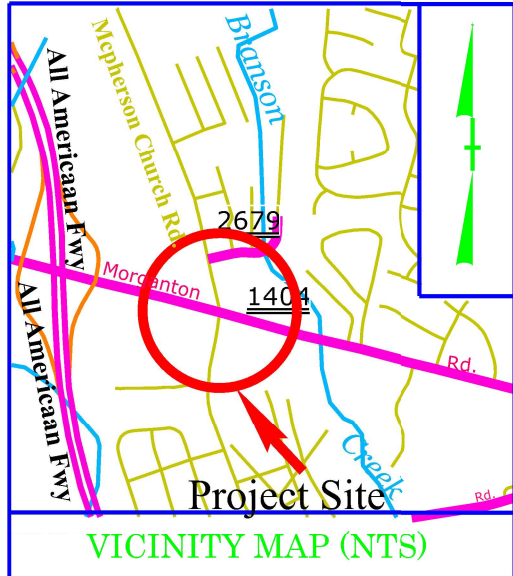


TIP PROJECT: HS-2406R

CONTRACT: DF00545

See Sheet 1A For Index of Sheets



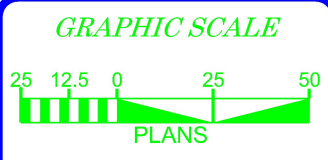
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

LOCATION: *SR 1404 (Morganton Road)*
McPherson Church Road

TYPE OF WORK: *PEDESTRIAN SIGNAL,*
PAVEMENT MARKING,
AND SIGNAL UPGRADE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HS-2406R	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
50978.1.20	5097821	P.E.	
50978.3.21	5097821	CON	



Prepared in the Office of
DIVISION OF HIGHWAYS
431 TRANSPORTAION DR., FAYETTEVILLE, NC 28301

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
02/16/2026

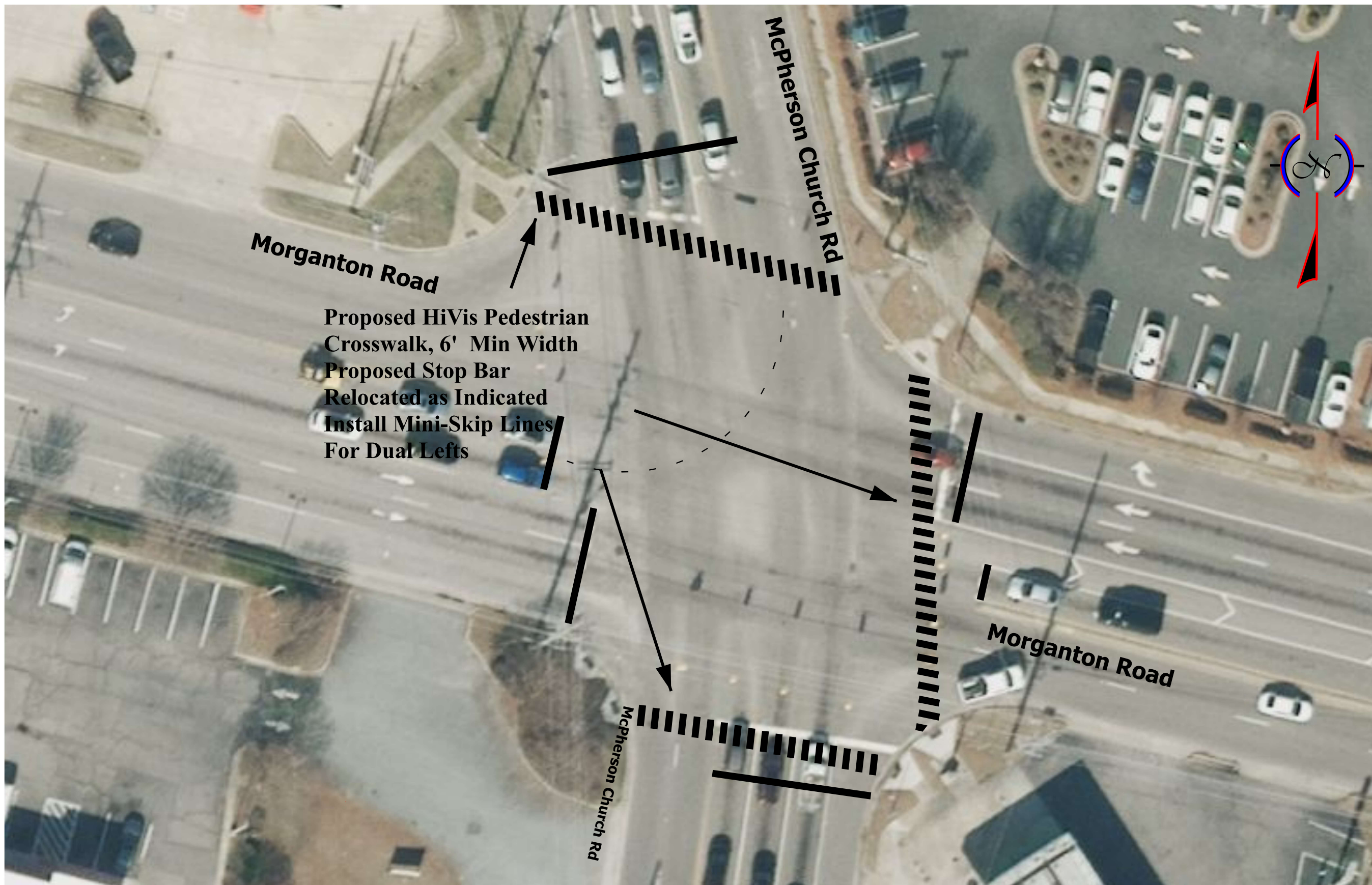
LETTING DATE:
6/03/2026

JOHN GAUTHIER
PROJECT ENGINEER

Paul Hart
PROJECT DESIGN ENGINEER

NCDOT CONTACT





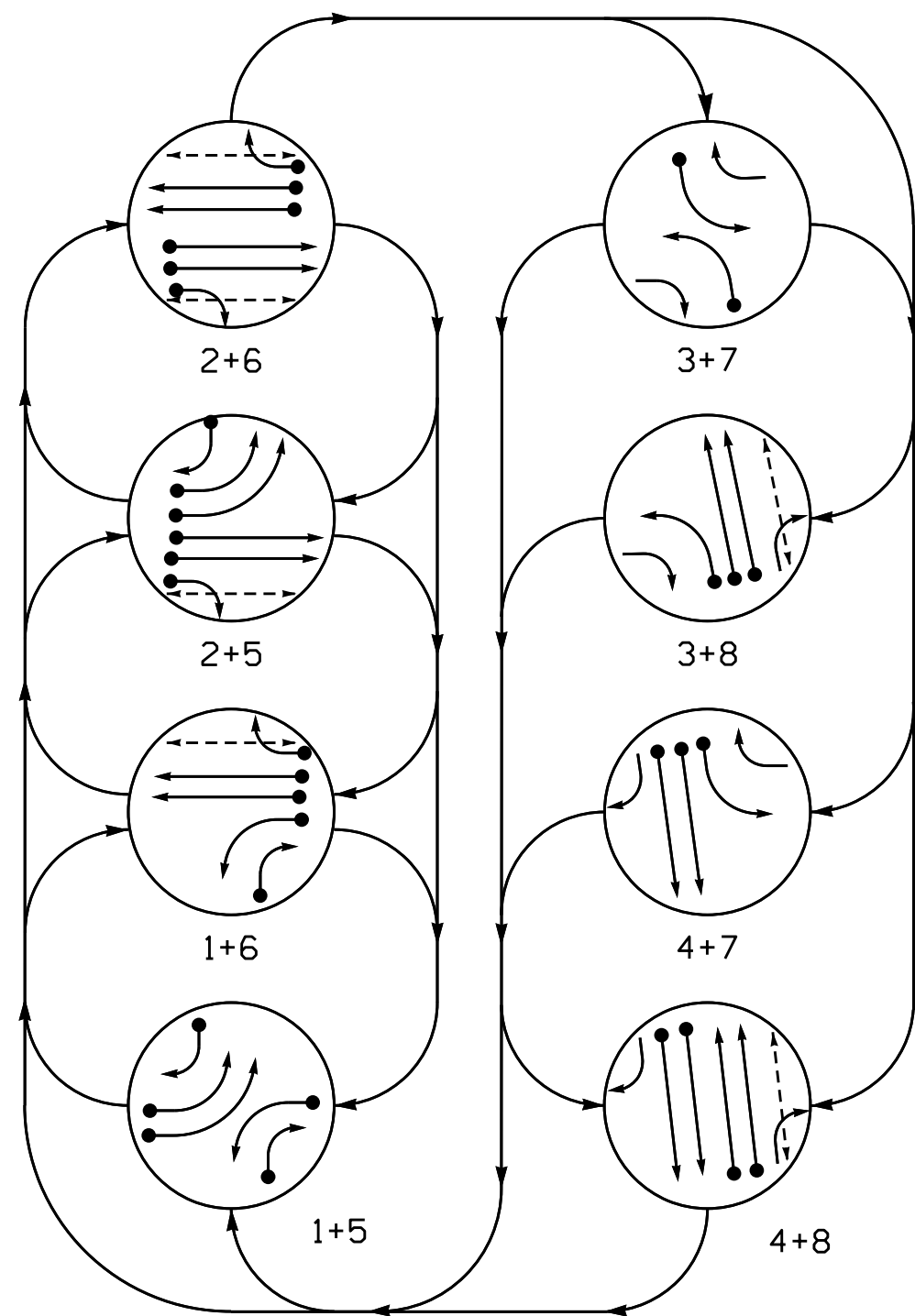
HS-2406R

8 Phase Fully Actuated Fayetteville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Set all detector units to presence mode.
- Install new 2070LX controller in existing cabinet.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM

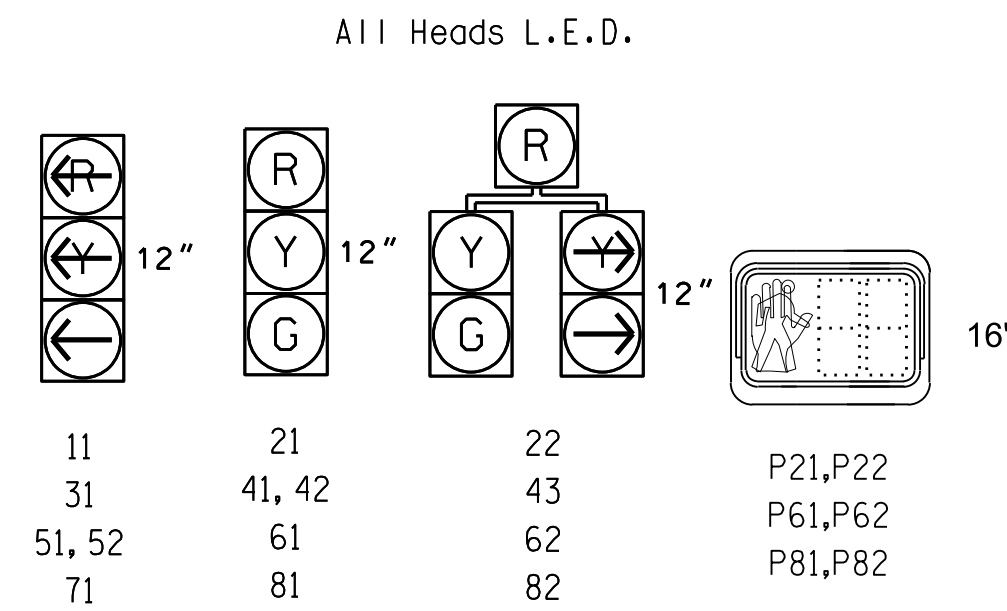


PHASING DIAGRAM DETECTION LEGEND

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

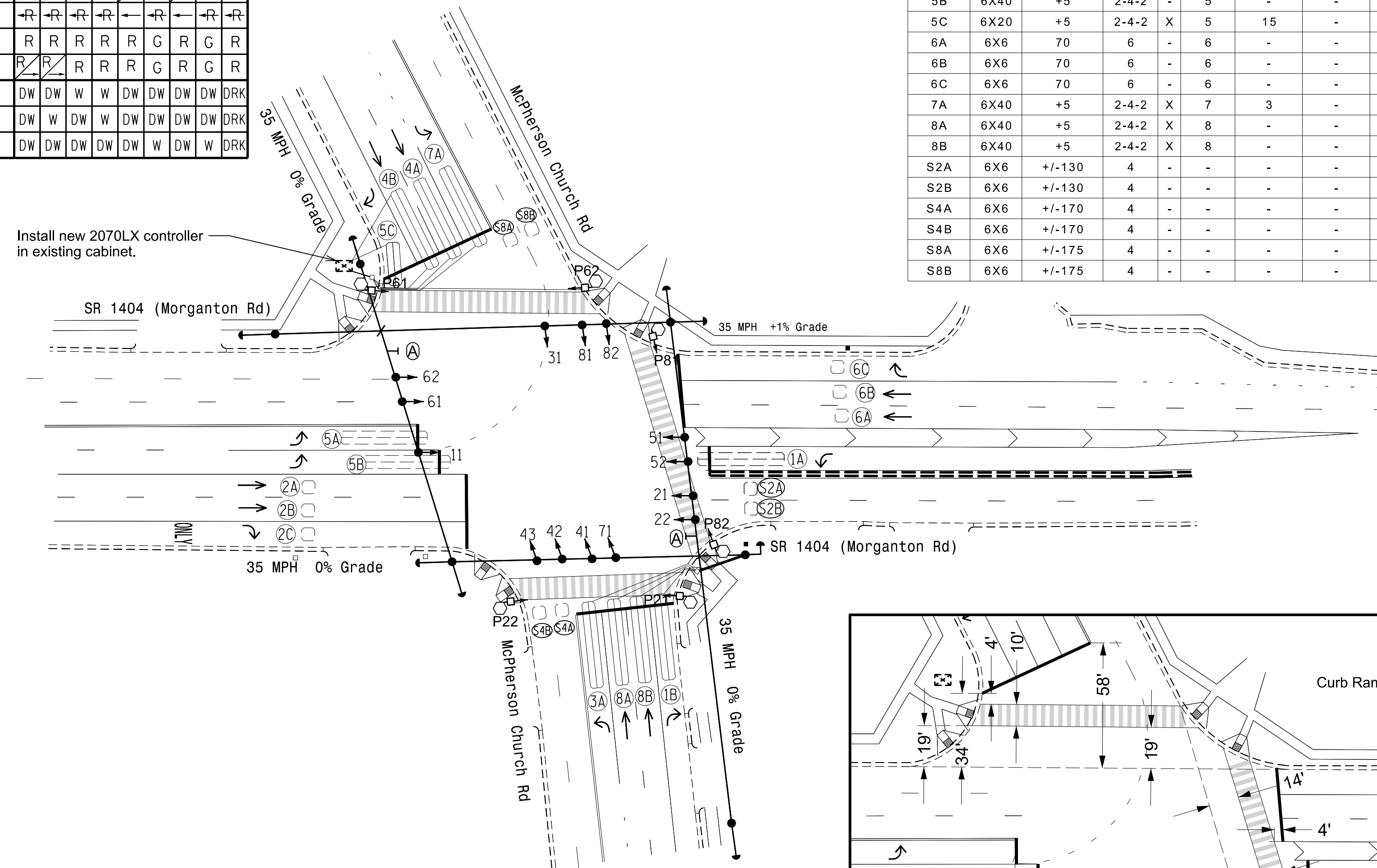
SIGNAL FACE	PHASE							
	1+5	1+6	2+5	2+6	3+7	3+8	4+7	4+8
11	←	←	←	←	←	←	←	←
21	R	R	G	G	R	R	R	R
31	←	←	←	←	←	←	←	←
41,42	R	R	R	R	R	R	G	G
43	R	R	R	R	R	R	G	G
51,52	←	←	←	←	←	←	←	←
61	R	G	R	G	R	R	R	R
62	R	G	R	G	R	R	R	R
71	←	←	←	←	←	←	←	←
81	R	R	R	R	G	R	G	R
82	R	R	R	R	G	R	G	R
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DW	W	DRK

SIGNAL FACE I.D.

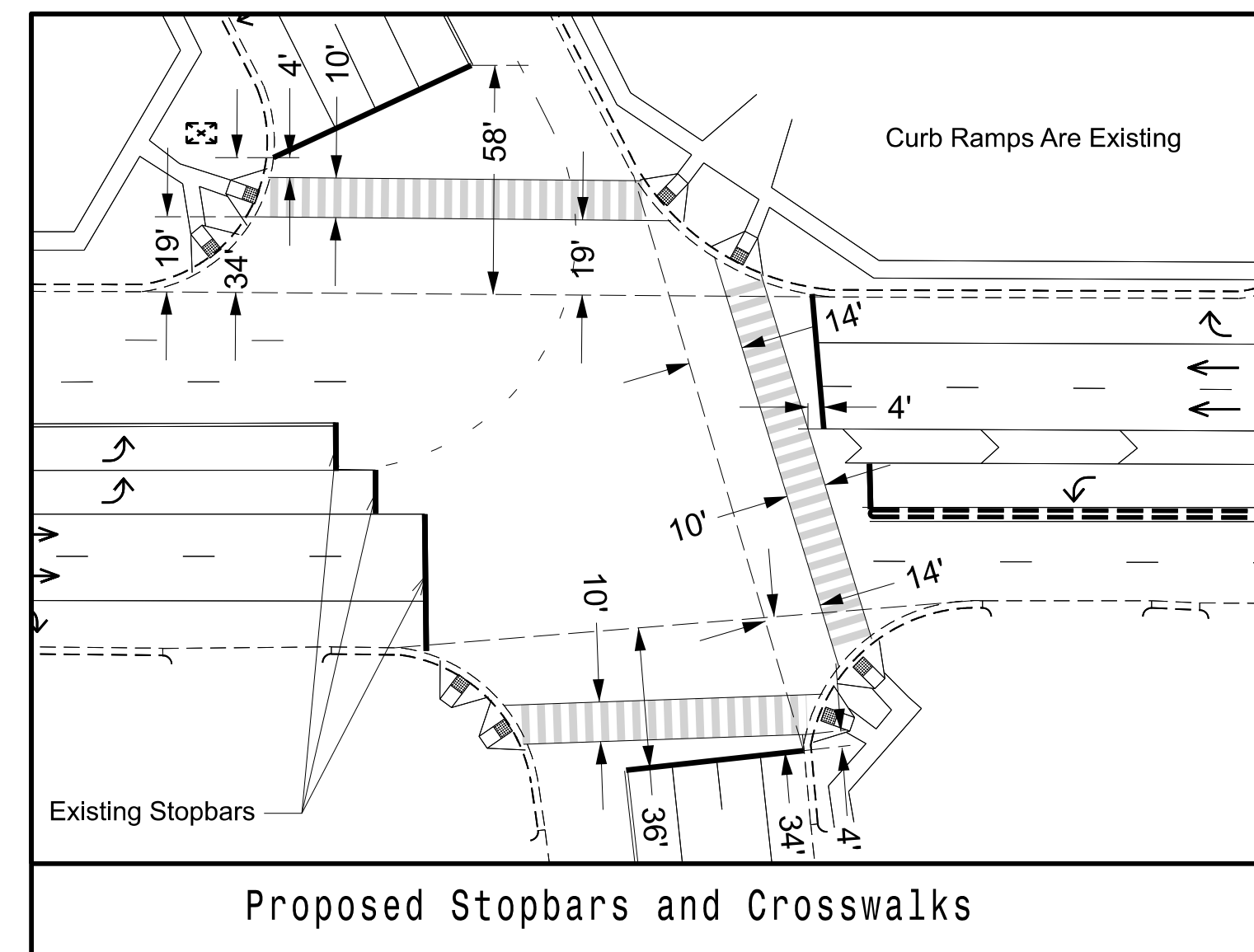


MAXTIME DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOP LINE (FT)	TURNS	NEW LOOP	PROGRAMMING						
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL DELAY DURING GREEN	NEW CARD
1A	6X40	+5	2-4-2	-	1	-	-	X	-	X	-
1B	6X40	+5	2-4-2	X	1	15	-	X	-	X	-
2A	6X6	70	2	-	2	-	-	X	-	X	-
2B	6X6	70	2	-	2	-	-	X	-	X	-
2C	6X6	70	2	-	2	-	-	X	-	X	-
3A	6X40	+5	2-4-2	X	3	3	-	X	-	X	-
4A	6X40	0	2-4-2	X	4	-	-	X	-	X	-
4B	6X40	0	2-4-2	X	4	-	-	X	-	X	-
5A	6X40	+5	2-4-2	-	5	3	-	X	-	X	-
5B	6X40	+5	2-4-2	-	5	-	-	X	-	X	-
5C	6X20	+5	2-4-2	X	5	15	-	X	-	X	-
6A	6X6	70	6	-	6	-	-	X	-	X	-
6B	6X6	70	6	-	6	-	-	X	-	X	-
6C	6X6	70	6	-	6	-	-	X	-	X	-
7A	6X40	+5	2-4-2	X	7	3	-	X	-	X	-
8A	6X40	+5	2-4-2	X	8	-	-	X	-	X	-
8B	6X40	+5	2-4-2	X	8	-	-	X	-	X	-
S2A	6X6	+/-130	4	-	-	-	-	-	-	-	-
S2B	6X6	+/-130	4	-	-	-	-	-	-	-	-
S4A	6X6	+/-170	4	-	-	-	-	-	-	-	-
S4B	6X6	+/-170	4	-	-	-	-	-	-	-	-
S8A	6X6	+/-175	4	-	-	-	-	-	-	-	-
S8B	6X6	+/-175	4	-	-	-	-	-	-	-	-



Install new 2070LX controller in existing cabinet.



LEGEND

- | PROPOSED | EXISTING |
|----------|----------|
| | |
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| | |

MAXTIME TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Walk *	-	12	-	-	-	14	-	14
Ped Clear	-	20	-	-	-	26	-	27
Min Green *	7	10	7	7	7	10	7	7
Passage *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max 1 *	20	90	20	45	20	90	20	45
Yellow Change	3.0	3.8	3.0	3.8	3.0	3.8	3.0	3.8
Red Clear	3.1	2.3	3.5	3.1	3.2	2.3	4.1	3.1
Added Initial *	-	-	-	-	-	-	-	-
Maximum Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Advance Walk	-	5	-	-	-	7	-	7
Non Lock Detector	X	-	X	X	X	-	X	X
Vehicle Recall	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Dual Entry	-	-	-	-	-	-	-	-

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

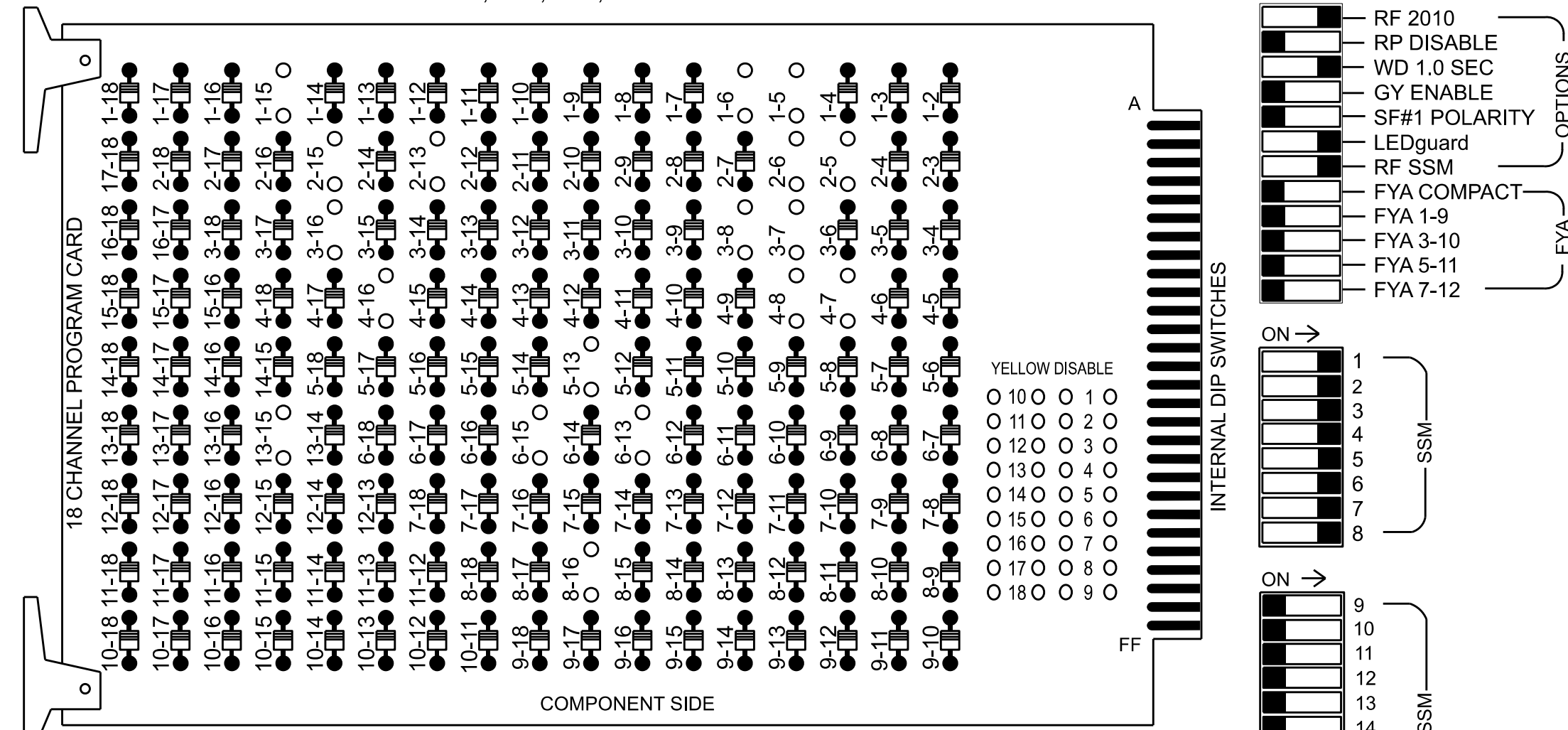
Signal Upgrade - Corr. File No. 06-24-013

	SR 1404 (Morganton Road) at McPherson Church Rd		
	Division 6 Cumberland County Fayetteville PLAN DATE: June 2025 REVIEWED BY: BMH	PREPARED BY: KGP, Jr. REVIEWED BY:	
SCALE 0 40 1" = 40'	REVISIONS	INIT. DATE	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

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



REMOVE JUMPERS AS SHOWN

NOTES:

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

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.
- If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- The cabinet and controller are part of the Fayetteville Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
 Cabinet.....332
 Software.....Q-Free MAXTIME
 Cabinet Mount.....Base
 Output File Positions.....12
 Load Switches Used.....S1, S2, S3, S4, S5, S7, S8, S9
 S10, S11, S12
 Phases Used.....1, 2, 2PED, 3, 4, 5, 6, 6PED,
 7, 8, 8PED
 Overlaps.....NONE

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.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
GMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11	82	21,22	P21, P22	22	31	41,42, 43	NU	43	51,52	61,62	P61, P62
RED		128			101			134				107
YELLOW		129			102			135				108
GREEN		130			103			136				109
RED ARROW	125				116			131				122
YELLOW ARROW	126	126			117	117		132	132		123	123
FLASHING YELLOW ARROW												
GREEN ARROW	127	127			118	118		133	133		124	124
Hand icon					113						119	
Walking person icon					115						121	

NU = Not Used

OUTPUT CHANNEL CONFIGURATION

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

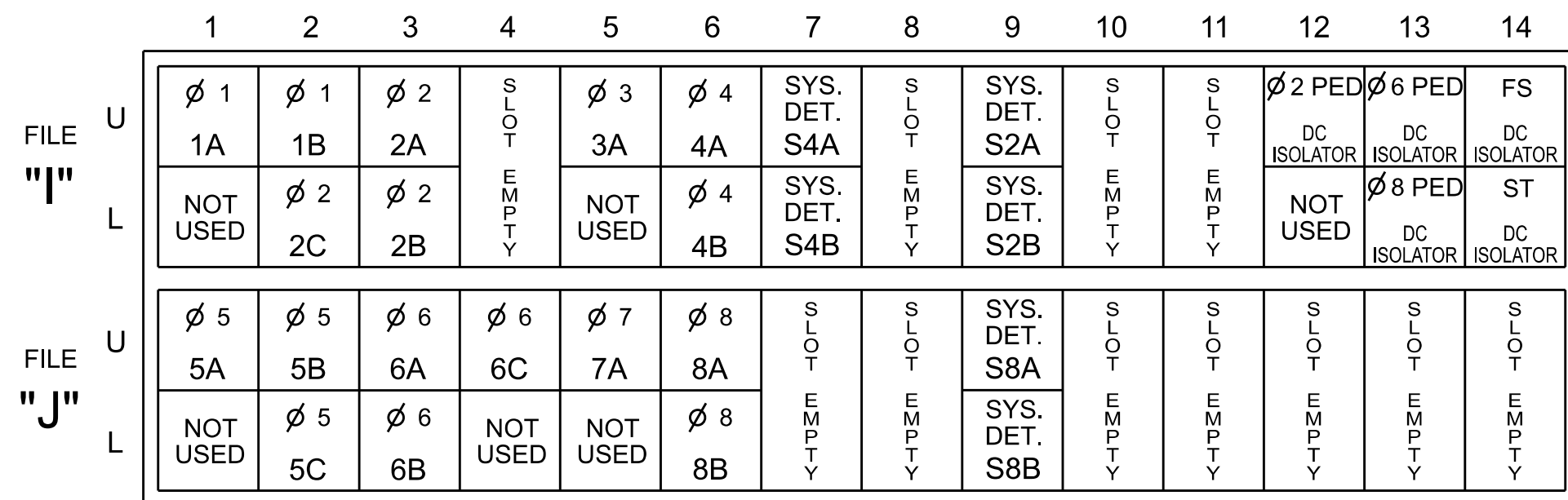
Web Interface
 Home >Controller >Advanced IO>Channels>Channel Configuration

Channel Configuration

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

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
 ST = STOP TIME

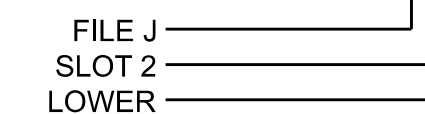
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT 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			X		X	
1B	TB2-5,6	I2U	39	1	2	1	15.0		X		X	
2A	TB2-9,10	I3U	63	29	4	2			X		X	
2B	TB2-11,12	I3L	76	42	5	2			X		X	
2C	TB2-7,8	I2L	43	5	3	2			X		X	
3A	TB4-5,6	I5U	58	20	7	3	3.0		X		X	
4A	TB4-9,10	I6U	41	3	8	4			X		X	
4B	TB4-11,12	I6L	45	7	9	4			X		X	
5A	TB3-1,2	J1U	55	17	15	5	3.0		X		X	
5B	TB3-5,6	J2U	40	2	16	5			X		X	
5C	TB3-7,8	J2L	44	6	17	5	15.0		X		X	
6A	TB3-9,10	J3U	64	30	18	6			X		X	
6B	TB3-11,12	J3L	77	43	19	6			X		X	
6C	TB5-1,2	J4U	48	10	20	6			X		X	
7A	TB5-5,6	J5U	57	19	21	7	3.0		X		X	
8A	TB5-9,10	J6U	42	4	22	8			X		X	
8B	TB5-11,12	J6L	46	8	23	8			X		X	
*S2A	TB6-9,10	I9U	60	22	13	SYS						
*S2B	TB6-11,12	I9L	62	24	14	SYS						
*S4A	TB6-1,2	I7U	65	31	10	SYS						
*S4B	TB6-3,4	I7L	78	44	11	SYS						
*S8A	TB7-9,10	J9U	59	21	27	SYS						
*S8B	TB7-11,12	J9L	61	23	28	SYS						
PED PUSH BUTTONS												
P21,P22	TB8-4,6	I12U	67	33	2	PED 2						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						
P81,P82	TB8-8,9	I13L	70	36	8	PED 8						

*System detector only. Remove any assigned vehicle phase.

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

INPUT FILE POSITION LEGEND: J2L



MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
 Main Menu >Controller >Unit

Web Interface
 Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

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

Unit Flash Parameters

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0233
 DESIGNED: June 2025
 SEALED: 06/26/2025
 REVISED: N/A

Electrical Detail - Sheet 1 of 1

Electrical and Programming Details For:

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SR 1404 (Morganton Road) at McPherson Church Road

Division 6 Cumberland County Fayetteville

PLAN DATE: June 2025 REVIEWED BY:

PREPARED BY: Tim Langston REVIEWED BY:

REVISIONS

REVISIONS	INIT.	DATE

Seal of North Carolina Professional Engineer D. Todd Joyce, License No. 031001

Document Not Considered Final Unless All Signatures Completed

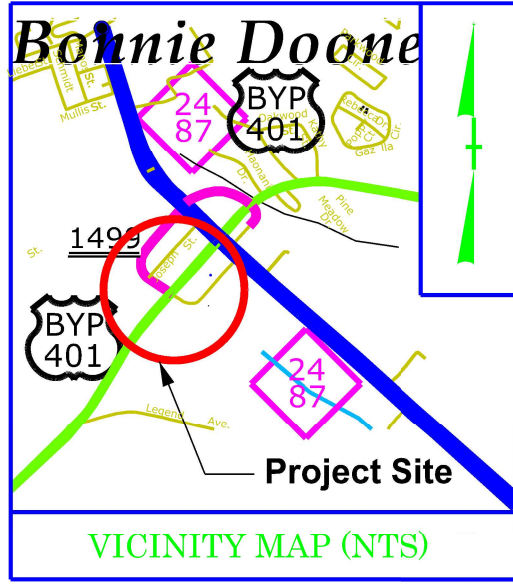
06/27/2025

SIG. INVENTORY NO. 06-0233

TIP PROJECT: HS-2406S

CONTRACT: DF00545

See Sheet 1A For Index of Sheets



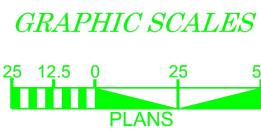
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

LOCATION: *US 401(SKIBO ROAD), AT NC24-87 (BRAGG BOULEVARD) EASTBOUND RAMPS (SWAIN STREET).*

TYPE OF WORK: *PAINTING, SIGNAL, AND STRUCTURES*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HS-2406S	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
50978.1.21	5097822	P.E.	
50978.3.22	5097822	CON	



Prepared in the Office of:
DIVISION OF HIGHWAYS
558 GILLESPIE ST. FAYETTEVILLE, NC 28301

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
02/16/2026

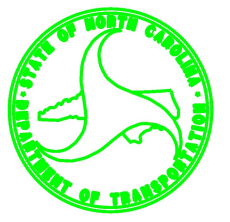
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06/03/2026

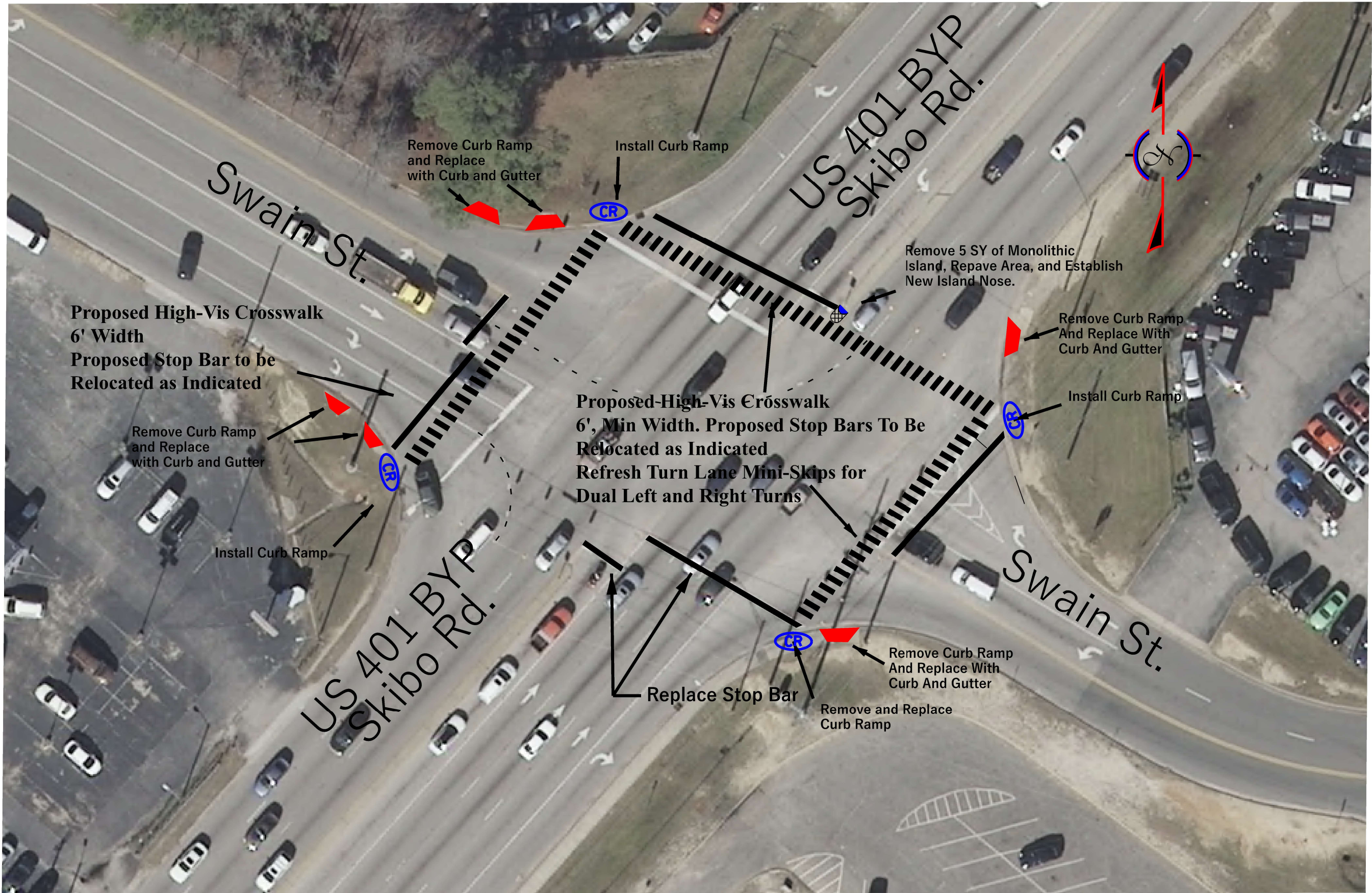
2024 STANDARD SPECIFICATIONS

JOHN GAUTHIER
PROJECT ENGINEER

Paul Hart
PROJECT DESIGN ENGINEER

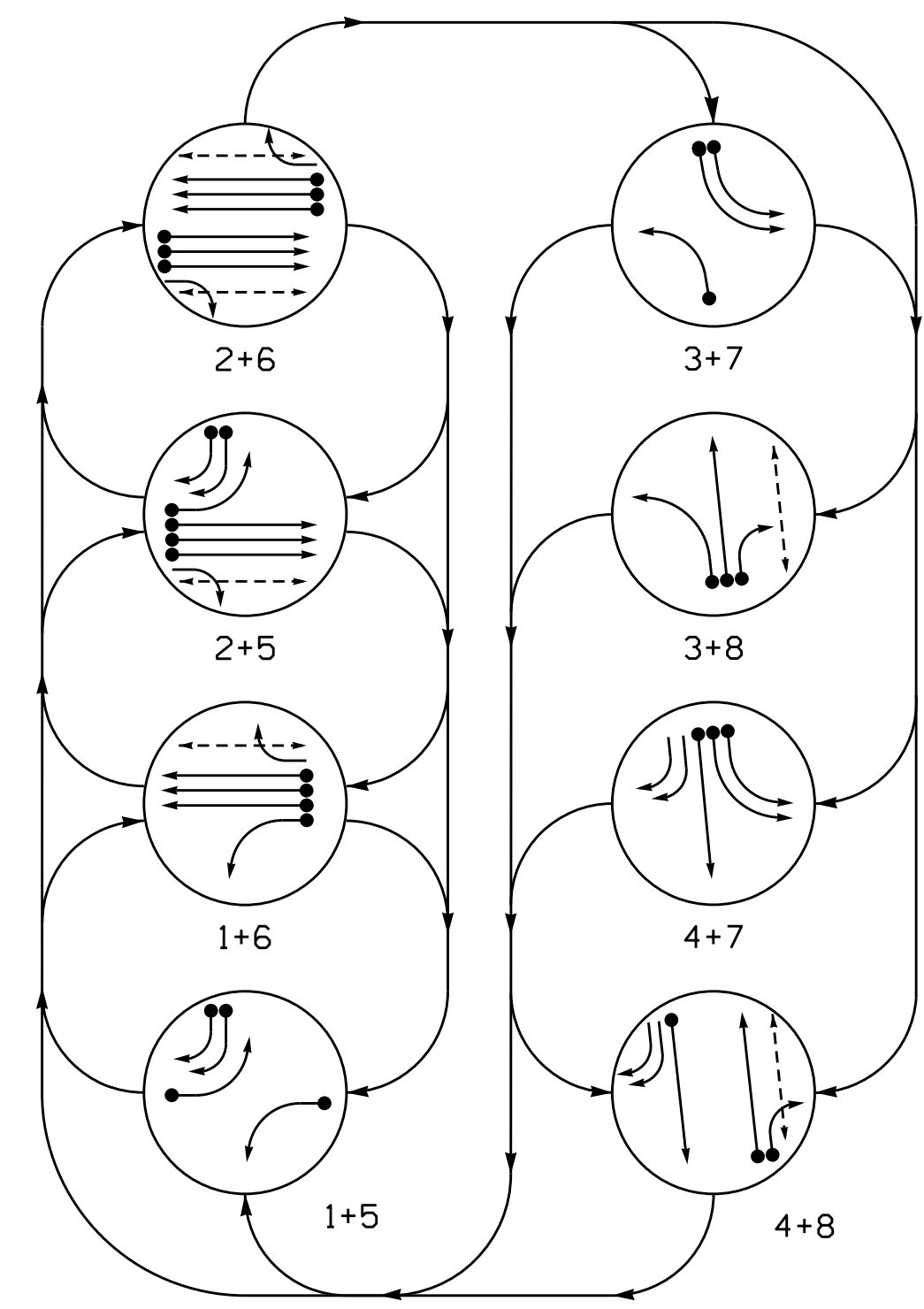
NCDOT CONTACT





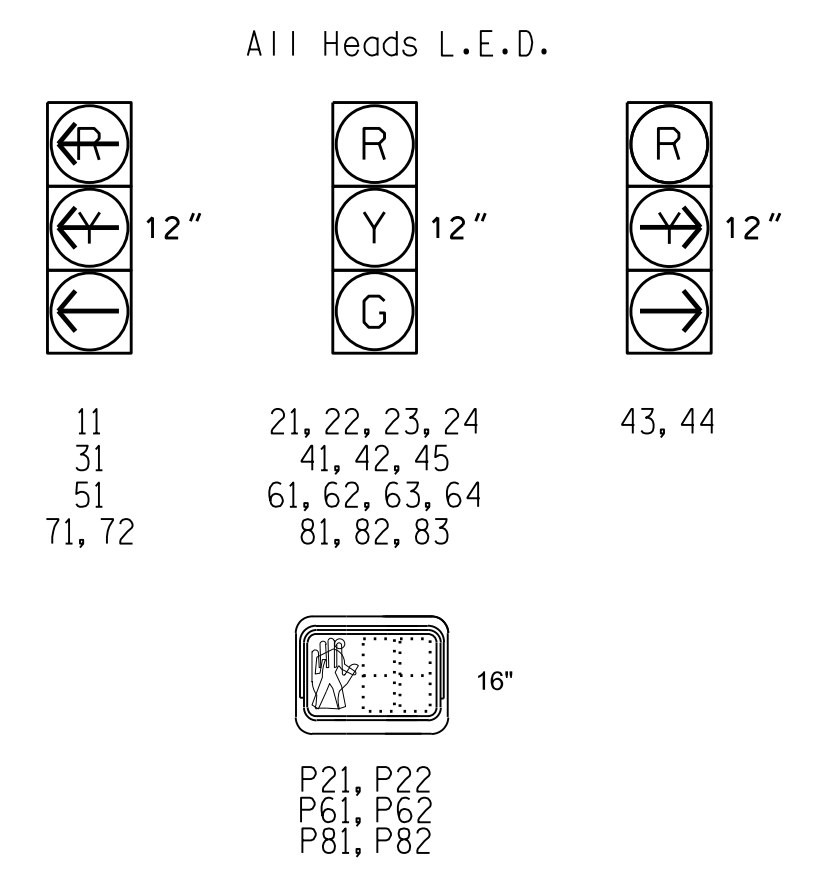
HS-2406S

PHASING DIAGRAM



SIGNAL FACE	PHASE							
	1+5	1+6	2+5	2+6	3+7	3+8	4+7	4+8
11	---	---	---	---	---	---	---	---
21,22,23,24	R	R	G	G	R	R	R	R
31	---	---	---	---	---	---	---	---
41,42,45	R	R	R	R	R	G	G	R
43,44	---	---	---	---	---	---	---	---
51	---	---	---	---	---	---	---	---
61,62,63,24	R	G	R	G	R	R	R	R
71,72	---	---	---	---	---	---	---	---
81,82,83	R	R	R	R	R	G	R	G
P21,P22	DW	DW	W	W	DW	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	W	W	DRK

SIGNAL FACE I.D.



MAXTIME DETECTOR INSTALLATION CHART

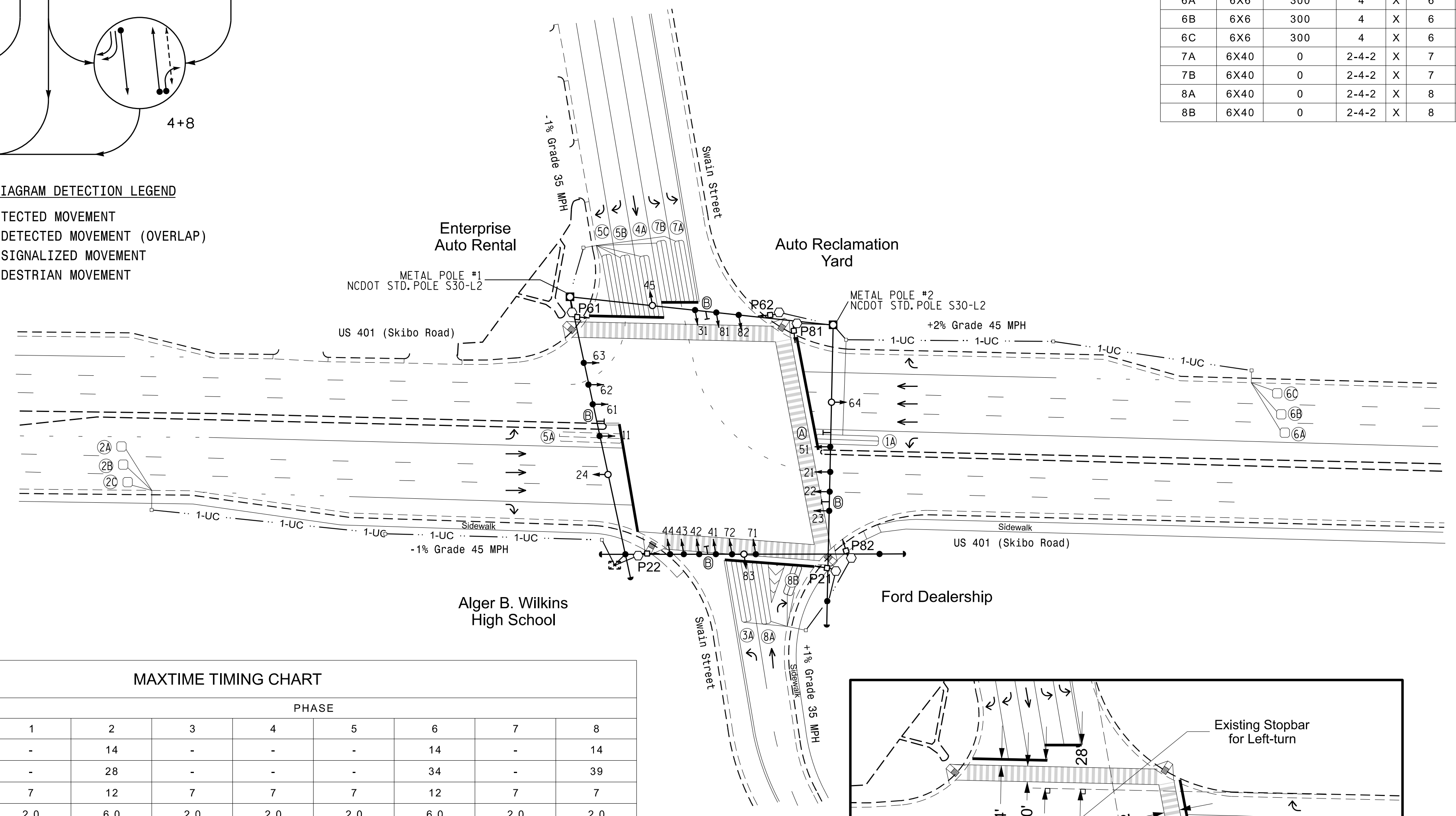
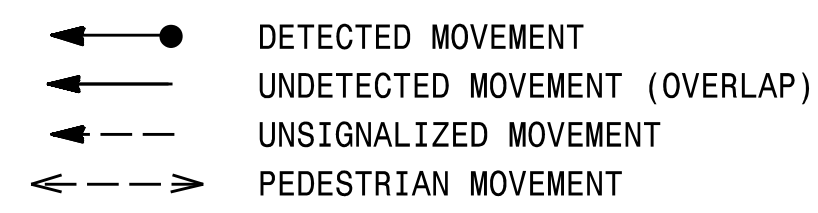
LOOP	SIZE (FT)	DISTANCE FROM STOP LINE (FT)	TURNS	NEW LOOP	PROGRAMMING					
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL DELAY DURING GREEN
1A	6X40	0	2-4-2	X	1	-	-	X	X	-
2A	6X6	300	4	X	2	-	-	X	X	-
2B	6X6	300	4	X	2	-	-	X	X	-
2C	6X6	300	4	X	2	-	-	X	X	-
3A	6X40	0	2-4-2	X	3	3	-	X	X	-
4A	6X40	0	2-4-2	X	4	-	-	X	X	-
5A	6X40	0	2-4-2	-	5	-	-	X	X	-
5B	6X40	0	2-4-2	X	5	15	-	X	X	-
5C	6X40	0	2-4-2	X	5	15	-	X	X	-
6A	6X6	300	4	X	6	-	-	X	X	-
6B	6X6	300	4	X	6	-	-	X	X	-
6C	6X6	300	4	X	6	-	-	X	X	-
7A	6X40	0	2-4-2	X	7	3	-	X	X	-
7B	6X40	0	2-4-2	X	7	-	-	X	X	-
8A	6X40	0	2-4-2	X	8	-	-	X	X	-
8B	6X40	0	2-4-2	X	8	15	-	X	X	-

8 Phase Fully Actuated Fayetteville Signal System

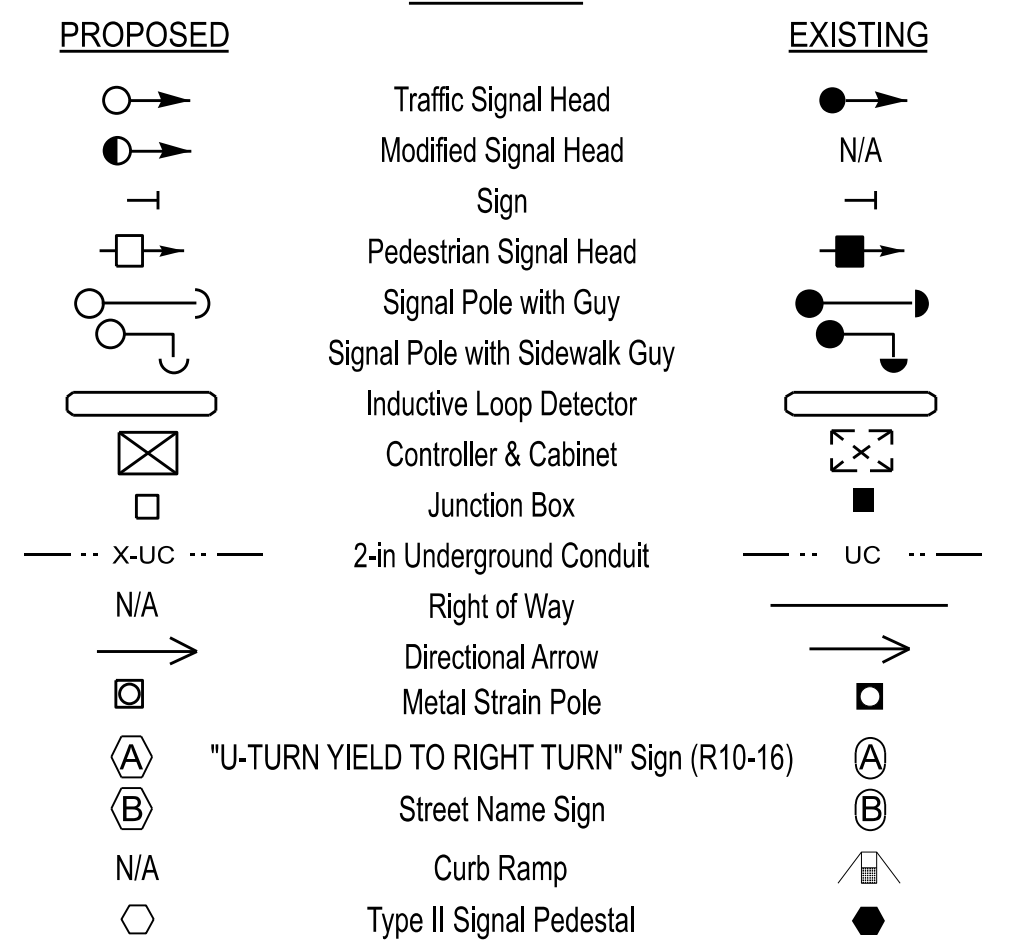
NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM DETECTION LEGEND

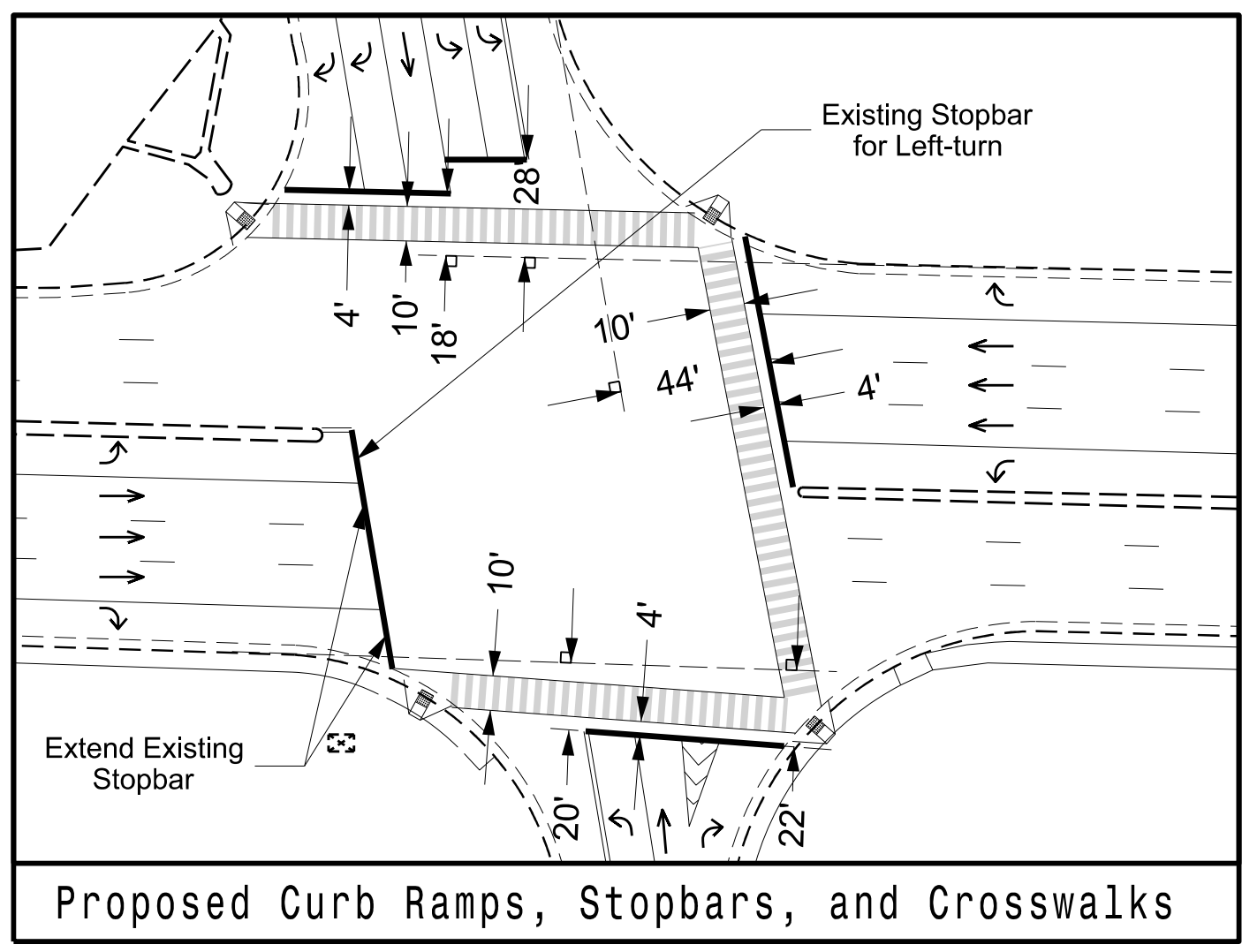


LEGEND



FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Walk *	-	14	-	-	-	14	-	14
Ped Clear	-	28	-	-	-	34	-	39
Min Green *	7	12	7	7	7	12	7	7
Passage *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max 1 *	15	90	30	30	30	90	30	40
Yellow Change	3.0	4.6	3.0	3.9	3.0	4.6	3.0	3.9
Red Clear	3.2	1.8	3.4	2.9	3.1	1.8	4.0	2.9
Added Initial *	-	1.5	-	-	-	1.5	-	-
Maximum Initial *	-	34	-	-	-	34	-	-
Time Before Reduction *	-	15	-	-	-	15	-	-
Time To Reduce *	-	45	-	-	-	45	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Advance Walk	-	7	-	-	-	7	-	7
Non Lock Detector	X	-	X	X	X	-	X	X
Vehicle Recall	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Dual Entry	-	-	-	-	-	-	-	-

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



Signal Upgrade - Corr. File No. 06-24-015

Prepared in the Offices of:

US 401 (Skibo Road) at Swain Street

Division 6 Cumberland County Fayetteville

PLAN DATE: February 2026 REVIEWED BY: BMH

PREPARED BY: KGP, Jr. REVIEWED BY:

REVISIONS

NO.	INIT.	DATE

0 SCALE 50 1"=50'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

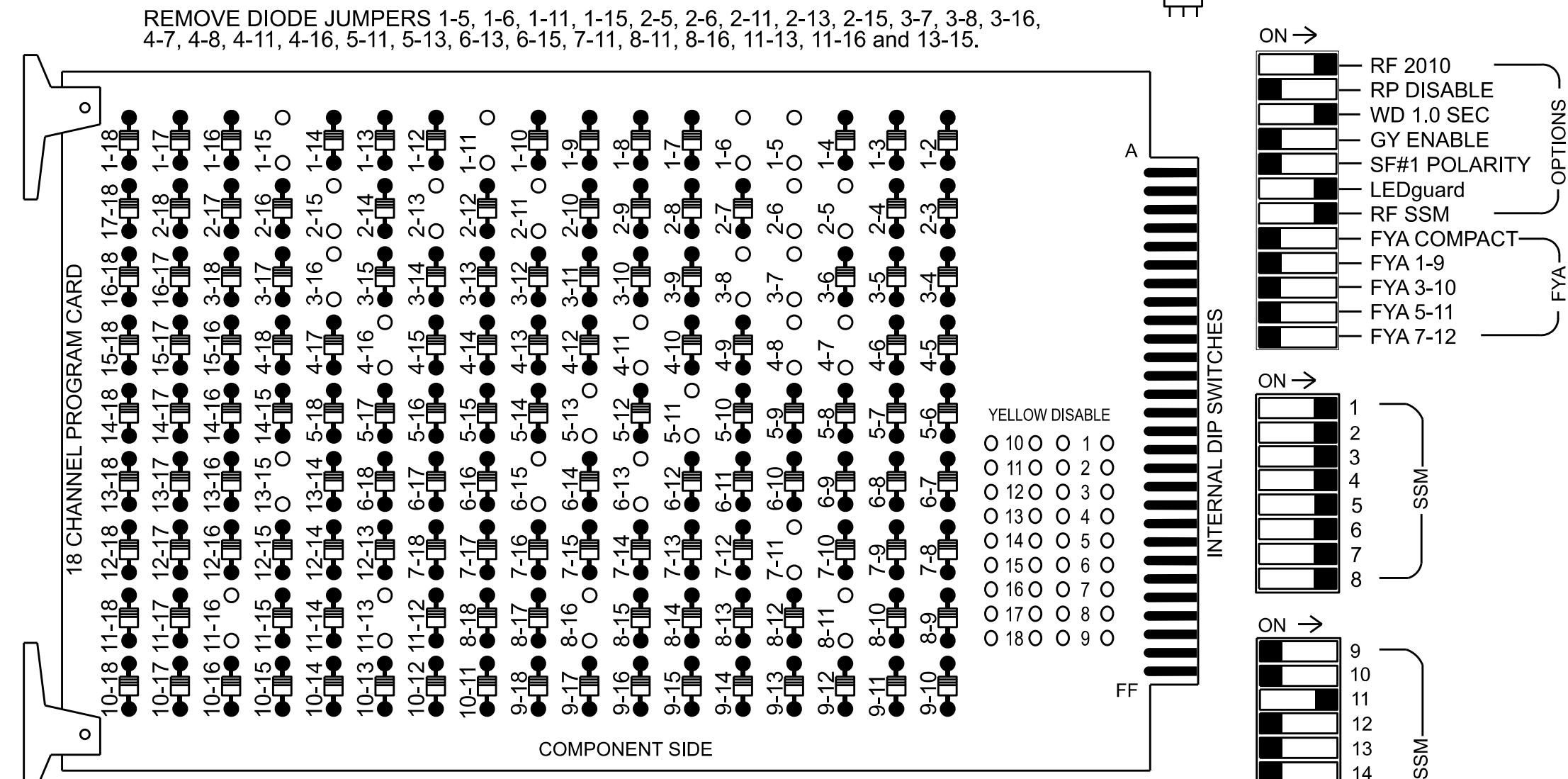
DATE: 04/15/2026

SIG. INVENTORY NO. 06-0355

I:\Projects\2025\06-24-015\06-24-015_Signal Design\06-24-015_Signal Design\06-24-015_Sig_1.0.dwg 2026mmddg.dgn

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 1-5, 1-6, 1-11, 1-15, 2-5, 2-6, 2-11, 2-13, 2-15, 3-7, 3-8, 3-16, 4-7, 4-8, 4-11, 4-16, 5-11, 5-13, 6-13, 6-15, 7-11, 8-11, 8-16, 11-13, 11-16 and 13-15.

REMOVE JUMPERS AS SHOWN

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

NOTES

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

EQUIPMENT INFORMATION

Controller.....2070LX
 Cabinet.....332 w/ Aux
 Software.....Q-Free MAXTIME
 Cabinet Mount.....Base
 Output File Positions.....18 With Aux. Output File
 Load Switches Used.....S1, S2, S3, S4, S5, S7, S8, S9, S10, S11, S12, AUX S4
 Phases Used.....1, 2, 2PED, 3, 4, 5, 6, 6PED, 7, 8, 8PED
 Overlap "1".....Not Used
 Overlap "2".....Not Used
 Overlap "3".....*
 Overlap "4".....Not Used

*See overlap programming detail on sheet 2

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11	21,22,23,24	P21, P22	31	41, 42,45	NU	51	61,62,63,64	P61, P62	71,71	81, 82,83	P81, P82	NU	NU	NU	43,44	NU	NU
RED		128			101			134			107							A114
YELLOW		129			102			135			108							
GREEN		130			103			136			109							
RED ARROW	125			116			131			122								
YELLOW ARROW	126			117			132			123								A115
FLASHING YELLOW ARROW																		
GREEN ARROW	127			118			133			124								A116
Hand icon				113					119		110							
Walking person icon				115					121		112							

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

FILE "I"	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	∅ 1	∅ 2	∅ 2	∅ 3	∅ 4	∅ 5	∅ 6	∅ 7	∅ 8	∅ 9	∅ 10	∅ 11	∅ 12	∅ 13
L	1A	2A	2C	3A	4A	5A	6A	7A	8A	9A	10A	11A	12A	13A
U	NOT USED	∅ 2	NOT USED	NOT USED	NOT USED	∅ 5	∅ 6	∅ 7	∅ 8	∅ 9	∅ 10	∅ 11	∅ 12	∅ 13
L	2B	2B	2B	2B	2B	5B	6B	7B	8B	9B	10B	11B	12B	13B
						5C	6C	7C	8C	9C	10C	11C	12C	13C

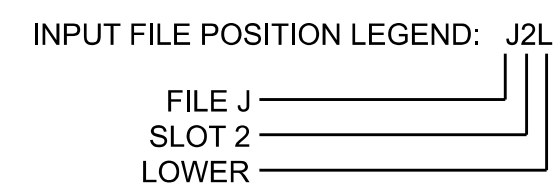
EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT 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			X		X	
2A	TB2-5,6	I2U	39	1	2	2			X	X	X	
2B	TB2-7,8	I2L	43	5	3	2			X	X	X	
2C	TB2-9,10	I3U	63	29	4	2			X	X	X	
3A	TB4-5,6	I5U	58	20	7	3	3		X		X	
4A	TB4-9,10	I6U	41	3	8	4			X		X	
5A	TB3-1,2	J1U	55	17	15	5			X		X	
5B	TB3-5,6	J2U	40	2	16	5	15		X		X	
5C	TB3-7,8	J2L	44	6	17	5	15		X		X	
6A	TB3-9,10	J3U	64	30	18	6			X	X	X	
6B	TB3-11,12	J3L	77	43	19	6			X	X	X	
6C	TB5-1,2	J4U	48	10	20	6			X	X	X	
7A	TB5-9,10	J6U	42	4	22	7	3		X		X	
7B	TB5-11,12	J6L	46	8	23	7			X		X	
8A	TB7-1,2	J7U	66	32	24	8			X		X	
8B	TB7-3,4	J7L	79	45	25	8	15		X		X	
PED PUSH BUTTONS												
P21,P22	TB8-4,6	I12U	67	33	2	PED 2						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						
P81,P82	TB8-8,9	I13L	70	36	8	PED 8						

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



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: 06-0355
 DESIGNED: February 2026
 SEALED: 4/15/2026
 REVISED: N/A

Electrical Detail - Sheet 1 of 2

Prepared in the Offices of:

US 401 Bypass (Skibo Road) at Swain Street

Division 6 Cumberland County Fayetteville

PLAN DATE: April 2026 REVIEWED BY:

PREPARED BY: Zarrar Zafar REVIEWED BY:

REVISIONS INIT. DATE

Seal: SEAL 031001 ENGINEER TODD JOYCE

DocuSigned by: D. Todd Joyce 04/16/2026

750 N. Greenfield Pkwy, Garner, NC 27529

SIG. INVENTORY NO. 06-0355

I:\APR-2026_14441... 06-0355\Signal Management\060355_sml.e_2026mmod.dgn

OVERLAP PROGRAMMING

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

Web Interface
Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	3
Type	Normal
Included Phases	4,5
Modifier Phases	-
Modifier Overlaps	-
Trail Green	0
Trail Yellow	0.0
Trail Red	0.0

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

StartUp Clearance Hold
6

Unit Flash Parameters

All Red Flash Exit Time
6

OUTPUT CHANNEL CONFIGURATION

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

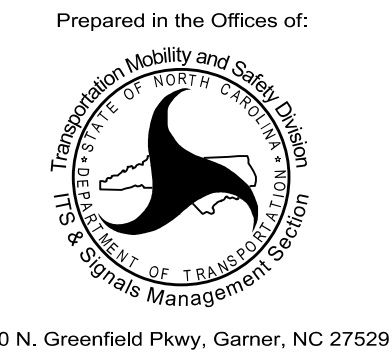
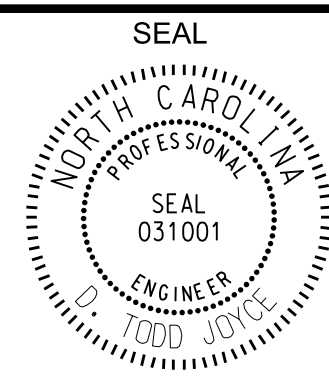

Web Interface
Home >Controller >Advanced IO>Channels>Channel Configuration

Channel Configuration

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

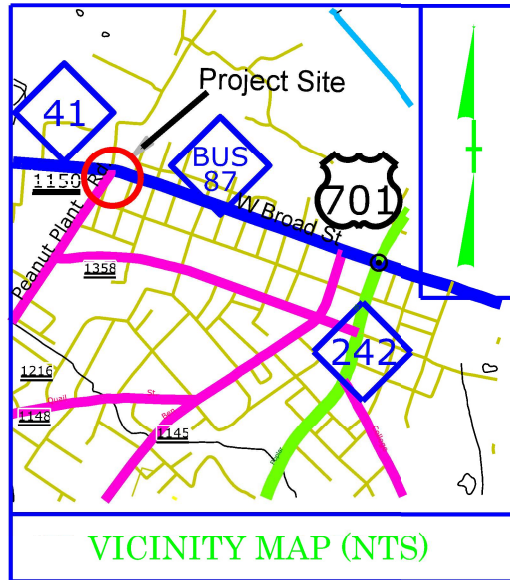
THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 06-0355
DESIGNED: February 2026
SEALED: 4/15/2026
REVISED: N/A

Electrical Detail - Sheet 2 of 2

 <p>Prepared in the Offices of: Transportation Mobility and Safety Division STATE OF NORTH CAROLINA SIGNAL MANAGEMENT SECTION</p> <p>750 N. Greenfield Pkwy, Garner, NC 27529</p>	US 401 Bypass (Skibo Road) at Swain Street		
	Division 6 Cumberland County Fayetteville	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLAN DATE: April 2026 PREPARED BY: Zarrar Zafar	REVIEWED BY:	REVISIONS	INIT. DATE
DocuSigned by:  04/16/2026		DATE	
SIG. INVENTORY NO. 06-0355			

TIP PROJECT: HS-2406T

CONTRACT: DF00545



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BLADEN COUNTY

LOCATION: *Broad Street (NC41) at
Peanut Plant Road/N. Newton
Street (SR1150)*

TYPE OF WORK: *Install Crosswalks with
Pedestrian Phasing With Countdown
Pedesrtian Heads For All Four
Legs of the Intersection*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HS-2406T	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
50978.1.22	5097823	P.E.	
50978.2.22	5097823	Util	
50978.3.23	5097823	CON	



GRAPHIC SCALE



Prepared in the Office of:
DIVISION OF HIGHWAYS
558 Gillespie ST., Fayetteville, NC 28301

2024 STANDARD SPECIFICATIONS

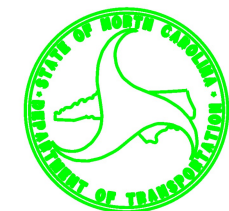
RIGHT OF WAY DATE:
02/16/2026

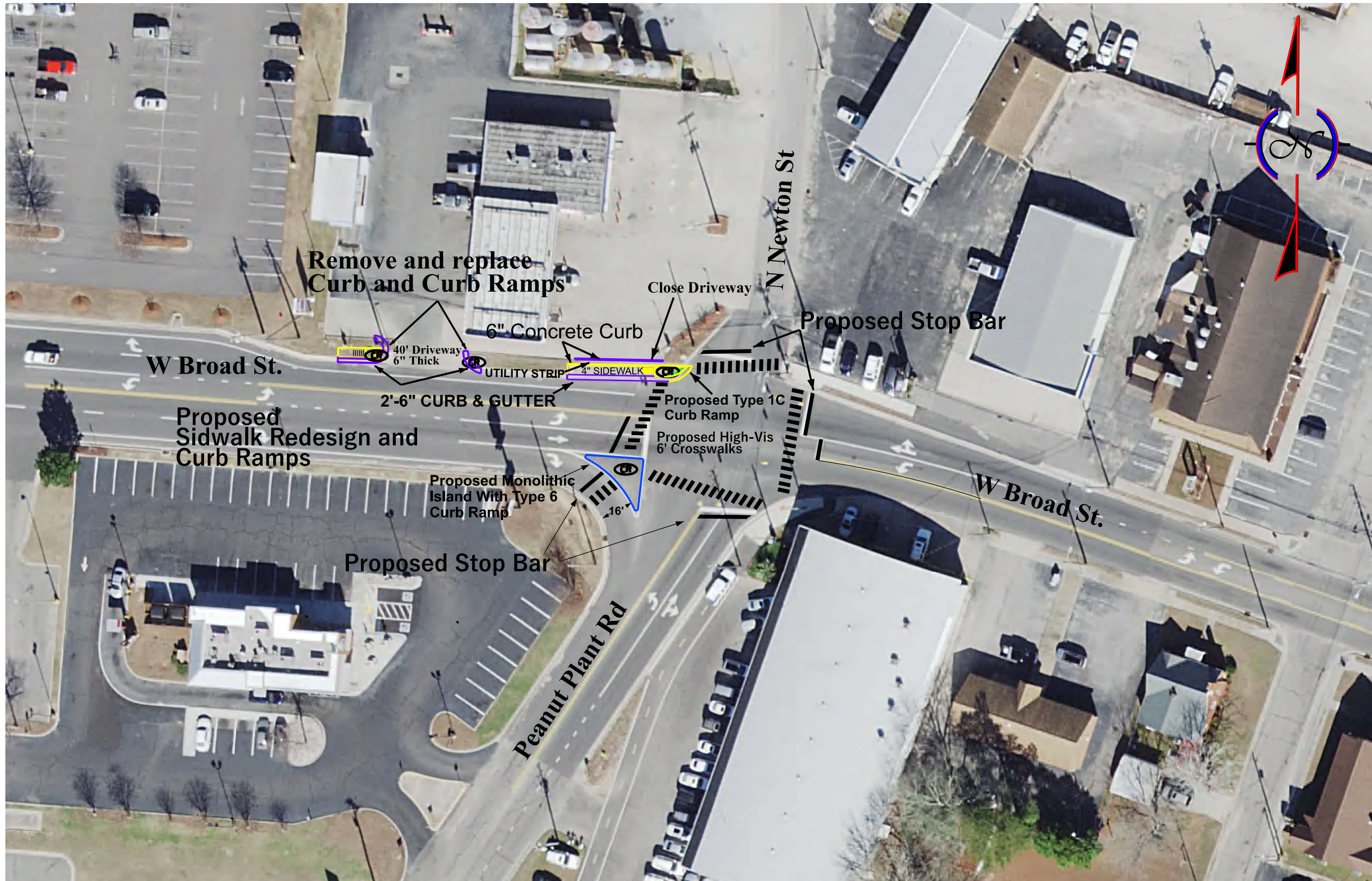
LETTING DATE:
06/03/2026

John Gauthier
PROJECT ENGINEER

Paul Hart
PROJECT DESIGN ENGINEER

NCDOT CONTACT



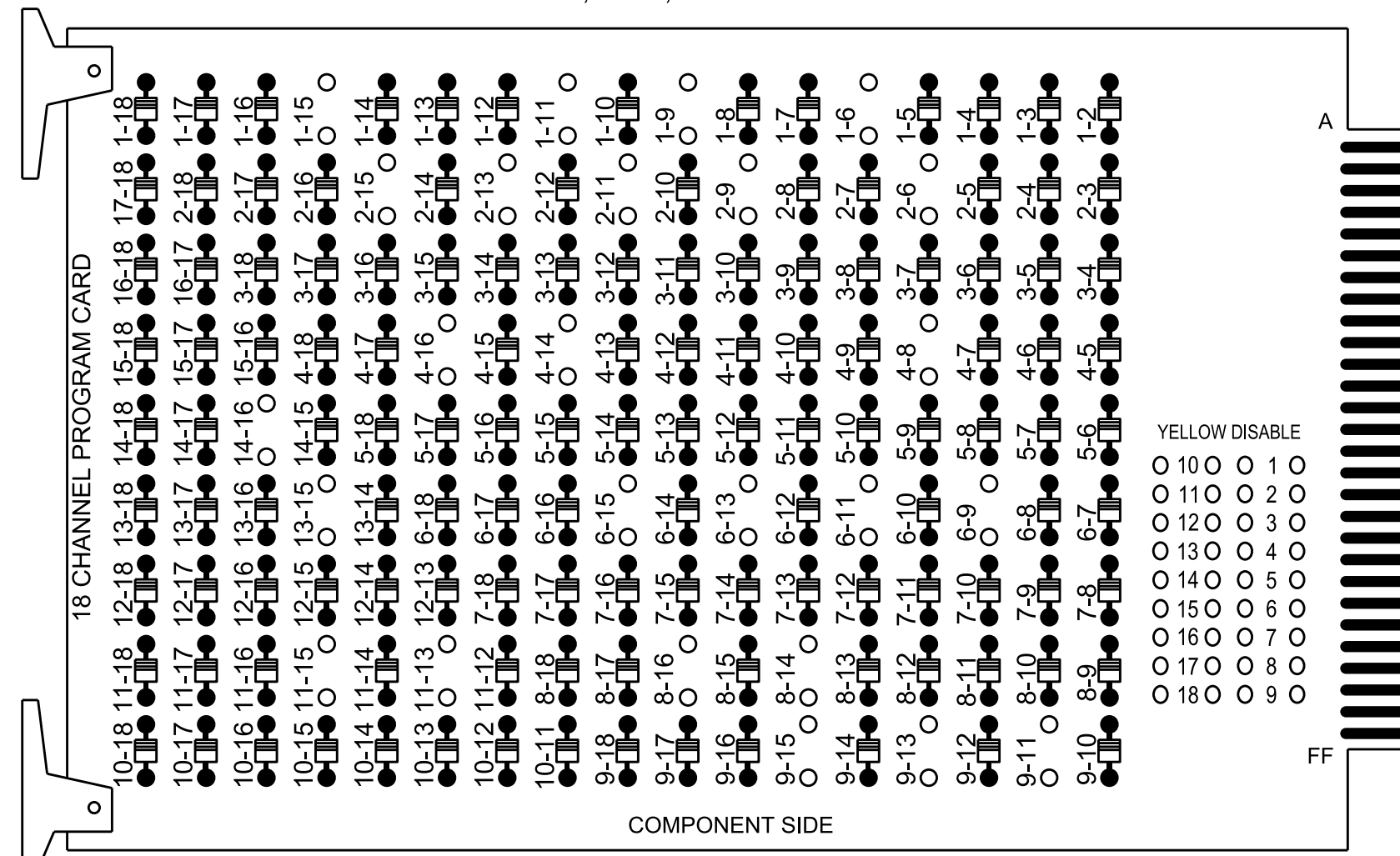


HS-2406T

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

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

NOTES:

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

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 phases 4 and 8 for Simultaneous Start.
4. Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.
5. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
6. The cabinet and controller are part of the D06-07 Elizabethtown Signal System.

EQUIPMENT INFORMATION

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

*See overlap programming detail on sheet 2

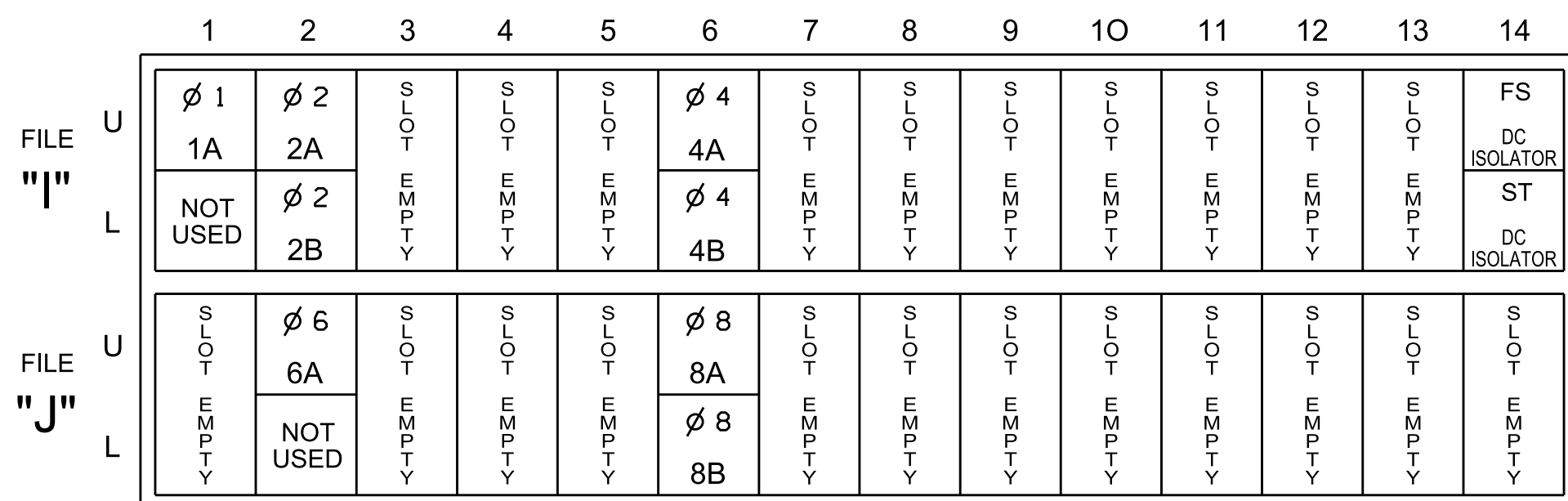
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11*	22,23	P21, P22	NU	41,42	P41, P42	NU	61,62	P61, P62	NU	81,82	P81, P82	11*	NU	NU	21*	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																	
Hand				113		104			119		110							
Walking				115		106			121		112							

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.
 * See pictorial of head wiring in detail this sheet.

INPUT FILE POSITION LAYOUT

(front view)



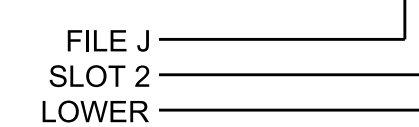
EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

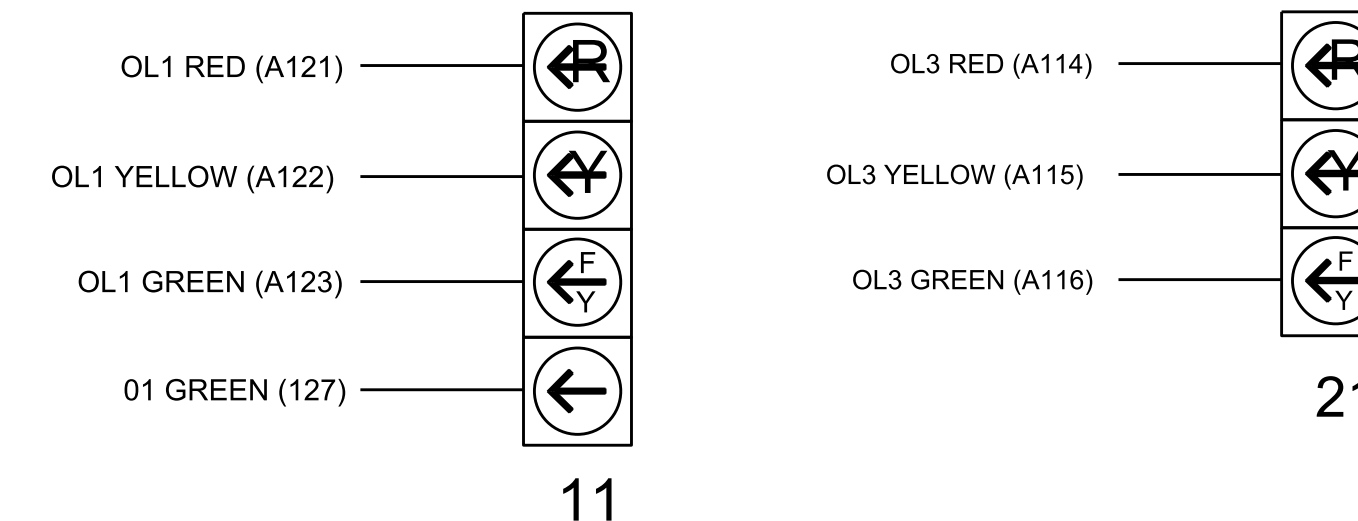
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
1A	TB2-1,2	I1U	56	18	1	1	15.0		X		X	
2A	TB2-5,6	I2U	39	1	2	2			X		X	
2B	TB2-7,8	I2L	43	5	3	2			X		X	
4A	TB4-9,10	I6U	41	3	8	4	10.0		X		X	
4B	TB4-11,12	I6L	45	7	9	4	15.0		X		X	
6A	TB3-5,6	J2U	40	2	16	6			X		X	
8A	TB5-9,10	J6U	42	4	22	8	3.0		X		X	
8B	TB5-11,12	J6L	46	8	23	8	10.0		X		X	

INPUT FILE POSITION LEGEND: J2L



FYA SIGNAL WIRING DETAIL

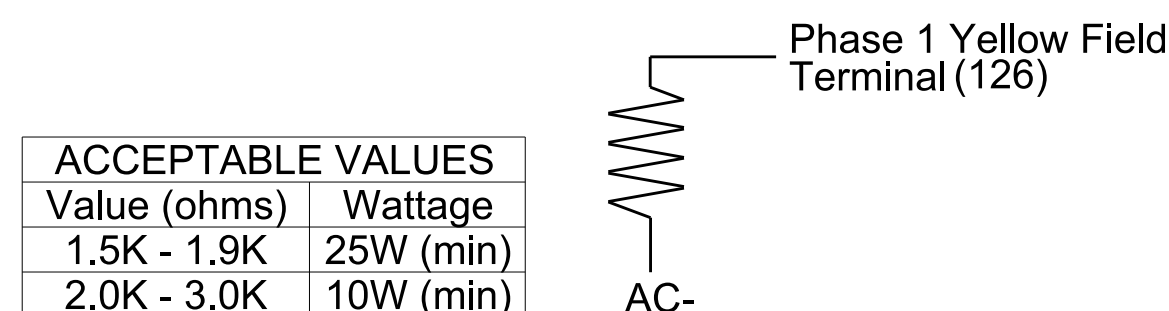
(wire signal heads as shown)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0472
 DESIGNED: February 2026
 SEALED: 4/2/2026
 REVISED: N/A

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown)



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.

Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared For:

750 N. Greenfield Pkwy, Corner, NC 27529

NC 41/NC 87 Business (W Broad Street) at SR 1150 (Peanut Road) / Newton Street

Division 6 Bladen County Elizabethtown

PLAN DATE: March 2026 REVIEWED BY:

PREPARED BY: Zarrar Zafar REVIEWED BY:

REVISIONS: INIT. DATE

Seal:

04/02/2026

SIG. INVENTORY NO. 06-0472

OVERLAP PROGRAMMING

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	-
Modifier Overlaps	-	-
Trail Green	0	0
Trail Yellow	0.0	0.0
Trail Red	0.0	0.0
FYA Ped Delay	7.0	0.0

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

StartUp Clearance Hold
6

Unit Flash Parameters

All Red Flash Exit Time
6

OUTPUT CHANNEL CONFIGURATION

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

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

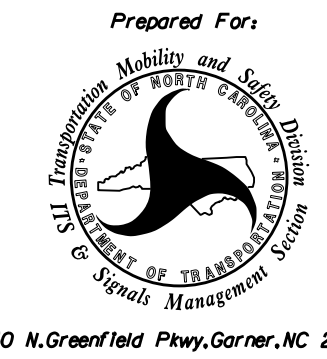
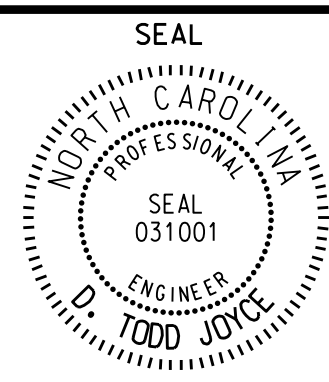
Channel Configuration

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

NOTICE: FLASH RED

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 06-0472
DESIGNED: February 2026
SEALED: 4/2/2026
REVISED: N/A

Electrical Detail - Sheet 2 of 2

 <p style="font-size: 8px;">750 N. Greenfield Pkwy, Corner, NC 27529</p>	<p>NC 41/NC 87 Business (W Broad Street) at SR 1150 (Peanut Road) / Newton Street</p> <p>Division 6 Bladen County Elizabethtown</p> <p>PLAN DATE: March 2026 REVIEWED BY:</p> <p>PREPARED BY: Zarrar Zafar REVIEWED BY:</p> <table border="1" style="width: 100%; font-size: 8px;"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISIONS	INIT.	DATE										<p style="font-size: 8px;">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p style="font-size: 8px;">SEAL</p>  <p style="font-size: 8px;">DocuSigned by: <i>Todd Joyce</i> 04/02/2026</p> <p style="font-size: 8px;">SIG. INVENTORY NO. 06-0472</p>
REVISIONS	INIT.	DATE												

\$FILES \$USERS \$TIME \$DATE

