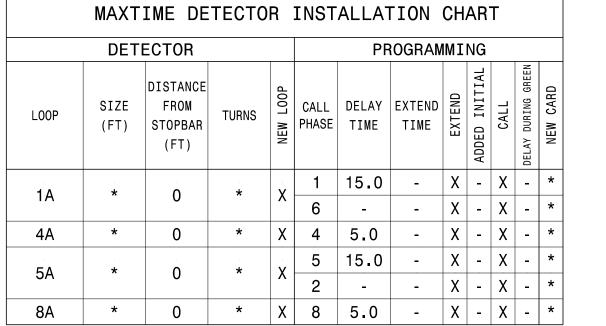
Sig-15.0 R-5600

5 Phase Fully Actuated (Time Based Coordination)

#### 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. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls. 6. Program pedestrian heads to countdown the flashing "Don't Walk" time only
- 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.



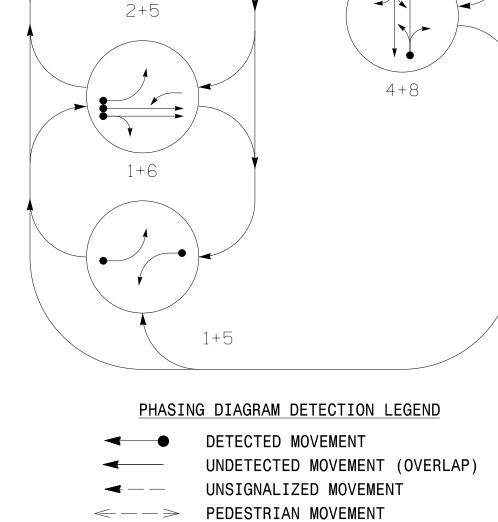
\*Multi-Zone Microwave Detection Zone

35 MPH -2% Grade

(Design Speed 45 MPH)

PUE NC 107 (E. Main Street)

<u>-L- Sta. 64+31′ ±</u> RT. 68′ ±



PHASING DIAGRAM

FEATURE

TABLE OF OPERATION

SIGNAL

FACE

21,22

41,42,43

51

61,62

81,82

PHASE

RRRRGF

P21, P22 | DW | DW | W | DW | DRI

35 MPH +1% Grade

(Design Speed 45 MPH)

MAXTIME TIMING CHART PHASE

14 Ped Clear Min Green \* 7 3.0 2.0 2.0 2.0 2.0 2.0 Passage \* 70 20 15 20 3.0 4.7 3.0 4.0 Yellow Change 4.0 4.7 3.2 Red Clear 2.4 3.5 2.6 3.5 Added Initial \* Maximum Initial \* Time Before Reduction \_ Time To Reduce Minimum Gap \_ Advance Walk \_ Non Lock Detector Χ Vehicle Recall MIN RECALL MIN RECALL

Microwave Detection								
	(2	<u>'A</u>	(6A)					
FUNCTION	Sen	sor 1	Sens	sor 2				
Channel		1		1				
Phase		2	6					
Direction of Travel	٧	WB EB						
Туре	Pric	ority	Priority					
Level	2	QUEUE	2	QUEUE				
Detection Zone (ft)	< 750	_	< 750	_				
Range (ft)	600–100	150–100	600–100	150–100				
Enable Speed	Υ	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.

21,22

41,42,43

61,62

81,82

P21,P22

11

51

KAN

<u>-L- Sta. 63+64 ±</u> LT. 59′ ±

NC 107 (E. Main Street)

<u>-L- Sta. 63+56′ ±</u> RT. 66′ ±

**EXISTING PROPOSED** 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 Controller & Cabinet Junction Box Oversized Junction Box 2-in Underground Conduit Right of Way Directional Arrow Ion-Intrusive Detection Zone 📁 🚃 Directional Drill N/A Type II Signal Pedestal N/A Permanent Utility Easement Guardrail U/G Sanitary Sewer U/G Water Line O/H Pwr. & Utl. Lines — PROP O/H TEL CATV & FO LINES-Utility Pole

Construction Zone

Barricade

LEGEND

Signal Upgrade Temporary Design 2 - TMP Ph1, S2



NC 107 (E. Main Street) SR 1352 (Walter Ashe Road)

SR 1449 (Cope Creek Road) Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

N/A

052936 Brittany Groome 8/26/2025 SIG. INVENTORY NO. 4-0694T

N/A

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

**Plans Prepared By:** 

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

PREPARED BY: KA Jones REVISIONS

REVIEWED BY: BN Groome INIT. DATE

# 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
- 3. Program controller to start up in phase 2 Green No Walk and phase 6 Green No
- logging for all detectors used at this location.
- 5. The cabinet and controller are part of the NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S3, S5, S7, S8, S11
	AUX S1, AUX S4
Phases Used	1, 2, 2PED, 4, 5, 6, 8
Overlap "1"	*
Overlap "2"	NOT USED
Overlap "3"	*

\*See overlap programming detail on sheet 2.

I12U 67 33

FILE J

SLOT 2

**LOWER** 

INPUT FILE POSITION LEGEND: J2L

- flash in accordance with the signal plan.
- 2. Program phases 4 and 8 for Dual Entry.
- 4. If this signal will be managed by an ATMS software, enable controller and detector

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S3, S5, S7, S8, S11
	AUX S1, AUX S4
Phases Used	1, 2, 2PED, 4, 5, 6, 8
Overlap "1"	*
Overlap "2"	NOT USED
Overlap "3"	*
Overlap "4"	NOT USED

INPUT FILE CONNECTION & PROGRAMMING CHART

15.0

LOOP INPUT PIN INPUT DETECTOR CALL DELAY EXTEND EXTEND INITIAL

15

# R-5600 Sig-15

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.	<b>★</b>	21,22	P21, P22	NU	41,42 43	NU	<b>★</b> 51	61,62	NU	NU	81,82	NU	<b>★</b> 11	NU	NU	<b>★</b> 51	NU	NU
RED		128		·	101			134			107			-				
YELLOW	*	129			102		*	135			108							
GREEN		130			103	-		136			109			-			·	
RED ARROW													A121			A114		
YELLOW ARROW						-					-		A122	-		A115		
FLASHING YELLOW ARROW				·		-				·	-		A123			A116		
GREEN ARROW	127						133											
*			113	·		·			·	·	-			-			·	
×			115															

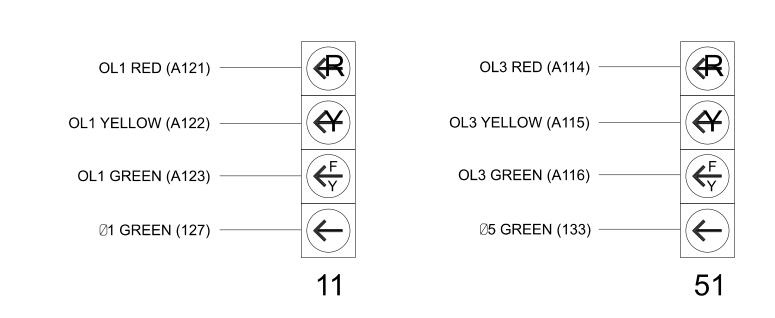
NU = Not Used

\* 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)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0694T2 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

#### LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)

Phase 1 Yellow Field Terminal (126) Phase 5 Yellow Field ACCEPTABLE VALUES Terminal (132) Value (ohms) Wattage 1.5K - 1.9K 25W (min) 2.0K - 3.0K | 10W (min)

- engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

**Plans Prepared By:** DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

Electrical Detail - Sheet 1 of 2 Temporary Design 2 - TMP Ph1, S2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

NC 107 (E. Main Street)

SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road)

Division 14 Jackson County Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE

SEAL CARA 052936 Brittany Groome 8/26/2025

SIG. INVENTORY NO. [4-0694]

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

SIGNATURES COMPLETED

FILE

TB2-1,2

TB3-1,2

TB8-4,6

5A

PED PUSH BUTTONS

P21,P22

ISOLATOR ST NOT USED

ON OFF

RP DISABLE

SF#1 POLARITY

FYA COMPACT—

─ WD 1.0 SEC GY ENABLE

 LEDguard RF SSM

- FYA 3-10

— FYA 1-9

\_\_\_\_ FYA 5-11 FYA 7-12

> > 16

= DENOTES POSITION OF SWITCH

17

WD ENABLE

DC ISOLATOR FILE

INPUT FILE POSITION LAYOUT

(front view)

1 2 3 4 5 6 7 8 9 10 11 12 13 14

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, 2-13, 4-8, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 9-11, 9-13 AND 11-13

4. Integrate monitor with Ethernet network in cabinet.

**REMOVE JUMPERS AS SHOWN** 

. 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.

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

FS = FLASH SENSE ST = STOP TIME

Χ Χ INSTALL DC ISOLATORS IN INPUT FILE SLOT I12. PED 2

Χ

Χ

CALL

Χ

Χ

DURING GREEN

SPECIAL DETECTOR NOTE

1. Install a multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT

2. For Detection Zones 1A and 5A, the equipment placement is typical for a NCDOT installation.

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

1	3
FYA 4 - Section	FYA 4 - Section
2	6
1	5
0	0
0.0	0.0
0.0	0.0
0.0	0.0
	FYA 4 - Section  2  1  0  0.0  0.0

## **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

#### **Channel Configuration**

Channel	Control Type	Control Source	Flach Vallow	Flash Red	Flash Alt	MMU Channel
Chamer	Control Type	Control Source	riasii iellow	Flasii Neu	FIASII AIL	IVIIVIO CHAIITIEI
1	Phase Vehicle	1		Х	Х	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	Х	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	Х	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	Х	8
9	Overlap	1		X	Х	9
10	Overlap	2		X	Х	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		17
18	Overlap	6		X	Х	18



## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold **Unit Flash Parameters** All Red Flash Exit Time

#### COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

> THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0694T2 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 2 of 2 Temporary Design 2 - TMP Ph1, S2

ELECTRICAL AND PROGRAMMING

NC 107 (E. Main Street)

SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road)

Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome

REVISIONS

052936 INIT. DATE

Brittary Groome 8/26/2025 SIG. INVENTORY NO. 14-0694T

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

**Plans Prepared By: ®DRMP** 



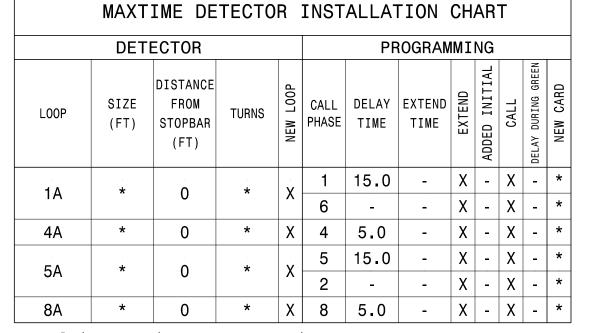
#### 5 Phase Fully Actuated (Time Based Coordination)

# 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.

**PROPOSED** 

- 4. Reposition existing signal heads 11, 21, 22, 51, 61 and 62.
- 5. Disconnect and bag existing pedestrian heads and pushbuttons P21 and P22.
- 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. 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.



\*Multi-Zone Microwave Detection Zone

35 MPH -2% Grade

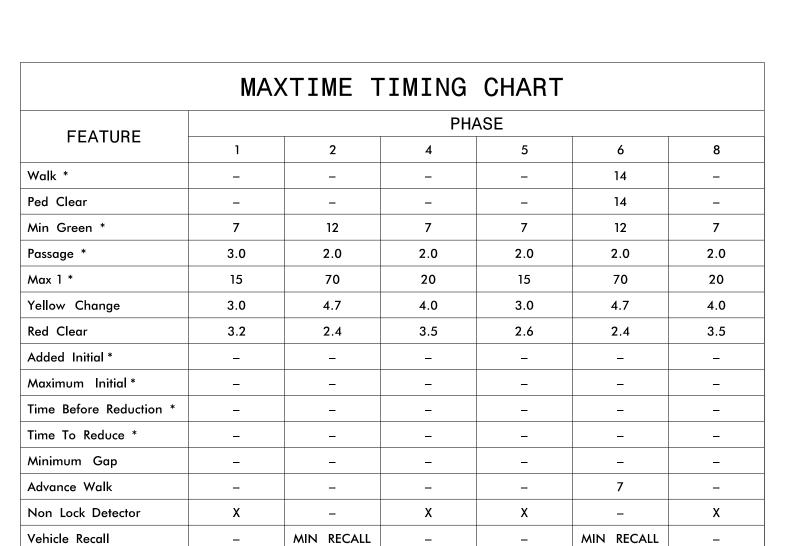
(Design Speed 45 MPH)

# 1+5 PHASING DIAGRAM DETECTION LEGEND DETECTED MOVEMENT UNDETECTED MOVEMENT (OVERLAP) UNSIGNALIZED MOVEMENT $<\!\!\!<\!\!\!--\!\!\!>$ PEDESTRIAN MOVEMENT

4+8

PHASING DIAGRAM

2+5



Microwave Detection									
	(2	PA)	(6	A)					
FUNCTION	Sen	sor 1	Sens	sor 2					
Channel		1		1					
Phase	:	2 6							
Direction of Travel	W	√B	EB						
Туре	Pric	ority	Priority						
Level	2	QUEUE	2	QUEUE					
Detection Zone (ft)	< 750	_	< 750	_					
Range (ft)	600–100	150–100	600–100	150–100					
Enable Speed	Y	Y	Υ	Y					
Speed Range (mph)	35–100	1–35	35–100	1–35					
Enable Estimated Time of Arrival	Y	N	Υ	N					
Estimated Time of Arrival (sec)	2.5–6.5	_	2.5–6.5	_					

Traffic Signal Head  $\bigcirc$ **●** Modified Signal Head N/A Pedestrian Signal Head with Push Button & Sign Signal Pole with Guy Signal Pole with Sidewalk Guy Inductive Loop Detector Controller & Cabinet Junction Box Oversized Junction Box 2-in Underground Conduit Right of Way Non-Intrusive Detection Zone Directional Arrow N/A Directional Drill — DD — Type II Signal Pedestal Permanent Utility Easement N/A Guardrail Construction Zone N/A N/A U/G Sanitary Sewer U/G Water Line N/A O/H Pwr. & Utl. Lines N/A

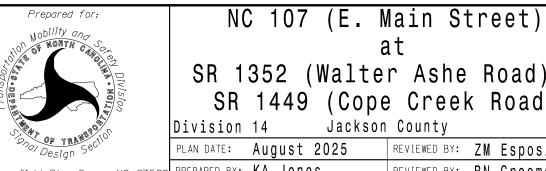
Barricade

LEGEND

**EXISTING** 

## Signal Upgrade Temporary Design 3 - TMP Ph2, S1

1"=40'



SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road)

N/A

Division 14 Jackson County REVIEWED BY: ZM Esposito REVIEWED BY: BN Groome PREPARED BY: KA Jones REVISIONS INIT. DATE

052936 Brittany Groome 8/26/2025 SIG. INVENTORY NO. 14-0694T

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

 $CAR^{\prime\prime}$ 

(Design Speed 45 MPH)

51

SIGNAL FACE I.D.

All Heads L.E.D.

21,22

P61,P62

41,42,43 61,62

81,82

61

NC 107 (E. Main Street)

 $\longrightarrow$ 

35 MPH +1% Grade

TABLE OF OPERATION

SIGNAL

FACE

21,22

41,42,43

51

61,62

81,82

PHASE

│<del></del>╼┈│╼╤┈│╼╀│╼┞

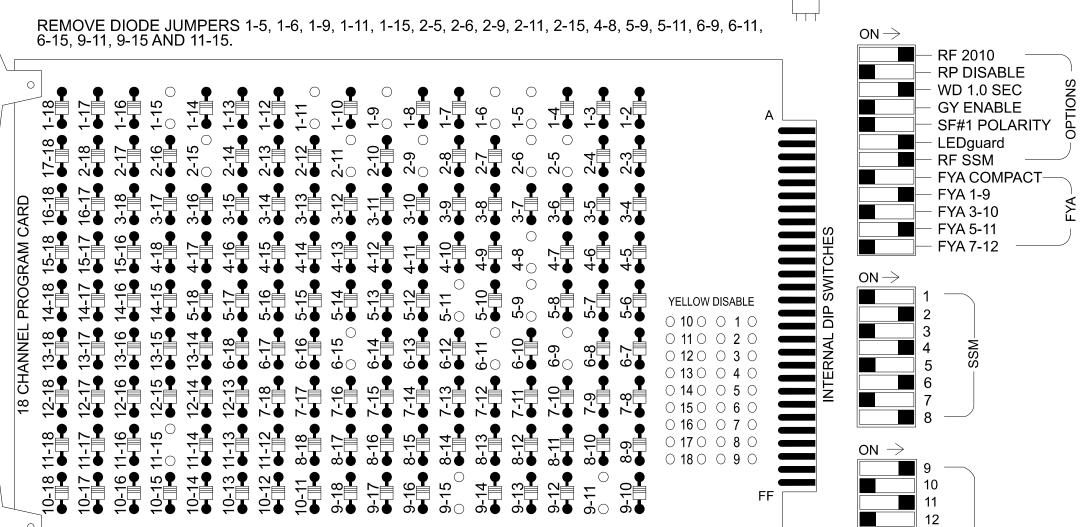
RRRRRGR

P61, P62 | DW | W | DW | W | DW | DRK

**Plans Prepared By:** DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

(remove jumpers and set switches as shown)

ON OFF WD ENABLE (



#### REMOVE JUMPERS AS SHOWN

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.

COMPONENT SIDE

- 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 phases 4 and 8 for Dual Entry.
- 3. Program controller to start up in phase 2 Green No Walk and phase 6 Green No
- 4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- 5. The cabinet and controller are part of the NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller	2070LX
Cabinet	
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S5, S7, S8, S9, S11
	AUX S1, AUX S4
Phases Used	1, 2, 4, 5, 6, 6PED, 8
Overlap "1"	·····*
Overlap "2"	NOT USED
Overlap "3"	*

\*See overlap programming detail on sheet 2.

Overlap "4".....

#### SIGNAL HEAD HOOK-UP CHART S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 AUX S1 AUX S2 AUX S3 AUX S4 S5 S6 CMU CHANNEL 1 2 13 3 4 14 5 6 15 7 8 16 9 10 17 11 12 18 1 2 2 3 4 4 5 6 6 FED 7 8 8 OL1 OL2 SPARE OL3 OL4 SPARE 11 21,22 NU NU 41,42 NU 51 61,62 $\frac{P61}{P62}$ NU 81,82 NU 11 NU NU 51 NU NU RED 108 102 **\*** 135 YELLOW ★ 129 109 130 103 136 GREEN RED A114 ARROW YELLOW A122 A115 ARROW FLASHING YELLOW A123 A116 GREEN 133 ARROW

R-5600

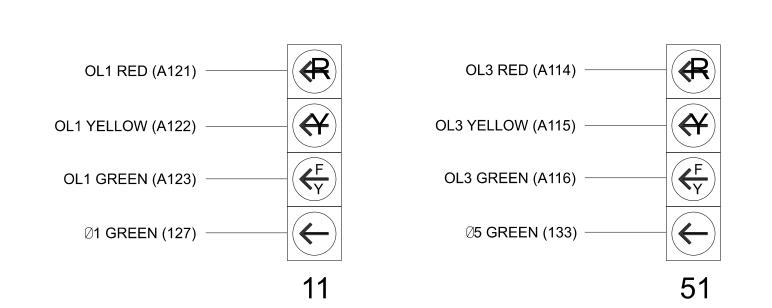
Sig-16

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)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0694T3 DESIGNED: Aug 2025 SEALED: 8/26/2025

REVISED: N/A

Electrical Detail - Sheet 1 of 2 Temporary Design 3 - TMP Ph2, S1

ELECTRICAL AND PROGRAMMING NC 107 (E. Main Street) DETAILS FOR:

SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road) Division 14 Jackson County

Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE

CARA 052936 Brittany Groome 8/26/2025

SIG. INVENTORY NO. [4-0694]

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

SIGNATURES COMPLETED

SEAL

119 121

## INPUT FILE POSITION LAYOUT

(front view)

	_	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Ø 1	S	S	S	S	S	S	S	S	S	S	S	Ø6 PED	FS
FILE	U	1A	Ŏ T	Ŏ T	Ö	O T	Ö	Ö	O T	Ö	Ö	S L O T	Ö	DC ISOLATOR	DC ISOLATOR
" "	,	NOT	E M P	E M P	E M P	E M P	E M P	E M P	E M P	E M P	E M P	E M P	E M P	NOT	ST
	-	USED	T Y	T Y	T Y	Ť	Y	Y	T Y	Y	Y	T Y	Y	USED	DC ISOLATOR
		Ø 5	S L	S L	S L	S L	S L	S L	S L	S L	S L	S L	S L	S L	S L
FILE	U	5A	O T	O T	O T	O T	O T	O T	O T	O T	O T	O T	O T	O T	O T
"J"	L	NOT USED	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y							
	Ĺ	EX.: 1A, 2A, ETC. = LOOP NO.'S FS = FLASH SENSE													

FS = FLASH SENSE ST = STOP TIME

12

] 13 14

15

16

= DENOTES POSITION OF SWITCH

17

#### INPUT FILE CONNECTION & PROGRAMMING CHART

...NOT USED

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	2 1411	I1U	1411	1411	56	18	1	1	15.0		Х		Х	
IA	102-1,2		50	-	29	6			Х		Х			
5A	TB3-1,2	J1U	1411	55	17	15	5	15.0		Х		Χ		
JA	103-1,2		33	_	31	2			Х		Х			
PED PUSH BUTTONS							NOTE: INSTALL DC ISOLATORS							
P61,P62	TB8-7,9	I13U	68	34	6	PED 6	IN INPUT FILE SLOT 113.							

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)

Phase 1 Yellow Field Terminal (126) Phase 5 Yellow Field Terminal (132)

#### SPECIAL DETECTOR NOTE

- Install a multi-zone microwave detection system for vehicle detection.
   Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.
- 2. For Detection Zones 1A and 5A, the equipment placement is typical for a NCDOT installation.



#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

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

## **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

#### **Channel Configuration**

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	Χ	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	Х	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	Χ	8
9	Overlap	1		X	Χ	9
10	Overlap	2		X	Χ	10
11	Overlap	3		X		11
12	Overlap	4		Х		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		17
18	Overlap	6		X	Х	18



## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold **Unit Flash Parameters** All Red Flash Exit Time

#### COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

> THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0694T3 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

> > Electrical Detail - Sheet 2 of 2 Temporary Design 3 - TMP Ph2, S1

ELECTRICAL AND PROGRAMMING

NC 107 (E. Main Street)

SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road)

Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome

REVISIONS

INIT. DATE

Brittany Groome 8/26/2025 SIG. INVENTORY NO. 14-0694T

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

**®DRMP** 



#### PHASING DIAGRAM

TABLE OF OPERATION

SIGNAL

FACE

21,22

41,42,43

51

61,62

81,82

P21, P22

P41, P42

P61,P62

P81,P82

PHASE

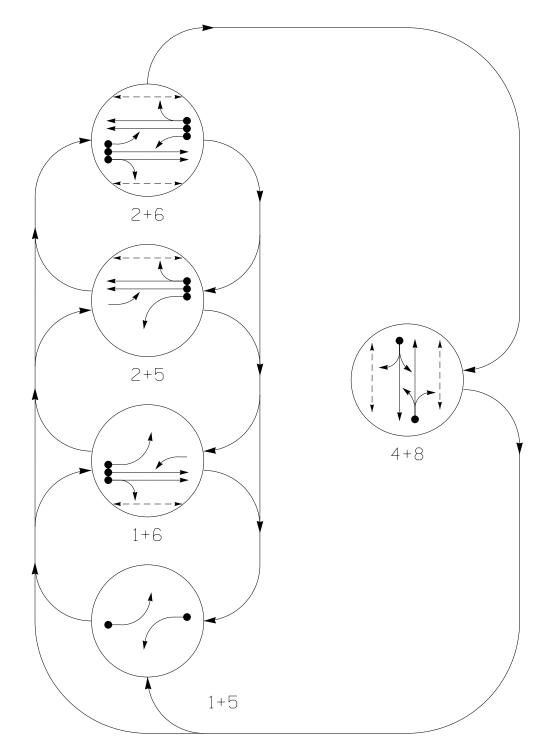
r | r | r | r | g | f

DW DW W DW DR

DW DW DW DW W DF

DW DW DW DW W DF

DW | W | DW | W | DW | DR K



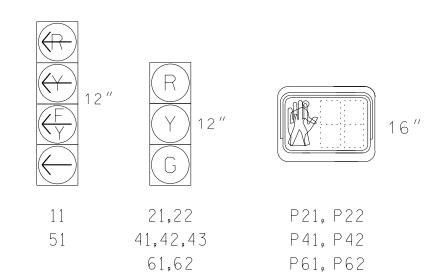
#### PHASING DIAGRAM DETECTION LEGEND

DETECTED MOVEMENT UNDETECTED MOVEMENT (OVERLAP)

UNSIGNALIZED MOVEMENT  $<\!\!\!<\!\!\!--\!\!\!>$  PEDESTRIAN MOVEMENT

## SIGNAL FACE I.D.

All Heads L.E.D.



81,82

P81, P82

MAXTIME DETECTOR INSTALLATION CHART												
	DET	ECTOR	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	1.0 * 0		*	X	1	15.0	-	Χ	-	Χ	-	*
17		U		^	6	-	-	Χ	1	Χ	•	*
4A	4A * 0			Χ	4	5.0	-	Χ	1	Χ	•	*

\* X 8 5.0

\*Multi-Zone Microwave Detection Zone

#### 5 Phase Fully Actuated (Time Based Coordination)

#### 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.

<u>PROPOSED</u>

N/A

- 4. Unbag and reconnect existing pedestrian heads and pushbuttons P21 and P22.
- 5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 6. Program pedestrians heads to countdown the flashing "Don't Walk" time only.
- 7. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.

LEGEND

Traffic Signal Head

Modified Signal Head

Pedestrian Signal Head

with Push Button & Sign

Signal Pole with Guy

Signal Pole with Sidewalk Guy

Inductive Loop Detector

Controller & Cabinet

Junction Box

Oversized Junction Box

Right of Way

Directional Arrow

Directional Drill

Metal Pole with Mastarm Permanent Utility Easement

Guardrail

U/G Sanitary Sewer

U/G Water Line O/H Pwr. & Utl. Lines

Utility Pole

Construction Zone

Non-Intrusive Detection Zone

2-in Underground Conduit

**EXISTING** 

**●** 

N/A

N/A 

N/A 

\_\_\_\_\_SS\_\_\_\_

---PROP O/H TEL CATV & FO LINES---

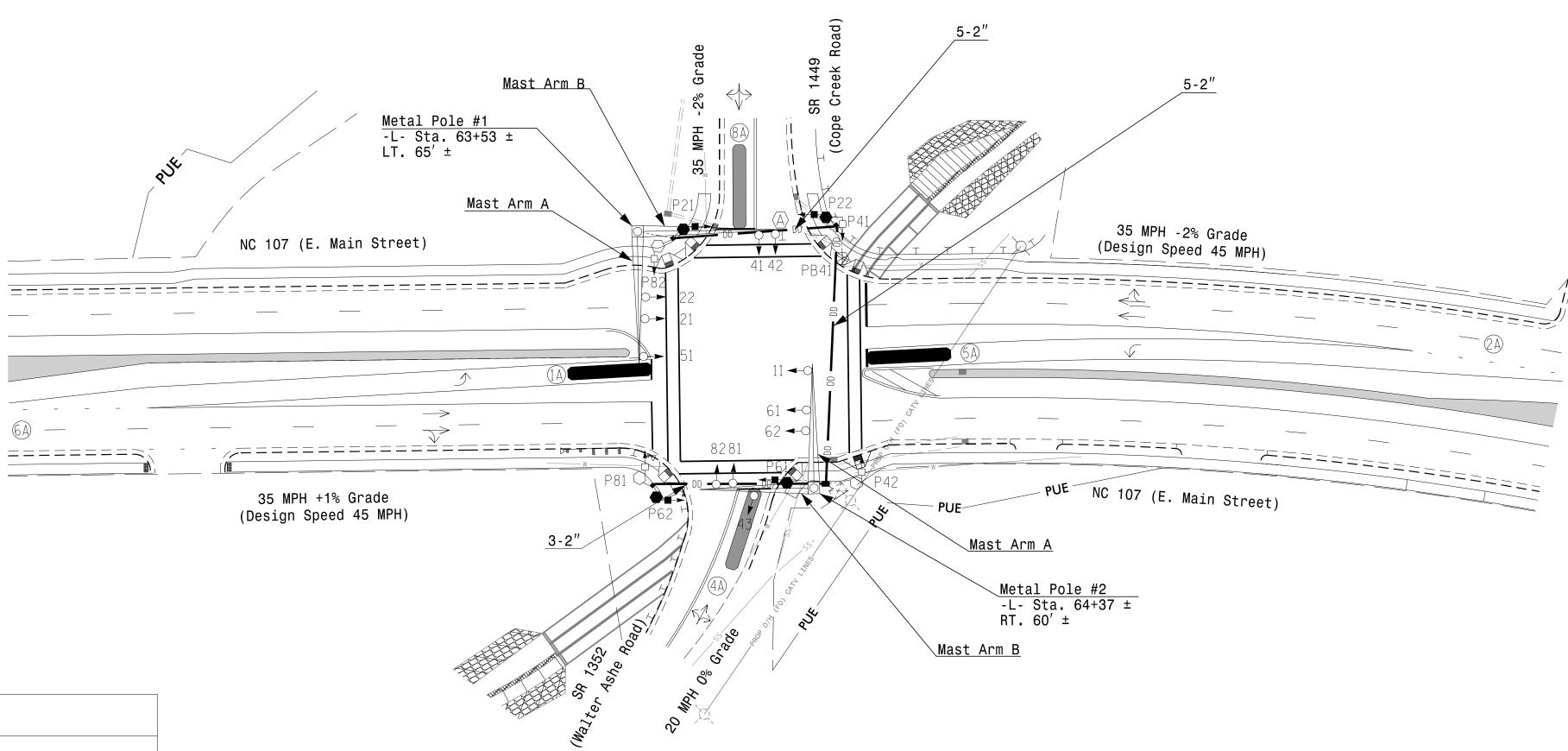
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N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

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



	MAX	KTIME 7	TIMING	CHART							
	PHASE										
Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change  Red Clear  Added Initial *  Maximum Initial *  Time Before Reduction *  Time To Reduce *  Minimum Gap  Advance Walk  Non Lock Detector  Vehicle Recall	1	2	4	5	6	8					
Walk *	_	14	12	_	14	13					
Ped Clear	_	13	23	_	14	25					
Min Green *	7	12	7	7	12	7					
Passage *	3.0	2.0	2.0	2.0	2.0	2.0					
Max 1 *	15	70	20	15	70	20					
Yellow Change	3.0	4.7	4.0	3.0	4.7	4.0					
Red Clear	2.8	2.0	3.5	2.8	2.0	3.5					
Added Initial *	_	-	_	_	_	_					
Maximum Initial *	_	-	_	_	_	_					
Time Before Reduction *	_	_	_	_	_	_					
Time To Reduce *	_	_	_	_	_	_					
Minimum Gap	_	_	_	_	_	_					
Advance Walk	_	7	5	_	7	6					
Non Lock Detector	Х	-	Х	Х	_	Х					
Vehicle Recall	_	MIN RECALL	_	_	MIN RECALL	_					
Dual Entry	_	_	Х	_	_	Х					

\* 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.

Microwa	ve De	tecti	_on	
	(2	?A)	(6	Ā
FUNCTION	Sen	sor 1	Sen	0 150–100 Y 0 1–35 N
Channel		1		1
Phase	:	2		6
Direction of Travel	W	√B	E	В
Туре	Pric	ority	Prio	ority
Level	2	QUEUE	2	QUEUE
Detection Zone (ft)	< 750	_	< 750	_
Range (ft)	600–100	150–100	600–100	150–100
Enable Speed	Υ	Υ	Υ	Y
Speed Range (mph)	35–100	1–35	35–100	1–35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5–6.5	_	2.5–6.5	_

Signal Upgrade





1"=40'

**Plans Prepared By:** 

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

NC 107 (E. Main Street) SR 1352 (Walter Ashe Road)

N/A

SR 1449 (Cope Creek Road) Division 14 Jackson County Sylva PLAN DATE: August 2025

REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE

052936 Brittary Groome 8/26/2025

(remove jumpers and set switches as shown)

SW2 REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 4-8, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 8-14, 8-16, 9-11, 9-13, 9-15, 11-13, 11-15, 13-15, AND 14-16.

#### REMOVE JUMPERS AS SHOWN

- 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 phases 4 and 8 for Dual Entry and Simultaneous Start.
- 3. Program controller to start up in phase 2 Green No Walk and phase 6 Green No
- 4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- 5. The cabinet and controller are part of the NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller... Cabinet... ..332 w/ Aux Software... ...Q-Free MAXTIME Cabinet Mount..... Output File Positions... ..18 With Aux. Output File Load Switches Used... ...S1, S2, S3, S5, S6, S7, S8, S9 S11, S12, AUX S1, AUX S4 Phases Used... Overlap "1"... Overlap "2".....NOT USED Overlap "3".....

Overlap "4"..... ...NOT USED

\*See overlap programming detail on sheet 2.

#### SIGNAL HEAD HOOK-UP CHART S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 AUX S1 AUX S2 AUX S3 AUX S4 S5 S6 CMU CHANNEL 1 2 13 3 4 14 5 6 15 7 8 16 9 10 17 11 12 18 1 2 2 3 4 4 5 6 6 FED 7 8 8 OL1 OL2 SPARE OL3 OL4 SPARE $11^{*}$ 21,22 $\frac{P21}{P22}$ NU $\frac{41,42}{43}$ $\frac{P41}{P42}$ $51^{*}$ 61,62 $\frac{P61}{P62}$ NU $\frac{81,82}{P82}$ $\frac{P81}{P82}$ $11^{*}$ NU NU $\frac{1}{51}$ NU NU HEAD NO. RED 108 102 **\*** 135 136 109 GREEN 130 103 RED A114 ARROW YELLOW A122 A115 ARROW FLASHING YELLOW A123 A116 GREEN 127 133 **ARROW**

NU = Not Used

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

104

106

★ See pictorial of head wiring in detail this sheet.

113

115

## FYA SIGNAL WIRING DETAIL

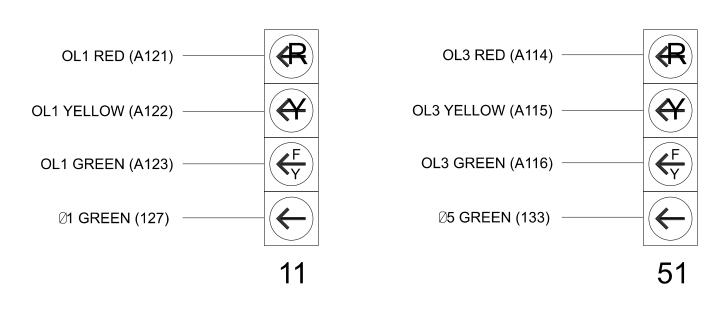
119

121

110

112

(wire signal heads as shown)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0694T4 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

#### INPUT FILE POSITION LAYOUT

(front view)

	_	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Ø 1	S L	Ø2 PED	Ø6 PED	FS									
FILE	U	1A	O T	O T	O T	O T	O T	O T	o T	O T	O T	O T	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR
" "	.	NOT	E M P	E M P	E M P	E M P T	E M P	E M P	E M P	E M P	E M P	E M P	Ø4 PED	Ø8 PED	ST
	-	USED	T Y	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR									
		Ø 5	S	S	s	S	 S	S	ş	S	S		S	S	S
FILE	U	5A	O T	O T	Ŏ T	O T	Ŏ T	Ŏ T	o T	P P	O T	Ŏ	O T	Ŏ T	O
"J"	L	NOT USED	E M P T Y												
	L	EX.: 1A	, 2A, ET	C. = LOO	P NO.'S				FS =	FLASH S	ENSE				

FS = FLASH SENSE ST = STOP TIME

ON OFF

- RF 2010

─ WD 1.0 SEC GY ENABLE

■ LEDguard

\_\_\_ RF ŠSM

FYA 1-9

FYA 5-11
FYA 7-12

12

] 13 **14** 

15

16

17

= DENOTES POSITION OF SWITCH

- FYA 3-10

RP DISABLE

SF#1 POLARITY

FYA COMPACT—

WD ENABLE (

#### 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			
1 /	TD2 1 2	I1U	56	18	1	1	15.0		Х		Χ				
1A	102-1,2	TB2-1,2 I1U		-	29	6			Х		Χ				
E A	TD2 1 2	1411	55	17	15	5	15.0		Х		Х				
5A	TB3-1,2	J1U	55	-	31	2			Х		Х				
PED PUSH BUTTONS															
P21,P22	TB8-4,6	I12U	67	33	2	PED 2	NOTE: INSTALL DC ISOLATORS IN INPUT FILE SLOTS								
P41,P42	TB8-5,6	I12L	69	35	4	PED 4									
P61,P62	TB8-7,9	I13U	68	34	6	PED 6	IN INPUT FILE SLUTS I12 AND I13.								
P81,P82	TB8-8,9	I13L	70	36	8	PED 8									

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)

Phase 1 Yellow Field Terminal (126)

Phase 5 Yellow Field Terminal (132)

## SPECIAL DETECTOR NOTE

- Install a multi-zone microwave detection system for vehicle detection.
   Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.
- 2. For Detection Zones 1A and 5A, the equipment placement is typical for a NCDOT installation.

**Plans Prepared By:** 

Electrical Detail - Sheet 1 of 2 Temporary Design 4 - TMP Ph3, S1

ELECTRICAL AND PROGRAMMING DETAILS FOR:

NC 107 (E. Main Street)

SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road) Division 14 Jackson County

Sylva PLAN DATE: August 2025 REVIEWED BY: BN Groome REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVISIONS INIT. DATE

SEAL 052936 Brittany Groome 8/26/2025

SIG. INVENTORY NO. [4-0694]

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

SIGNATURES COMPLETED

R-5600

Sig-17.

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

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

## **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

#### **Channel Configuration**

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	Х	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	Х	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	Х	8
9	Overlap	1		X	Х	9
10	Overlap	2		X	Х	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		17
18	Overlap	6		X	Х	18



## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold **Unit Flash Parameters** All Red Flash Exit Time

#### COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

> THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0694T4 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

> > Electrical Detail - Sheet 2 of 2 Temporary Design 4 - TMP Ph3, S1

ELECTRICAL AND PROGRAMMING

NC 107 (E. Main Street)

SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road)

Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome

REVISIONS

INIT. DATE

Brittany Groome 8/26/2025 SIG. INVENTORY NO. 14-0694T

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

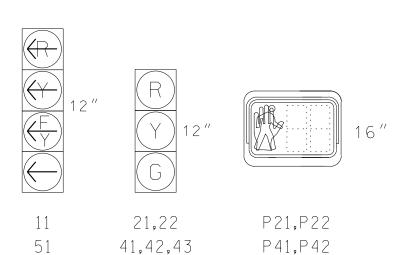
**Plans Prepared By: ®DRMP** 



Sig-18.0 R-5600

#### SIGNAL FACE I.D.

All Heads L.E.D.



P61,P62

P81,P82

61,62

81,82

MAXTIME DETECTOR INSTALLATION CHART													
	DET	ECTOR		PROGRAMMING									
L00P	SIZE (FT)	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD				
1A	*	* 0 * >		X	1	15.0	<u>-</u>	Χ	_	Χ	_	*	
IA				^	6	-	-	Χ	-	Χ	-	*	
4A	*	0	*	Χ	4	5.0	-	Χ	-	Χ	_	*	
<b>5</b> A	*		*	V	5	15.0	-	Χ	_	Χ	_	*	
5A		0		* X		-	-	Χ	_	Χ	_	*	
8A	*	0	*	Χ	8	5.0	-	χ	-	Χ	_	*	

**Plans Prepared By:** 

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

Mast Arm A

Metal Pole #2

<u>Mast Arm B</u>

\*Multi-Zone Microwave Detection Zone

#### 5 Phase Fully Actuated (NC 107 - D14-14)

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. Repostion existing signal heads 11 and 51.

**PROPOSED** 

N/A

- 5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 6. Program pedestrian heads to countdown the flashing "Don't Walk" time
- 7. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.

LEGEND

Traffic Signal Head

Modified Signal Head

Sign Pedestrian Signal Head With Push Button & Sign

Signal Pole with Guy Signal Pole with Sidewalk Guy Inductive Loop Detector

Controller & Cabinet

Junction Box

Oversized Junction Box

Right of Way

Directional Arrow

Directional Drill

Metal Pole with Mastarm Type I Pushbutton Post

Type II Signal Pedestal

Permanent Utility Easement

Guardrail

U/G Sanitary Sewer

U/G Water Line

O/H Pwr. & Utl. Lines

Utility Pole

Right "TURNING VEHICLES" Yield "TO" Pedestrians Sign (R10-15R)

Non-Intrusive Detection Zone

?-in Underground Conduit

**EXISTING** 

**—** 

N/A

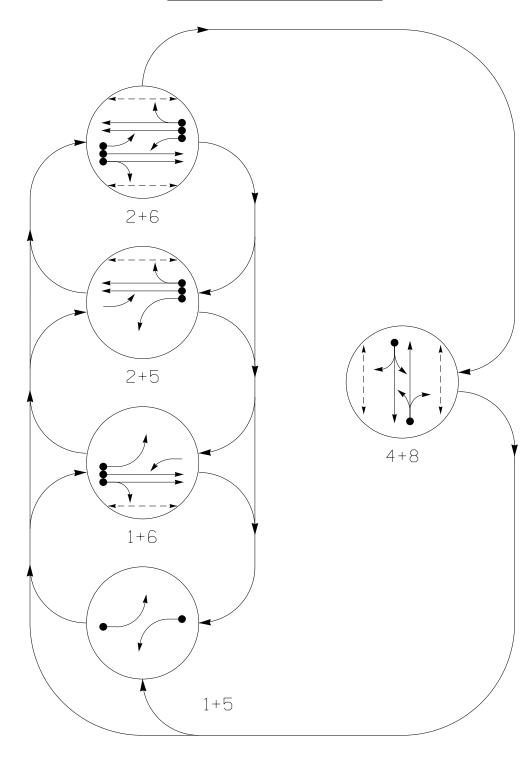
\_\_\_\_

N/A 

N/A

---PROP O/H TEL CATV

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



PHASING DIAGRAM

#### PHASING DIAGRAM DETECTION LEGEND

DETECTED MOVEMENT

**FEATURE** 

Ped Clear

Passage

Red Clear

Min Green \*

Yellow Change

Added Initial \*

Maximum Initial \*

Time To Reduce

Minimum Gap

Advance Walk

Vehicle Recall

Non Lock Detector

Time Before Reduction

- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT  $<\!\!--\!\!>$  PEDESTRIAN MOVEMENT

Metal	Mast Arm B  Pole #1  Pole #1	SR 1449 (Cope Creek Road)		
NC 107 (E. Main Street)  ==================================	1st Arm A P21   P21   P82	P22 PB41 P41 P41 PF T T T T T T T T T T T T T T T T T T	35 MPH -2% Grade (Design Speed 45 MPH) ====================================	
<ul><li></li></ul>		51 - 5A -		
35 MPH +1% Grade (Design Speed 45 MPH)	======================================	/ <b>\</b>	PUE NC 107 (E. Main Street)	

. 1		

TABLE OF OPERATION

SIGNAL

FACE

21,22

41,42,43

51

61,62

81,82

P21**,**P22

P41,P42

P61,P62

P81,P82

PHASE

r | r | r | r | g | f

DW DW W W DW DRI

DW DW DW DW W DR

DW | W | DW | W | DW | DR K

DW DW DW DW W DF

MAXTIME TIMING CHART

14

23

2.0

40

4.0

3.5

7

14

2.0

70

4.7

2.0

MIN RECALL

3.0

3.0

2.8

PHASE

5

7

2.0

15

3.0

2.9

\_

\_

Χ

6

2.0

4.7

MIN RECALL

14

25

2.0

40

4.0

3.5

Microwave Detection **FUNCTION** Sensor 1 Sensor 2 Channel **Direction of Travel** EB Priority QUEUE QUEUE Detection Zone (ft) < 750 < 750 Range (ft) 600–100 150-100 600–100 150-100 **Enable Speed** Speed Range (mph) 35-100 1–35 35-100 1–35 **Enable Estimated Time of Arrival** 2.5-6.5 2.5-6.5 Estimated Time of Arrival (sec)

Signal Upgrade - Final Design

1"=40'

NC 107 (E. Main Street) SR 1352 (Walter Ashe Road)

SR 1449 (Cope Creek Road) Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE

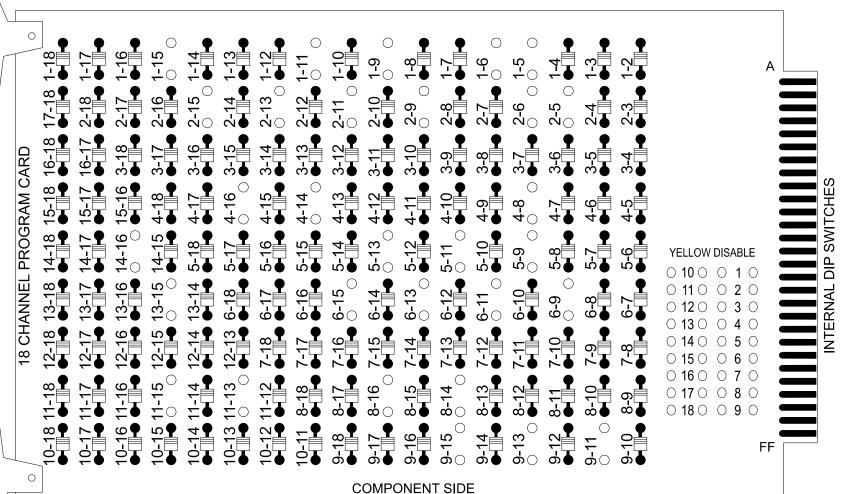
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Brittany Groome 8/26/2025 14-0694

(remove jumpers and set switches as shown)

SW2 REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 4-8, 4-14, 4-16, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 6-15, 8-14, 8-16, 9-11, 9-13, 9-15, 11-13, 11-15, 13-15, AND 14-16.



#### REMOVE JUMPERS AS SHOWN

- 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 phases 4 and 8 for Dual Entry.
- 3. Program controller to start up in phase 2 Green No Walk and phase 6 Green No
- 4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- 5. The cabinet and controller are part of the NC 107 D14-14 System.

#### **EQUIPMENT INFORMATION**

Controller	2070LX
Cabinet	332 w/ Aux
Software	.Q-Free MAXTIME
Cabinet Mount	.Base
Output File Positions	.18 With Aux. Output File
Load Switches Used	S1, S2, S3, S5, S6, S7, S8, S9
	S11, S12, AUX S1, AUX S4
Phases Used	1, 2, 2PED, 4, 4PED, 5, 6, 6PED, 8, 8PED
Overlap "1"	*
Overlap "2"	NOT USED
Overlap "3"	*
Overlap "4"	NOT USED

\*See overlap programming detail on sheet 2.

#### SIGNAL HEAD HOOK-UP CHART S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 AUX S1 AUX S2 AUX S3 AUX S4 S5 S6 CMU CHANNEL 1 2 13 3 4 14 5 6 15 7 8 16 9 10 17 11 12 18 1 2 2 3 4 4 5 6 6 FED 7 8 8 OL1 OL2 SPARE OL3 OL4 SPARE 11 21,22 P21, P22 NU 41,42 P41, P42 51 61,62 P61, P62 NU 81,82 P81, P82 11 NU NU NU NU NU NU HEAD NO. RED 108 102 **\*** 135 YELLOW **\*** 129 109 130 103 136 GREEN RED A114 ARROW YELLOW A122 A115 ARROW FLASHING YELLOW A123 A116 GREEN 127 133 ARROW 104 119 110 113 115 106 121 112

R-5600

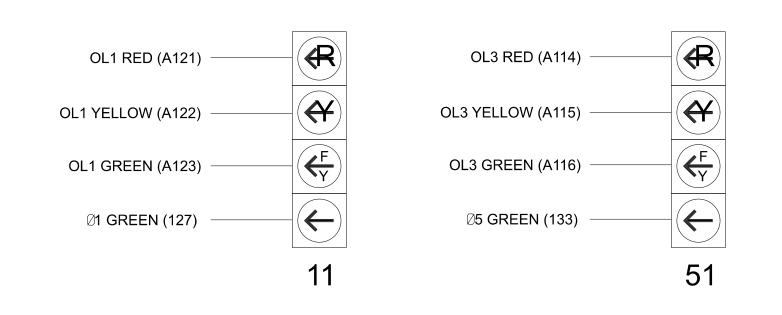
Sig-18 '

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)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0694 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

## INPUT FILE POSITION LAYOUT

(front view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE U	Ø 1 1A	SLOT EMP	SLOT EM	S L OT	SLOT EMP	S L O T E M	S L O T	S L O T E M P	S L O T E M	SLOT EMP	SLOT EMP	DC ISOLATOR	Ø 6 PED  DC ISOLATOR Ø 8 PED	DC ISOLATOR
. L	NOT USED	P T Y	P T Y	M P T Y	P T Y	P T Y	M P T Y	P T Y	P T Y	P T Y	P T Y	DC ISOLATOR	DC ISOLATOR	DC
FILE U	Ø 5 <b>5A</b>	S L OT	SLOT	S L O T	SLOT	SLOT	S L O T	S L O T	S L O T	SLOT	S L O T	S L O T	S L O T	S L O T
"J" L	NOT USED	E M P T Y	EMPTY	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y
	EX.: 1 <i>A</i>	A, 2A, ET	C. = LOC	P NO.'S					FS =	FLASH S	ENSE			

ST = STOP TIME

ON OFF

- RF 2010

─ WD 1.0 SEC GY ENABLE

■ LEDguard

\_\_\_ RF ŠSM

FYA 1-9

FYA 5-11 FYA 7-12

12

] 13 14

15

16

■ = DENOTES POSITION OF SWITCH

17

- FYA 3-10

RP DISABLE

SF#1 POLARITY

FYA COMPACT—

WD ENABLE (

#### 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	15.0		Х		Х	
IA	IDZ-1,Z	110	96	-	29	6			Х		Χ	
5A	TB3-1,2	J1U	55	17	15	5	15.0		Х		Х	
ЭA	100-1,2	310	55	-	31	2			Х		Х	
PED PUSH BUTTONS												
P21,P22	TB8-4,6	I12U	67	33	2	PED 2	NOTE:					
P41,P42	TB8-5,6	I12L	69	35	4	PED 4		. DC ISOLAT T FILE SLOT				
P61,P62	TB8-7,9	I13U	68	34	6	PED 6	IN INFO		J			
P81,P82	TB8-8,9	I13L	70	36	8	PED 8						

INPUT FILE POSITION LEGEND: J2L FILE J -SLOT 2 LOWER

#### LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)

Phase 1 Yellow Field Terminal (126) ACCEPTABLE VALUES Value (ohms) Wattage 1.5K - 1.9K 25W (min) 2.0K - 3.0K | 10W (min)

Phase 5 Yellow Field Terminal (132)

#### SPECIAL DETECTOR NOTE

- 1. Install a multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.
- 2. For Detection Zones 1A and 5A, the equipment placement is typical for a NCDOT installation.



## Electrical Detail

Final Design - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING NC 107 (E. Main Street) DETAILS FOR:

SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road)

Division 14 Jackson County Sylva PLAN DATE: August 2025 REVIEWED BY: BN Groome REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVISIONS INIT. DATE

SEAL CARA 052936 Brittany Groome 8/26/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

SIGNATURES COMPLETED

SIG. INVENTORY NO.

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

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

## **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

#### **Channel Configuration**

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	Х	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	Χ	3
4	Phase Vehicle	4		Х		4
5	Phase Vehicle	5		Х		5
6	Phase Vehicle	6		X	Χ	6
7	Phase Vehicle	7		Х		7
8	Phase Vehicle	8		X	Χ	8
9	Overlap	1		X	Χ	9
10	Overlap	2		X	Х	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		17
18	Overlap	6		X	Х	18



## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold **Unit Flash Parameters** All Red Flash Exit Time

#### COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

> THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-0694 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail

Final Design - Sheet 2 of 2

ELECTRICAL AND PROGRAMMING

NC 107 (E. Main Street) SR 1352 (Walter Ashe Road)

SR 1449 (Cope Creek Road) Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: BN Groome PREPARED BY: KA Jones REVIEWED BY: ZM Esposito

REVISIONS

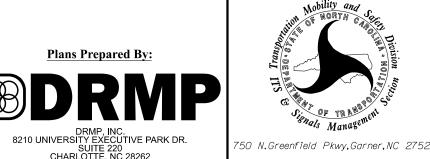
Sylva 052936 INIT. DATE

Brittary Groome 8/26/2025 SIG. INVENTORY NO.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

**Plans Prepared By:** 



LOADING

SYMBOL

PROJECT REFERENCE NO. R-5600 Sig-18.3

MAST ARM LOADING SCHEDULE SIZE WEIGHT DESCRIPTION AREA RIGID MOUNTED SIGNAL HEAD 16.3 S.F. 103 LBS 12"-5 SECTION-WITH BACKPLATE RIGID MOUNTED SIGNAL HEAD 74 LBS 12"-4 SECTION-WITH BACKPLATE

9.3 S.F.

1.0 S.F.

25.5"W

52.5″L

X 11.0" L

60 LBS

30 LBS

24.0" W X 36 LBS 96.0"L

#### **NOTES**

Street Name

- 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.

RIGID MOUNTED SIGNAL HEAD

12"-3 SECTION-WITH BACKPLATE

CCTV CAMERA

POLE-MOUNTED

STREET NAME SIGN

RIGID MOUNTED

- 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. 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. This requires staggering the connections. Use elevation data for each arm to
- determine appropriate connection points. 5. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- 6. The mast arm attachment height (H1) shown is based on the following design assumptions:
- a. Nominal vertical rise in mast arm is 5 feet as measured from the centerline of the arm base to the centerline of the free end of the arm.
- 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.
- f. Provide horizontal distance from the proposed centerline of the foundation to the edge of travelway. Refer to the Elevation Data Chart for elevation difference between the proposed foundation ground level and the edge of travelway. This information is necessary to ensure that the roadway clearance is maintained at the edge of the travelway and to aid in the camber design of the arm.
- 7. The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
- Mast arm attachment height (H1) plus 2 feet, or
- H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot, or From top of CCTV Camera assembly plus 2 feet.
- 8. 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.
- 9. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- 10. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

All metal poles and arms should be black in color as specified in the project special provisions.

# NCDOT Wind Zone 5 (110 mph)



N/A

NC 107 (E. Main Street) SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road)

Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Espostio PREPARED BY: DJ White REVIEWED BY: BN Groome REVISIONS INIT. DATE

052936 Brittany Groome 8/26/2025 SIG. INVENTORY NO. |4-0694

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

Design Loading for METAL POLE NO. 1, MAST ARM A Ç Pole 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 17 feet See Note elevation data below which was obtained by field measurement or from available project survey data. Street Name Elevation Data for Mast Arm 5' Rise Elevation Differences for: Baseline reference point at See Note 4 Elevation difference at High point of roadway surface Maximum Elevation difference at 25.6 ft. Edge of travelway or face of curb Roadway Clearance Design Height 17 ft. H1= 13.1' Minimum 16.5 ft. See Note 6 ARM A See Note See Note - High Point of Roadway Surface -Foundation

Edge of travelway

or face of curb

Street Name

High Point of Roadway Surface

6' 4' 4'

Base line reference elev. = 2087 ft

Elevation View @ 270

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

↑See Note See Note

Base line reference elev. = 2087 ft.

Elevation View @ O

Edge of travelway

or face of curb

See Note

See Note 4

See Note

© Foundation

See lote

H1=13.1'

See Note

DESIGN REFERENCE MATERIAL Terminal ,Compartmen @ 180° BETWEEN ARMS ARM B

POLE RADIAL ORIENTATION

SPECIAL NOTE

Attachment (H1)

Arm B

-0.3 ft.

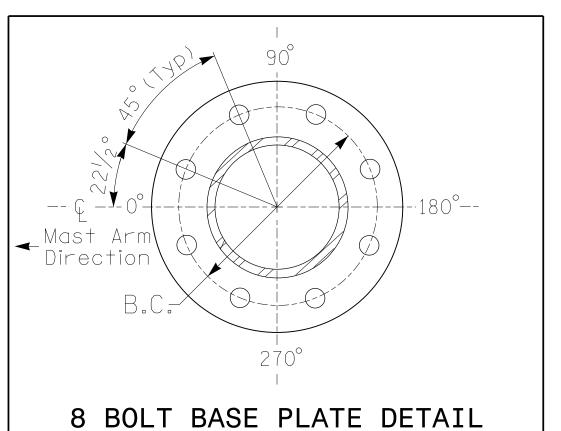
-0.4 ft.

Arm A

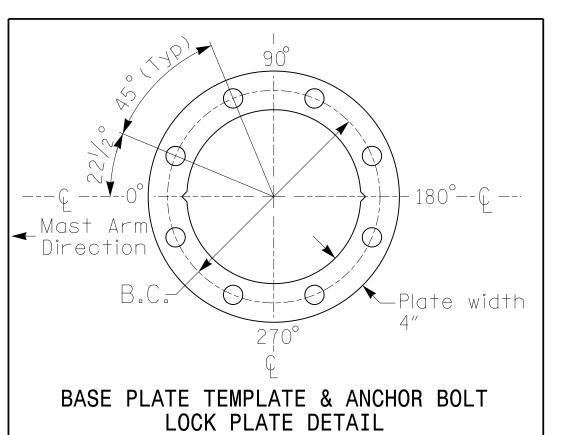
-1.9 ft.

-1.6 ft.

2087.0 ft. 2087.0 ft



See Note 5



For 8 Bolt Base Plate

5' Rise Maximum 25.6 ft. Roadway Clearance Design Height 17 ft. Minimum 16.5 ft. Plans Prepared By: DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

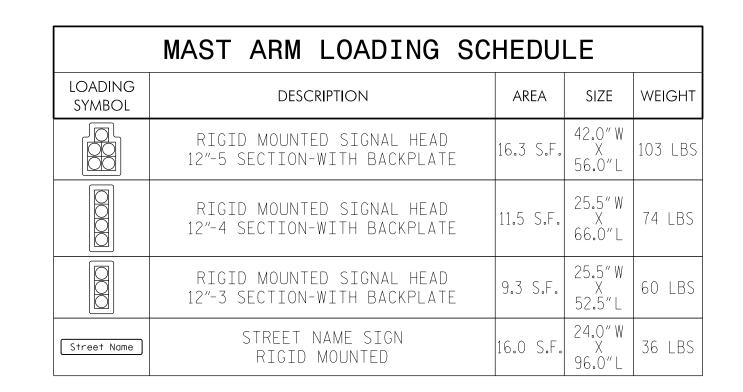
5' Rise

Roadway Clearance

Design Height 17 ft. Minimum 16.5 ft.

Maximum

25.6 ft.



#### 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

- 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. 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. This requires staggering the connections. Use elevation data for each arm to determine appropriate connection points.
- 5. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- 6. The mast arm attachment height (H1) shown is based on the following design assumptions: a. Nominal vertical rise in mast arm is 5 feet as measured from the centerline of the arm base to the centerline of the free end of the arm.
- 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.
- f. Provide horizontal distance from the proposed centerline of the foundation to the edge of travelway. Refer to the Elevation Data Chart for elevation difference between the proposed foundation ground level and the edge of travelway. This information is necessary to ensure that the roadway clearance is maintained at the edge of the travelway and to aid in the camber design of the arm.
- 7. The pole manufacturer will determine the total height (H2) of each pole using the greater of the followina:
- Mast arm attachment height (H1) plus 2 feet, or
- H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot. 8. 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. 9. The contractor is responsible for verifying that the mast arm length shown will allow
- proper positioning of the signal heads over the roadway. 10. The contractor is responsible for providing soil penetration testing data (SPT) to the pole
- manufacturer so site specific foundations can be designed.

All metal poles and arms should be black in color as specified in the project special provisions.

# NCDOT Wind Zone 5 (110 mph)

N/A

NC 107 (E. Main Street) SR 1352 (Walter Ashe Road) SR 1449 (Cope Creek Road)

Division 14 Jackson County Sylva PLAN DATE: August 2025 | REVIEWED BY: ZM Esposito PREPARED BY: DJ White REVIEWED BY: BN Groome N.Greenfield Pkwy,Garner,NC 27529 REVISIONS INIT. DATE

052936 Brittany Groome 8/26/2025

SIG. INVENTORY NO. |4-0694

DOCUMENT NOT CONSIDERED

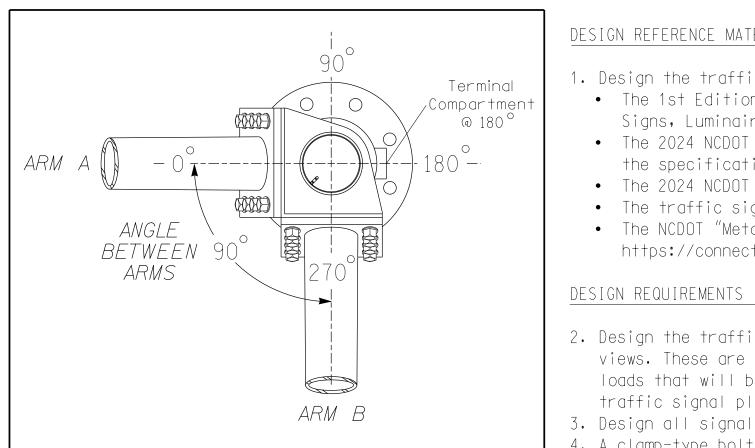
FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

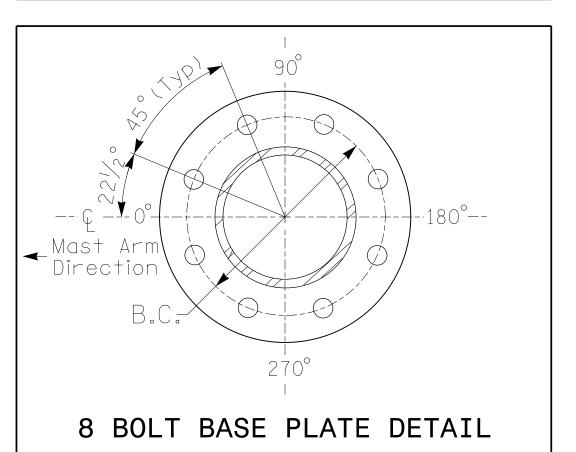
SPECIAL NOTE The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project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

# Attachment (H1)

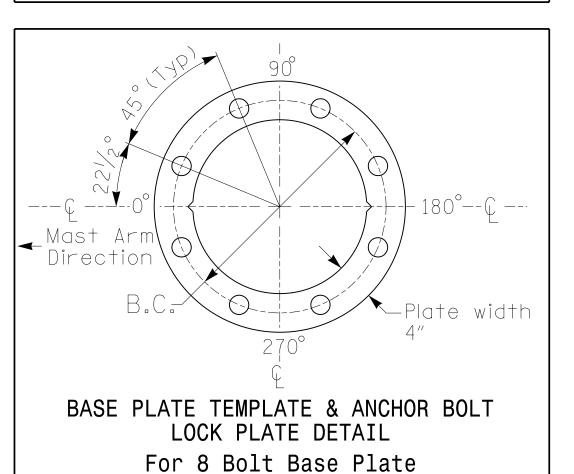
Elevation Differences for:	Arm A	Arm B
Baseline reference point at © Foundation @ ground level	2085.3 ft.	2085.3 ft.
Elevation difference at High point of roadway surface	+2.2 ft.	+0.5 ft.
Elevation difference at Edge of travelway or face of curb	+1.6 ft.	+0.8 ft.



POLE RADIAL ORIENTATION



See Note 5



# Design Loading for METAL POLE NO. 2, MAST ARM B See Note Street Name 5' Rise See Note 4 Maximum See lote 25.6 ft. Roadway Clearance Design Height 17 ft. Minimum 16.5 ft. H1= 16.2' See Note 6 7′ min. – 10′ max. ↑See Note See Note High Point of Roadway Surface © Foundation Edge of travelway **Plans Prepared By:** or face of curb -Base line reference elev. = 2085.3 ft. Elevation View @ O DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

Elevation View @ 270

Design Loading for METAL POLE NO. 2, MAST ARM A

Street Name

- High Point of Roadway Surface —

l2.5 feet

See Note

See Note 4

See Note

See Note See Note

Base line reference elev. = 2085.3 ft

Edge of travelway or face of curb

7′ min. -10′ max.

See Note

H1= 16.2′

See Note 6

Foundation

PHASING DIAGRAM

2+6

1+6

PHASING DIAGRAM DETECTION LEGEND

UNSIGNALIZED MOVEMENT PEDESTRIAN MOVEMENT

2.0

20

3.0

2.9

2.0

4.3

2.2

MIN RECALL

UNDETECTED MOVEMENT (OVERLAP)

MAXTIME TIMING CHART

2.0

20

4.0

2.4

Χ

PHASE

16

2.0

30

3.2

2.9

Χ

5

7

2.0

20

3.0

2.6

Х

12

2.0

45

4.3

2.2

MIN RECALL

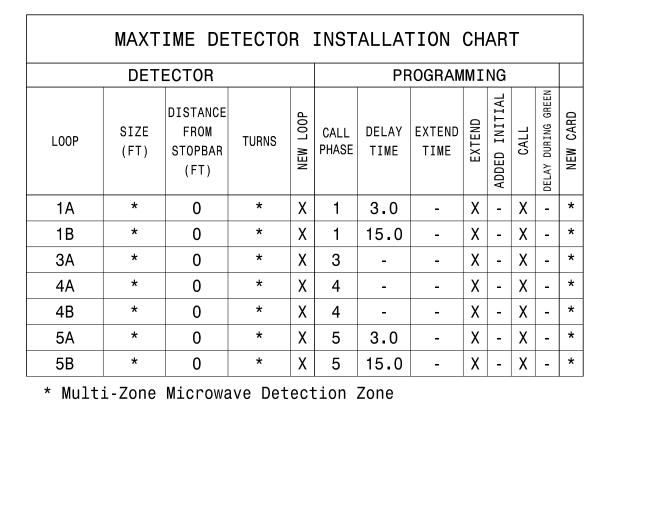
DETECTED MOVEMENT

## 6 Phase Fully Actuated (Time Based Coordination)

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

NOTES

- 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. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red
- 7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 8. Program pedestrian heads to countdown the flashing "Don't Walk" time only
- 9. To provide a leading pedestrian interval on phase 4, program FYA head numbered 44 to delay for 7 seconds after the start of the phase 4 walk interval. See Electrical Details for programming.
- 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.



Retaining wall

35 MPH +2% Grade (Design Speed 45 MPH)

PUE NC 107 (E. Main Street)

<u>-L- Sta. 99+98 ±</u> RT. 57′ ±

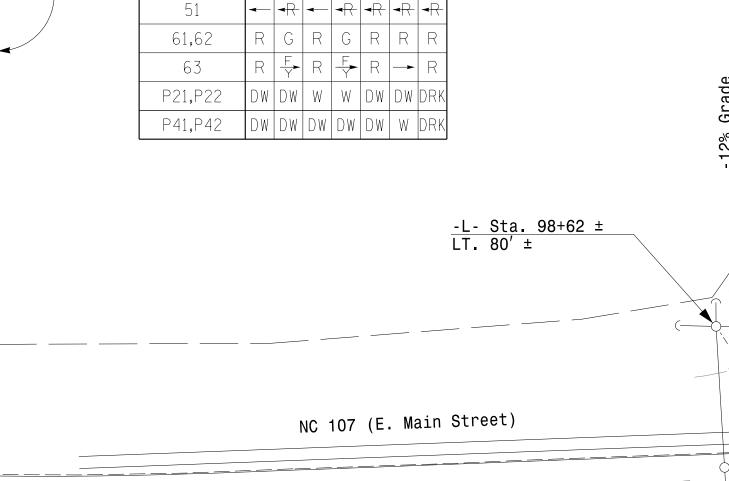


TABLE OF OPERATION

SIGNAL

FACE

21,22

31

32

33

42

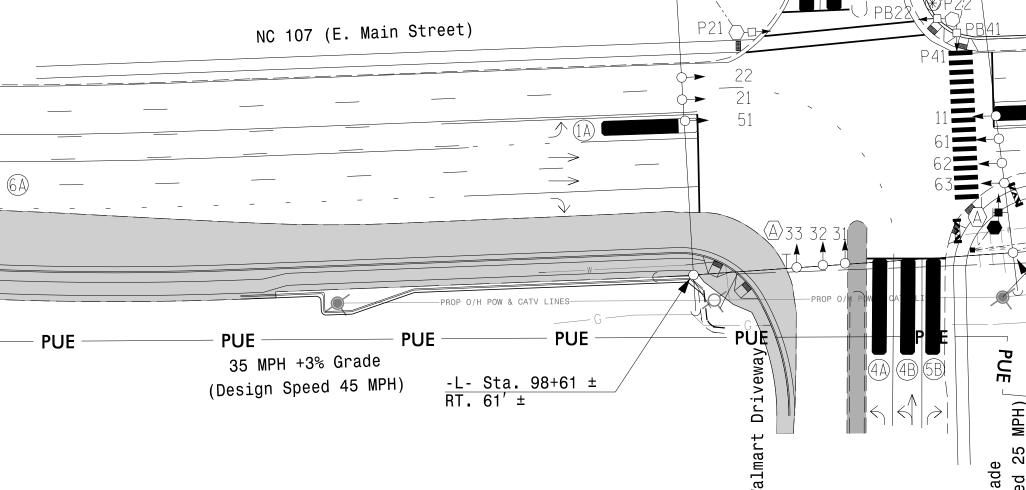
43

44

PHASE

│<del>╺</del>┞│<del>╺┞</del>│<del>╺┞</del>│<del>╺┞</del>│<del></del>

|→| R |→| R | R | <del>[</del>→| F



PED	ESTRIAN DETAIL
Detail for i	nstallation of P22 & P41 heads and pushbuttons
Install new pushbutton and sign on new temporary post with extender. Maintain 10' min from existing pushbutton PB41.  Standard R10-3 (E) Sign  Pedestrian Pushbutton 3  Existing Wall— Sidewalk	Install ped heads on new Type II pedestal behind existing retaining wall  P41  Transformer Base  Handhole  Existing pushbutton mounted in retaining wall. Intercept Conduit on back side of wall to maintain pushbutton

SIGNAL FACE I.D.

All Heads L.E.D.

21,22 32 43

61,62

33 44

P21,P22 P41,P42

Retaining wall

-L- Sta. 99+87 ± LT. 72′ ±

Microwa	ve De	tecti	.on			
	(2	A	(6A)			
FUNCTION	Sen	sor 1	Sens	sor 2		
Channel		1		1		
Phase		2		6		
Direction of Travel	٨	IB	s	БВ		
Туре	Pric	ority	Pric	ority		
Level	2	QUEUE	2	QUEUE		
Detection Zone (ft)	< 750	_	< 750	_		
Range (ft)	600–100	150–100	600–100	150_100		
Enable Speed	Y	Y	Y	Υ		
Speed Range (mph)	35–100	1–35	35–100	1–35		
Enable Estimated Time of Arrival	Y	Ν	Y	N		
Estimated Time of Arrival (sec)	2.5–6.5	_	2.5–6.5	_		

LEGEND **EXISTING PROPOSED** 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 Controller & Cabinet Junction Box Oversized Junction Box 2-in Underground Conduit -----Right of Way Directional Arrow Non-Intrusive Detection Zone Directional Drill N/A Type II Signal Pedestal Temporary Pedestrian Post with Ped Push Button & Sign Permanent Utility Easement N/A \_\_\_T\_\_\_T\_\_ Guardrail Gas Line N/A U/G Sanitary Sewer N/A U/G Water Line O/H Pwr. & Utl. Lines X Utility Pole N/A Construction Zone N/A Barricade 

(A) "RIGHT TURN SIGNAL" Sign (R10-10)

# Signal Upgrade

Temporary Design 1 - TMP Ph1, S2, Part 1

NC 107 (E. Main Street) Walmart Driveway /

Commercial Driveway Division 14 Jackson County REVIEWED BY: ZM Esposito

CARN Sylva 052936 INIT. DATE Brittany Groome

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

**Plans Prepared By:** 

PLAN DATE: August 2025 REVIEWED BY: BN Groome PREPARED BY: KA Jones REVISIONS 1"=40'

SIG. INVENTORY NO. |4-|022T

**Dual Entry** \* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is \*\* See note 9

**FEATURE** 

Ped Clear

Passage \*

Red Clear

Min Green

Yellow Change

Added Initial \*

Maximum Initial \*

Time To Reduce \*

Non Lock Detector

Minimum Gap

Advance Walk

Time Before Reduction

Vehicle Recall

#### 18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS: 1-4, 1-9, 1-11, 1-14, 2-5, 2-6, 2-9, 2-11, 2-13 2-18, 3-5, 3-6, 3-8, 3-9, 3-10, 3-11, 3-17, 3-18, 4-9, 4-11, 4-14, 5-10, 5-11, 5-13, 5-17, 5-18, 6-9, 6-10, 6-13, 6-17, 8-10, 9-10, 9-11, 9-13, 9-14, 9-17, 10-11, 10-17, 10-18, 11-13, 11-14, 11-17, 11-18, 13-18 AND 17-18.

#### REMOVE JUMPERS AS SHOWN

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.

COMPONENT SIDE

- 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.

#### INPUT FILE POSITION LAYOUT

(front view)

ſ	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE U	SLOT EMPTY	S L O T E M P T Y	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø 2 PED  DC ISOLATOR Ø 4 PED  DC ISOLATOR	S L O T E M P T Y	FS DC ISOLATOR ST DC ISOLATOR					
FILE U "J" L	SLOT EMPTY	S L O T E M P T Y	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY

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

FS = FLASH SENSE ST = STOP TIME

ON OFF

RF 2010 RP DISABLE

WD 1.0 SEC

**GY ENABLE** SF#1 POLARITY

LEDguard

- FYA COMPACT-

RF SSM

FYA 1-9 FYA 3-10

FYA 5-11 FYA 7-12

13

14

15

= DENOTES POSITION OF SWITCH

#### 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) **OL7 Yellow Field** Terminal (126)

OL8 Yellow Field Terminal (117) OL9 Yellow Field Terminal (132)

## 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 phase 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 NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller... Cabinet ..332 w/ Aux ...Q-Free MAXTIME Software... Cabinet Mount..... Output File Positions... ..18 With Aux. Output File ...S1, S2, S3, S4, S5, S6, S7, S8, Load Switches Used. S11, AUXS1, AUXS2, AUXS3, AUXS4, AUXS6

...1, 2, 2PED, 3, 4, 4PED, Phases Used.

Overlap "1". Overlap "2". Overlap "3". ..NOT USED Overlap "4". Overlap "5"... ...NOT USED Overlap "6"... ...NOT USED Overlap "7".

Overlap "8" Overlap "9". \*See overlap programming detail on sheet 2

#### 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
PED PUSH BUTTONS								DC ISOLAT				
P21,P22	TB8-4,6	I12U	67	33	2	PED 2	IN INFO	I FILE SLUT	112.			
P41,P42	TB8-5,6	I12L	69	35	4	PED 4						

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



R-5600 Sig-19

(R)

\*

F

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# SIGNAL HEAD HOOK LID CHAPT

					,	SIG	NAI	_ HE	=AL	HC	OK	-UP	, Ch	1AR							
LOAD SWITCH NO.	S1	S2	S3	S4		S5		S6	S7	S8	S9	S10	S	11	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	. (	3	16	9	10	17	11	12	18
PHASE	OL7	2	2 PED			4		4 PED	OL9	6	6 PED	7	• (	3	8 PED	OL1		1	OL3	OL4	5
SIGNAL HEAD NO.	<b>★</b> 63	21,22	P21 P22	33	41	42	43	P41 P42	<b>4</b> 4	61,62	NU	NU	31	32	NU	<b>★</b> 63	<b>33</b> ★	11	<b>4</b> 4	NU	51
RED		128				101	101			134			107	107		A121	A124		A114		
YELLOW	*	129		*		102	102		*	135			108	108			·			,	
GREEN		130	·			103	103			136			109	109		·		·			
RED ARROW					101													A111			A10
YELLOW ARROW					102											A122	A125	A112	A115		A10
FLASHING YELLOW ARROW											·					A123	A126		A116		
GREEN ARROW	127			118	103	103			133				109				-	A113			A10
₩			113					104													
Ķ			115					106													

NU = Not Used

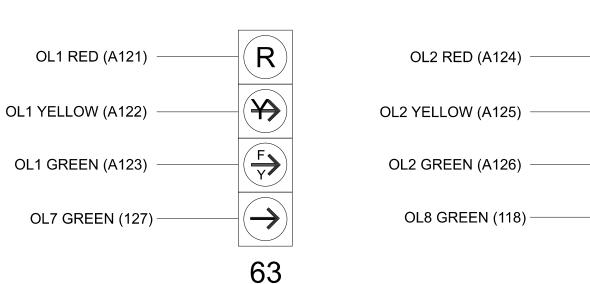
NC = Not Connected

\* 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)



R OL3 RED (A114) OL3 YELLOW (A115) OL3 GREEN (A116) OL9 GREEN (133)-

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T1 DESIGNED: Aug 2025 SEALED: 8/26/2025

REVISED: N/A

# Electrical Detail - Sheet 1 of 2

Temporary Design 1 - TMP Ph1,S2, Part 1 ELECTRICAL AND PROGRAMMING

NC 107 (E. Main St) Walmart Driveway

Commercial Driveway Division 14 Jackson County

PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE

SEAL Sylva 052936

Brittany Groome 8/26/2025 SIG. INVENTORY NO.  $|4-|0\rangle$ 

DOCUMENT NOT CONSIDERED

SIGNATURES COMPLETED

FINAL UNLESS ALL

## MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

Overlap	1	2	3	7	8	9
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal	Normal	Normal
Included Phases	6	-	4	4	1,3	5
Modifier Phases	4	1,3	5	-	-	-
Trail Green	0	0	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0
FYA Ped Delay	0.0	0.0	7.0	0.0	0.0	0.0

#### FLASHER CIRCUIT MODIFICATION DETAIL

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

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

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

## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold **Unit Flash Parameters** All Red Flash Exit Time

#### OUTPUT CHANNEL CONFIGURATION

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

#### **Channel Configuration**

	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channe
NOTICE OVERLAP 7 ASSIGNED TO CHANNEL 1	1	Overlap	7		Χ	X	1
	2	Phase Vehicle	2		X		2
NOTICE OVERLAP 8 ASSIGNED TO CHANNEL 3	3	Overlap	8		Χ	Х	3
	4	Phase Vehicle	4		Χ		4
NOTICE OVERLAP 9 ASSIGNED TO CHANNEL 5	5	Overlap	9		Χ		5
	6	Phase Vehicle	6		Χ	X	6
NOTICE BUACE VEHICLE 2	7	Phase Vehicle	7		Χ		7
NOTICE PHASE VEHICLE 3 ASSIGNED TO CHANNEL 8	8	Phase Vehicle	3		Χ	Χ	8
	9	Overlap	1		Χ	Χ	9
	10	Overlap	2		Χ	X	10
	11	Overlap	3		Χ		11
	12	Overlap	4		Χ		12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
	15	Phase Ped	6				15
	16	Phase Ped	8				16
NOTICE PHASE VEHICLE 1 ASSIGNED TO CHANNEL 17	17	Phase Vehicle	1		Х		17
NOTICE PHASE VEHICLE 5 ASSIGNED TO CHANNEL 18	18	Phase Vehicle	5		Х	Χ	18

NOTICE FLASHING RED

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T1 DESIGNED: Aug 2025

SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 2 of 2 Temporary Design 1 - TMP Ph1, S2, Part 1

ELECTRICAL AND PROGRAMMING NC 107 (E. Main St

NC 107 (E. Main St) Division 14 Jackson County

Walmart Driveway / Commerical Driveway

Sylva

REVIEWED BY: BN Groome REVISIONS INIT. DATE

052936

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

SIG. INVENTORY NO. |4-|02|

PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

PHASING DIAGRAM

2+6

1+6

TABLE OF OPERATION

SIGNAL

FACE

21,22

31

32

33

42

43

- PUE -

5

7

2.0

20

3.0

2.6

12

2.0

45

4.3

2.1

PHASE

 $\rightarrow \mid \rightarrow \mid R \mid R \mid \stackrel{F}{\Rightarrow} \mid R \mid$ 

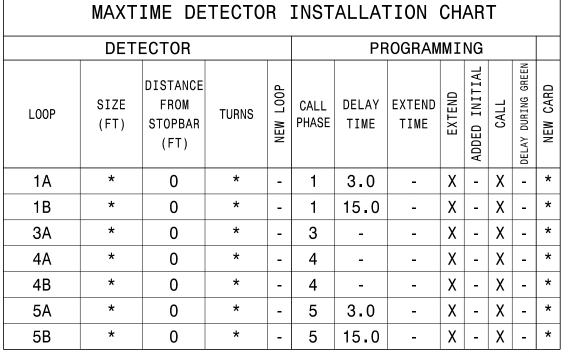
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Sig-20.0 R-5600

#### 6 Phase Fully Actuated (Time Based Coordination)

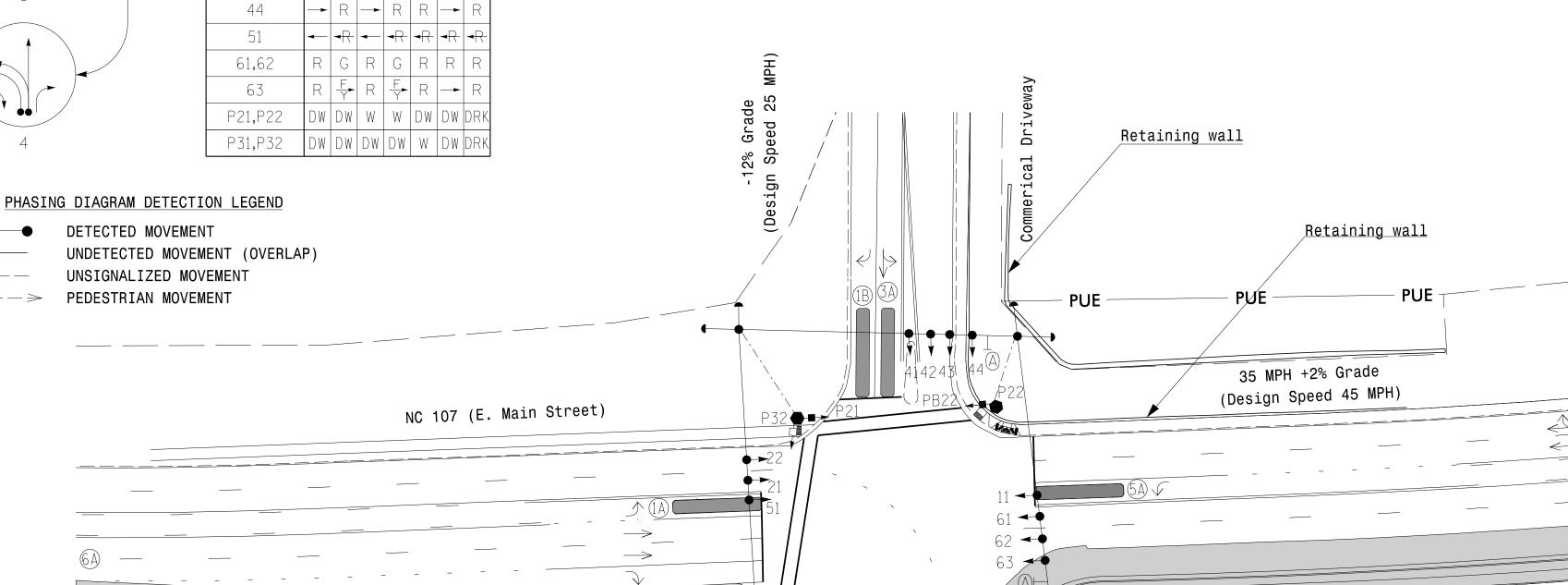
#### NOTES

- 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. To provide a leading pedestrian interval on phase 3 program FYA head numbered 33 to delay for 7 seconds after the start of the phase 3 walk interval. See Electrical Details for programming.
- 9. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- 10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



\* Multi-Zone Microwave Detection Zone

NC 107 (E. Main Street)



SIGNAL FACE I.D.

All Heads L.E.D.

21,22 32 43

61,62

33 44 63

P21,P22 P31,P32

<u> </u>	25 N	Microwa	ive De	tecti	_on	
an T	Ψ		(2	'A)	(6	SA)
Walmar	s Grad Speed	FUNCTION	Sensor 1		Sensor 2	
>	<u>o</u> ′	Channel				1
	igi	Phase		2		6
PEDESTRIAN DETAIL	(Design	Direction of Travel	N	IB	9	SB
Detail for P22 head and pushbutton		Туре	Pric	ority	Pric	ority
		Level	2	QUEUE	2	QUEUE
		Detection Zone (ft)	< 750	-	< 750	-
		Range (ft)	600–100	150–100	600–100	150_100
		Enable Speed	Y	Υ	Y	Υ
P22		Speed Range (mph)	35–100	1–35	35–100	1–35
Transformer Base		Enable Estimated Time of Arrival	Y	N	Y	N
xisting pushbutton Handhole		Estimated Time of Arrival (sec)	2.5–6.5	_	2.5–6.5	-
7' min 10' max.				S	ignal	Upgra

#### **EXISTING PROPOSED** Traffic Signal Head $\bigcirc$ Modified Signal Head N/A Sign Pedestrian Signal Head Signal Pole with Guy Signal Pole with Sidewalk Guy Inductive Loop Detector Controller & Cabinet Junction Box Oversized Junction Box 2-in Underground Conduit N/A Right of Way Directional Arrow Non-Intrusive Detection Zone Directional Drill N/A Type II Signal Pedestal Temporary Pedestrian Post with Ped Push Button & Sign Permanent Utility Easement Construction Zone N/A (A) "RIGHT TURN SIGNAL" Sign (R10-10)

LEGEND

Temporary Design 2 - TMP Ph1, S2, Part 2

NC 107 (E. Main Street) Walmart Driveway / Commercial Driveway Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome

REVISIONS

SEAL Sylva 052936 INIT. DATE Brittary Groome 8/26/2025

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

SIG. INVENTORY NO. |4-|022T2

Dual Entry \* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is

MAXTIME TIMING CHART

14

22

2.0

40 4.0

2.4

PHASE

2.0

20

3.2

3.1

\*\* See note 8

FEATURE

2.0

20

3.0

2.8

Ped Clear

Min Green '

Yellow Change

Added Initial \*

Maximum Initial \*

Red Clear

(E) Sign Pushbutton Χ Χ Elevation View MIN RECALL MIN RECALL

35 MPH +3% Grade

- PUE -

Time Before Reduction Time To Reduce \* Minimum Gap Advance Walk Non Lock Detector Vehicle Recall

2.0

4.3

2.1

#### 18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS: 1-4, 1-5, 1-9, 1-11, 2-5, 2-6, 2-9, 2-11, 2-13, 2-18, 3-5, 3-6, 3-9, 3-10, 3-11, 3-17, 3-18, 4-5, 4-9, 4-11, 5-9, 5-10, 5-11, 5-13, 5-17, 5-18, 6-9, 6-10, 6-13, 6-17, 8-10, 8-16, 9-10, 9-11, 9-13, 9-17, 10-11, 10-16, 10-17, 10-18, 11-13, 11-17, 11-18, 13-18 AND 17-18. - RF 2010 RP DISABLE - WD 1.0 SEC **GY ENABLE** SF#1 POLARITY - LEDguard RF SSM - FYA COMPACT-FYA 1-9 FYA 3-10 FYA 5-11 FYA 7-12

ON OFF

13

14

15

= DENOTES POSITION OF SWITCH

#### REMOVE JUMPERS AS SHOWN

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.

COMPONENT SIDE

- 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.

#### INPUT FILE POSITION LAYOUT

(front view)

	_	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE	U	S L O T E	S L O T	Ø 2 PED  DC ISOLATOR	NOT USED Ø 3 PED	FS DC ISOLATOR ST									
I	L	M P T Y	E M P T Y	M P T Y	NOT USED	DC	DC ISOLATOR								
FILE	U	S L O T	S L O T												
"J"	L	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y							

#### 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)

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

**OL7 Yellow Field** Terminal (126) OL8 Yellow Field Terminal (117) OL9 Yellow Field

## 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 phase 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 NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S3, S4, S5, S7, S8, S11,
	S12, AUXS1, AUXS2, AUXS3,
	AUXS4, AUXS6
Phases Used	1, 2, 2PED, 3, 3PED, 4,
	5, 6
Overlan "1"	*

Overlap "1"..... Overlap "2"... Overlap "3"... Overlap "4"... ...NOT USED Overlap "5"... ....NOT USED .....NOT USED Overlap "6"..... Overlap "7"... Overlap "8".

\*See overlap programming detail on sheet 2

Overlap "9"....

#### 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
PED PUSH BUTTONS								. DC ISOLAT T FILE SLOT				
P21,P22	TB8-4,6	I12U	67	33	2	PED 2	IN INFO		3			
P31,P32	TB8-8,9	I13L	70	36	8	PED 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 multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

R-5600 Sig-20.

#### SIGNAL HEAD HOOK-UP CHART S12 AUX S1 AUX S2 AUX S3 AUX S4 AUX S5 S6 LOAD S1 S2 S3 S4 S6 | S7 | S8 | S9 | S10 | S11 CMU CHANNEL NO. 1 2 13 3 16 | 9 | 10 | 17 | 11 | 12 | 18 14 | 5 | 6 | 15 | 7 OL7 2 PED OL8 3 OL1 OL2 1 OL3 OL4 5 $63^{*}$ 21,22 $\begin{vmatrix} P21 \\ P22 \end{vmatrix}$ $33^{*}$ 41 42 43 NC 44 $\begin{vmatrix} 44 \\ 61,62 \end{vmatrix}$ NU NU 31 32 $\begin{vmatrix} P31 \\ P32 \end{vmatrix}$ $63^{*}$ $33^{*}$ 11 44 NU 51 RED 101 | 101 107 | 107 | A121 A124 YELLOW \* 129 102 102 **\*** 135 108 | 108 130 103 | 103 109 | 109 | GREEN 101 A111 ARROW YELLOW 102 A122 A125 A112 A115 ARROW FLASHING A123 A126 A116 YELLOW ARROW GREEN 127 118 | 103 | 103 133 109 ARROW

NU = Not Used

NC = Not Connected

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

★ See pictorial of head wiring in detail this sheet.

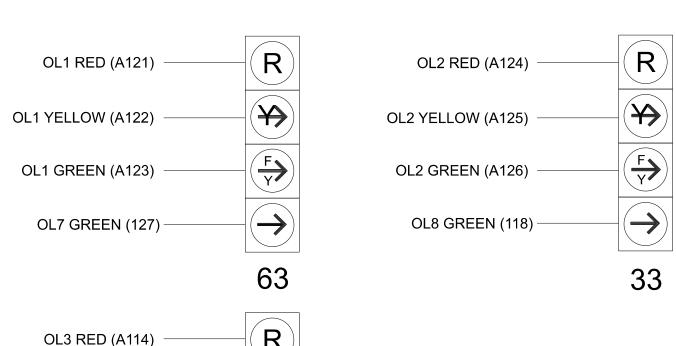
113

115

## FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)

112



R OL3 YELLOW (A115) OL3 GREEN (A116) OL9 GREEN (133)-

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T2

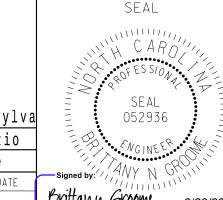
DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 1 of 2

Temporary Design 2 - TMP Ph1, S2, Part 2 ELECTRICAL AND PROGRAMMING NC 107 (E. Main St)

Walmart Driveway Commerical Driveway

Division 14 Jackson County Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Espostio PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE



Brittany Groome 8/26/2025 SIG. INVENTORY NO.  $|4-|0\rangle$ 

DOCUMENT NOT CONSIDERED

SIGNATURES COMPLETED

FINAL UNLESS ALL

FS = FLASH SENSE

Terminal (132)

ST = STOP TIME

Web Interface

Home >Controller >Detector Configuration >Pedestrian Detector

Plan 1

	Detector	Descripton	Call Phase	Call Overlap
	2	·	2	0
NOTICE PHASE 3 PED	4	·	4	0
ASSIGNED TO	6	·	6	0
DETECTOR 8 PED	8		3	0

#### **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

#### Channel Configuration

	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channe
NOTICE OVERLAP 7 ASSIGNED TO CHANNEL 1	1	Overlap	7		Χ	X	1
	2	Phase Vehicle	2		Χ		2
NOTICE OVERLAP 8 ASSIGNED TO CHANNEL 3	3	Overlap	8		Χ	Х	3
NOTICE OVER AD C	4	Phase Vehicle	4		Χ		4
NOTICE OVERLAP 9 ASSIGNED TO CHANNEL 5	5	Overlap	9		Χ		5
	6	Phase Vehicle	6		Χ	X	6
NOTICE DUACE VEHICLE 2	7	Phase Vehicle	7		Х		7
NOTICE PHASE VEHICLE 3 ASSIGNED TO CHANNEL 8	8	Phase Vehicle	3		Χ	Χ	8
	9	Overlap	1		Χ	Χ	9
	10	Overlap	2		Χ	Χ	10
	11	Overlap	3		Χ		11
	12	Overlap	4		X		12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
NOTICE DUACE 2 DED	15	Phase Ped	6				15
NOTICE PHASE 3 PED SSIGNED TO CHANNEL 16 ■	16	Phase Ped	3				16
NOTICE PHASE VEHICLE 1 SSIGNED TO CHANNEL 17	17	Phase Vehicle	1		Χ		17
NOTICE PHASE VEHICLE 5 SSIGNED TO CHANNEL 18	18	Phase Vehicle	5		Х	Х	18

NOTICE FLASHING RED

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

Overlap	1	2	3	7	8	9
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal	Normal	Normal
Included Phases	6	3	<u>-</u>	4	1	4,5
Modifier Phases	4	1	4,5	-	-	-
Trail Green	0	0	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0
FYA Ped Delay	0.0	7.0	0.0	0.0	0.0	0.0

R-5600 Sig-20.2

## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold **Unit Flash Parameters** All Red Flash Exit Time

#### 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.

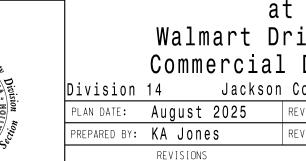
THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T2 DESIGNED: Aug 2025

SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 2 of 2

Temporary Design 2 - TMP Ph1,S2, Part 2

ELECTRICAL AND PROGRAMMING NC 107 (E. Main St NC 107 (E. Main St)



Walmart Driveway / Commercial Driveway

Division 14 Jackson County Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Espostio REVIEWED BY: BN Groome

INIT. DATE Brittany Groome 8/26/2025 SIG. INVENTORY NO. |4-|022|

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

052936





#### 6 Phase Fully Actuated (Time Based Coordination) 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. Reposition existing signal heads numbered 11, 21, 22, 51, 61, 62 and 63.
- 8. Program pedestrian heads to countdown the flashing "Don't Walk"
- 9. To provide a leading pedestrian interval on phase 3 program FYA head numbered 33 to delay for 7 seconds after the start of the phase 3 walk interval. See Electrical Details for programming.
- 10. To provide a leading pedestrian interval on phase 6 program FYA head numbered 63 to delay for 7 seconds after the start of the phase 6 walk interval. See Electrical Details for programming.
- 11. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- 12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PROPOSED	<b>EXISTING</b>
	<b></b>
	N/A
⊢ Sign	$\overline{}$
	•
Signal Pole with Guy	•
Signal Pole with Sidewalk Gu	ıy
Inductive Loop Detector	
Controller & Cabinet	
☐ Junction Box	
<pre>Oversized Junction Box</pre>	
2-in Underground Conduit	
N/A Right of Way	
$\longrightarrow$ Directional Arrow	$\longrightarrow$
Non-Intrusive Detection Zone	9
— DD — Directional Drill	N/A
	lacktriangle
	•
— PUE — Permanent Utility Easement	N/A
Construction Zone	_N/A
N/A Barricade	
N/A Portable Concrete Barrier	4.0.)
⟨A⟩ "RIGHT TURN SIGNAL" Sign (R10-	-10) 🛆

B "RIGHT TURN YIELD TO U-TURN" Sign B

LEGEND

Signal Upgrade Temporary Design 3 - TMP Ph2, S1, Part 1

> NC 107 (E. Main Street) Walmart Driveway / Division 14 Jackson County

Commercial Driveway

Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Espostio PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE

052936 Brittany Groome

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**Plans Prepared By:** 

MAXTIME DETECTOR INSTALLATION CHART

**DETECTOR** 

SIZE

(FT)

Retaining wall

DISTANCE

FROM

STOPBAR

\* Multi-Zone Microwave Detection Zone

35 MPH +2% Grade (Design Speed 45 MPH) **PROGRAMMING** 

- X - X

- X - X

- X - X

- | X | - | X

- X - X -

- | X | - | X | - | \*

CALL DELAY EXTEND ALL INE TIME TIME TIME

| \* | X | 1 | 3.0 | - | X | - | X

1 | 15.0 |

3 3.0

\* | X | 4 | - |

\* | X | 4 | - |

\* X 5 3.0

0 | \* | X | 5 | 15.0 |

Sensor 2 Channel Direction of Travel Priority Priority QUEUE QUEUE 2 Detection Zone (ft) < 750 < 750 600–100 150–100 600–100 150-100 Range (ft) **Enable Speed** Speed Range (mph) 35–100 1–35 35–100 1–35 Enable Estimated Time of Arrival

│<del></del>╃│╃╎╃│╃╎╃│╃ 42 43 44  $\rightarrow$  R  $\rightarrow$  R R  $\rightarrow$  F 51 61,62  $R \rightarrow R$ 63 P31,P32 DW DW DW DW W DW DR P61,P62 | DW | W | DW | W | DW | DW | DR PHASING DIAGRAM DETECTION LEGEND NC 107 (E. Main Street)

TABLE OF OPERATION

SIGNAL

FACE

21,22

31

32

33

PHASE

DETECTED MOVEMENT UNDETECTED MOVEMENT (OVERLAP) UNSIGNALIZED MOVEMENT ← − → PEDESTRIAN MOVEMENT

- PUE

PHASING DIAGRAM

1+6

- PUE -

PUE -

35 MPH +3% Grade (Design Speed 45 MPH)

MAXTIME TIMING CHART PHASE 22 23 7 2.0 2.0 2.0 2.0 20

2.0 2.0 Passage \* 20 Yellow Change 3.0 4.3 4.0 3.2 3.0 4.3 2.6 2.4 3.0 3.1 3.3 Red Clear Added Initial \* Time Before Reduction Time To Reduce \* Minimum Gap

Advance Walk Non Lock Detector Χ MIN RECALL MIN RECALL Vehicle Recall

\*\*\* See note 10

Ped Clear

Min Green 3

**FEATURE** 

7

\*\* See note 9

NC 107 (E. Main Street)

Microwave Detection

SIGNAL FACE I.D.

All Heads L.E.D.

21,22 32 43 61,62

33 44

P31,P32 P61,P62

Estimated Time of Arrival (sec) 2.5-6.5 2.5-6.5

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS:1-4, 1-5, 1-9, 1-11, 2-5, 2-6, 2-9, 2-11, 2-15, 2-18, 3-5, 3-6, 3-9, 3-10, 3-11, 3-15, 3-17, 3-18, 4-5, 4-9, 4-11, 5-9, 5-10, 5-11, 5-17, 5-18, 6-9, 6-10, 6-15, 6-17, 8-10, 8-16, 9-10, 9-11, 9-15, 9-17, 10-11, 10-15, 10-16, 10-17, 10-18, 11-17, 11-18, 15-17 AND 17-18.

WD 1.0 SEC **GY ENABLE** SF#1 POLARITY - LEDguard - RF SSM - FYA COMPACT-FYA 3-10 FYA 5-11 FYA 7-12

#### REMOVE JUMPERS AS SHOWN

- 1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- 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 phase 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 NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S4, S5, S7, S8, S9
	S11, S12, AUXS1, AUXS2,
	AUXS3, AUXS4, AUXS6
Phases Used	1, 2, 3, 3PED 4, 5
	6, 6PED
Overlap "1"	*
Overlap "2"	*
Overlap "3"	*
Overlap "4"	NOT USED
O I !!!!!	NOTHOED

.....NOT USED Overlap "5".... ...NOT USED Overlap "6"... Overlap "7".....

Overlap "8"... Overlap "9".....

\*See overlap programming detail on sheet 2

COMPONENT SIDE

## 2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.

# INPUT FILE POSITION LAYOUT

(front view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE U	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T E	S L O T	S L O T	S L O T E	S L O T	Ø 6 PED  DC ISOLATOR	DC ISOLATOR
"I" L	M P T Y	E M P T Y	M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	M P T Y	M P T Y	E M P T Y	M P T Y	E M P T Y	Ø 3 PED  DC ISOLATOR	DC
FILE U	S L O T	S L OT	SLOT	S L OT	S L OT	S L OT	S L O T	S L OT	S L O T	S L O T	S L O T	S L OT	S L O T	S L O T
"J" L	E M P T Y													

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

FS = FLASH SENSE ST = STOP TIME

ON OFF

- RF 2010 RP DISABLE

FYA 1-9

13 14 15

= DENOTES POSITION OF SWITCH

SW2

#### 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) Terminal (126)

OL8 Yellow Field Terminal (117) OL9 Yellow Field Terminal (132)

**OL7 Yellow Field** 

#### 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
PED PUSH BUTTONS								DC ISOLAT				
P31,P32	TB8-8,9	I13L	70	36	8	PED 3	IIN IINPU I	FILE SLUT	113.			
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						

INPUT FILE POSITION LEGEND: J2L 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 multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.



## Electrical Detail - Sheet 1 of 2

Temporary Design 3 - TMP Ph2, S1, Part 1 ELECTRICAL AND PROGRAMMING NC 107 (E. Main St)

> Walmart Driveway / Commerical Driveway Division 14 Jackson County

PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVISIONS

Sylva REVIEWED BY: BN Groome

Brittany Groome 8/26/2025 SIG. INVENTORY NO. |4-|022|

R-5600 Sig-21

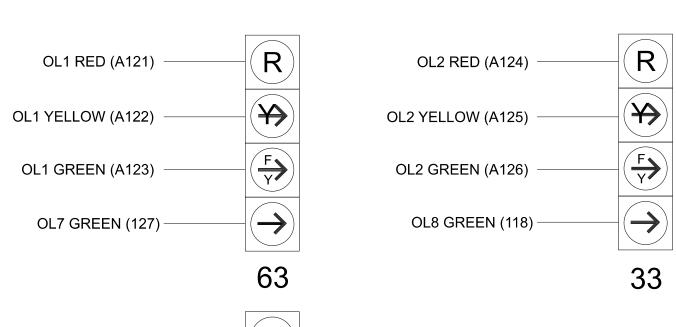
					•	SIG	NAI	_ HE	EAD	HC	OK	-UF	Ct	HAR	T						
LOAD SWITCH NO.	S1	S2	S3	S4		S5		S6	S7	S8	S9	S10	S	11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3		4		14	5	6	15	7		3	16	9	10	17	11	12	18
PHASE	OL7	2	2 PED			4		4 PED		6	6 PED	7	,	3	3 PED	OL1	OL2	1	OL3	OL4	5
SIGNAL HEAD NO.	63 <sup>*</sup>	21,22	NC	33*	41	42	43	NU	<b>★</b> 44	61,62	P61 P62	NU	31	32	P31, P32	63 <sup>*</sup>	33	11	<b>★</b> 44	NU	51
RED		128				101	101			134	·	·	107	107		A121	A124		A114	·	
YELLOW	*	129		*		102	102		*	135	·		108	108							
GREEN		130				103	103			136			109	109						·	
RED ARROW					101													A111			A104
YELLOW ARROW					102											A122	A125	A112	A115		A105
FLASHING YELLOW ARROW			·								·	·				A123	A126		A116	·	
GREEN ARROW	127			118	103	103			133				109					A113			A106
₩											119				110						
Ķ											121				112						
NU = Not U	Jsed		NC =	= Not (	Conne	cted	1						I					I		1	

\* 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)



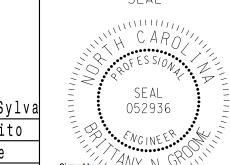
R OL3 RED (A114) OL3 YELLOW (A115) OL3 GREEN (A116) OL9 GREEN (133)-

REVISED: N/A

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T3 DESIGNED: Aug 2025 SEALED: 8/26/2025

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED SEAL



INIT. DATE

Main Menu >Controller >Detector >Ped Det Plans

Web Interface

Home >Controller >Detector Configuration >Pedestrian Detector

Plan 1

	Detector	Descripton	Call Phase	Call Overlap
	2		2	0
	4		4	0
	6		6	0
$\rightarrow$	8		3	0

**OUTPUT CHANNEL CONFIGURATION** 

Front Panel

NOTICE PHASE 3 PED

ASSIGNED TO

DETECTOR 8 PED

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

**Channel Configuration** 

		_					
	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channe
NOTICE OVERLAP 7 ASSIGNED TO CHANNEL 1	1	Overlap	7		X	X	1
	2	Phase Vehicle	2		X	7.	2
NOTICE OVERLAP 8 ASSIGNED TO CHANNEL 3	3	Overlap	8		Х	X	3
NOTICE OVERLAR O	4	Phase Vehicle	4		Χ		4
NOTICE OVERLAP 9 ASSIGNED TO CHANNEL 5	5	Overlap	9		Χ		5
	6	Phase Vehicle	6		Χ	Χ	6
NOTICE PHASE VEHICLE 3	7	Phase Vehicle	7		Χ		7
ASSIGNED TO CHANNEL 8	8	Phase Vehicle	3		Х	Х	8
	9	Overlap	1		Х	X	9
	10	Overlap	2		Х	X	10
	11	Overlap	3		Х		11
	12	Overlap	4		Χ		12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
NOTICE PHASE 3 PED	15	Phase Ped	6				15
NOTICE PHASE 3 PED ASSIGNED TO CHANNEL 16	16	Phase Ped	3				16
NOTICE PHASE VEHICLE 1 ASSIGNED TO CHANNEL 17	17	Phase Vehicle	1		Х		17
NOTICE PHASE VEHICLE 5 ASSIGNED TO CHANNEL 18	18	Phase Vehicle	5		Х	Х	18

NOTICE FLASHING RED

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

Overlap	1	2	3	7	8	9
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal	Normal	Normal
Included Phases	6	3	-	4	1	4,5
Modifier Phases	4	1	4,5	4	4	i
Trail Green	0	0	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0
FYA Ped Delay	7.0	7.0	0.0	0.0	0.0	0.0

R-5600

Sig-21

## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold

**Unit Flash Parameters** All Red Flash Exit Time

#### 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.

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T3 DESIGNED: Aug 2025

SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 2 of 2

Temporary Design 3 - TMP Ph2, S1, Part 1

ELECTRICAL AND PROGRAMMING NC 107 (E. Main St NC 107 (E. Main St)



Walmart Driveway / Commerical Driveway

Division 14 Jackson County

Sylva REVIEWED BY: BN Groome REVISIONS INIT. DATE

052936 Brittary Groome 8/26/2025

SIG. INVENTORY NO. |4-|022|

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

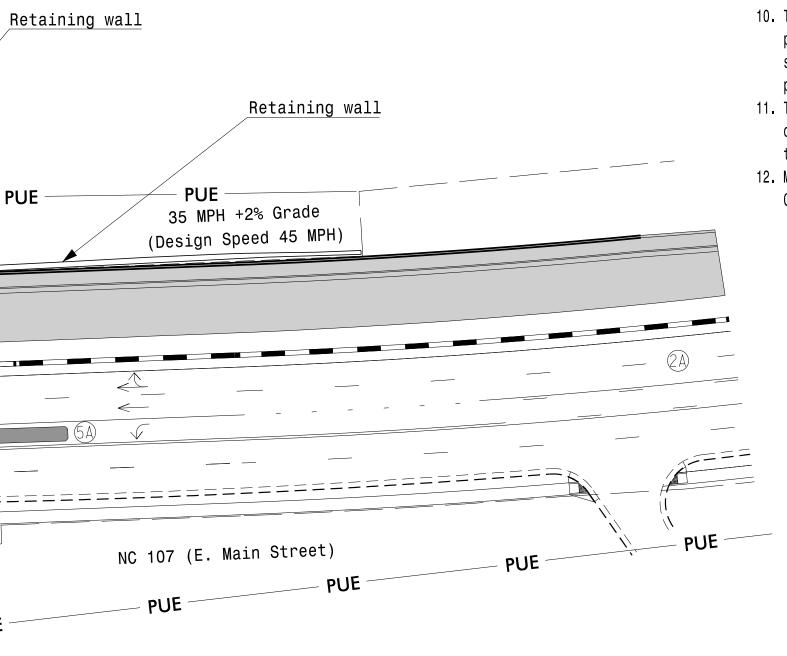
SEAL

PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones

#### 6 Phase Fully Actuated (Time Based Coordination)

#### 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. Cover and disconnect existing pedestrian head and pushbutton P31.
- 6. Set all detector units to presence mode.
- 7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 8. Program pedestrian heads to countdown the flashing "Don't Walk" time only
- 9. To provide a leading pedestrian interval on phase 4 program FYA head numbered 44 to delay for 7 seconds after the start of phase 4 walk interval. See Electrical Details for programming.
- 10. To provide a leading pedestrian interval on phase 6 program FYA head numbered 63 to delay for 7 seconds after the start of the phase 6 walk interval. See Electrical Details for programming.
- 11. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- 12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



MAXTIME DETECTOR INSTALLATION CHART

**DETECTOR** 

SIZE

(FT)

4A

DISTANCE

FROM

STOPBAR

\* Multi-zone Microwave Detection Zone

**PROGRAMMING** 

- X - X

- X - X

- X - X

- X - X

- | X | - | X

- X - X -

- | X | - | X | - | \*

PHASE TIME TIME

1 3.0

1 | 15.0 |

3 3.0

4 | - |

5 3.0

0 | \* | - | 5 | 15.0 |

Microwave Detection							
	(2	(A)	(6	A			
FUNCTION	Sen	sor 1	Sensor 2				
Channel		1		1			
Phase	:	2		6			
Direction of Travel	٨	IB	S	В			
Туре	Pric	ority	Pric	ority			
Level	2	QUEUE	2	QUEUE			
Detection Zone (ft)	< 750	-	< 750	_			
Range (ft)	600–100	150–100	600–100	150–100			
Enable Speed	Υ	Y	Y	Y			
Speed Range (mph)	35–100	1–35	35–100	1–35			
Enable Estimated Time of Arrival	Y	Ν	Y	N			
Estimated Time of Arrival (sec)	2.5–6.5	-	2.5–6.5	_			

**Plans Prepared By:** 

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

# N/A N/A

**PROPOSED** 

 $\bigcirc$ 

#### Pedestrian Signal Head with Push Button & Sign Signal Pole with Guy Signal Pole with Sidewalk Guy Inductive Loop Detector Controller & Cabinet Junction Box Oversized Junction Box P-in Underground Conduit Right of Way Directional Arrow on-Intrusive Detection Zone Directional Drill N/A Type I Pushbutton Post Type II Signal Pedestal Permanent Utility Easement — PUE – N/A Construction Zone Barricade XXX Portable Concrete Barrier (A) "RIGHT TURN SIGNAL" Sign (R10-10)

LEGEND

Traffic Signal Head

Modified Signal Head

Sign

**EXISTING** 

N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

CARA

# Signal Upgrade

Temporary Design 4 - TMP Ph2, S1, Part 2

NC 107 (E. Main Street) Walmart Driveway / Commerical Driveway

Division 14 Jackson County

052936 INIT. DATE Brittany Groome

PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome

								<u> </u>
			— (6	Ā) —				- — — - —
				) 				
			===	====:	====	======	=====	=======================================
								MPH +3% Grade
							(Desi	ign Speed 45 MP
			- PUE		— PUE		PUE —	PU
	MAX	KTTME TI	r m t NG	CHART				
	MAX	KTIME T						
FEATURE	<b>MA</b> )	KTIME T		CHART  ASE	5	6		Detail fo
FEATURE  Walk *			PH	ASE	5 -	6 14		
	1	2	PH.	ASE 4				
Walk *	1 –	2 -	PH. 3	ASE 4 14	-	14		
Walk * Ped Clear	1 - -	2	PH. 3 - -	4 14 25	-	14 23		Instal
Walk * Ped Clear Min Green *	1 - - 7	2 - - 12	PH. 3 7	ASE  4  14  25  7	- - 7	14 23 12		Instal I
Walk * Ped Clear Min Green * Passage *	1 - - 7 2.0	2 - - 12 2.0	PH. 3 7 2.0	ASE  4  14  25  7  2.0	- - 7 2.0	14 23 12 2.0		Install F
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *	1 - - 7 2.0 20	2 - - 12 2.0 45	PH. 3 7 2.0 20	ASE  4 14 25 7 2.0 40	- 7 2.0 20	14 23 12 2.0 45		Install F
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change  Red Clear	1 - - 7 2.0 20 3.0	2 - - 12 2.0 45 4.3	PH. 3 7 2.0 20 4.0	ASE  4 14 25 7 2.0 40 3.2	- 7 2.0 20 3.0	14 23 12 2.0 45 4.3		Install F
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change	1 - - 7 2.0 20 3.0 2.6	2 - - 12 2.0 45 4.3 2.5	PH. 3 - 7 2.0 20 4.0 3.0	ASE  4 14 25 7 2.0 40 3.2 3.0	- 7 2.0 20 3.0 3.3	14 23 12 2.0 45 4.3 2.5		Install F
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change  Red Clear  Added Initial *	1 - - 7 2.0 20 3.0 2.6	2 - - 12 2.0 45 4.3 2.5 -	PH. 3  - 7 2.0 20 4.0 3.0 -	ASE  4 14 25 7 2.0 40 3.2 3.0 —	- 7 2.0 20 3.0 3.3 -	14 23 12 2.0 45 4.3 2.5		Install  Install new pushbuttor and signs. Maintain 10' min between push PB41 and PB22.
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change  Red Clear  Added Initial *  Maximum Initial *	1 - - 7 2.0 20 3.0 2.6 -	2 - - 12 2.0 45 4.3 2.5 - -	PH. 3  7 2.0 20 4.0 3.0	ASE  4 14 25 7 2.0 40 3.2 3.0 -	- 7 2.0 20 3.0 3.3 -	14 23 12 2.0 45 4.3 2.5 -		Install  Install new pushbuttor and signs. Maintain 10' min between push PB41 and PB22.
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change  Red Clear  Added Initial *  Maximum Initial *  Time Before Reduction *	1 - - 7 2.0 20 3.0 2.6 - -	2 - - 12 2.0 45 4.3 2.5 - - -	PH. 3  7 2.0 20 4.0 3.0	ASE  4 14 25 7 2.0 40 3.2 3.0	- 7 2.0 20 3.0 3.3 - -	14 23 12 2.0 45 4.3 2.5 -		Install  Install new pushbutton and signs. Maintain 10' min between push PB41 and PB22.  Standard R10—(E) Sign  Pedestrian
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change  Red Clear  Added Initial *  Maximum Initial *  Time Before Reduction *  Time To Reduce *	1 - - 7 2.0 20 3.0 2.6 - - -	2 - - 12 2.0 45 4.3 2.5 - - -	PH. 3  7 2.0 20 4.0 3.0	ASE  4 14 25 7 2.0 40 3.2 3.0	- 7 2.0 20 3.0 3.3 - - -	14 23 12 2.0 45 4.3 2.5		Pedestrian Pushbutton
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change  Red Clear  Added Initial *  Maximum Initial *  Time Before Reduction *  Time To Reduce *  Minimum Gap	1 - - 7 2.0 20 3.0 2.6 - - -	2 - 12 2.0 45 4.3 2.5 - - - -	PH. 3  7 2.0 20 4.0 3.0	ASE  4 14 25 7 2.0 40 3.2 3.0	- 7 2.0 20 3.0 3.3 - - - -	14 23 12 2.0 45 4.3 2.5		Install Install new pushbuttor and signs. Maintain 10' min between push PB41 and PB22.  Standard R10—(E) Sign Pedestrian
Walk *  Ped Clear  Min Green *  Passage *  Max 1 *  Yellow Change  Red Clear  Added Initial *  Maximum Initial *  Time Before Reduction *  Time To Reduce *  Minimum Gap  Advance Walk	1 - 7 2.0 20 3.0 2.6 - - - -	2 12 2.0 45 4.3 2.5	PH. 3  - 7 2.0 20 4.0 3.0	ASE  4 14 25 7 2.0 40 3.2 3.0 **	- 7 2.0 20 3.0 3.3	14 23 12 2.0 45 4.3 2.5 ***		Install new pushbuttor and signs. Maintain 10' min between push PB41 and PB22.  Standard R10— (E) Sign  Pedestrian Pushbutton

PHASING DIAGRAM

1+6

TABLE OF OPERATION

SIGNAL

FACE

21,22

31

32

33

42

43

44

51

61,62

63

P41,P42

P61,P62

PHASING DIAGRAM DETECTION LEGEND

DETECTED MOVEMENT

UNSIGNALIZED MOVEMENT

PEDESTRIAN MOVEMENT

UNDETECTED MOVEMENT (OVERLAP)

PHASE

→| →| R | R | →| R | F

│<del></del>╃│╃╎╃│╃╎╃│╃

 $\rightarrow$  R  $\rightarrow$  R R R  $\downarrow \stackrel{F}{\Rightarrow}$  F

R | ➡ R | ➡ R | ➡ R

DW|DW|DW|DW|W|DR

| DW | W | DW | W | DW | DW | DR

NC 107 (E. Main Street)

Future P22 Transformer Base Install new pushbuttons and signs. Maintain 10' min between pushbuttons PB41 and PB22. Existing pushbutton mounted in retaining wall. Intercept Conduit on back side of wall 10' max. to maintain pushbutton Standard R10–3 – (E) Sign Pedestrian Pushbutton Future Elevation View

PEDESTRIAN DETAIL

Detail for installation of P22 & P41 heads and pushbuttons

Install ped heads on new Type II pedestal at –L– Sta. 99 + 78  $\,\pm\,\,$  LT 76  $\,\pm\,\,$ 

-Locate pushbuttons adjacent to truncated domes -See additional information in -WALL 15-details

SIGNAL FACE I.D.

All Heads L.E.D.

21**,**22 32 43

61,62

33 44 63

P41,P42 P61,P62

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS:1-4, 1-9, 1-11, 1-14, 2-5, 2-6, 2-9, 2-11, 2-15, 2-18, 3-5, 3-6, 3-8, 3-9, 3-10, 3-11, 3-15, 3-17, 3-18, 4-9, 4-11, 4-14, 5-10, 5-11, 5-17, 5-18, 6-9, 6-10, 6-15, 6-17, 8-10, 9-10, 9-11, 9-14, 9-15, 9-17, 10-11, 10-15, 10-17, 10-18, 11-14, 11-17, 11-18, 15-17 AND 17-18.

#### REMOVE JUMPERS AS SHOWN

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.

COMPONENT SIDE

- 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 phase 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 NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller... ..2070LX ...332 w/ Aux ..Q-Free MAXTIME Software... Cabinet Mount Output File Positions.. ..18 With Aux. Output File ...S1, S2, S4, S5, S6, S7, S8, S9 Load Switches Used. S11, AUXS1, AUXS2, AUXS3, AUXS4, AUXS6 ...1, 2, 3, 4, 4PED, 5 Phases Used... 6. 6PED Overlap "1"...... Overlap "2"... Overlap "3". Overlap "4". ..NOT USED Overlap "5". ...NOT USED

\*See overlap programming detail on sheet 2

ON OFF

13 14 15

- RF 2010 RP DISABLE

- WD 1.0 SEC

**GY ENABLE** SF#1 POLARITY

- LEDguard

RF SSM

FYA 1-9 FYA 3-10

- FYA 5-11 FYA 7-12

- FYA COMPACT-

# = DENOTES POSITION OF SWITCH

Overlap "6". ....NOT USED Overlap "7"..... Overlap "8". Overlap "9"...

#### INPUT FILE POSITION LAYOUT

(front view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE U	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	NOT USED	Ø 6 PED  DC ISOLATOR	DC
" <b> </b> "	E M P T Y	Ø 4 PED  DC ISOLATOR	NOT USED	ST DC ISOLATOR										
<sub>FILE</sub> U	S L O T													
"J" L	E M P T Y													

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

FS = FLASH SENSE ST = STOP TIME

#### 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)

Terminal (126) OL8 Yellow Field Terminal (117) **OL9 Yellow Field** Terminal (132)

**OL7 Yellow Field** 

#### 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
PED PUSH BUTTONS								. DC ISOLAT T FILE SLOT				
P41,P42	TB8-5,6	I12L	69	35	4	PED 4	IN INFO		3			
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						

INPUT FILE POSITION LEGEND: J2L 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 multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.



R-5600 Sig-22

#### SIGNAL HEAD HOOK-UP CHART S12 | AUX | AUX | AUX | AUX | AUX | S5 | S6 | LOAD S1 S2 S3 S4 S6 | S7 | S8 | S9 | S10 | S11 CMU CHANNEL NO. 1 2 13 3 14 | 5 | 6 | 15 | 7 16 9 10 17 11 12 18 4 OL9 6 6 PED 7 3 OL1 OL2 1 OL3 OL4 SIGNAL HEAD NO. RED 128 101 | 101 A121 A124 107 | 107 | YELLOW \* 129 102 102 **\*** 135 108 | 108 130 103 103 109 | 109 | **GREEN** 101 A104 A111 ARROW YELLOW 102 A122 A125 A112 A115 ARROW FLASHING A123 A126 A116 YELLOW ARROW GREEN 127 118 | 103 | 103 133 A113 ARROW

104

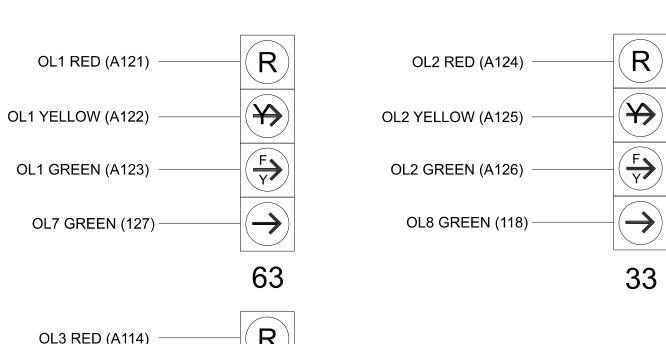
NU = Not Used NC = Not Connected

- \* Denotes install load resistor. See load resistor installation detail this sheet.
- ★ See pictorial of head wiring in detail this sheet.

## FYA SIGNAL WIRING DETAIL

121

(wire signal heads as shown)



R OL3 RED (A114) OL3 YELLOW (A115) OL3 GREEN (A116) OL9 GREEN (133)-

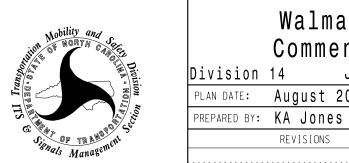
> THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T4 DESIGNED: Aug 2025

SEALED: 8/26/2025 REVISED: N/A

# Electrical Detail - Sheet 1 of 2

Temporary Design 4 - TMP Ph2, S1, Part 2 ELECTRICAL AND PROGRAMMING NC 107 (E. Main St)

REVISIONS



Walmart Driveway

Commercial Driveway Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

Sylva 052936 REVIEWED BY: BN Groome INIT. DATE

Brittany Groome 8/26/2025 SIG. INVENTORY NO. |4-|022|

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL

SEAL

SIGNATURES COMPLETED

#### R-5600 Sig-22.2

## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold

**Unit Flash Parameters** All Red Flash Exit Time

#### **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

#### **Channel Configuration**

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

NOTICE OVERLAP 7 ASSIGNED TO CHANNEL 1				Flash Yellow	Flash Red	Flash Alt	MMU Channel
	1	Overlap	7		X	X	1
•	2	Phase Vehicle	2		Х		2
NOTICE OVERLAP 8 ASSIGNED TO CHANNEL 3	3	Overlap	8		Χ	Х	3
	4	Phase Vehicle	4		Х		4
NOTICE OVERLAP 9 ASSIGNED TO CHANNEL 5	5	Overlap	9		Χ		5
	6	Phase Vehicle	6		Χ	Χ	6
NOTICE PHASE VEHICLE 3	7	Phase Vehicle	7		Χ		7
ASSIGNED TO CHANNEL 8	8	Phase Vehicle	3		Х	Х	8
	9	Overlap	1		Х	Х	9
	10	Overlap	2		X	Х	10
	11	Overlap	3		Х		11
	12	Overlap	4		X		12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
NOTICE PHASE 3 PED	15	Phase Ped	6				15
ASSIGNED TO CHANNEL 16	16	Phase Ped	3				16
NOTICE PHASE VEHICLE 1 ASSIGNED TO CHANNEL 17	17	Phase Vehicle	1		X		17
NOTICE PHASE VEHICLE 5 ASSIGNED TO CHANNEL 18	18	Phase Vehicle	5		Х	Х	18

NOTICE FLASHING RED

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T4 DESIGNED: Aug 2025

SEALED: 8/26/2025 REVISED: N/A

# Electrical Detail - Sheet 2 of 2

Temporary Design 4 - TMP Ph2, S1, Part 2

ELECTRICAL AND PROGRAMMING NC 107 (E. Main St) NC 107 (E. Main St)

REVISIONS

Walmart Driveway / Commercial Driveway

Division 14 Jackson County Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome

INIT. DATE

SIG. INVENTORY NO. |4-|022T

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

## FLASHER CIRCUIT MODIFICATION DETAIL

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

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

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

3. REMOVE FLASHER UNIT 2.

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

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

Overlap	1	2	3	7	8	9
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal	Normal	Normal
Included Phases	6	<u>-</u>	4	4	1,3	5
Modifier Phases	4	1,3	5	-	<del>-</del>	-
Trail Green	0	0	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0
FYA Ped Delay	7.0	0.0	7.0	0.0	0.0	0.0

PHASING DIAGRAM

2+6

2+5

1+6

PHASING DIAGRAM DETECTION LEGEND

DETECTED MOVEMENT

 $\ll$  - > PEDESTRIAN MOVEMENT

UNSIGNALIZED MOVEMENT

UNDETECTED MOVEMENT (OVERLAP)

TABLE OF OPERATION

SIGNAL

FACE

21,22

31

32

33

42

43

44

51,52

61,62

63

P21,P22

P31,P32

P41,P42

P61,P62

PHASE

→| →| R | R | <del>5 |</del> R | F

-R -R -R -R -R

RRRRRGF

R R R R R F

 $R \Rightarrow R \Rightarrow R$ 

|DW|DW|W|W|DW|DR

DW DW DW DW W DW DR

DW DW DW DW DW W DR

NC 107 (E. Main Street)

(Design Speed 45 MPH)

Install new pushbuttons

10' min between pushbuttons PB41 and PB22.

Pedestrian Pushbutton

-Locate pushbuttons adjacent to truncated domes -See additional information in -WALL 15-details

and signs. Maintain

PUE

PEDESTRIAN DETAIL

Transformer Base

Ex. PB41

Detail for installation of P22 head and pushbutton

10' max.

Elevation View

DW W DW W DW DW DR

#### 6 Phase Fully Actuated (Time Based Coordination)

# 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.

**PROPOSED** 

 $\bigcirc$ 

- 4. The order of phase 3 and phase 4 may be reversed.
- 5. Uncover and reconnect existing pedestrian head P31.
- 6. Reposition existing signal heads numbered 21, 22 and 51.
- 7. Set all detectors units to presence mode.
- 8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 9. Program pedestrian heads to countdown the flashing "Don't Walk" time only 10. To provide a leading pedestrian interval on phase 3, program FYA
- head numbered 33 to delay for 7 seconds after the start of the phase 3 walk interval. See Electrical Details for programming.
- 11. To provide a leading pedestrian interval on phase 4, program FYA head numbered 44 to delay for 6 seconds after the start of the phase 4 walk interval. See Electrical Details for programming. 12. To provide a leading pedestrian interval on phase 6, program FYA
- head numbered 63 to delay for 7 seconds after the start of the phase 7 walk interval. See Electrical Details for programming. 13. This intersection uses multi-zone microwave detection. Install
- detectors according to the manufacturer's instructions to achieve the desired detection.

LEGEND

Traffic Signal Head

Modified Signal Head

Pedestrian Signal Head

Signal Pole with Guy

Signal Pole with Sidewalk Guy

Inductive Loop Detector

Controller & Cabinet

Junction Box Oversized Junction Box

?-in Underground Conduit Right of Way Directional Arrow

Directional Drill

Type I Pushbutton Post Type II Signal Pedestal

Construction Zone

(A) "RIGHT TURN SIGNAL" Sign (R10-10)

"U-TURN YIELD TO RIGHT TURN"

Sign (R10-16)

(R) "RIGHT TURN ON RED YIELD TO U-TURN" Sign (R10-30)

n-Intrusive Detection Zone 👅 🚃

Permanent Utility Easement — PUE -

**EXISTING** 

N/A

×\_

N/A

N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

Microwa	ive De	tecti	.on			
	(2A)			(6A)		
FUNCTION	Sen	sor 1	Sens	sor 2		
Channel		1		1		
Phase		2	(	5		
Direction of Travel	١	IB	S	В		
Туре	Pric	ority	Pric	ority		
Level	2	QUEUE	2	QUEUE		
Detection Zone (ft)	< 750	_	< 750	_		
Range (ft)	600–100	150–100	600–100	150–100		
Enable Speed	Y	Υ	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	_		

MAXTIME DETECTOR INSTALLATION CHART

\* |X| 1 |15.0|

\* X 3 3.0

4 - |

4 | 15.0 |

\* | X | 5 | - | - | X | - | X |

\* X 5 - - X - X - \*

**DETECTOR** 

SIZE

(FT)

4A

P21,P22 P31,P32 P41,P42 P61,P62

DISTANCE

FROM

STOPBAR

0

\* Multi-Zone Microwave Detection Zone

**PROGRAMMING** 

CALL CALL CALL CALL

- X - X

- X - X

- X - X

- | X | - | X

- | X | - | X |

			9.
de 25 MPH)			10.
-12% Grade in Speed 25		Retaining wall	11.
-1 (Design	Commerical	Retaining wall	12.
	PUE	PUE PUE PUE	13.
		35 MPH +2% Grade (Design Speed 45 MPH)	
32	414243 44 B		
-	21 - 52		
	51	<b>5</b>	
	/ \ 61 <del>&lt;  </del> 62 <del>&lt;    </del>	—	
P31	(A) 33 3 <sub>1</sub> 2 31		PUE —
		NC 107 (E. Main Street)	PUE PUE
P62 (		PUE	

PUE :

SIGNAL FACE I.D.

All Heads L.E.D.

21**,**22 32 43

33 44

	MAX	KTIME	TIMING	CHART					
FEATURE	PHASE								
FEATURE	1	2	3	4	5	6			
Walk *	_	14	14	13	_	14			
Ped Clear	_	21	31	26	_	23			
Min Green *	7	12	7	7	7	12			
Passage *	2.0	2.0	2.0	2.0	2.0	2.0			
Max 1 *	20	45	45	40	20	45			
Yellow Change	3.0	4.3	4.0	3.2	3.0	4.3			
Red Clear	3.4	2.5	3.5	3.7	3.9	2.5			
Added Initial *	_	_	_	_	_	_			
Maximum Initial *	_	_	_	_	_	_			
Time Before Reduction *	_	_	_	_	_	_			
Time To Reduce *	_	_	_	_	_	_			
Minimum Gap	_	_	_	_	_	_			
Advance Walk	_	7	**	***	_	***			
Non Lock Detector	Х	_	Х	Х	Х	_			
Vehicle Recall	_	MIN RECAL	.L –	_	_	MIN RECALL			
Dual Entry	_	_	_	_	_	_			

PUE -

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

\*\*\* See note 11

\*\* See note 10 \*\*\*\* See note 12 Signal Upgrade Temporary Design 5 - TMP Ph3, S1

**Plans Prepared By:** 

NC 107 (E. Main Street) Walmart Driveway / Commercial Driveway

Jackson County

SEAL 052936 Brittany Groome

Division 14 PLAN DATE: August 2025 REVIEWED BY: ZM Esposito REVIEWED BY: BN Groome PREPARED BY: KA Jones INIT. DATE

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

#### 18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS:1-4, 1-9, 1-11, 1-14, 2-6, 2-9, 2-13, 2-15, 2-18, 3-6, 3-9, 3-10, 3-15, 3-17, 3-18, 4-9, 4-11, 4-14, 6-9, 6-10, 6-13, 6-15, 6-17, 8-10, 8-16, 9-10, 9-11, 9-13, 9-14, 9-15, 9-17, 10-15, 10-16, 10-17, 10-18, 11-14, 13-15, 13-18, 15-17 AND 17-18.

- RF 2010 RP DISABLE WD 1.0 SEC **GY ENABLE** SF#1 POLARITY - LEDguard RF SSM - FYA COMPACT-FYA 1-9 FYA 3-10 FYA 5-11 FYA 7-12

#### REMOVE JUMPERS AS SHOWN

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.

COMPONENT SIDE

- 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 phase 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 NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S3, S4, S5, S6, S7, S8, S9
	S11,S12, AUXS1, AUXS2, AUXS3
	AUXS4, AUXS6
Phases Used	1, 2, 2PED, 3, 3PED, 4, 4PED, 5
	6, 6PED

Overlap "1"... Overlap "2"... Overlap "3"...

Overlap "4"... ..NOT USED Overlap "5".... ....NOT USED Overlap "6"... ....NOT USED Overlap "7".

Overlap "8"... Overlap "9".....

\*See overlap programming detail on sheet 2

#### INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE U	J	S L O T	SLOT	SLOT	SLOT	SLOT	S L O T	S L O T	S L O T	S L O T	S L O T	S L O T	Ø 2 PED  DC ISOLATOR	Ø 6 PED  DC ISOLATOR	FS DC ISOLATOR
<b>" "</b>	-	E M P T Y	DC	Ø 3 PED DC ISOLATOR	DC										
FILE U	J	S L O T	S L O T												
"J" <sub>L</sub>	-	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	E M P T Y	EMPTY	E M P T Y	E M P T Y	E M P T Y	E M P T Y

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

FS = FLASH SENSE ST = STOP TIME

ON OFF

13

14

15

= DENOTES POSITION OF SWITCH

#### 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) **OL7 Yellow Field** Terminal (126)

OL8 Yellow Field Terminal (117) OL9 Yellow Field Terminal (132)

#### 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
PED PUSH BUTTONS												
P21,P22	TB8-4,6	I12U	67	33	2	PED 2	NOTE:					
P31,P32	TB8-8,9	I13L	70	36	8	PED 3	INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.					
P41,P42	TB8-5,6	I12L	69	35	4	PED 4						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						

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



Sig-23 R-5600

#### SIGNAL HEAD HOOK-UP CHART S12 AUX S1 AUX S2 AUX S3 AUX S4 AUX S5 AUX S6 SWITCH NO. S1 S2 S3 S4 S6 | S7 | S8 | S9 | S10 | S11 CMU CHANNEL NO. 1 2 13 3 14 | 5 | 6 | 15 | 7 16 9 10 17 11 12 18 OL7 2 2 PED OL8 4 OL9 6 6 PED 7 3 | OL1 | OL2 | 1 | OL3 | OL4 | RED 101 | 101 A121 A124 107 | 107 | YELLOW \* 129 102 102 **\*** 135 108 | 108 130 103 | 103 109 | 109 | GREEN 101 A104 A111 ARROW YELLOW 102 A122 A125 A112 A115 ARROW FLASHING A116 A123 A126 YELLOW ARROW GREEN 127 118 | 103 | 103 133 A113 ARROW 113 104 110

NC = Not Connected NU = Not Used

- \* Denotes install load resistor. See load resistor installation detail this sheet.
- ★ See pictorial of head wiring in detail this sheet.

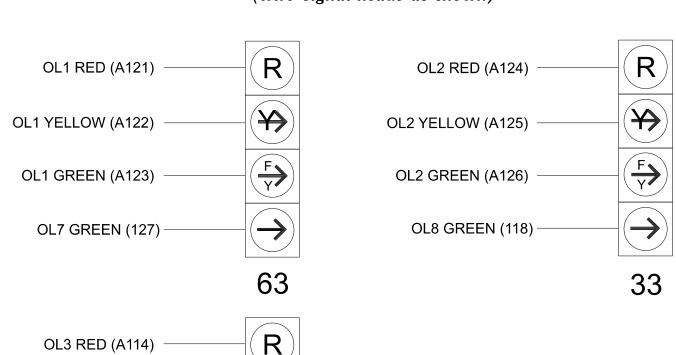
115

## FYA SIGNAL WIRING DETAIL

121

(wire signal heads as shown)

112



R OL3 YELLOW (A115) OL3 GREEN (A116) OL9 GREEN (133)-

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022T5 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

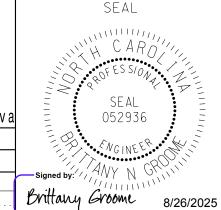
Electrical Detail - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING

Temporary Design 5 - TMP Ph3, S1 NC 107 (E. Main St)

Walmart Driveway Commerical Driveway Division 14 Jackson County

Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE



DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL

SIGNATURES COMPLETED

SIG. INVENTORY NO.  $|4-|0\rangle$ 

Main Menu >Controller >Detector >Ped Det Plans

Web Interface

Home >Controller >Detector Configuration >Pedestrian Detector

Plan 1

	Detector	Descripton	Call Phase	Call Overlap
	2		2	0
	4		4	0
	6		6	0
$\rightarrow$	8		3	0

**OUTPUT CHANNEL CONFIGURATION** 

Front Panel

NOTICE PHASE 3 PED

ASSIGNED TO

DETECTOR 8 PED

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

**Channel Configuration** 

		<u> </u>					
	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channe
NOTICE OVERLAP 7 ASSIGNED TO CHANNEL 1	1	Overlap	7		X	X	1
	2	Phase Vehicle	2		Χ		2
NOTICE OVERLAP 8 ASSIGNED TO CHANNEL 3	3	Overlap	8		Χ	Χ	3
NOTICE OVERLAR O	4	Phase Vehicle	4		Χ		4
NOTICE OVERLAP 9 ASSIGNED TO CHANNEL 5	5	Overlap	9		Χ		5
	6	Phase Vehicle	6		Х	Χ	6
NOTICE PHASE VEHICLE 3	7	Phase Vehicle	7		Х		7
ASSIGNED TO CHANNEL 8	8	Phase Vehicle	3		Х	Х	8
	9	Overlap	1		Х	Х	9
	10	Overlap	2		Х	Х	10
	11	Overlap	3		Χ		11
	12	Overlap	4		Х		12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
NOTICE PHASE 3 PED	15	Phase Ped	6				15
ASSIGNED TO CHANNEL 16	16	Phase Ped	3				16
NOTICE PHASE VEHICLE 1 ASSIGNED TO CHANNEL 17	17	Phase Vehicle	1		Χ		17
NOTICE PHASE VEHICLE 5 ASSIGNED TO CHANNEL 18	18	Phase Vehicle	5		Χ	Χ	18

NOTICE FLASHING RED

## MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

Overlap	1	2	3	7	8	9
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal	Normal	OFF
Included Phases	6	3	4	4	1	-
Modifier Phases	4	1	-	-	-	-
Trail Green	0	0	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0
FYA Ped Delay	7.0	7.0	6.0	0.0	0.0	0.0

Sig-23.2 R-5600

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

> Front Panel
> Main Menu>Controller>Unit Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold

**Unit Flash Parameters** All Red Flash Exit Time

#### 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: 14-1022T5

DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 2 of 2

Temporary Design 5 - TMP Ph3, S1

ELECTRICAL AND PROGRAMMING NC 107 (E.

NC 107 (E. Main St) Walmart Driveway /

Commerical Driveway Division 14 Jackson County

Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE

SIG. INVENTORY NO. |4-|022|

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

SIGNATURES COMPLETED

SEAL

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

PHASING DIAGRAM

PHASING DIAGRAM DETECTION LEGEND

UNSIGNALIZED MOVEMENT

UNDETECTED MOVEMENT (OVERLAP)

DETECTED MOVEMENT

 $<\!\!<\!\!--\!\!>$  PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL

FACE

21,22

31

32

33

42

43

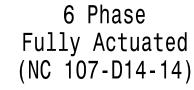
44

PHASE

→| →| R | R | <del>5</del> | R |

│<del></del>╃│╃╎╃│╃╎╃│╃

R | R | R | R | <del>5 |</del> F



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 detectors 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. To provide a leading pedestrian interval on phase 3, program FYA head numbered 33 to delay for 7 seconds after the start of the phase 3 walk interval. See Electrical Details for programming.
- 9. To provide a leading pedestrian interval on phase 4, program FYA head numbered 44 to delay for 7 seconds after the start of the phase 4 walk interval. See Electrical Details for programming.
- 10. To provide a leading pedestrian interval on phase 6, program FYA head numbered 63 to delay for 7 seconds after the start of the phase 7 walk interval. See Electrical Details for programming.
- 11. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- 12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

Traffic Signal Head Modified Signal Head

Sign Pedestrian Signal Head With Push Button & Sign

Signal Pole with Guy

Signal Pole with Sidewalk Guy

Inductive Loop Detector

Controller & Cabinet

Junction Box

Oversized Junction Box

2-in Underground Conduit

Right of Way Directional Arrow

Non-Intrusive Detection Zone

Directional Drill

Metal Pole with Mastarm

Type I Pushbutton Post

Type II Signal Pedestal

Gas Line

U/G Water Line

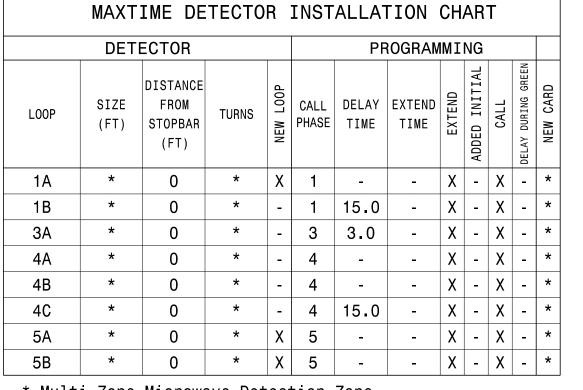
O/H Pwr. & Utl. Lines

"RIGHT TURN SIGNAL" Sign (R10-10) "RIGHT TURN ON RED YIELD TO U-TURN"

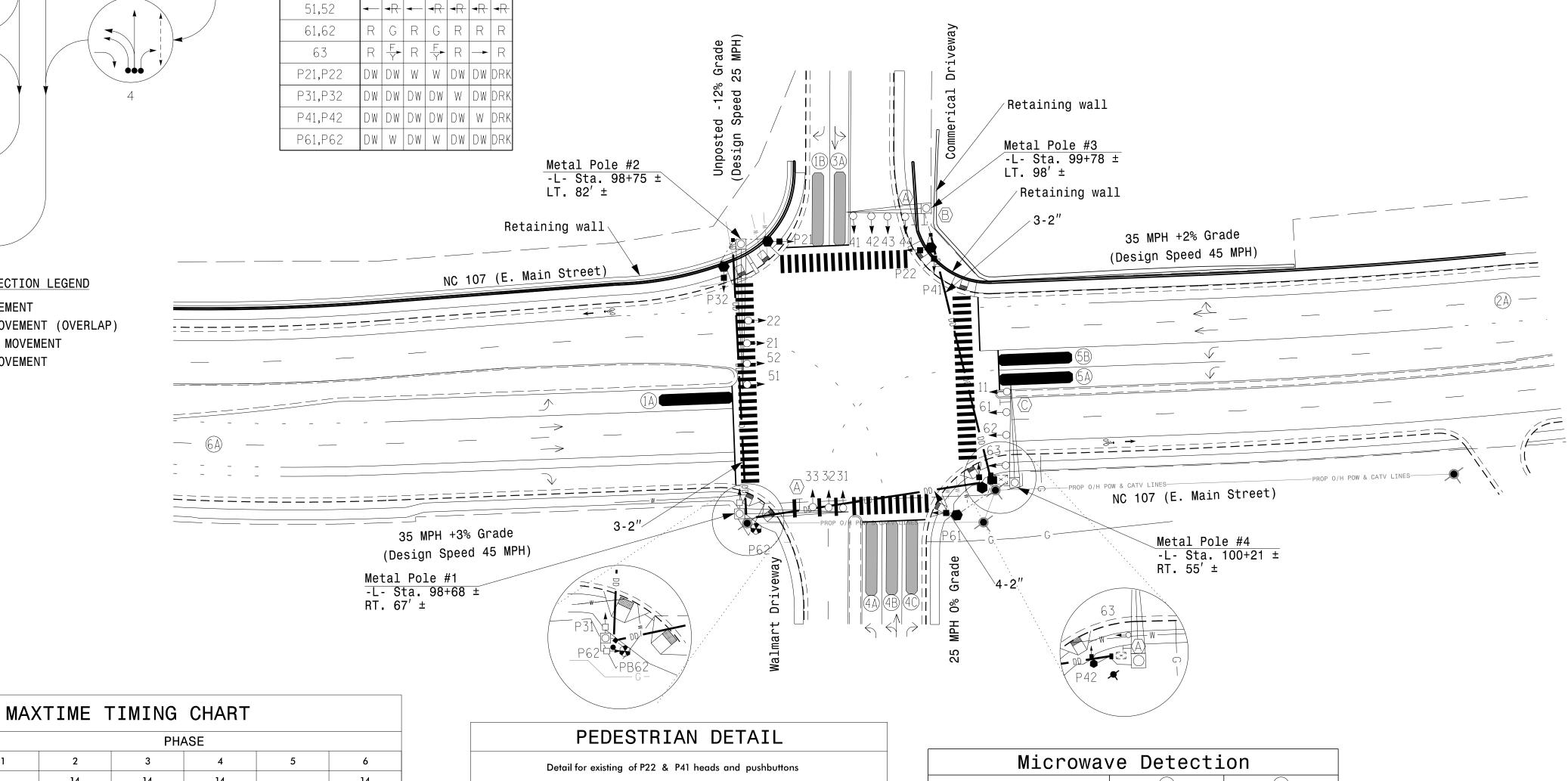
Sign (R10-30)

"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)

Utility Pole



\* Multi-Zone Microwave Detection Zone



P21,P22 P31,P32 P41,P42 P61,P62

SIGNAL FACE I.D.

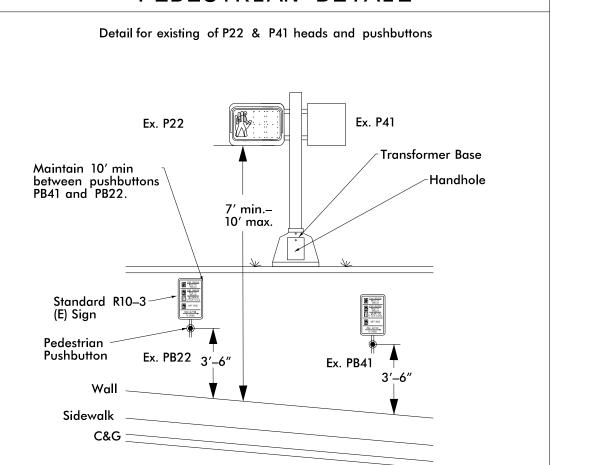
All Heads L.E.D.

21,22 32 43

61,62

	IVI <i>)</i> —	(VIII)	TIMITING	CHANI				
FEATURE	PHASE							
FEATURE	1	2	3	4	5	6		
Walk *	_	14	14	14	_	14		
Ped Clear	_	21	31	26	_	23		
Min Green *	7	12	7	7	7	12		
Passage *	2.0	2.0	2.0	2.0	2.0	2.0		
Max 1 *	20	45	45	40	20	45		
Yellow Change	3.0	4.3	4.0	3.2	3.0	4.3		
Red Clear	3.3	2.5	3.5	3.7	3.7	2.5		
Added Initial *	_	_	_	-	_	-		
Maximum Initial *	_	_	_	_	_	_		
Time Before Reduction *	_	_	_	-	_	-		
Time To Reduce *	_	_	_	_	_	_		
Minimum Gap	_	_	_	_	_	_		
Advance Walk	_	7	**	***	_	***		
Non Lock Detector	Х	-	Х	Х	Х	-		
Vehicle Recall	_	MIN RECALL	_	_	_	MIN RECALL		
Dual Entry	=	_	_	_	_	_		

Dual Entry	_	_	_	_	_	_		
* 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.								
** See note 8								
*** See note 9								
**** See note 10								



Microwave Detection							
	(2	ŶA)	(6	A			
FUNCTION	Sen	sor 1	Sens	sor 2			
Channel		1		1			
Phase	:	2		6			
Direction of Travel	٨	NB		В			
Туре	Pric	Priority		ority			
Level	2	QUEUE	2	QUEUE			
Detection 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	_			

**Plans Prepared By:** 

DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

1"=40'

Signal Upgrade - Final Design

# NC 107 (E. Main Street) Walmart Driveway /

N/A

N/A

N/A

N/A

N/A

Commerical Driveway Division 14 Jackson County PLAN DATE: August 2025

Sylva REVIEWED BY: ZM Esposito PREPARED BY: KA Jones REVIEWED BY: BN Groome REVISIONS INIT. DATE SIG. INVENTORY NO.

FINAL UNLESS ALL SIGNATURES COMPLETED SEAL 052936 Brittany Groome

**EXISTING** 

N/A

 $\longrightarrow$ 

N/A 

---PROP O/H TEL CATV & FO LINES-

DOCUMENT NOT CONSIDERED

Elevation View -Locate pushbuttons adjacent to truncated domes -See additional information in -WALL 15-details

(remove jumpers and set switches as shown) REMOVE DIODE JUMPERS:1-4, 1-9, 1-11, 1-14, 2-6. 2-9, 2-13, 2-15, 2-18, 3-6, 3-9, 3-10, 3-15, 3-17, 3-18, 4-9, 4-11,4-14, 6-9, 6-10, 6-13, 6-15, 6-17, 8-10, 8-16, 9-10, 9-13, 9-14, 9-15, 9-17, 10-15, 10-16, 10-17, 10-18, 11-14, 13-15, 13-18, 15-17 AND 17-18.

- RF 2010 RP DISABLE - WD 1.0 SEC - GY ENABLE SF#1 POLARITY - LEDguard RF SSM - FYA COMPACT-FYA 1-9 FYA 3-10 FYA 5-11 FYA 7-12

ON OFF

13

14

15

= DENOTES POSITION OF SWITCH

SW2

#### REMOVE JUMPERS AS SHOWN

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.

COMPONENT SIDE

- 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 phase 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 NC 107 D14-14 System.

#### **EQUIPMENT INFORMATION**

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S3, S4, S5, S6, S8, S9,
	S11,S12, AUXS1, AUXS2, AUXS3
	AUXS4, AUXS6

Phases Used.

Overlap "1"	*
Overlap "2"	
Overlap "3"	
Overlap "4"	
Overlap "5"	
Overlap "6"	NOT USED
Overlap "7"	*
Overlap "8"	
Overlan "O"	

\*Overlap programming detail on sheet 2

LOAD S1 S2 S3 S4

\*

127

1 2 13 3

OL7 2 2 PED OL8

129

130

113

115

★ See pictorial of head wiring in detail this sheet.

GREEN

CMU CHANNEL NO.

RED

YELLOW

GREEN

ARROW

YELLOW

ARROW FLASHING

YELLOW ARROW GREEN

ARROW

NU = Not Used

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S3, S4, S5, S6, S8, S9,
	S11,S12, AUXS1, AUXS2, AUXS3,
	AUXS4, AUXS6

...1, 2, 3, 4, 4PED, 5, 6, 6PED

...NOT USED

I12U

I12L

TB8-8,9

TB8-7,9

67 33

69 35

I13L 70 36

I13U 68 34

PED PUSH BUTTONS

P21,P22

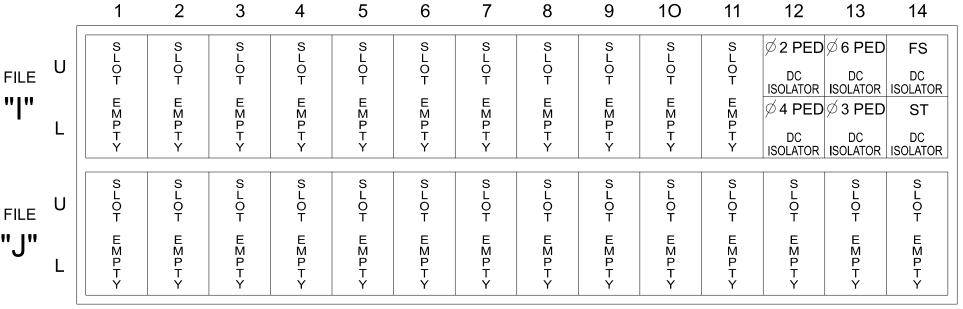
P31,P32

P41,P42

P61,P62

## INPUT FILE POSITION LAYOUT

(front view)



FS = FLASH SENSE ST = STOP TIME

INPUT FILE POSITION LEGEND: J2L

INPUT FILE CONNECTION & PROGRAMMING CHART

PED 6

PED 2 NOTE:
PED 3 INSTALL DC ISOLATORS
IN INPUT FILE SLOTS
I12 AND I13.

LOOP INPUT PIN INPUT DETECTOR CALL DELAY EXTEND EXTEND ADDED

8

FILE J SLOT 2 LOWER

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 resistors as shown)

**OL7 Yellow Field** Terminal (126)

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

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

AC-

OL8 Yellow Field Terminal (117) Remove load resistor from Terminal (132).

## SPECIAL DETECTOR NOTE

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

> **Plans Prepared By:** DRMP, INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 NC LICENSE NO. F-1524 (704) 549-4260

#### A122 A125 A112 A115 A116 A123 A126 A113 104 110 121 112 \* Denotes install load resistor. See load resistor installation detail this sheet.

Sig-24

R-5600

 S12
 AUX S1
 AUX S2
 AUX S3
 AUX S4
 AUX S5
 AUX S6

16 | 9 | 10 | 17 | 11 | 12 | 18

3 | OL1 | OL2 | 1 | OL3 | OL4 | 5

A111

A121 A124

#### FYA SIGNAL WIRING DETAIL

SIGNAL HEAD HOOK-UP CHART

14 | 5 | 6 | 15 | 7

135

101 | 101

102 102

103 | 103

101

102

118 | 103 | 103

NC = Not Connected

S6 | S7 | S8 | S9 | S10 | S11

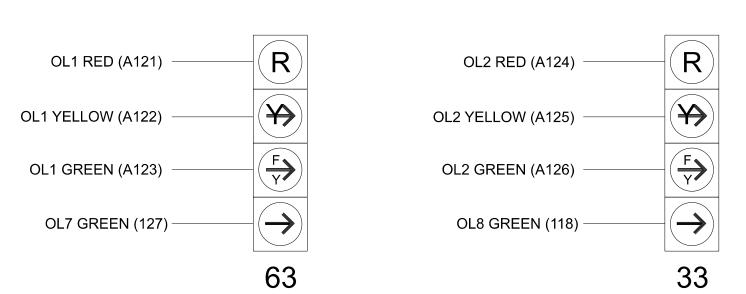
63 21,22 P21 R22 | 33 41 | 42 | 43 | P41 R2 | NC | 61,62 | P61 R2 | NU | 31 | 32 | P31 R32 | 63 33 11 | 44 NU | 51,52

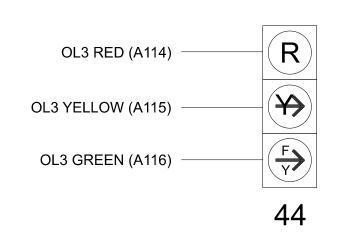
107 | 107 |

108 | 108

109 | 109 |

(wire signal heads as shown)





THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022 DESIGNED: Aug 2025 SEALED: 8/26/2025

REVISED: N/A

# Electrical Detail - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING

Walmart Driveway Commerical Driveway

Sylva August 2025 REVIEWED BY: ZM Esposito REVIEWED BY: BN Groome REVISIONS INIT. DATE

CARA 052936

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL

SIGNATURES COMPLETED

SEAL

Brittany Groome 8/26/2025 14-1022 SIG. INVENTORY NO.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Final Design

NC 107 (E. Main St)

Division 14 Jackson County PLAN DATE: PREPARED BY: KA Jones

#### PED 3 PROGRAMMING DETAIL

Front Panel

Main Menu >Controller >Detector >Ped Det Plans

Web Interface

Home >Controller >Detector Configuration >Pedestrian Detector

Plan 1

	Detector	Descripton	Call Phase	Call Overlap
	2	·	2	0
	4	·	4	0
	6		6	0
<b>→</b>	8		3	0

#### OUTPUT CHANNEL CONFIGURATION

Front Panel

NOTICE PHASE 3 PED

ASSIGNED TO
DETECTOR 8 PED

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channels Configuration

**Channel Configuration** 

	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channe
NOTICE OVERLAP 7 ASSIGNED TO CHANNEL 1	1	Overlap	7		X	X	1
	2	Phase Vehicle	2		Х		2
NOTICE OVERLAP 8 ASSIGNED TO CHANNEL 3	3	Overlap	8		Х	Χ	3
NOTICE BUACE VEHICLE 5	4	Phase Vehicle	4		Х		4
NOTICE PHASE VEHICLE 5 ASSIGNED TO CHANNEL 5	5	Phase Vehicle	5		Х		5
·	6	Phase Vehicle	6		Х	Χ	6
NOTICE PHASE VEHICLE 3	7	Phase Vehicle	7		Х		7
ASSIGNED TO CHANNEL 8	8	Phase Vehicle	3		Х	Χ	8
·	9	Overlap	1		Х	Х	9
	10	Overlap	2		Х	Χ	10
	11	Overlap	3		Х		11
	12	Overlap	4		Х		12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
NOTICE PHASE 3 PED	15	Phase Ped	6				15
SSIGNED TO CHANNEL 16	16	Phase Ped	3				16
NOTICE PHASE VEHICLE 1 SSIGNED TO CHANNEL 17	17	Phase Vehicle	1		Х		17
NOTICE PHASE VEHICLE 5 SSIGNED TO CHANNEL 18	18	Phase Vehicle	5		Х	Х	18

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	1	2	3	7	8	9
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal	Normal	OFF
Included Phases	6	3	4	4	1	<u>-</u>
Modifier Phases	4	1	-	-	-	-
Trail Green	0	0	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0
FYA Ped Delay	7.0	7.0	7.0	0.0	0.0	0.0

# MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit
Web Interface
Home>Controller>Unit

Start Up Parameters
Startup Clearance Hold

Unit Flash Parameters

All Red Flash Exit Time

#### FLASHER CIRCUIT MODIFICATION DETAIL

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

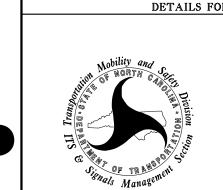
- 1. ON REAR OF PDA REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- 2. ON REAR OF PDA REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- 3. REMOVE FLASHER UNIT 2.

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1022 DESIGNED: Aug 2025

DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

REVISED. N/A



Final Design

ELECTRICAL AND PROGRAMMING

Electrical Detail - Sheet 2 of 2

#### NC 107 (E. Main St) at Walmart Driveway / Commercial Driveway

Commercial Driveway
Division 14 Jackson County Sylva
PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

PLAN DATE: August 2025 REVIEWED BY: ZM Esposito
PREPARED BY: KA Jones REVIEWED BY: BN Groome
REVISIONS INIT. DATE

052936

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

Plans Prepared By:

DRMP, INC.

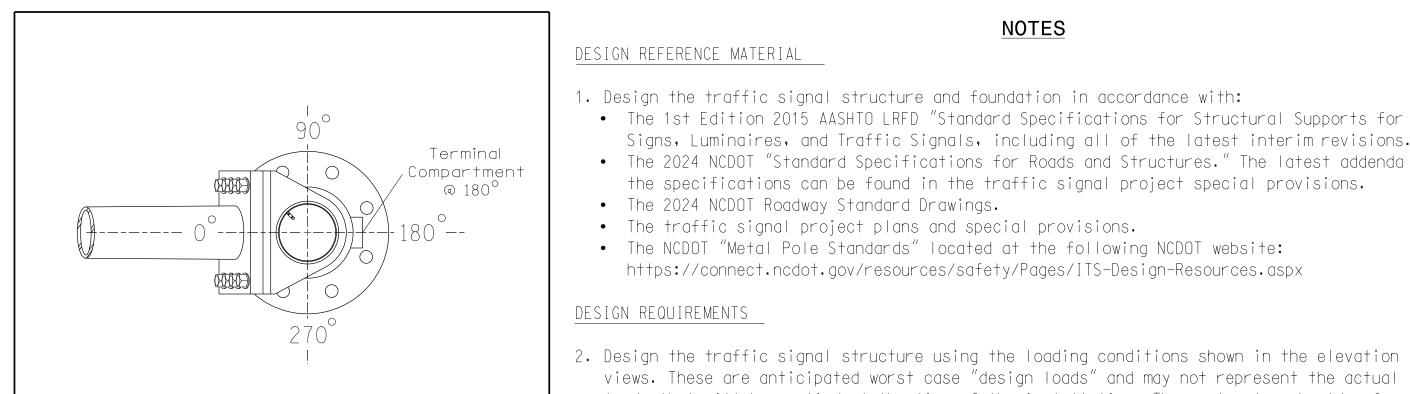
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220
CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

Maximum

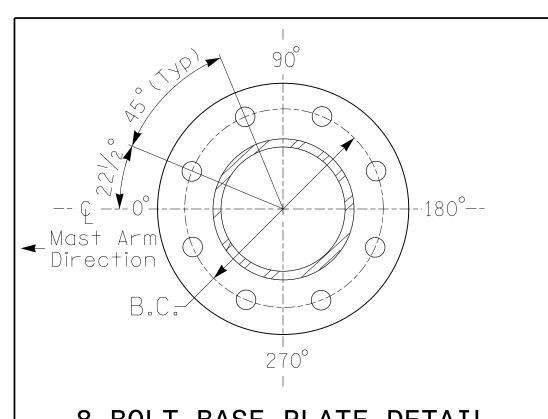
25.6 ft.

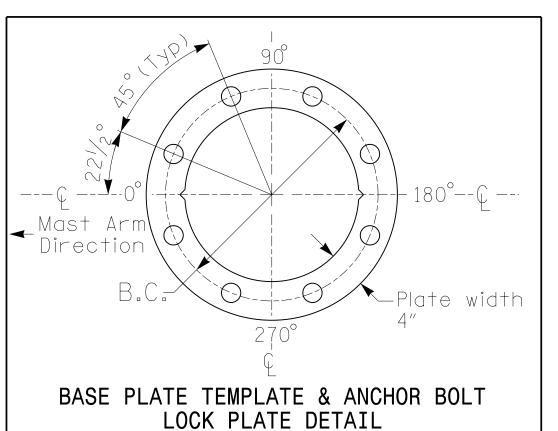
#### Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 1	
Baseline reference point at © Foundation @ ground level	2187.7 ft.	
Elevation difference at High point of roadway surface	+0.7 ft.	
Elevation difference at Edge of travelway or face of curb	+1.2 ft.	



#### POLE RADIAL ORIENTATION





METAL POLE No. 1

R-5600 Sig-24.3

	MAST ARM LOADING SC	HEDU	LE	
loading Symbol	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5″W X 66.0″L	74 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 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
	PEDESTRIAN SIGNAL HEAD WITH MOUNTING HARDWARE	2.2 S.F.	18.5" W X 17.0" L	21 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

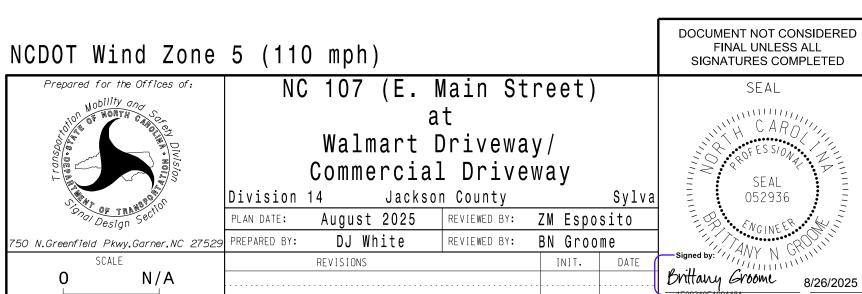
#### DESIGN REQUIREMENTS

- 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. 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
- 5. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- 6. The mast arm attachment height (H1) shown is based on the following design assumptions: a. Nominal vertical rise in mast arm is 5 feet as measured from the centerline of the arm base to the centerline of the free end of the arm.
- b. Signal heads are rigidly mounted and vertically centered on the mast arm.
- c. The roadway clearance height tor 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.
- f. Provide horizontal distance from the proposed centerline of the foundation to the edge of travelway. Refer to the Elevation Data Chart for elevation difference between the proposed foundation ground level and the edge of travelway. This information is necessary to ensure that the roadway clearance is maintained at the edge of the travelway and to aid in the camber design of the arm.
- 7. The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
- Mast arm attachment height (H1) plus 2 feet, or

N/A

- H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- 8. 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.
- }. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- 10. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

All metalpoles and arms should be black in color as specified in the project special provisions.



# See Note Street Name See Note 4 -See Note 7 Roadway Clearance Design Height 17 ft. H1= 14.7′ Minimum 16.5 ft. See Note 6 7′ min. – 10′ max.

Edge of travelway or face of curb

Base line reference elev. = 2187.7'

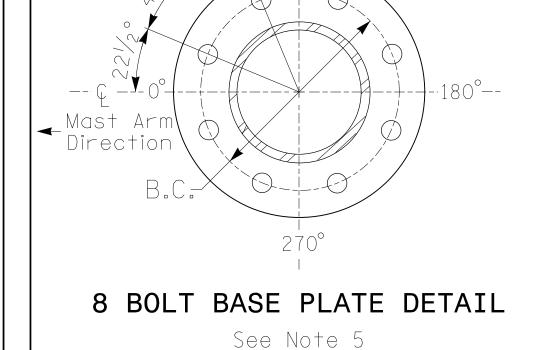
Elevation View

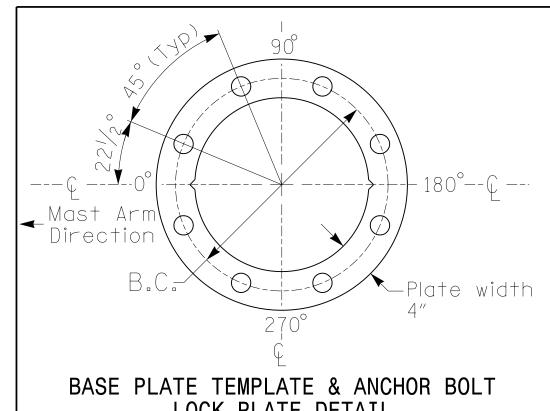
High Point of Roadway Surface —

Design Loading for METAL POLE NO. 1



Ç Foundation





For 8 Bolt Base Plate

#### Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 2
Baseline reference point at © Foundation @ ground level	2200.1 ft.
Elevation difference at High point of roadway surface	-10.8 ft.
Elevation difference at Edge of travelway or face of curb	-11.1 ft.

Terminal

Compartment

@ 180°

#### METAL POLE No. 2

R-5600 Sig 24 4

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

052936

SIG. INVENTORY NO.

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					
Street Name	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" I	36 LBS					

#### **NOTES**

#### DESIGN REFERENCE MATERIAL

- 1. Design the traffic signalstructure 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 signalproject specialprovisions.
- The 2024 NCDOT Roadway Standard Drawings.
- The traffic signalproject plans and specialprovisions.
- The NCDOT "MetalPole Standards" located at the following NCDOT website:
- https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

#### DESIGN REQUIREMENTS

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 signalplans for the actualloads that will be applied at the time of the installation. 3. Design allsignalsupports using force ratios that do not exceed 0.9.

2. Design the traffic signal structure using the loading conditions shown in the elevation

- 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. Signalheads 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 leveland the high point of the roadway.
- 8. The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
- Mast arm attachment height (H1) plus 2 feet, or
- H1 plus 1/2 of the totalheight of the mast arm attachment assembly plus 1 foot.
- 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.
- O.The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signalheads over the roadway.
- 11. The contractor is responsible for providing soilpenetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

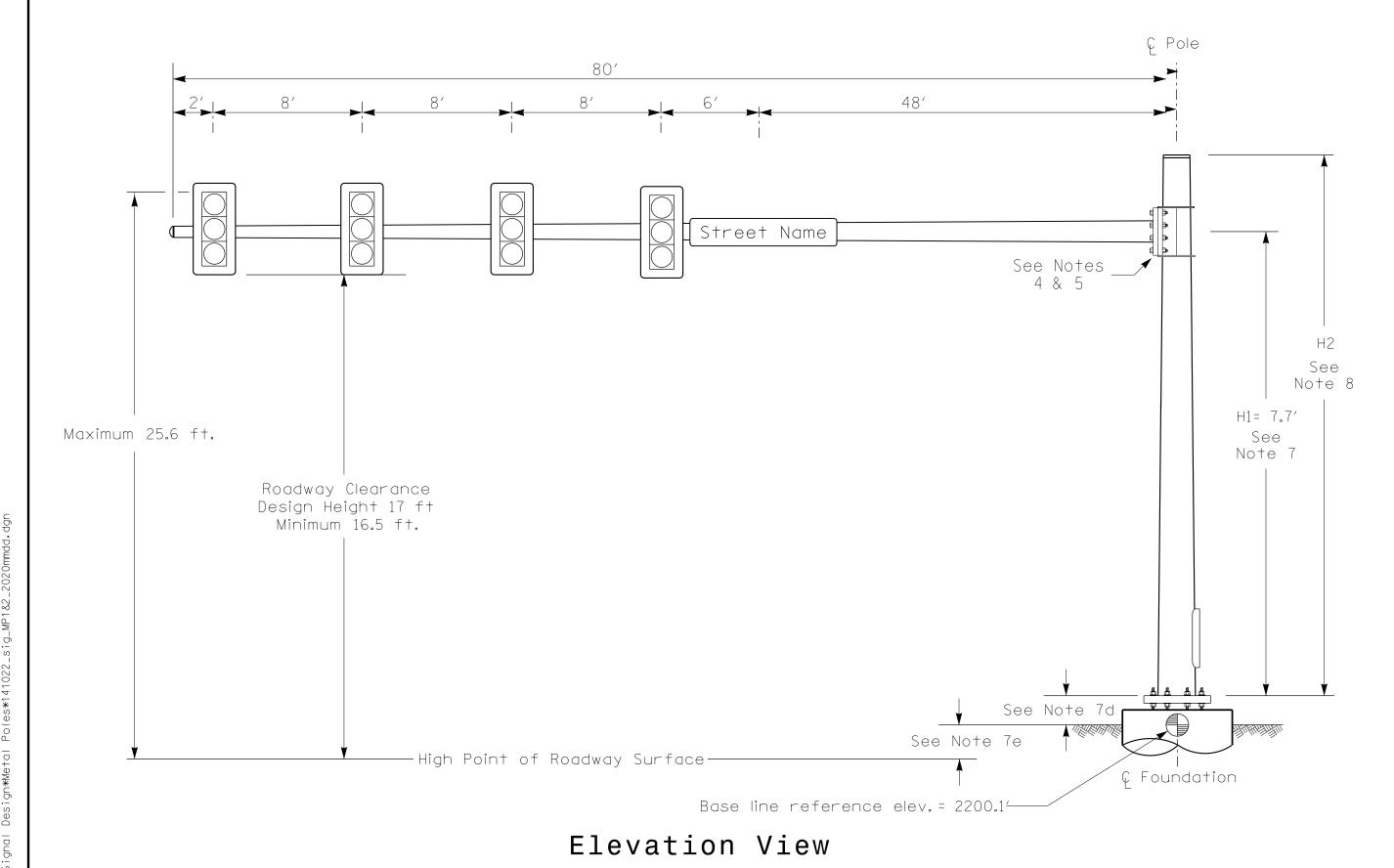
All metalpoles and arms should be black in color as specified in the project special provisions.

# NCDOT Wind Zone 5 (110 mph)

## NC 107 (E. Main Street) Walmart Driveway/ Commercial Driveway Division 14 Jackson County

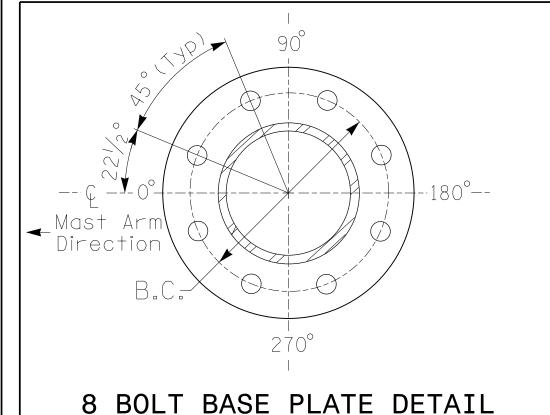
Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: DJ White REVIEWED BY: BN Groome O N.Greenfield Pkwy,Garner,NC 27529 REVISIONS INIT. DATE Brittany Groome N/A

# Design Loading for METAL POLE NO. 2

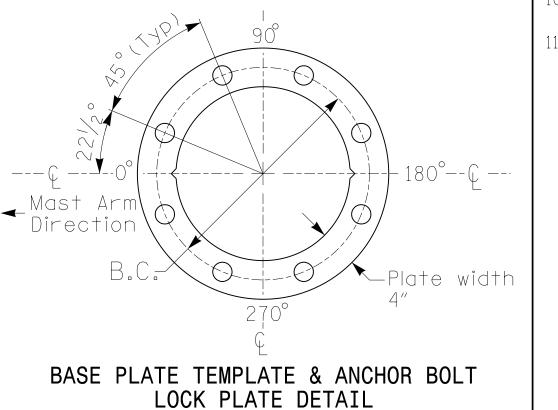




# POLE RADIAL ORIENTATION



See Note 6



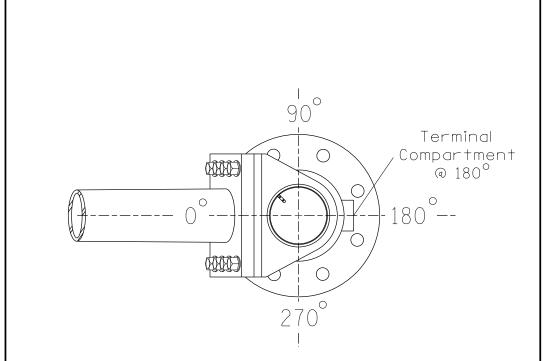
For 8 Bolt Base Plate

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

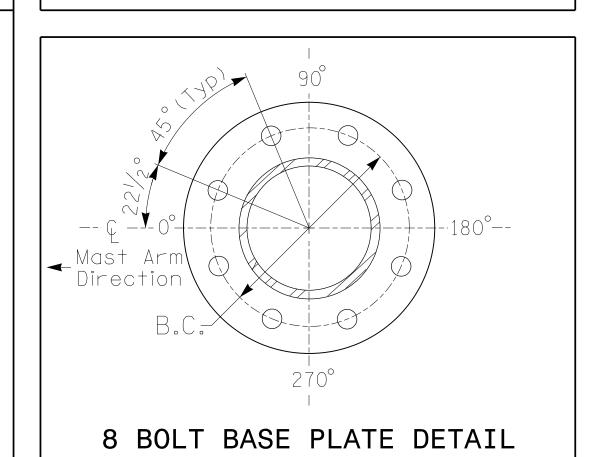
project survey data.

#### Elevation Data for Mast Arm Attachment (H1)

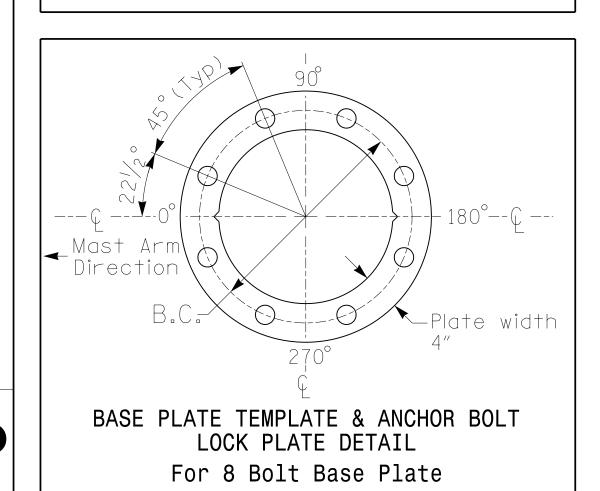
Elevation Differences for:	Pole 3	Pole 4
Baseline reference point at © Foundation @ ground level	2199.0 ft.	2187.2 ft.
Elevation difference at High point of roadway surface	-10.9 ft.	-0.2 ft.
Elevation difference at Edge of travelway or face of curb	-10.3 ft.	-1.0 ft.



#### POLE RADIAL ORIENTATION



See Note 5



METAL POLE No. 3 and 4

PROJECT REFERENCE NO. SHEET NO. Sig-24.5

	MAST ARM LOADING SC	HEDU	LE	
LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5″W X 66.0″L	74 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 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
4	CCTV CAMERA ARM-MOUNTED	1.0 S.F.	11.0" W X 11.0"L	30 LBS

#### NOTES

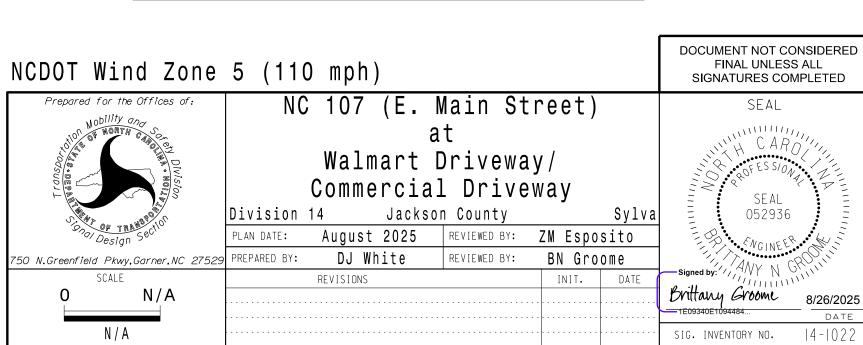
#### DESIGN REFERENCE MATERIAL

- 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

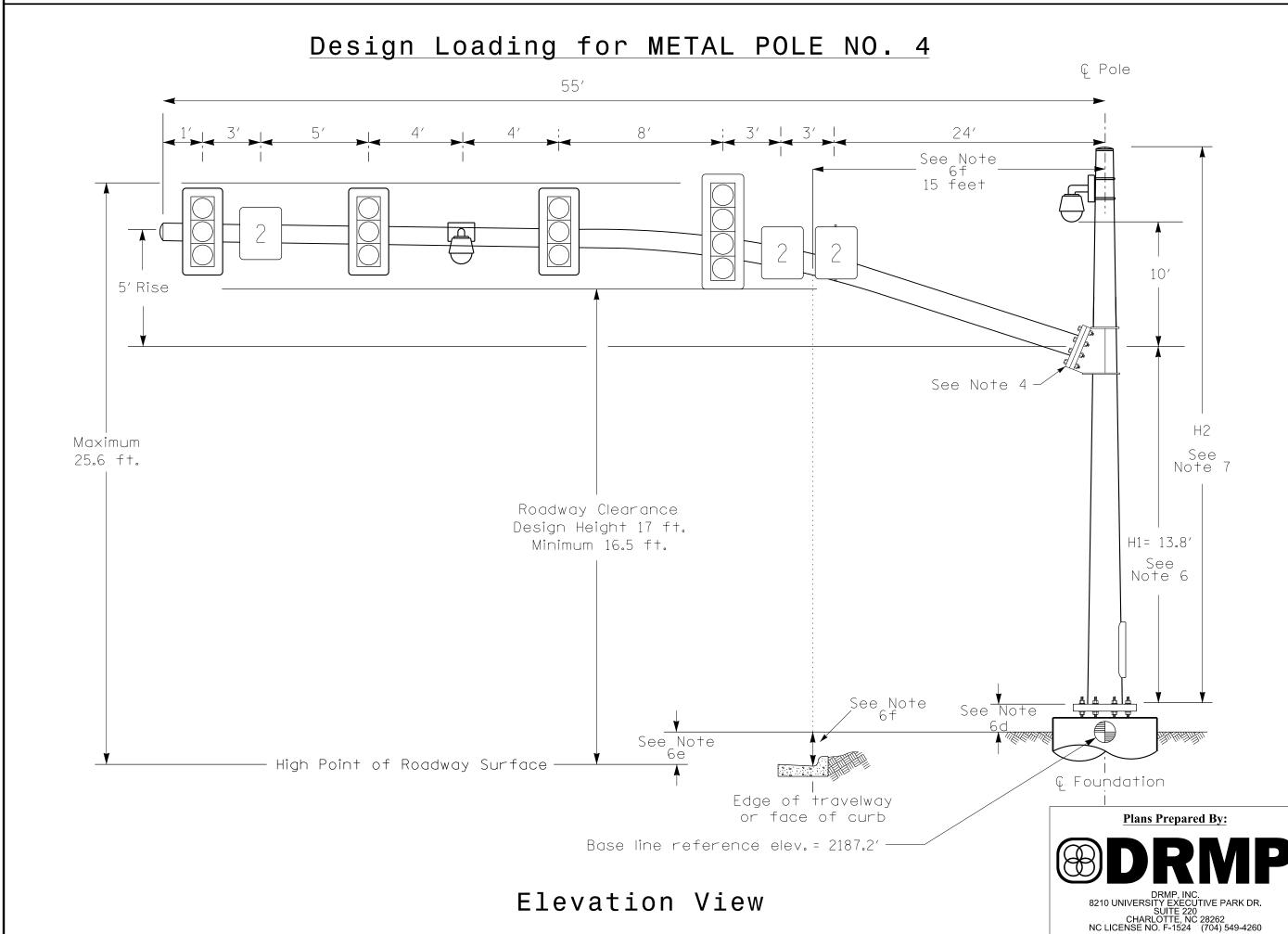
#### DESIGN REQUIREMENTS

- 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. 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
- 5. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- 6. The mast arm attachment height (H1) shown is based on the following design assumptions:
  a. Nominal vertical rise in mast arm is 5 feet as measured from the centerline of the arm base to the centerline of the free end of the arm.
- 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.
- f. Provide horizontal distance from the proposed centerline of the foundation to the edge of travelway. Refer to the Elevation Data Chart for elevation difference between the proposed foundation ground level and the edge of travelway. This information is necessary to ensure that the roadway clearance is maintained at the edge of the travelway and to aid in the camber design of the arm.
- 7. The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
- Mast arm attachment height (H1) plus 2 feet, or
- H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- 8. 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.
- 9. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- 10. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

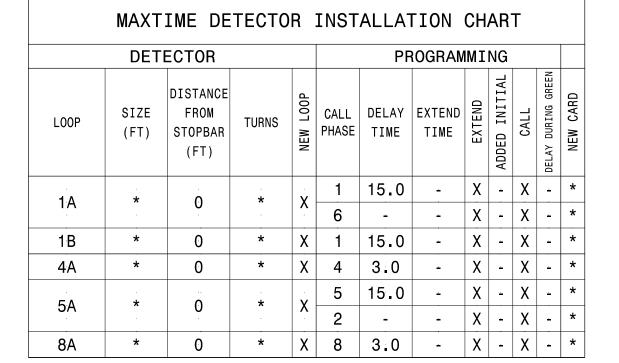
All metalpoles and arms should be black in color as specified in the project special provisions.



Design Loading for METAL POLE NO. 3 15 feet Street Name-Ç Pole 5' Rise See Note 4 Н2 Maximum See Note 25.6 ft. Roadway Clearance Design Height 17 ft. H1= 3.1′ Minimum 16.5 ft. See Note 6 See Note High Point of Roadway Surface — C Foundation Edge of travelway or face of curb Base line reference elev. = 2199' Elevation View Design Loading for METAL POLE NO. 4 Ç Pole



Sig-25.0 R-5600

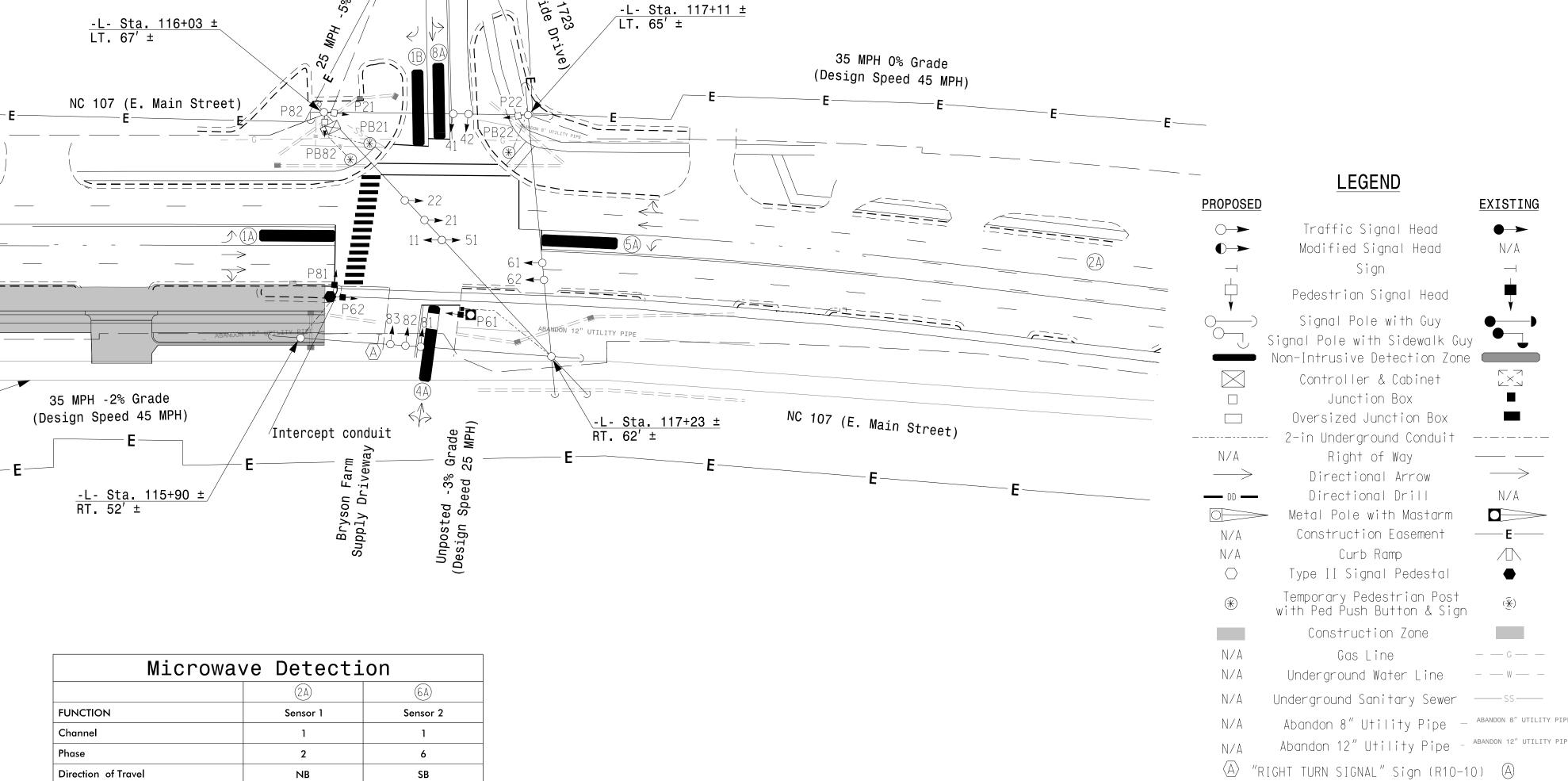


\* Multi-Zone Microwave Detection Zone

#### 5 Phase Fully Actuated (Time Based Coordination)

#### 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. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 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. 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.



MAXTIME TIMING CHART PHASE **FEATURE** 8 13 13 Ped Clear 7 Min Green \* 7 12 2.0 2.0 2.0 2.0 2.0 Passage \* 2.0 20 20 25 30 3.0 Yellow Change 3.0 3.5 4.7 3.5 2.6 Red Clear 2.4 2.4 1.6 2.4 Added Initial \* Maximum Initial \* Time Before Reduction Time To Reduce \* \_ Minimum Gap Advance Walk 6 Non Lock Detector Χ Vehicle Recall MIN RECALL MIN RECALL **Dual Entry** \* 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.

PHASING DIAGRAM

PHASING DIAGRAM DETECTION LEGEND

DETECTED MOVEMENT

 $<\!\!--\!\!>$  PEDESTRIAN MOVEMENT

UNSIGNALIZED MOVEMENT

UNDETECTED MOVEMENT (OVERLAP)

2+6

TABLE OF OPERATION

FACE

21,22

41,42

61, 62

P21;P22

P61,P62

P81**,**P82

10' X 5' RCBC

Direction of Travel

Detection Zone (ft)

Speed Range (mph)

Enable Estimated Time of Arrival

Estimated Time of Arrival (sec)

Range (ft)

**Enable Speed** 

NB

Priority

< 750

600–100

35–100

2.5-6.5

QUEUE

150-100

1–35

SB

Priority

< 750

600–100

35-100

2.5-6.5

QUEUE

150-100

1–35

PHASE

RRRRGR

|DW|DW| W | W |DW|DRK

|DW| W |DW| W |DW |DRK

DW DW DW DW W DRK

SIGNAL FACE I.D.

All Heads L.E.D.

21,22 41,42 61,62 81,82

P21,P22 P61,P62 P81,P82

**Plans Prepared By:** 

Signal Upgrade

SR 1723 (Cliffside Drive) Bryson Farm Supply Driveway Jackson County Division 14

Temporary Design 1 - TMP Ph1, S2, Part 1

PLAN DATE: August 2025 REVIEWED BY: ZM Esposito REPARED BY: DS Griffith REVIEWED BY: BN Groome REVISIONS INIT. DATE

NC 107 (E. Main Street)

Brittany Groome 8/26/2025 SIG. INVENTORY NO. |4-|200T|

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

SIGNATURES COMPLETED

SEAL

052936

A114

A115

51

# 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.

CMU CHANNEL

PHASE

YELLOW

GREEN

RED

ARROW

YELLOW

**\*** 129

130

- 2. Program phases 4 and 8 for Dual Entry and Simultaneous Start.
- 3. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- 4. Program controller to start up in phase 2 Green No Walk and phase 6 Green No Walk.
- 5. The cabinet and controller are part of the NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

S4
D

## \*See overlap programming detail on sheet 2.

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	TD2 1 2	I1U	56	18	1	1	15.0		Х		Χ	
IA.	TB2-1,2	IIO	50	_	29	6			Х		Х	
5A	TB3-1,2	J1U	55	17	15	5	15.0		Х		Χ	
J/A	103-1,2	310	55	-	31	2			Х		Χ	
PED PUSH BUTTONS							NOTE:					
P21,P22	TB8-4,6	I12U	67	33	2	PED 2	INSTALL	DC ISOLAT FILE SLOT	ORS			
P61,P62	TB8-7,9	I13U	68	34	6	PED 6	IN INFO		3			
P81,P82	TB8-8,9	I13L	70	36	8	PED 8						

#### INPUT FILE POSITION LEGEND: FILE SLOT 2 **LOWER**

- Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.
- 2. For Detection Zones 1A and 5A, the equipement placement is typical for a NCDOT installation.



## FLASHING A123 A126 YELLOW **GREEN** 133 ARROW 112 NC = Not Connected \* Denotes install load resistor. See load resistor installation detail this sheet. ★ See pictorial of head wiring in detail this sheet. FYA SIGNAL WIRING DETAIL

SIGNAL HEAD HOOK-UP CHART

**\*** 135

136

**\*** 102

103

S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 AUX AUX AUX AUX S5 S6 S6

109

A121

A122 A125

1 2 13 3 4 14 5 6 15 7 8 16 9 10 17 11 12 18

1 2 | 2 | OL7 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 8 | OL1 | OL2 | SPARE | OL3 | OL4 | SPARE |

11 21,22 P21, P22 83 41,42 NU 51 61,62 P61, P62 NU 81,82 P81, P82 11 83 NU 51 NU NU

#### (wire signal heads as shown) **₩** OL3 RED (A114) OL1 RED (A121) $(\mathbf{Y})$ OL3 YELLOW (A115) OL1 YELLOW (A122) F OL1 GREEN (A123) OL3 GREEN (A116) Ø1 GREEN (127) Ø5 GREEN (133)

OL2 RED (A124) OL2 YELLOW (A125) OL2 GREEN (A126) **OL7 GREEN (118)** 

> THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1200T1 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 1 of 2 Temporary Design 1 - TMP Ph1, S2, Part 1

ELECTRICAL AND PROGRAMMING NC 107 (E. Main Street) DETAILS FOR: SR 1723 (Cliffside Drive)

REVISIONS

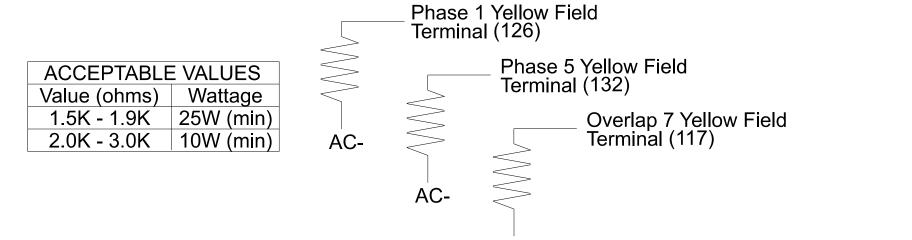
Bryson Farm Supply Driveway Division 14 Jackson County Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: DS Griffith REVIEWED BY: BN Groome

SIGNATURES COMPLETED SEAL 052936 INIT. DATE

DOCUMENT NOT CONSIDERED

FINAL UNLESS ALL

Brittany Groome 8/26/2025 SIG. INVENTORY NO. |4-|200T



Note: For Detection Zones 1A and 5A the equipment and slots reserved are typical for a NCDOT installation.

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)

18 CHANNEL IP CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

**COMPONENT SIDE** 

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.

INPUT FILE POSITION LAYOUT

(front view)

1 2 3 4 5 6 7 8 9 10 11 12 13 14

4. Integrate monitor with Ethernet network in cabinet.

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

FILE

REMOVE JUMPERS AS SHOWN

REMOVE DIODE JUMPERS 1-3, 1-5, 1-6, 1-9, 1-10, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-13, 2-15, 3-5, 3-6, 3-9, 3-10, 3-11, 3-15, 4-8, 4-10, 4-16, 5-9, 5-10, 5-11, 5-13, 6-9, 6-10, 6-11, 6-13, 6-15, 8-10, 8-16, 9-10, 9-11, 9-13, 9-15, 10-11, 10-15, 10-16,11-13, 11-15 AND 13-15.

WD ENABLE (

RF 2010

─ WD 1.0 SEC

FYA 1-9 - FYA 3-10

FYA 5-11

FYA 7-12

13

14

■ = DENOTES POSITION OF SWITCH

DC DC DC ISOLATOR ISOLATOR

NOT

Ø8 PED ST

DC DC ISOLATOR

FS = FLASH SENSE

ST = STOP TIME

RP DISABLE

- GY ENABLE

- SF#1 POLARITY 📮

FYA COMPACT—

#### 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	15.0		Х		Х	
IA.	102-1,2	Iro	30	-	29	6			Х		Х	
5A	TD2 1 2	J1U	55	17	15	5	15.0		Х		Χ	
)A	5A TB3-1,2	2 310	55	-	31	2			Х		Х	
PED PUSH BUTTONS							NOTE:					
P21;P22	TB8-4,6	I12U	67	33	2	PED 2	INSTALL	. DC ISOLAT	ORS			
P61;P62	TB8-7,9	I13U	68	34	6	PED 6	IN INPUT FILE SLOTS I12 AND I13.					
P81;P82	TB8-8,9	I13L	70	36	8	PED 8						
		INPUT FILE	POS	ITION I F	GEND: J2L							

#### SPECIAL DETECTOR NOTE

- 1. Install a multi-zone microwave detection system for vehicle detection.

#### 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.



#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

Overlap	1	2	3	7
Туре	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal
Included Phases	2	8	6	1
Modifier Phases	1	1	5	<u> </u>
Modifier Overlap	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
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

#### **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channel Configuration

#### Channel Configuration

	Oriani	ici comigaratic	211			
	Channel	Control Type	Control Source Flash Yellow	Flash Red	Flash Alt	MMU Channel
	1	Phase Vehicle	1	Х	X	1
	2	Phase Vehicle	2	Х		2
NOTICE OVERLAP 7	3	Overlap	7	Х	X	3
ASSIGNED TO CHANNEL 3	4	Phase Vehicle	4	Х		4
	5	Phase Vehicle	5	Х		5
	6	Phase Vehicle	6	Х	Х	6
	7	Phase Vehicle	7	Х		7
	8	Phase Vehicle	8	Χ	X	8
	9	Overlap	1	Х	Х	9
	10	Overlap	2	Χ	Х	10
	11	Overlap	3	Х		11
	12	Overlap	4	Х		12
	13	Phase Ped	2			13
	14	Phase Ped	4			14
	15	Phase Ped	6			15
	16	Phase Ped	8			16
	17	Overlap	5	Х	X	17
	18	Overlap	6	Х		18

NOTICE FLASHING RED

#### MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold

**Unit Flash Parameters** All Red Flash Exit Time

#### 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: 14-1200T1 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 2 of 2 Temporary Design 1 - TMP Ph1, S2, Part 1

ELECTRICAL AND PROGRAMMING

NC 107 (E. Main Street) SR 1723 (Cliffside Drive)

Bryson Farm Supply Driveway Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

REVISIONS INIT. DATE

Brittany Groome 8/26/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

SIGNATURES COMPLETED

SEAL

**Plans Prepared By:** 



PREPARED BY: DS Griffith REVIEWED BY: BN Groome

SIG. INVENTORY NO. 4-1200T

Sig-26.0 R-5600

**DETECTOR PROGRAMMING** FROM CALL DELAY EXTEND NO SERVICE STREET TURNS STOPBAR NOTES 1 | 15.0 | - | X | - | X - | X | - | X | - | \*

\* Multi-Zone Microwave Detection Zone

SIZE

L00P

MAXTIME DETECTOR INSTALLATION CHART

\* | X | 1 | 15.0 | - | X | - | X |

\* | X | 4 | 3.0 | - | X | - | X | - | \*

\* | X | 8 | 3.0 | - | X | - | X | - | \*

5 | 15.0 | - | X | - | X |

2 - X - X - \*

5 Phase Fully Actuated (Time Based Coordination)

- 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. Disconnect and bag existing pedestrian head and pushbutton for P82.
- 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. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.

LEGEND

Traffic Signal Head

Modified Signal Head

Sign

Pedestrian Signal Head

Signal Pole with Guy

Signal Pole with Sidewalk Guy

Inductive Loop Detector Controller & Cabinet Junction Box Oversized Junction Box 2-in Underground Conduit

Right of Way

Directional Arrow

Directional Drill

Metal Pole with Mastarm Construction Easement Curb Ramp

Temporary Pedestrian Post with Ped Push Button & Sign

Construction Zone

Pedestrian Barricade

⟨A⟩ "RIGHT TURN SIGNAL" Sign (R10-10) 
⟨A⟩

Non-Intrusive Detection Zone

**EXISTING** 

**-**

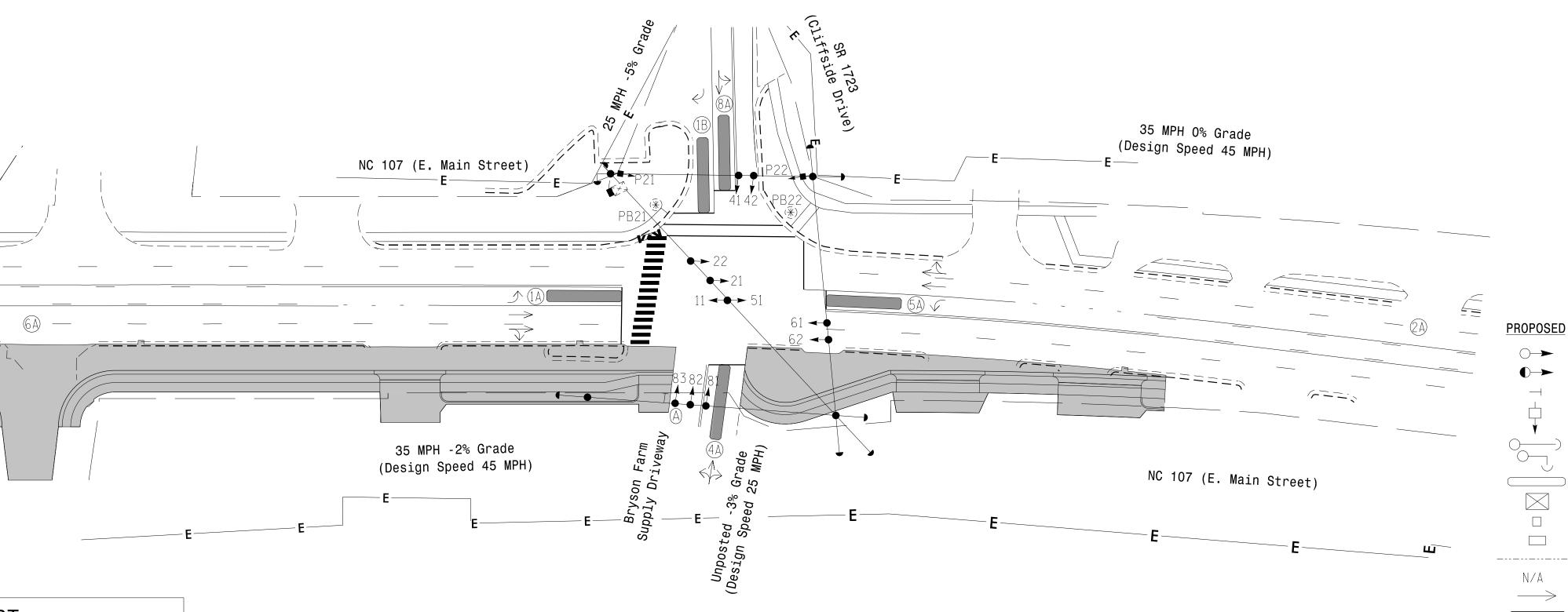
N/A

 $\longrightarrow$ 

N/A

N/A

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



	MAX	TIME T	IMING	CHART		
EE A TUDE			PH	IASE		
FEATURE	1	2	4	5	6	8
Walk *	-	14	_	_	_	_
Ped Clear	_	18	_	-	_	_
Min Green *	7	12	7	7	12	7
Passage *	2.0	2.0	2.0	2.0	2.0	2.0
Max 1 *	20	45	25	20	45	25
Yellow Change	3.0	4.7	3.5	3.0	4.7	3.5
Red Clear	2.6	1.6	2.4	2.4	1.6	2.4
Added Initial *	_	_	_	_	_	_
Maximum Initial *	_	_	_	-	_	_
Time Before Reduction *	_	_	_	_	_	_
Time To Reduce *	_	_	_	_	_	_
Minimum Gap	_	_	_	_	_	_
Advance Walk	_	7	_	_	_	_
Non Lock Detector	Х	_	Х	Х	_	Х
Vehicle Recall	_	MIN RECALL	_	_	MIN RECALL	_
Dual Entry	_	_	Х	_	_	Х

\* 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

PHASING DIAGRAM

PHASING DIAGRAM DETECTION LEGEND

DETECTED MOVEMENT

 $<\!\!--\!\!>$  PEDESTRIAN MOVEMENT

UNSIGNALIZED MOVEMENT

UNDETECTED MOVEMENT (OVERLAP)

2+6

2+5

TABLE OF OPERATION

FACE

21,22

41,42

61, 62

P21, P22

PHASE

 $\rightarrow \rightarrow R R F R$ 

DWDWWWDWDRK

Microwa	ve De	tecti	.on	
	(2	À	(6	A
FUNCTION	Sen	sor 1	Sens	sor 2
Channel		1		1
Phase		2		6
Direction of Travel	٨	IB	S	В
Туре	Pric	ority	Pric	ority
Level	2	QUEUE	2	QUEUE
Detection Zone (ft)	< 750	_	< 750	_
Range (ft)	600–100	150–100	600–100	150–100
Enable Speed	Y	Υ	Y	Υ
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.

83

P21**,**P22

21,22 41,42 61,62 81,82

Signal Upgrade

**Plans Prepared By:** 

Temporary Design 2 - TMP Ph1, S2, Part 2



NC 107 (E. Main Street) SR 1723 (Cliffside Drive) Bryson Farm Supply Driveway

N/A

 $\longrightarrow$ 

N/A

Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

PREPARED BY: DS Griffith REVIEWED BY: BN Groome INIT. DATE SEAL 052936

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Brittany Groome SIG. INVENTORY NO. 4-120072

lower than 4 seconds.

- . Program controller to start up in phase 2 Green No Walk and phase 6 Green No Walk.

#### **EQUIPMENT INFORMATION**

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S3, S4, S5, S7, S8, S11,
	AUX S1, AUX S2, AUX S4
Phases Used	1, 2, 2PED, 4, 5, 6, 8
Overlap "1"	*
Overlap "2"	*
Overlap "3"	*
Overlap "4"	NOT USED
Overlap "7"	*

- 2. Program phases 4 and 8 for Dual Entry.
- 3. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- 5. The cabinet and controller are part of the NC 107 Time Based System.

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S2, S3, S4, S5, S7, S8, S11,
	AUX S1, AUX S2, AUX S4
Phases Used	1, 2, 2PED, 4, 5, 6, 8
Overlap "1"	*
Overlap "2"	*
Overlap "3"	*
Overlap "4"	NOT USED
Overlap "7"	*

#### \*See overlap programming detail on sheet 2.

#### 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	15.0		Х		Х	
IA		I ITO	50	-	29	6			X		Χ	
5A	TD2 1 2	141.1	55	17	15	5	15.0		Х		Х	
ΘA	TB3-1,2	J1U	00	-	31	2			Х		Х	
PED PUSH BUTTONS							NOTE:					
P21;P22	TB8-4,6	I12U	67	33	2	PED 2						
P21,P22 TB8-4,6 I12U 67 33 2 PED 2 INSTALL DC ISOLATORS IN INPUT FILE SLOT I13.  INPUT FILE J SLOT 2 LOWER												

#### SPECIAL DETECTOR NOTE

- 1. Install a multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.
- 2. For Detection Zones 1A and 5A, the equipement placement is typical for a NCDOT installation.

#### 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.



#### 1 2 | 2 | OL7 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 8 | OL1 | OL2 | SPARE | OL3 | OL4 | SPARE | PHASE 11 21,22 P21, P22 83 41,42 NU 51 61,62 NC NU 81,82 NC 11 83 NU 51 NU NU **\*** 129 **\*** 102 **\*** 135 108 YELLOW GREEN 130 103 136 109 RED A121 A114 ARROW YELLOW A122 A125 A115 FLASHING A123 A126 YELLOW **GREEN** 133 ARROW NC = Not Connected

SIGNAL HEAD HOOK-UP CHART

 S2
 S3
 S4
 S5
 S6
 S7
 S8
 S9
 S10
 S11
 S12
 AUX S1
 AUX S2
 AUX S3
 AUX S5
 S6

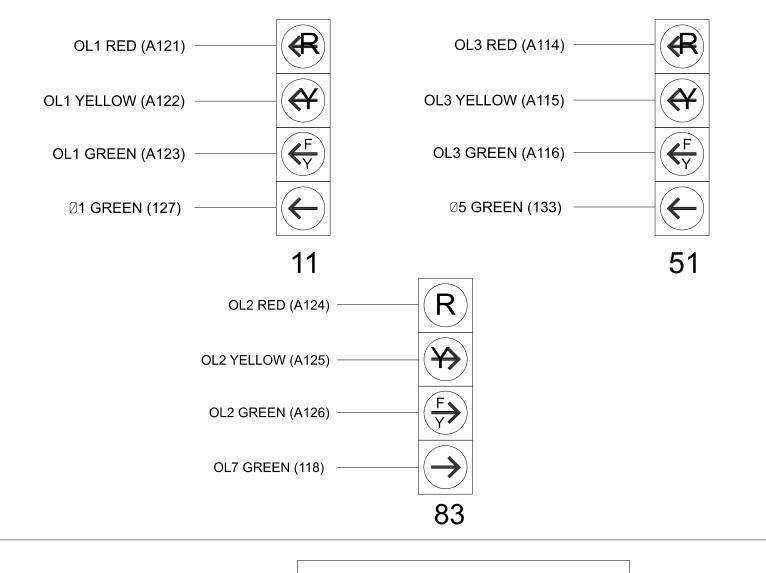
1 2 13 3 4 14 5 6 15 7 8 16 9 10 17 11 12 18

- \* Denotes install load resistor. See load resistor installation detail this sheet.
- ★ See pictorial of head wiring in detail this sheet.

CMU CHANNEL NO.

#### FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1200T2 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 1 of 2 Temporary Design 2 - TMP Ph1, S2, Part 2

ELECTRICAL AND PROGRAMMING NC 107 (E. Main Street) DETAILS FOR: SR 1723 (Cliffside Drive)

REVISIONS

Bryson Farm Supply Driveway Division 14 Jackson County August 2025 REVIEWED BY: ZM Esposito PREPARED BY: DS Griffith REVIEWED BY: BN Groome

Sylva 052936 INIT. DATE Brittany Groome 8/26/2025

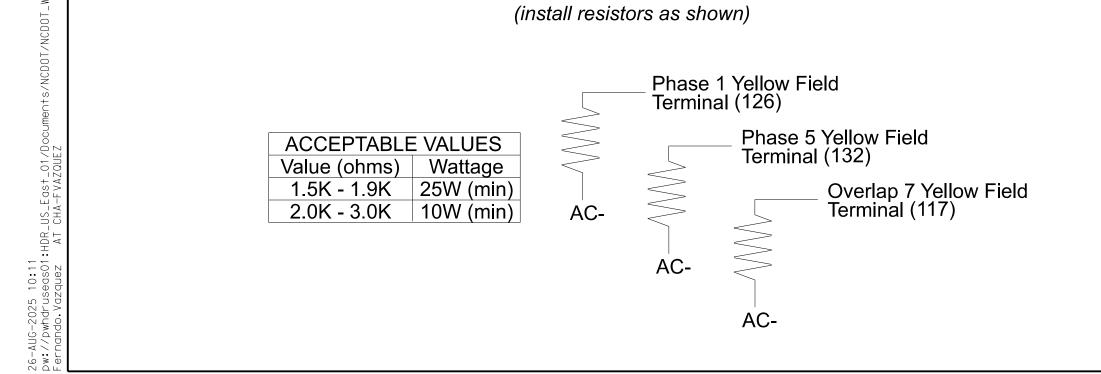
DOCUMENT NOT CONSIDERED

SIGNATURES COMPLETED

SEAL

FINAL UNLESS ALL

SIG. INVENTORY NO. 4-1200T



18 CHANNEL IP CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

**COMPONENT SIDE** 

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

INPUT FILE POSITION LAYOUT

(front view)

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Note: For Detection Zones 1A and 5A the equipment and slots reserved are typical for a NCDOT installation.

LOAD RESISTOR INSTALLATION DETAIL

REMOVE JUMPERS AS SHOWN

4. Integrate monitor with Ethernet network in cabinet.

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

FILE

REMOVE DIODE JUMPERS 1-3, 1-5, 1-6, 1-9, 1-10 1-11, 2-5, 2-6, 2-9, 2-11, 2-13, 3-5, 3-6, 3-9, 3-10, 3-11, 4-8, 4-10, 5-9, 5-10, 5-11, 5-13, 6-9, 6-10, 6-11, 6-13, 8-10, 9-10, 9-11, 9-13, 10-11 AND 11-13.

ON OFF

RF 2010

- FYA 1-9

- FYA 3-10

FYA 5-11 - FYA 7-12

13

14

16

■ = DENOTES POSITION OF SWITCH

DC ISOLATOR

ST

DC

FS = FLASH SENSE

ST = STOP TIME

NOT

- RP DISABLE

SF#1 POLARITY

FYA COMPACT—

- WD 1.0 SEC **GY ENABLE** 

WD ENABLE (

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

Overlap	1	2	3	7
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal
Included Phases	2	8	6	1
Modifier Phases	1	1	5	-
Modifier Overlap	<u>-</u>	÷	<u>-</u>	-
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

#### **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channel Configuration

#### Channel Configuration

	Onam	ici oomigarada					
	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
	1	Phase Vehicle	1		Х	Х	1
	2	Phase Vehicle	2		Х		2
NOTICE OVERLAP 7	3	Overlap	7		Х	Х	3
ASSIGNED TO CHANNEL 3	4	Phase Vehicle	4		Х		4
	5	Phase Vehicle	5		Х		5
	6	Phase Vehicle	6		Х	Χ	6
	7	Phase Vehicle	7		X		7
	8	Phase Vehicle	8		X	Χ	8
	9	Overlap	1		Х	Χ	9
	10	Overlap	2		Х	Х	10
	11	Overlap	3		Х		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		Х	Х	17
	18	Overlap	6		Х		18

NOTICE FLASHING RED

# MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters
Startup Clearance Hold

Unit Flash Parameters

All Red Flash Exit Time

#### 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: 14-1200T2
DESIGNED: Aug 2025
SEALED: 8/26/2025
REVISED: N/A

Electrical Detail - Sheet 2 of 2 Temporary Design 2 - TMP Ph1, S2, Part 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

NC 107 (E. Main Street) at SR 1723 (Cliffside Drive) /

Bryson Farm Supply Driveway
Division 14 Jackson County Sylver August 2025 Reviewed By: ZM Esposito

PLAN DATE: August 2025 REVIEWED BY: ZM Esposito
PREPARED BY: DS Griffith REVIEWED BY: BN Groome
REVISIONS INIT. DATE

SEAL

SEAL

SEAL

SEAL

O52936

SIGNATURES COMPLETED

SEAL

O52936

SEAL

O52936

SIGNATURES COMPLETED

SEAL

O52936

SEAL

O52936

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

Plans Prepared By:

DRMP, INC.

8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220
CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260



Sig-27.0 R-5600

5 Phase Fully Actuated (Time Based Coordination)

#### 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. Reposition existing signal heads numbered 11, 21, 22, 51, 61, 62, 81 82 and 83.
- 5. Disconnect and bag existing pedestrian heads P21 and P22 and pushbutton PB21. 6. Unbag and reconnect existing signal head P82 and pushbutton PB82.
- 7. Set all detectors units to presence mode.
- 8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 9. Program pedestrian heads to countdown the flashing "Don't Walk" time only
- tion uses multi-zone microwave detection. Install detectors the manufacturer's instructions to achieve the desired detection.

Controller & Cabinet Junction Box Oversized Junction Box 2-in Underground Conduit Right of Way

> Directional Arrow Directional Drill

Metal Pole with Mastarm

Construction Easement

Construction Zone

Curb Ramp

Temporary Pedestrian Post with Ped Push Button & Sign

Type II Signal Pedestal Underground Water Line

Pedestrian Barricade

(A) "RIGHT TURN SIGNAL" Sign (R10-10)

Abandon 12" Utility Pipe \_ ABANDON 12" UTILITY PIPE

Non-Intrusive Detection Zone

**EXISTING** 

**-**

N/A

 $\longrightarrow$ 

N/A 

——E——

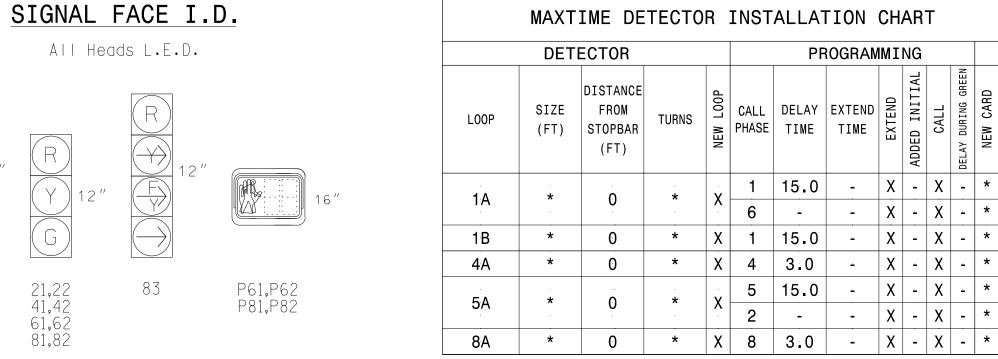
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

052936

shown in timing chart are for free-run operation only. ignal system timing values supersede these values.



\* Multi-Zone Microwave Detection Zone

# PHASING DIAGRAM DETECTION LEGEND DETECTED MOVEMENT

PHASING DIAGRAM

2+5

TABLE OF OPERATION

SIGNAL

FACE

21,22

41,42

61, 62

P81,P82

 $\sqcap$ 

PHASE

- F - F -R

RRRRGR

 $\rightarrow \rightarrow R R F R$ 

|DW|W|DW|W|DW|DRK|

DW DW DW DW W DRK

UNDETECTED MOVEMENT (OVERLAP) UNSIGNALIZED MOVEMENT

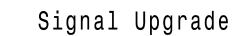
 $<\!\!--\!\!>$  PEDESTRIAN MOVEMENT

	Sh age of the state of the stat		accord: 11. Maximur	ntersection uses multi-zone microwave detection. Install de ing to the manufacturer's instructions to achieve the desir m times shown in timing chart are for free-run operation or nated signal system timing values supersede these values.
NC 107 (E. Main Street)   P82	723 1723 18 19 19 19 19 19 19 19 19 19 19	35 MPH 0% Grade (Design Speed 45 MPH)  E  E		LEGEND
	11 - 51	<b>■</b> 5A ✓		PROPOSED  Traffic Signal Head  Modified Signal Head
 - — — — — — — — — — — — — — — — — — — —	61 — 62 —			Modified Signal Head  Sign
	83.82.81 P61			- Pedestrian Signal Head
35 MPH -2% Grade (Design Speed 45 MPH)	Ρ62 (Δ)	NC 107 (E. Main Street)		Signal Pole with Guy Signal Pole with Sidewalk Guy
(DCGIGIT OPCCO TO MITTI)	Jyson Farm Oly Driveway 3% Grade ed 25 MPH)			Non-Intrusive Detection Zone
	Gree 25			Controller & Cabinet
E	$\overset{\text{2.3}}{\Leftrightarrow} \overset{\text{3.3}}{\Leftrightarrow}$			☐ Junction Box

	MAX	TIME T	IMING	CHART					
FEATURE		PHASE							
FEATURE	1	2	4	5	6	8			
Walk *	_	_	_	_	14	14			
Ped Clear	_	_	_	_	9	21			
Min Green *	7	12	7	7	12	7			
Passage *	2.0	2.0	2.0	2.0	2.0	2.0			
Max 1 *	20	45	25	20	45	35			
Yellow Change	3.0	4.7	3.5	3.0	4.7	3.5			
Red Clear	2.9	2.1	2.9	2.9	2.1	2.9			
Added Initial *	_	_	_	_	_	_			
Maximum Initial *	_	_	_	_	_	_			
Time Before Reduction *	_	_	_	_	_	_			
Time To Reduce *	_	_	_	_	_	_			
Minimum Gap	_	_	_	_	_	_			
Advance Walk	_	_	_	_	7	7			
Non Lock Detector	Х	_	Х	Х	_	Х			
Vehicle Recall	_	MIN RECALL	_	_	MIN RECALL	_			
Dual Entry	_	_	Х	_	-	Х			

\* 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.

Microwa	ve De	tecti	.on	
	(2	À	(6	A
FUNCTION	Sen	sor 1	Sens	sor 2
Channel		1		1
Phase		2		6
Direction of Travel	٨	IB	S	В
Туре	Pric	ority	Pric	ority
Level	2	QUEUE	2	QUEUE
Detection Zone (ft)	< 750	_	< 750	_
Range (ft)	600–100	150–100	600–100	150–100
Enable Speed	Y	Υ	Y	Υ
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	_



Temporary Design 3 - TMP Ph2, S1, Part 1

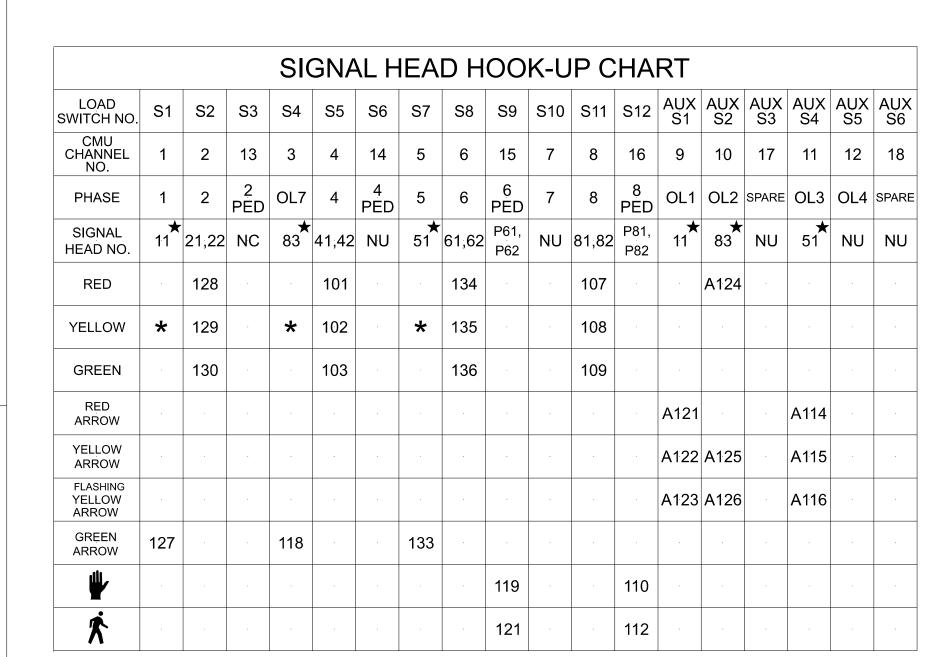
**Plans Prepared By:** 

NC 107 (E. Main Street) SR 1723 (Cliffside Drive) Bryson Farm Supply Driveway

Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

Greenfield Pkwy,Garner,NC 27529 PREPARED BY: DS Griffith REVIEWED BY: BN Groome REVISIONS INIT. DATE

Brittany Groome 8/26/2025 SIG. INVENTORY NO. |4-|200T3



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)

OL3 RED (A114)

OL3 YELLOW (A115)

OL3 GREEN (A116)

Ø5 GREEN (133)

**€**R

OL2 RED (A124)

OL2 YELLOW (A125)

OL2 GREEN (A126)

**OL7 GREEN (118)** 

NC = Not Connected

OL1 RED (A121)

OL1 YELLOW (A122)

OL1 GREEN (A123)

Ø1 GREEN (127)

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

★ See pictorial of head wiring in detail this sheet.

# **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 phases 4 and 8 for Dual Entry and Simultaneous Start.
- 3. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- 4. Program controller to start up in phase 2 Green No Walk and phase 6 Green No Walk.
- 5. The cabinet and controller are part of the NC 107 Time Based System.

#### **EQUIPMENT INFORMATION**

Controller Cabinet Software Cabinet Mount	332 w/ Aux Q-Free MAXTIME
Output File Positions	
Phases Used Overlap "1" Overlap "2" Overlap "3"	* 
Overlap "4" Overlap "7"	

\*See overlap programming detail on sheet 2.

## 14

ON OFF

RF 2010

- FYA 1-9

- FYA 3-10 FYA 5-11

- FYA 7-12

13

16

■ = DENOTES POSITION OF SWITCH

DC DC ISOLATOR

Ø8 PED ST

FS = FLASH SENSE

ST = STOP TIME

RP DISABLE

SF#1 POLARITY

FYA COMPACT—

- WD 1.0 SEC **GY ENABLE** 

WD ENABLE (

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.

**COMPONENT SIDE** 

REMOVE JUMPERS AS SHOWN

18 CHANNEL IP CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-3, 1-5, 1-6, 1-9, 1-10, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-15, 3-5, 3-6, 3-9, 3-10, 3-11, 3-15, 4-8, 4-10, 4-16, 5-9, 5-10, 5-11,6-9, 6-10, 6-11, 6-15, 8-10, 8-16, 9-10, 9-11, 9-15, 10-11, 10-15, 10-16 AND 11-15.

3. Ensure that the Red Enable is active at all times during normal operation

INPUT FILE POSITION LAYOUT

(front view)

1 2 3 4 5 6 7 8 9 10 11 12 13 14

4. Integrate monitor with Ethernet network in cabinet.

FILE

#### 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
1 /	TD2 4.2	1411	56	18	1	1	15.0		Х		Х	
1A	TB2-1,2	l1U	00	-	29	6			Х		Х	
5.1	TD2 1 2	J1U	55	1.7	15	5	15.0		Х		Х	
5A	TB3-1,2	310	55	-	31	2			X		Χ	
PED PUSH BUTTONS							NOTE:					
P61;P62	TB8-7,9	I13U	68	34	6	PED 6		DC ISOLATO FILE SLOT	ORS			
P81;P82	TB8-8,9	I13L	70	36	8	PED 8	113.	TILL SLOT				
							-					

INPUT FILE POSITION LEGEND: J2L FILE J SLOT 2 **LOWER** 

#### SPECIAL DETECTOR NOTE

- 1. Install a multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer -approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.
- 2. For Detection Zones 1A and 5A, the equipement placement is typical for a NCDOT installation.

## COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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



#### THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1200T3 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 1 of 2 Temporary Design 3 - TMP Ph2, S1, Part 1

ELECTRICAL AND PROGRAMMING NC 107 (E. Main Street) DETAILS FOR:

REVISIONS

PREPARED BY: DS Griffith

SR 1723 (Cliffside Drive) Bryson Farm Supply Driveway Division 14 Jackson County Sylva PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

REVIEWED BY: BN Groome

SEAL 052936 INIT. DATE

DOCUMENT NOT CONSIDERED

SIGNATURES COMPLETED

FINAL UNLESS ALL

51

Brittany Groome 8/26/2025 SIG. INVENTORY NO. 4-1200T

# LOAD RESISTOR INSTALLATION DETAIL

Note: For Detection Zones 1A and 5A the equipment and slots reserved are typical for a NCDOT installation.

(install resistors as shown)

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

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

Phase 1 Yellow Field Terminal (126)

Phase 5 Yellow Field Terminal (132) Overlap 7 Yellow Field Terminal (117)

#### MAXTIME OVERLAP PROGRAMMING DETAIL

Front Panel

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

Web Interface

Home >Controller >Overlap Configuration >Overlaps

#### Overlap Plan 1

Overlap	1	2	3	7
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal
Included Phases	2	8	6	1
Modifier Phases	1	1	5	<u>-</u>
Modifier Overlap	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Trail Green	0	0	0	-
Trail Yellow	0.0	0.0	0.0	0
Trail Red	0.0	0.0	0.0	0.0

#### **OUTPUT CHANNEL CONFIGURATION**

Front Panel

Main Menu >Controller >More>Channels>Channels Config

Web Interface

Home >Controller >Advanced IO>Channels>Channel Configuration

#### Channel Configuration

	Onam	ioi ooriiigaratic	<b>711</b>				
	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
	1	Phase Vehicle	1		Х	X	1
	2	Phase Vehicle	2		X		2
NOTICE OVERLAP 7	3	Overlap	7		X	Х	3
ASSIGNED TO CHANNEL 3	4	Phase Vehicle	4		X		4
	5	Phase Vehicle	5		Х		5
	6	Phase Vehicle	6		Х	X	6
	7	Phase Vehicle	7		X		7
	8	Phase Vehicle	8		X	Х	8
	9	Overlap	1		X	Х	9
	10	Overlap	2		X	Х	10
	11	Overlap	3		X		11
	12	Overlap	4		Х		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	Х	17
	18	Overlap	6		Х		18

NOTICE FLASHING RED

## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu>Controller>Unit

Web Interface Home>Controller>Unit

Start Up Parameters Startup Clearance Hold **Unit Flash Parameters** All Red Flash Exit Time

#### 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: 14-1200T3 DESIGNED: Aug 2025 SEALED: 8/26/2025 REVISED: N/A

Electrical Detail - Sheet 2 of 2 Temporary Design 3 - TMP Ph2, S1, Part 1

ELECTRICAL AND PROGRAMMING

NC 107 (E. Main Street)

SR 1723 (Cliffside Drive) Bryson Farm Supply Driveway Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito PREPARED BY: DS Griffith

REVISIONS

REVIEWED BY: BN Groome INIT. DATE

052936 Brittany Groome 8/26/2025 SIG. INVENTORY NO. |4-|2007

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL

SIGNATURES COMPLETED

SEAL

**Plans Prepared By:** 





Sig-28.0 R-5600

SIGNAL FACE I.D. MAXTIME DETECTOR INSTALLATION CHART All Heads L.E.D. **DETECTOR** PROGRAMMING SIZE FROM CALL DELAY EXTEND NI INI DELAY PHASE TIME TIME XX DELAY L00P TURNS STOPBAR 1 | 15.0 | - | X | - | X - | X | - | X | - | \* \* | X | 1 | 15.0 | - | X | - | X | \* | X | 4 | 3.0 | - | X | - | X | - | \* 5 | 15.0 | - X | - X 83 P61,P62 2 - X - X - \* \* | X | 8 | 3.0 | - | X | - | X | - | \*

\* Multi-Zone Microwave Detection Zone

5 Phase Fully Actuated (Time Based Coordination)

#### 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. Disconnect and bag existing pedestrian heads P81 and P82.
- 5. Set all detectors 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. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.

LEGEND

Traffic Signal Head

Modified Signal Head

Pedestrian Signal Head

Signal Pole with Guy Signal Pole with Sidewalk Guy Non-Intrusive Detection Zone

Controller & Cabinet Junction Box Oversized Junction Box 2-in Underground Conduit

Right of Way

Directional Arrow Directional Drill

Metal Pole with Mastarm

Construction Easement

Curb Ramp

Temporary Pedestrian Post with Ped Push Button & Sign

Construction Zone

Type II Signal Pedestal Pedestrian Barricade

⟨A⟩ "RIGHT TURN SIGNAL" Sign (R10-10) 
⟨A⟩

**EXISTING** 

**-**

N/A

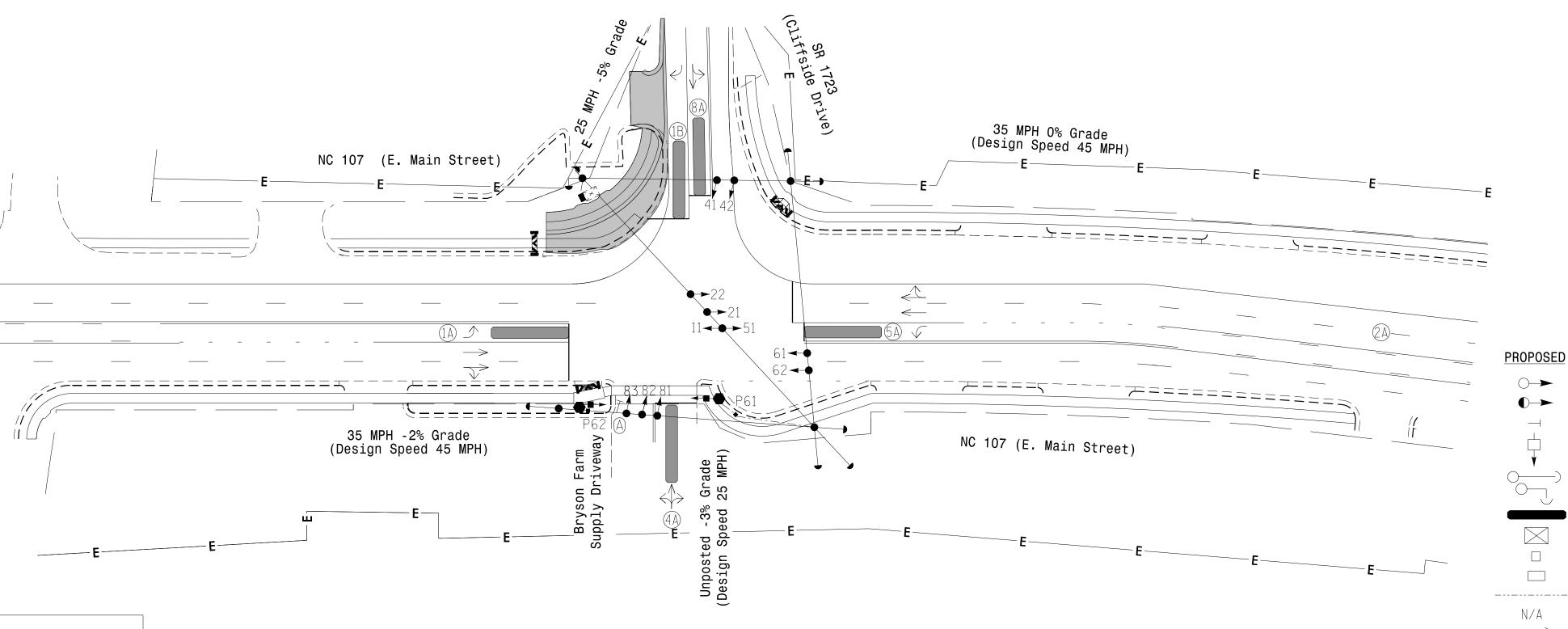
 $\longrightarrow$ 

N/A

N/A

ZAN

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



	MAX	XTIME	TIMING	CHART					
EE A TUDE	PHASE								
FEATURE	1	2	4	5	6	8			
Walk *	_	_	_	_	14	_			
Ped Clear	_	_	-	_	9	_			
Min Green *	7	12	7	7	12	7			
Passage *	2.0	2.0	2.0	2.0	2.0	2.0			
Max 1 *	20	45	25	20	45	25			
Yellow Change	3.0	4.7	3.5	3.0	4.7	3.5			
Red Clear	2.9	2.1	2.9	2.9	2.1	2.9			
Added Initial *	_	_	_	_	_	_			
Maximum Initial *	_	_	_	_	_	_			
Time Before Reduction *	-	_	_	_	_	_			
Time To Reduce *	-	_	_	_	_	_			
Minimum Gap	_	_	_	_	_	_			
Advance Walk	_	_	_	_	7	_			
Non Lock Detector	Х	_	Х	Х	_	Х			
Vehicle Recall	_	MIN RECAL	L –	_	MIN RECALL	_			
Dual Entry	_	_	Х	_	_	х			

\* 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.

PHASING DIAGRAM

PHASING DIAGRAM DETECTION LEGEND

UNSIGNALIZED MOVEMENT

UNDETECTED MOVEMENT (OVERLAP)

\_\_\_\_

DETECTED MOVEMENT

 $<\!\!--\!\!>$  PEDESTRIAN MOVEMENT

TABLE OF OPERATION

FACE

21,22

41,42

61, 62

P61,P62

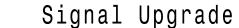
PHASE

R R F

DW W DW W DW DRK

Microwa	ve De	tecti	.on		
	(2	A	(6 A)		
FUNCTION	Sen	sor 1	Sensor 2		
Channel		1	1		
Phase		2	6		
Direction of Travel	٨	IB	SB		
Туре	Pric	ority	Priority		
Level	2	QUEUE	2	QUEUE	
Detection Zone (ft)	< 750	_	< 750	_	
Range (ft)	600–100	150–100	600–100	150–100	
Enable Speed	Y	Υ	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	_	

21,22 41,42 61,62 81,82



**Plans Prepared By:** 

Temporary Design 4 - TMP Ph2, S1, Part 2



NC 107 (E. Main Street) SR 1723 (Cliffside Drive) Bryson Farm Supply Driveway

N/A

N/A

Division 14 Jackson County PLAN DATE: August 2025 REVIEWED BY: ZM Esposito

REVIEWED BY: BN Groome INIT. DATE 052936

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

reenfield Pkwy,Garner,NC 27529 PREPARED BY: DS Griffith

Brittany Groome SIG. INVENTORY NO. |4-|200T4