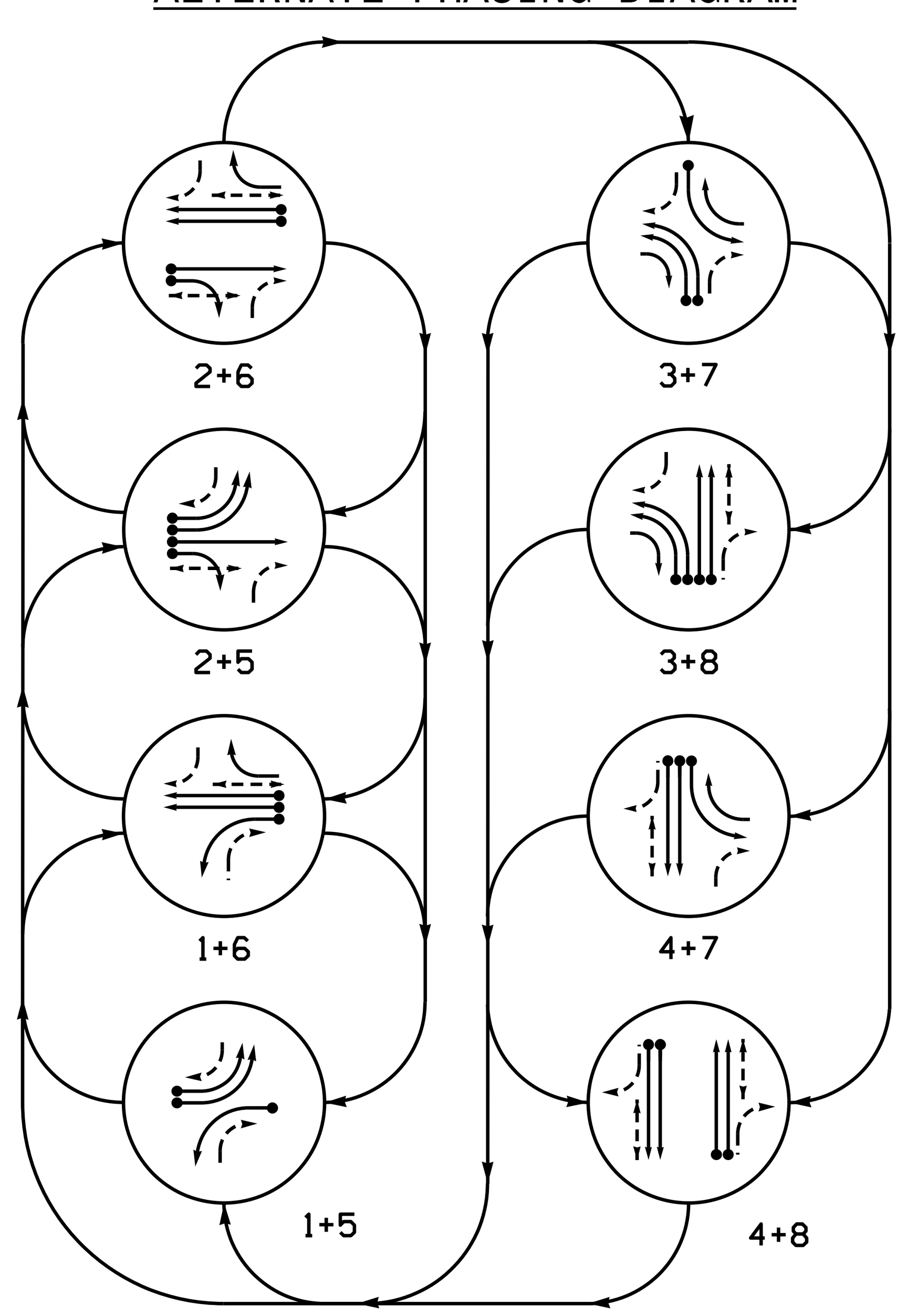


8 Phase
Fully Actuated
Greenville Signal System

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. Omit "WALK" and flashging "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. See U-5875 PMP for pavement markings.
9. The City 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.

ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

ALTERNATE TABLE OF OPERATION

SIGNAL FACE	PHASE 1+5	1+6	2+5	2+6	3+7	3+8	4+7	4+8	FLASH
11, 12	←	←	←R	←R	←R	←R	←R	←R	←R
21, 22, 24	R	R	G	G	R	R	R	R	R
23	R	R	F/Y →	F/Y →	→	→	R	R	R
31, 32, 33	←R	←R	←R	←R	←	←	←R	←R	←R
41, 42, 43	R	R	R	R	R	R	G	G	R
51, 52, 53	←	←R	←	←R	←R	←R	←R	←R	←R
61, 62, 64	R	G	R	G	R	R	R	R	R
63	R	F/Y →	R	F/Y →	→	R	→	R	R
71,72	←R	←R	←R	←R	←	←R	←	←R	←R
81, 82, 83	R	R	R	R	R	G	R	G	R
P21, P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P41, P42	DW	DW	DW	DW	DW	DW	W	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DW	W	DRK

W - Walk
DW - Don't Walk
DRK - Dark

Signal Upgrade - Final

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
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Prepared for the Offices of:
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US 13 (Dickinson Avenue) / US 264 Alternate at SR 1203 (Allen Road)/US 264 Alternate (Greenville Boulevard)

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

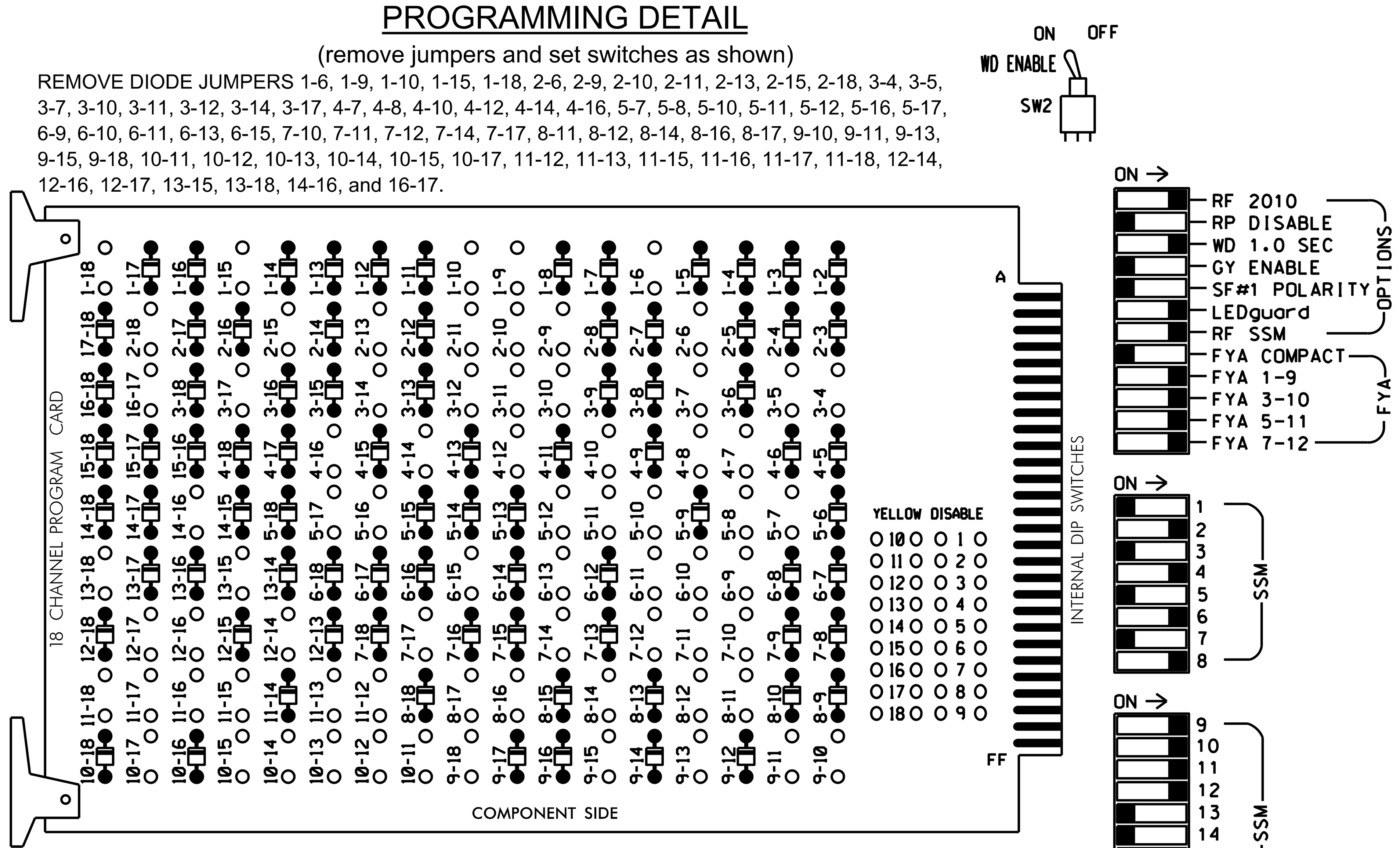
Sig. Inventory No. 02-0029

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 3.2

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-6, 1-9, 1-10, 1-15, 1-18, 2-6, 2-9, 2-10, 2-11, 2-13, 2-15, 2-18, 3-4, 3-5, 3-7, 3-10, 3-11, 3-12, 3-14, 3-17, 4-7, 4-8, 4-10, 4-12, 4-14, 4-16, 5-7, 5-8, 5-10, 5-11, 5-12, 5-16, 5-17, 6-9, 6-10, 6-11, 6-13, 6-15, 7-10, 7-11, 7-12, 7-14, 7-17, 8-11, 8-12, 8-14, 8-16, 9-10, 9-11, 9-13, 9-15, 9-18, 10-11, 10-12, 10-13, 10-14, 10-15, 10-17, 11-12, 11-13, 11-15, 11-16, 11-17, 11-18, 12-14, 12-16, 12-17, 13-15, 13-18, 14-16, and 16-17.



REMOVE JUMPERS AS SHOWN

NOTES:

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

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phase 2 Green and 6 Green.
3. The cabinet and controller are part of the Greenville Signal 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,S4,S5,S6,S7,S8, S9,S10,S11,S12,AUX S1,AUX S2, AUX S3,AUX S4,AUX S5,AUX S6
PHASES USED............1,2,2PED,3,4,4PED,5,6, 6PED,7,8,8PED
OVERLAP "A"............*
OVERLAP "B"............*
OVERLAP "C"............*
OVERLAP "D"............*
OVERLAP "E"............*
OVERLAP "F"............*
OVERLAP "G"............*
OVERLAP "H"............*

* 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	OLG	4	4 PED	OLH	6	6 PED	7	8	8 PED	OLA	OLB	OLE	OLC	OLD	OLF
SIGNAL HEAD NO.	11,12★	21, 22,24	P21, P22	63★	41,42, 43	P41, P42	23★	61, 62,64	P61, P62	71,72★	81, 82,83	P81, P82	11,12★	63★	31, 32,33	23★	71,72★	51, 52,53
RED		128			101			134			107			A124		A114		
YELLOW	*	129		*	102		*	135		*	108							
GREEN		130			103			136			109							
RED ARROW													A121		A111		A101	A104
YELLOW ARROW													A122	A125	A112	A115	A102	A105
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW	127			118			133			124					A113			A106
(hand)			113			104			119			110						
(pedestrian)			115			106			121			112						

NU = Not Used

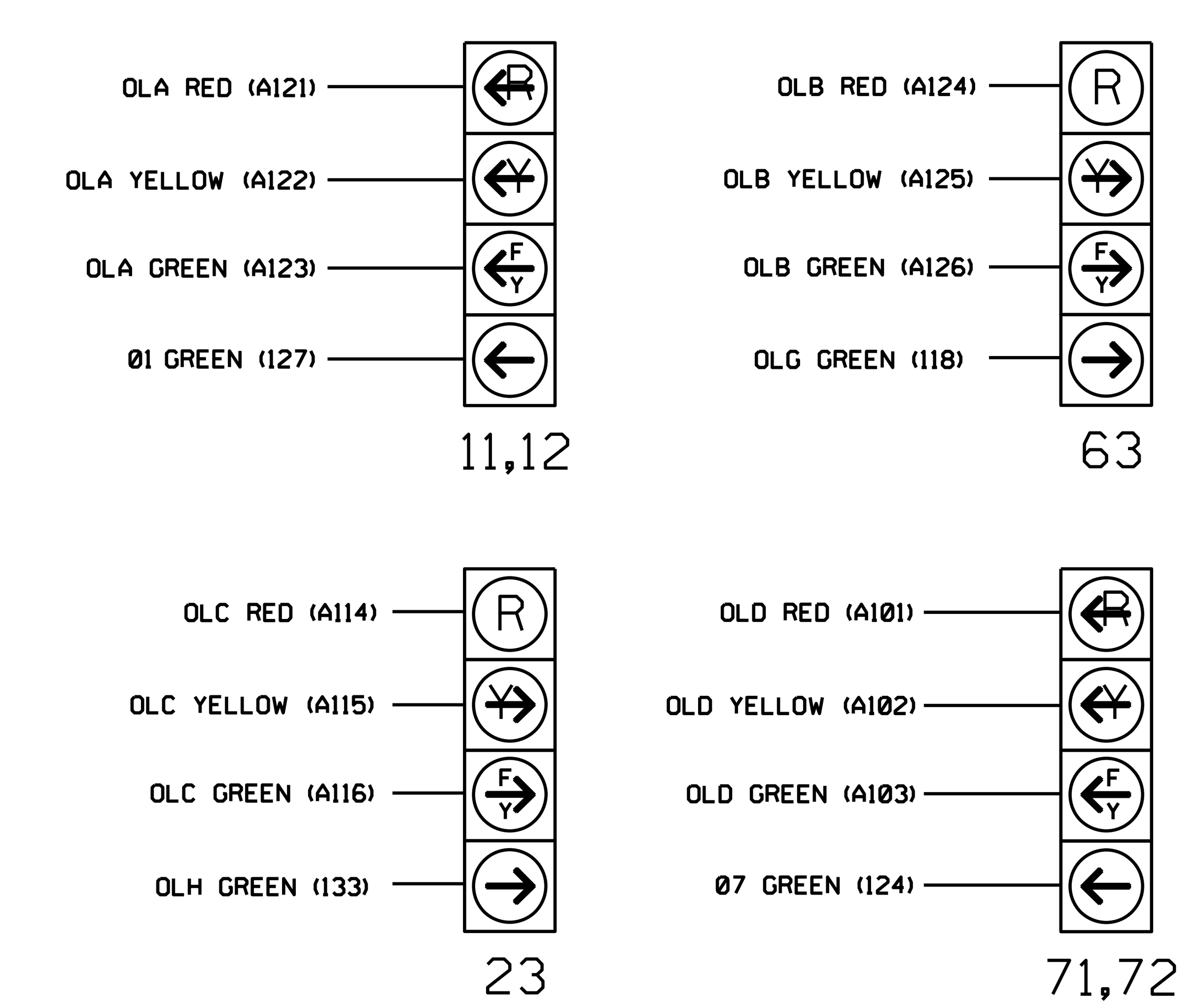
* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail this sheet.

NOTE: Output functionS for load switches S4 and S7 have been reassigned. See sheet 2 for details.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

FILE		1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I"	U	Ø 1 1A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	WIRED INPUT ⊗	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø2PED DC ISOLATOR	Ø6PED DC ISOLATOR	FS DC ISOLATOR
"I"	L	NOT USED											Ø4PED DC ISOLATOR	Ø8PED DC ISOLATOR	ST DC ISOLATOR
"J"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	WIRED INPUT ⊗	Ø 7 7A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
"J"	L					NOT USED									

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

⊗ Wired Input - Do not populate slot with detector card

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
1A[1]	TB2-1,2	I1U	56	1★	1	YES		15		N
	-	J4U	48	26★	6	YES		-		N
7A[2]	TB5-5,6	J5U	57	7★	7	YES		15		N
	-	I8U	49	24★	4	YES		3		N
PED PUSH BUTTONS										
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED					
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	PED 8	8 PED					

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

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

[2]Add jumper from J5-W to I8-W, on rear of input file.

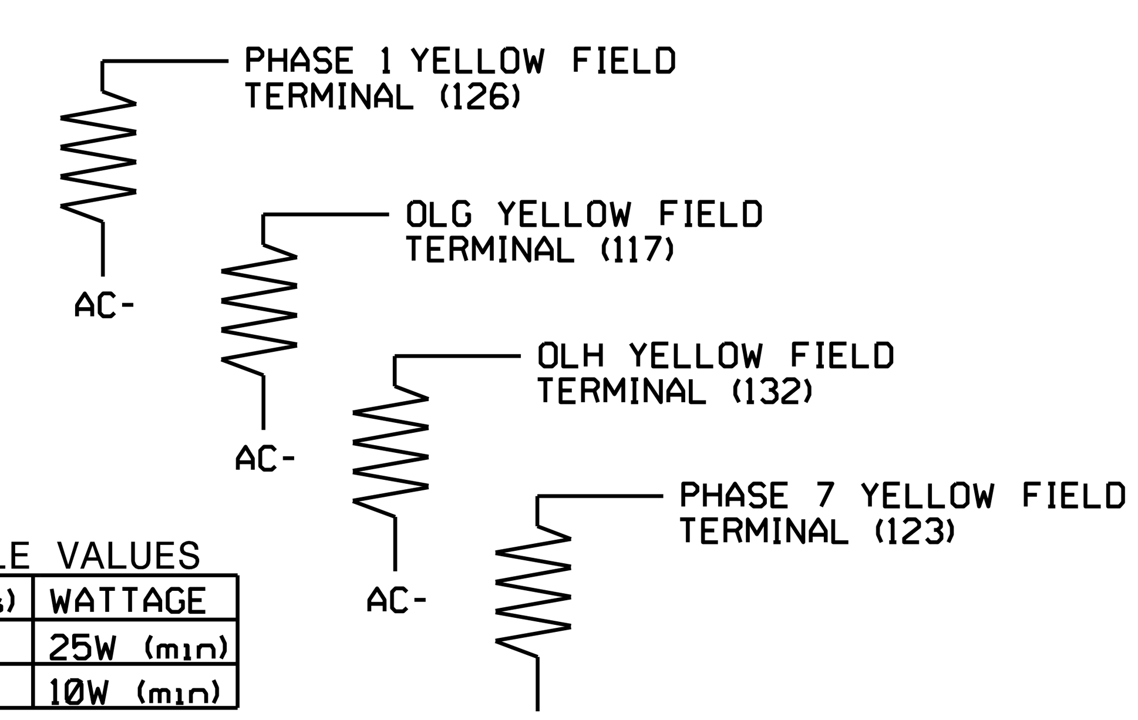
★ See Input Page Assignment programming details for alternate phasing on sheet 3.

INPUT FILE POSITION LEGEND: J2L

FILE J
SLOT 2
LOWER

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)

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 and 7A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0029
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Signal Upgrade - Final
Electrical Detail - Sheet 1 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 13 (Dickinson Avenue)/
US 264 Alt at SR 1203
(Allen Road)/US 264 Alt
(Greenville Boulevard)

Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY: ____________

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
D633DCC9A5D44B6...
SIGNATURE DATE

SIG. INVENTORY NO. 02-0029

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 3.3

ECONOLITE ASC/3-2070
OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select [2. CONTROLLER]
2. From CONTROLLER Submenu select [2. VEHICLE OVERLAPS]
3. Press "Toggle" until positioned on Overlap E

OVERLAP E

Select TMG VEH OVLP [E] and 'NORMAL'

```
TMG VEH OVLP...[E] TYPE: ......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP F

Select TMG VEH OVLP [F] and 'NORMAL'

```
TMG VEH OVLP...[F] TYPE: ......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . X . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP G

Select TMG VEH OVLP [G] and 'NORMAL'

```
TMG VEH OVLP...[G] TYPE: ......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . . X . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

OVERLAP H

Select TMG VEH OVLP [H] and 'NORMAL'

```
TMG VEH OVLP...[H] TYPE: ......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Press Toggle until positioned over Overlap A

OVERLAP A

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

```
TMG VEH OVLP...[A] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....    PHASE    1
OPPOSING THROUGH.......    PHASE    2

FLASHING ARROW OUTPUT.....CH9  ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 1
```

← NOTICE ACTION PLAN SF BIT "1"

Toggle Once

OVERLAP B

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

```
TMG VEH OVLP...[B] TYPE: .....PPLT FYA

PROTECTED RIGHT TURN....   OVERLAP  G
OPPOSING THROUGH.......    PHASE    6

FLASHING ARROW OUTPUT.....CH10 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 0
```

Toggle Once

OVERLAP C

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

```
TMG VEH OVLP...[C] TYPE: .....PPLT FYA

PROTECTED RIGHT TURN....   OVERLAP  H
OPPOSING THROUGH.......    PHASE    2

FLASHING ARROW OUTPUT.....CH11 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 0
```

Toggle Once

OVERLAP D

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

```
TMG VEH OVLP...[D] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....    PHASE    7
OPPOSING THROUGH.......    PHASE    8

FLASHING ARROW OUTPUT.....CH12 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 7
```

← NOTICE ACTION PLAN SF BIT "7"

END PROGRAMMING

ECONOLITE ASC/3-2070
LOAD SWITCH ASSIGNMENT DETAIL

(program controller as shown)

To assign load switch S4 as OLG, program LD SWITCH 3 as OVLP '7' TYPE 'O' as shown below.
To assign load switch S7 as OLH, program LD SWITCH 5 as OVLP '8' TYPE 'O' as shown below.

1. From Main Menu select [1. CONFIGURATION]
2. From CONFIGURATION Submenu select [3. LOAD SW ASSIGN]

LD SWITCH ASSIGN

	PHASE /OVLP	TYPE	DIMMING R	Y	G	D	---FLASH--- PWR	AUT	TGR
1	1	V	.	.	.	+	A	R	X
2	2	V	.	.	.	+	A	R	.
→ 3	7	O	.	.	.	+	A	R	X
4	4	V	.	.	.	+	A	R	.
→ 5	8	O	.	.	.	−	A	R	.
6	6	V	.	.	.	−	A	R	X
7	7	V	.	.	.	−	A	R	.
8	8	V	.	.	.	−	A	R	X
9	1	O	.	.	.	+	A	R	X
10	2	O	.	.	.	−	A	R	X
11	3	O	.	.	.	+	A	R	.
12	4	O	.	.	.	−	A	R	.
13	2	P	.	.	.	+	A	.	.
14	4	P	.	.	.	+	A	.	.
15	6	P	.	.	.	−	A	.	.
16	8	P	.	.	.	−	A	.	.

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.

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.

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0029
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Signal Upgrade - Final
Electrical Detail - Sheet 2 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
NC Transportation Mobility and Safety Division
Traffic Engineering Branch
NC DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 13 (Dickinson Avenue)/
US 264 Alt at SR 1203
(Allen Road)/US 264 Alt
(Greenville Boulevard)
Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

SIG. INVENTORY NO. 02-0029

7/12/2025
X:\PW\0100063003.LI-5875 Signals & Comms (SEP) TDM1\Design\Traffic\Signals\Design\Plan Sheets\LI-5875 Signal Sheets\020029_sm_ele_202210XX.dgn
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PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 3.4

ECONOLITE ASC/3-2070 VEHICLE DETECTOR SETUP PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOPS 1A, 7A

(program controller as shown)

IMPORTANT!

Program detectors per the input file connection and programming chart shown on sheet 1 before proceeding.

1. From Main Menu select [8. UTILITIES]
2. From UTILITIES Submenu select [1. COPY/CLEAR]
3. Copy from DETECTOR PLAN "1" to DETECTOR PLAN "2".

```
COPY / CLEAR UTILITY
       FROM                TO
PHASE TIMING.... . > PHASE TIMING.... .
TIMING PLAN..... . > TIMING PLAN..... .
PH DET OPT PLAN. . > PH DET OPT PLAN. .
DETECTOR PLAN... 1 > DETECTOR PLAN... 2
  TOGGLE TO SELECT A "FROM" AND A "TO"
            THEN PRESS ENTER
```

4. From Main Menu select [6. DETECTORS]
5. From DETECTOR Submenu select [2. VEHICLE DETECTOR SETUP]
6. Place cursor in VEH DET PLAN [ ] position and enter "2".

- Place cursor in VEH DETECTOR [ ] position and enter "1".
- Set delay time to "3".

```
VEH DETECTOR [ 1]   VEH DET PLAN [ 2]          ← NOTICE VEH DET PLAN 2
TYPE: N-NTCIP
TS2 DETECTOR..... . ECPI LOG.......   NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 1  1    . . . . . . . . . . . . . . .
CALL OPTION.... YES DELAY TIME...    3.0   ← ENSURE DELAY IS SET TO '3'
EXT OPTION. PASSAGE EXTENSION TIME.  0.0
USE ADDED INITIAL . CROSS SWITCH PH..  0
LOCK IN....... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
```

- Place cursor in VEH DETECTOR [ ] position and enter "26".
- Set assigned phase to "0".

```
                      VEH DETECTOR [26]   VEH DET PLAN [ 2]          ← NOTICE VEH DET PLAN 2
                      TYPE: N-NTCIP
                      TS2 DETECTOR..... . ECPI LOG.......   NO
                      DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
ENSURE PHASE          
IS SET TO "0" →        26 0    . . . . . . . . . . . . . . .
                      CALL OPTION.... YES DELAY TIME...    0.0
                      EXT OPTION. PASSAGE EXTENSION TIME.  0.0
                      USE ADDED INITIAL . CROSS SWITCH PH..  0
                      LOCK IN....... NONE NTCIP VOL . OR OCC .
                      PMT QUEUE DELAY- NO
```

- Place cursor in VEH DETECTOR [ ] position and enter "7".
- Set delay time to "3".

```
VEH DETECTOR [ 7]   VEH DET PLAN [ 2]          ← NOTICE VEH DET PLAN 2
TYPE: N-NTCIP
TS2 DETECTOR..... . ECPI LOG.......   NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 7  7    . . . . . . . . . . . . . . .
CALL OPTION.... YES DELAY TIME...    3.0   ← ENSURE DELAY IS SET TO '3'
EXT OPTION. PASSAGE EXTENSION TIME.  0.0
USE ADDED INITIAL . CROSS SWITCH PH..  0
LOCK IN....... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
```

- Place cursor in VEH DETECTOR [ ] position and enter "24".
- Set assigned phase to "0".

```
                      VEH DETECTOR [24]   VEH DET PLAN [ 2]          ← NOTICE VEH DET PLAN 2
                      TYPE: N-NTCIP
                      TS2 DETECTOR..... . ECPI LOG.......   NO
                      DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
ENSURE PHASE
IS SET TO "0" →        24 0    . . . . . . . . . . . . . . .
                      CALL OPTION.... YES DELAY TIME...    0.0
                      EXT OPTION. PASSAGE EXTENSION TIME.  0.0
                      USE ADDED INITIAL . CROSS SWITCH PH..  0
                      LOCK IN....... NONE NTCIP VOL . OR OCC .
                      PMT QUEUE DELAY- NO
```

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0029
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Signal Upgrade - Final
Electrical Detail - Sheet 3 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division — ITS & Signals Management Section — State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 13 (Dickinson Avenue)/
US 264 Alt at SR 1203
(Allen Road)/US 264 Alt
(Greenville Boulevard)

Division 02 — Pitt County — Greenville

PLAN DATE:	July 2025	REVIEWED BY:	S.G. Haynie
PREPARED BY:	A.M. Kollar	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie — D633DCC9A5D44B6 — 7/15/2025
SIGNATURE — DATE

SIG. INVENTORY NO. 02-0029

7/12/2025
X:*P*1030063003_U-5875 Signals & Comms (SEPI TO#4)*Design*Traffic*Signals*Design*Plan Sheets*U-5875 Signal Sheets*020029_sm_ele_202210XX.dgn
9:42:29 AM

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 3.5

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM CHANGES (SHOWN BELOW) IN A TIME BASED ACTION PLAN. SCHEDULE A DAY PLAN THAT INCLUDES THE ACTION PLAN PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BITS 1 and 7.

TO RUN ALT. PHASING DURING COORDINATION - SELECT THE TIME BASED ACTION PLAN THAT IS PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BITS 1 and 7.

PHASING	VEH DET PLAN	SF BITS ENABLED
ACTIONS REQUIRED TO RUN DEFAULT PHASING	1	NONE
ACTIONS REQUIRED TO RUN ALTERNATE PHASING	2	1, 7

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN SF BITS 1 AND 7 AND VEH DET PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

SF BITS 1,7: Modifies overlap parent phases for heads 11 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 3 seconds.

Disables phase 4 call on loop 7A and reduces delay time for phase 7 call on loop 7A to 3 seconds.

ECONOLITE ASC/3-2070 ACTION PLAN PROGRAMMING DETAIL

1. From Main Menu select [5. TIME BASE]
2. From TIME BASE Submenu select [2. ACTION PLAN]

```
ACTION PLAN...[  *]
PATTERN..........AUTO   SYS OVERRIDE.... NO
TIMING PLAN........ 0   SEQUENCE........  0
VEH DETECTOR PLAN.. 2   DET LOG........NONE
FLASH...........   --   RED REST........ NO
VEH DET DIAG PLN... 0   PED DET DIAG PLN..0
DIMMING ENABLE..   NO   PRIORITY RETURN. NO
PED PR RETURN..    NO   QUEUE DELAY..... NO
PMT COND DELAY     NO
  PHASE   1  2  3  4  5  6  7  8  9  0  1  2  3  4  5  6
PED RCL   .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
WALK 2    .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
VEX 2     .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
VEH RCL   .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
MAX RCL   .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
MAX 2     .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
  PHASE   1  2  3  4  5  6  7  8  9  0  1  2  3  4  5  6
MAX 3     .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
CS INH    .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
OMIT      .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
SPC FCT   X  .  .  .  .  .  X  .  (1-8)
AUX FCT   .  .  .  (1-3)
          1  2  3  4  5  6  7  8  9  0  1  2  3  4  5
LP 1-15   .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 16-30  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 31-45  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 46-60  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 61-75  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 76-90  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 91-100 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
```

* The Action Plan number(s) are to be determined by the Divison Traffic Engineer.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0029
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Signal Upgrade - Final
Electrical Detail - Sheet 4 of 5

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NC FIRM LICENSE No: F-0493
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RALEIGH, NC 27615
(919) 926-4100

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 13 (Dickinson Avenue)/ US 264 Alt at SR 1203 (Allen Road)/US 264 Alt (Greenville Boulevard)

Division 02 | Pitt County | Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE
DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE | DATE
SIG. INVENTORY NO. 02-0029

7/12/2025
X:*P*1030063003_U-5875 Signals & Comms (SEPI TO#4)*Design*Traffic*Signals*Design*Plan Sheets*U-5875 Signal Sheets*020029_sm_ele_202210XX.dgn
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ASC/3 FLASH SENSE INPUT CONTROL FOR RED-RED FLASH

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

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

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

```
LP#:100  COPY FROM:100  ACTIVE: M   FALSE
IF   LP CIB CODE ON                  331  F

THEN LP  DELAY FOR         1.0 SECONDS
     LP  SET CIB ON        427

ELSE
```

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

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

END PROGRAMMING

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

(program controller as shown)

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

```
START/FLASH DATA
------START UP---------------------------
         1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE      G       G
         A B C D E F G H I J K L M N O P
OVERLAP  X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...  6
PWR START SEQ..  1 MUTCD→ YES   Y- G: NO
```

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0029
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Signal Upgrade - Final
Electrical Detail - Sheet 5 of 5

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
State of North Carolina Department of Transportation
750 N.Greenfield Pkwy.Garner.NC 27529

US 13 (Dickinson Avenue)/ US 264 Alt at SR 1203 (Allen Road)/US 264 Alt (Greenville Boulevard)

Division 02 | Pitt County | Greenville

PLAN DATE:	July 2025	REVIEWED BY:	O. Drobny
PREPARED BY:	S.G. Haynie	REVIEWED BY:	____________

REVISIONS	INIT.	DATE

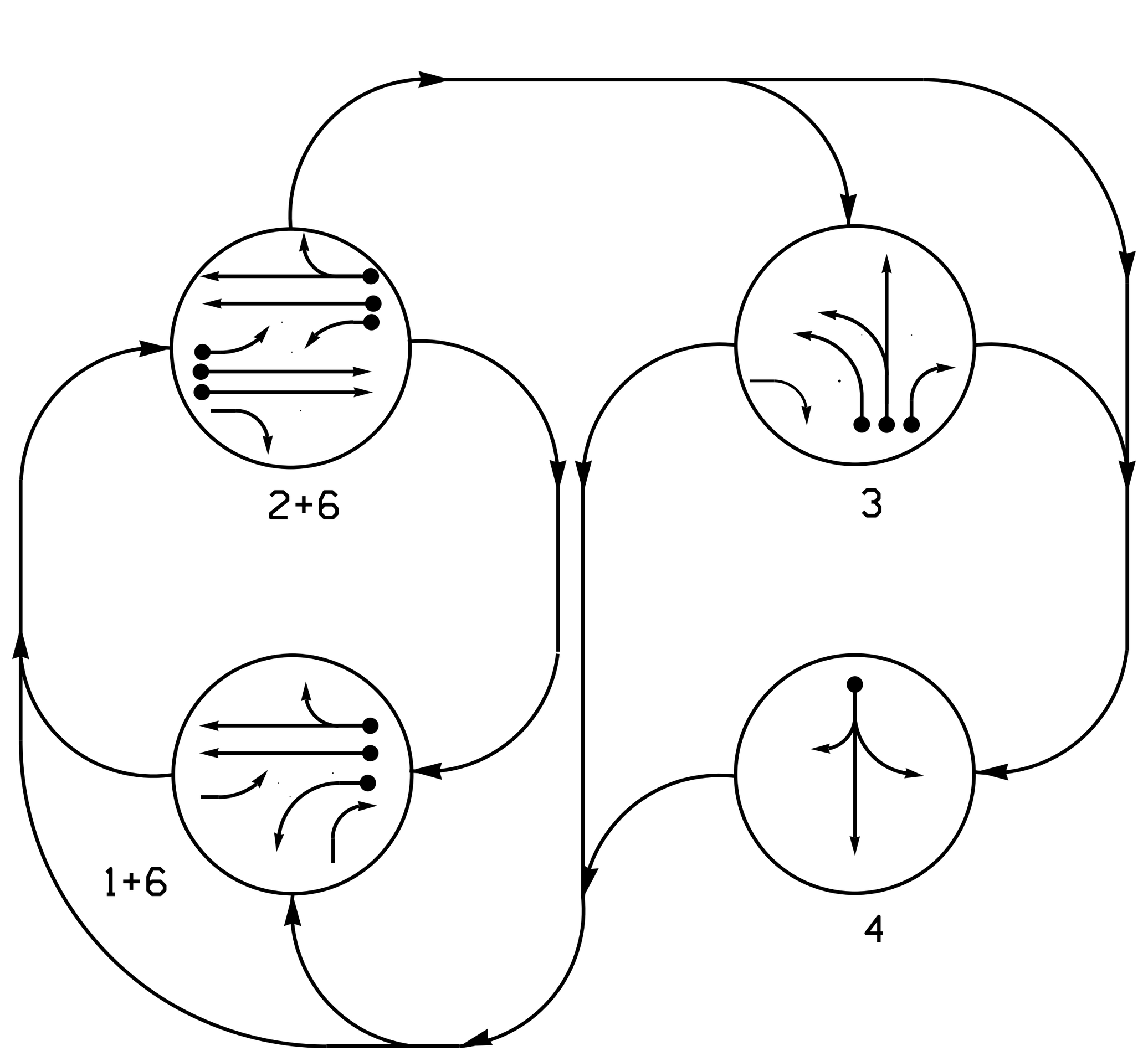
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE | DATE

SIG. INVENTORY NO. 02-0029

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 4.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

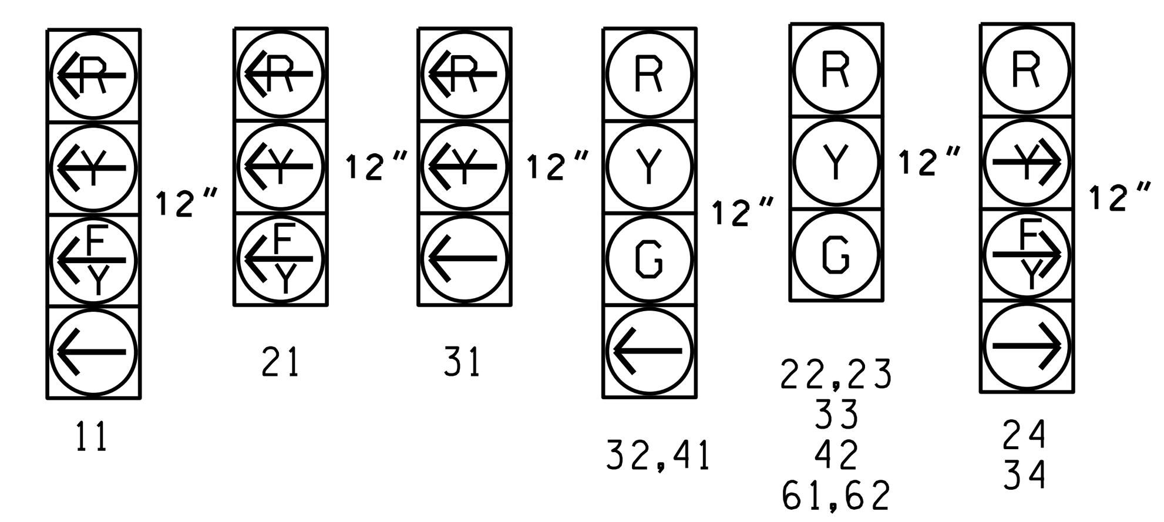
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 1+6	2+6	3	4	FLASH
11	←	F/Y ←	←R	←R	←R
21	F/Y ←	F/Y ←	←R	←R	←R
22,23	R	G	R	R	R
24	R	F/Y →	→	R	R
31	R	R	←	R	R
32	R	R	G ←	R	R
33	R	R	G	R	R
34	→	R	F/Y →	R	R
41	R	R	R	G ←	R
42	R	R	R	G	R
61,62	G	G	R	R	R

SIGNAL FACE I.D.

All Heads L.E.D.



ASC/3 DETECTOR INSTALLATION CHART

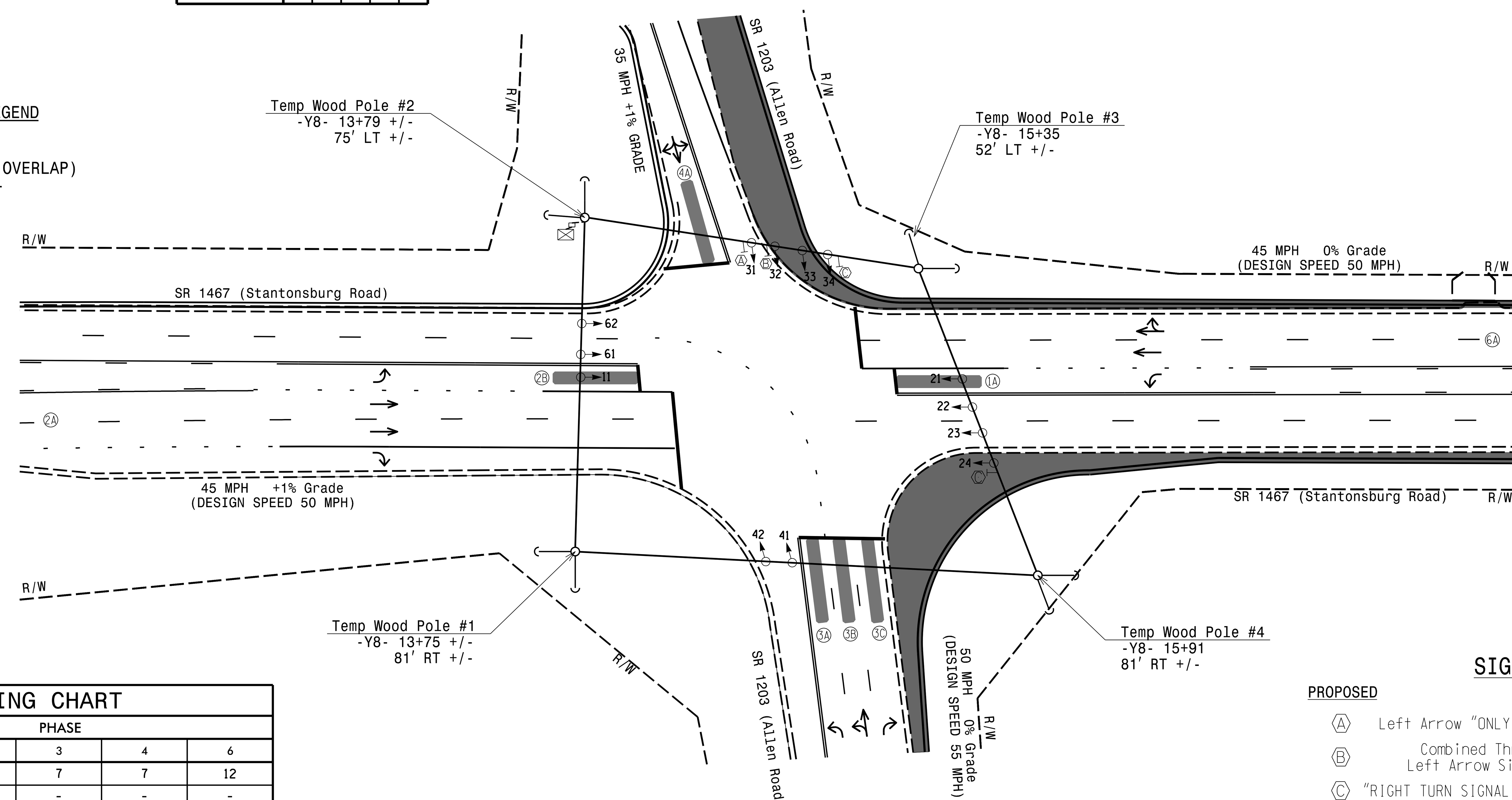
DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	✱	✱	1	Yes	-	15	-	N	-	✱
					6	Yes	-	-	-	N	-	✱
2B	6X40	0	✱	✱	2	Yes	-	-	-	N	-	✱
3A	6X40	0	✱	✱	3	Yes	-	3	-	N	-	✱
3B	6X40	0	✱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

✱ Multizone Microwave Detection

4 Phase
Fully Actuated
Greenville Signal System

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 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
7. Pavement markings are existing.
8. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



SIGNS

PROPOSED		EXISTING
(A)	Left Arrow "ONLY" Sign (R3-5L)	(A)
(B)	Combined Through and Left Arrow Sign (R3-6L)	(B)
(C)	"RIGHT TURN SIGNAL" Sign (R10-10R)	(C)

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Non-Intrusive Detection Zone	
	Controller & Cabinet	
	Junction Box	
	Oversized Junction Box	
	Type II Signal Pedestal	
	Metal Strain Pole	
	2-in Underground Conduit	
DD	Directional Drill	N/A
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	
	Construction Zone	

ASC/3 TIMING CHART

FEATURE	PHASE 1	2	3	4	6
Min Green *	7	12	7	7	12
Delayed Green *	-	-	-	-	-
Walk *	-	-	-	-	-
Ped Clear	-	-	-	-	-
Veh. Extension *	2.0	2.0	2.0	2.0	2.0
Max 1 *	15	90	15	25	90
Yellow	3.0	4.5	4.8	3.8	4.5
Red Clear	3.2	1.6	2.0	2.8	1.6
Red Revert	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-	-
Seconds /Actuation *	-	-	-	-	-
Max Initial *	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-
Time To Reduce *	-	-	-	-	-
Minimum Gap	-	-	-	-	-
Locking Detector	-	X	-	-	X
Recall Position	-	VEH. RECALL	-	-	VEH. RECALL
Dual Entry	-	-	-	-	-
Simultaneous Gap	X	X	X	X	X

* 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.

MICROWAVE DETECTION

FUNCTION	2A		6A	
	Sensor 1		Sensor 2	
Channel	1		1	
Phase	2		6	
Direction of Travel	EB		WB	
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	-

$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Temporary Signal 1 - TMP Phase I & II

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

SR 1467 (Stantonsburg Road) at SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE:	July 2025	REVIEWED BY:	S.G. Haynie
PREPARED BY:	A.M. Kollar	REVIEWED BY:	

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE DATE

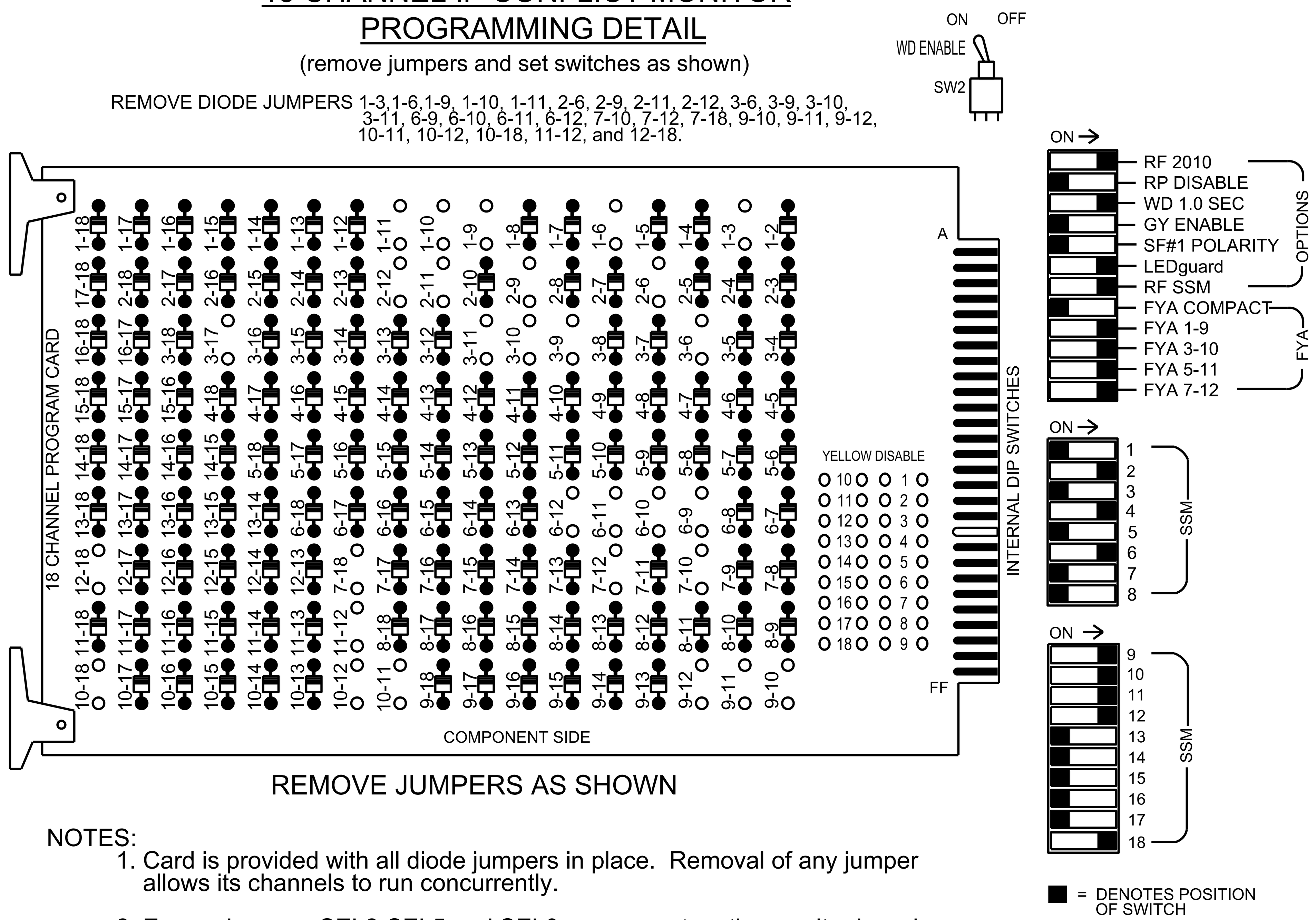
Sig Inventory No. 02-0500T1

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 4.1

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-3,1-6,1-9, 1-10, 1-11, 2-6, 2-9, 2-11, 2-12, 3-6, 3-9, 3-10, 3-11, 6-9, 6-10, 6-11, 6-12, 7-10, 7-12, 7-18, 9-10, 9-11, 9-12, 10-11, 10-12, 10-18, 11-12, and 12-18.



REMOVE JUMPERS AS SHOWN

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

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phase 2 Green and 6 Green.
3. The cabinet and controller are part of the Greenville Signal 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,S4,S5,S8, S10,AUX S1,AUX S2, AUX S4,AUX S5,AUX S6

PHASES USED.............1,2,3,4,6
OVERLAP "A".............*
OVERLAP "B".............*
OVERLAP "C".............*
OVERLAP "D".............*
OVERLAP "E".............NOT USED
OVERLAP "F".............*
OVERLAP "G".............*
OVERLAP "H".............*

* 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	OLG	4		4 PED	5	6	6 PED	OLH	8	8 PED	OLA	OLB	SPARE	OLC	OLD	OLF		
SIGNAL HEAD NO.	11★	22,23	NU	34★	41	42	NU	NU	61,62	NU	24★	NU	NU	11★	34★	NU	21★	24★	31	32	33
RED		128			101	101			134						A124			A101		A104	A104
YELLOW	*	129		*	102	102			135		*									A105	A105
GREEN		130			103	103			136											A106	A106
RED ARROW														A121			A114		A104		
YELLOW ARROW														A122	A125		A115	A102	A105		
FLASHING YELLOW ARROW														A123	A126		A116	A103			
GREEN ARROW	127			118	103						124								A106	A106	

NU = Not Used

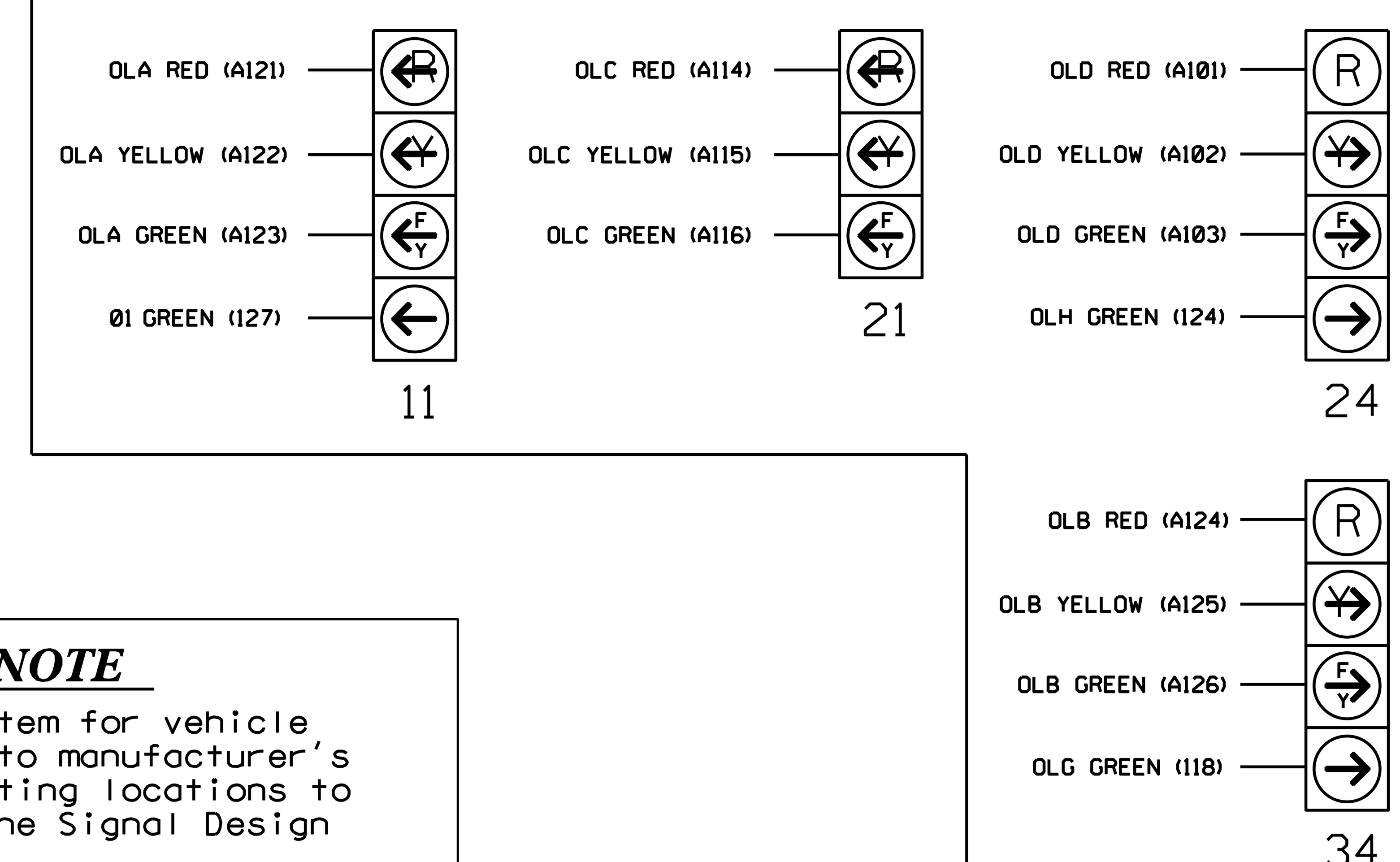
* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail this sheet.

NOTE: Output functions for load switches S4 and S10 have been reassigned. See sheet 2 for details.

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



NOTE
See overlap programming instructions on sheet 2.

INPUT FILE POSITION LAYOUT

(front view)

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

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE

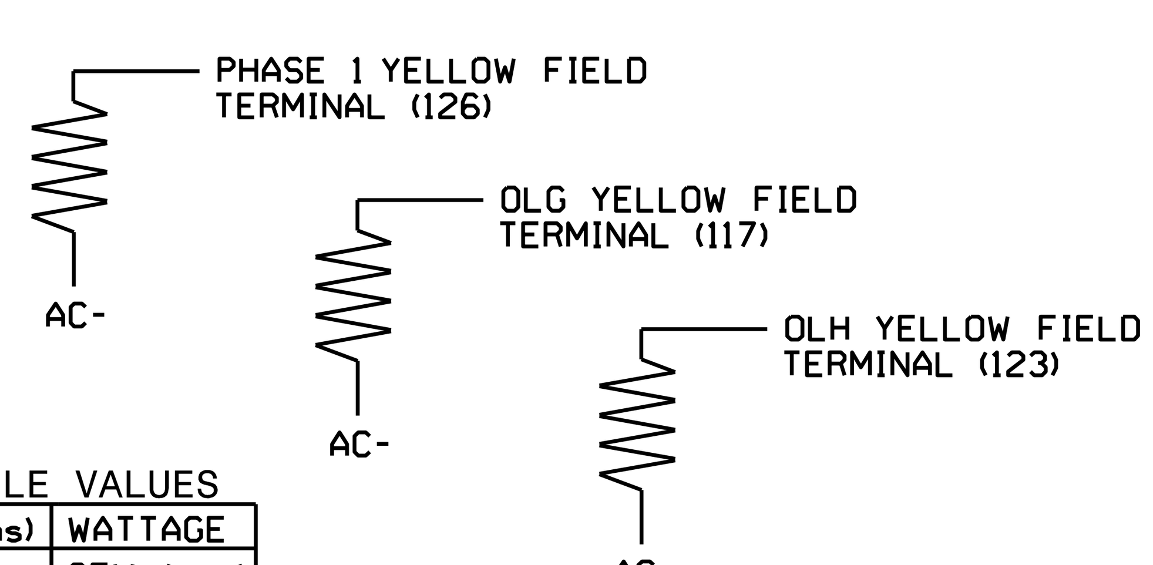
INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

SPECIAL DETECTOR NOTE

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

LOAD RESISTOR INSTALLATION DETAIL

(install resistor 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: 02-0500T1
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Temporary Signal 1 - TMP Phase I & II
Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:
Prepared for the Offices of:
Transportation Mobility and Safety Division — Signals Management Section — North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE DATE

SIG. INVENTORY NO. 02-0500T1

7/22/2025
X:\P\1030063003_U-5875 Signals & Comms (SEP) TDM\Design\Traffic\Signals\Design\Plan Sheets\U-5875 Signal Sheets\020500T1_sm_ele_202506XX.dgn
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PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 4.2

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select [2. CONTROLLER]
2. From CONTROLLER Submenu select [2. VEHICLE OVERLAPS]
3. Press "Toggle" until positioned on Overlap F

OVERLAP F

Select TMG VEH OVLP [F] and 'NORMAL'

```
TMG VEH OVLP...[F] TYPE: ......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP G

Select TMG VEH OVLP [G] and 'NORMAL'

```
TMG VEH OVLP...[G] TYPE: ......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED X . . . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP H

Select TMG VEH OVLP [H] and 'NORMAL'

```
TMG VEH OVLP...[H] TYPE: ......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Press Toggle until positioned over Overlap A

OVERLAP A

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

```
TMG VEH OVLP...[A] TYPE: ....PPLT FYA

PROTECTED RIGHT TURN....   PHASE    1
OPPOSING THROUGH.......    PHASE    2

FLASHING ARROW OUTPUT.....CH9 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE.......... 0
```

Toggle Once

OVERLAP B

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

```
TMG VEH OVLP...[B] TYPE: ....PPLT FYA

PROTECTED RIGHT TURN....   OVERLAP  G
OPPOSING THROUGH.......    PHASE    3

FLASHING ARROW OUTPUT.....CH10 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE.......... 0
```

Toggle Once

OVERLAP C

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

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

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
```

Toggle Once

OVERLAP D

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

```
TMG VEH OVLP...[D] TYPE: ....PPLT FYA

PROTECTED RIGHT TURN....   OVERLAP  H
OPPOSING THROUGH.......    PHASE    2

FLASHING ARROW OUTPUT.....CH12 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE.......... 0
```

END PROGRAMMING

ECONOLITE ASC/3-2070 LOAD SWITCH ASSIGNMENT DETAIL

(program controller as shown)

1. From Main Menu select [1. CONFIGURATION]
2. From CONFIGURATION Submenu select [3. LOAD SW ASSIGN]

```
LD SWITCH ASSIGN
    PHASE        DIMMING  ---FLASH---
    /OVLP TYPE   R Y G D  PWR AUT TGR
1     1    V     . . . +   A   R   X
2     2    V     . . . +   A   R   .
3     7    O     . . . +   A   R   X
4     4    V     . . . +   A   R   .
5     5    V     . . . -   A   R   .
6     6    V     . . . -   A   R   X
7     8    O     . . . -   A   R   .
8     8    V     . . . -   A   R   X
9     1    O     . . . +   A   R   X
10    2    O     . . . +   A   R   X
11    3    O     . . . -   A   R   .
12    4    O     . . . -   A   R   .
13    2    P     . . . +   A   .   .
14    4    P     . . . -   A   .   .
15    6    P     . . . +   A   .   .
16    8    P     . . . -   A   .   .
```

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

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

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

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

```
LP#:100  COPY FROM:100  ACTIVE: M   FALSE
IF   LP CIB CODE ON                 331  F

THEN LP  DELAY FOR          1.0 SECONDS
     LP  SET CIB ON         427

ELSE
```

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

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

END PROGRAMMING

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

(program controller as shown)

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

```
START/FLASH DATA
------START UP-------------------------
          1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE       G       G
          A B C D E F G H I J K L M N O P
OVERLAP   X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...  6
PWR START SEQ..  1 MUTCD→ YES   Y- G: NO
```

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

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: 02-0500T1
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

Temporary Signal 1 - TMP Phase I & II
Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
NC Department of Transportation — Transportation Mobility and Safety Division — Traffic Engineering Branch — Signal Management Section

750 N.Greenfield Pkwy.Garner,NC 27529

SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 | Pitt County | Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G HAYNIE
DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE | DATE

SIG. INVENTORY NO. 02-0500T1

7/22/2025
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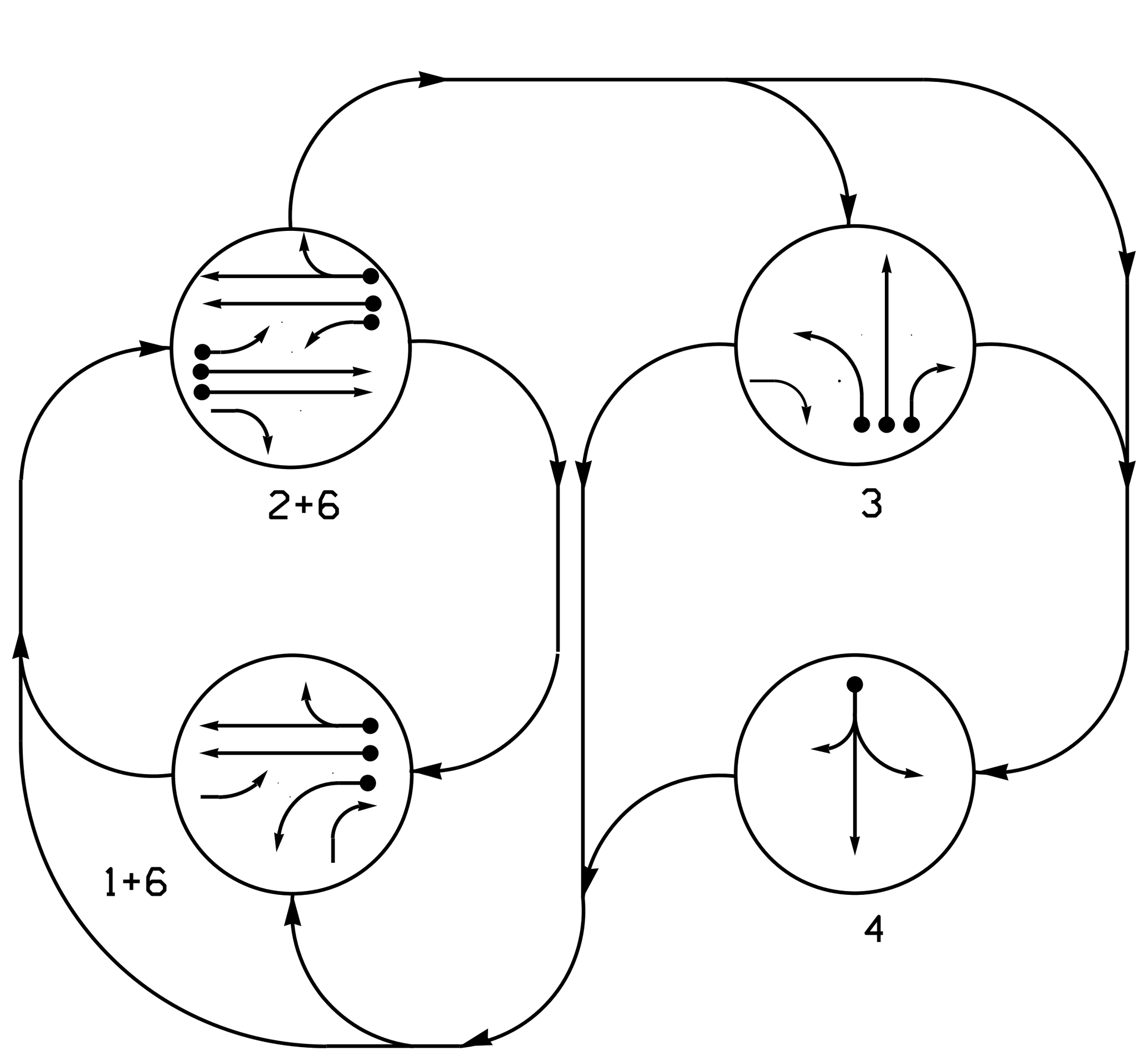
PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 5.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

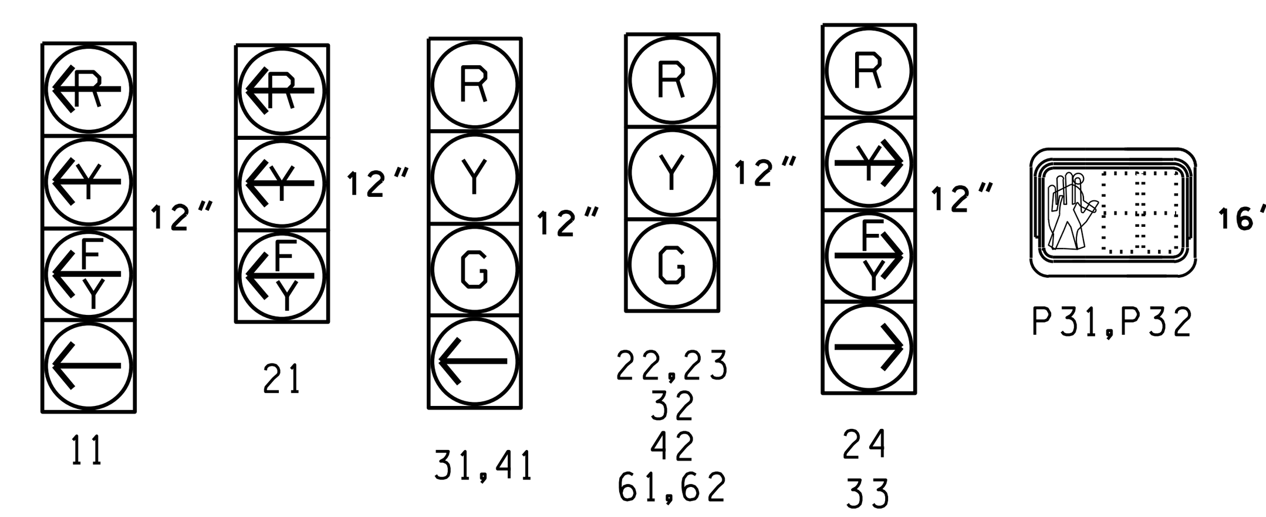
TABLE OF OPERATION

SIGNAL FACE	PHASE 1+6	2+6	3	4	FLASH
11	←	←F/Y	←R	←R	←R
21	←F/Y	←F/Y	←R	←R	←R
22,23	R	G	R	R	R
24	R	F/Y→	→	R	R
31	R	R	G←	R	R
32	R	R	G	R	R
33	R	→	F/Y→	R	R
41	R	R	R	G←	R
42	R	R	R	G	R
61,62	G	G	R	R	R
P31,P32	DW	DW	W	DW	DRK

W - Walk
DW - Don't Walk
DRK - Dark

SIGNAL FACE I.D.

All Heads L.E.D.



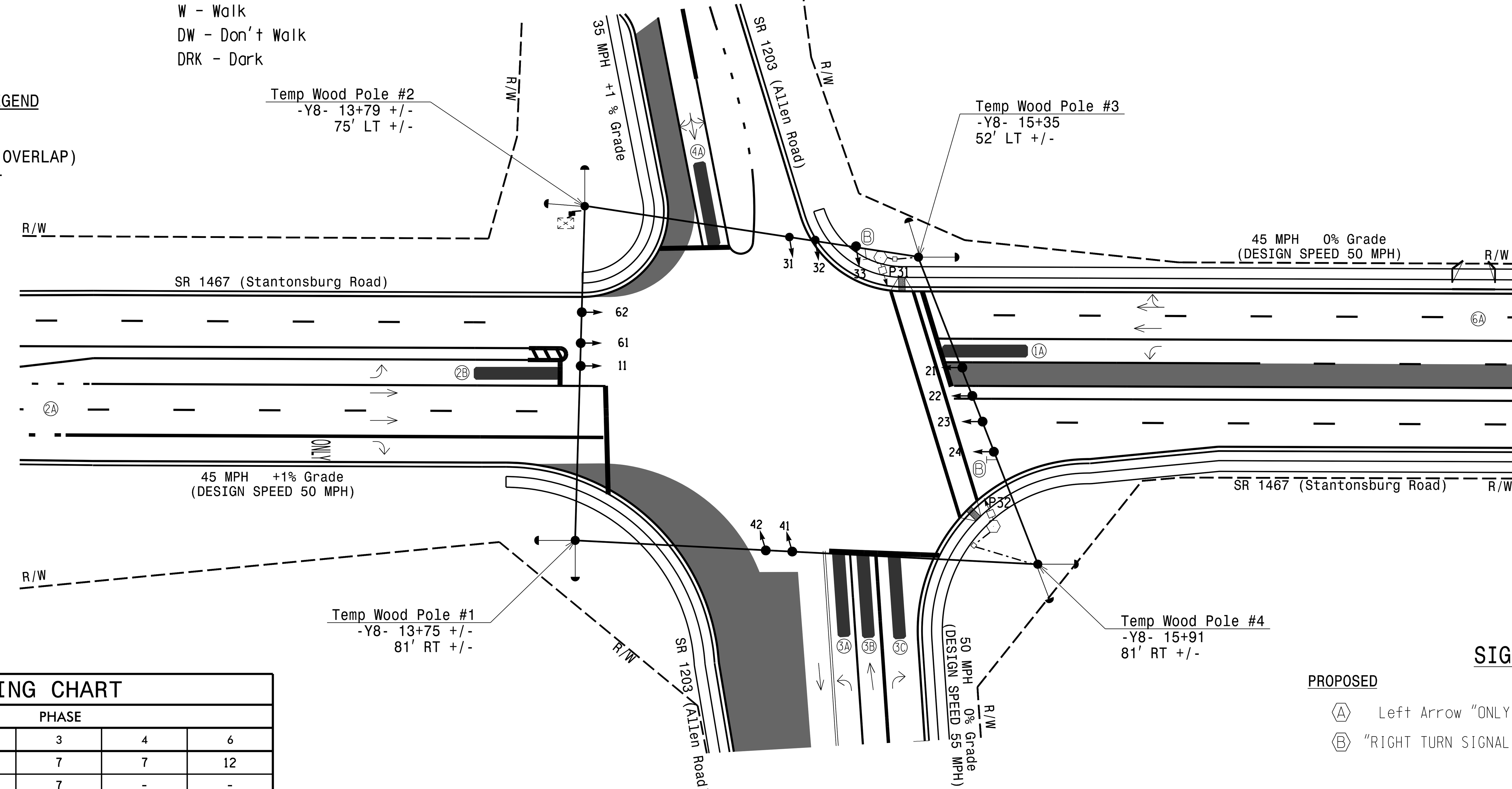
ASC/3 DETECTOR INSTALLATION CHART												
DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	✱	✱	1	Yes	-	15	-	N	-	✱
					6	Yes	-	-	-	N	-	✱
2B	6X40	0	✱	✱	2	Yes	-	-	-	N	-	✱
3A	6X40	0	✱	✱	3	Yes	-	-	-	N	-	✱
3B	6X40	0	✱	✱	3	Yes	-	-	-	N	-	✱
3C	6X40	0	✱	✱	3	Yes	-	-	-	N	-	✱
4A	6X40	0	✱	✱	4	Yes	-	-	-	N	-	✱

✱ Multizone Microwave Detection

4 Phase
Fully Actuated
Greenville Signal System

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 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. See U-5874 PMP for pavement markings.
7. Remove existing signal head numbered 31.
8. Renumber existing signal heads 32, 33 and 34 as 31, 32, 33 respectively.
9. Reposition signal heads 31, 32 and 33.
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.



SIGNS

PROPOSED		EXISTING
(A)	Left Arrow "ONLY" Sign (R3-5L)	(A)
(B)	"RIGHT TURN SIGNAL" Sign (R10-10R)	(B)

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Non-Intrusive Detection Zone	
	Controller & Cabinet	
	Junction Box	
	Oversized Junction Box	
	Type II Signal Pedestal	
	Metal Strain Pole	
	2-in Underground Conduit	
DD	Directional Drill	N/A
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	
	Construction Zone	

ASC/3 TIMING CHART

FEATURE	PHASE 1	2	3	4	6
Min Green *	7	12	7	7	12
Delayed Green *	-	-	7	-	-
Walk *	-	-	14	-	-
Ped Clear	-	-	26	-	-
Veh. Extension *	2.0	2.0	2.0	2.0	2.0
Max 1 *	15	90	15	25	90
Yellow	3.0	4.5	4.8	3.8	4.5
Red Clear	2.8	2.4	1.8	2.9	2.4
Red Revert	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-	-
Seconds /Actuation *	-	-	-	-	-
Max Initial *	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-
Time To Reduce *	-	-	-	-	-
Minimum Gap	-	-	-	-	-
Locking Detector	-	X	-	-	X
Recall Position	-	VEH. RECALL	-	-	VEH. RECALL
Dual Entry	-	-	-	-	-
Simultaneous Gap	X	X	X	X	X

* 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.

MICROWAVE DETECTION

FUNCTION	2A Sensor 1		6A Sensor 2	
Channel	1		1	
Phase	2		6	
Direction of Travel	EB		WB	
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	-

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Temporary Signal 2 - TMP Phase III

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE:	July 2025	REVIEWED BY:	S.G. Haynie
PREPARED BY:	A.M. Kollar	REVIEWED BY:	

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

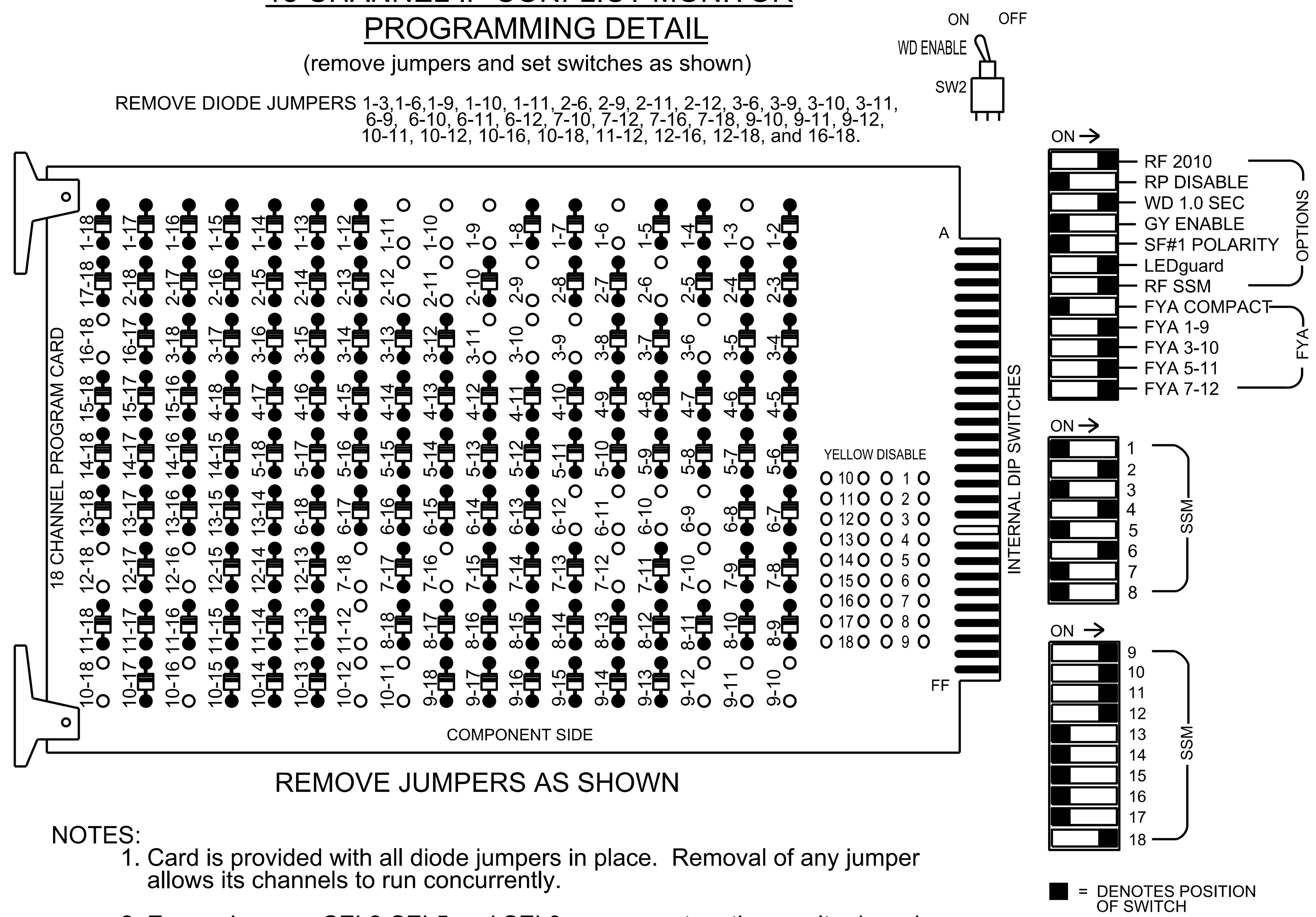
Sig Inventory No. 02-0500T2

$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-3,1-6,1-9, 1-10, 1-11, 2-6, 2-9, 2-11, 2-12, 3-6, 3-9, 3-10, 3-11, 6-9, 6-10, 6-11, 6-12, 7-10, 7-12, 7-16, 7-18, 9-10, 9-11, 9-12, 10-11, 10-12, 10-16, 10-18, 11-12, 12-16, 12-18, and 16-18.



REMOVE JUMPERS AS SHOWN

NOTES:

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

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phase 2 Green and 6 Green.
3. The cabinet and controller are part of the Greenville Signal 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,S4,S5,S8, S10,S12,AUX S1,AUX S2, AUX S4,AUX S5,AUX S6

PHASES USED............1,2,3,3PED,4,6
OVERLAP "A"............*
OVERLAP "B"............*
OVERLAP "C"............*
OVERLAP "D"............*
OVERLAP "E"............NOT USED
OVERLAP "F"............*
OVERLAP "G"............*
OVERLAP "H"............*

* 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	OLG	4		4 PED	5	6	6 PED	OLH	8	3 PED	OLA	OLB	SPARE	OLC	OLD	OLF	
SIGNAL HEAD NO.	11★	22,23	NU	33★	41	42	NU	NU	61,62	NU	24★	NU	P31, P32	11★	33★	NU	21★	24★	31	32
RED		128			101	101			134						A124			A101	A104	A104
YELLOW	*	129		*	102	102			135		*								A105	A105
GREEN		130			103	103			136										A106	A106
RED ARROW														A121			A114			
YELLOW ARROW														A122	A125		A115	A102		
FLASHING YELLOW ARROW														A123	A126		A116	A103		
GREEN ARROW	127			118	103						124								A106	
(hand symbol)													110							
(walking person symbol)													112							

NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

NOTE: Output functions for load switches S4, S10, and S12 have been reassigned. See sheet 2 for details.

INPUT FILE POSITION LAYOUT

(front view)

FILE		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	NOT USED	FS DC ISOLATOR
	L													Ø3PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L														

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
PED PUSH BUTTONS										
P31,P32	TB8-8,9	I13L	70	PED 8	3 PED					

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOT I13.

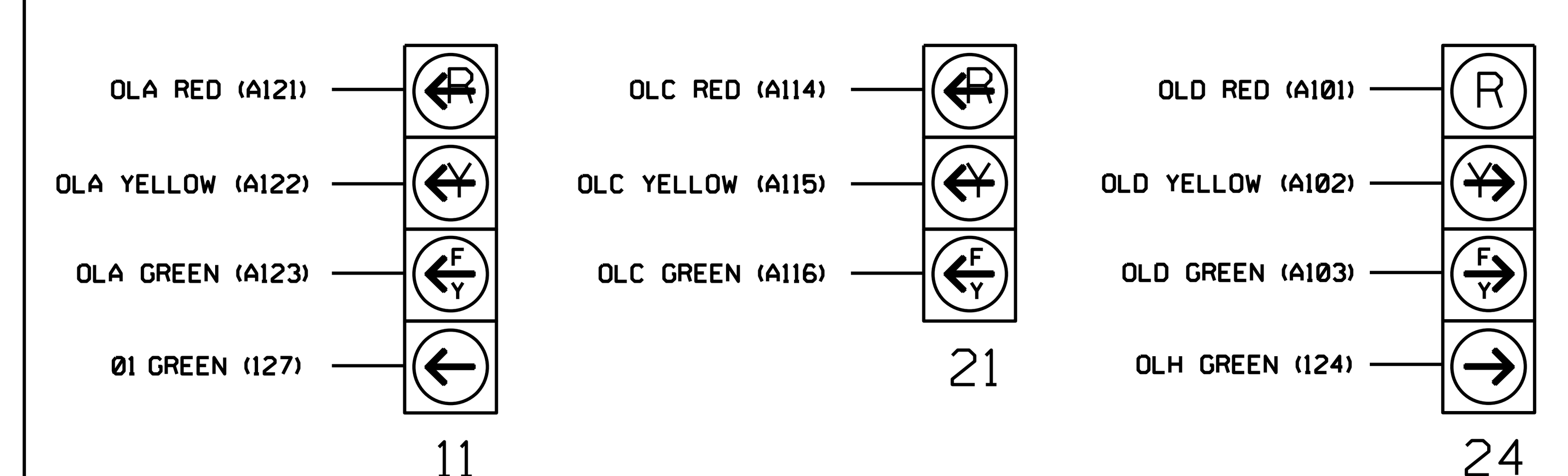
INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

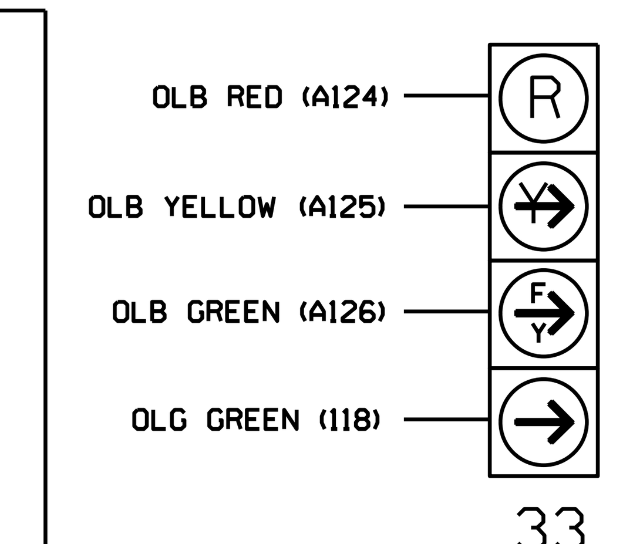
SPECIAL DETECTOR NOTE

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)





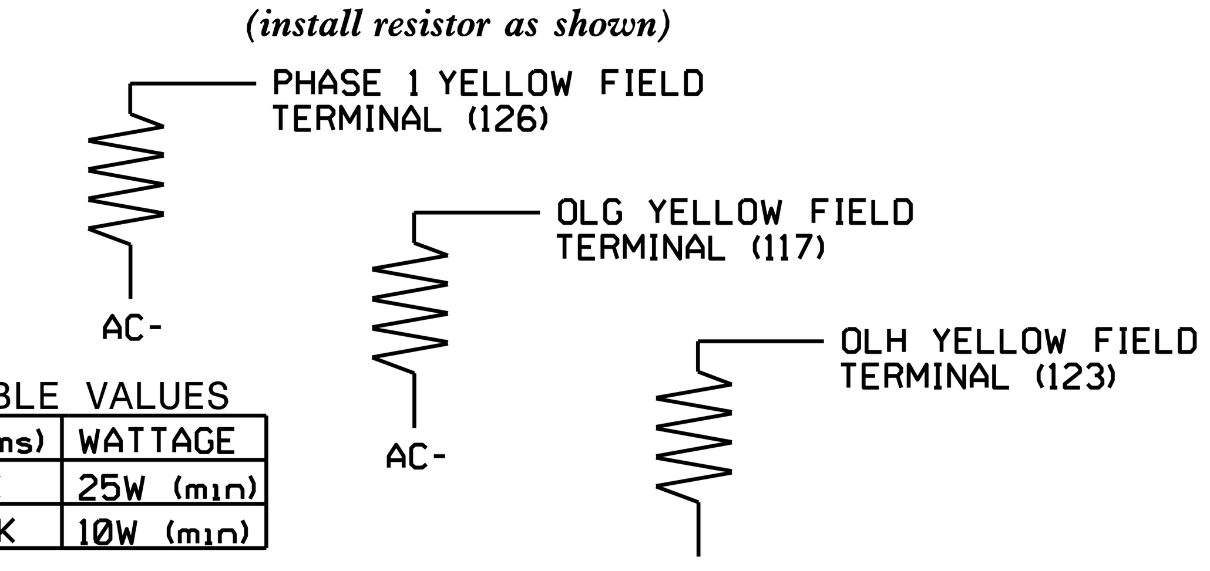
NOTE
See overlap programming instructions on sheet 2.

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.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor 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: 02-0500T2
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

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

(program controller as shown)

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

```
START/FLASH DATA
------START UP--------------------------
           1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE        G       G
           A B C D E F G H I J K L M N O P
OVERLAP    X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...  6
PWR START SEQ..  1 MUTCD→ YES   Y- G: NO
```

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

Temporary Signal 2 - TMP Phase III
Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ITS & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
D633DCC9A5D44B6...
SIGNATURE DATE

SIG. INVENTORY NO. 02-0500T2

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 5.2

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select [2. CONTROLLER]
2. From CONTROLLER Submenu select [2. VEHICLE OVERLAPS]
3. Press "Toggle" until positioned on Overlap F

OVERLAP F

Select TMG VEH OVLP [F] and 'NORMAL'

```
TMG VEH OVLP...[F] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP G

Select TMG VEH OVLP [G] and 'NORMAL'

```
TMG VEH OVLP...[G] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED X . . . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP H

Select TMG VEH OVLP [H] and 'NORMAL'

```
TMG VEH OVLP...[H] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Press Toggle until positioned over Overlap A

OVERLAP A

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

```
TMG VEH OVLP...[A] TYPE: .....PPLT FYA

PROTECTED RIGHT TURN....  PHASE    1
OPPOSING THROUGH.......   PHASE    2

FLASHING ARROW OUTPUT.....CH9 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

Toggle Once

OVERLAP B

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

```
TMG VEH OVLP...[B] TYPE: .....PPLT FYA

PROTECTED RIGHT TURN....  OVERLAP  G
OPPOSING THROUGH.......   PHASE    3

FLASHING ARROW OUTPUT.....CH10 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

Toggle Once

OVERLAP C

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

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

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
```

Toggle Once

OVERLAP D

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

```
TMG VEH OVLP...[D] TYPE: .....PPLT FYA

PROTECTED RIGHT TURN....  OVERLAP  H
OPPOSING THROUGH.......   PHASE    2

FLASHING ARROW OUTPUT.....CH12 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

END PROGRAMMING

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

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

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

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

```
LP#:100  COPY FROM:100  ACTIVE: M   FALSE
IF   LP CIB CODE ON                331  F

THEN LP  DELAY FOR          1.0 SECONDS
     LP  SET CIB ON         427

ELSE
```

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

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

END PROGRAMMING

ECONOLITE ASC/3-2070 LOAD SWITCH AND PED 3 PROGRAMMING ASSIGNMENT DETAIL

(program controller as shown)

1. From Main Menu select [6. DETECTORS]
2. From DETECTOR Submenu select [3. PED DETECTOR INPUT ASSIGNMENT]

PED DET PHASE ASSIGNMENT MODE: NTCIP

PHASE	1	2	3	4	5	6	7	8
DETECTOR	0	2	8	4	0	6	0	0

PHASE	9	10	11	12	13	14	15	16
DETECTOR	0	0	0	0	0	0	0	0

NOTICE PED DETECTOR 8 ASSIGNED TO PHASE 3

To assign load switch S4 as OLG, program LD SWITCH 3 as OVLP '7' TYPE 'O' as shown below.
To assign load switch S10 as OLH, program LD SWITCH 7 as OVLP '8' TYPE 'O' as shown below.
To reassign load switch S12 as PED 3, program LD SWITCH 16 as '3' TYPE 'P' as shown below.

1. From Main Menu select [1. CONFIGURATION]
2. From CONFIGURATION Submenu select [3. LOAD SW ASSIGN]

LD SWITCH ASSIGN

	PHASE /OVLP	TYPE	DIMMING R	Y	G	D	---FLASH--- PWR	AUT	TGR
1	1	V	.	.	.	+	A	R	X
2	2	V	.	.	.	+	A	R	.
3	7	O	.	.	.	+	A	R	X
4	4	V	.	.	.	+	A	R	.
5	5	V	.	.	.	-	A	R	.
6	6	V	.	.	.	-	A	R	X
7	8	O	.	.	.	-	A	R	.
8	8	V	.	.	.	-	A	R	X
9	1	O	.	.	.	+	A	R	X
10	2	O	.	.	.	+	A	R	X
11	3	O	.	.	.	-	A	R	.
12	4	O	.	.	.	-	A	R	.
13	2	P	.	.	.	+	A	.	.
14	4	P	.	.	.	-	A	.	.
15	6	P	.	.	.	+	A	.	.
16	3	P	.	.	.	-	A	.	.

NOTICE PHASE 3 PED ASSIGNED TO LD SWITCH 12

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0500T2
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

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.

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Temporary Signal 2 - TMP Phase III
Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy.Garner,NC 27529

SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
DocuSigned by: Steven G. Haynie 7/15/2025
D633DCC9A5D44B6...
SIGNATURE DATE

SIG. INVENTORY NO. 02-0500T2

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 6.0

6 Phase
Fully Actuated
Greenville Signal System

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. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "DON'T WALK" time only.
8. See U-5875 PMP for pavement markings.
9. The City 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.

ASC/3 DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	*	*	1	YES	-	-	-	N	-	*
1B	6X40	0	*	*	1	YES	-	-	-	N	-	*
1C	6X40	0	*	*	1	YES	-	15	-	N	-	*
3A	6X40	0	*	*	3	YES	-	3	-	N	-	*
3B	6X40	0	*	*	3	YES	-	-	-	N	-	*
3C	6X40	0	*	*	3	YES	-	-	-	N	-	*
4A	6X40	0	*	*	4	YES	-	-	-	N	-	*
5A	6X40	0	*	*	5	YES	-	15+	-	N	-	*
					2@	YES	-	-	-	N	-	*
5B	6X40	0	*	*	5	YES	-	15	-	N	-	*

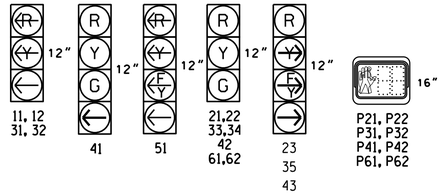
* Multizone Microwave Detection
+ Reduce to 3 seconds during Alt Phasing Ops
@ Disable phase call during Alt Phasing Ops

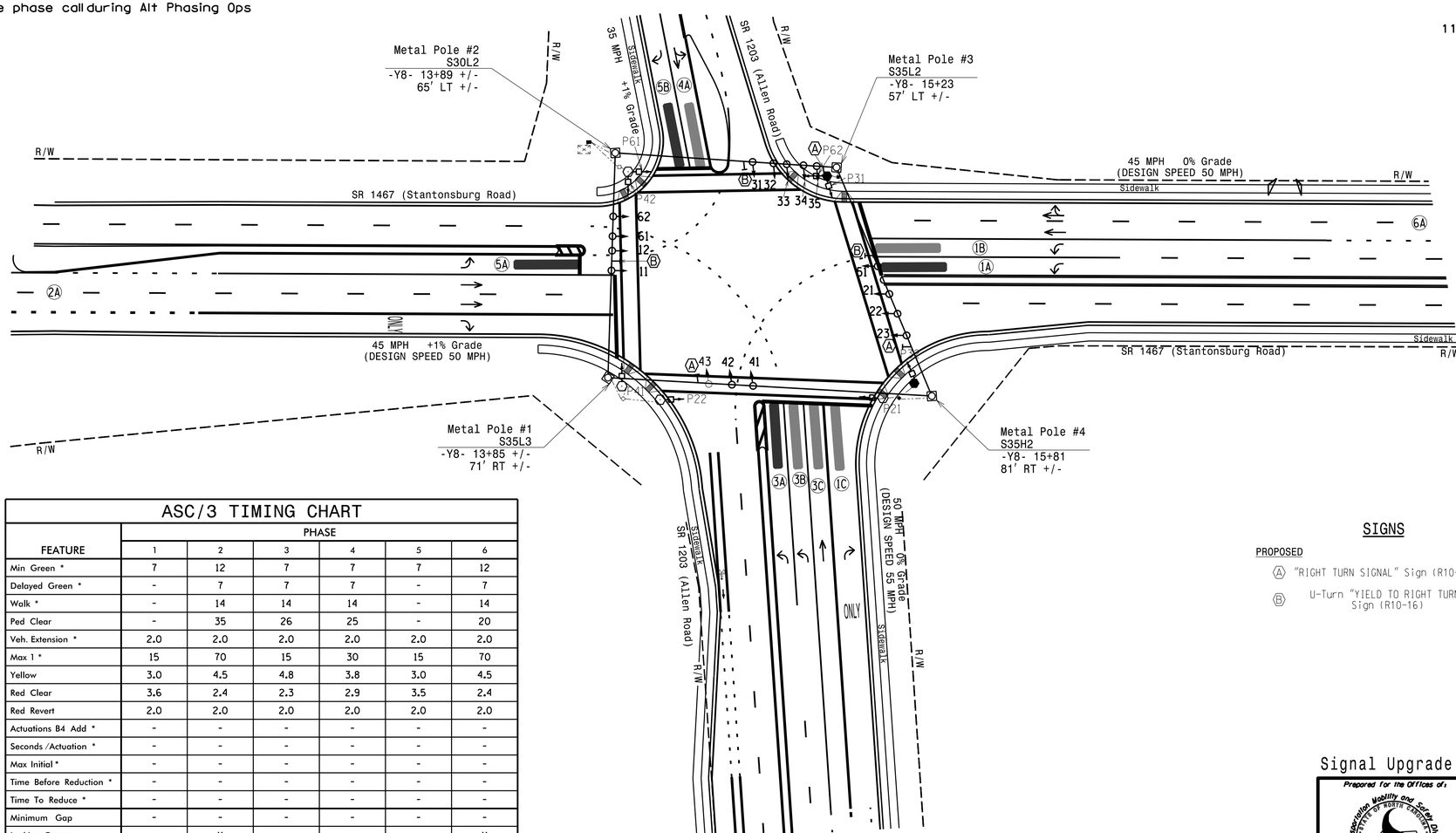
MICROWAVE DETECTION

	2A		6A	
FUNCTION	Sensor 1		Sensor 2	
Channel	1		1	
Phase	2		6	
Direction of Travel	EB		WB	
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	-

SIGNAL FACE I.D.

All Heads L.E.D.





ASC/3 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6
Min Green *	7	12	7	7	7	12
Delayed Green *	-	7	7	7	-	7
Walk *	-	14	14	14	-	14
Ped Clear	-	35	26	25	-	20
Veh. Extension *	2.0	2.0	2.0	2.0	2.0	2.0
Max 1 *	15	70	15	30	15	70
Yellow	3.0	4.5	4.8	3.8	3.0	4.5
Red Clear	3.6	2.4	2.3	2.9	3.5	2.4
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-	-	-
Seconds /Actuation *	-	-	-	-	-	-
Max Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Locking Detector	-	X	-	-	-	X
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	X	X	X	X	X	X

* 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.

SIGNS

PROPOSED		EXISTING
Ⓐ	"RIGHT TURN SIGNAL" Sign (R10-10R)	Ⓐ
Ⓑ	U-Turn "YIELD TO RIGHT TURN" Sign (R10-16)	Ⓑ

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Non-Intrusive Detection Zone	
	Controller & Cabinet	
	Junction Box	
	Oversized Junction Box	
	Type II Signal Pedestal	
	Metal Strain Pole	
	2-in Underground Conduit	
DD	Directional Drill	N/A
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	
	Controller & Cabinet	

Signal Upgrade - Final

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Traffic Engineering Branch
Signal Design Section
750 N.Greenfield Pkwy.Corner,NC 27529

SR 1467 (Stantonsburg Road) at SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.W. Kollar REVIEWED BY:

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

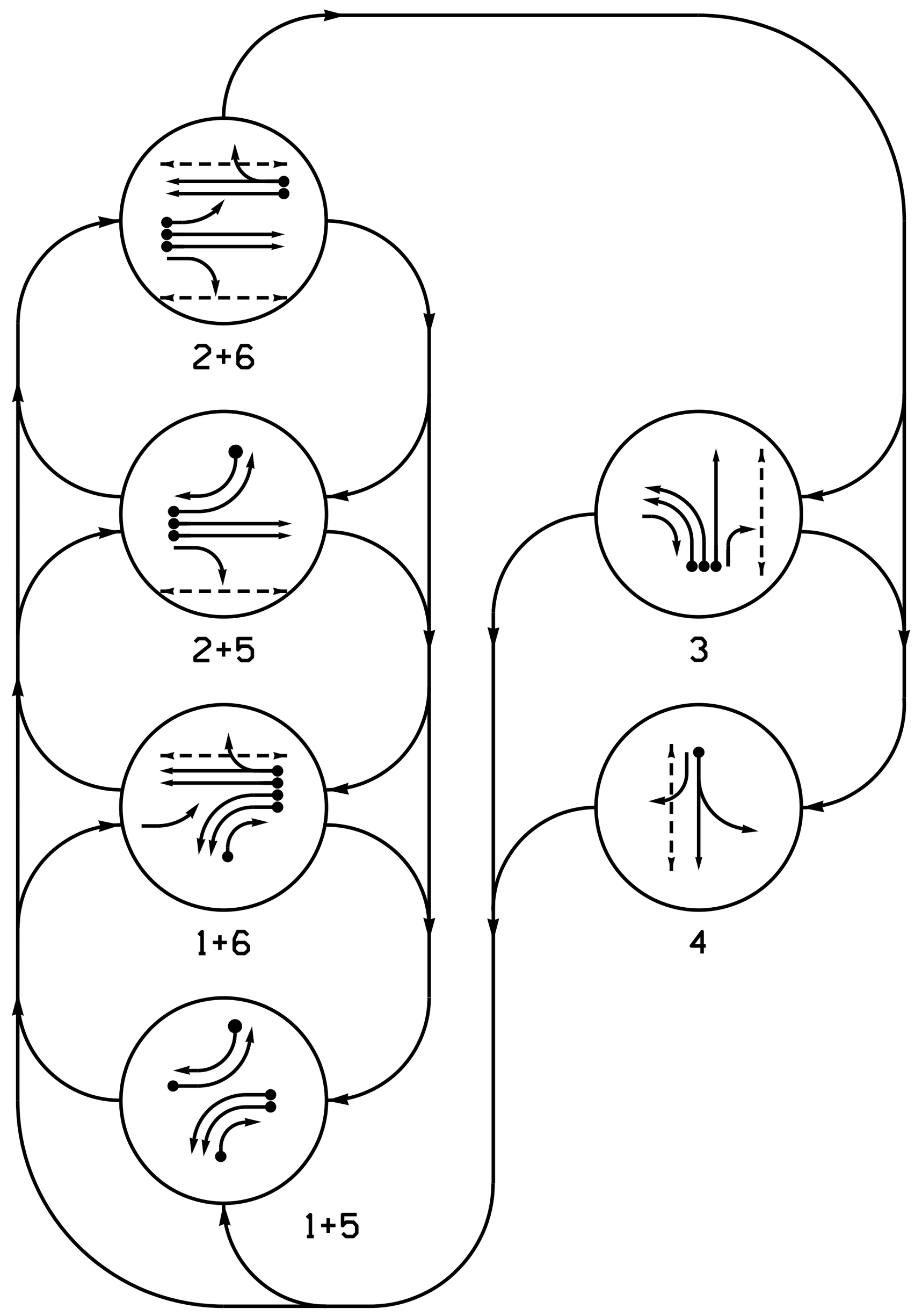
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNE
DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE DATE

Sig Inventory No. 02-0500

$$$$USERNAME$$$$
$$$$DESIGN$$$$
$$$$ENGINEER$$$$
$$$$SIGNATURE$$$$

6 Phase
Fully Actuated
Greenville Signal System

DEFAULT PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

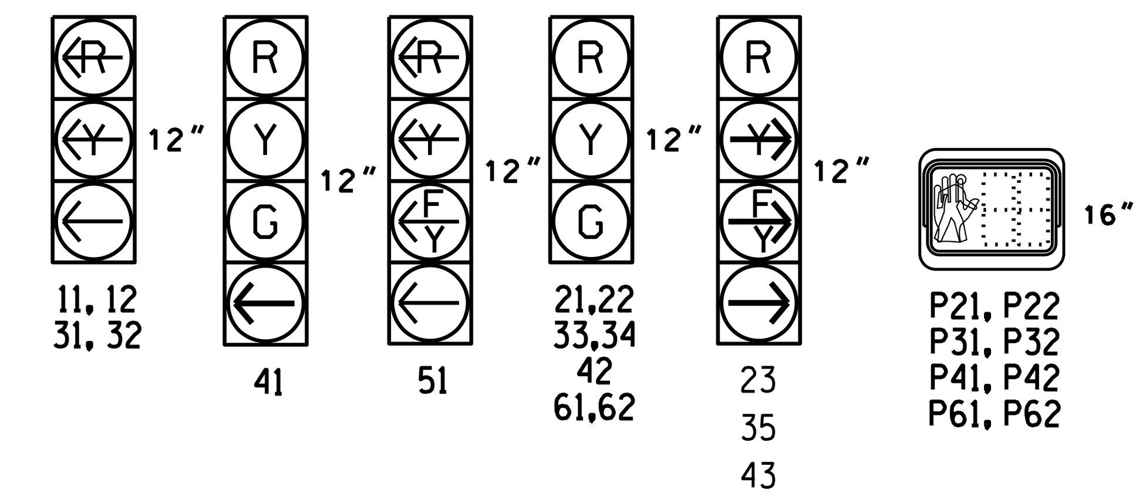
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

DEFAULT TABLE OF OPERATION

SIGNAL FACE	PHASE 1+5	1+6	2+5	2+6	3	4	FLASH
11, 12	←	←	←R	←R	←R	←R	←R
21, 22	R	R	G	G	R	R	R
23	R	R	F/Y→	F/Y→	→	R	R
31, 32	←R	←R	←R	←R	←	←R	←R
33, 34	R	R	R	R	G	R	R
35	→	→	R	R	F/Y→	R	R
41	R	R	R	R	R	G/←	R
42	R	R	R	R	R	G	R
43	→	R	→	R	R	F/Y→	R
51	←	←F/Y	←	←F/Y	←R	←R	←R
61, 62	R	G	R	G	R	R	R
P21, P22	DW	DW	W	W	DW	DW	DRK
P31, P32	DW	DW	DW	DW	W	DW	DRK
P41, P42	DW	DW	DW	DW	DW	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



NOTES

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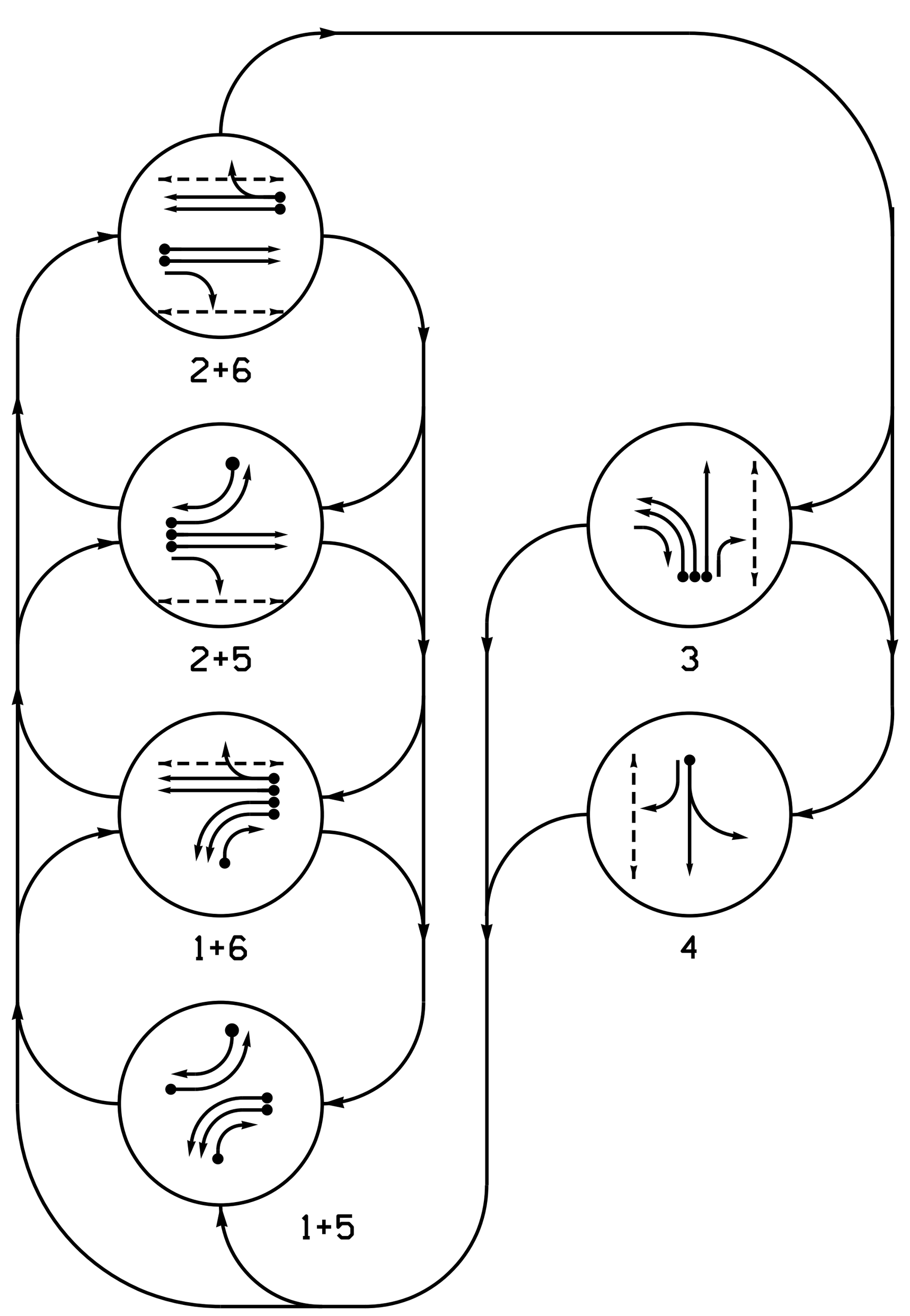
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

ALTERNATE TABLE OF OPERATION

SIGNAL FACE	PHASE 1+5	1+6	2+5	2+6	3	4	FLASH
11, 12	←	←	←R	←R	←R	←R	←R
21, 22	R	R	G	G	R	R	R
23	R	R	F/Y→	F/Y→	→	R	R
31, 32	←R	←R	←R	←R	←	←R	←R
33, 34	R	R	R	R	G	R	R
35	→	→	R	R	F/Y→	R	R
41	R	R	R	R	R	G/←	R
42	R	R	R	R	R	G	R
43	→	R	→	R	R	F/Y→	R
51	←	←R	←	←R	←R	←R	←R
61, 62	R	G	R	G	R	R	R
P21, P22	DW	DW	W	W	DW	DW	DRK
P31, P32	DW	DW	DW	DW	W	DW	DRK
P41, P42	DW	DW	DW	DW	DW	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DRK

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(919) 926-4100

Signal Upgrade - Final

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy.Garner.NC 27529

SCALE 0 40 1"=40'

SR 1467 (Stantonsburg Road) at SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE:	July 2025	REVIEWED BY:	S.G. Haynie
PREPARED BY:	A.M. Kollar	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/22/2025
D62BDCC9A5D44B6...
SIGNATURE DATE

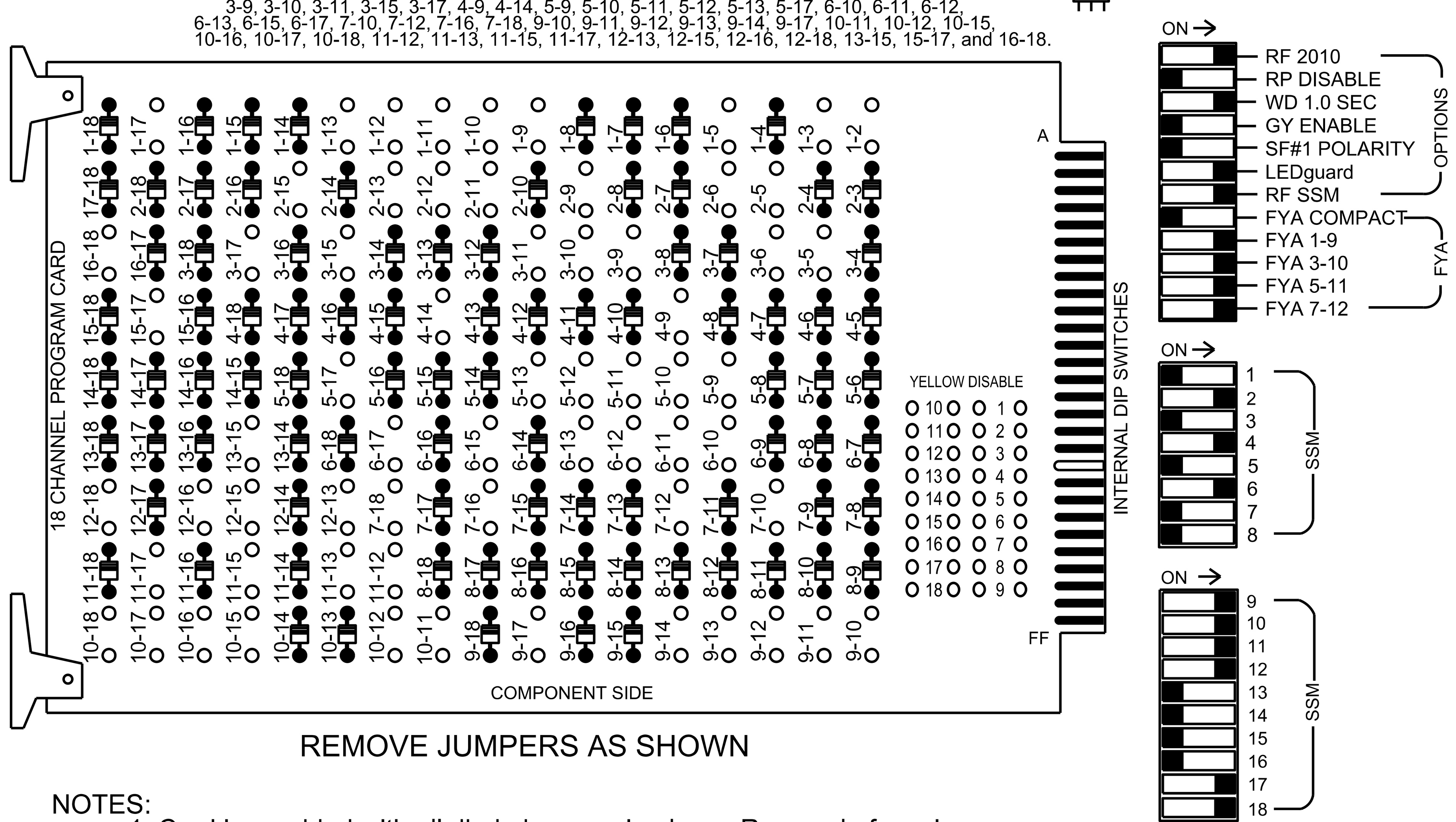
Sig Inventory No. 02-0500

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 6.2

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-2, 1-3, 1-5, 1-9, 1-10, 1-11, 1-12, 1-13, 1-17, 2-5, 2-6, 2-9, 2-11, 2-12, 2-13, 2-15, 3-5, 3-6, 3-9, 3-10, 3-11, 3-15, 3-17, 4-9, 4-14, 5-9, 5-10, 5-11, 5-12, 5-13, 5-17, 6-10, 6-11, 6-12, 6-13, 6-15, 6-17, 7-10, 7-12, 7-16, 7-18, 9-10, 9-11, 9-12, 9-13, 9-14, 9-17, 10-11, 10-12, 10-15, 10-16, 10-17, 10-18, 11-12, 11-13, 11-15, 11-17, 12-13, 12-15, 12-16, 12-18, 13-15, 15-17, and 16-18.



REMOVE JUMPERS AS SHOWN

NOTES:

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

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phase 2 Green and 6 Green.
3. The cabinet and controller are part of the Greenville Signal 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,S4,S5,S6,S7,S8,S9,S10,S12,AUX S1,AUX S2 AUX S3,AUX S4,AUX S5,AUX S6
PHASES USED............1,2,2PED,3,3PED,4,4PED,5,6,6PED
OVERLAP "A".............*
OVERLAP "B".............*
OVERLAP "C".............*
OVERLAP "D".............*
OVERLAP "E".............*
OVERLAP "F".............*
OVERLAP "G".............*
OVERLAP "H".............*
OVERLAP "I".............*

* 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	OLG	2	2 PED	OLH	4		4 PED	5	6	6 PED	OLI	8	3 PED	OLA	OLB	OLE	OLC	OLD	OLF	
SIGNAL HEAD NO.	43★	21,22	P21, P22	35★	41	42	P41, P42	51★	61,62	P61, P62	23★	NU	P31, P32	43★	35★	11,12	51★	23★	31,32	33,34
RED		128			101	101			134					A121	A124			A101		A104
YELLOW	*	129		*	102	102		*	135		*									A105
GREEN		130			103	103			136											A106
RED ARROW																A111	A114		A104	
YELLOW ARROW														A122	A125	A112	A115	A102	A105	
FLASHING YELLOW ARROW														A123	A126		A116	A103		
GREEN ARROW	127			118	103			133			124					A113			A106	
(hand)			113				104			119			110							
(walking person)			115				106			121			112							

NU = Not Used

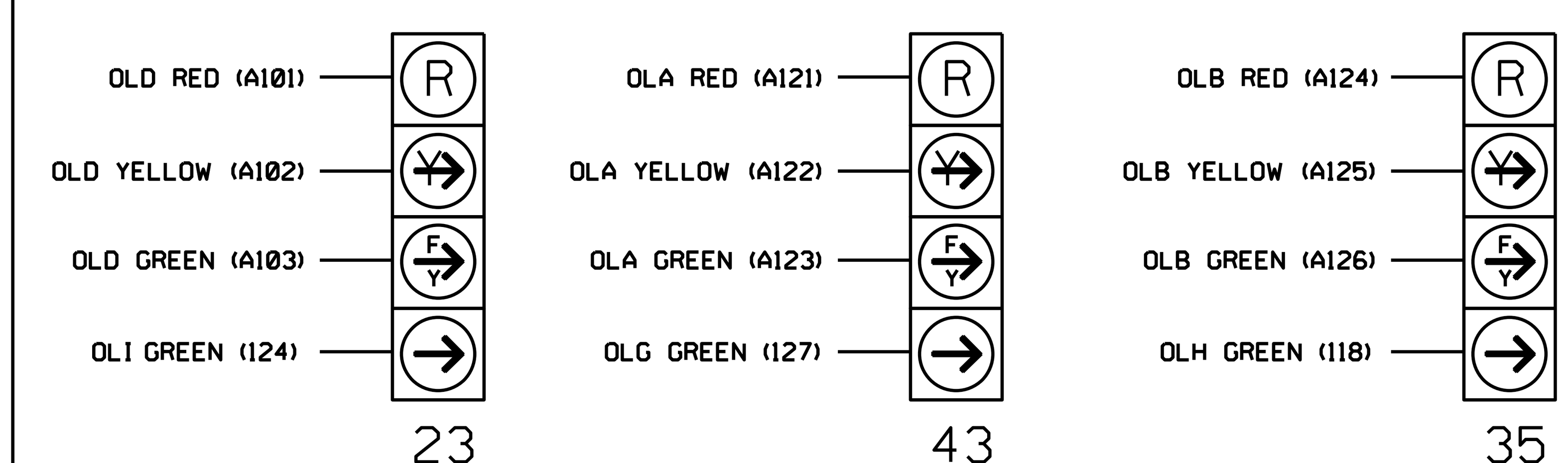
* Denotes install load resistor. See load resistor installation detail this sheet.

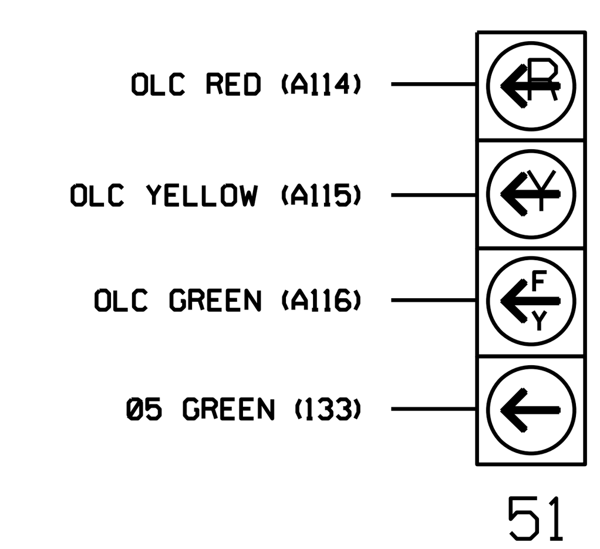
★ See pictorial of head wiring in detail this sheet.

NOTE: Output functions for load switches S1, S4, S10, and S12 have been reassigned. See sheet 2 for details.

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)





INPUT FILE POSITION LAYOUT

(front view)

FILE		1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	WIRED INPUT ⊗	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø2PED DC ISOLATOR	Ø6PED DC ISOLATOR	FS DC ISOLATOR
"I"	L												Ø4PED DC ISOLATOR	Ø3PED DC ISOLATOR	ST DC ISOLATOR
"J"	U	Ø5 5A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
"J"	L	NOT USED													

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

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
5A[1]	TB3-1,2	J1U	55	5★	5	YES		15	___	N
	-	I4U	47	22★	2	YES		-	___	N
PED PUSH BUTTONS										
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED					
P31,P32	TB8-8,9	I13L	70	PED 8	3 PED					
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED					

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

[1] Add jumper from J1-W to I4-W, on rear of input file.

★ See Input Page Assignment programming details for alternate phasing on sheet 3.

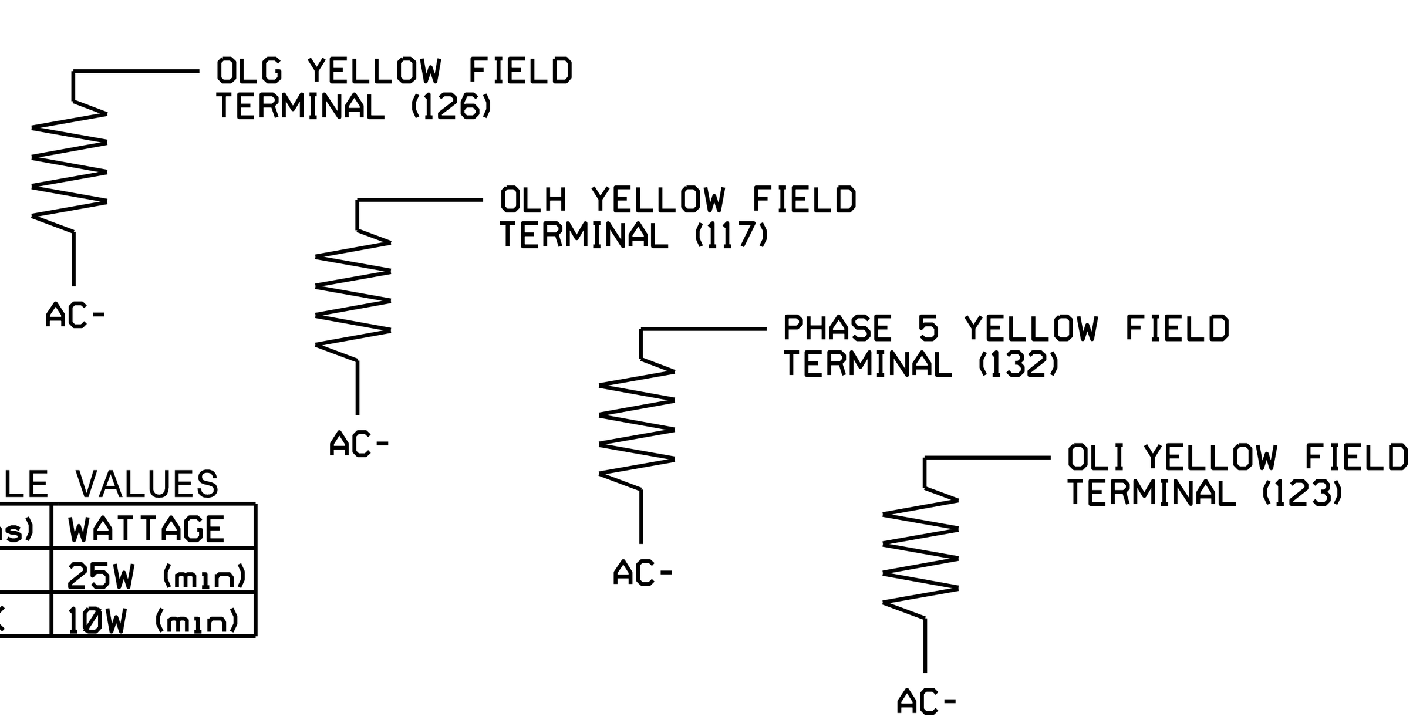
INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

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.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown)



ACCEPTABLE VALUES

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

SPECIAL DETECTOR NOTE

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

For Detection Zone 5A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0500
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

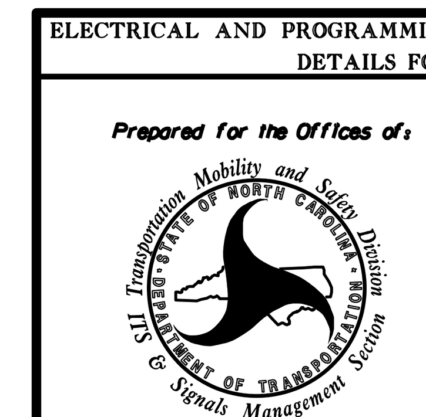
RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Signal Upgrade - Final
Electrical Detail - Sheet 1 of 4

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

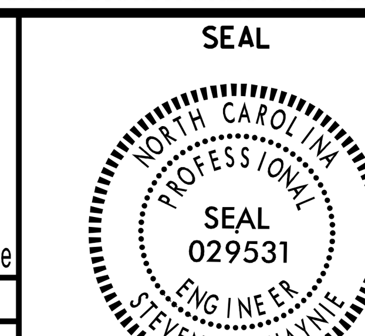
SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL



DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE DATE

SIG. INVENTORY NO. 02-0500

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 6.3

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select **2. CONTROLLER**
2. From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**
3. Press "Toggle" until positioned on Overlap E

OVERLAP E

Select TMG VEH OVLP [E] and 'NORMAL'

```
TMG VEH OVLP...[E] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED X . . . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP F

Select TMG VEH OVLP [F] and 'NORMAL'

```
TMG VEH OVLP...[F] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP G

Select TMG VEH OVLP [G] and 'NORMAL'

```
TMG VEH OVLP...[G] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . X . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP H

Select TMG VEH OVLP [H] and 'NORMAL'

```
TMG VEH OVLP...[H] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED X . . . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP I

Select TMG VEH OVLP [I] and 'NORMAL'

```
TMG VEH OVLP...[I] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Press Toggle until positioned over Overlap A

OVERLAP A

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

```
TMG VEH OVLP...[A] TYPE: .....PPLT FYA

PROTECTED RIGHT TURN....  OVERLAP  G
OPPOSING THROUGH.......   PHASE    4

FLASHING ARROW OUTPUT.....CH9 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

Toggle Once

OVERLAP B

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

```
TMG VEH OVLP...[B] TYPE: .....PPLT FYA

PROTECTED RIGHT TURN....  OVERLAP  H
OPPOSING THROUGH.......   PHASE    3

FLASHING ARROW OUTPUT.....CH10 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

Toggle Once

OVERLAP C

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

```
TMG VEH OVLP...[C] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....   PHASE    5
OPPOSING THROUGH.......   PHASE    6

FLASHING ARROW OUTPUT.....CH11 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 5
```

← NOTICE ACTION PLAN SF BIT "5"

Toggle Once

OVERLAP D

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

```
TMG VEH OVLP...[D] TYPE: .....PPLT FYA

PROTECTED RIGHT TURN....  OVERLAP  I
OPPOSING THROUGH.......   PHASE    2

FLASHING ARROW OUTPUT.....CH12 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

END PROGRAMMING

ECONOLITE ASC/3-2070 LOAD SWITCH AND PED 3 PROGRAMMING ASSIGNMENT DETAIL

(program controller as shown)

1. From Main Menu select **6. DETECTORS**
2. From DETECTOR Submenu select **3. PED DETECTOR INPUT ASSIGNMENT**

PED DET PHASE ASSIGNMENT MODE: NTCIP

PHASE	1	2	3	4	5	6	7	8
DETECTOR	0	2	8	4	0	6	0	0
PHASE	9	10	11	12	13	14	15	16
DETECTOR	0	0	0	0	0	0	0	0

← NOTICE PED DETECTOR 8 ASSIGNED TO PHASE 3

To assign load switch S1 as OLG, program LD SWITCH 1 as OVLP '7' TYPE 'O' as shown below.
To assign load switch S4 as OLH, program LD SWITCH 3 as OVLP '8' TYPE 'O' as shown below.
To assign load switch S10 as OLI, program LD SWITCH 7 as OVLP '9' TYPE 'O' as shown below.
To reassign load switch S12 as PED 3, program LD SWITCH 16 as PHASE '3' TYPE 'P' as shown below.

1. From Main Menu select **1. CONFIGURATION**
2. From CONFIGURATION Submenu select **3. LOAD SW ASSIGN**

LD SWITCH ASSIGN

	PHASE /OVLP	TYPE	DIMMING R	Y	G	D	---FLASH--- PWR	AUT	TGR
→ 1	7	O	.	.	.	+	A	R	X
2	2	V	.	.	.	+	A	R	.
→ 3	8	O	.	.	.	+	A	R	X
4	4	V	.	.	.	+	A	R	.
5	5	V	.	.	.	-	A	R	.
6	6	V	.	.	.	-	A	R	X
→ 7	9	O	.	.	.	-	A	R	.
8	8	V	.	.	.	-	A	R	X
9	1	O	.	.	.	+	A	R	X
10	2	O	.	.	.	+	A	R	X
11	3	O	.	.	.	-	A	R	.
12	4	O	.	.	.	-	A	R	.
13	2	P	.	.	.	+	A	.	.
14	4	P	.	.	.	-	A	.	.
15	6	P	.	.	.	+	A	.	.
→ 16	3	P	.	.	.	-	A	.	.

NOTICE PHASE 3 PED ASSIGNED TO LD SWITCH 12 →

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: 02-0500
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

Signal Upgrade - Final
Electrical Detail - Sheet 2 of 4

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 N.Greenfield Pkwy.Garner,NC 27529

SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/22/2025
D633DCC9A5D44B6...
SIGNATURE DATE

SIG. INVENTORY NO. 02-0500

7/22/2025
X:*P*1030063003_U-5875 Signals & Comms (SEPI TO#4)*Design*Traffic*Signals*Design*Plan Sheets*U-5875 Signal Sheets*020500_sm_ele_202210XX.dgn
11:06:51 AM

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 6.4

ECONOLITE ASC/3-2070 VEHICLE DETECTOR SETUP PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOP 5A

(program controller as shown)

IMPORTANT!

Program detectors per the input file connection and programming chart shown on sheet 1 before proceeding.

1. From Main Menu select **8. UTILITIES**
2. From UTILITIES Submenu select **1. COPY/CLEAR**
3. Copy from DETECTOR PLAN "1" to DETECTOR PLAN "2".

```
COPY / CLEAR UTILITY
      FROM            TO
PHASE TIMING.... . > PHASE TIMING.... .
TIMING PLAN..... . > TIMING PLAN..... .
PH DET OPT PLAN. . > PH DET OPT PLAN. .
DETECTOR PLAN... 1 > DETECTOR PLAN... 2
  TOGGLE TO SELECT A "FROM" AND A "TO"
         THEN PRESS ENTER
```

4. From Main Menu select **6. DETECTORS**
5. From DETECTOR Submenu select **2. VEHICLE DETECTOR SETUP**
6. Place cursor in VEH DET PLAN [ ] position and enter "2".

- Place cursor in VEH DETECTOR [ ] position and enter "5".
- Set delay time to "3".

```
VEH DETECTOR [ 5]   VEH DET PLAN [ 2]      <- NOTICE VEH DET PLAN 2
TYPE: N-NTCIP
TS2 DETECTOR..... . ECPI LOG.......   NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 5  5   . . . . . . . . . . . . . . . .
CALL OPTION.... YES DELAY TIME...   3.0  <- ENSURE DELAY IS SET TO '3'
EXT OPTION. PASSAGE EXTENSION TIME.  0.0
USE ADDED INITIAL . CROSS SWITCH PH..  0
LOCK IN....... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
```

- Place cursor in VEH DETECTOR [ ] position and enter "22".
- Set assigned phase to "0".

```
VEH DETECTOR [22]   VEH DET PLAN [ 2]      <- NOTICE VEH DET PLAN 2
TYPE: N-NTCIP
TS2 DETECTOR..... . ECPI LOG.......   NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 22 0   . . . . . . . . . . . . . . . .   <- ENSURE PHASE IS SET TO "0"
CALL OPTION.... YES DELAY TIME...   0.0
EXT OPTION. PASSAGE EXTENSION TIME.  0.0
USE ADDED INITIAL . CROSS SWITCH PH..  0
LOCK IN....... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
```

END PROGRAMMING

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM CHANGES (SHOWN BELOW) IN A TIME BASED ACTION PLAN. SCHEDULE A DAY PLAN THAT INCLUDES THE ACTION PLAN PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 5.

TO RUN ALT. PHASING DURING COORDINATION - SELECT THE TIME BASED ACTION PLAN THAT IS PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 5.

PHASING	VEH DET PLAN	SF BITS ENABLED
ACTIONS REQUIRED TO RUN DEFAULT PHASING	1	NONE
ACTIONS REQUIRED TO RUN ALTERNATE PHASING	2	5

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN SF BIT 5 AND VEH DET PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

SF BIT 5: Modifies overlap parent phase 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 3 seconds.

ECONOLITE ASC/3-2070 ACTION PLAN PROGRAMMING DETAIL

1. From Main Menu select **5. TIME BASE**
2. From TIME BASE Submenu select **2. ACTION PLAN**

```
ACTION PLAN...[  *]
PATTERN..........AUTO   SYS OVERRIDE.... NO
TIMING PLAN........ 0   SEQUENCE........  0
VEH DETECTOR PLAN.. 2   DET LOG........NONE
FLASH...........   --   RED REST........ NO
VEH DET DIAG PLN... 0   PED DET DIAG PLN..0
DIMMING ENABLE..   NO   PRIORITY RETURN. NO
PED PR RETURN..    NO   QUEUE DELAY..... NO
PMT COND DELAY     NO
  PHASE   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PED RCL   . . . . . . . . . . . . . . . .
WALK 2    . . . . . . . . . . . . . . . .
VEX 2     . . . . . . . . . . . . . . . .
VEH RCL   . . . . . . . . . . . . . . . .
MAX RCL   . . . . . . . . . . . . . . . .
MAX 2     . . . . . . . . . . . . . . . .
  PHASE   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
MAX 3     . . . . . . . . . . . . . . . .
CS INH    . . . . . . . . . . . . . . . .
OMIT      . . . . . . . . . . . . . . . .
SPC FCT   . . . . X . . . (1-8)
AUX FCT   . . . (1-3)
          1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
LP 1-15   . . . . . . . . . . . . . . .
LP 16-30  . . . . . . . . . . . . . . .
LP 31-45  . . . . . . . . . . . . . . .
LP 46-60  . . . . . . . . . . . . . . .
LP 61-75  . . . . . . . . . . . . . . .
LP 76-90  . . . . . . . . . . . . . . .
LP 91-100 . . . . . . . . . .
```

* The Action Plan number(s) are to be determined by the Divison Traffic Engineer.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0500
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

Signal Upgrade - Final
Electrical Detail - Sheet 3 of 4

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RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M Kollar REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE DATE

SIG. INVENTORY NO. 02-0500

7/22/2025
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PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 6.5

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

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

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

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

```
LP#:100  COPY FROM:100  ACTIVE: M   FALSE
IF   LP CIB CODE ON                  331  F

THEN LP  DELAY FOR         1.0 SECONDS
     LP  SET CIB ON        427

ELSE
```

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

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

END PROGRAMMING

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

(program controller as shown)

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

```
START/FLASH DATA
------START UP--------------------------
          1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE       G       G
          A B C D E F G H I J K L M N O P
OVERLAP   X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...  6
PWR START SEQ..  1 MUTCD→ YES   Y- G: NO
```

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0500
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

Signal Upgrade - Final
Electrical Detail - Sheet 4 of 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section — State of North Carolina Department of Transportation
750 N.Greenfield Pkwy.Garner.NC 27529

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SR 1467 (Stantonsburg Road)
at
SR 1203 (Allen Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: O. Drobny
PREPARED BY: S.G. Haynie	REVIEWED BY:

REVISIONS	INIT.	DATE

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DocuSigned by: Steven G. Haynie 7/22/2025
D633DCC9A5D44B6...
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SIG. INVENTORY NO. 02-0500

7/22/2025
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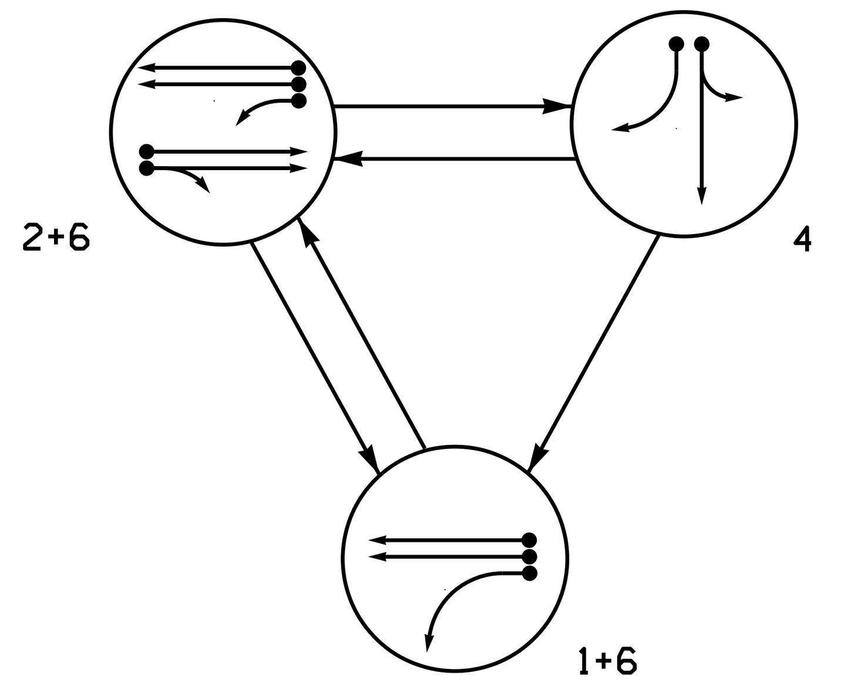
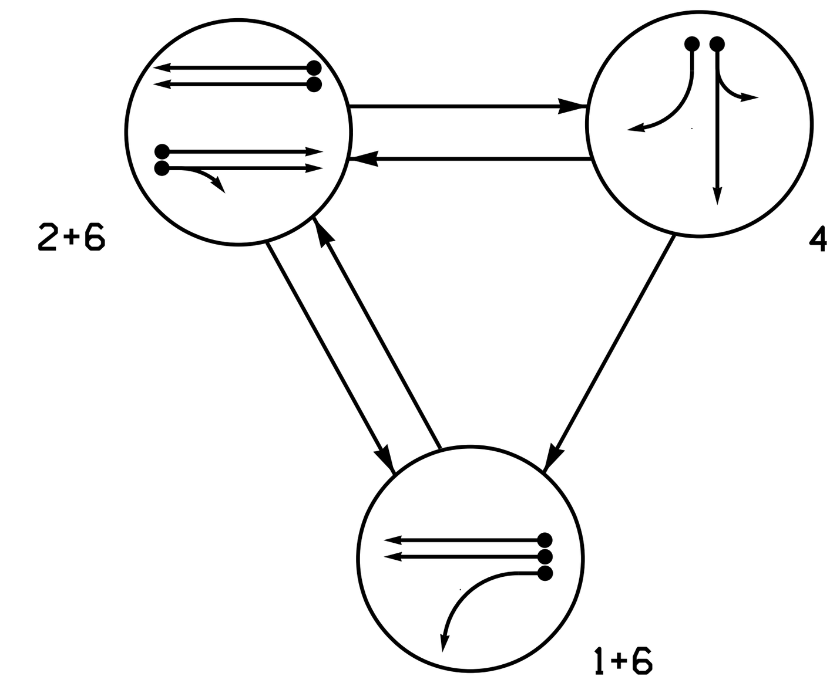
PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 7.0

DEFAULT PHASING DIAGRAM



DEFAULT TABLE OF OPERATION				
SIGNAL FACE	PHASE 1+6	2+6	4	FLASH
11	←	F/Y ←	←R	←R
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 DIAGRAM



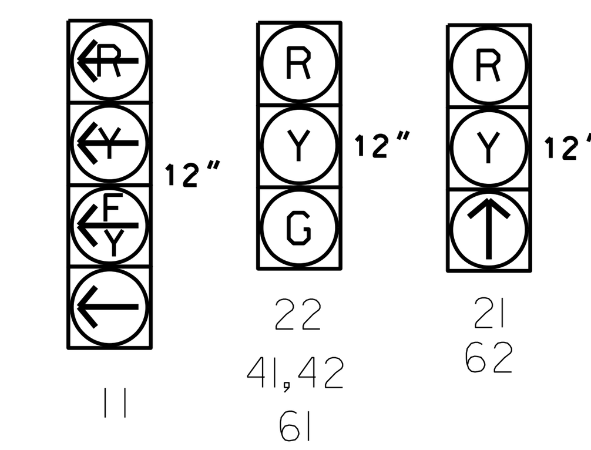
ALTERNATE TABLE OF OPERATION				
SIGNAL FACE	PHASE 1+5	2+6	4	FLASH
11	←	←R	←R	←R
21	R	↑	R	R
22	R	G	R	R
41, 42	R	R	G	R
61	G	G	R	R
62	↑	↑	R	R

PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE I.D.

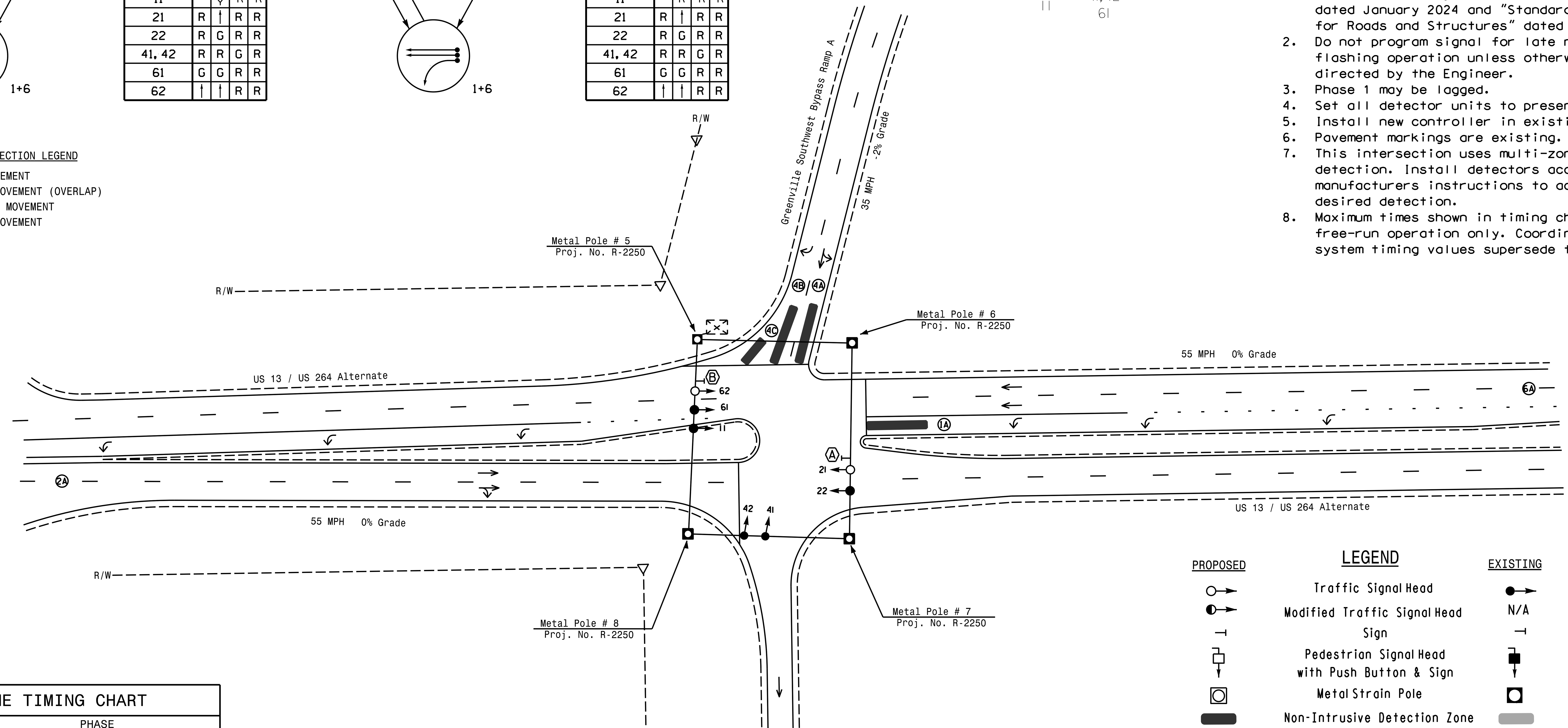
All Heads L.E.D.



3 Phase
Fully Actuated
US 264A/US 13 Signal System

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 may be lagged.
4. Set all detector units to presence mode.
5. Install new controller in existing cabinet.
6. Pavement markings are existing.
7. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturers instructions to achieve the desired detection.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Traffic Signal Head	N/A
	Sign	
	Pedestrian Signal Head with Push Button & Sign	
	Metal Strain Pole	
	Non-Intrusive Detection Zone	
	Controller & Cabinet	
	Junction Box	
	2" Underground Conduit	
	3-2" Underground Conduit	
N/A	Right of Way with Marker	
	Directional Arrow	
Ⓐ	No U-Turn / No Left Turn Sign (R3-18)	Ⓐ
Ⓑ	No Right Turn Sign (R3-1)	Ⓑ

MAXTIME TIMING CHART

FEATURE	PHASE 1	2	4	6
Walk *	–	–	–	–
Ped Clear	–	–	–	–
Min Green *	7	14	7	14
Passage *	2.0	2.0	2.0	2.0
Max 1 *	20	90	30	90
Yellow Change	3.0	5.2	4.0	5.2
Red Clear	2.6	1.1	1.8	1.1
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	–	–	–	–

* 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.

MAXTIME DETECTOR INSTALLATION CHART

DETECTOR: 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	6X40	0	✳	✳	1	15+	-	X	-	X	-	✳
					6@	-	-	X	-	X	-	✳
4A	6X40	0	✳	✳	4	-	-	X	-	X	-	✳
4B	6X40	0	✳	✳	4	10	-	X	-	X	-	✳
4C	6X20	0	✳	✳	4	15	-	X	-	X	-	✳

✳ Multizone Microwave Detection
+ Disable Delay during Alt Phasing Ops
@ Disable phase call during Alt Phasing Ops

MICROWAVE DETECTION

FUNCTION	2A Sensor 1		6A Sensor 2	
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	-

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Signal Upgrade

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Prepared for the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 13/US 264 Alternate at Greenville Southwest Bypass Ramps A/B

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar REVIEWED BY:

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

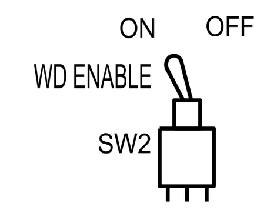
Sig Inventory No. 02-0905

$$$$SYSTIME$$$$ $$$$DGN$$$$ $$$$USERNAME$$$$

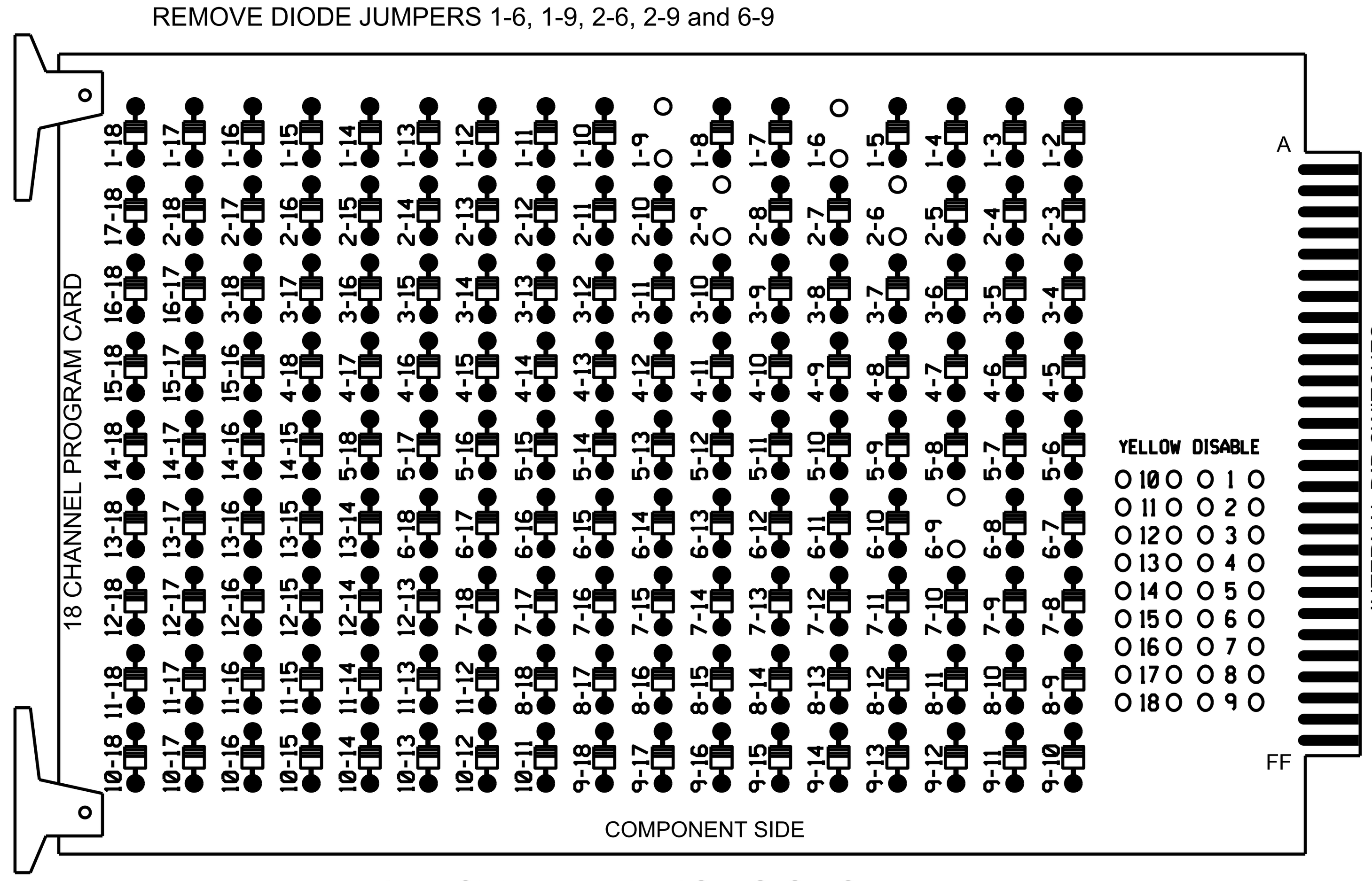
PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 7.1

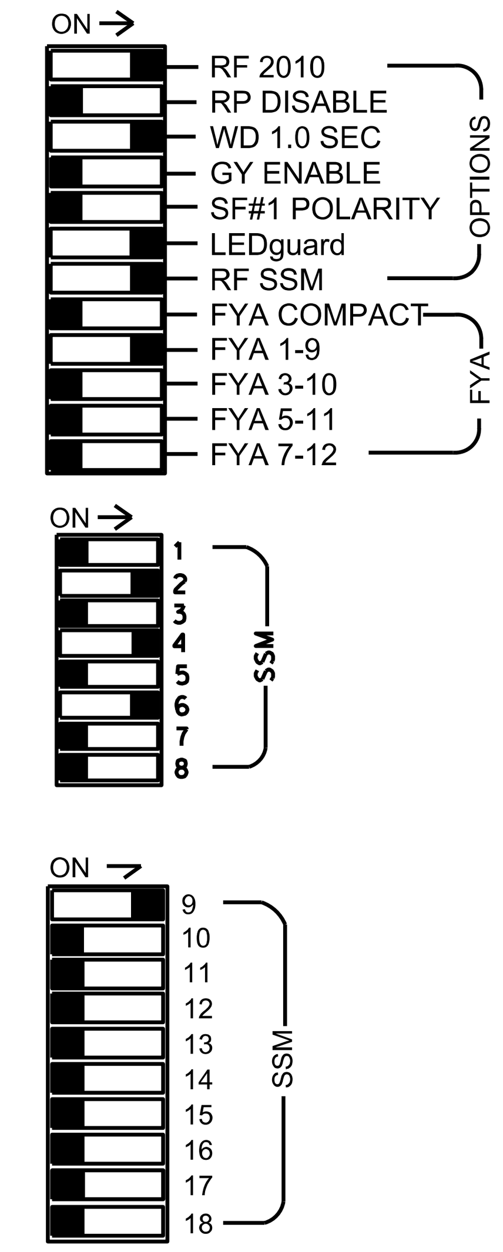
18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 1-6, 1-9, 2-6, 2-9 and 6-9





■ = DENOTES POSITION OF SWITCH

REMOVE JUMPERS AS SHOWN

NOTES:
1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that 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 US 264A/US 13 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	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	21	22	NU	NU	41,42	NU	NU	61	62	NU	NU	NU	NU	11★	NU	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										

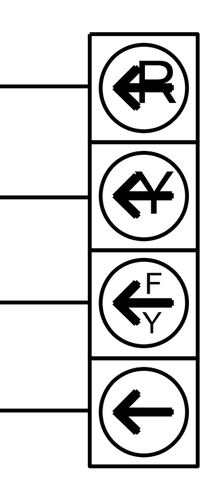
NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	ø1 1A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L	NOT USED													ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L														

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

FS = FLASH SENSE
ST = STOP TIME

Note: Remove jumper from I1-W to J4-W if present.

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	-

★ See detector programming detail for alternate phasing on sheet 2.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

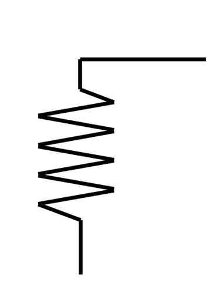
SPECIAL DETECTOR NOTE

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, the equipment placement is typical for a NCDOT installation.

LOAD RESISTOR INSTALLATION DETAIL

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: 02-0905
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Electrical Detail - Sheet 1 of 2

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, North Carolina Department of Transportation

750 N.Greenfield Pkwy,Garner,NC 27529

US 13/US 264 Alternate at Greenville Southwest Bypass Ramps A/B

PLAN DATE: July 2025 | REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar | REVIEWED BY:

REVISIONS | INIT. | DATE

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DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE | DATE

SIG. INVENTORY NO. 02-0905

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 7.2

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

← NOTICE INCLUDED PHASE

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 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 RUN DEFAULT PHASING	1	1
ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHASING	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 phase for head 11 to run protected turn 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.

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

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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.

Plan 2

	Detector	Call Phase	Delay
1A	1	1	-
	29	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.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0905
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Electrical Detail - Sheet 2 of 2

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 N.Greenfield Pkwy.Garner,NC 27529

US 13/US 264 Alternate
at
Greenville Southwest
Bypass Ramps A/B

Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by:
Steven G. Haynie 7/15/2025
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SIGNATURE DATE

SIG. INVENTORY NO. 02-0905

7/12/2025
X:*P*1030063003_U-5875 Signals & Comms (SEPI TO#4)*Design*Traffic*Signals*Design*Plan Sheets*U-5875 Signal Sheets*020905_sm_ele_2024XXYY.dgn
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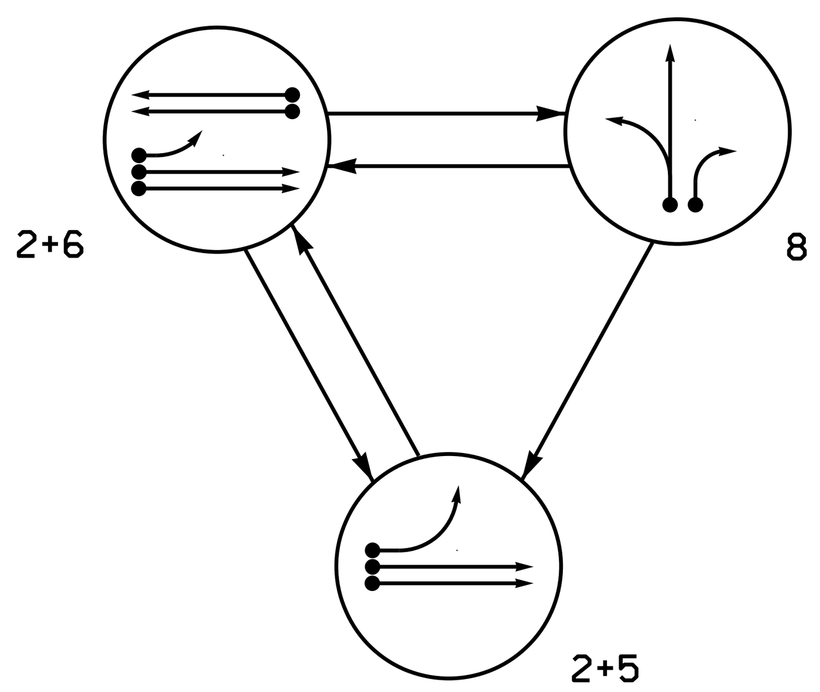
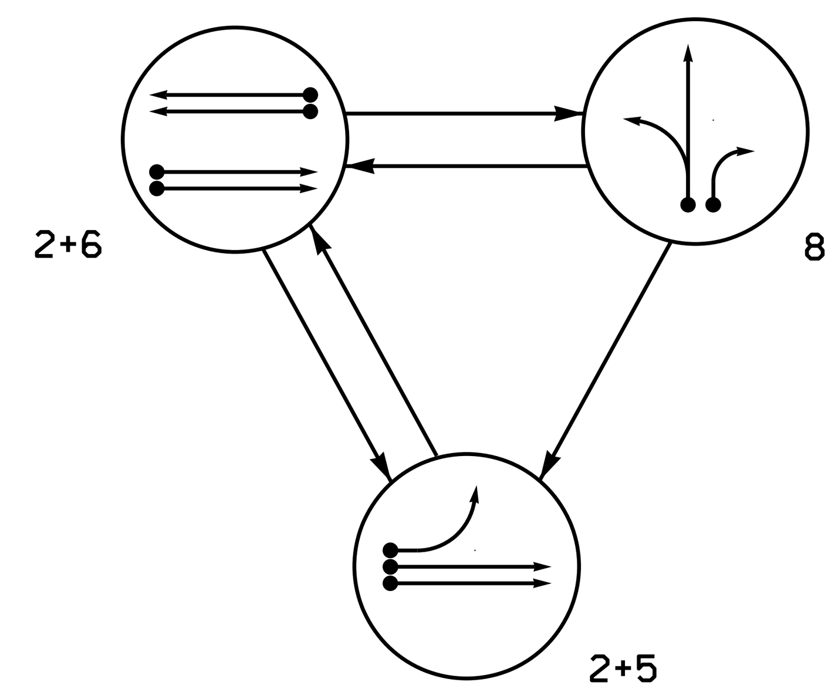
PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 8.0

DEFAULT PHASING DIAGRAM



DEFAULT TABLE OF OPERATION				
SIGNAL FACE	PHASE			
	2+5	2+6	8	FLASH
21	G	G	R	R
22	↑	↑	R	R
51	←	←F Y	←R	←R
61	R	↑	R	R
62	R	G	R	R
81, 82	R	R	G	R

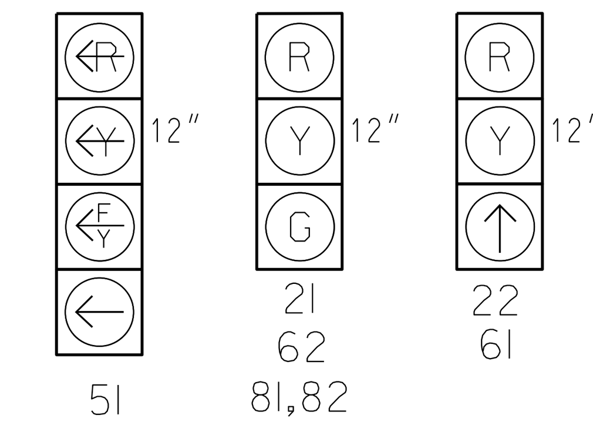
ALTERNATE PHASING DIAGRAM



ALTERNATE TABLE OF OPERATION				
SIGNAL FACE	PHASE			
	2+5	2+6	8	FLASH
21	G	G	R	R
22	↑	↑	R	R
51	←	←R	←R	←R
61	R	↑	R	R
62	R	G	R	R
81, 82	R	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



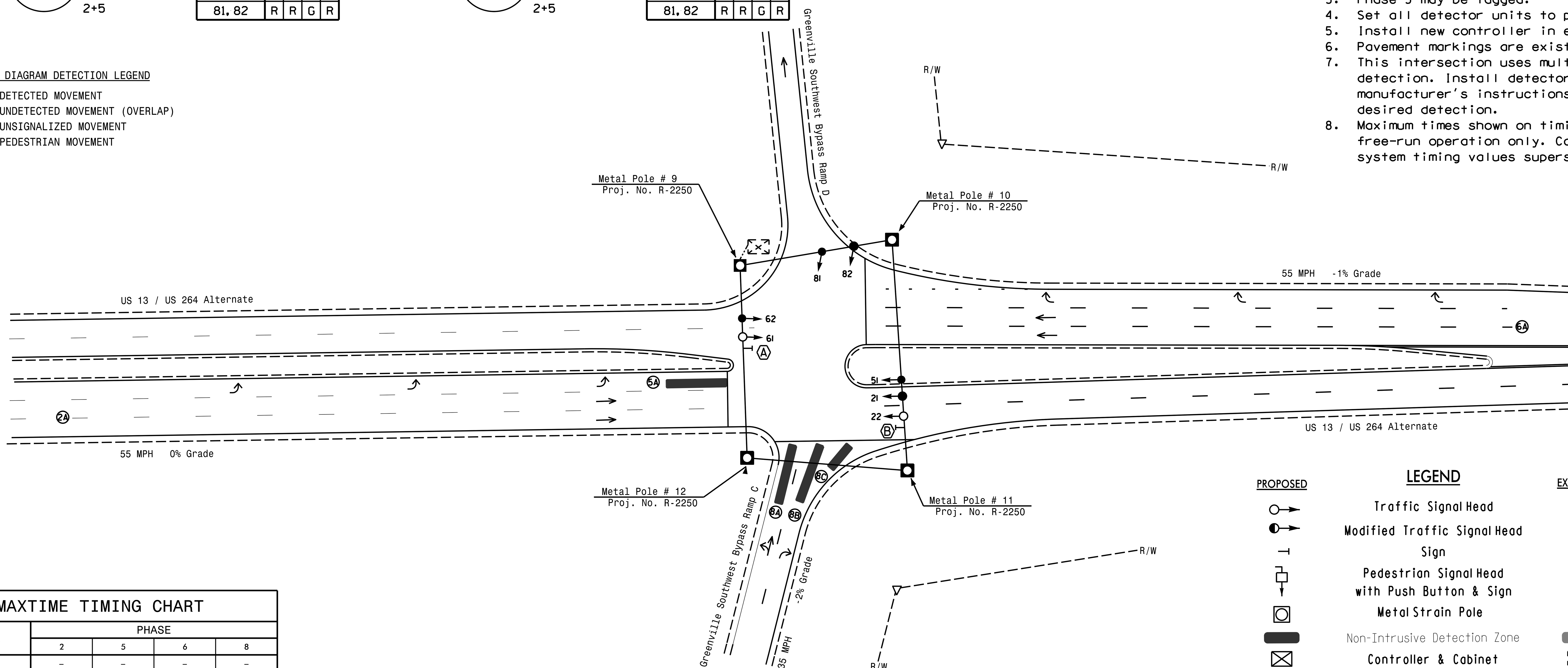
3 Phase
Fully Actuated
US 264A/US 13 Signal System

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 5 may be lagged.
4. Set all detector units to presence mode.
5. Install new controller in existing cabinet.
6. Pavement markings are existing.
7. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
8. Maximum times shown on timimg chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM DETECTION LEGEND

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



MAXTIME TIMING CHART

FEATURE	PHASE 2	PHASE 5	PHASE 6	PHASE 8
Walk *	–	–	–	–
Ped Clear	–	–	–	–
Min Green *	14	7	14	7
Passage *	2.0	2.0	2.0	2.0
Max 1 *	90	25	90	25
Yellow Change	5.3	3.0	5.3	4.0
Red Clear	1.4	2.4	1.4	1.8
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	–	–	–	–

* 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.

MAXTIME DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
5A	6X40	0	✳	✳	5	15+	-	X	-	X	-	✳
					2@	-	-	X	-	X	-	✳
8A	6X40	0	✳	✳	8	-	-	X	-	X	-	✳
8B	6X40	0	✳	✳	8	15	-	X	-	X	-	✳
8C	6X20	0	✳	✳	8	15	-	X	-	X	-	✳

(DETECTOR: LOOP through NEW LOOP; PROGRAMMING: CALL PHASE through DELAY DURING GREEN)

✳ Multizone Microwave Detection
+ Disable Delay during Alt Phasing Ops
@ Disable phase call during Alt Phasing Ops

MICROWAVE DETECTION

FUNCTION	2A		6A	
	Sensor 1		Sensor 2	
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	LEGEND	EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Traffic Signal Head	N/A
⊣	Sign	⊣
□	Pedestrian Signal Head with Push Button & Sign	■
◎	Metal Strain Pole	◘
▬	Non-Intrusive Detection Zone	▬
⊠	Controller & Cabinet	⊠
□	Junction Box	■
-·-·-·-	2" Underground Conduit	-·-·-·-
-------	3-2" Underground Conduit	-------
N/A	Right of Way with Marker	——△——
→	Directional Arrow	→
Ⓐ	No U-Turn / No Left Turn Sign (R3-18)	Ⓐ
Ⓑ	No Right Turn Sign (R3-1)	Ⓑ

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 13/US 264 Alternate at Greenville Southwest Bypass Ramps C/D

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar REVIEWED BY:

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

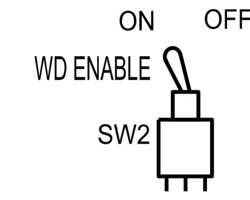
Sig Inventory No. 02-0906

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

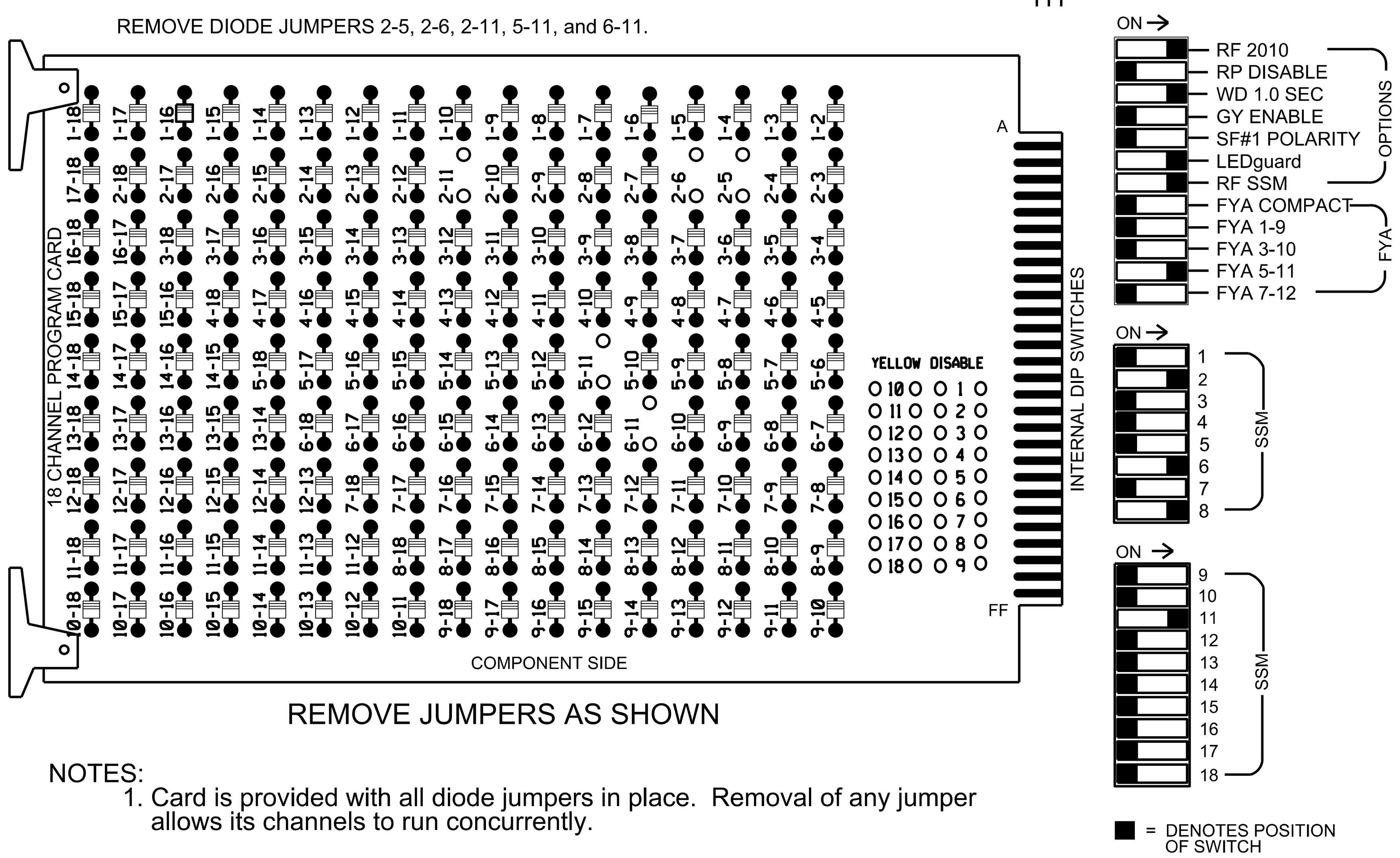
$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 2-5, 2-6, 2-11, 5-11, and 6-11.



REMOVE JUMPERS AS SHOWN

NOTES:
1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that 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 US 264A/US 13 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, S7, S8, S11, AUX S4
Phases Used.......................................2, 5, 6, 8
Overlap "1"..NOT USED
Overlap "2"..NOT USED
Overlap "3"..*
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	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	21	22	NU	NU	NU	NU	51★	61	62	NU	NU	81,82	NU	NU	NU	NU	51★	NU	NU
RED		128	128						134	134			107							
YELLOW		129	129					✱	135	135			108							
GREEN		130								136			109							
RED ARROW																		A114		
YELLOW ARROW																		A115		
FLASHING YELLOW ARROW																		A116		
GREEN ARROW			130					133	136											

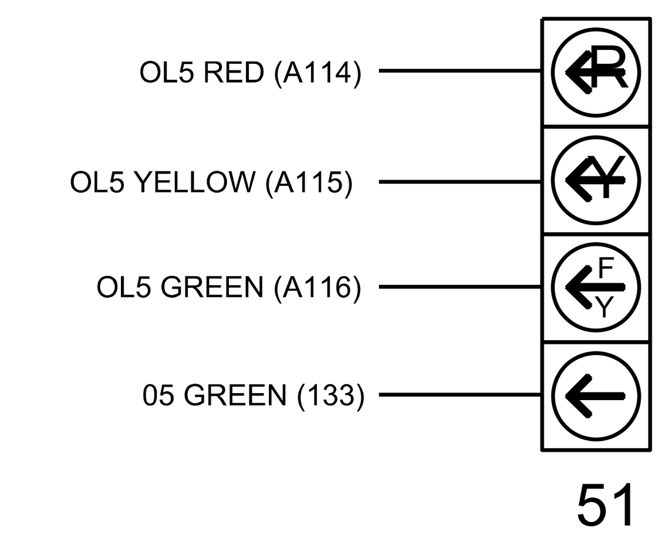
NU = Not Used

✱ 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)



INPUT FILE POSITION LAYOUT

(front view)

FILE		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L														ST DC ISOLATOR
FILE "J"	U	ø5 5A	SLOT EMPTY	SLOT EMPTY	WIRED INPUT	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L	NOT USED													

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

FS = FLASH SENSE
ST = STOP TIME

Note: Remove jumper from J1-W to I4-W if present.

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	-

★ See detector programming detail for alternate phasing on sheet 2.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

SPECIAL DETECTOR NOTE

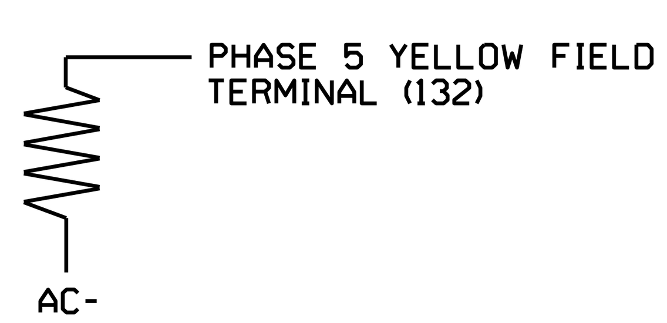
Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

For Detection Zone 5A, the equipment placement is typical for a NCDOT installation.

LOAD RESISTOR INSTALLATION DETAIL

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: 02-0906
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 13/US 264 Alternate at Greenville Southwest Bypass Ramps C/D

Prepared for the Offices of:
Transportation Mobility and Safety Division, ITS & Signals Management Section, North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

PLAN DATE: July 2025 | REVIEWED BY: S.G. Haynie
PREPARED BY: E.N. Rodriguez | REVIEWED BY:

REVISIONS | INIT. | DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE | DATE

SIG. INVENTORY NO. 02-0906

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	3
Type	FYA 4 - Section
Included Phases	6
Modifier Phases	5
Modifier Overlaps	-
Trail Green	0
Trail Yellow	0.0
Trail Red	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	3
Type	FYA 4 - Section
Included Phases	-
Modifier Phases	5
Modifier Overlaps	-
Trail Green	0
Trail Yellow	0.0
Trail Red	0.0

← NOTICE INCLUDED PHASE

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 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 RUN DEFAULT PHASING	1	1
ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHASING	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 phase for head 51 to run protected turn 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.

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

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
5A	15	5	-
	31	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.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0906
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 N.Greenfield Pkwy.Garner.NC 27529

US 13/US 264 Alternate at
Greenville Southwest
Bypass Ramps C/D

Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: E.N. Rodriguez	REVIEWED BY:

REVISIONS	INIT.	DATE

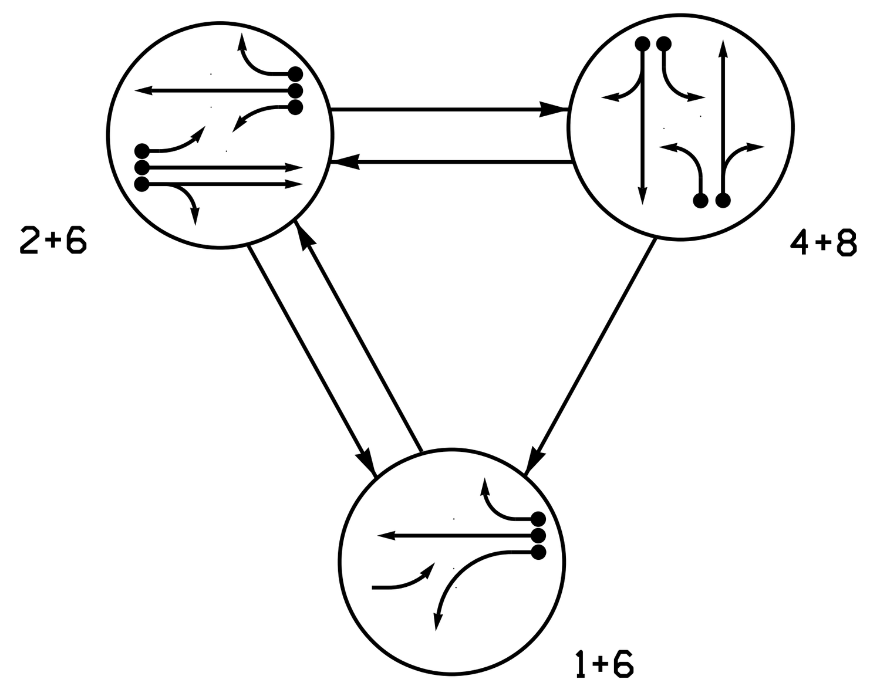
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by:
Steven G. Haynie 7/15/2025
D633BCC8A5D74B6
SIGNATURE DATE

SIG. INVENTORY NO. 02-0906

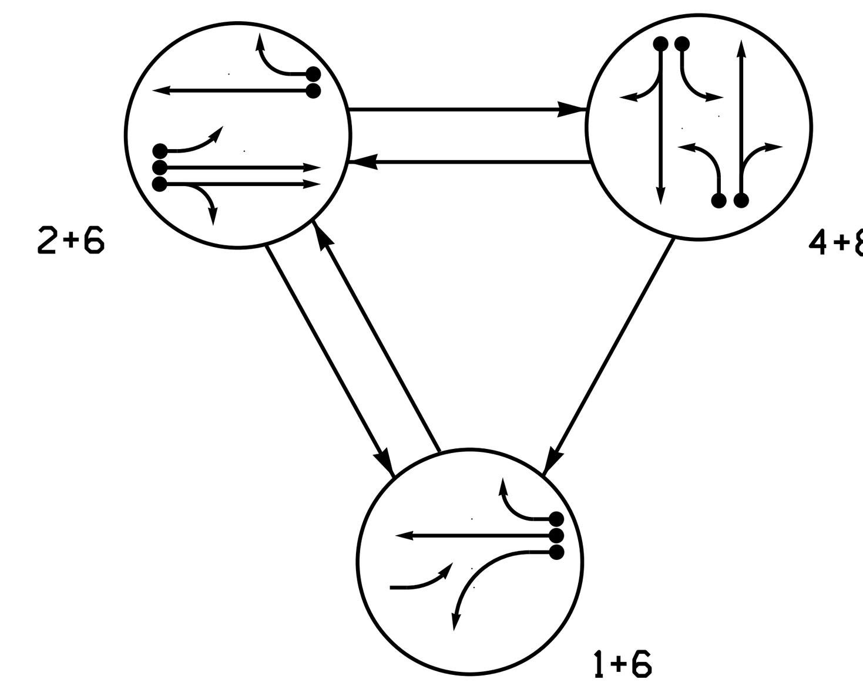
PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 9.0

DEFAULT PHASING DIAGRAM



DEFAULT TABLE OF OPERATION				
SIGNAL FACE	PHASE 1+6	2+6	4+8	FLASH
11	←	←F/Y	←R	←R
21	←F/Y	←F/Y	←R	←R
22, 23	R	G	R	R
41, 42	R	R	G	R
61, 62	G	G	R	R
63	F/Y→	F/Y→	R	R
81, 82	R	R	G	R

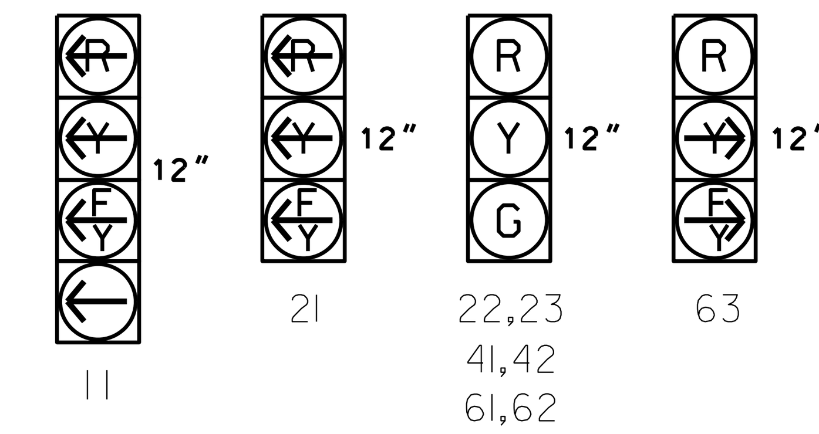
ALTERNATE PHASING DIAGRAM



ALTERNATE TABLE OF OPERATION				
SIGNAL FACE	PHASE 1+6	2+6	4+8	FLASH
11	←	←R	←R	←R
21	←F/Y	←F/Y	←R	←R
22, 23	R	G	R	R
41, 42	R	R	G	R
61, 62	G	G	R	R
63	F/Y→	F/Y→	R	R
81, 82	R	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



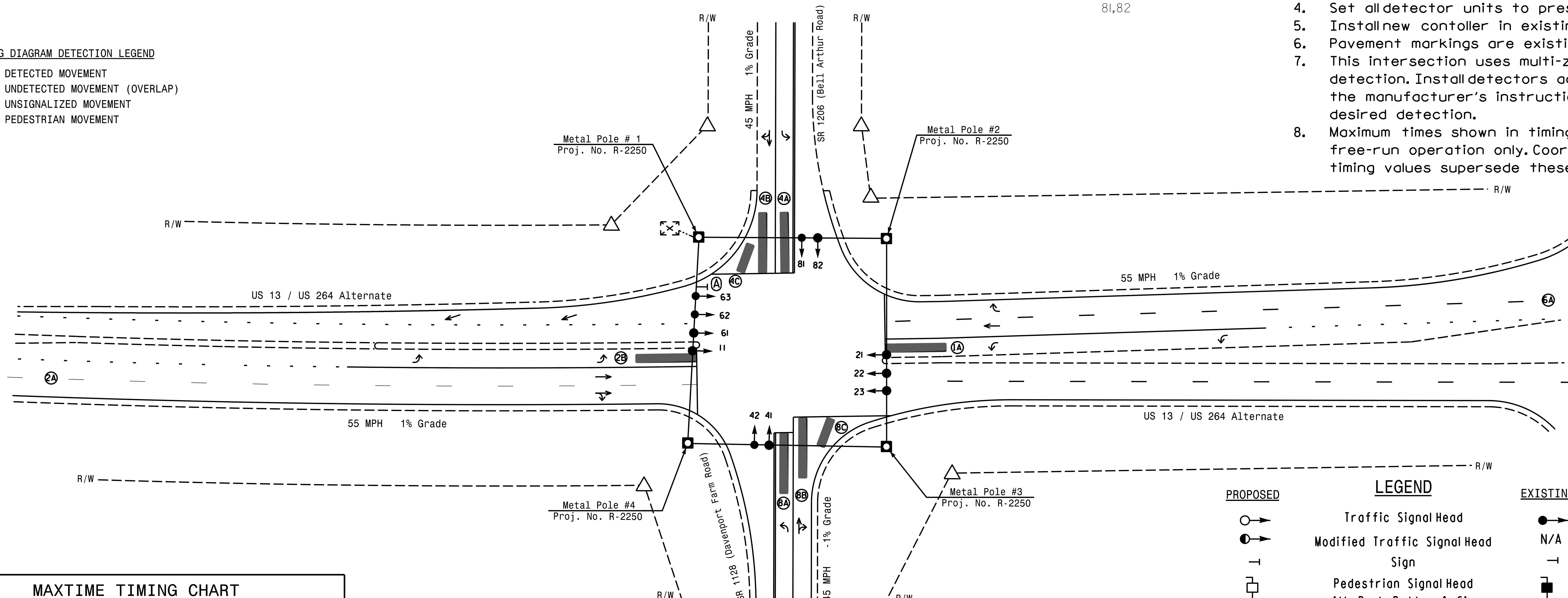
3 Phase
Fully Actuated
US 264A/US 13 Signal System

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 may be lagged.
4. Set all detector units to presence mode.
5. Install new contoller in existing cabinet.
6. Pavement markings are existing.
7. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
8. Maximum times shown in timing chart are free-run operation only. Coordinated signal sytem timing values supersede these values.

PHASING DIAGRAM DETECTION LEGEND

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



LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Traffic Signal Head	N/A
⊣	Sign	⊣
	Pedestrian Signal Head with Push Button & Sign	
	Metal Strain Pole	
	Non-Intrusive Detection Zone	
	Controller & Cabinet	
□	Junction Box	■
	2" Underground Conduit	
	3-2" Underground Conduit	
N/A	Right of Way with Marker	
→	Directional Arrow	→
Ⓐ	Right Arrow "ONLY" Sign (R3-5R)	Ⓐ

MAXTIME TIMING CHART

FEATURE	PHASE 1	2	4	6	8
Walk *	–	–	–	–	–
Ped Clear	–	–	–	–	–
Min Green *	7	14	7	14	7
Passage *	2.0	2.0	2.0	2.0	2.0
Max 1 *	15	90	25	90	25
Yellow Change	3.0	5.2	4.4	5.2	4.6
Red Clear	2.9	1.7	1.4	1.7	1.3
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	–	–	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.

MAXTIME DETECTOR INSTALLATION CHART

DETECTOR: 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	6X40	0	✳	✳	1	15+	-	X	-	X	-	✳
					6@	-	-	X	-	X	-	✳
2B	6X40	0	✳	✳	2	-	-	X	-	X	-	✳
4A	6X40	0	✳	✳	4	3	-	X	-	X	-	✳
4B	6X40	0	✳	✳	4	10	-	X	-	X	-	✳
4C	6X20	0	✳	✳	4	10	-	X	-	X	-	✳
8A	6X40	0	✳	✳	8	3	-	X	-	X	-	✳
8B	6X40	0	✳	✳	8	10	-	X	-	X	-	✳
8C	6X20	0	✳	✳	8	10	-	X	-	X	-	✳

✳ Multizone Microwave Detection
+ Disable Delay during Alt Phasing ops
@ Disable phase call during Alt Phasing Ops

MICROWAVE DETECTION

FUNCTION	2A Sensor 1		6A Sensor 2	
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	-

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 13/US 264 Alternate
at
SR 1128 (Davenport Farm Road)/
SR 1206 (Bell Arthur Road)

Division 02 | Pitt County | Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

SCALE 0 40, 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

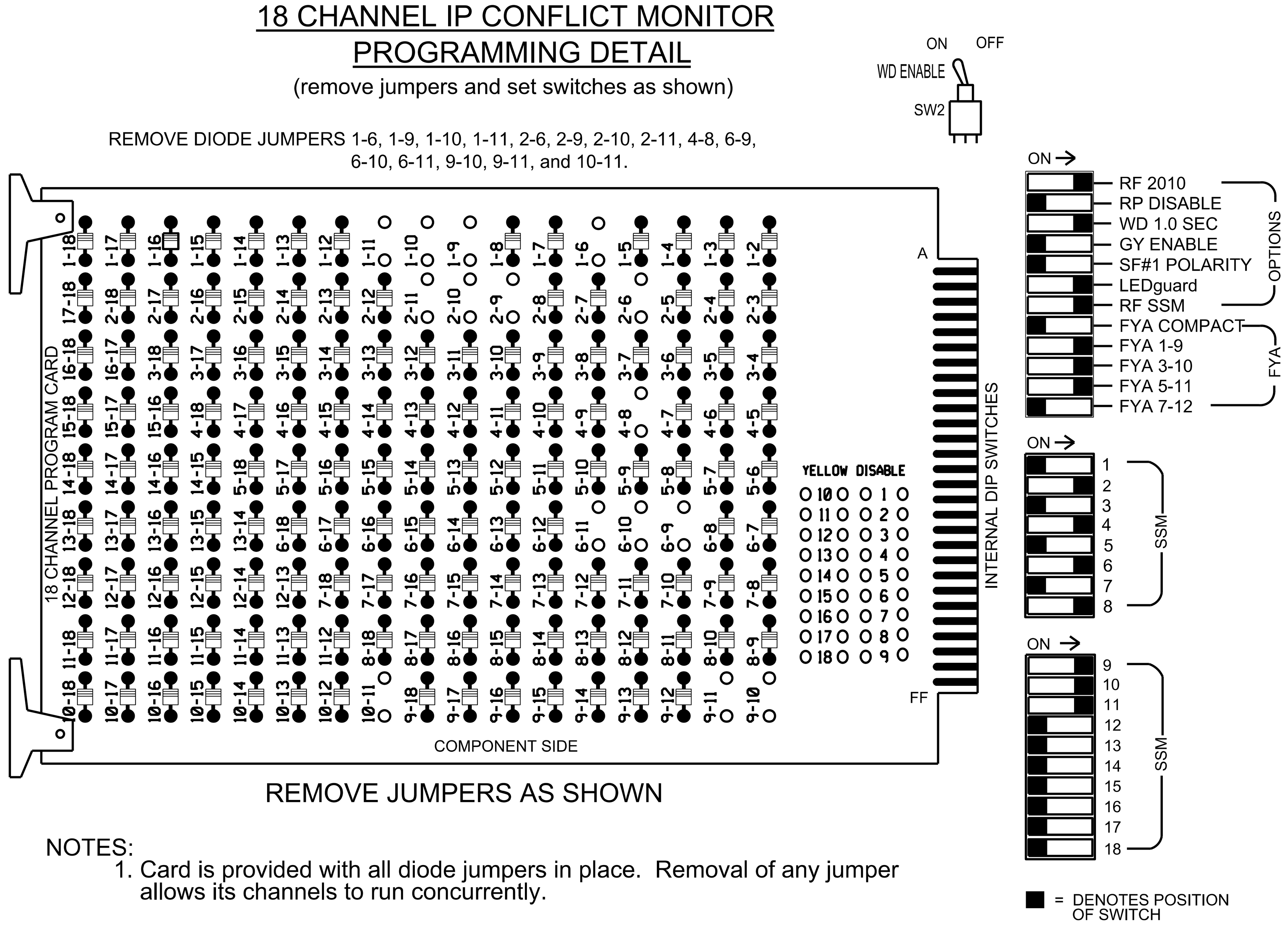
Sig Inventory No. 02-0907

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 9.1

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-6, 1-9, 1-10, 1-11, 2-6, 2-9, 2-10, 2-11, 4-8, 6-9, 6-10, 6-11, 9-10, 9-11, and 10-11.



REMOVE JUMPERS AS SHOWN

NOTES:
1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that 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 US 264A/US 13 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, S11, AUX S1, AUX S2, AUX S4
Phases Used...1, 2, 4, 6, 8
Overlap "1"...*
Overlap "2"...*
Overlap "3"...*
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★	22;23	NU	NU	41;42	NU	NU	61;62	NU	NU	81;82	NU	11★	63★	NU	21★	NU	NU
RED	·	128	·	·	101	·	·	134	·	·	107	·	·	A124	·	·	·	·
YELLOW	*	129	·	·	102	·	·	135	·	·	108	·	·	·	·	·	·	·
GREEN	·	130	·	·	103	·	·	136	·	·	109	·	·	·	·	·	·	·
RED ARROW	·	·	·	·	·	·	·	·	·	·	·	·	A121	·	·	A114	·	·
YELLOW ARROW	·	·	·	·	·	·	·	·	·	·	·	·	A122	A125	·	A115	·	·
FLASHING YELLOW ARROW	·	·	·	·	·	·	·	·	·	·	·	·	A123	A126	·	A116	·	·
GREEN ARROW	127	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·

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)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	ø1 1A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L	NOT USED													ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L														

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

FS = FLASH SENSE
ST = STOP TIME

Note: Remove jumper from I1-W to J4-W if present.

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	-

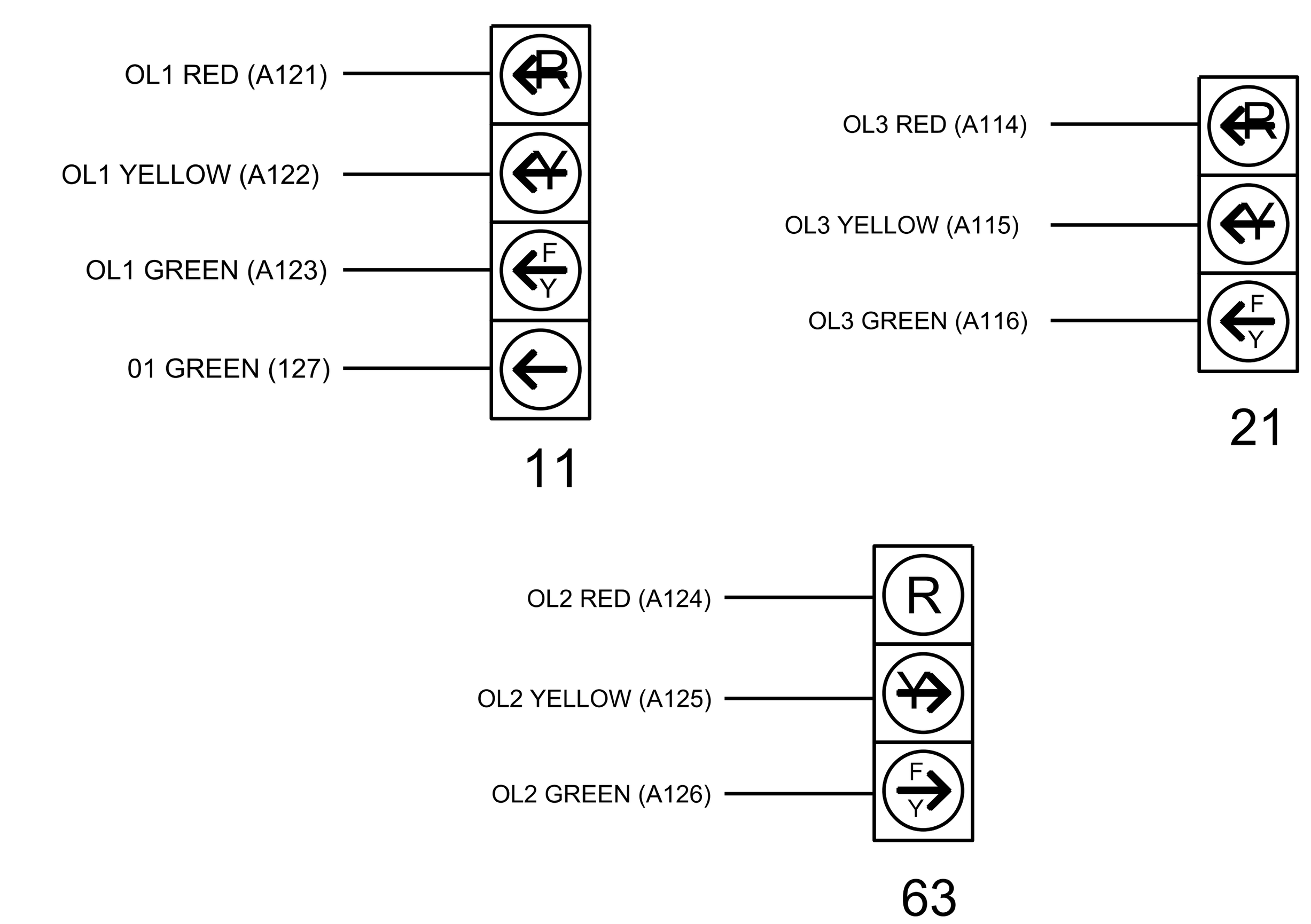
★ See detector programming detail for alternate phasing on sheet 2.

INPUT FILE POSITION LEGEND: J2L

FILE J
SLOT 2
LOWER

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0907
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

SPECIAL DETECTOR NOTE

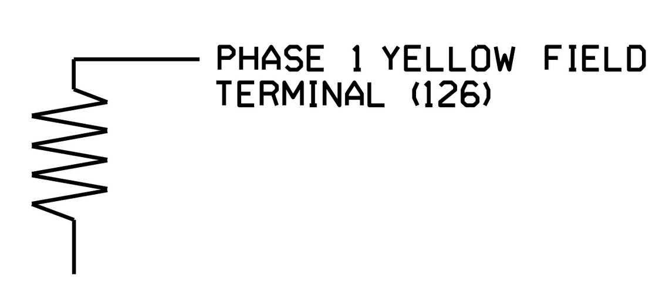
Install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

For Detection Zone 1A, the equipment placement is typical for a NCDOT installation.

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES

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



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(919) 926-4100

Electrical Detail - Sheet 1 of 2

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division, ITS & Signals Management Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

US 13/US 264 Alternate at SR 1128 (Davenport Farm Road)/ SR 1206 (Bell Arthur Road)

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: E.N. Rodriguez	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

SIG. INVENTORY NO. 02-0907

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 9.2

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
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section
Included Phases	2	6	6
Modifier Phases	1	-	-
Modifier Overlaps	-	-	-
Trail Green	0	0	0
Trail Yellow	0.0	0.0	0.0
Trail Red	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
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section
Included Phases	-	6	6
Modifier Phases	1	-	-
Modifier Overlaps	-	-	-
Trail Green	0	0	0
Trail Yellow	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0

← NOTICE INCLUDED PHASE

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 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 RUN DEFAULT PHASING	1	1
ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHASING	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 phase for head 11 to run protected turn 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.

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

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.

Plan 2

	Detector	Call Phase	Delay
1A	1	1	-
	29	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.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0907
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Electrical Detail - Sheet 2 of 2

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(919) 926-4100

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
Transportation Mobility and Safety Division
ITS & Signals Management Section
750 N.Greenfield Pkwy.Garner.NC 27529

US 13/US 264 Alternate at
SR 1128 (Davenport Farm Road)/
SR 1206 (Bell Arthur Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: E.N. Rodriguez	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

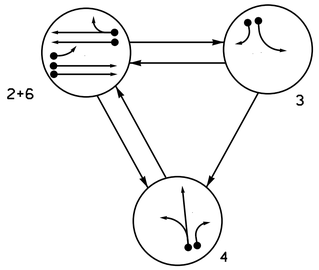
DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

SIG. INVENTORY NO. 02-0907

7/12/2025
X:\P\1030063003_U-5875 Signals & Comms (SEPI TO#4)\Design\Traffic\Signals\Design\Plan Sheets\U-5875 Signal Sheets\020907_sm_ele_2024XXYY.dgn
11:36:49 AM

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 10.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATION

SIGNAL FACE	PHASE 2+6	PHASE 3	PHASE 4	PHASE FLASH
21	~~FY~~	~~R~~	~~R~~	~~R~~
22,23	G	R	R	R
31,32	R	G	R	R
41	R	R	G	R
42	R	R	G	R
61,62	G	R	R	R

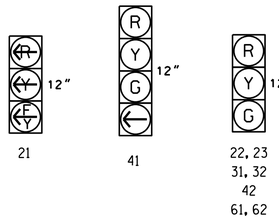
ASC/3 DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
2C	6X40	+5	*	*	2	YES	-	-	-	N	-	*
3A	6X40	+5	*	*	3	YES	-	3	-	N	-	*
3B	6X40	+5	*	*	3	YES	-	15	-	N	-	*
4A	6X40	+5	*	*	4	YES	-	-	-	N	-	*
4B	6X40	+5	*	*	4	YES	-	15	-	N	-	*

*Microwave Detection Zone

SIGNAL FACE I.D.

All Heads L.E.D.



MICROWAVE DETECTION

	2A		6A	
FUNCTION	Sensor 1		Sensor 2	
Channel	1		1	
Phase	2		6	
Direction of Travel	EB		WB	
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	-

ASC/3 TIMING CHART

FEATURE	PHASE 2	PHASE 3	PHASE 4	PHASE 6
Min Green *	14	7	7	14
Walk *	0	0	0	0
Ped Clear	0	0	0	0
Veh. Extension *	2.0	2.0	2.0	2.0
Max 1 *	60	20	20	60
Yellow	4.9	3.8	3.0	4.9
Red Clear	1.3	2.1	4.4	1.3
Actuations B4 Add *	-	-	-	-
Seconds /Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	X	-	-	X
Recall Position	VEH. RECALL	-	-	VEH. RECALL
Dual Entry	-	-	-	-
Simultaneous Gap	X	X	X	X

* 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.

3 Phase
Fully Actuated
Greenville Signal System

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. The order of of phase 3 and phase 4 may be reversed.
4. Set all detector units to presence mode.
5. Pavement markings are existing.
6. The City Traffic Engineer will determine the hours of use for each phasing plan.
7. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Microwave Detection Zone	
	Controller & Cabinet	
	Junction Box	
	Oversized Junction Box	
	Type II Signal Pedestal	
	Metal Pole with Mastarm	
	2-in Underground Conduit	
DD	Directional Drill	N/A
N/A	Right of Way	
	Directional Arrow	

SIGNS

PROPOSED		EXISTING
A	Left Arrow "ONLY" Sign (R3-5L)	A
B	Right Arrow only "ONLY" Sign (R3-5R)	B

Signal Upgrade

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RALEIGH, NC 27615
(919) 926-4100

Prepared In the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 264 Alt. (Greenville Blvd) at SR 1135 (William Rd)/ Koinonia Church Exit

DIVISION 2 PITT COUNTY GREENVILLE

PLAN DATE: June 2025 REVIEWED BY: S.G. Haynie

PREPARED BY: A.M. Kollar REVIEWED BY:

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
D630DC SIGNATURE DATE

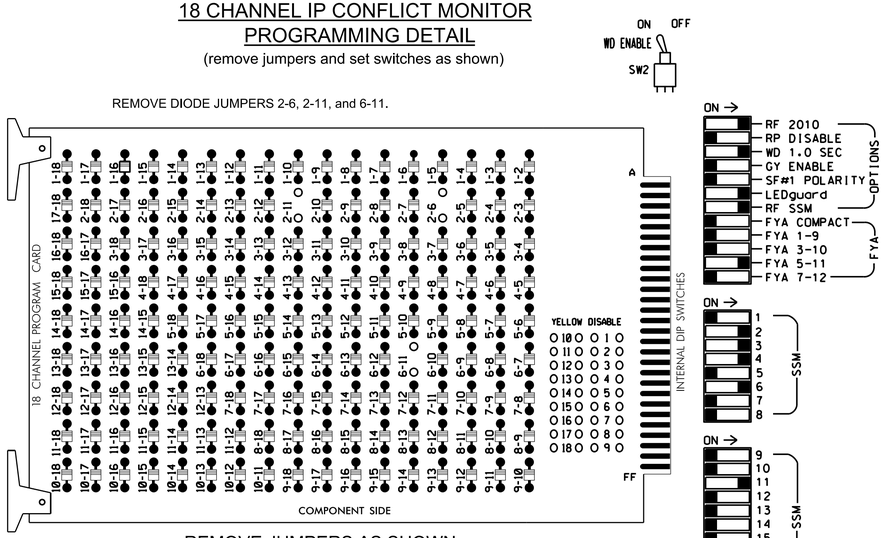
SIG. INVENTORY NO. 02-0910

$$$$USERNAME$$$$ $$$$DESIGN$$$$ $$$$DRAWN$$$$ $$$$CHECKED$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 10.1

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

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

■ = DENOTES POSITION OF SWITCH

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L														ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	WIRED INPUT	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L														

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.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phase 2 Green and 6 Green.
3. The cabinet and controller are part of the Greenville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/AUX
SOFTWARE.....ECONOLITE ASC/3-2070
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S2,S4,S5,S8,AUX S4
PHASES USED.....2,3,4,6
OVERLAP "A".....NOT USED
OVERLAP "B".....NOT USED
OVERLAP "C".....*
OVERLAP "D".....NOT USED

* See overlap programming detail this sheet.

SIGNAL HEAD HOOK-UP CHART

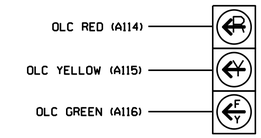
LOAD SWITCH NO.	S1	S2	S3	S4	S5		S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4		14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4		4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	22,23	NU	31,32	41	42	NU	NU	61,62	NU	NU	NU	NU	NU	NU	NU	21 ★	NU	NU
RED		128		116	101	101			134										
YELLOW		129		117	102	102			135										
GREEN		130		118	103	103			136										
RED ARROW																	A114		
YELLOW ARROW																	A115		
FLASHING YELLOW ARROW																	A116		
GREEN ARROW					103														

NU = Not Used

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



21

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

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

Toggle Twice

OVERLAP C

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

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

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
```

END PROGRAMMING

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0910
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

RS&H
NC FIRM LICENSE No: F-0493
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(919) 926-4100

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

(program controller as shown)

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

```
START/FLASH DATA
------START UP----------------------------
          1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE       G       G
          A B C D E F G H I J K L M N O P
OVERLAP   X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...  6
PWR START SEQ..  1 MUTCD→ YES   Y- G: NO
```

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

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 264 Alt. (Greenville Blvd) at SR 1135 (William Rd)/ Koinonia Church Exit

Prepared for the Offices of:
NC Department of Transportation Mobility and Safety Division Traffic Engineering & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar	REVIEWED BY:

REVISIONS	INIT.	DATE

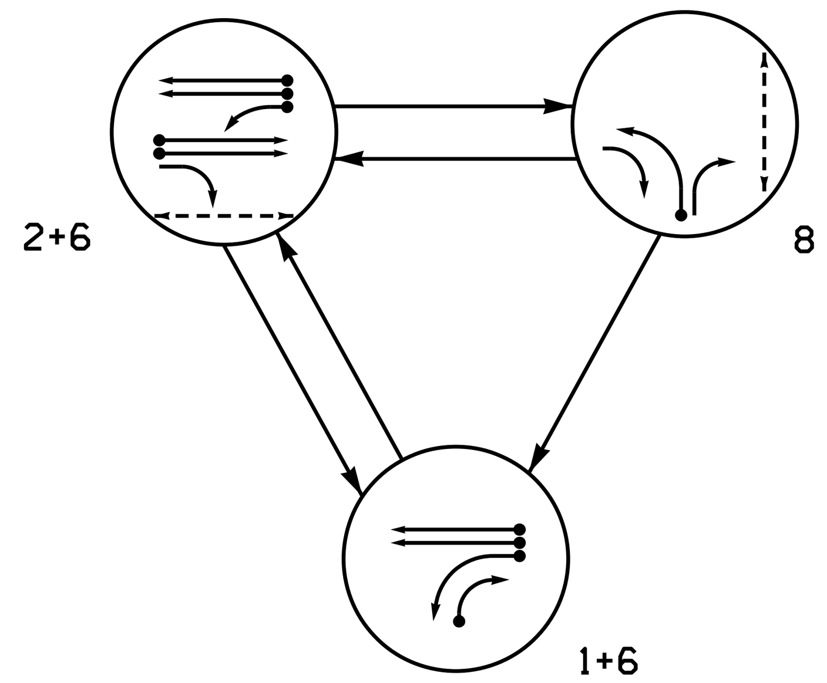
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

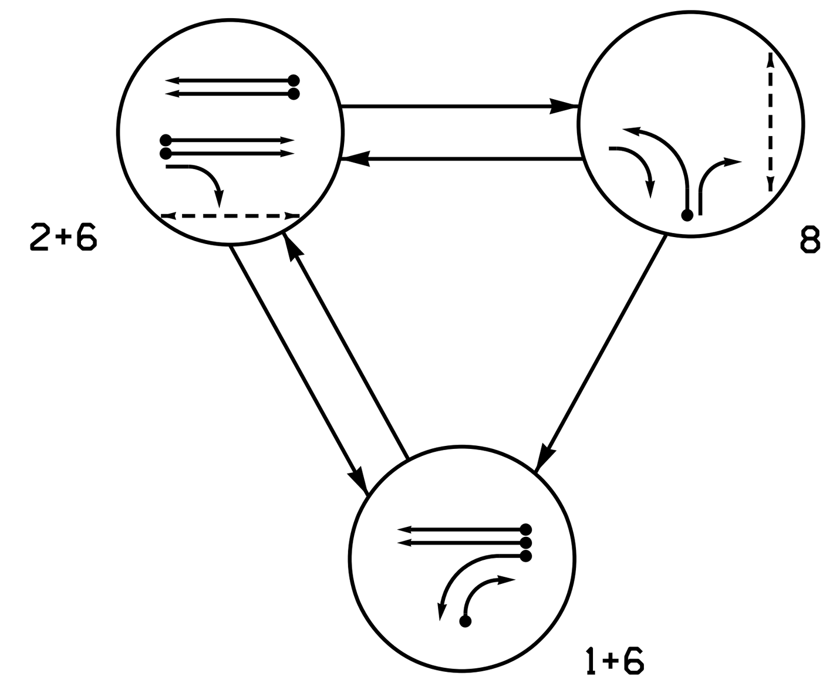
SIG. INVENTORY NO. 02-0910

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig 11.0

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

DEFAULT TABLE OF OPERATION

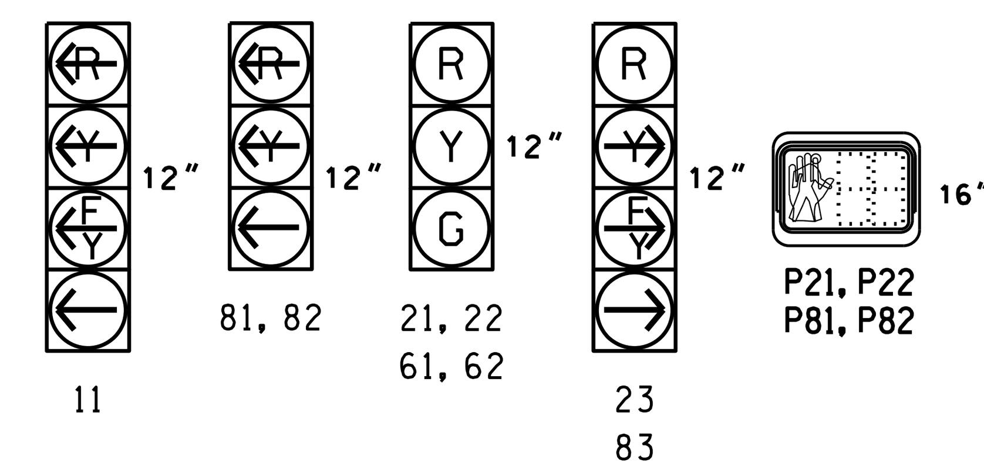
SIGNAL FACE	PHASE 1+6	PHASE 2+6	PHASE 8	FLASH
11	←	F/Y	←R	←R
21,22	R	G	R	R
23	R	F/Y→	→	R
61, 62	G	G	R	R
81, 82	←R	←R	←	←R
83	→	R	F/Y→	R
P21,P22	DW	W	DW	DRK
P81,P82	DW	DW	W	DRK

ALTERNATE TABLE OF OPERATION

SIGNAL FACE	PHASE 1+6	PHASE 2+6	PHASE 8	FLASH
11	←	←R	←R	←R
21,22	R	G	R	R
23	R	F/Y→	→	R
61, 62	G	G	R	R
81, 82	←R	←R	←	←R
83	→	R	F/Y→	R
P21,P22	DW	W	DW	DRK
P81,P82	DW	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



ASC/3 DETECTOR INSTALLATION CHART

DETECTOR: LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING: PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	*	X	1	YES	-	15#	-	N	-	*
					6@	YES	-	-	-	N	-	*
1B	6X40	0	*	X	1	YES	-	15	-	N	-	*
8A	6X40	0	*	X	8	YES	-	3	-	N	-	*

* Multizone Microwave Detection
\# Disable Delay during Alt Phasing Ops
@ Disable phase call during Alt Phasing Ops

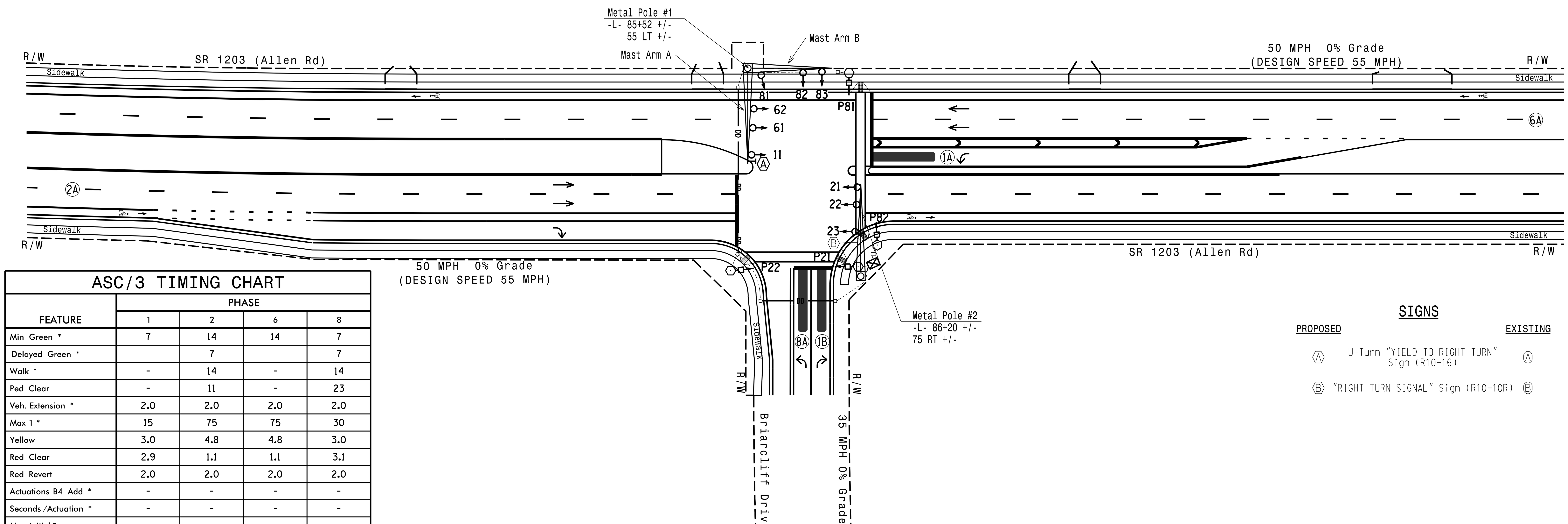
MICROWAVE DETECTION

FUNCTION	2A Sensor 1		6A Sensor 2	
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	-

3 Phase
Fully Actuated
Greenville Signal System

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 may be lagged.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. See U-5875 PMP for pavement markings.
9. The City 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.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Non-Intrusive Detection Zone	
	Controller & Cabinet	
	Junction Box	
	Oversized Junction Box	
	Type II Signal Pedestal	
	Metal Pole with Mastarm	
	2-in Underground Conduit	
DD	Directional Drill	N/A
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	

SIGNS

PROPOSED		EXISTING
A	U-Turn "YIELD TO RIGHT TURN" Sign (R10-16)	A
B	"RIGHT TURN SIGNAL" Sign (R10-10R)	B

ASC/3 TIMING CHART

FEATURE	PHASE 1	PHASE 2	PHASE 6	PHASE 8
Min Green *	7	14	14	7
Delayed Green *		7		7
Walk *	-	14	-	14
Ped Clear	-	11	-	23
Veh. Extension *	2.0	2.0	2.0	2.0
Max 1 *	15	75	75	30
Yellow	3.0	4.8	4.8	3.0
Red Clear	2.9	1.1	1.1	3.1
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-
Seconds /Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	-	X	X	-
Recall Position	-	VEH. RECALL	VEH. RECALL	-
Dual Entry	-	-	-	-
Simultaneous Gap	X	X	X	X

* 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.

New Installation

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Prepared for the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40 1"=40'

SR 1203 (Allen Road) at Briarcliff Drive

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE

DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE DATE
Sig Inventory No. 02-0921

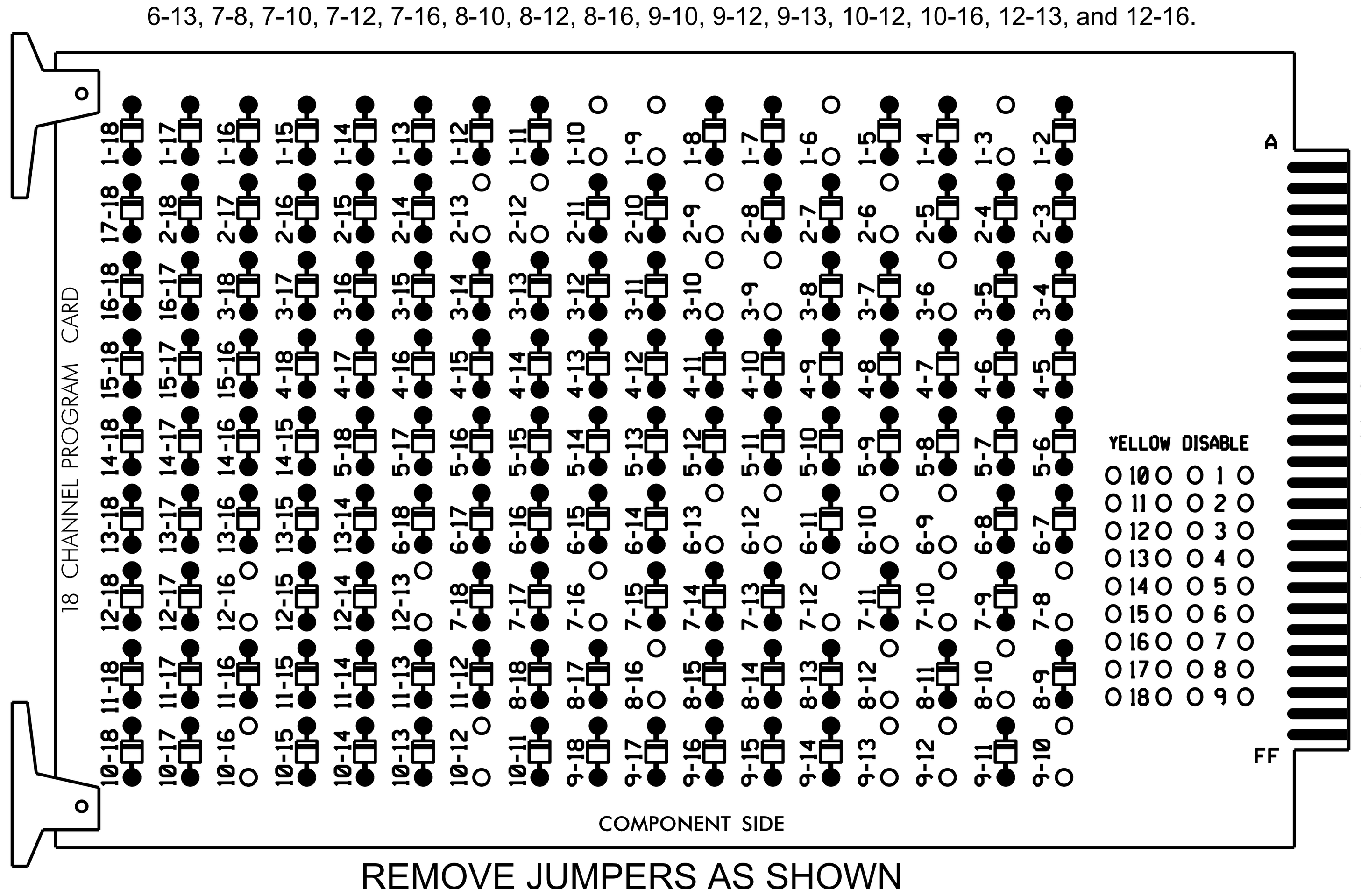
$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 11.1

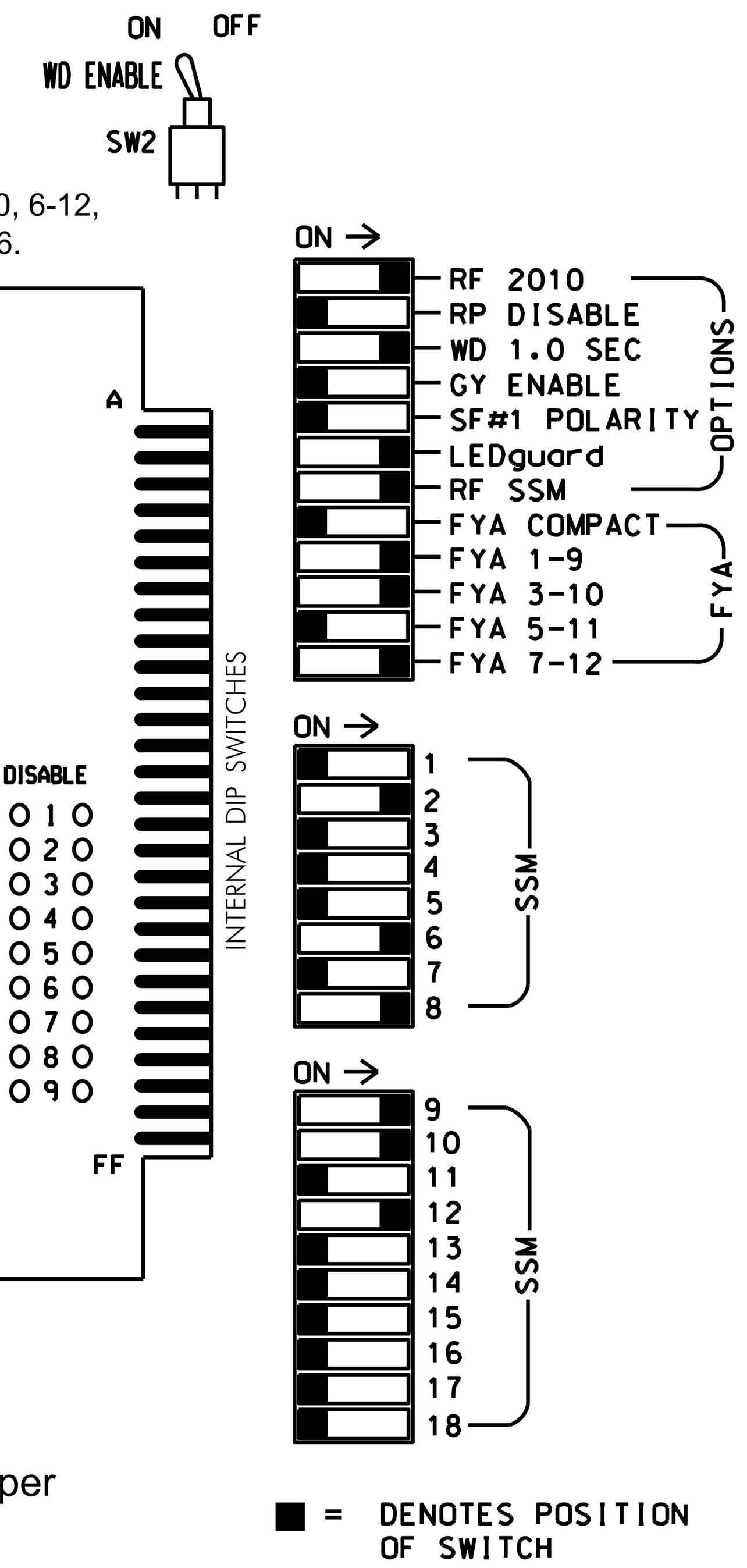
18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-3, 1-6, 1-9, 1-10, 2-6, 2-9, 2-12, 2-13, 3-6, 3-9, 3-10, 6-9, 6-10, 6-12, 6-13, 7-8, 7-10, 7-12, 7-16, 8-10, 8-12, 8-16, 9-10, 9-12, 9-13, 10-12, 10-16, 12-13, and 12-16.



REMOVE JUMPERS AS SHOWN



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

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phase 2 Green and 6 Green.
3. The cabinet and controller are part of the Greenville Signal 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,S4,S8,S10,S11, S12,AUX S1,AUX S2,AUX S5
PHASES USED.............1,2,2PED,6,8,8PED
OVERLAP "A".............*
OVERLAP "B".............*
OVERLAP "C".............NOT USED
OVERLAP "D".............*
OVERLAP "G".............*
OVERLAP "H".............*

* 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	OLG	4	4 PED	5	6	6 PED	OLH	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	21,22	P21, P22	83★	NU	NU	NU	61,62	NU	23★	81, 82	P81, P82	11★	83★	NU	NU	23★	NU
RED		128						134						A124			A101	
YELLOW	*	129		*				135		*								
GREEN		130						136										
RED ARROW											107		A121					
YELLOW ARROW											108		A122	A125			A102	
FLASHING YELLOW ARROW													A123	A126			A103	
GREEN ARROW	127			118						124	109							
(hand)			113									110						
(walking person)			115									112						

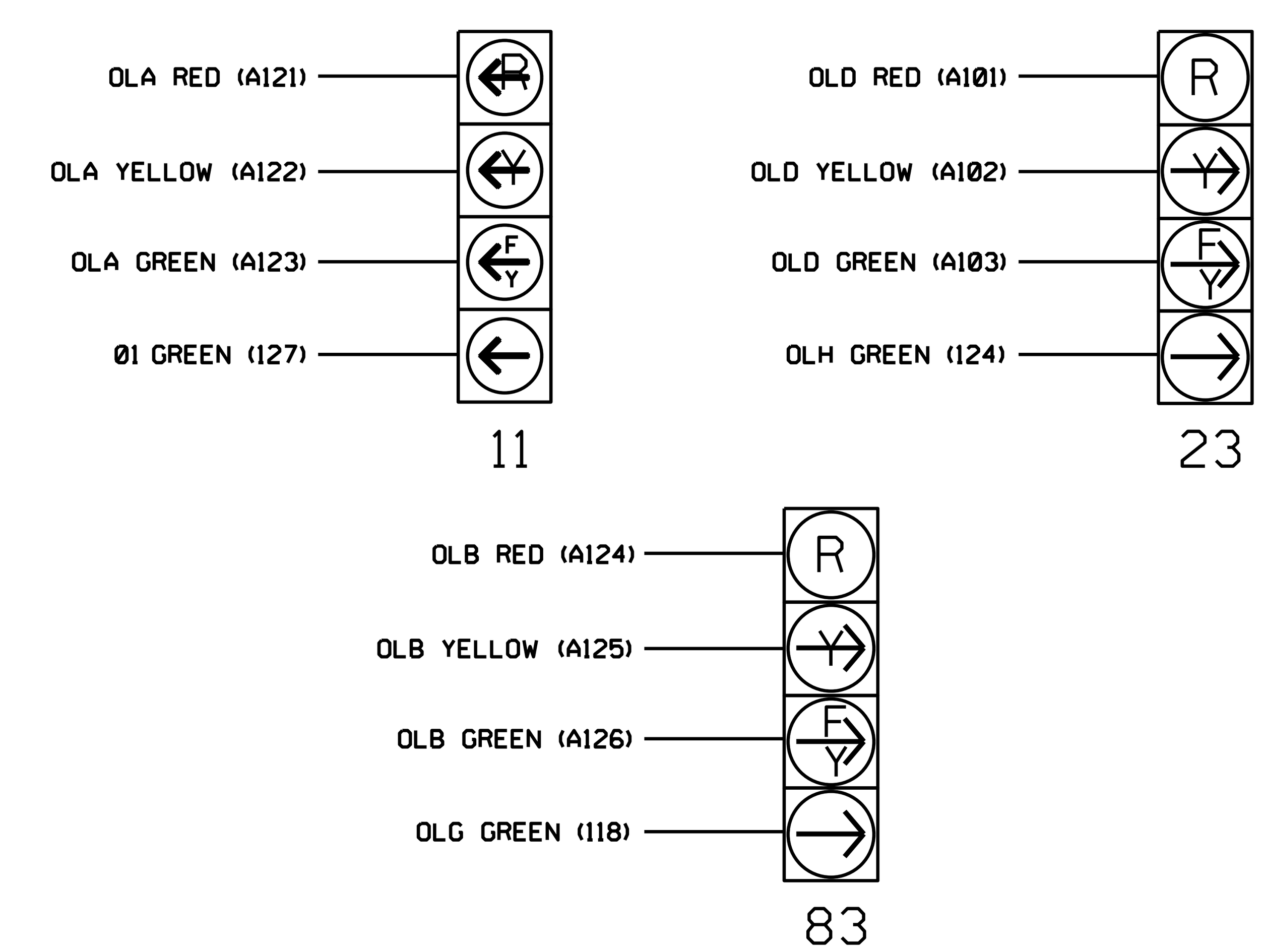
NU = Not Used

* 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)



INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø1 1A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø2PED DC ISOLATOR	NOT USED	FS DC ISOLATOR
	L	NOT USED											NOT USED	Ø8PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	WIRED INPUT ⊗	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L														

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

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
1A[1]	TB2-1,2	I1U	56	1★	1	YES		15	___	N
	-	J4U	48	26★	6	YES		-	___	N
PED PUSH BUTTONS										
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED					
P81,P82	TB8-8,9	I13L	70	PED 8	8 PED					

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

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

★ See Input Page Assignment programming details on sheet 3.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

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.

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.

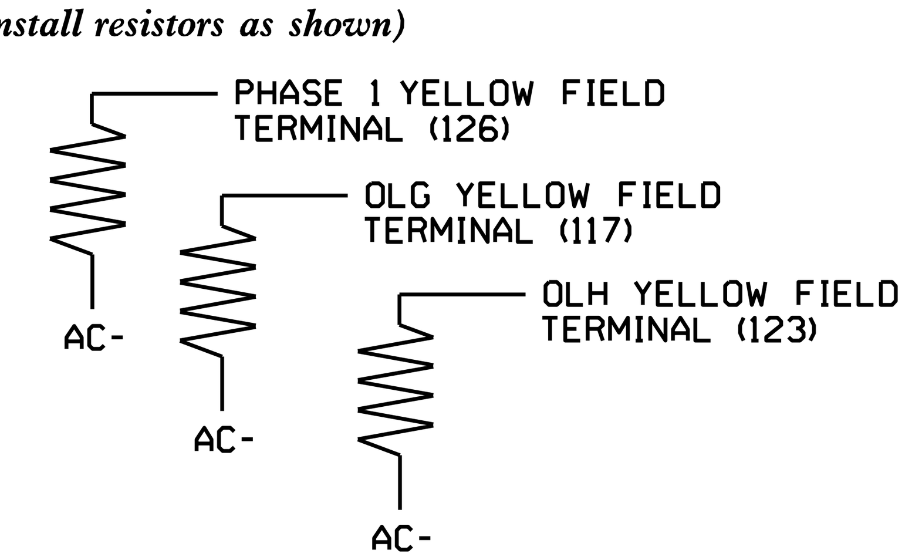
For Detection Zone 1A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation.

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: 02-0921
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

Electrical Detail - Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1203 (Allen Road)
at
Briarcliff Drive

Prepared for the Offices of: Transportation Mobility and Safety Division, ITS & Signals Management Section, North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

PLAN DATE: July 2025 | REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar | REVIEWED BY:
REVISIONS | INIT. | DATE

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NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE | DATE
SIG. INVENTORY NO. 02-0921

7/22/2025
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PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 11.2

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

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

Toggle to "Overlap G"

OVERLAP G

Select TMG VEH OVLP [G] and 'NORMAL'

```
TMG VEH OVLP...[G] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED X . . . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle Once

OVERLAP H

Select TMG VEH OVLP [H] and 'NORMAL'

```
TMG VEH OVLP...[H] TYPE: .......NORMAL
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . . . . X . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0
```

Toggle to "Overlap A"

OVERLAP A

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

```
TMG VEH OVLP...[A] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....   PHASE    1
OPPOSING THROUGH.......   PHASE    2

FLASHING ARROW OUTPUT.....CH9  ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 1
```

← NOTICE ACTION PLAN SF BIT "1"

Toggle Once

OVERLAP B

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

```
TMG VEH OVLP...[B] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....   OVERLAP  G
OPPOSING THROUGH.......   PHASE    8

FLASHING ARROW OUTPUT.....CH10 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

Toggle Two Times

OVERLAP D

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

```
TMG VEH OVLP...[D] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....   OVERLAP  H
OPPOSING THROUGH.......   PHASE    2

FLASHING ARROW OUTPUT.....CH12 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

END PROGRAMMING

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

(program controller as shown)

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

```
START/FLASH DATA
------START UP---------------------------
         1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE      G       G
         A B C D E F G H I J K L M N O P
OVERLAP  X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...  6
PWR START SEQ..  1 MUTCD> YES   Y- G: NO
```

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

ECONOLITE ASC/3-2070 LOAD SWITCH ASSIGNMENT DETAIL

(program controller as shown)

To assign load switch S4 as OLG and load switch S10 as OLH, program LD SWITCH 3 as OVLP '7 TYPE 'O' and LD SWITCH 7 as OVLP '8' TYPE 'O' as shown below.

1. From Main Menu select `1. CONFIGURATION`
2. From CONFIGURATION Submenu select `3. LOAD SW ASSIGN`

LD SWITCH ASSIGN

	PHASE /OVLP	TYPE	DIMMING R	Y	G	D	FLASH PWR	AUT	TGR
1	1	V	.	.	.	+	A	R	X
2	2	V	.	.	.	+	A	R	.
→ 3	7	O	.	.	.	+	A	R	X
4	4	V	.	.	.	+	A	R	.
5	5	V	.	.	.	-	A	R	.
6	6	V	.	.	.	-	A	R	X
→ 7	8	O	.	.	.	+	A	R	.
8	8	V	.	.	.	-	A	R	X
9	1	O	.	.	.	+	A	R	X
10	2	O	.	.	.	+	A	R	X
11	3	O	.	.	.	-	A	R	.
12	4	O	.	.	.	-	A	R	.
13	2	P	.	.	.	+	A	.	.
14	4	P	.	.	.	-	A	.	.
15	6	P	.	.	.	+	A	.	.
16	8	P	.	.	.	-	A	.	.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0921
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

Electrical Detail - Sheet 2 of 3

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RS&H
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ELECTRICAL AND PROGRAMMING DETAILS FOR:

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

SR 1203 (Allen Road)
at
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Division 02 Pitt County Greenville

PLAN DATE: July 2025	REVIEWED BY: S.G. Haynie
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REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
DocuSigned by: Steven G. Haynie 7/22/2025
D633DCC9A5D44B6...
SIGNATURE DATE
SIG. INVENTORY NO. 02-0921

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 11.3

ECONOLITE ASC/3-2070 VEHICLE DETECTOR SETUP PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOP 1A

(program controller as shown)

IMPORTANT!

Program detectors per the input file connection and programming chart shown on sheet 1 before proceeding.

1. From Main Menu select [8. UTILITIES]
2. From UTILITIES Submenu select [1. COPY/CLEAR]
3. Copy from DETECTOR PLAN "1" to DETECTOR PLAN "2".

```
COPY / CLEAR UTILITY
        FROM              TO
PHASE TIMING.... . > PHASE TIMING.... .
TIMING PLAN..... . > TIMING PLAN..... .
PH DET OPT PLAN. . > PH DET OPT PLAN. .
DETECTOR PLAN... 1 > DETECTOR PLAN... 2
  TOGGLE TO SELECT A "FROM" AND A "TO"
          THEN PRESS ENTER
```

4. From Main Menu select [6. DETECTORS]
5. From DETECTOR Submenu select [2. VEHICLE DETECTOR SETUP]
6. Place cursor in VEH DET PLAN [ ] position and enter "2".

- Place cursor in VEH DETECTOR [ ] position and enter "1".
- Set delay time to "0".

```
VEH DETECTOR [ 1]   VEH DET PLAN [ 2]      <- NOTICE VEH DET PLAN 2
TYPE: N-NTCIP
TS2 DETECTOR..... . ECPI LOG.......   NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 1  1   . . . . . . . . . . . . . . . .
CALL OPTION.... YES DELAY TIME...    0.0   <- ENSURE DELAY IS SET TO '0'
EXT OPTION. PASSAGE EXTENSION TIME.  0.0
USE ADDED INITIAL . CROSS SWITCH PH..  0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
```

↓

- Place cursor in VEH DETECTOR [ ] position and enter "26".
- Set assigned phase to "0".

```
VEH DETECTOR [26]   VEH DET PLAN [ 2]      <- NOTICE VEH DET PLAN 2
TYPE: N-NTCIP
TS2 DETECTOR..... . ECPI LOG.......   NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 26 0   . . . . . . . . . . . . . . . .
CALL OPTION.... YES DELAY TIME...    0.0
EXT OPTION. PASSAGE EXTENSION TIME.  0.0
USE ADDED INITIAL . CROSS SWITCH PH..  0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
```

ENSURE PHASE IS SET TO "0" →

END PROGRAMMING

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING FREE RUN – PROGRAM CHANGES (SHOWN BELOW) IN A TIME BASED ACTION PLAN. SCHEDULE A DAY PLAN THAT INCLUDES THE ACTION PLAN PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 1.

TO RUN ALT. PHASING DURING COORDINATION – SELECT THE TIME BASED ACTION PLAN THAT IS PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 1.

PHASING	VEH DET PLAN	SF BITS ENABLED
ACTIONS REQUIRED TO RUN DEFAULT PHASING	1	NONE
ACTIONS REQUIRED TO RUN ALTERNATE PHASING	2	1

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN SF BIT 1 AND VEH DET PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

SF BIT 1:	Modifies overlap parent phase 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 6 call on loop 1A to 0 seconds.

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

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

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

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

```
LP#:100  COPY FROM:100  ACTIVE: M   FALSE
IF   LP CIB CODE ON                 331  F

THEN LP  DELAY FOR          1.0 SECONDS
     LP  SET CIB ON         427

ELSE
```

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

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

END PROGRAMMING

ECONOLITE ASC/3-2070 ACTION PLAN PROGRAMMING DETAIL

1. From Main Menu select [5. TIME BASE]
2. From TIME BASE Submenu select [2. ACTION PLAN]

```
ACTION PLAN...[  *]
PATTERN.....AUTO   SYS OVERRIDE.... NO
TIMING PLAN..... 0   SEQUENCE.....  0
VEH DETECTOR PLAN.. 2   DET LOG.....NONE
FLASH.....   --   RED REST..... NO
VEH DET DIAG PLN... 0   PED DET DIAG PLN..0
DIMMING ENABLE..  NO   PRIORITY RETURN. NO
PED PR RETURN..   NO   QUEUE DELAY..... NO
PMT COND DELAY    NO
  PHASE  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PED RCL  . . . . . . . . . . . . . . . .
WALK 2   . . . . . . . . . . . . . . . .
VEX 2    . . . . . . . . . . . . . . . .
VEH RCL  . . . . . . . . . . . . . . . .
MAX RCL  . . . . . . . . . . . . . . . .
MAX 2    . . . . . . . . . . . . . . . .
  PHASE  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
MAX 3    . . . . . . . . . . . . . . . .
CS INH   . . . . . . . . . . . . . . . .
OMIT     . . . . . . . . . . . . . . . .
SPC FCT  X . . . . . . . (1-8)
AUX FCT  . . . (1-3)
         1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
LP 1-15  . . . . . . . . . . . . . . . .
LP 16-30 . . . . . . . . . . . . . . . .
LP 31-45 . . . . . . . . . . . . . . . .
LP 46-60 . . . . . . . . . . . . . . . .
LP 61-75 . . . . . . . . . . . . . . . .
LP 76-90 . . . . . . . . . . . . . . . .
LP 91-100. . . . . . . . . . . . . . . .
```

* The Action Plan number(s) are to be determined by the Divison Traffic Engineer.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0921
DESIGNED: July 2025
SEALED: 07/22/2025
REVISED: N/A

Electrical Detail - Sheet 3 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
NC Department of Transportation Mobility and Safety Division Traffic Engineering Branch Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1203 (Allen Road) at Briarcliff Drive

Division 02 | Pitt County | Greenville

PLAN DATE:	July 2025	REVIEWED BY:	S.G. Haynie
PREPARED BY:	A.M. Kollar	REVIEWED BY:	

REVISIONS	INIT.	DATE

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

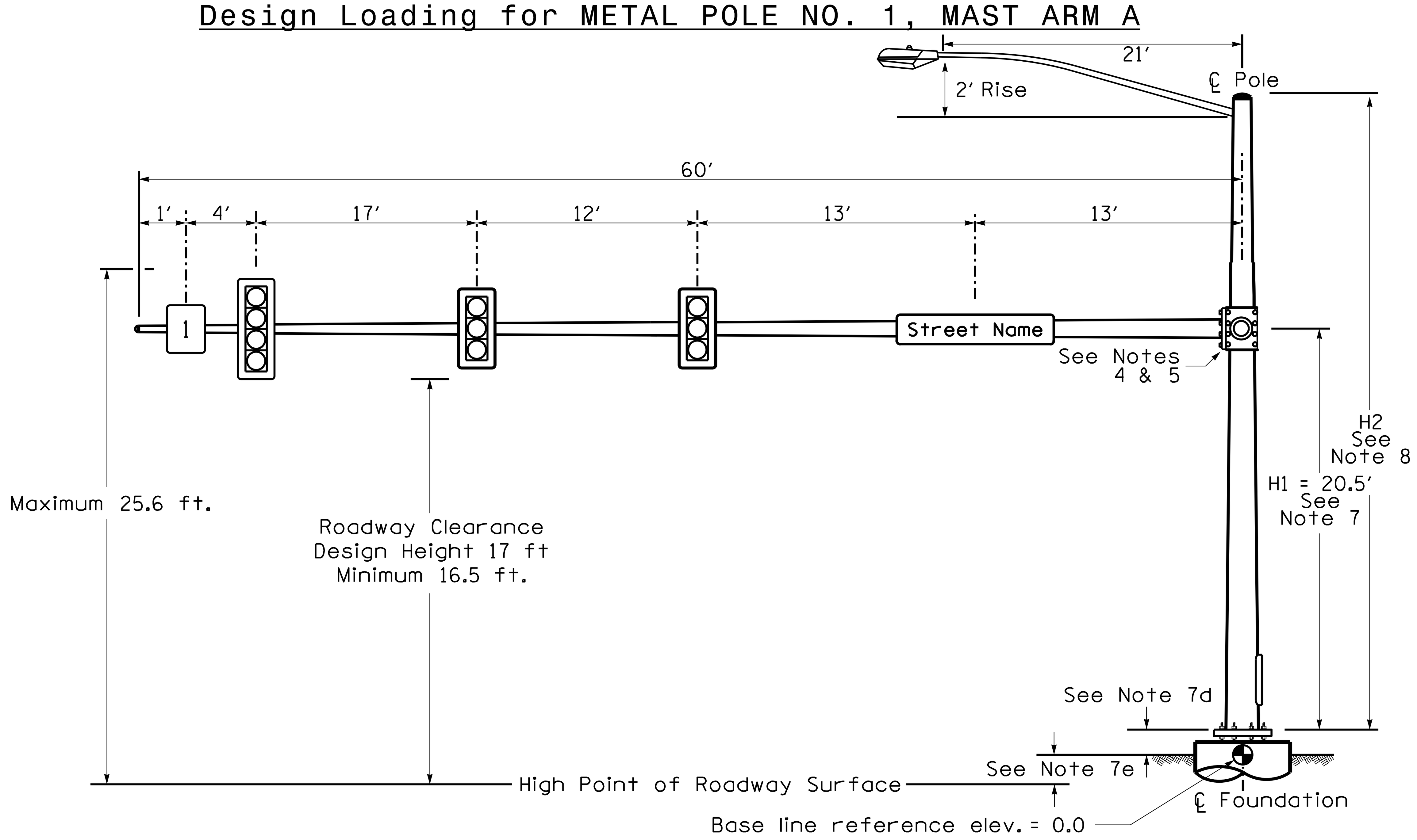
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G HAYNIE

DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE DATE

SIG. INVENTORY NO. 02-0921

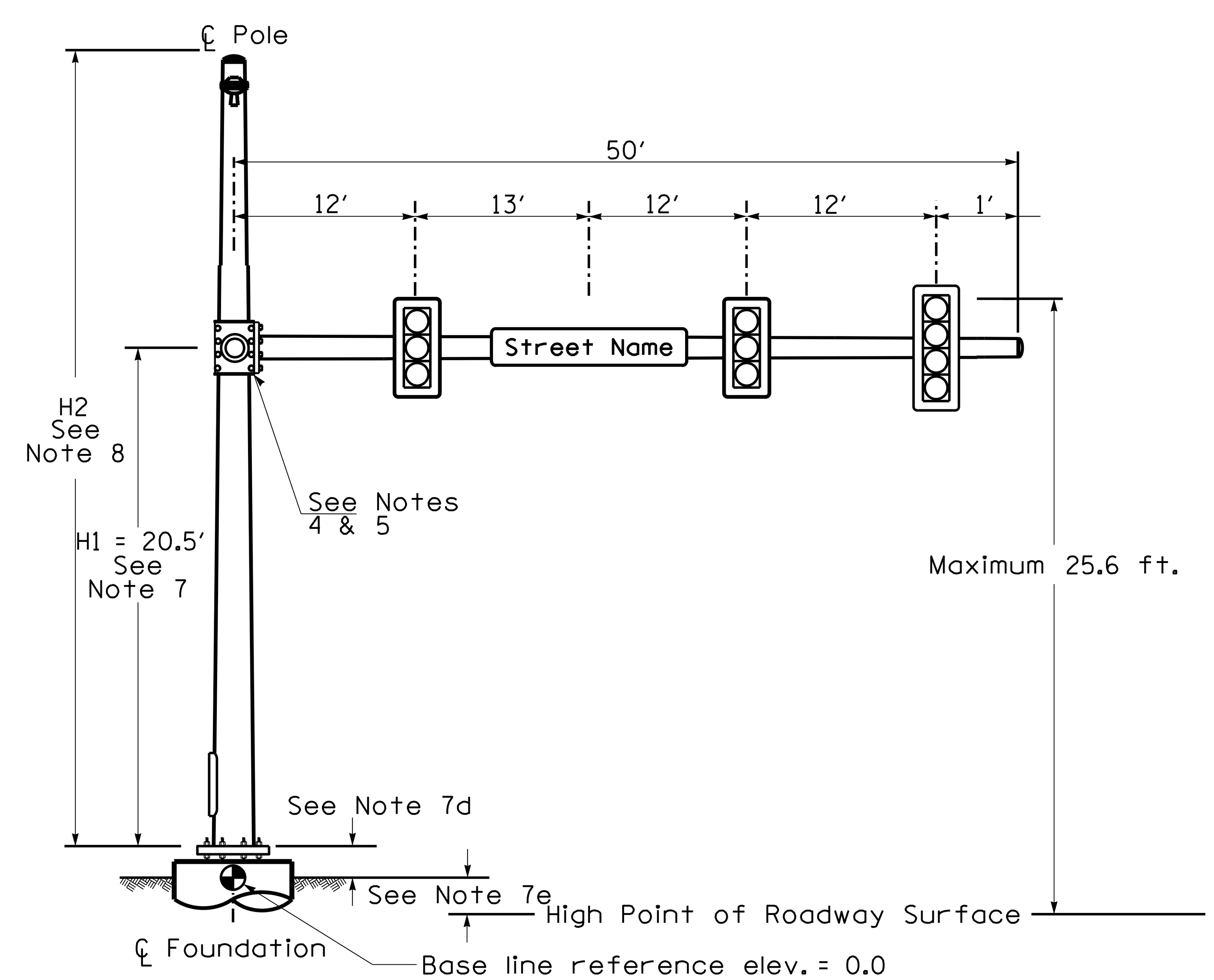
7/22/2025
X:\PW\0100063003.U-5875 Signals & Comms (SEPI TDM)\Design\Traffic\Signals\Design\Plan Sheets\U-5875 Signal Sheets\020921_sm.ele_20221OXX.dgn
11:08:20 AM

Design Loading for METAL POLE NO. 1, MAST ARM A



Mast Arm Elevation View @ 90°
Luminaire Elevation View @ 90°

Design Loading for METAL POLE NO. 1, MAST ARM B



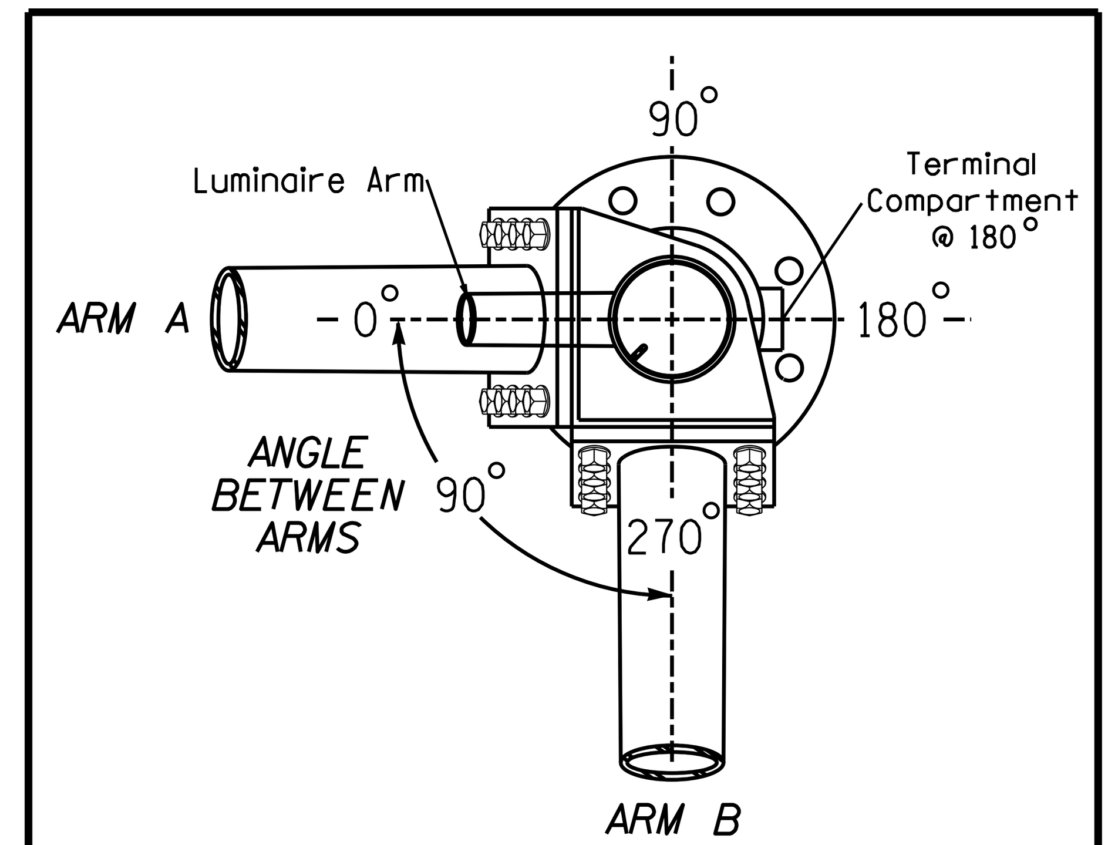
Mast Arm Elevation View @ 180°

SPECIAL NOTE

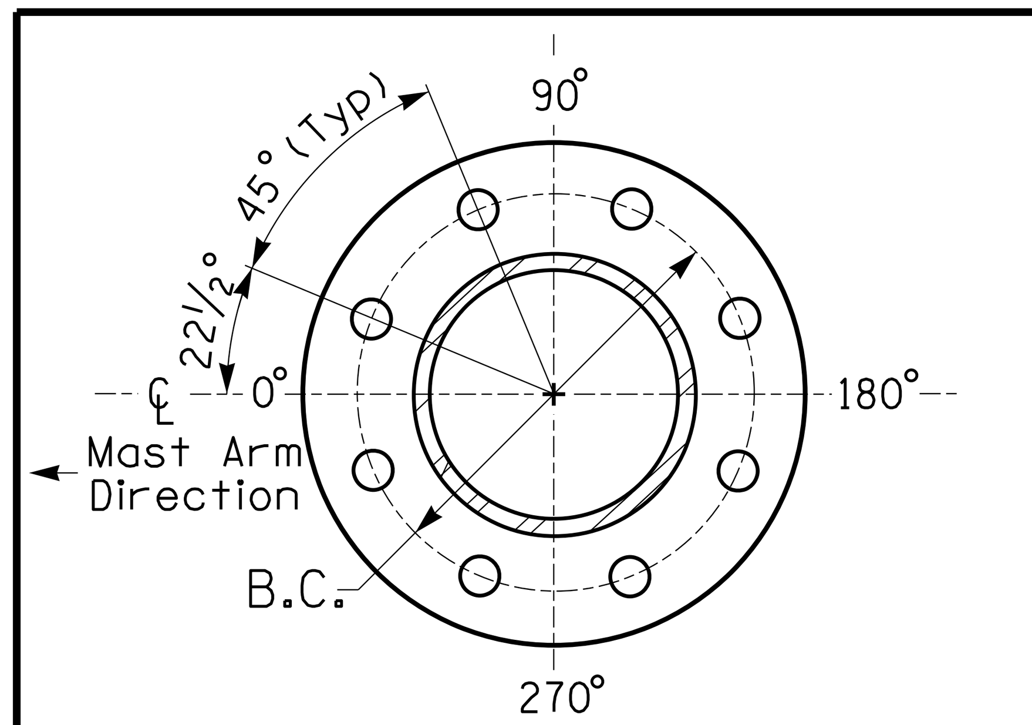
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Arm A	Arm B
Baseline reference point at ℄ Foundation @ ground level	0.0 ft.	N/A
Elevation difference at High point of roadway surface	+1.48 ft.	N/A
Elevation difference at Edge of travelway or face of curb	+1.17 ft.	N/A

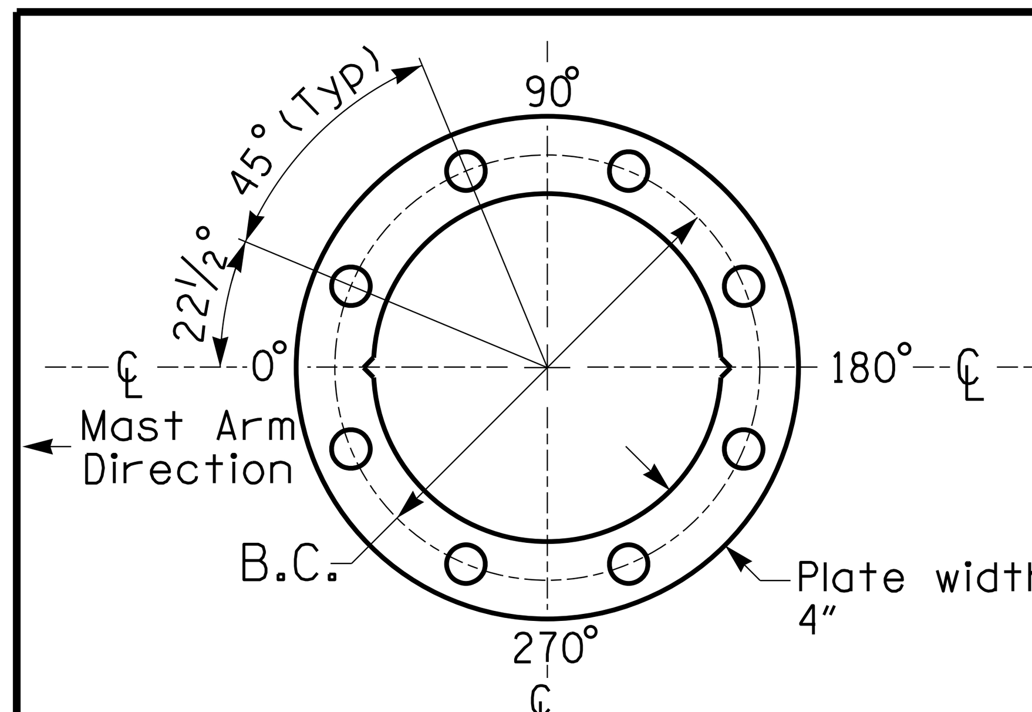


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL

For 8 Bolt Base Plate

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
(3-section signal head)	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
(4-section signal head)	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5" W X 66.0" L	74 LBS
(luminaire)	LUMINAIRE	EPA 0.87 S.F.	13.25" W X 26.25" L	35 LBS
Street Name	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS
1	SIGN RIGID MOUNTED	5.0 S.F.	24.0" W X 30.0" L	11 LBS
2	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS

NOTES

DESIGN REFERENCE MATERIAL

1. Design the traffic signal structure and foundation in accordance with:
   - The 1st Edition 2015 AASHTO LRFD "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
   - The 2024 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
   - The 2024 NCDOT Roadway Standard Drawings.
   - The traffic signal project plans and special provisions.
   - The NCDOT "Metal Pole Standards" located at the following NCDOT website: https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

DESIGN REQUIREMENTS

2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
3. Design all signal supports using force ratios that do not exceed 0.9.
4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
5. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements.
6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
7. The mast arm attachment height (H1) shown is based on the following design assumptions:
   a. Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
   b. Signal heads are rigidly mounted and vertically centered on the mast arm.
   c. The roadway clearance height for design is as shown in the elevation views.
   d. The top of the pole base plate is 0.75 feet above the ground elevation.
   e. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
8. The pole manufacturer will determine the total height (H2) of each pole X based on the luminaire height requirement of 30 ft.
9. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.
12. Comply with NEC code 230.2(E) concerning service equipment disconnect.
13. Lighting fixture and luminaire arm represent a load condition to the pole and may not represent exactly how the fixtures will be mounted. The contractor is responsible for ensuring that any required factory preps for mounting fixtures to the pole are included on the shop drawings.
14. Design the luminaire support arm using design dimensions as shown on elevations views. Refer to the Radial Orientation Detail for attachment to the signal pole. Design arm end for a nominal 2 inch slip fit socket connection for light assembly.

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NCDOT Wind Zone 3 (130 mph)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

SR 1203 (Allen Road)
at
Briarcliff Drive

Division 2 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar REVIEWED BY:

SCALE 0 N/A
N/A

REVISIONS	INIT.	DATE

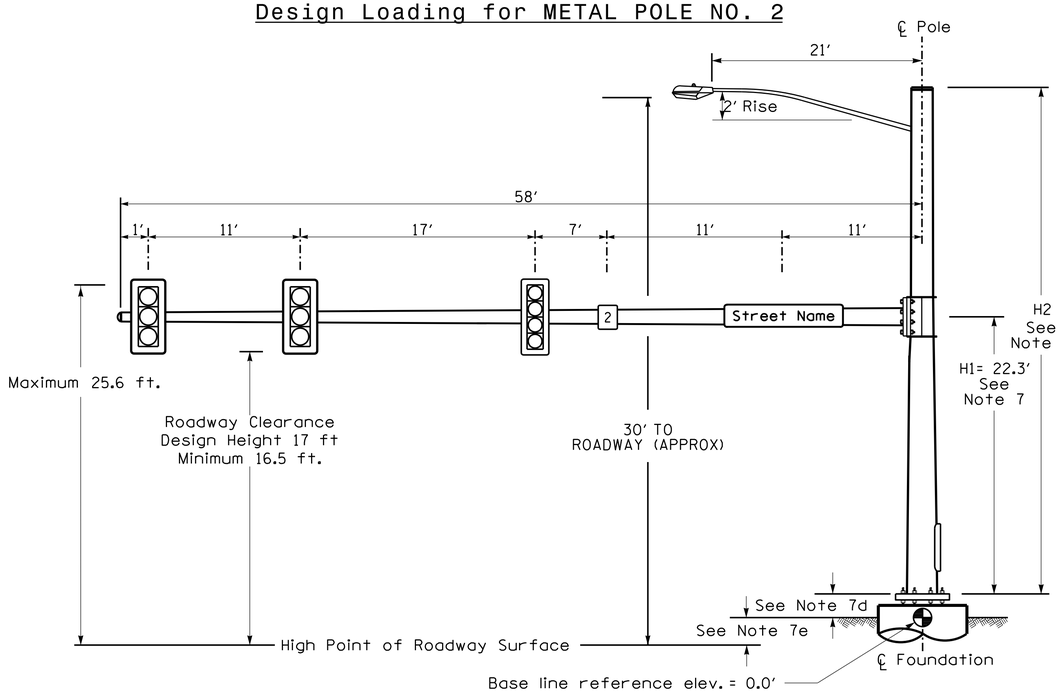
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029531 STEVEN G. HAYNIE
DocuSigned by: Steven G. Haynie 7/22/2025
DATE
SIG. INVENTORY NO. 02-0921

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

METAL POLE No. 2

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig 11.5

Design Loading for METAL POLE NO. 2



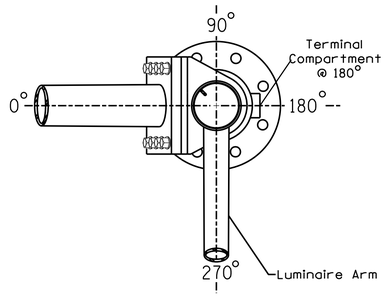
Mast Arm Elevation View @ 90°
Luminaire Elevation View @ 180°

SPECIAL NOTE

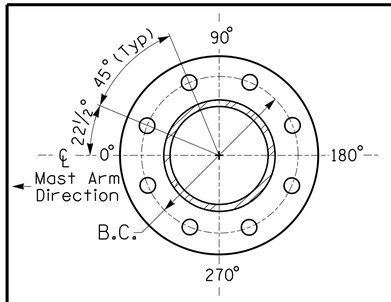
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 2	-
Baseline reference point at ℄ Foundation @ ground level	0.0 ft.	-
Elevation difference at High point of roadway surface	+3.28 ft.	-
Elevation difference at Edge of travelway or face of curb	+2.14 ft.	-

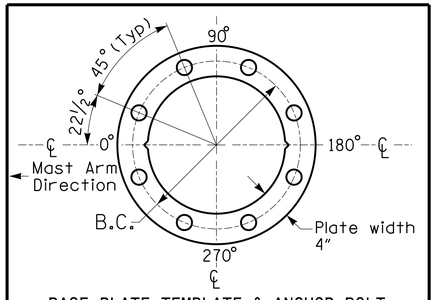


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL
For 8 Bolt Base Plate

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5"W X 52.5"L	60 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.7 S.F.	25.5"W X 66.0"L	74 LBS
	LUMINAIRE	1.0 S.F.	N/A	25 LBS
2	SIGN RIGID MOUNTED	7.5 S.F.	30.0"W X 36.0"L	14 LBS
Street Name	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0"W X 96.0"L	36 LBS

NOTES

DESIGN REFERENCE MATERIAL

1. Design the traffic signal structure and foundation in accordance with:
   - The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
   - The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
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DESIGN REQUIREMENTS

2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
3. Design all signal supports using stress ratios that do not exceed 0.9.
4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
5. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements.
6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
7. The mast arm attachment height (H1) shown is based on the following design assumptions:
   a. Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
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   c. The roadway clearance height for design is as shown in the elevation views.
   d. The top of the pole base plate is 0.75 feet above the ground elevation.
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10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.
12. Comply with NEC code 230.2(E) concerning service equipment disconnect.
13. Lighting fixture and luminaire arm represent a load condition to the pole and may not represent exactly how the fixtures will be mounted. The contractor is responsible for ensuring that any required factory preps for mounting fixtures to the pole are included on the shop drawings.
14. Design the luminaire support arm using design dimensions as shown on elevations views. Refer to the Radial Orientation Detail for attachment to the signal pole. Design arm end for a nominal 2 inch slip fit socket connection for light assembly.

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NCDOT Wind Zone 3 (130 mph)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

SR 1203 (Allen Road)
at
Briarcliff Drive

Division 2 | Pitt County | Greenville

PLAN DATE: July 2025 | REVIEWED BY: S.G. Haynie
PREPARED BY: A.M. Kollar | REVIEWED BY:

REVISIONS	INIT.	DATE

0 N/A
1"=N/A

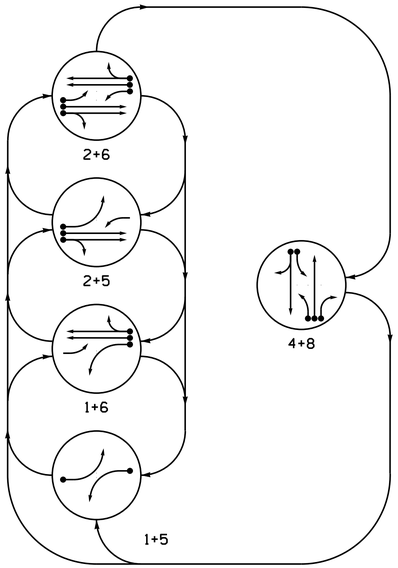
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G HAYNIE

DocuSigned by: Steven G. Haynie 7/22/2025
SIGNATURE DATE

Sig Inventory No. 02-0921

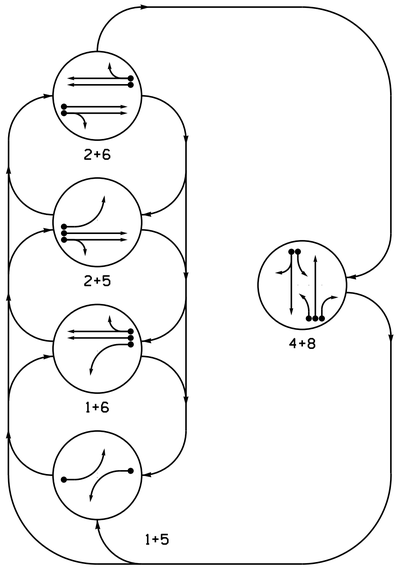
PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 12.0

DEFAULT PHASING DIAGRAM



DEFAULT TABLE OF OPERATION						
SIGNAL FACE	PHASE 1+5	1+6	2+5	2+6	4+8	FLASH
11	←	←	F Y	F Y	~~R~~	~~R~~
21, 22	R	R	G	G	R	R
41	~~R~~	~~R~~	~~R~~	~~R~~	F Y	~~R~~
42, 43	R	R	R	R	G	R
51	←	F Y	←	F Y	~~R~~	~~R~~
61, 62	R	G	R	G	R	R
81	~~R~~	~~R~~	~~R~~	~~R~~	F Y	~~R~~
82, 83	R	R	R	R	G	R

ALTERNATE PHASING DIAGRAM



ALTERNATE TABLE OF OPERATION						
SIGNAL FACE	PHASE 1+5	1+6	2+5	2+6	4+8	FLASH
11	←	←	~~R~~	~~R~~	~~R~~	~~R~~
21, 22	R	R	G	G	R	R
41	~~R~~	~~R~~	~~R~~	~~R~~	F Y	~~R~~
42, 43	R	R	R	R	G	R
51	←	~~R~~	←	~~R~~	~~R~~	~~R~~
61, 62	R	G	R	G	R	R
81	~~R~~	~~R~~	~~R~~	~~R~~	F Y	~~R~~
82, 83	R	R	R	R	G	R

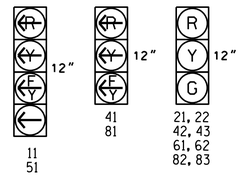
MAXTIME DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
1A	6X40	0	✳	✳	1	15+	-	X	-	X	-	✳
					6@	-	-	X	-	X	-	✳
4A	6X40	0	✳	✳	4	3	-	X	-	X	-	✳
4B	6X40	0	✳	✳	4	10	-	X	-	X	-	✳
4C	6X6	0	✳	✳	4	15	-	X	-	X	-	✳
5A	6X40	0	✳	✳	5	15+	-	X	-	X	-	✳
					2@	-	-	X	-	X	-	✳
8A	6X40	0	✳	✳	8	3	-	X	-	X	-	✳
8B	6X40	0	✳	✳	8	-	-	X	-	X	-	✳
8C	6X40	0	✳	✳	8	15	-	X	-	X	-	✳

✳ Multizone Microwave Detection
\+ Reduce to 3 sec during Alt Phasing Ops
@ Disable phase during Alt Phasing Ops

SIGNAL FACE I.D.

All Heads L.E.D.



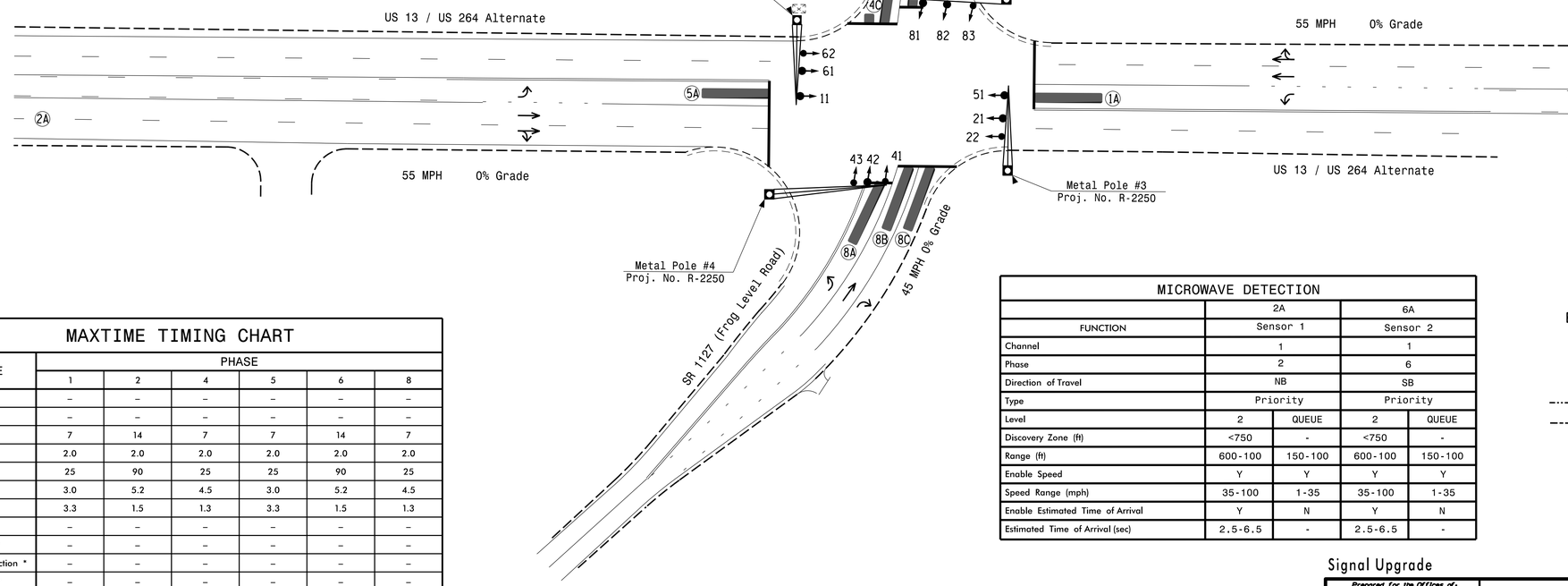
5 Phase
Fully Actuated
US 264A/ US 13 Signal System

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. Set all detector units to presence mode.
5. Install new controller in existing cabinet.
6. Pavement markings are existing.
7. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
8. Maximum times shown im timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM DETECTION LEGEND

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



MAXTIME TIMING CHART

FEATURE	PHASE 1	2	4	5	6	8
Walk *	–	–	–	–	–	–
Ped Clear	–	–	–	–	–	–
Min Green *	7	14	7	7	14	7
Passage *	2.0	2.0	2.0	2.0	2.0	2.0
Max 1 *	25	90	25	25	90	25
Yellow Change	3.0	5.2	4.5	3.0	5.2	4.5
Red Clear	3.3	1.5	1.3	3.3	1.5	1.3
Added Initial *	–	–	–	–	–	–
Maximum Initial *	–	–	–	–	–	–
Time Before Reduction *	–	–	–	–	–	–
Time To Reduce *	–	–	–	–	–	–
Minimum Gap	–	–	–	–	–	–
Advance Walk	–	–	–	–	–	–
Non Lock Detector	X	–	X	X	–	X
Vehicle Recall	–	MIN RECALL	–	–	MIN RECALL	–
Dual Entry	–	–	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.

MICROWAVE DETECTION

FUNCTION	2A Sensor 1		6A Sensor 2	
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	●→
◐→	Modified Traffic Signal Head	N/A
⊣	Sign	⊣
	Pedestrian Signal Head with Push Button & Sign	
◎	Metal Strain Pole	◘
	MetalPole with Mastarm	
	Non-Intrusive Detection Zone	
⊠	Controller & Cabinet	
□	Junction Box	■
	2" Underground Conduit	
	3-2" Underground Conduit	
N/A	Right of Way with Marker	
→	Directional Arrow	→

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Integrated Mobility Division
1 South Wilmington Street
Raleigh, North Carolina 27601
750 N.Greenfield Pkwy.Garner,NC 27529

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

US 13/US 264A (Dickison Ave.) at SR 1127 (Frog Level Road)

DIVISION 2 PITT COUNTY GREENVILLE

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie

PREPARED BY: A.M. KOLLAR REVIEWED BY:

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE

Sig Inventory No. 02-0946

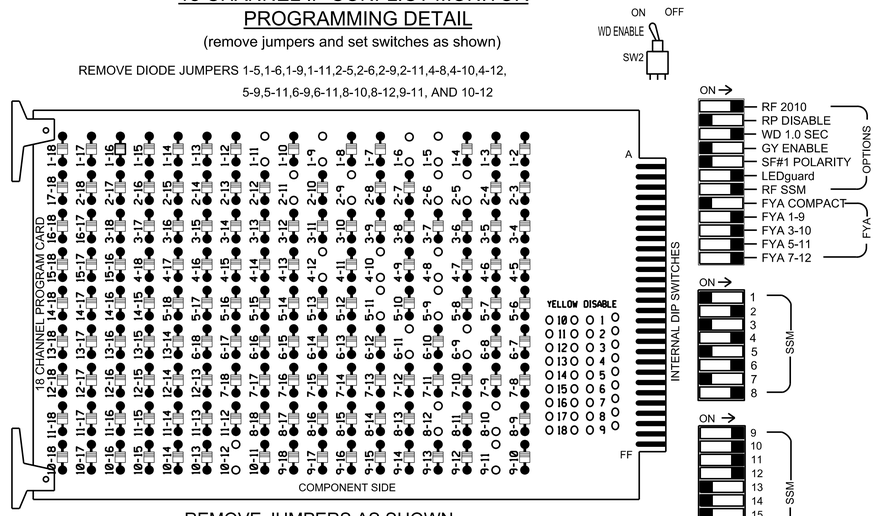
$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 12.1

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

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



REMOVE JUMPERS AS SHOWN

NOTES:

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

■ = DENOTES POSITION OF SWITCH

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 US 264A/US 13 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,S7,S8,S11, AUX S1, AUX S2, AUX S4, AUX S5
Phases Used.....1,2,4,5,6,8
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	NU	42,43	NU	51★	61,62	NU	NU	82,83	NU	11★	81★	NU	51★	41★	NU
RED		128			101			134			107							
YELLOW	*	129			102		*	135			108							
GREEN		130			103			136			109							
RED ARROW													A121	A124		A114	A101	
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW	127						133											

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)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø1 1A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L	NOT USED														ST DC ISOLATOR
FILE "J"	U	Ø5 5A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L	NOT USED														

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

FS = FLASH SENSE
ST = STOP TIME

Note: Remove jumpers from I1-W to J4-W and J1-W to I4-W if present.

INPUT FILE CONNECTION & PROGRAMMING CHART

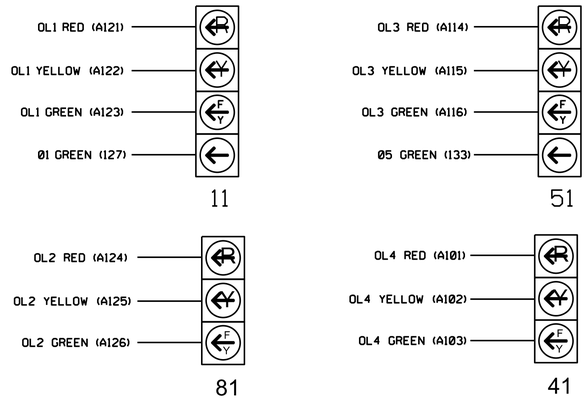
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
1A	TB2-1,2	I1U	56	18	1★	1	15	...	X	_	X	_
				.	29★	6	...	...	X	_	X	_
5A	TB3-1,2	J1U	55	17	15★	5	15	...	X	_	X	_
				.	31★	2	...	...	X	_	X	_

★ See detector programming detail for alternate phasing on sheet 2.

INPUT FILE POSITION LEGEND: J2L
J = FILE J
2 = SLOT 2
L = LOWER

FYA SIGNAL WIRING DETAIL

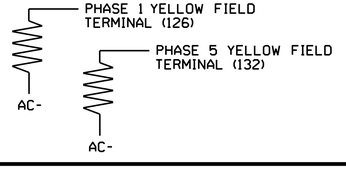
(wire signal heads as shown)



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)



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 and 5A, the equipment placement is typical for a NCDOT installation.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0946
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for the Offices of:
NC Department of Transportation Mobility and Safety Division Traffic Engineering Branch Signals Management Section

750 N.Greenfield Pkwy.Garner,NC 27529

13/US 264A (Dickinson Ave.) at SR 1127 (Frog Level Road)

PLAN DATE: July 2025 | REVIEWED BY: S.G. Haynie
PREPARED BY: E.N. RODRIGUEZ | REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE
SIG. INVENTORY NO. 02-0946

7/15/2025
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PROJECT REFERENCE NO.	SHEET NO.
U-5875	Sig. 12.2

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
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section
Included Phases	2	4	6	8
Modifier Phases	1	-	5	-
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	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section
Included Phases	-	4	-	8
Modifier Phases	1	-	5	-
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 PHASE

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 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 RUN DEFAULT PHASING	1	1
ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHASING	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 and 51 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 3 seconds.

Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 3 seconds.

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

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8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOPS 1A & 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

1A

Detector	Call Phase	Delay
1	1	3.0
29	0	-

5A

Detector	Call Phase	Delay
15	5	3.0
31	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.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 02-0946
DESIGNED: July 2025
SEALED: 07/15/2025
REVISED: N/A

Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

13/US 264A (Dickinson Ave.)
at
SR 1127 (Frog Level Road)

Division 02 Pitt County Greenville

PLAN DATE: July 2025 REVIEWED BY: S.G. Haynie
PREPARED BY: E.N. Rodriguez REVIEWED BY:

REVISIONS	INIT.	DATE

Prepared for the Offices of:
NC DEPARTMENT OF TRANSPORTATION Transportation Mobility and Safety Division Traffic Engineering Branch Signal Management Section
750 N.Greenfield Pkwy.Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
DocuSigned by: Steven G. Haynie 7/15/2025
SIGNATURE DATE
SIG. INVENTORY NO. 02-0946

7/15/2025
X:\PROJECTS\053003_1\U-5875 Signals & Comms (SEPI TDM)\Design\Traffic\Signals\Design\Plan Sheets\U-5875 Signal Sheets\020946_sheet_2024XXYY.dgn
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PROJECT I.D.NO.	SHEET NO.
	Sig.M1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STANDARD DRAWINGS FOR ALL METAL POLES (LRFD)

NCDOT METAL POLE STANDARDS

DIVISION 11
WIND ZONE 5 & 6

DIVISION 9
WIND ZONE 5

DIVISION 7
WIND ZONE 5

DIVISION 5
WIND ZONE 4 & 5

DIVISION 4
WIND ZONE 3 & 4

DIVISION 1
WIND ZONE 2, 3, 4 & 5

DIVISION 13
WIND ZONE 5 & 6

DIVISION 14
WIND ZONE 5 & 6

DIVISION 12
WIND ZONE 5

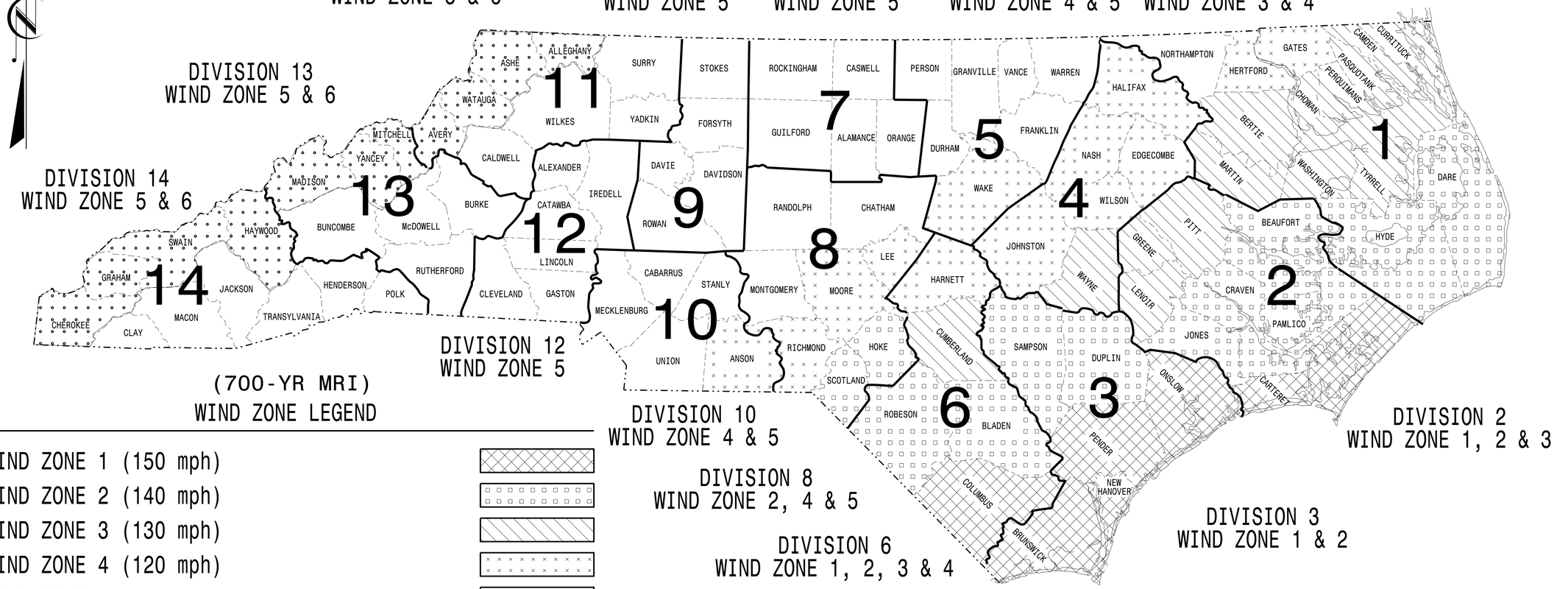
DIVISION 10
WIND ZONE 4 & 5

DIVISION 8
WIND ZONE 2, 4 & 5

DIVISION 6
WIND ZONE 1, 2, 3 & 4

DIVISION 2
WIND ZONE 1, 2 & 3

DIVISION 3
WIND ZONE 1 & 2



(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

Prepared in the Offices of:

Transportation Mobility and Safety Division
Signal Design Section
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

INDEX OF PLANS

DRAWING NUMBER	DESCRIPTION
Sig. M 1A	Statewide Wind Zone Map (700–yr MRI)
Sig. M 1B	Statewide Wind Zone Map (10–yr MRI)
Sig. M 2	Typical Fabrication Details–All Metal Poles
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

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036626 ENGINEER KEVIN C. DURIGON

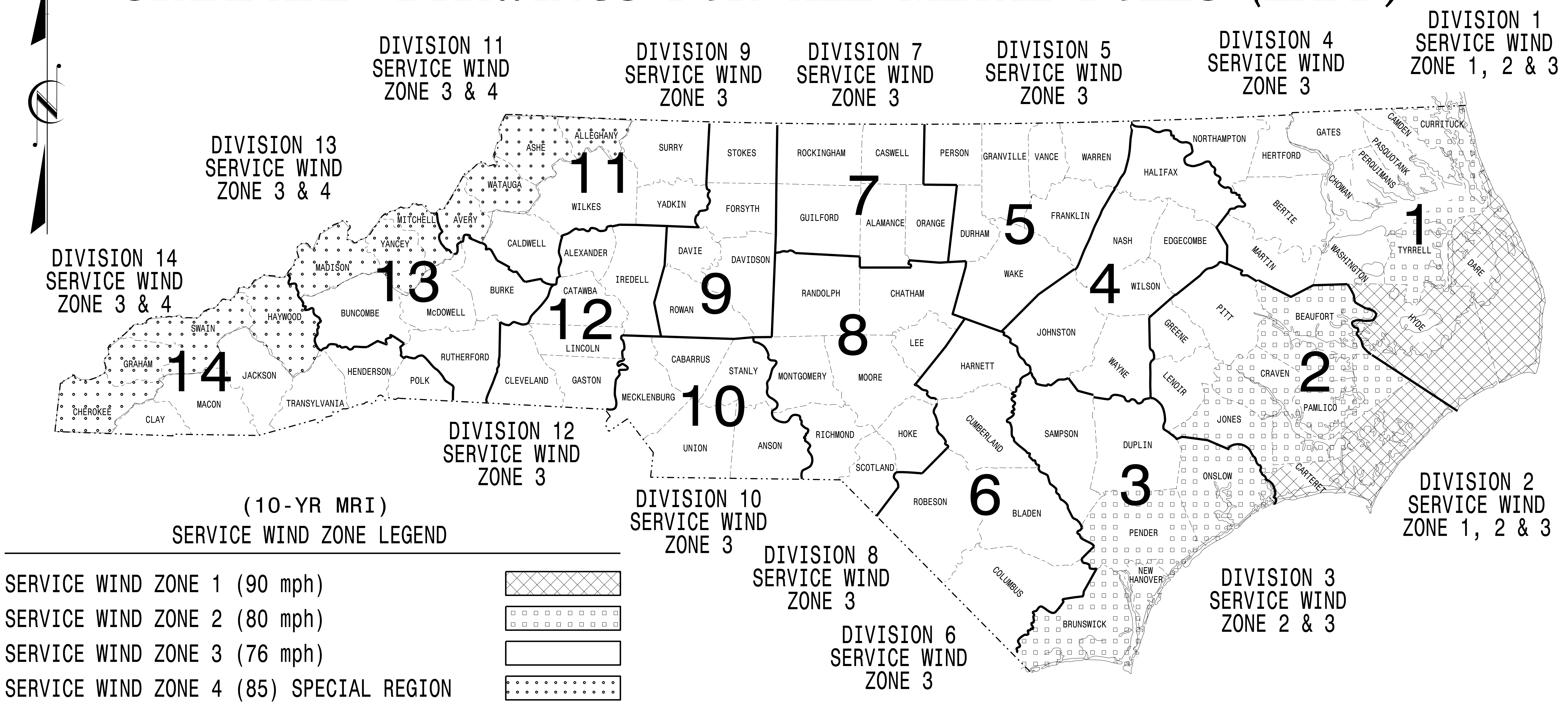
DocuSigned by:
Kevin Durigon
SIGNATURE
4B23DC79B3784DA...
09/21/2023
DATE

NCDOT METAL POLE STANDARDS

PROJECT I.D. NO.	SHEET NO.
	Sig.M1B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STANDARD DRAWINGS FOR ALL METAL POLES (LRFD)



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

Prepared In the Offices of:

Transportation Mobility and Safety Division
Signal Design Section
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

INDEX OF PLANS

DRAWING NUMBER	DESCRIPTION
Sig. M 1A	Statewide Wind Zone Map (700-yr MRI)
Sig. M 1B	Statewide Wind Zone Map (10-yr MRI)
Sig. M 2	Typical Fabrication Details-All Metal Poles
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

NCDOT CONTACTS:

MOBILITY AND SAFETY DIVISION - TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS UNIT

D.Y. ISHAK – STATE SIGNALS ENGINEER

K. DURIGON, P.E. – ITS AND SIGNALS STRUCTURAL ENGINEER

B. WALKER, P.E. – ITS AND SIGNALS STRUCTURAL ENGINEER

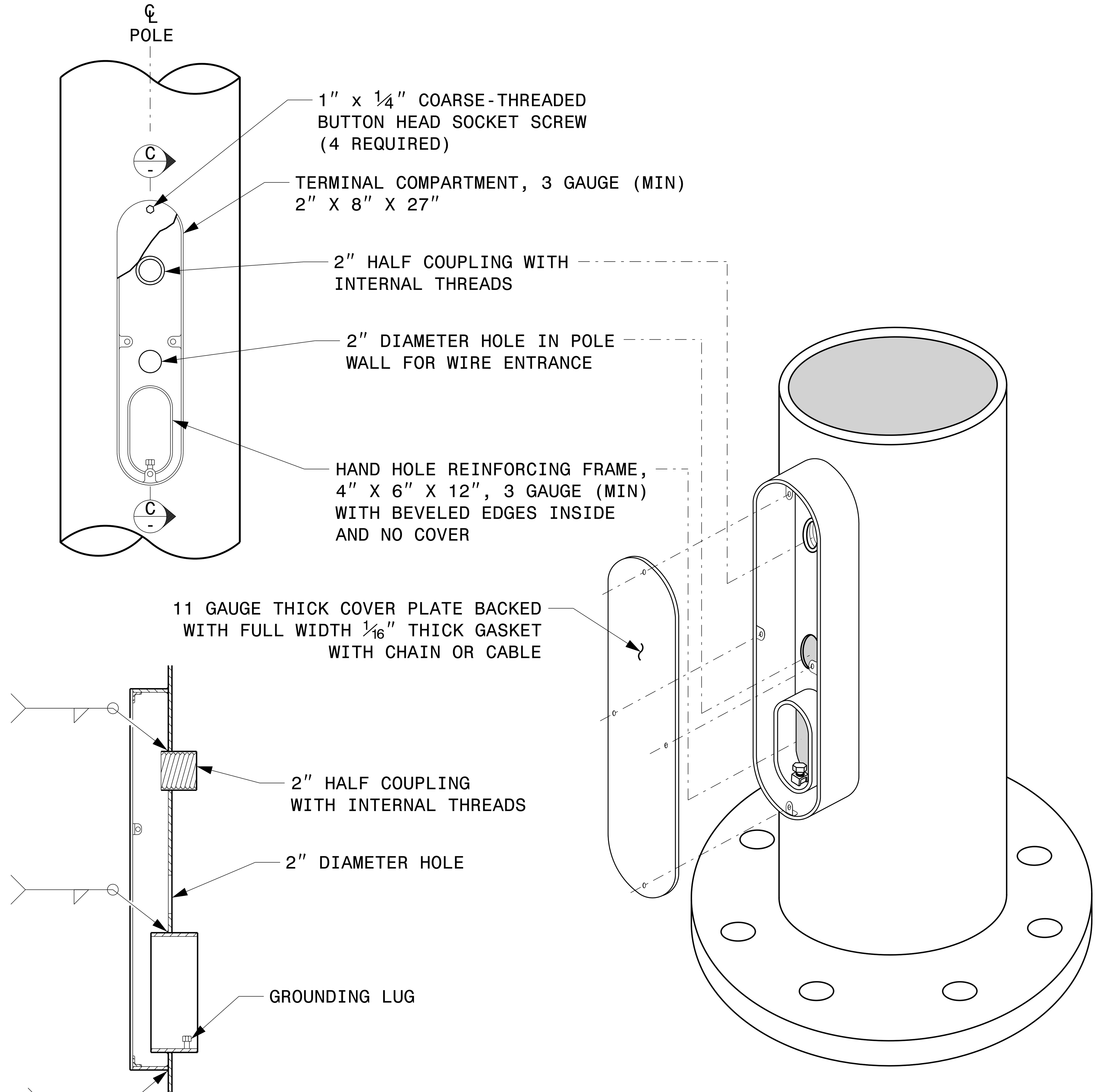
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036626 ENGINEER KEVIN C. DURIGON

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

PROJECT I.D. NO.	SHEET NO.
	Sig.M2

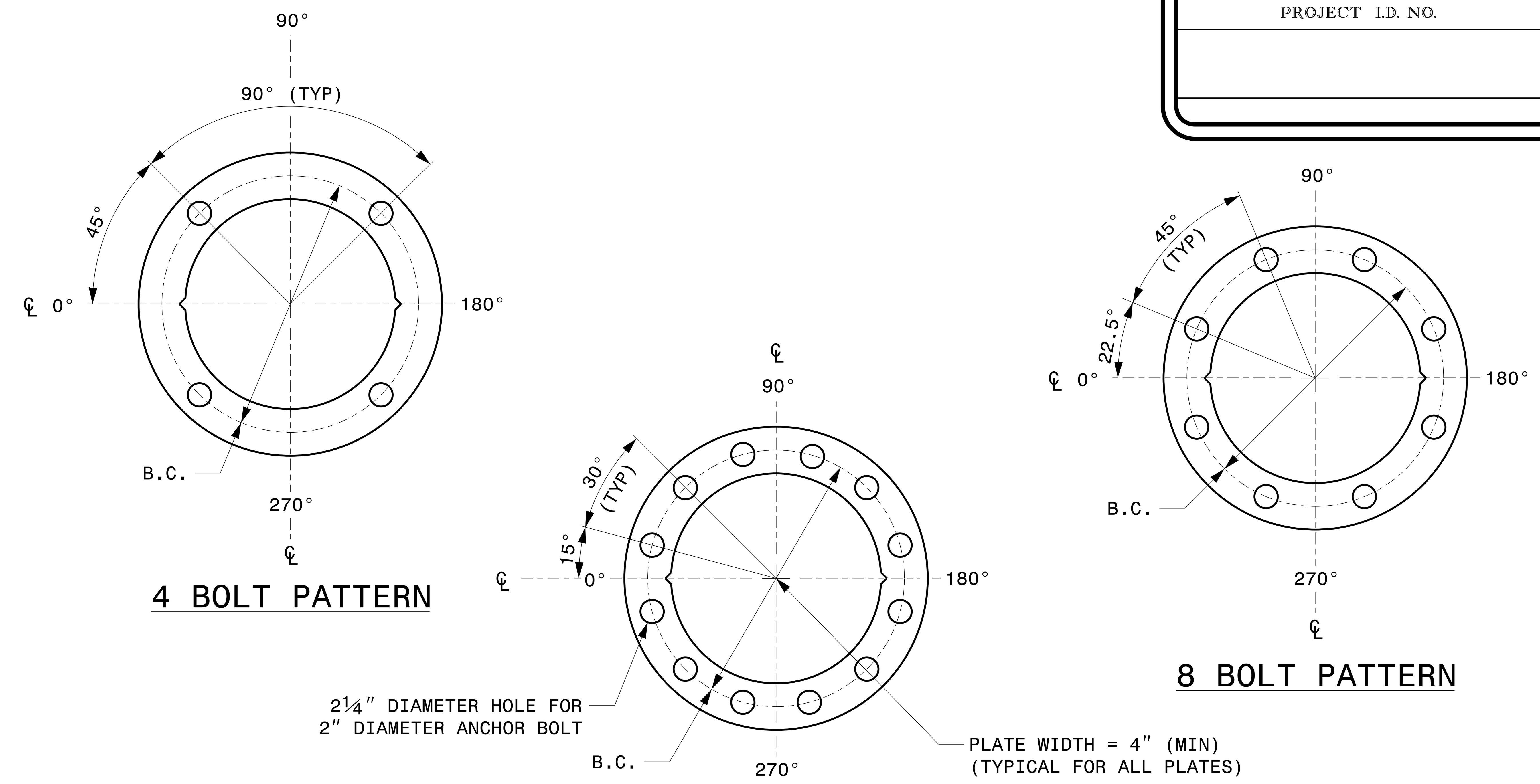
Fabrication Details – All Metal Poles



NOTE: UNLESS OTHERWISE SPECIFIED, LOCATE TERMINAL COMPARTMENT 1 FOOT ABOVE THE POLE BASE AT 180 DEGREES ON THE POLE'S RADIAL INDEX.

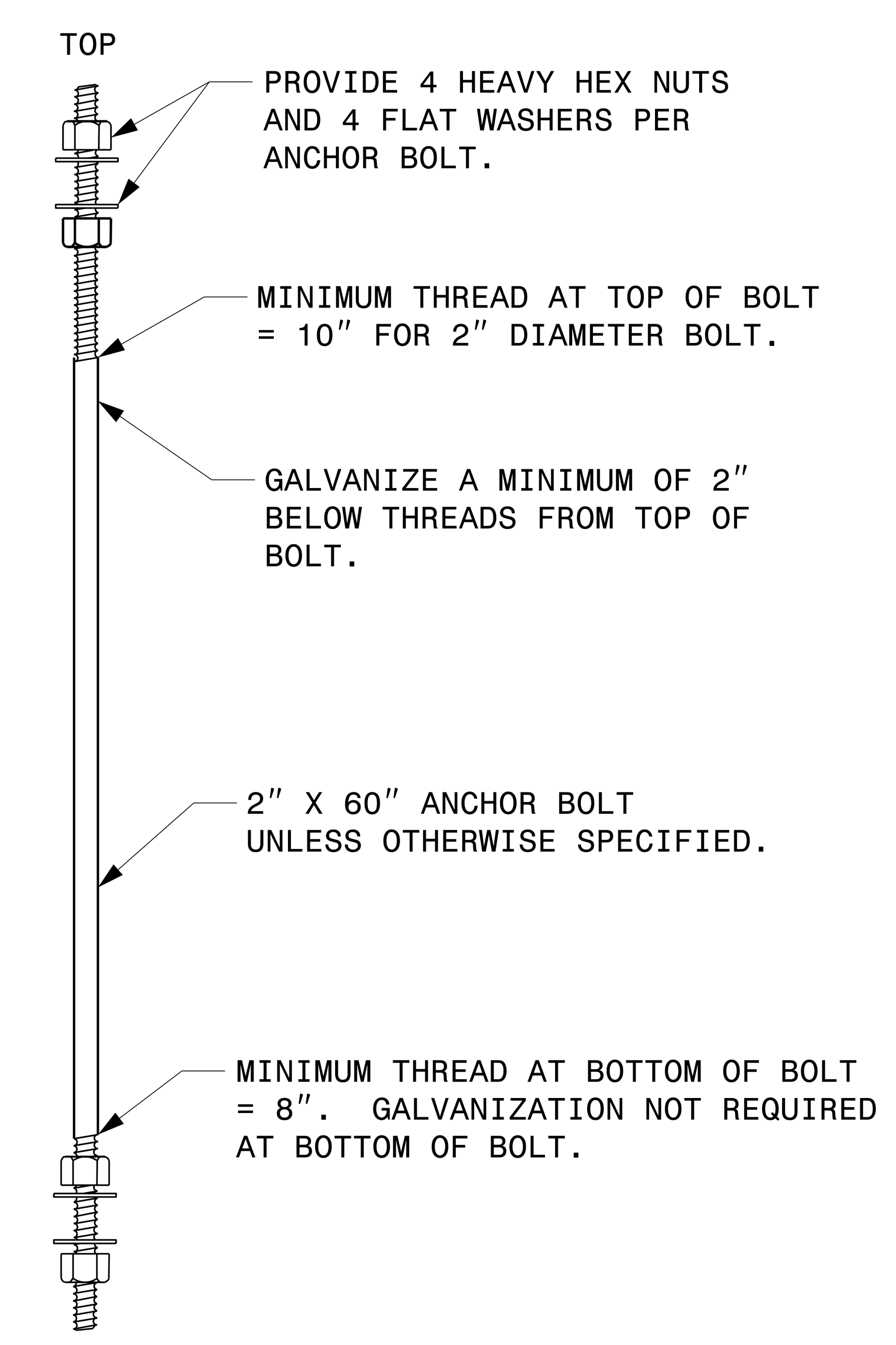
SECTION C-C

TERMINAL COMPARTMENT DETAIL

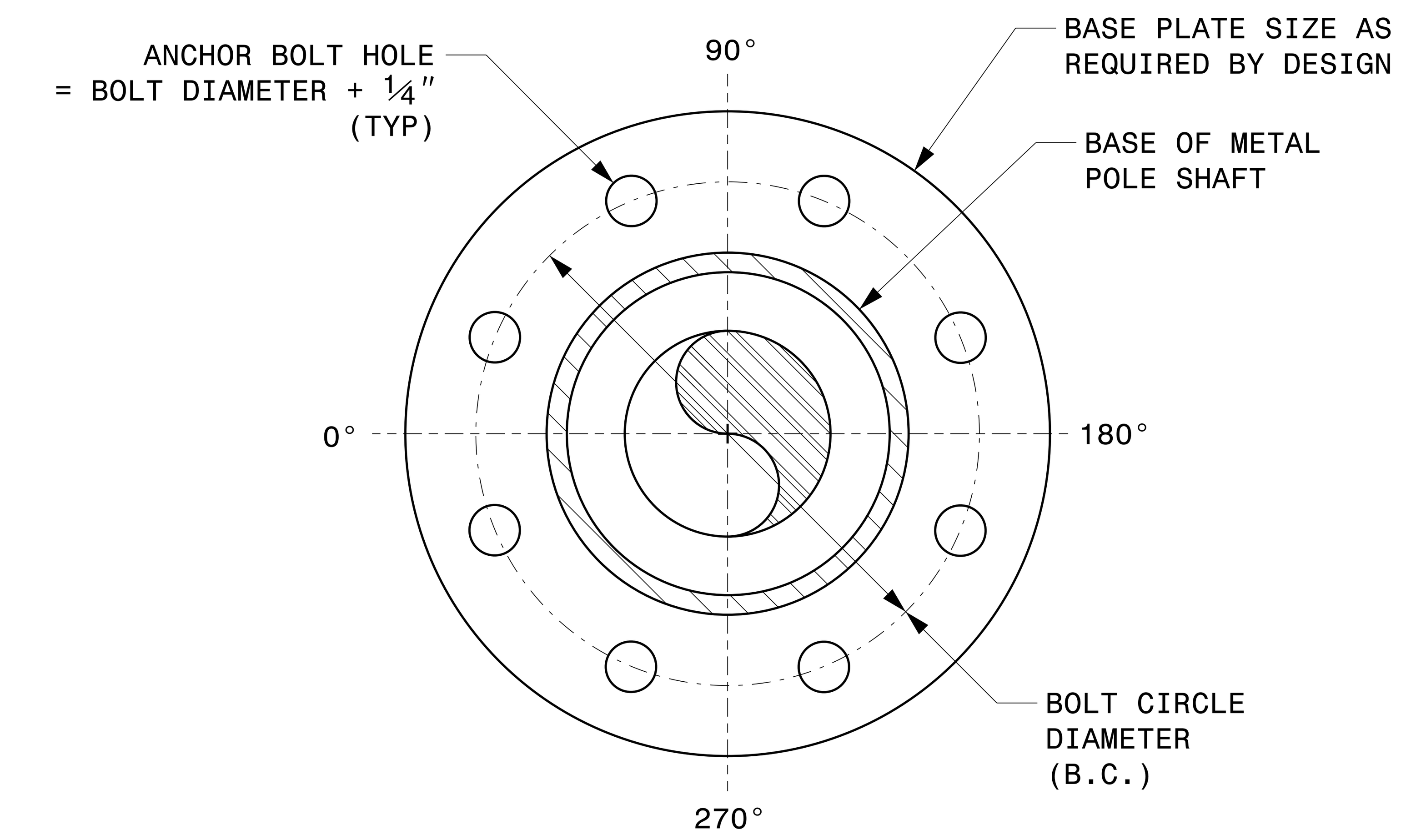


CONSTRUCT TEMPLATES AND PLATES FROM ¼″ (MIN) THICK STEEL. GALVANIZING IS NOT REQUIRED.

BASE PLATE TEMPLATE AND ANCHOR BOLT LOCK PLATE DETAILS



ANCHOR BOLT DETAIL



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

TYPICAL BASE PLATE DETAIL

MFG ________ MFG. DATE: MM/YY
SHAFT D/T/L/Y ___/___/___/___
ARM-A D/T/L/Y ___/___/___/___
___/___/___/___
ARM-B D/T/L/Y ___/___/___/___
___/___/___/___
A.B. DIA./B.C./L/Y ___/___/___/___
NCDOT SIG. INV. NO. ________
NCDOT POLE NO. ________

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

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

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

NOTES:

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

IDENTIFICATION TAG DETAILS

Prepared in the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

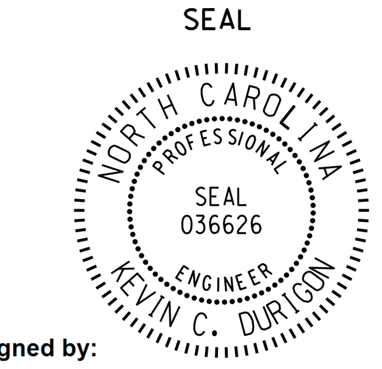
Typical Fabrication Details For All Metal Poles

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



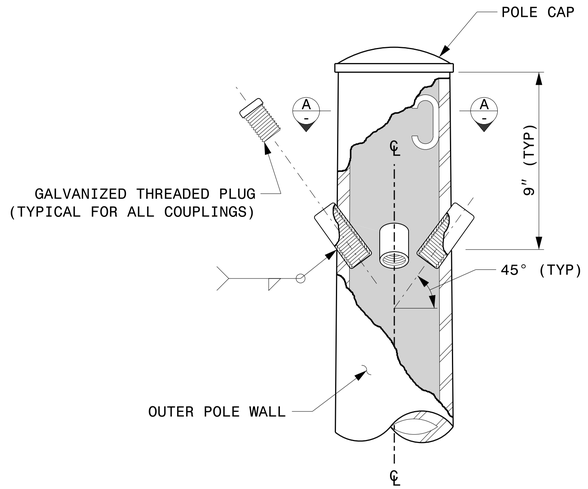
DocuSigned by:
Kevin Durigon
4B23DC79B3784DA...
SIGNATURE
09/21/2023
DATE

PROJECT I.D. NO.	SHEET NO.
	Sig.M3

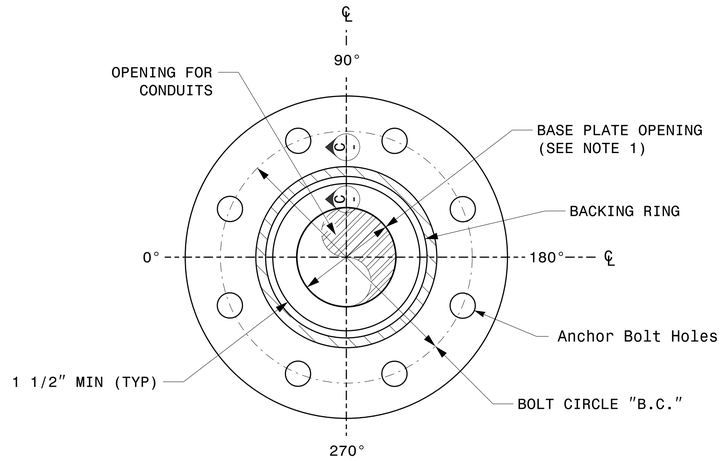
Fabrication Details – Strain Poles

NOTE:

1. OPENING IN POLE BASE PLATE SHALL BE EQUAL TO POLE BASE INSIDE DIAMETER MINUS 3½" BUT SHALL NOT BE LESS THAN 8½".

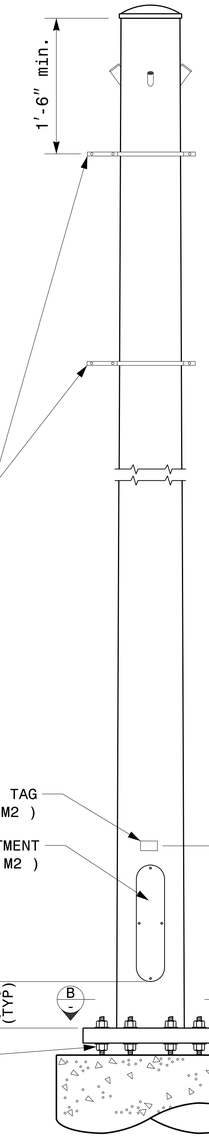


CABLE ENTRANCES AT TOP OF POLE

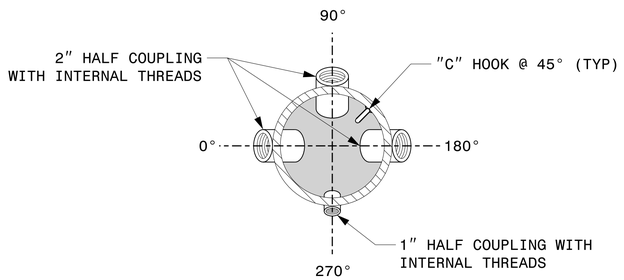


SECTION B-B

POLE BASE PLATE DETAILS
(8 AND 12 BOLT PATTERN)

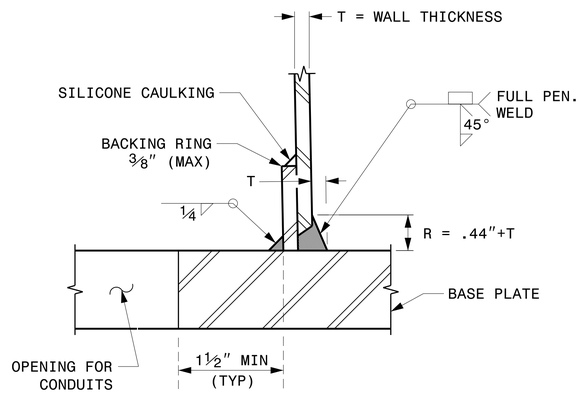


MONOTUBE STRAIN POLE



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

Prepared In the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE
0 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

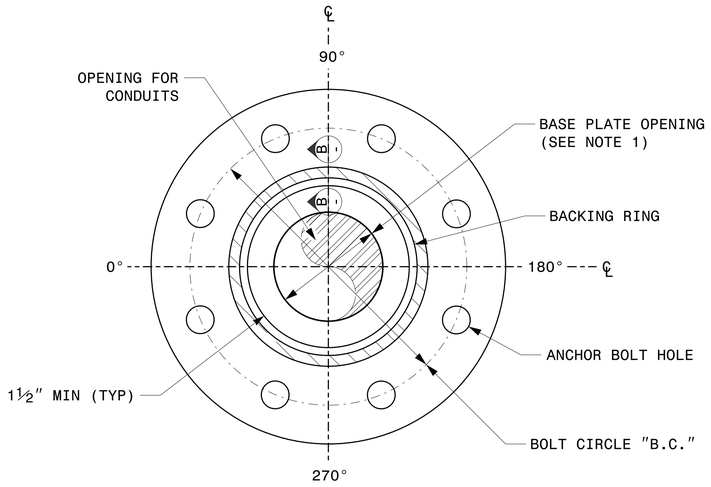
SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL
036626
ENGINEER
KEVIN C. DURIGON

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

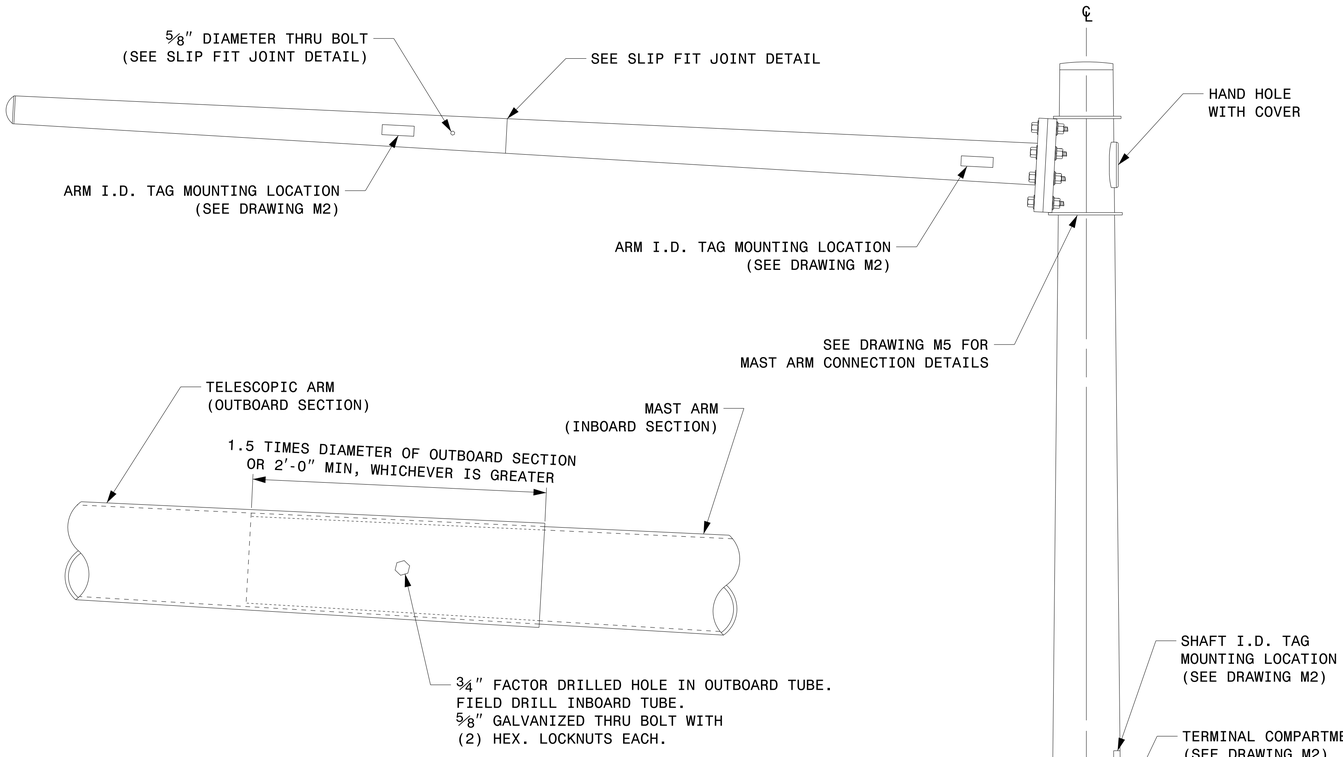
PROJECT I.D. NO.	SHEET NO.
	Sig.M4

NOTE:

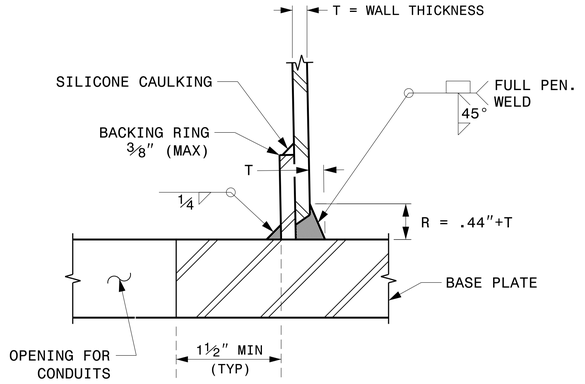
1. OPENING IN POLE BASE PLATE SHALL BE EQUAL TO POLE BASE INSIDE DIAMETER MINUS 3½" BUT SHALL NOT BE LESS THAN 8½".



SECTION A-A
POLE BASE PLATE DETAILS

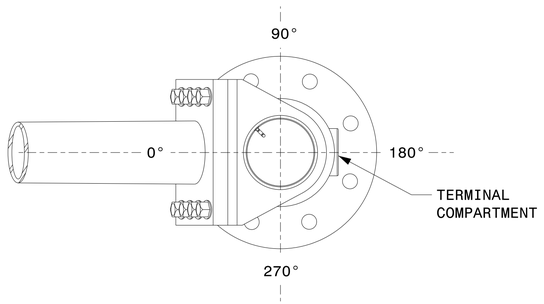


SLIP FIT JOINT DETAIL FOR MAST ARM



SECTION B-B
(POLE ATTACHMENT TO BASE PLATE)

FULL-PENETRATION GROOVE WELD DETAIL



MAST ARM RADIAL ORIENTATION

MAST ARM POLE

Fabrication Details – Mast Arm Poles

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

SCALE 0 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
NORTH CAROLINA PROFESSIONAL SEAL 036626 ENGINEER KEVIN C. DURIGON

DocuSigned by:
Kevin Durigon
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09/21/2023
DATE

03-OCT-2023 12:25
S:*ITS\SIG\M*ITS\Signals\Signal Design Section\Structures\Drawings*2024 Metal Pole Std Drawings for LRFD*2024 Sig.M4 Std. Fabrication Details-Mast Arm Poles.dgn
kcdurigon