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Project: W-5206AM

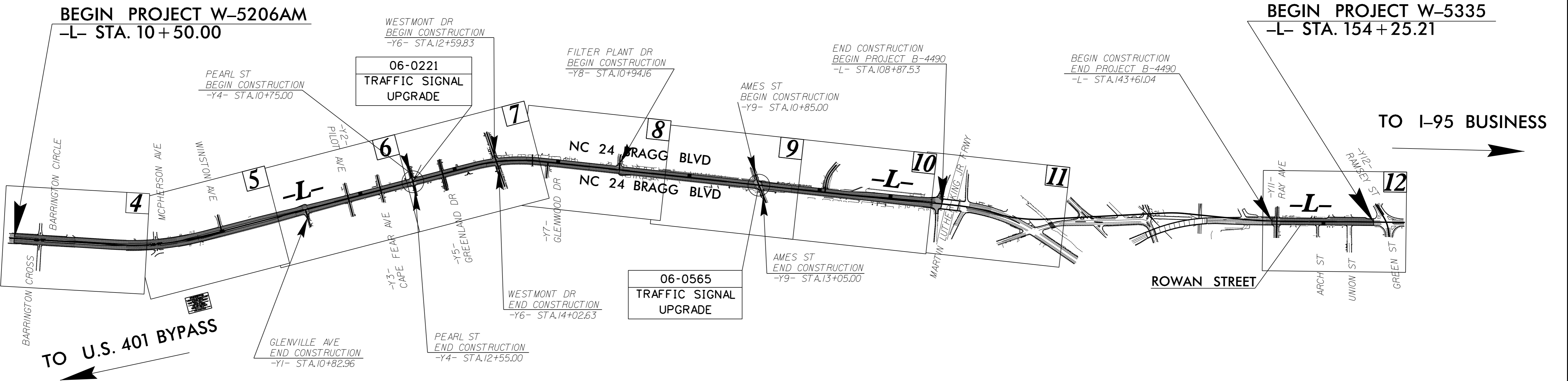
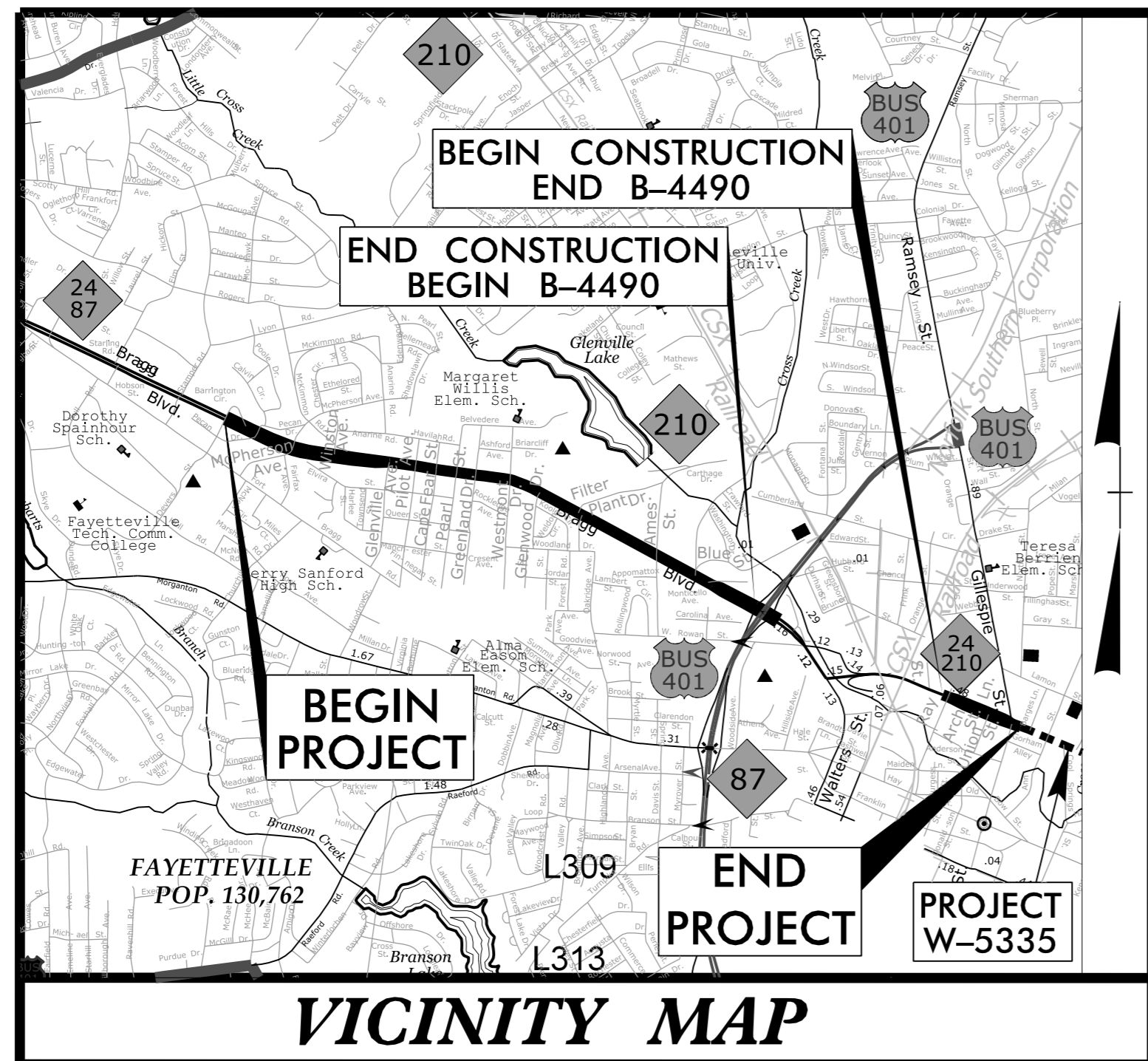
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

Project No.	Sheet No.
W-5206AM	Sig. 1.0

CUMBERLAND

LOCATION: NC 24/NC87 FROM BARRINGTON CROSS STREET TO EAST OF MARTIN LUTHER KING WESTBOUND RAMPS; AND NC 24/ NC 210 (ROWAN STREET) BETWEEN RAY AVENUE AND RAMSEY STREET

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNING, PAVEMENT MARKINGS, & SIGNALS



Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.

Sheet #	Reference #	Index of Plans	Location/Description
Sig. 1.0	N/A	Title Sheet	
Sig. 2.0	05-0221	NC 24/NC 87 (Bragg Blvd) at Pearl Street / Signal Design	
Sig. 2.1	05-0221	NC 24/NC 87 (Bragg Blvd) at Pearl Street / Electrical Details-1	
Sig. 2.2	05-0221	NC 24/NC 87 (Bragg Blvd) at Pearl Street / Electrical Details-2	
Sig. 3.0	05-0565	NC 24/NC 87 (Bragg Blvd) at Ames Street / Signal Design	
Sig. 3.1	05-0565	NC 24/NC 87 (Bragg Blvd) at Ames Street / Electrical Details-1	
Sig. 3.2	05-0565	NC 24/NC 87 (Bragg Blvd) at Ames Street / Electrical Details-2	
Sig. 3.3	05-0565	NC 24/NC 87 (Bragg Blvd) at Ames Street / Electrical Details-3	
Sig. 3.4	05-0565	NC 24/NC 87 (Bragg Blvd) at Ames Street / Electrical Details-4	

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

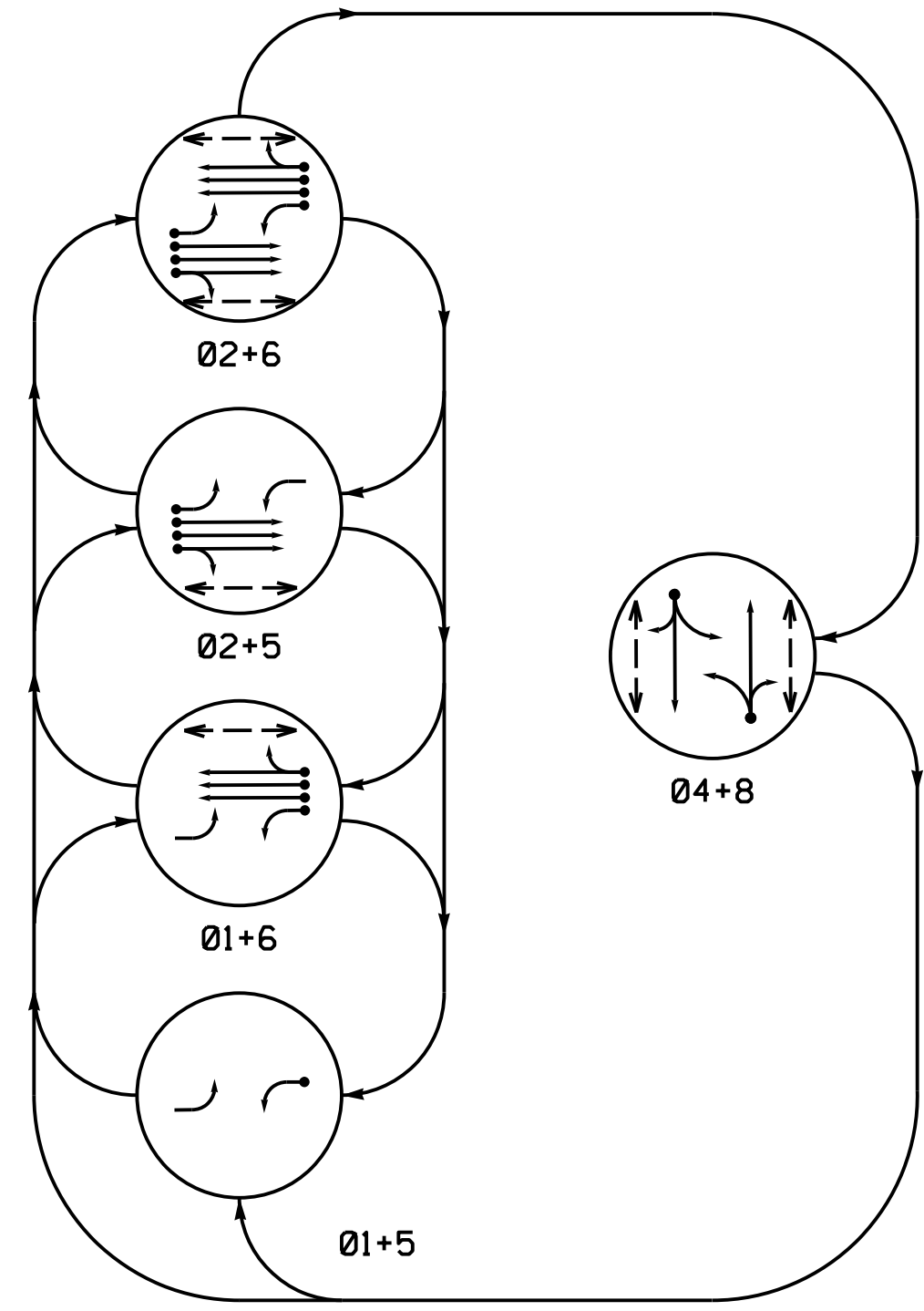
Pamela L. Alexander, PE - Eastern Region Signals Engineer
Todd Joyce, PE - Signal Equipment Design Engineer
I. Neil Avery - Intelligent Transportation Systems Engineer

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

750 N. Greenfield Parkway, Garner, NC 27529

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PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE I.D.

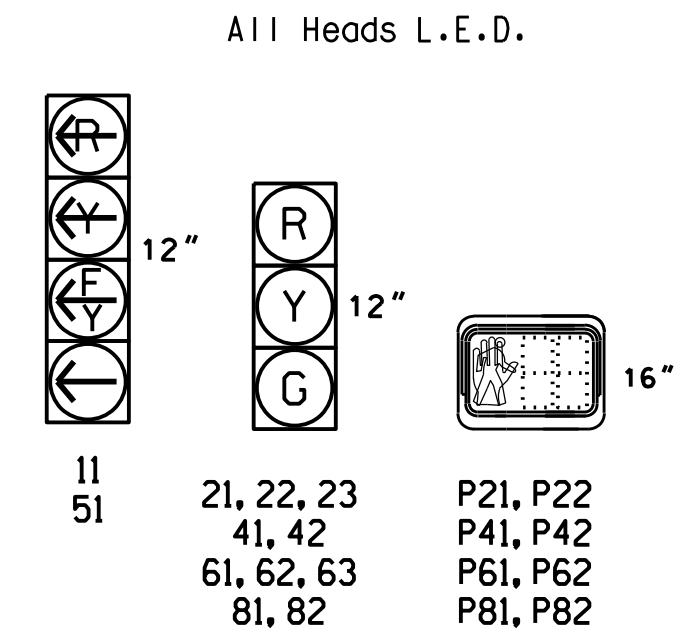


TABLE OF OPERATION

SIGNAL FACE	PHASE					
	01+5	01+6	02+5	02+6	04+8	FLASH
11	←	←	←	←	←	←
21, 22, 23	R	R	G	G	R	Y
41, 42	R	R	R	R	G	R
51	←	←	←	←	←	←
61, 62, 63	R	G	R	G	R	Y
81, 82	R	R	R	R	G	R
P21, P22	DW	DW	W	W	DW	DRK
P41, P42	DW	DW	DW	DW	W	DRK
P61, P62	DW	W	DW	W	DW	DRK
P81, P82	DW	DW	DW	DW	W	DRK

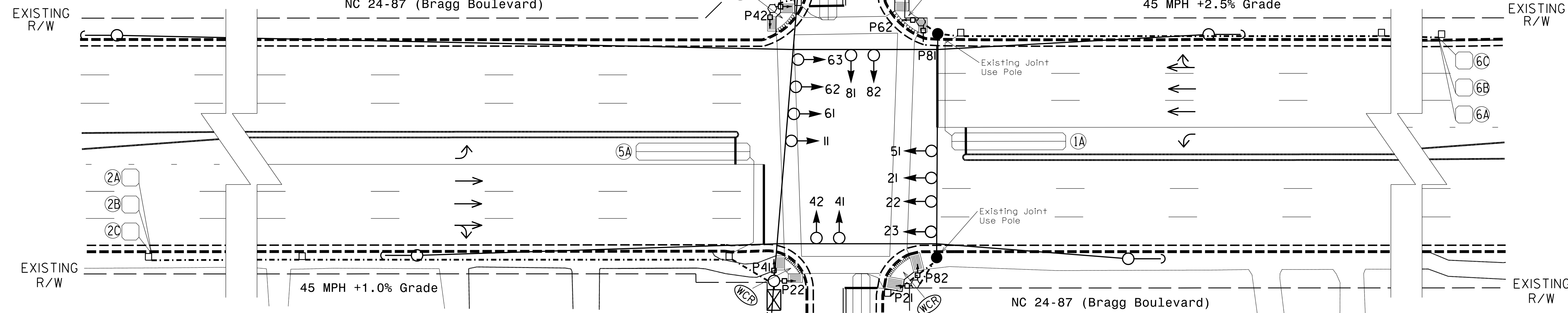
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING					SYSTEM LOOP	NEW CARD	
					PHASE	CALLING	EXTENSION	STRETCH TIME	DELAY TIME			
1A	6X40	+5	2-4-2	Y	1	Y	Y	-	-	15	-	Y
2A	6X6	300	4	Y	2	Y	Y	-	-	-	-	Y
2B	6X6	300	4	Y	2	Y	Y	-	-	-	-	Y
2C	6X6	300	4	Y	2	Y	Y	-	-	-	-	Y
4A	6X40	+5	2-4-2	Y	4	Y	Y	-	-	5	-	Y
5A	6X40	+5	2-4-2	Y	5	Y	Y	-	-	15	-	Y
6A	6X6	300	5	Y	6	Y	Y	-	-	-	-	Y
6B	6X6	300	5	Y	6	Y	Y	-	-	-	-	Y
6C	6X6	300	5	Y	6	Y	Y	-	-	-	-	Y
8A	6X40	+5	2-4-2	Y	8	Y	Y	-	-	5	-	Y

5 Phase Fully Actuated Fayetteville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated July 2012 and "Standard Specifications for Roads and Structures" dated July 2012.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 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" only.
- Pushbutton locations must be approved in the field by the Division Traffic Engineer prior to installation.
- Maximum times shown in timing chart are for free run operation only. Coordinated signal timing values supersede these values.
- Locate cabinet so as to not obstruct sight distance of vehicles turning right on red.

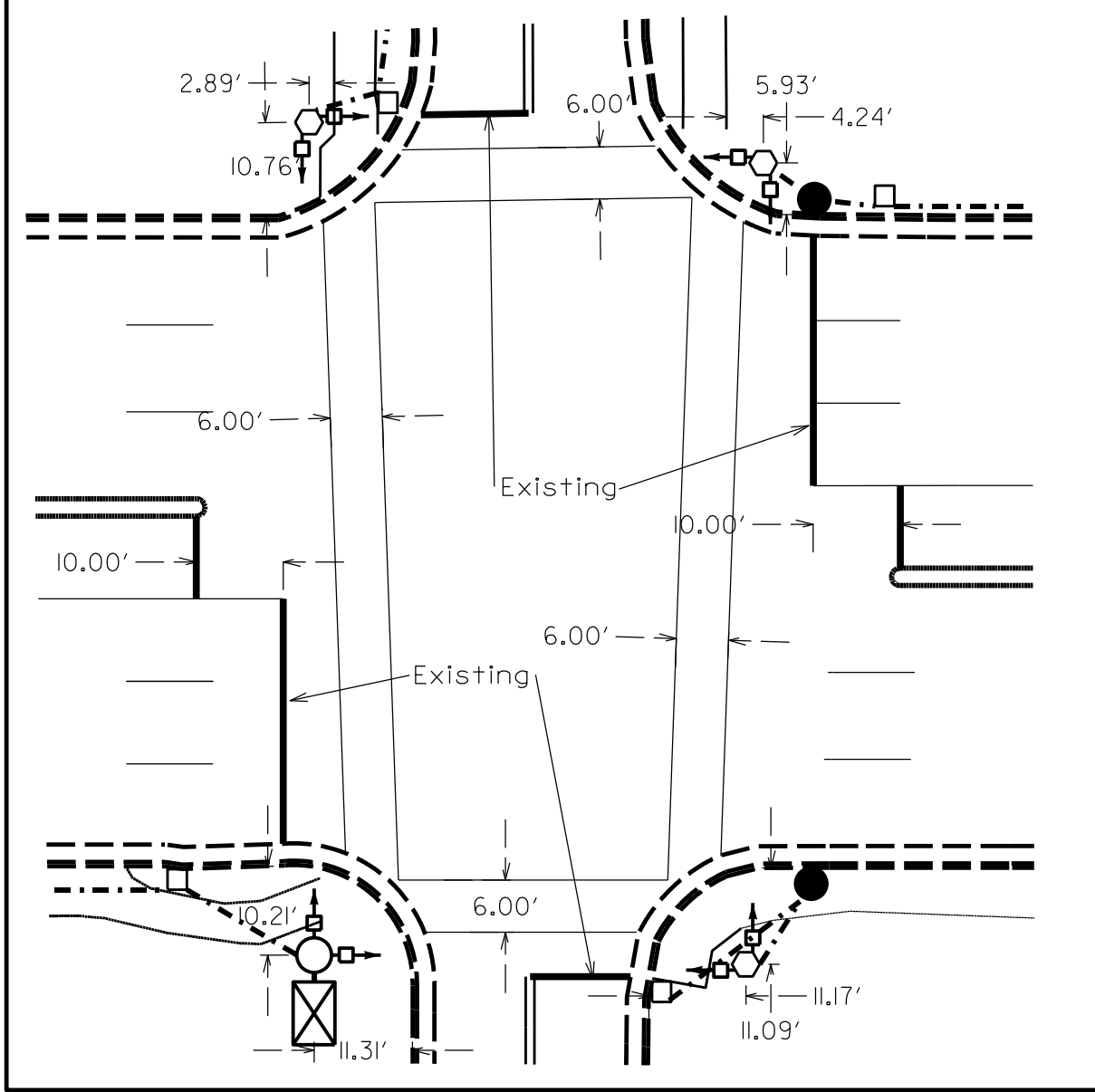


OASIS 2070 TIMING CHART

FEATURE	PHASE					
	1	2	4	5	6	8
Min Green 1*	7	12	7	7	12	7
Extension 1*	2.0	6.0	2.0	2.0	6.0	2.0
Max Green 1*	20	90	25	20	90	30
Yellow Clearance	3.0	4.4	3.1	3.0	4.4	3.3
Red Clearance	2.3	1.0	2.5	2.1	1.0	2.5
Walk 1*	-	7	7	-	7	7
Don't Walk 1	-	8	20	-	6	20
Seconds Per Actuation *	-	1.5	-	-	1.5	-
Max Variable Initial *	-	34	-	-	34	-
Time Before Reduction *	-	15	-	-	15	-
Time To Reduce *	-	30	-	-	30	-
Minimum Gap	-	3.0	-	-	3.0	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-
Dual Entry	-	-	ON	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON

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

STOP BAR AND POLE LOCATION DIAGRAM



LEGEND

PROPOSED	EXISTING
○ →	● →
○ ⊥	● ⊥
○ ⊥ ⊥	● ⊥ ⊥
○ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥
○ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥	● ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥ ⊥
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Signal Upgrade

NC 24-87 (Bragg Boulevard) at Pearl Street

Division 6 Cumberland County Fayetteville

PLAN DATE: September 2015 REVIEWED BY: D. Clodgo

PREPARED BY: B. Wan REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 034389

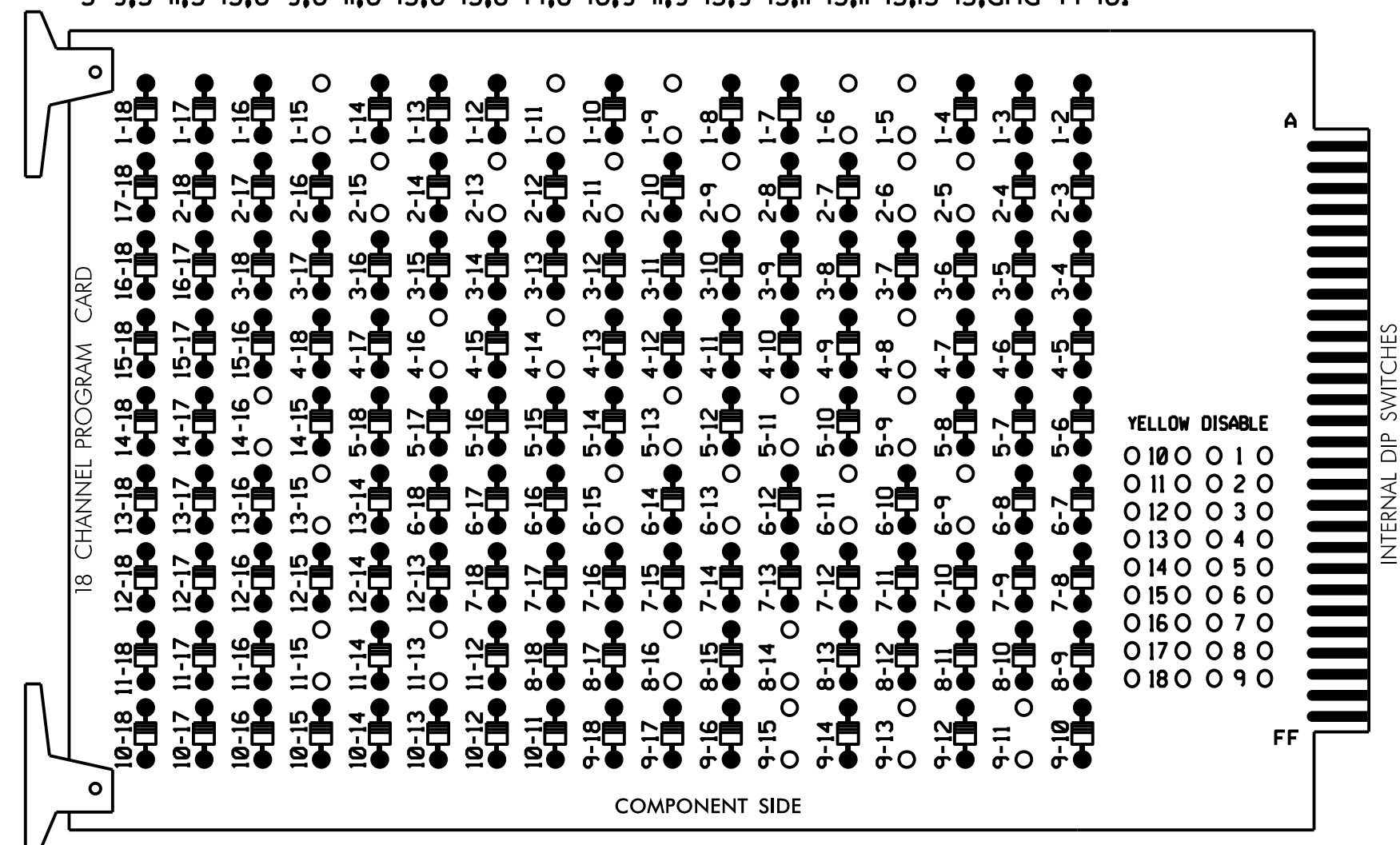
B. WAN

SIGNATURE DATE

SIG. INVENTORY NO. 06-0221

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL
(remove jumpers and set switches as shown)

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

NOTES:

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

■ = DENOTES POSITION OF SWITCH

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Variable Initial and Gap Reduction.
- Program phases 2 and 6 for Start Up In Green.
- Program phases 2, 4, 6 and 8 for 'STARTUP PED CALL'.
- Program phases 2 and 6 for Yellow Flash and overlap 1 as Wag Overlaps.
- The cabinet and controller are part of the Fayetteville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332 W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S3,S5,S6,S7,S8,S9,S11,S12,
 AUX S1,AUX S4
 PHASES USED.....1,2,2 PED,4,4 PED,5,6,6 PED,8,8 PED
 OVERLAP "A".....1+2
 OVERLAP "B".....NOT USED
 OVERLAP "C".....5+6
 OVERLAP "D".....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	∅ 4	∅ 5	∅ 6	∅ 6	∅ 8	∅ 9	∅ 10	∅ 11	∅ 12	∅ 13	∅ 14
L	1A	2A	2C	4A	5A	6A	6C	8A	9A	10A	11A	12A	13A	14A
U	NOT USED	∅ 2	NOT USED	NOT USED	∅ 6	∅ 6	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED
L	2B	2B	2B	2B	6B	6B	2B	2B	2B	2B	2B	2B	2B	2B

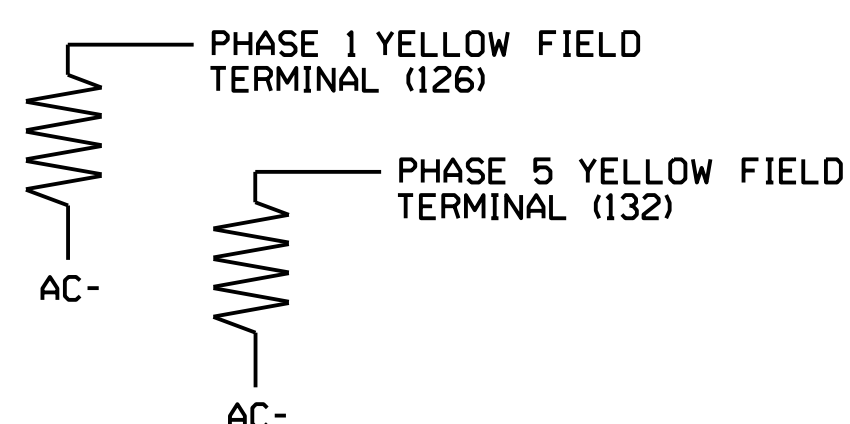
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

LOAD RESISTOR INSTALLATION DETAIL

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

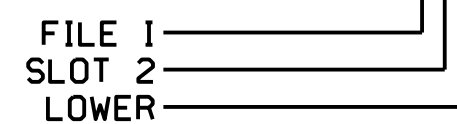


INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y	-	-	15
	-	J4U	48	10	26	6	Y	Y	Y	-	3
2A	TB2-5,6	I2U	39	1	2	2	Y	Y	-	-	-
2B	TB2-7,8	I2L	43	5	12	2	Y	Y	-	-	-
2C	TB2-9,10	I3U	63	25	32	2	Y	Y	-	-	-
4A	TB4-9,10	I6U	41	3	4	4	Y	Y	-	-	5
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y	-	-	15
	-	I4U	47	9	22	2	Y	Y	Y	-	3
6A	TB3-5,6	J2U	40	2	6	6	Y	Y	-	-	-
6B	TB3-7,8	J2L	44	6	16	6	Y	Y	-	-	-
6C	TB3-9,10	J3U	64	26	36	6	Y	Y	-	-	-
8A	TB5-9,10	J6U	42	4	8	8	Y	Y	-	-	5
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2	PED	-	-	-	-
P41,P42	TB8-5,6	I12L	69	31	PED 4	4	PED	-	-	-	-
P61,P62	TB8-7,9	I13U	68	30	PED 6	6	PED	-	-	-	-
P81,P82	TB8-8,9	I13L	70	32	PED 8	8	PED	-	-	-	-

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

INPUT FILE POSITION LEGEND: I2L



- Add jumper from I1-W to J4-W (on rear of input file).
- Add jumper from J1-W to I4-W (on rear of input file).

SIGNAL HEAD HOOK-UP CHART

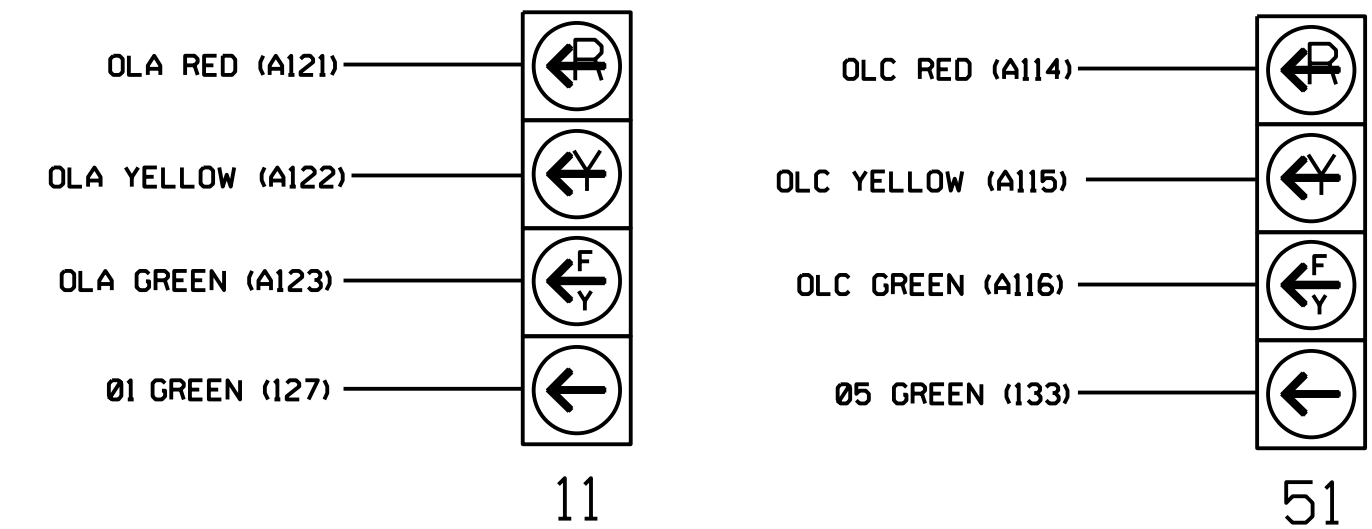
LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22,23	P21, P22	NU	41,42	P41, P42	51	61,62,63	P61, P62	NU	81,82	P81, P82	11	NU	NU	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										
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 below.

FYA SIGNAL WIRING DETAIL
(wire signal heads as shown)



NOTE

- The sequence display for signal heads 11 and 51 requires special logic programming. See sheet 2 for programming instructions.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0221
 DESIGNED: September 2015
 SEALED: September 28, 2015
 REVISED:

Signal Upgrade - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared in the Offices of: 	NC 24-87 (Bragg Boulevard) at Pearl Street		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034389 BISHONG WANG
	Division 06 PLAN DATE: September 2015 PREPARED BY: B. Wan	Cumberland County REVIEWED BY: D. Clodgo REVIEWED BY:	
5400 GLENWOOD AVENUE Suite 400 RALEIGH, NC 27612			SIGNATURE: _____ DATE: _____ SIG. INVENTORY NO. 06-0221

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, AND 6.
2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

LOGICAL I/O COMMAND #1 (+/-COMMAND#)
IF ACTIVE PHASE #1 IS ON
AND RED CLEAR ON PHASE #1 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #50 ON
SET OUTPUT ASSIGNMENT #51 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

LOGICAL I/O COMMAND #2 (+/-COMMAND#)
IF ACTIVE PHASE #1 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #3 (+/-COMMAND#)
IF YELLOW ON PHASE #1 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #51 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #4 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON
AND RED CLEAR ON PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #42 ON
SET OUTPUT ASSIGNMENT #43 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).

LOGICAL I/O COMMAND #5 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #44 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 5 (HEAD 51).

LOGICAL I/O COMMAND #6 (+/-COMMAND#)
IF YELLOW ON PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #43 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 42 = Overlap C Red
OUTPUT 43 = Overlap C Yellow
OUTPUT 44 = Overlap C Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0.0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)...0.0

← NOTICE GREEN FLASH

PRESS '+' TWICE

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0.0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)...0.0

← NOTICE GREEN FLASH

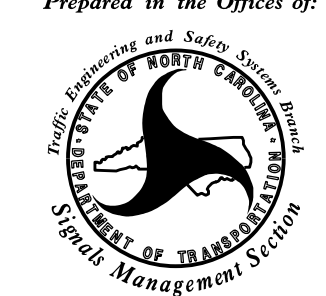
OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL: 06-0221
DESIGNED: September 2015
SEALED: September 28, 2015
REVISED:

Signal Upgrade - Sheet 2 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:



122 N. McDowell St., Raleigh, NC 27603

NC 24-87 (Bragg Boulevard)
at
Pearl Street

Division 06 Cumberland County Fayetteville

PLAN DATE: September 2015 REVIEWED BY: D. Clodgo

PREPARED BY: B. Wan REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
BIOHONG WANG

SEAL
034389

SIGNATURE DATE

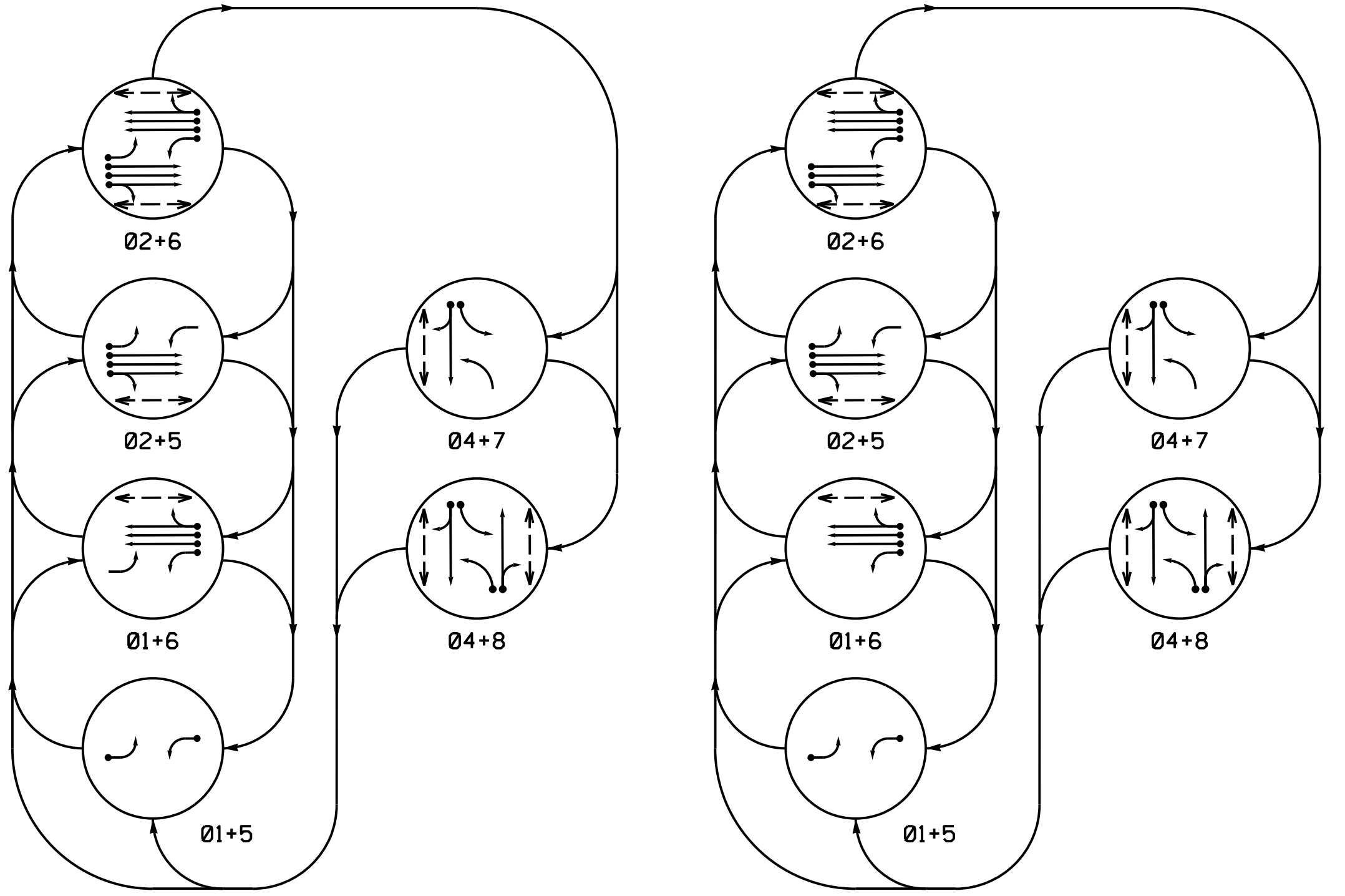
SIG. INVENTORY NO. 06-0221

CDM Smith
5400 GLENWOOD AVENUE
Suite 400
RALEIGH, NC 27612

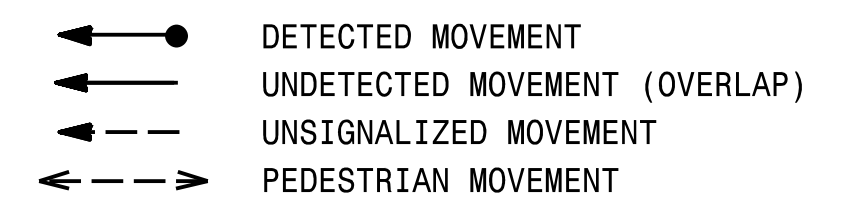
6 Phase Fully Actuated Fayetteville Signal System

DEFAULT PHASING DIAGRAM

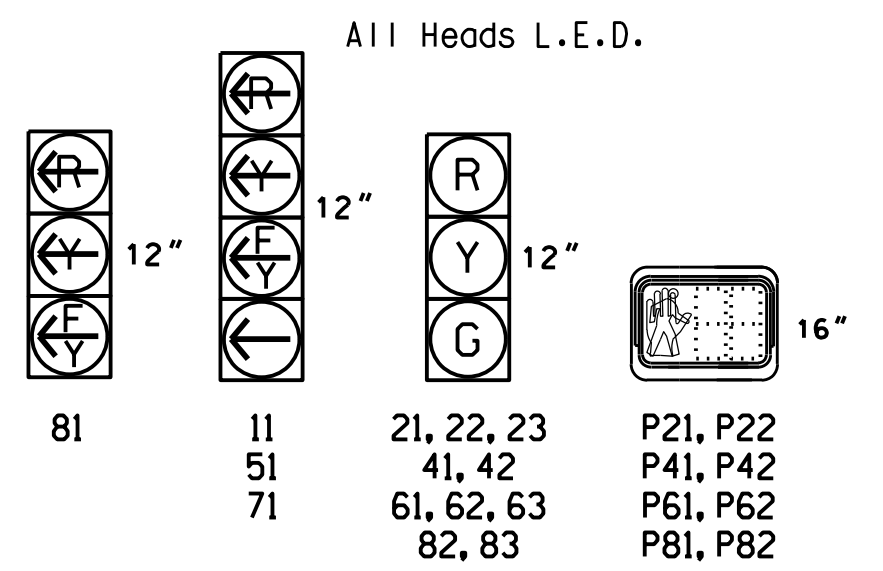
ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND



SIGNAL FACE I.D.



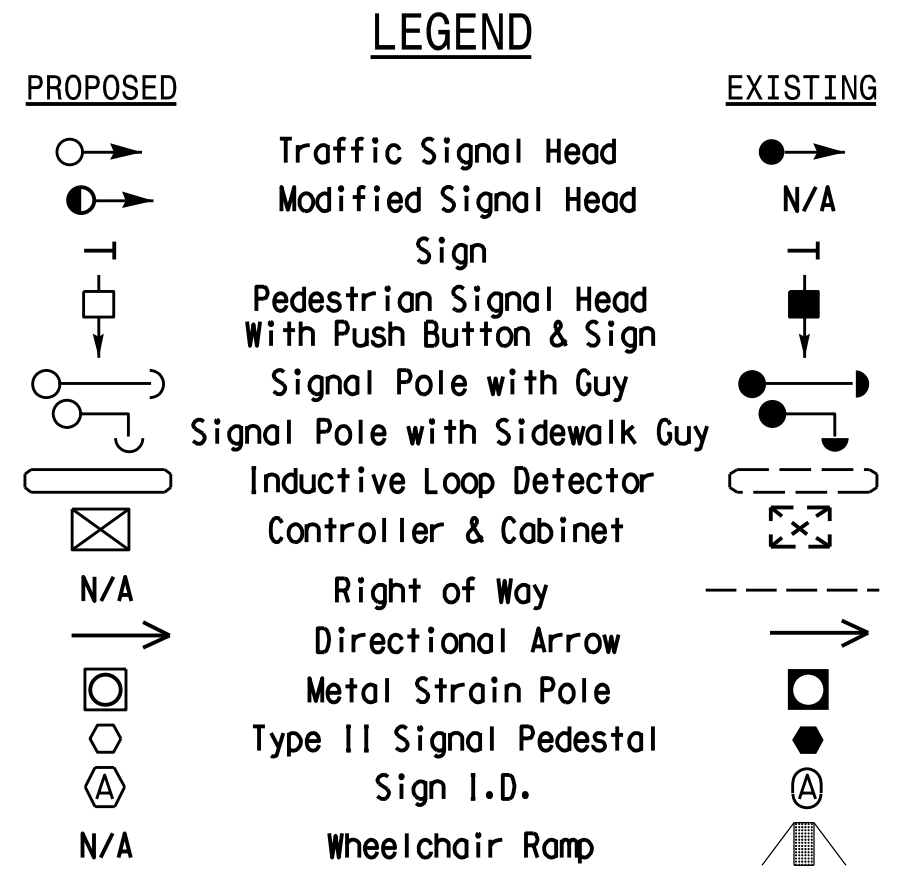
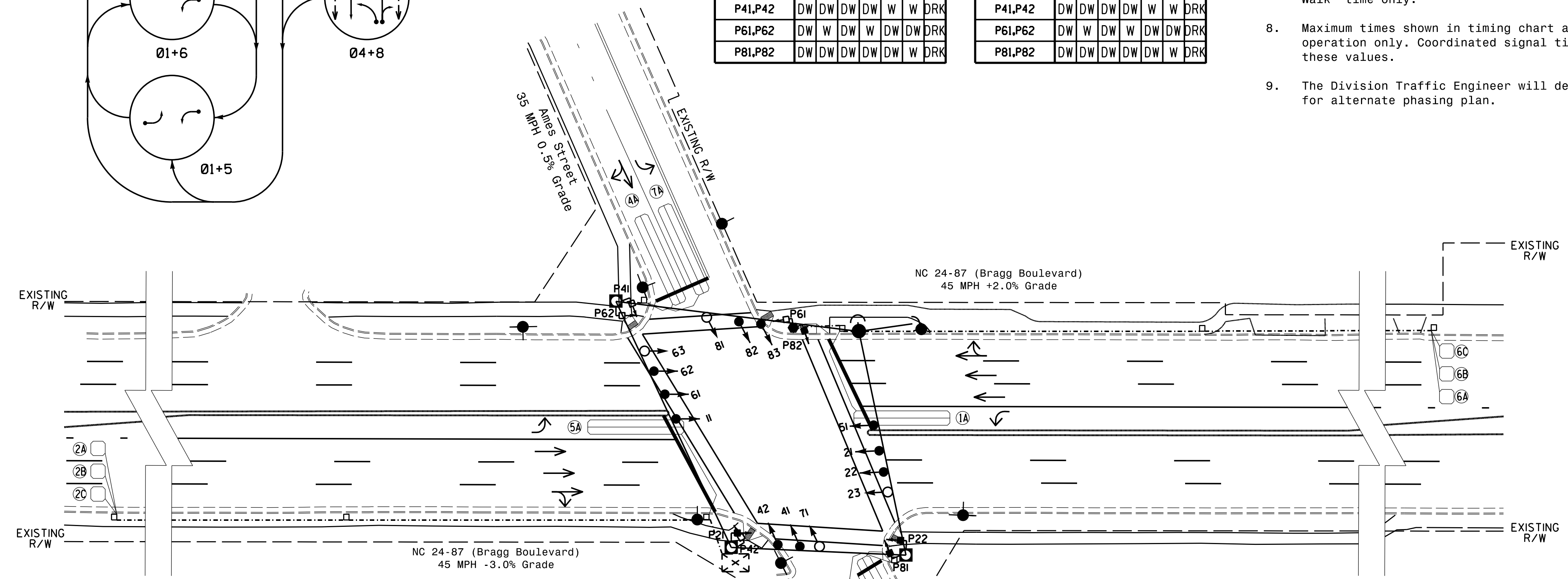
DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE						FLASH
	01+5	02+5	02+6	04+7	04+8	FLASH	
11	---	---	---	---	---	---	*
21,22,23	R	R	G	G	R	R	Y
41,42	R	R	R	R	G	G	R
51	---	---	---	---	---	---	*
61,62,63	R	G	R	G	R	R	Y
71	---	---	---	---	---	---	*
81	---	---	---	---	---	---	*
82,83	R	R	R	R	G	R	
P21,P22	DW	DW	W	W	DW	DW	DRK
P41,P42	DW	DW	DW	DW	W	W	DRK
P61,P62	DW	W	DW	W	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DRK	

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE						FLASH
	01+5	02+5	02+6	04+7	04+8	FLASH	
11	---	---	---	---	---	---	*
21,22,23	R	R	G	G	R	R	Y
41,42	R	R	R	R	G	G	R
51	---	---	---	---	---	---	*
61,62,63	R	G	R	G	R	R	Y
71	---	---	---	---	---	---	*
81	---	---	---	---	---	---	*
82,83	R	R	R	R	R	G	R
P21,P22	DW	DW	W	W	DW	DW	DRK
P41,P42	DW	DW	DW	DW	W	W	DRK
P61,P62	DW	W	DW	W	DW	DW	DRK
P81,P82	DW	DW	DW	DW	W	DRK	

- NOTES
1. Refer to "Roadway Standard Drawings NCDOT" dated July 2012 and "Standard Specifications for Roads and Structures" dated July 2012.
 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
 3. Phase 1 and/or phase 5 may be lagged.
 4. Set all detector units to presence mode.
 5. Reposition existing signal heads 21, 22, 41, 42, 61, 62, 82, and 83.
 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. Maximum times shown in timing chart are for free run operation only. Coordinated signal timing values supersede these values.
 9. The Division Traffic Engineer will determine the hours of use for alternate phasing plan.



OASIS 2070 TIMING CHART

FEATURE	PHASE							
	1	2	4	5	6	7	8	
Min Green 1*	7	12	7	7	12	7	7	
Extension 1*	2.0	6.0	2.0	2.0	6.0	2.0	2.0	
Max Green 1*	20	90	25	20	90	25	30	
Yellow Clearance	3.0	4.9	3.8	3.0	4.9	3.0	3.8	
Red Clearance	2.1	1.2	2.6	1.9	1.2	3.1	2.6	
Walk 1*	-	7	7	-	7	-	7	
Don't Walk 1	-	11	24	-	11	-	23	
Seconds Per Actuation*	-	1.5	-	-	1.5	-	-	
Max Variable Initial*	-	34	-	-	34	-	-	
Time Before Reduction*	-	15	-	-	15	-	-	
Time To Reduce*	-	30	-	-	30	-	-	
Minimum Gap	-	3.0	-	-	3.0	-	-	
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-	-	
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-	-	
Dual Entry	-	-	ON	-	-	-	ON	
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING				SYSTEM LOOP	NEW CARD
					PHASE	CALLING EXTENSION	STRETCH TIME	DELAY TIME		
1A	6X40	+5	2-4-2	Y	1	Y	Y	-	15	-
2A	6X6	300	4	Y	2	Y	Y	-	3	-
2B	6X6	300	4	Y	2	Y	Y	-	-	-
2C	6X6	300	4	Y	2	Y	Y	-	-	-
4A	6X40	+5	2-4-2	Y	4	Y	Y	-	10	-
5A	6X40	+5	2-4-2	Y	5	Y	Y	-	15*	-
6A	6X6	300	4	Y	6	Y	Y	-	3	-
6B	6X6	300	4	Y	6	Y	Y	-	-	-
6C	6X6	300	4	Y	6	Y	Y	-	-	-
7A	6X40	+5	2-4-2	Y	7	Y	Y	-	15	-
8A	6X40	+5	2-4-2	Y	8	Y	Y	-	3	-
8B	6X40	+5	2-4-2	Y	8	Y	Y	-	10	-

* 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.

* Disable Delay During Alternate Phasing Operation.
** Disable Phase 2 Call For Loops 5A During Alternate Phasing Operation.

Signal Upgrade

CDM Smith
5400 GLENWOOD AVENUE
Suite 400
RALEIGH, NC 27612
NC Licensure F-1255

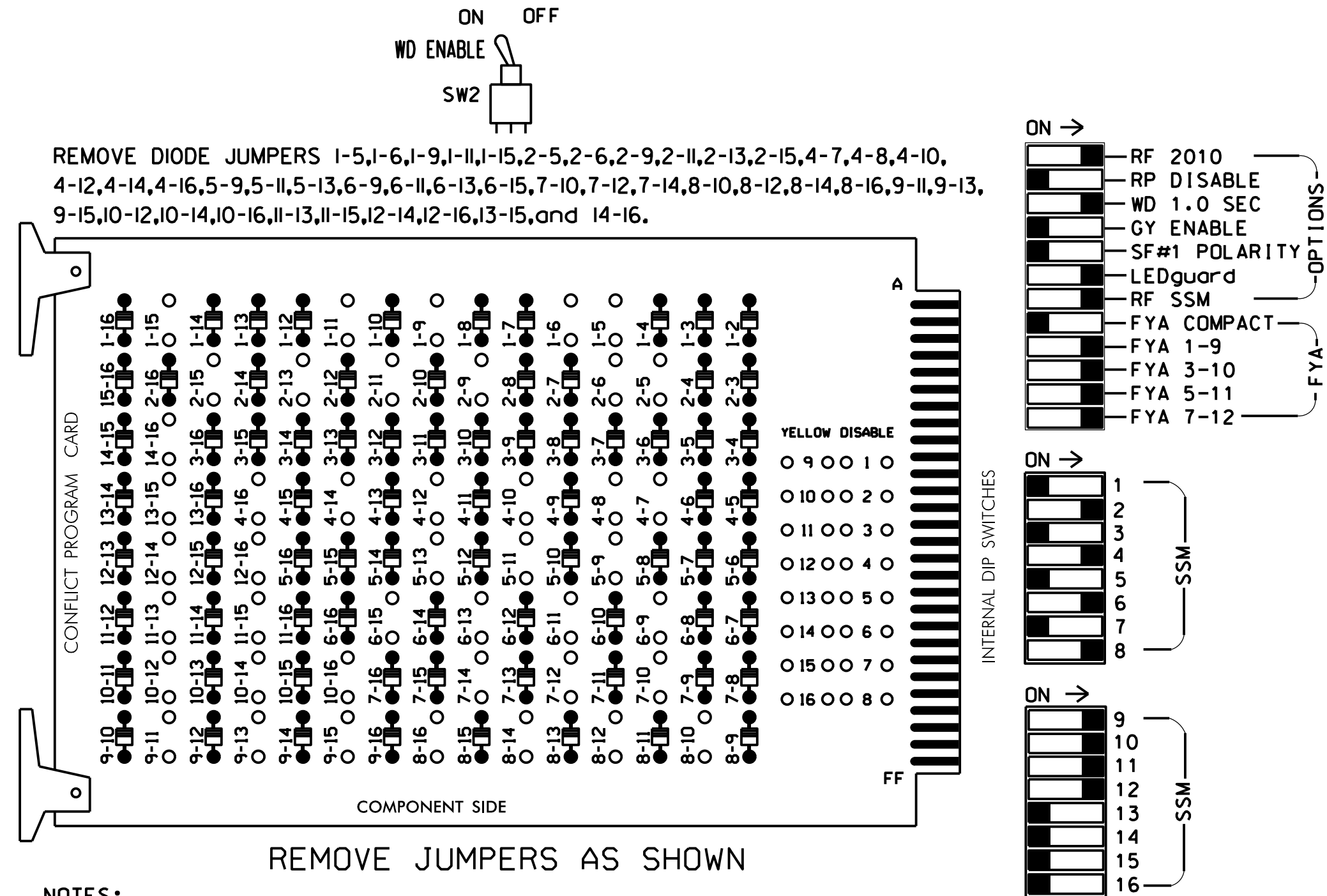
Prepared in the Offices of:

 NC 24-87 (Bragg Boulevard)
 at
 Ames Street
 Division 6 Cumberland County Fayetteville
 PLAN DATE: September 2015 REVIEWED BY: D. Clodgo
 PREPARED BY: B. Wan REVIEWED BY:
 REVISIONS: _____ INIT. DATE
 SCALE: 1"=30'
 SIGNATURE: _____ DATE: _____
 SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER 034389 BAOHONG WAN
 SIGNATURE: _____ DATE: _____
 SIG. INVENTORY NO. 06-0565

FILE: H:\2015\24-87\Signal Design\Drawings\Signal\06-0565.dwg, 20150929.dwg
 DATE: 09/29/2015 9:47:33 AM

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 1,3,5,7,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Variable Initial.
- Program phases 2 and 6 for Gap Reduction.
- Program phases 2 and 6 for Start Up In Green.
- Program phases 2, 4, 6 and 8 for 'STARTUP PED CALL'.
- Program phases 2 and 6 for Yellow Flash and overlaps 1 and 2 as Wag Overlaps.
- The cabinet and controller are part of the Fayetteville City Signal System.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22, 23	P21, P22	NU	41,42	P41, P42	51	61,62, 63	P61, P62	71	82,83	P81, P82	11	81	NU	51	71	NU
RED		128			101			134			107							
YELLOW	*	129			102		*	135		*	108							
GREEN		130			103			136			109							
RED ARROW														A121	A124		A114	A101
YELLOW ARROW														A122	A125		A115	A102
FLASHING YELLOW ARROW														A123	A126		A116	A103
GREEN ARROW	127							133			124							
Hand							113			104								
Walking Person																		

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

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332 W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S2P,S4,S4P,S5,S6,S6P,S7,S8,S8P,
 S9,S10,S12,S13
 PHASES USED.....1,2,2 PED,4,4 PED,5,6,6 PED,7,8,8 PED
 OVERLAP "A".....1+2
 OVERLAP "B".....4
 OVERLAP "C".....5+6
 OVERLAP "D".....7+8

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	∅ 4	∅ 5	∅ 6	∅ 6	∅ 7	∅ 8	∅ 8	∅ 8	∅ 8	∅ 8	∅ 8
L	1A	2A	2C	4A	5A	6A	6C	7A	8A	8B	8B	8B	8B	8B
U	NOT USED	∅ 2	NOT USED	NOT USED	∅ 6	∅ 6	NOT USED	∅ 8	∅ 8	∅ 8	∅ 8	∅ 8	∅ 8	∅ 8
L	NOT USED	2B	NOT USED	NOT USED	6B	6B	NOT USED	8B	8B	8B	8B	8B	8B	8B

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 ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A'	TB2-1,2	I1U	56	18	1	1	Y	Y	-	-	15
2A	TB2-5,6	J4U	48	10	26	6	Y	Y	Y	-	3
2B	TB2-7,8	I2L	43	5	12	2	Y	Y	-	-	-
2C	TB2-9,10	I3U	63	25	32	2	Y	Y	-	-	-
4A	TB4-9,10	I6U	41	3	4	4	Y	Y	-	-	10
5A'	TB3-1,2	J1U	55	17	5	5	Y	Y	-	-	15
6A	TB3-5,6	J2U	40	2	6	6	Y	Y	-	-	-
6B	TB3-7,8	J2L	44	6	16	6	Y	Y	-	-	-
6C	TB3-9,10	J3U	64	26	36	6	Y	Y	-	-	-
7A'	TB5-5,6	J5U	57	19	7	7	Y	Y	-	-	15
8A	TB5-9,10	J6U	42	4	8	8	Y	Y	-	-	3
8B	TB5-11,12	J6L	46	8	18	8	Y	Y	-	-	10
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29							
P41,P42	TB8-5,6	I12L	69	31							
P61,P62	TB8-7,9	I13U	68	30							
P81,P82	TB8-8,9	I13L	70	32							

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

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

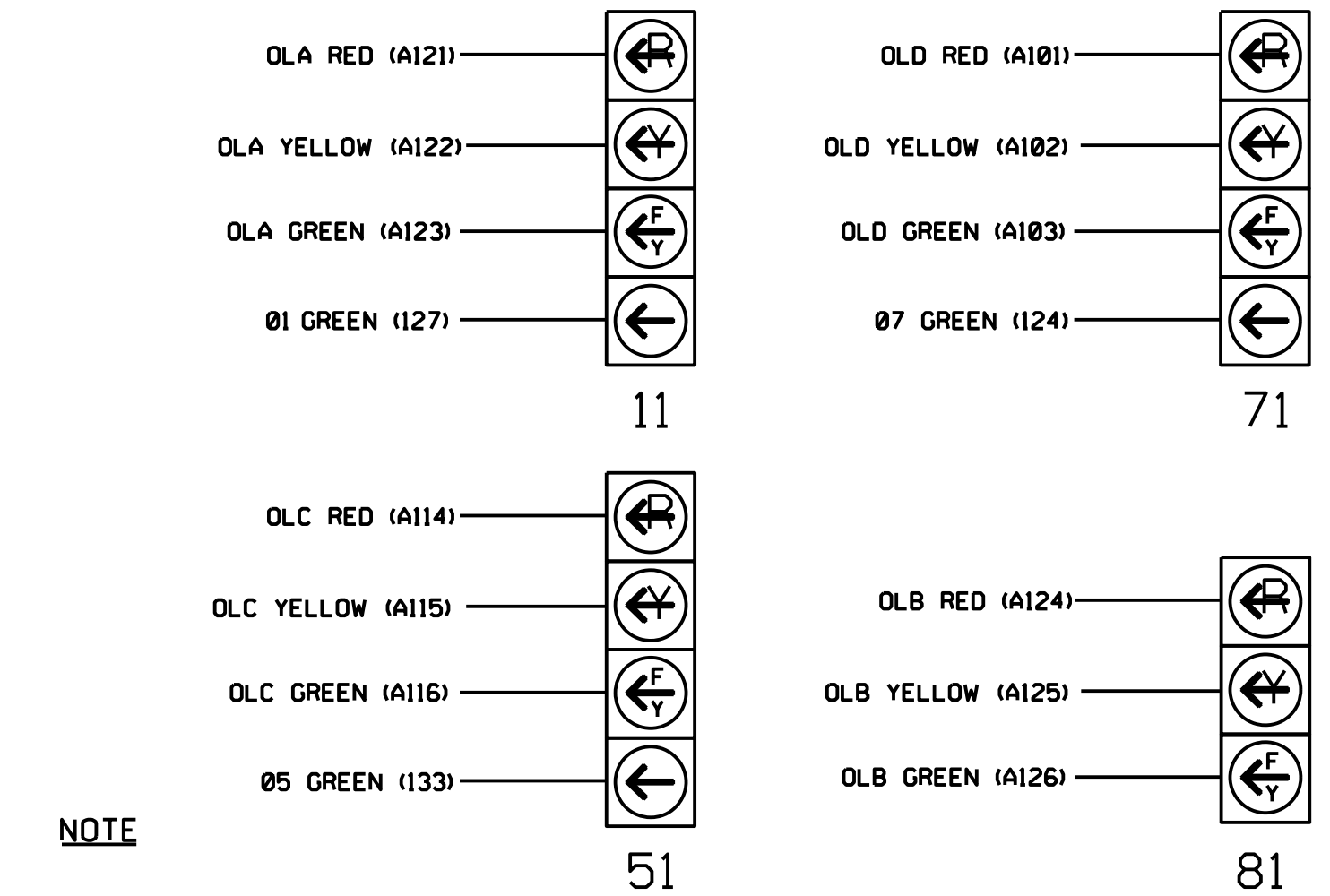
★ See Input Page Assignment programming details on sheets 3 and 4.
 INPUT FILE POSITION LEGEND: I2L
 FILE 1
 SLOT 2
 LOWER

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0565
 DESIGNED: September 2015
 SEALED: September 28, 2015
 REVISED:

CDM Smith
 5400 GLENWOOD AVENUE
 Suite 400
 RALEIGH, NC 27612

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

- The sequence display for signal heads 11, 51 and 71 requires special logic programming. See sheet 2 for programming instructions.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

Signal Upgrade - Sheet 1 of 4

	NC 24-87 (Bragg Boulevard) at Ames Street	
	Division 06	Cumberland County
	Prepared in the Offices of:	Fayetteville
	PLAN DATE: September 2015	REVIEWED BY: D. Clodgo
PREPARED BY: B. Wan	REVIEWED BY:	
REVISIONS	INIT.	DATE
SIGNATURE	DATE	
SIG. INVENTORY NO. 06-0565		

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, 6, 7, 8, AND 9.
2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

LOGICAL I/O COMMAND #1 (+/-COMMAND#)
IF ACTIVE PHASE #1 IS ON
AND RED CLEAR ON PHASE #1 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #50 ON
SET OUTPUT ASSIGNMENT #51 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

LOGICAL I/O COMMAND #2 (+/-COMMAND#)
IF ACTIVE PHASE #1 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #3 (+/-COMMAND#)
IF YELLOW ON PHASE #1 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #51 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #4 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON
AND RED CLEAR ON PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #42 ON
SET OUTPUT ASSIGNMENT #43 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).

LOGICAL I/O COMMAND #5 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #44 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 5 (HEAD 51).

LOGICAL I/O COMMAND #6 (+/-COMMAND#)
IF YELLOW ON PHASE #5 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #43 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).

LOGICAL I/O COMMAND #7 (+/-COMMAND#)
IF ACTIVE PHASE #7 IS ON
AND RED CLEAR ON PHASE #7 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #39 ON
SET OUTPUT ASSIGNMENT #40 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 7 RED CLEAR WHEN TRANSITIONING FROM PHASE 7 TO PHASE 8 (HEAD 71).

LOGICAL I/O COMMAND #8 (+/-COMMAND#)
IF ACTIVE PHASE #7 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #41 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 7 (HEAD 71).

LOGICAL I/O COMMAND #9 (+/-COMMAND#)
IF YELLOW ON PHASE #7 IS ON

↓
SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #40 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 7 (HEAD 71).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

- OUTPUT 39 = Overlap D Red
- OUTPUT 40 = Overlap D Yellow
- OUTPUT 41 = Overlap D Green
- OUTPUT 42 = Overlap C Red
- OUTPUT 43 = Overlap C Yellow
- OUTPUT 44 = Overlap C Green
- OUTPUT 50 = Overlap A Red
- OUTPUT 51 = Overlap A Yellow
- OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0
OUTPUT AS PHASE # (0=NONE, 1-16)...0

PRESS '+'

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC)...0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0
OUTPUT AS PHASE # (0=NONE, 1-16)...0

PRESS '+'

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0
OUTPUT AS PHASE # (0=NONE, 1-16)...0

PRESS '+'

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC)...0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0
OUTPUT AS PHASE # (0=NONE, 1-16)...0

PRESS '+'

← NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING - PAGE 2

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

NOTICE PAGE 2 → PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0
OUTPUT AS PHASE # (0=NONE, 1-16)...0

PRESS '+'

← NOTICE GREEN FLASH

NOTICE PAGE 2 → PAGE 2: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC)...0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0
OUTPUT AS PHASE # (0=NONE, 1-16)...0

PRESS '+'

← NOTICE GREEN FLASH

NOTICE PAGE 2 → PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0
OUTPUT AS PHASE # (0=NONE, 1-16)...0

PRESS '+'

NOTICE PAGE 2 → PAGE 2: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC)...0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0
OUTPUT AS PHASE # (0=NONE, 1-16)...0

PRESS '+'

← NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

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 CHANGE LISTED ABOVE TIES ALL PHASES AND OVERLAP TO FLASHER UNIT 1.

Signal Upgrade - Sheet 2 of 4

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-0565
DESIGNED: September 2015
SEALED: September 28, 2015
REVISED: _____

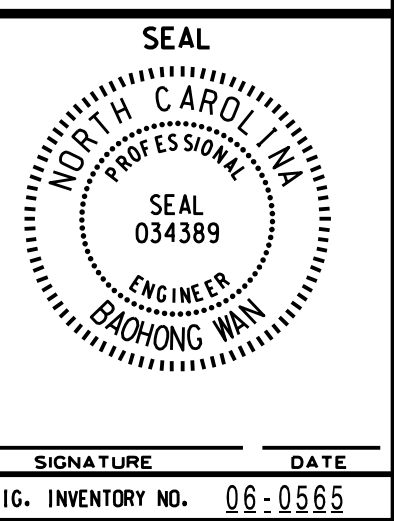


ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

122 N. McDowell St., Raleigh, NC 27603

NC 24-87 (Bragg Boulevard) at Ames Street	
Division 06	Cumberland County Fayetteville
PLAN DATE: September 2015	REVIEWED BY: D. Clodgo
PREPARED BY: B. Wan	REVIEWED BY:
REVISIONS	INIT. DATE
SIGNATURE	DATE
SIG. INVENTORY NO. 06-0565	

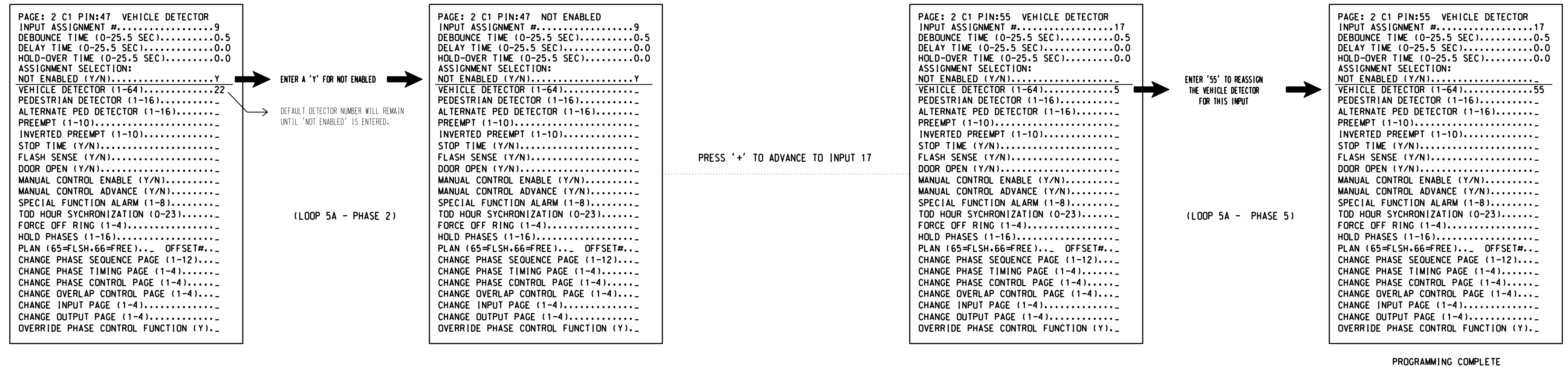


INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 5A

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #9 (DETECTOR 22) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 2 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 55 TO INPUT #17 SO THAT THE DELAY ON LOOP 5A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

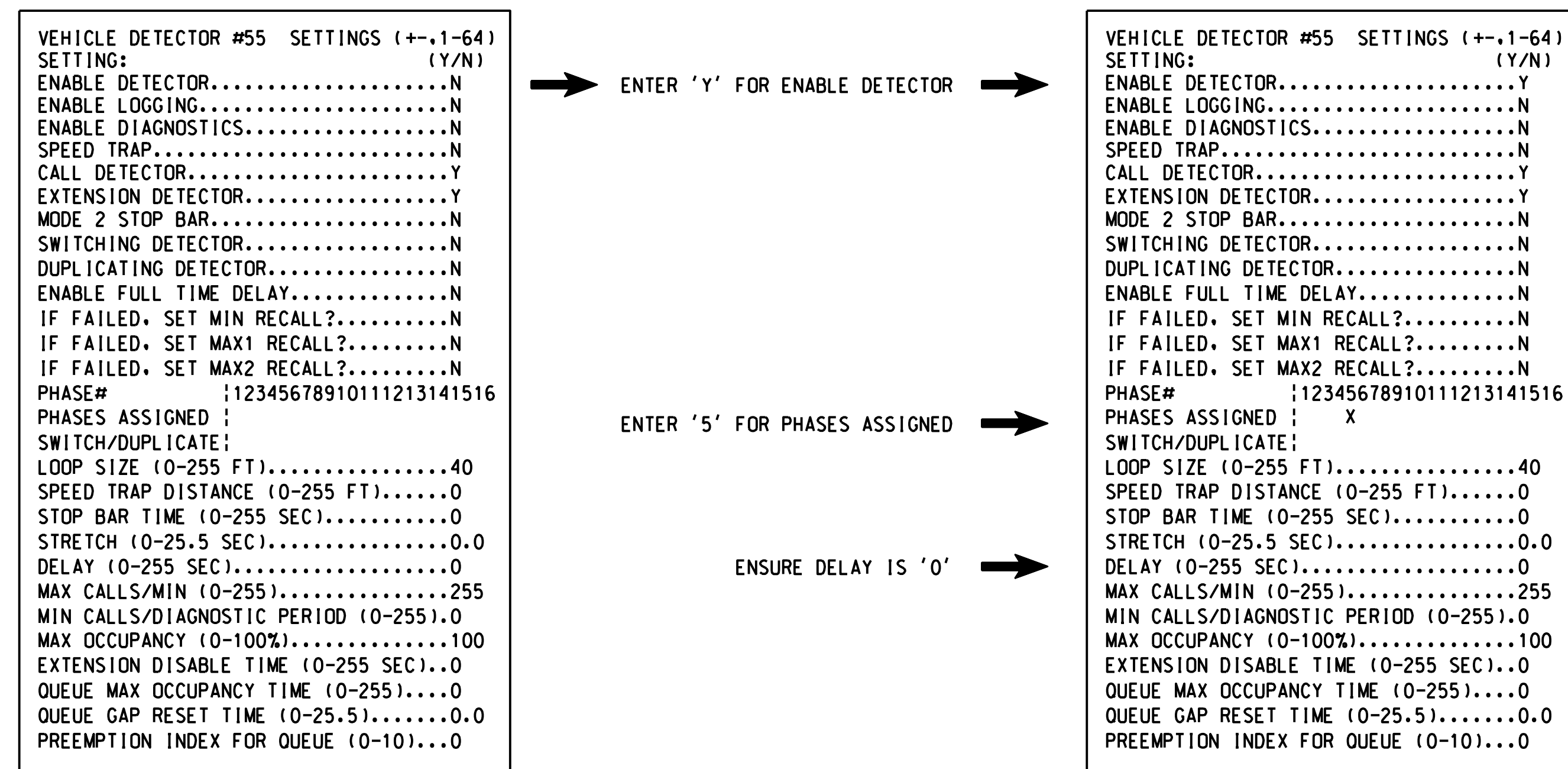
FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 9 IS REACHED.



SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 5A (ALT.)

(program controller as shown below)

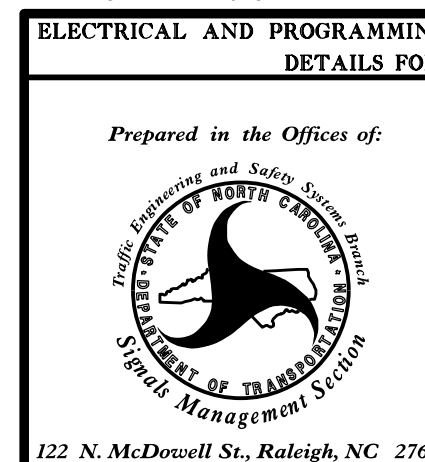
FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #55.



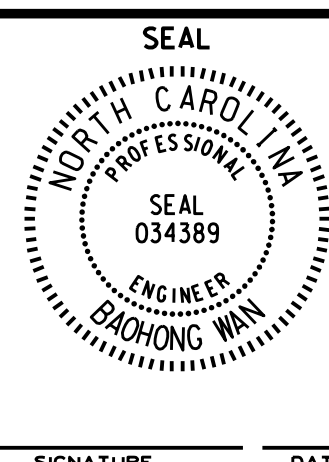
NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

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Signal Upgrade - Sheet 3 of 4



ELECTRICAL AND PROGRAMMING DETAILS FOR:	
Prepared in the Offices of:	
NC 24-87 (Bragg Boulevard) at Ames Street	
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ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

<u>PHASING</u>	<u>INPUTS PAGE</u>	<u>OVERLAPS PAGE</u>
ACTIVE PAGES REQUIRED TO RUN <u>NORMAL PHASING</u>	1	1
ACTIVE PAGES REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	2

NOTE: PAGES NOT SHOWN (i.e. sequence, phase control, etc.) SHOULD REMAIN AS '1', OR AS DEFINED BY TIMING ENGINEER.

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

ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

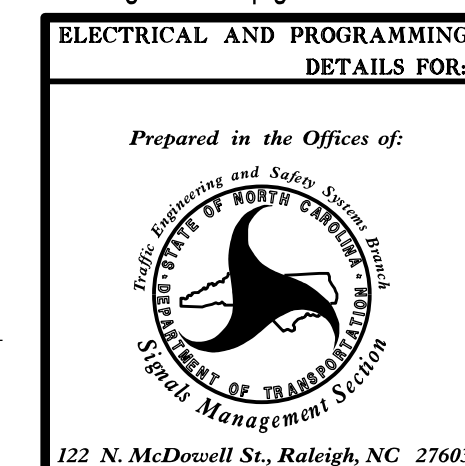
- OVERLAPS PAGE 2: Modifies overlap parent phase for head 51 to run protected turns only.
- INPUTS PAGE 2: Disables phase 2 call on loop 5A and modifies delay time.

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 06-0565
 DESIGNED: September 2015
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 REVISED: _____

Signal Upgrade - Sheet 4 of 4

I:\w\14_10\exp\action
 ...06-0565_sml.dwg 10/20/15 09:28 - dgn
 USER: WANG

**CDM
Smith**
 5400 GLENWOOD AVENUE
 Suite 400
 RALEIGH, NC 27612



**ELECTRICAL AND PROGRAMMING
DETAILS FOR:**
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