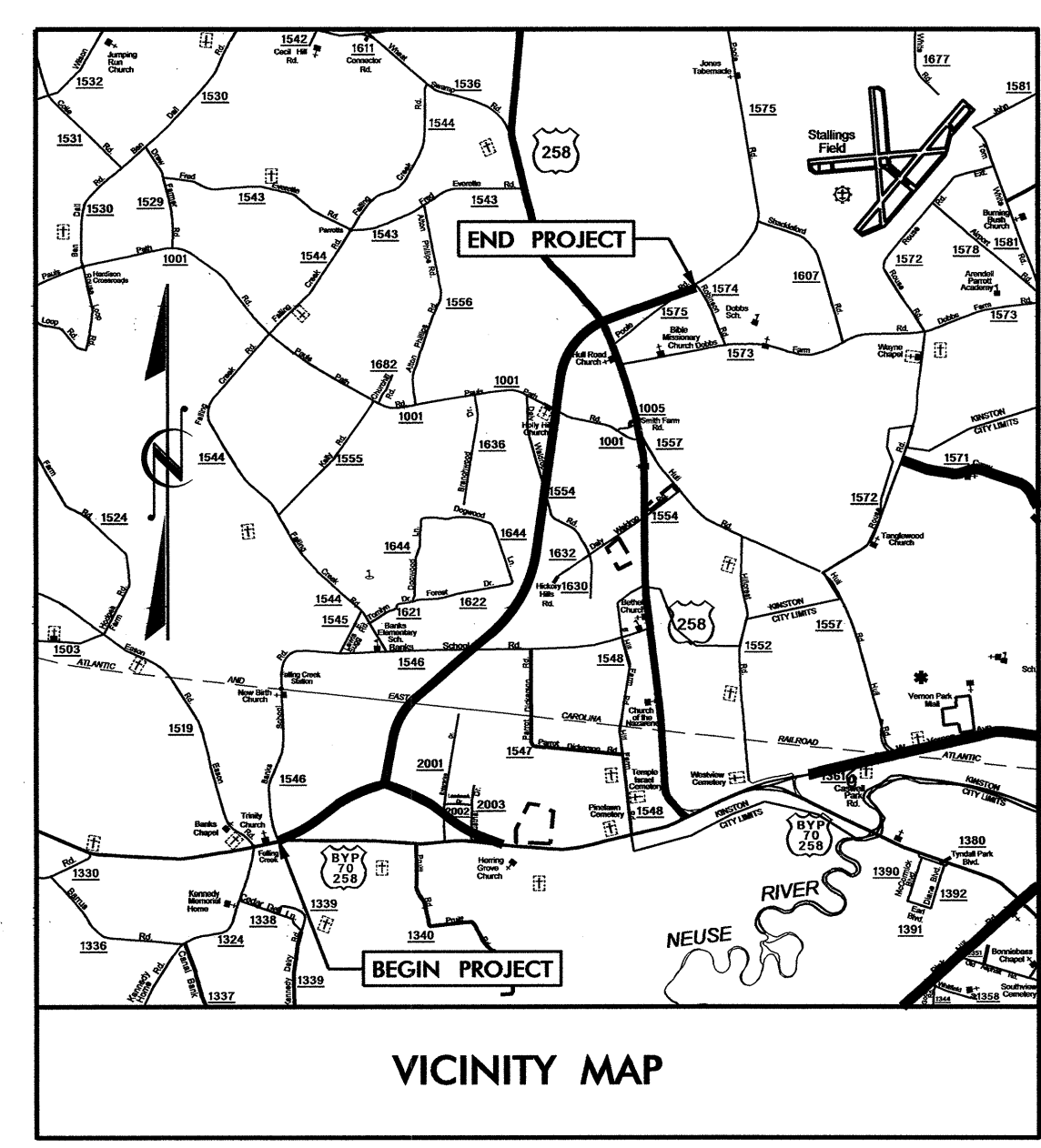


TIP: R-2719AA

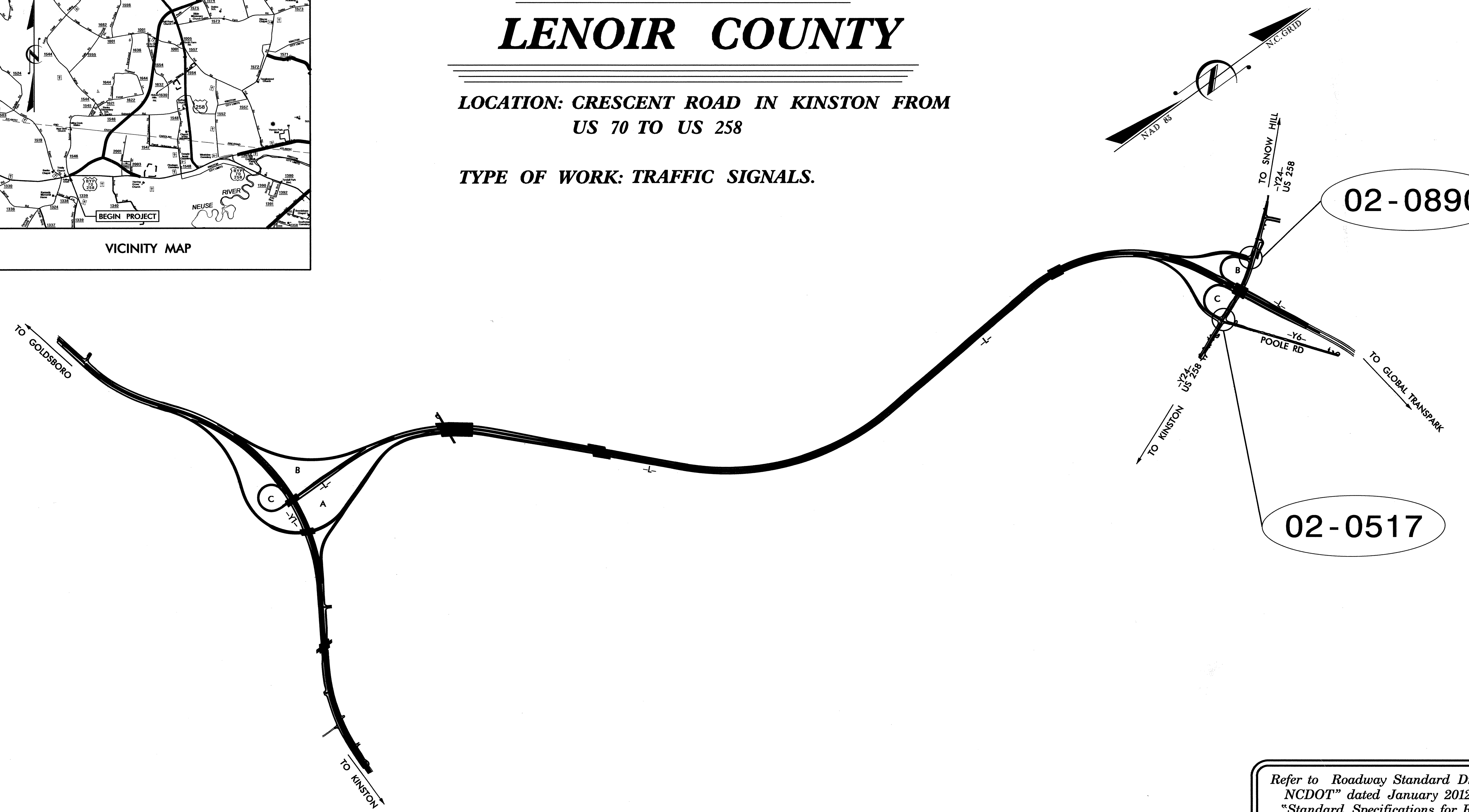


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LENOIR COUNTY

**LOCATION: CRESCENT ROAD IN KINSTON FROM
US 70 TO US 258**

TYPE OF WORK: TRAFFIC SIGNALS.



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

Index of Plans		
Sheet #	Reference #	Location/Description
Sig. 1		Title Sheet
Sig. 2-3	02-0890	US 258 at Crescent Road-Ramp B
Sig. 4-7	02-0517	US 258 at Crescent Road-Ramp C/SR 1575 (Poole Road)

Transportation Mobility And System Division

Contacts:

Jason P. Galloway, PE - East Region Signal Project Engineer
George C. Brown, PE - Signal Equipment Design Engineer

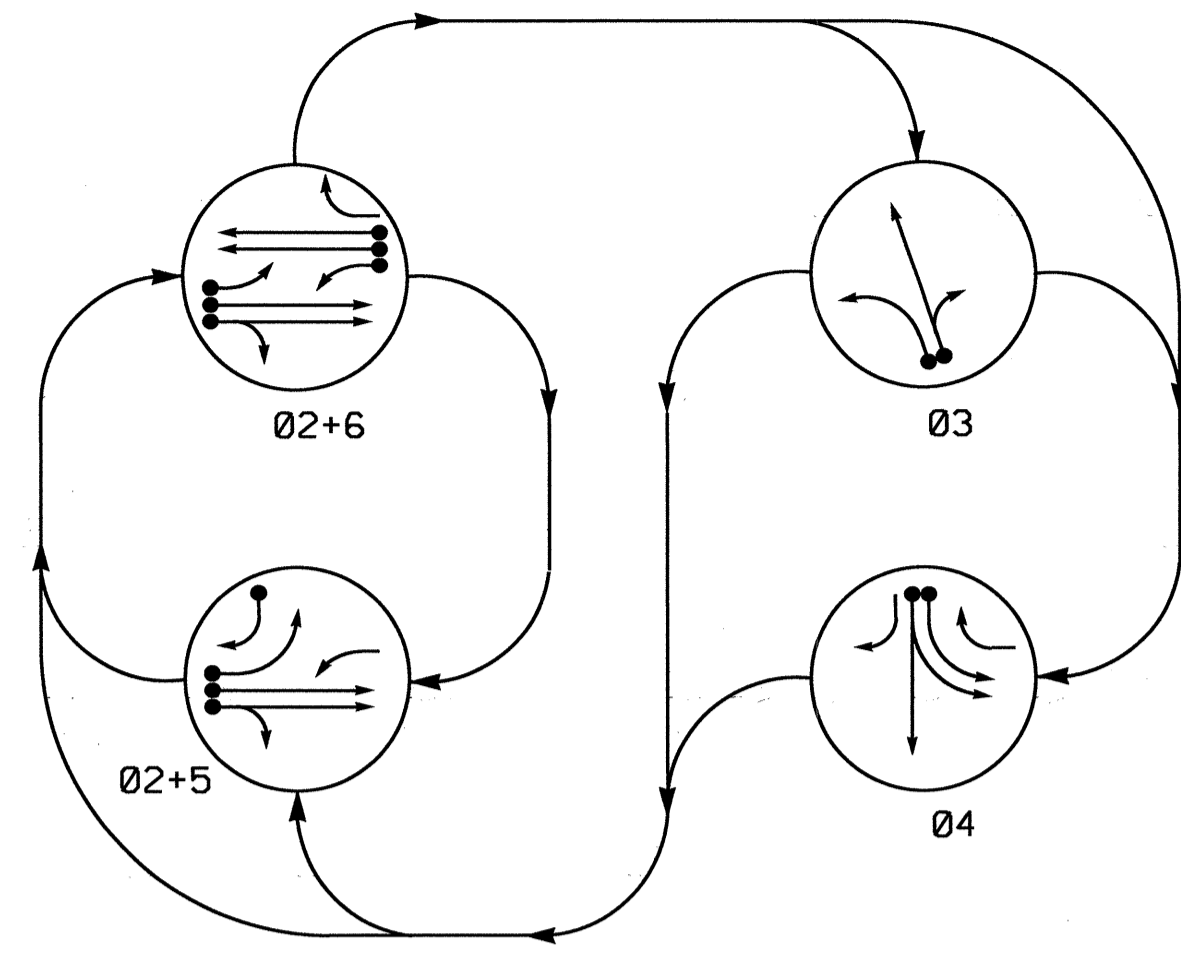
Prepared In the Office of:
DIVISION OF HIGHWAYS
**TRANSPORTATION MOBILITY AND SAFETY
DIVISION**

750 N. Greenfield Parkway, Garner, NC 27529

09-FEB-2012 07:38
R:\Traffic Signals\Design\Titlesheet\R2719A_sig_tsh.dgn

4 Phase Fully Actuated Kinston City Signal System

PHASING DIAGRAM



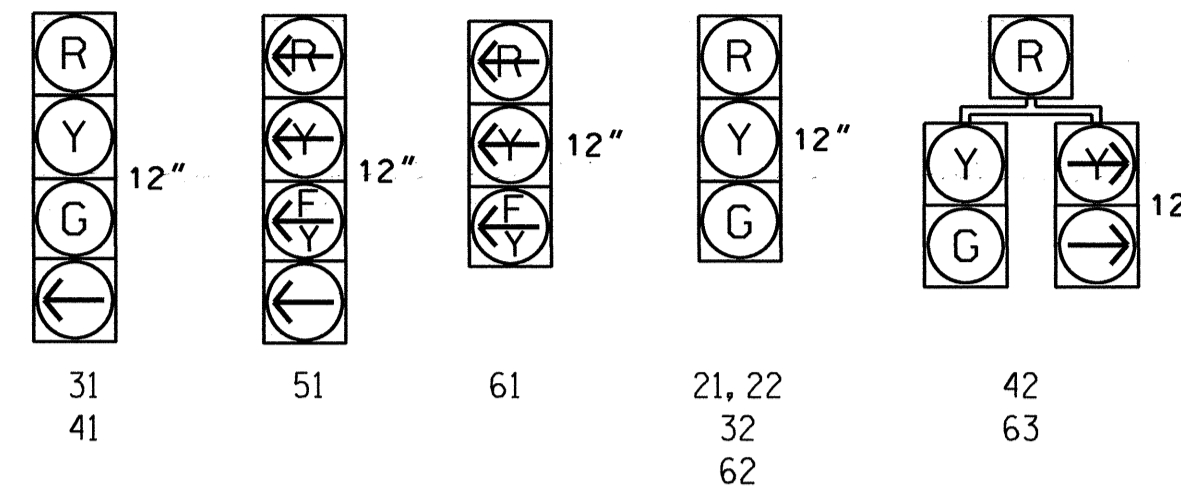
PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE				
	Ø 2+5	Ø 2+6	Ø 3	Ø 4	F L
21, 22	G	G	R	R	Y
31	R	R	G	R	R
32	R	R	G	R	R
41	R	R	R	G	R
42	R	R	R	G	R
51	F	F	R	R	Y
61	F	F	R	R	Y
62	R	G	R	R	Y
63	R	G	R	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.

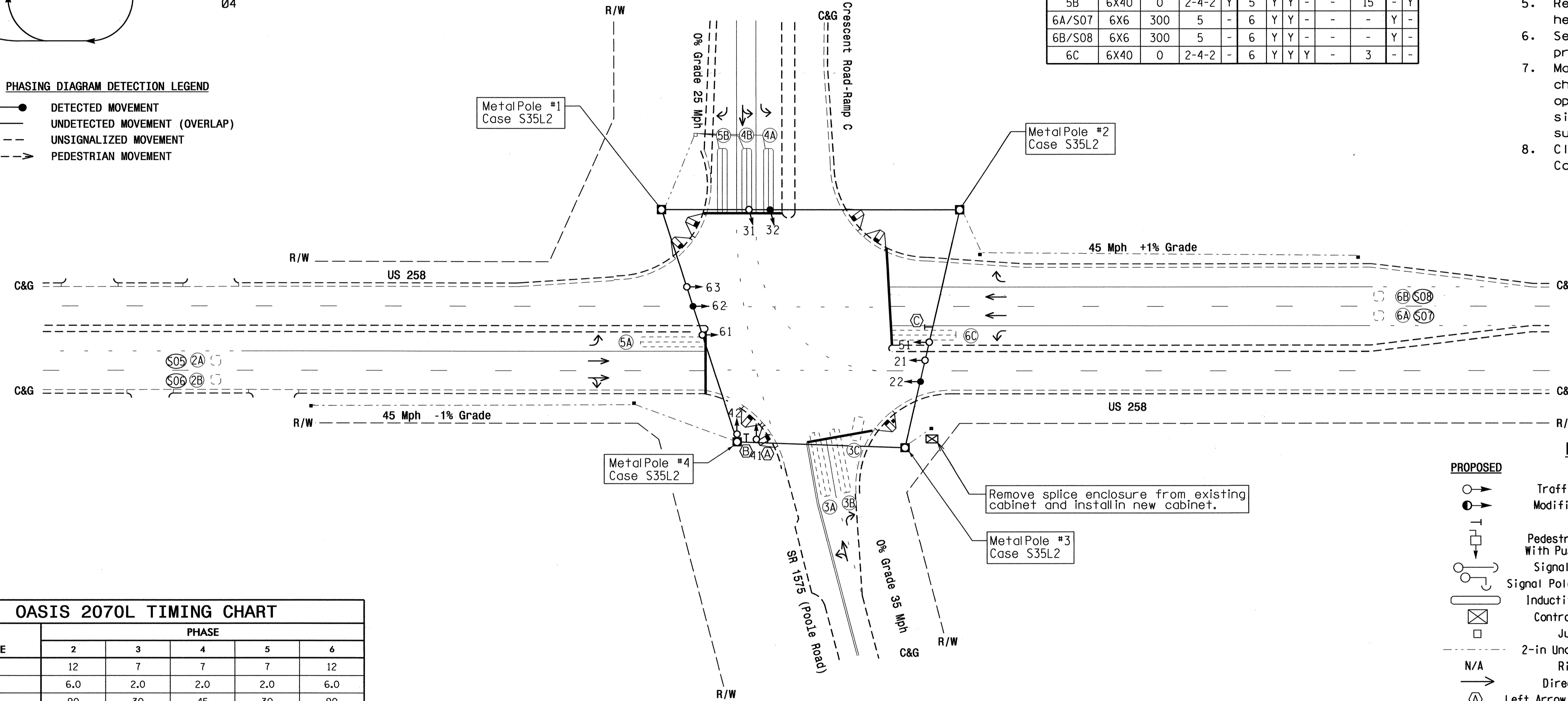


OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING							
					PHASE	CALLING	EXTENSION	STRETCH TIME	DELAY TIME	LOOP SYSTEM	NEW CARD	
2A/S05	6X6	300	5	-	2	Y	Y	-	-	-	Y	-
2B/S06	6X6	300	5	-	2	Y	Y	-	-	-	Y	-
3A	6X40	0	2-4-2	-	3	Y	Y	-	-	3	-	-
3B	6X40	0	2-4-2	-	3	Y	Y	-	-	10	-	-
3C	6X15	+5	4	-	3	Y	Y	-	-	15	-	-
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y
5A	6X40	0	2-4-2	-	5	Y	Y	-	-	15	-	-
5B	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	Y
6A/S07	6X6	300	5	-	6	Y	Y	-	-	-	-	Y
6B/S08	6X6	300	5	-	6	Y	Y	-	-	-	-	Y
6C	6X40	0	2-4-2	-	6	Y	Y	-	-	3	-	-

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Reposition existing signal heads numbered #22.
- Set all detector units to presence mode.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Controller Asset #0517.



OASIS 2070L TIMING CHART

FEATURE	PHASE				
	2	3	4	5	6
Min Green 1 *	12	7	7	7	12
Extension 1 *	6.0	2.0	2.0	2.0	6.0
Max Green 1 *	90	30	45	30	90
Yellow Clearance	4.6	3.8	3.2	3.0	4.6
Red Clearance	1.6	2.3	3.4	2.8	1.6
Walk 1 *	-	-	-	-	-
Don't Walk 1	-	-	-	-	-
Seconds Per Actuation *	1.8	-	-	-	1.8
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	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON

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

LEGEND

- | | | | |
|-----|---|-----|---|
| ○ | PROPOSED Traffic Signal Head | ● | EXISTING Traffic Signal Head |
| ○ | PROPOSED Modified Signal Head | ● | EXISTING Modified Signal Head |
| ⊥ | PROPOSED Pedestrian Signal Head With Push Button & Sign | ⊥ | EXISTING Pedestrian Signal Head With Push Button & Sign |
| ⊥ | PROPOSED Signal Pole with Guy | ⊥ | EXISTING Signal Pole with Guy |
| ⊥ | PROPOSED Signal Pole with Sidewalk Guy | ⊥ | EXISTING Signal Pole with Sidewalk Guy |
| ⊠ | PROPOSED Inductive Loop Detector | ⊠ | EXISTING Inductive Loop Detector |
| ⊠ | PROPOSED Controller & Cabinet | ⊠ | EXISTING Controller & Cabinet |
| ⊠ | PROPOSED Junction Box | ⊠ | EXISTING Junction Box |
| ⊠ | PROPOSED 2-in Underground Conduit | ⊠ | EXISTING 2-in Underground Conduit |
| N/A | PROPOSED Right of Way | N/A | EXISTING Right of Way |
| → | PROPOSED Directional Arrow | → | EXISTING Directional Arrow |
| Ⓐ | PROPOSED Left Arrow "ONLY" Sign (R3-5L) | Ⓐ | EXISTING Left Arrow "ONLY" Sign (R3-5L) |
| Ⓑ | PROPOSED Combined Through and Left Arrow Sign (R3-6L) | Ⓑ | EXISTING Combined Through and Left Arrow Sign (R3-6L) |
| Ⓒ | PROPOSED "U-TURN YIELD TO RIGHT TURN" Sign (R10-16) | Ⓒ | EXISTING "U-TURN YIELD TO RIGHT TURN" Sign (R10-16) |
| Ⓞ | PROPOSED Metal Strain Pole | Ⓞ | EXISTING Metal Strain Pole |
| N/A | PROPOSED Wheelchair Ramp | N/A | EXISTING Wheelchair Ramp |

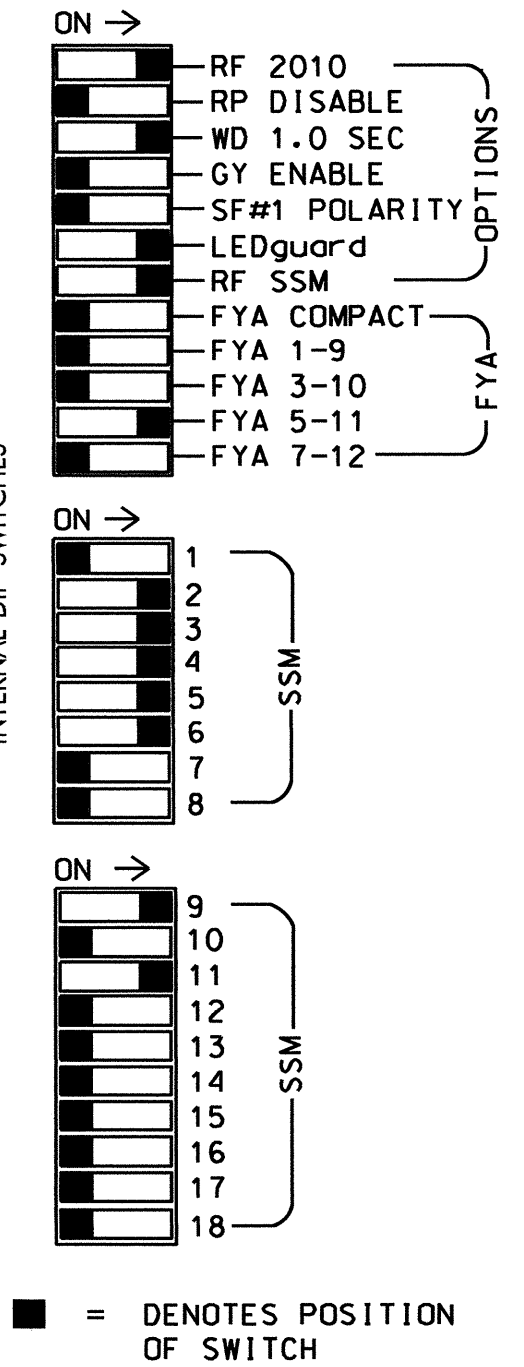
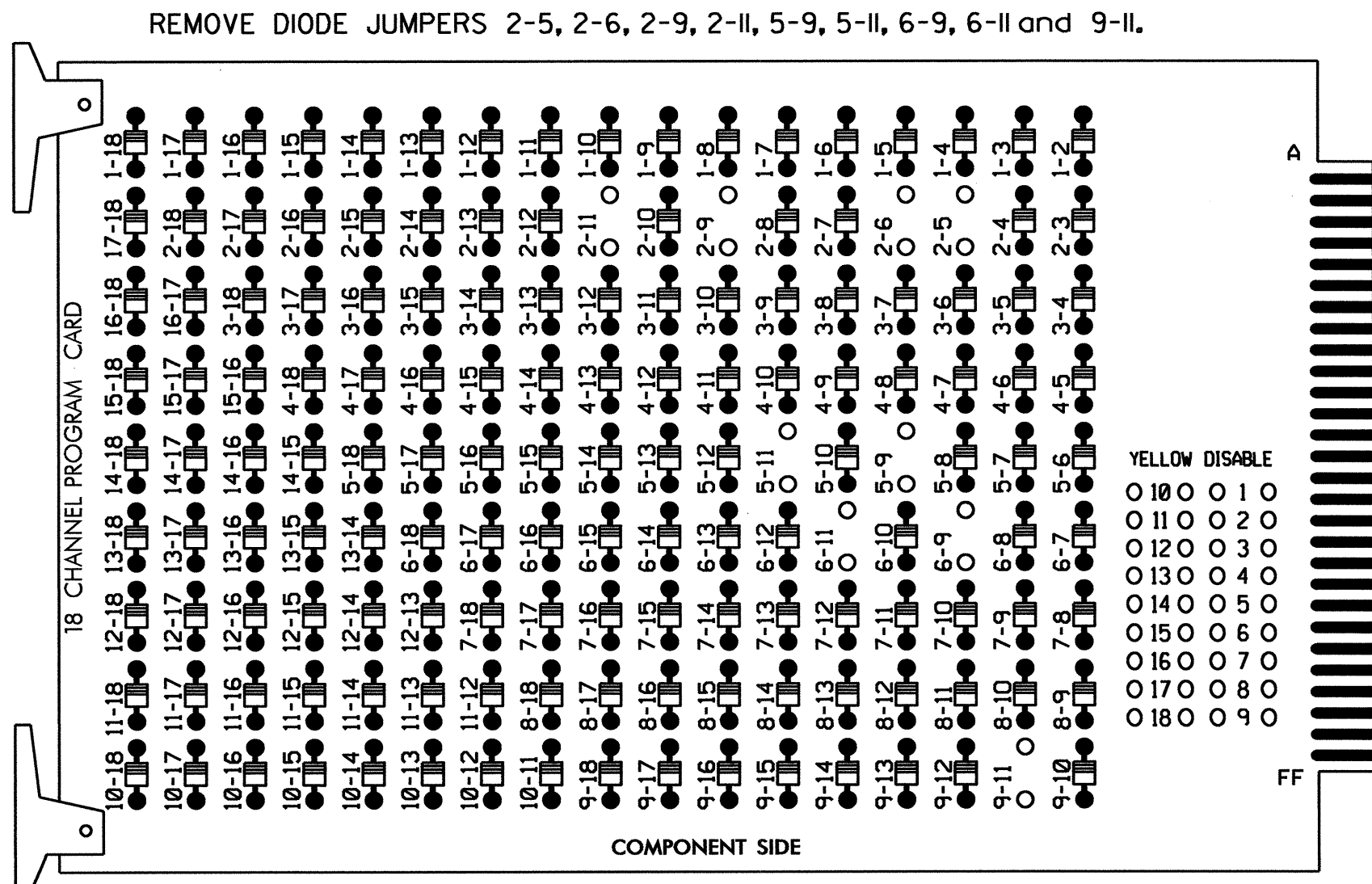
Signal Upgrade

	<p>US 258 at Crescent Road-Ramp C/ SR 1515 (Poole Road)</p>							
	<p>Division 2 Lenoir County Kinston</p> <p>PLAN DATE: January 2012</p>	<p>PREPARED BY: I. O. Umzurike</p> <p>REVIEWED BY:</p>		<p>REVISIONS:</p> <table border="1"> <tr> <th>NO.</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	INIT.	DATE	
NO.	INIT.	DATE						
<p>750 N. Greenfield Pkwy, Garner, NC 27529</p> <p>SCALE: 1"=40'</p>		<p>SIG. INVENTORY NO. 02-0517</p>						

EDI MODEL 2018ECL-NC CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



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

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. Then installer shall verify that signal heads flash in accordance with the Signal Plans.
- 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 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
- The cabinet and controller are part of the Kinston City Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
 CABINET.....332 /W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE LOAD SWITCHES USED.....S2,S4,S5,S7,S8,AUX S1,AUX S4.
 PHASES USED.....2,3,4,5,6
 OVERLAP "A".....2
 OVERLAP "B".....NOT USED
 OVERLAP "C".....5+6
 OVERLAP "D".....NOT USED

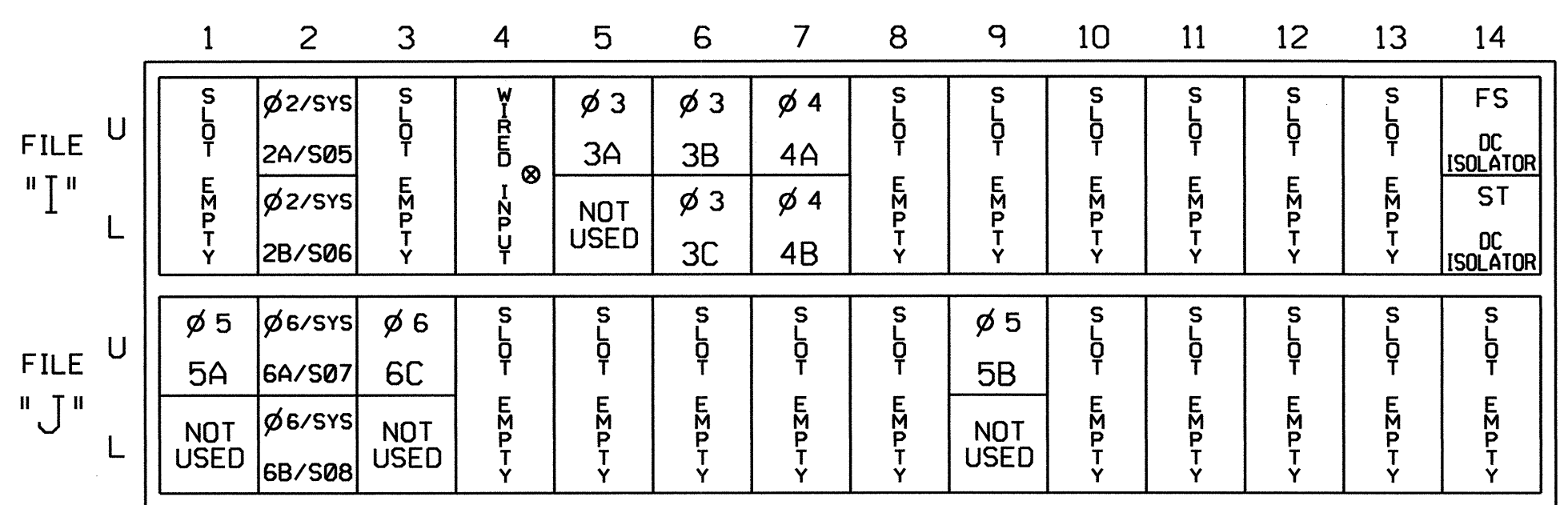
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6	
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18	
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE	
SIGNAL HEAD NO.	NU	21,22	NU	31	32	41	42	63	NU	42	51*	62,63	NU	NU	NU	61*	NU	51*	NU
RED	128		116	116	101	101		*				134							
YELLOW	129		117	117	102	102						135							
GREEN	130		118	118	103	103						136							
RED ARROW																A121		A114	
YELLOW ARROW							102		132							A122		A115	
FLASHING YELLOW ARROW																A123		A116	
GREEN ARROW				118	103	103		133	133										

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

INPUT FILE POSITION LAYOUT

(front view)



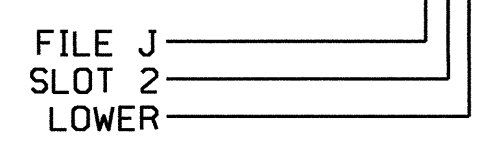
EX.: 1A, 2A, ETC. = LOOP NO.'S
 FS = FLASH SENSE
 ST = STOP TIME
 ⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A/S05	TB2-5,6	I2U	39	1	2	2/SYS	Y	Y			
2B/S06	TB2-7,8	I2L	43	5	12	2/SYS	Y	Y			
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			3
3B	TB4-9,10	I6U	41	3	4	3	Y	Y			10
3C	TB4-11,12	I6L	45	7	14	3	Y	Y			15
4A	TB6-1,2	I7U	65	27	34	4	Y	Y			
4B	TB6-3,4	I7L	78	40	44	4	Y	Y			
5A ¹	TB3-1,2	J1U	55	17	5	5	Y	Y	Y		15
		I4U	47	9	22	2	Y	Y	Y		3
5B	TB7-9,10	J9U	59	21	15	5	Y	Y			15
6A/S07	TB3-5,6	J2U	40	2	6	6/SYS	Y	Y			
6B/S08	TB3-7,8	J2L	44	6	16	6/SYS	Y	Y			
6C	TB3-9,10	J3U	64	26	36	6	Y	Y	Y		3

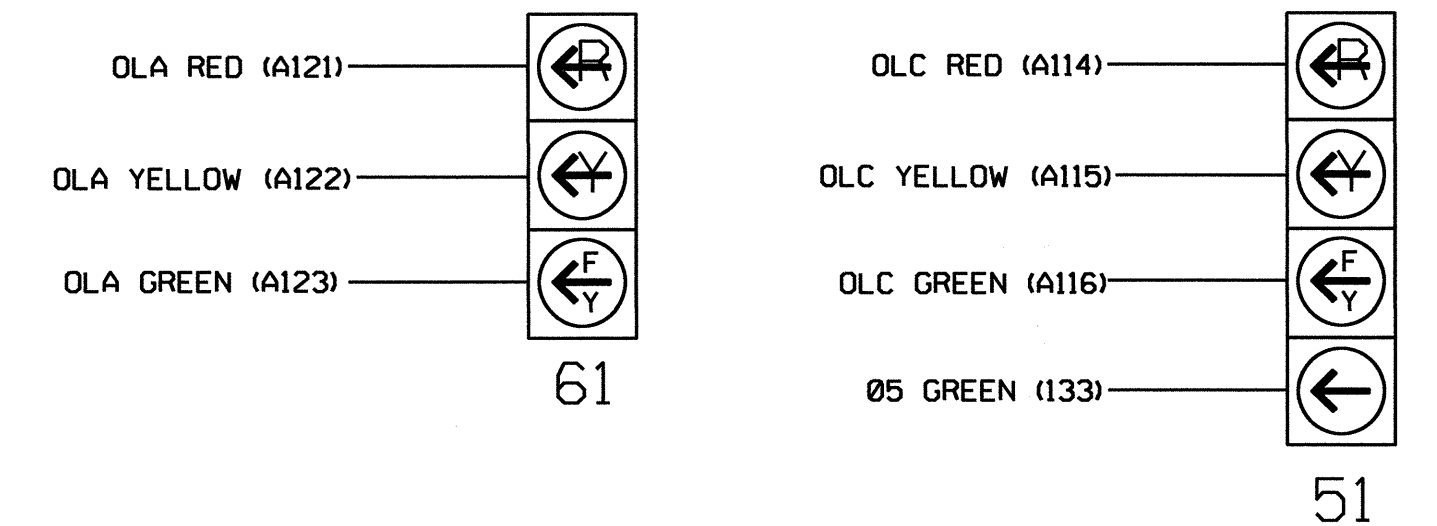
¹Add jumper from J1-W to I4-W, on rear of input file.

INPUT FILE POSITION LEGEND: J2L



FYA SIGNAL WIRING DETAIL

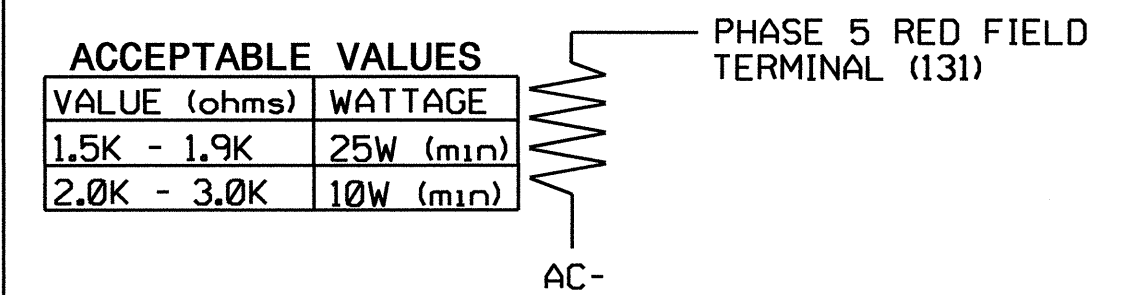
(wire signal heads as shown)



- NOTE**
- The sequence display for signal head 51 requires special logic programming. See sheet 2 of 2 for programming instructions.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)



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

NOTE: The purpose of this resistor is to load the channel red monitor input in order for the Signal Sequence Monitor to use the full signal sequence monitoring capability on channels that do not use the red display in the field.

ELECTRICAL DETAIL SHEET 1 OF 2

Electrical and Programming Details for:

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

US 258
 at
**Crescent Road-Ramp C/
 SR 1575 (Poole Road)**

Division 2 Lenoir County Kinston
 PLAN DATE: January 2012 REVIEWED BY: T. J. J.
 PREPARED BY: C. Strickland REVIEWED BY:
 REVISIONS INIT. DATE

SEAL
 PROFESSIONAL ENGINEER
 GEORGE C. BROWN
 SEAL 022013
 SIGNATURE: George C. Brown DATE: 2/3/12
 SIG. INVENTORY NO. 02-0517

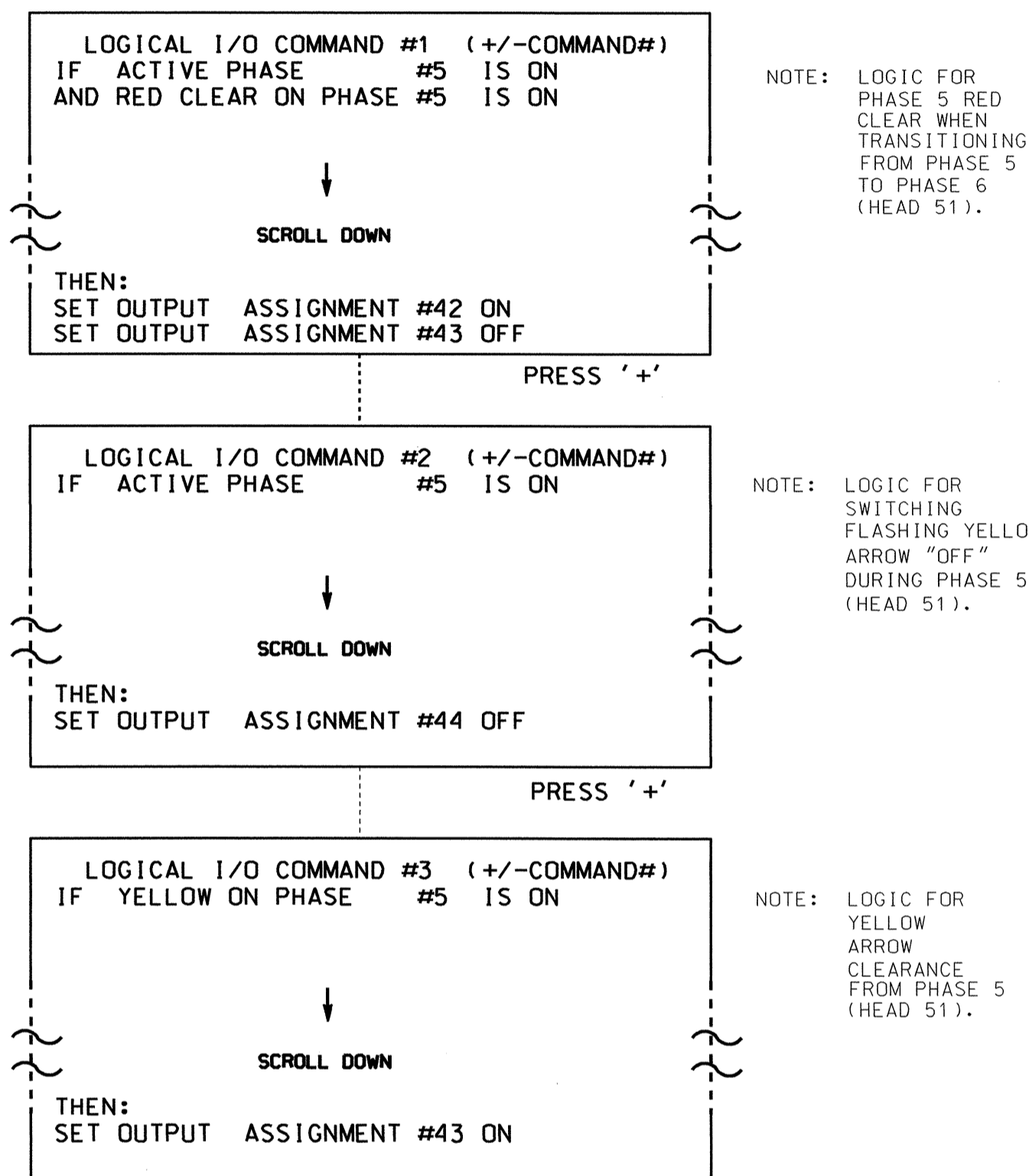
THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0517
 DESIGNED: January 2012
 SEALED: 02/01/2012
 REVISED: N/A

02-FEB-2012 08:103 S:\155501\15 Signal\w\k\groups\sig Mon\61r\ckl\and\020517_sml.e (e....dgn) gstrickland

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

(program controller as shown below)

- 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 AND 3.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE	
OUTPUT 42	= Overlap C Red
OUTPUT 43	= Overlap C Yellow
OUTPUT 44	= Overlap C 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: X
 VEH OVL NOT VEH:
 VEH OVL NOT PED:
 VEH OVL GRN EXT:
 STARTUP COLOR: - RED - YELLOW - GREEN
 FLASH COLORS: - RED - YELLOW X GREEN ← NOTICE GREEN FLASH
 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)...0.0
 RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)...0

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 ← NOTICE GREEN FLASH
 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)...0.0
 RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)...0

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 02-0517
 DESIGNED: January 2012
 SEALED: 02/01/2012
 REVISED: N/A

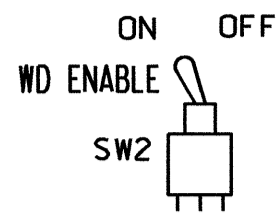
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ELECTRICAL DETAIL SHEET 2 OF 2

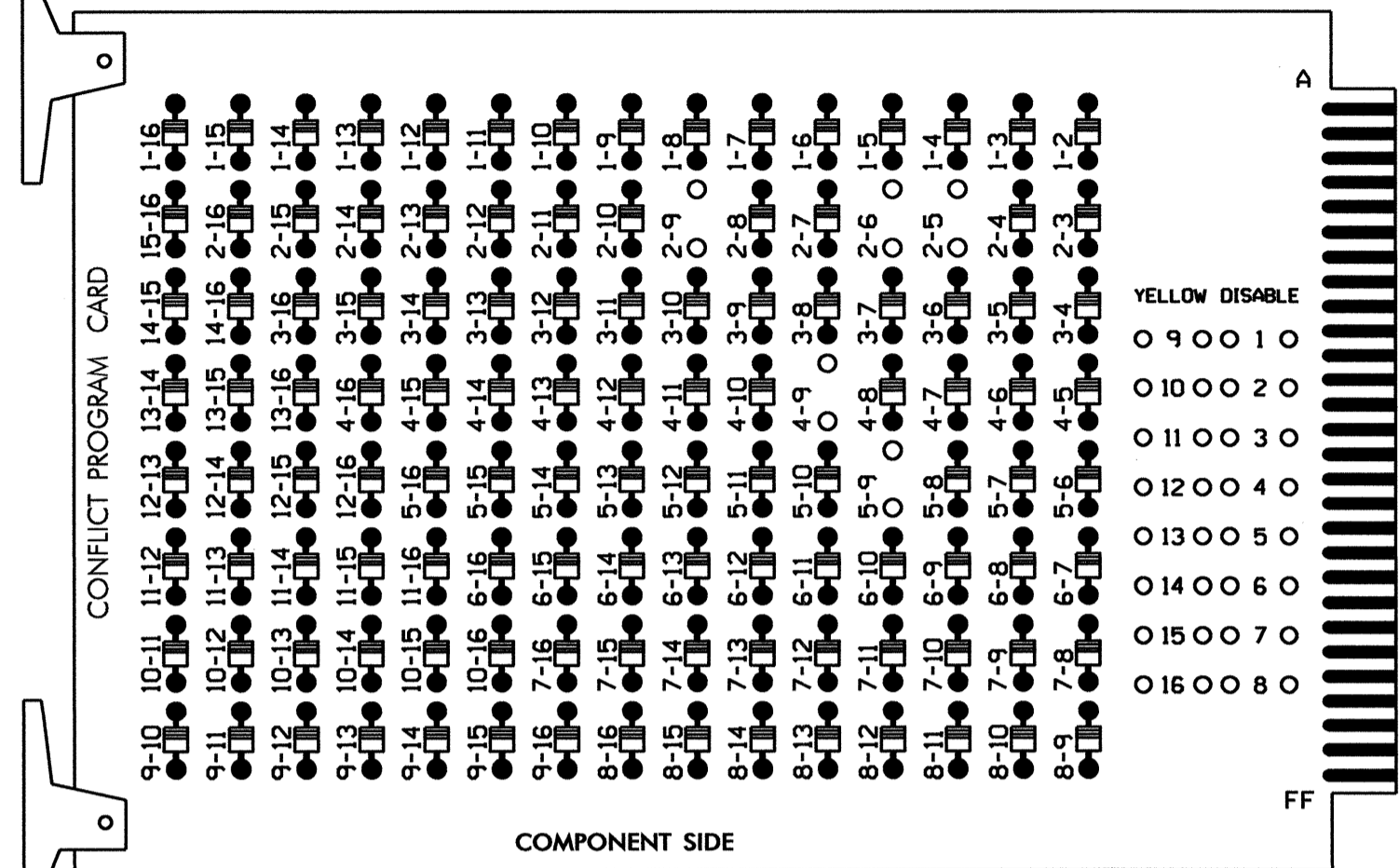
	US 258 at Crescent Road-Ramp C/ SR 1575 (Poole Road)		
	Division 2 Lenior County Kinston	PREPARED BY: C. Strickland REVIEWED BY: T. J. J.	
PLAN DATE: January 2012	REVIEWED BY: T. J. J.	SIGNATURE: <i>George C. Brown</i> DATE: 2/3/12	
REVISIONS	INIT.	DATE	SIG. INVENTORY NO. 02-0517

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



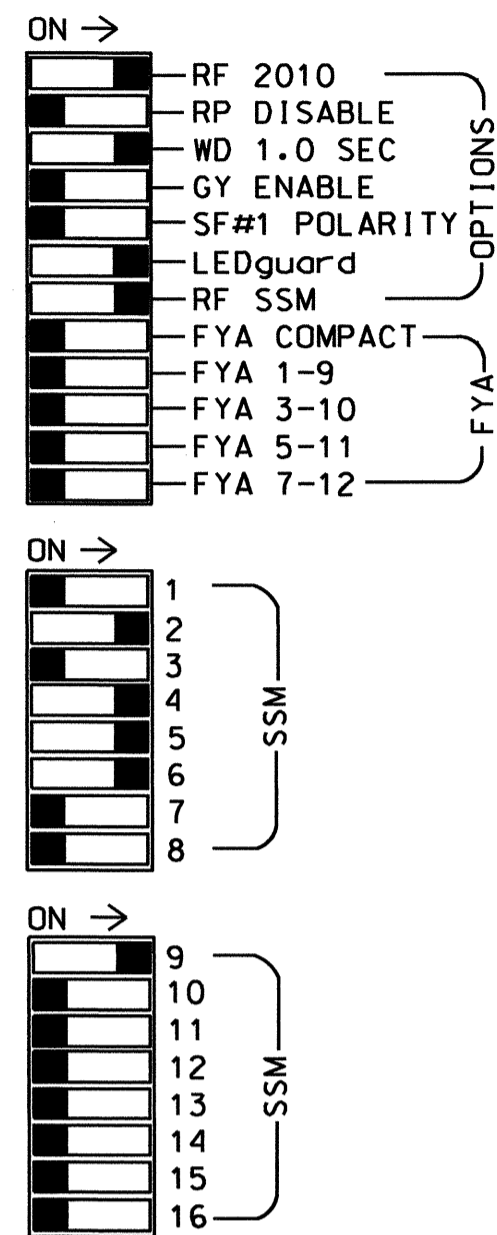
REMOVE DIODE JUMPERS 2-5, 2-6, 2-9, 4-9 and 5-9.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Make sure jumpers SEL2-SEL5 are present on the monitor board.



■ = 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.
- 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 1,3,7,8,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- 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 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
- The cabinet and controller are part of the Kinston City Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
 CABINET332 /W/ AUX
 SOFTWAREECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS..18 (12-STD, 6-AUX)
 LOAD SWITCHES USED.....S2,S4,S5,S6,S9
 PHASES USED.....2,4,5,6
 OVERLAP A.....4+5

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.	NU	21,22	NU	NU	41,42	62	NU	51,52	61,62	NU	NU	NU	43	NU	NU	NU	NU	NU
RED		128							134				A121					
YELLOW		129							135									
GREEN		130							136									
RED ARROW					101				131									
YELLOW ARROW					102	102			132					A122				
GREEN ARROW					103	103			133					A123				

NU = Not Used

*Flash Note: Wire Overlap "A" to flash on Flasher unit #2, Circuit #2.

INPUT FILE POSITION LAYOUT

(front view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE U	S	∅2/SYS	S	S	S	∅4	S	S	S	S	S	S	S	FS
"I"	∅2/SYS	2A/S09	∅2/SYS	∅2/SYS	∅2/SYS	4A	∅2/SYS	∅2/SYS	∅2/SYS	∅2/SYS	∅2/SYS	∅2/SYS	∅2/SYS	DC ISOLATOR
L	∅2/SYS	2B/S10	∅2/SYS	∅2/SYS	∅2/SYS	4B	∅2/SYS	∅2/SYS	∅2/SYS	∅2/SYS	∅2/SYS	∅2/SYS	∅2/SYS	ST DC ISOLATOR
FILE U	S	∅6/SYS	∅5	S	S	S	S	S	∅5	S	S	S	S	S
"J"	∅6/SYS	6A/S11	5A	∅6/SYS	∅6/SYS	∅6/SYS	∅6/SYS	∅6/SYS	5C	∅6/SYS	∅6/SYS	∅6/SYS	∅6/SYS	∅6/SYS
L	∅6/SYS	6B/S12	5B	∅6/SYS	∅6/SYS	∅6/SYS	∅6/SYS	∅6/SYS	NOT USED	∅6/SYS	∅6/SYS	∅6/SYS	∅6/SYS	∅6/SYS

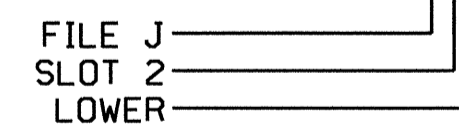
EX. : 1A, 2A, ETC. = LOOP NO.'S

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
2A/S09	TB2-5,6	I2U	39	1	2	2/SYS	Y	Y			
2B/S10	TB2-7,8	I2L	43	5	12	2/SYS	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			
5A	TB3-9,10	J3U	64	26	36	5	Y	Y			
5B	TB3-11,12	J3L	77	39	46	5	Y	Y			
5C	TB7-9,10	J9U	59	21	15	5	Y	Y			15
6A/S11	TB3-5,6	J2U	40	2	6	6/SYS	Y	Y			
6B/S12	TB3-7,8	J2L	44	6	16	6/SYS	Y	Y			

INPUT FILE POSITION LEGEND: J2L



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

OVERLAP PROGRAMMING COMPLETE

Electrical Detail

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

 750 N. Greenfield Pkwy, Garner, NC 27529

US 258 at Crescent Road-Ramp B	
Division 2	Lenoir County Kinston
PLAN DATE: January 2012	REVIEWED BY: T. J. J. J.
PREPARED BY: C. Strickland	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL
 STATE OF NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SEAL 022013
 GEORGE C. BROWN
 SIGNATURE:
 DATE: 2/3/12
 SIG. INVENTORY NO. 02-0890

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0890
 DESIGNED: January 2012
 SEALED: 02/01/2012
 REVISED: N/A