

09/08/09

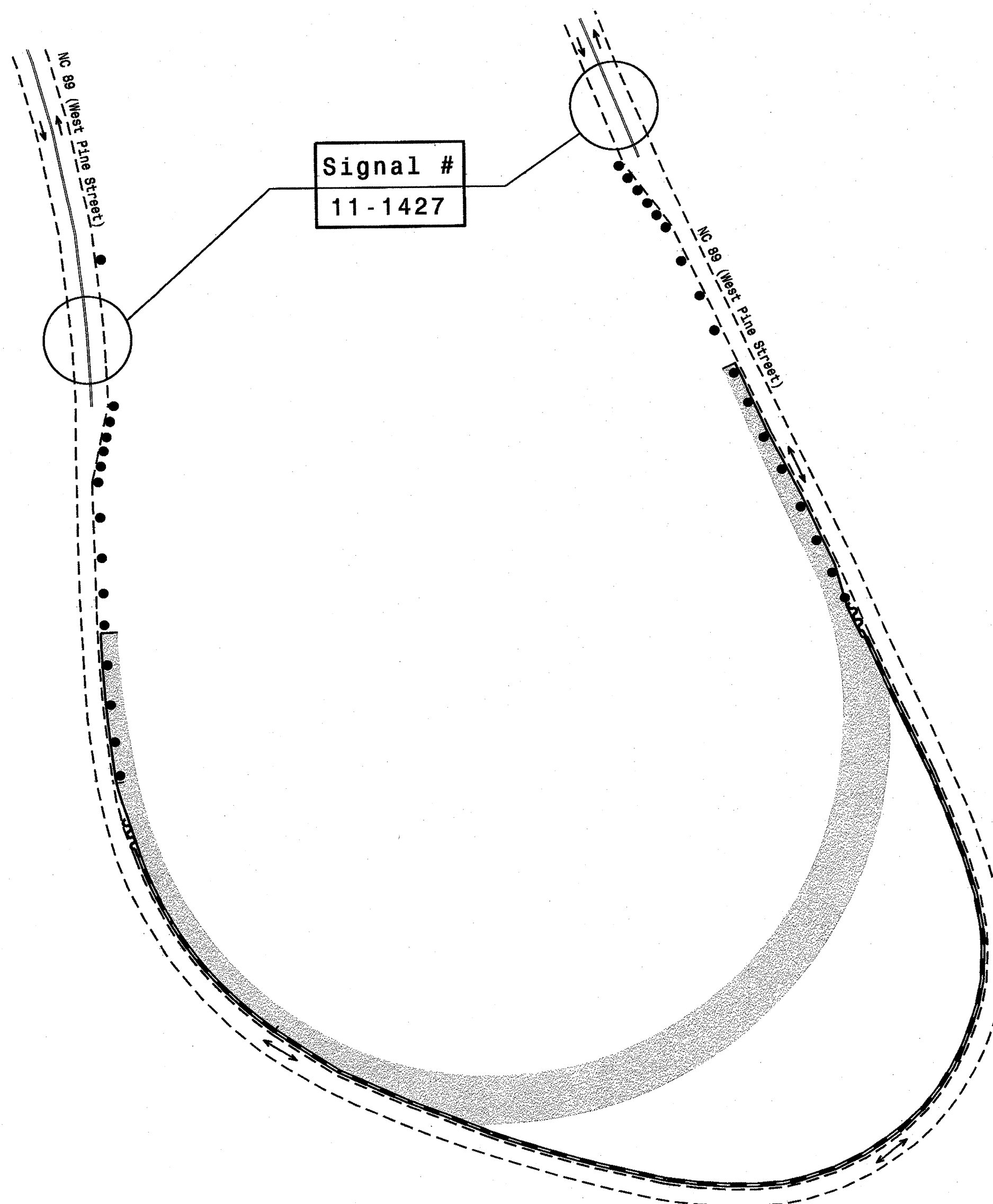
TIP PROJECT: W-5307

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURRY COUNTY

LOCATION: LOWGAP - NC 89 (WEST PINE STREET) SOUTH OF NC 18

TYPE OF WORK: TRAFFIC SIGNAL

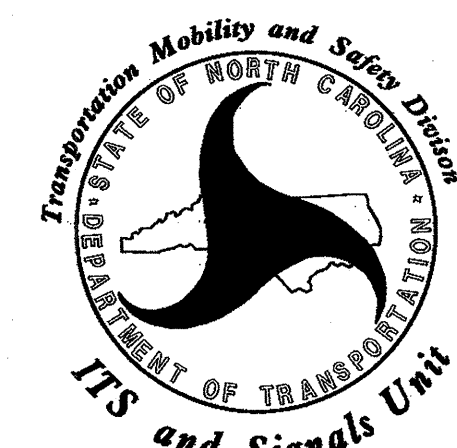


Refer to "Roadway Standard Drawings
NCDOT" dated January, 2012 and
"Standard Specifications for Roads
and Structures" dated January, 2012.

Index of Plans		
Sheet #	Reference #	Location/Description
Sig. 1 Sig. 2-4	14-1427	Title Sheet NC 89 (West Pine Street) South of NC 18

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT
Contacts:
Zachary M. Little, PE - Western Region Signals Project Engineer
G. C. Brown, PE - Signal Equipment Design Engineer

Prepared In the Office of:
DIVISION OF HIGHWAYS



750 N. Greenfield Parkway, Garner, NC 27529

14-MAY-2012 14:52
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PHASING DIAGRAM

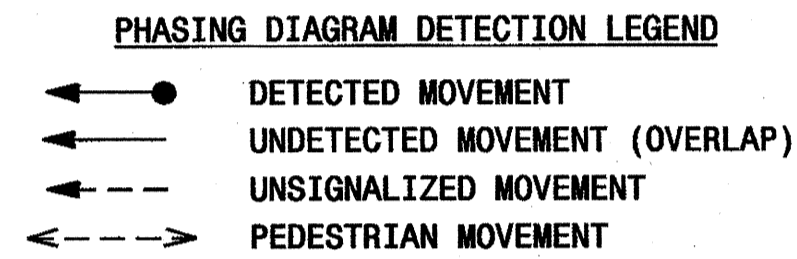
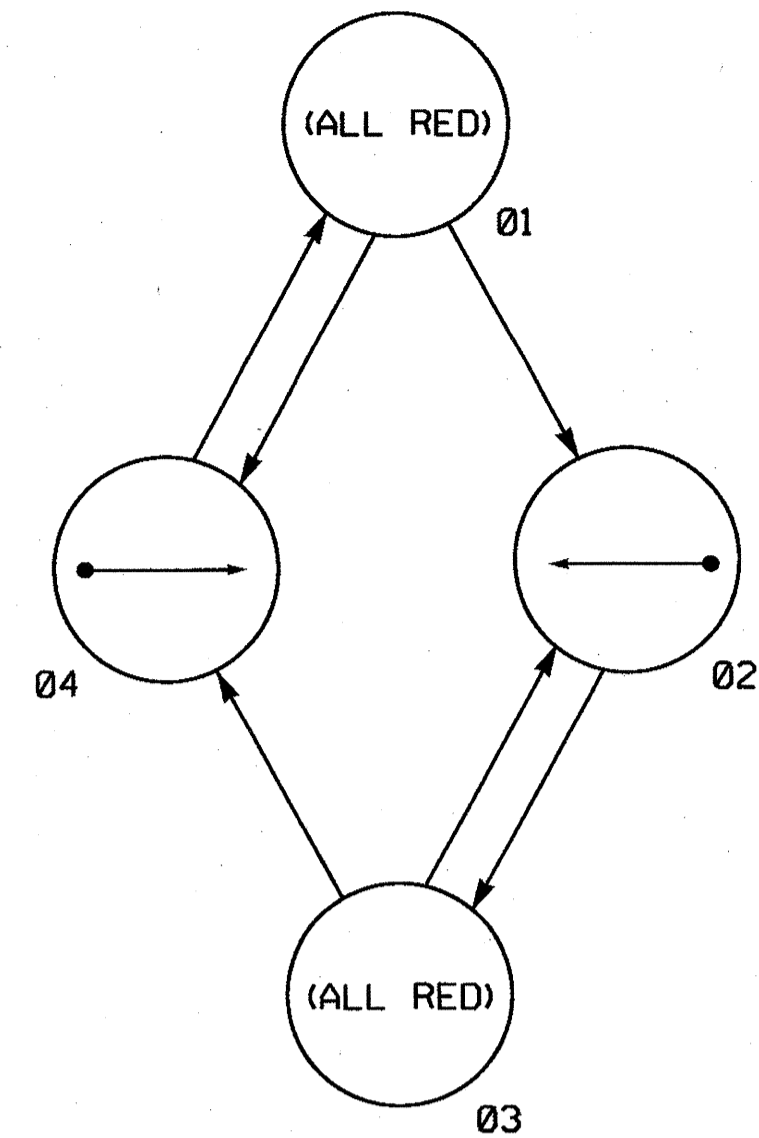
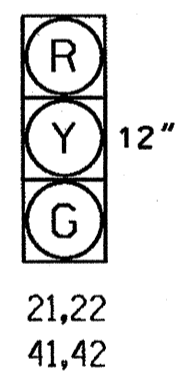


TABLE OF OPERATION

SIGNAL FACE	PHASE			
	01	02	03	04
21,22	R	G	R	R
41,42	R	R	G	R

SIGNAL FACE I.D.
All Heads L.E.D.



OASIS 2070L TIMING CHART

FEATURE	PHASE			
	1 (ALL RED)	2	3 (ALL RED)	4
Min Green 1*	1	10	1	10
Extension 1*	0.0	2.0	0.0	2.0
Max Green 1*	1	90	1	90
Yellow Clearance	4.0	3.0	4.0	3.5
Red Clearance	20.0	25.0	20.0	25.0
Red Revert	2.0	2.0	2.0	2.0
Walk 1*	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation*	-	-	-	-
Max Variable Initial*	-	-	-	-
Time Before Reduction*	-	-	-	-
Time To Reduce*	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	-	-	-	-
Vehicle Call Memory	-	YELLOW	-	YELLOW
Dual Entry	-	-	-	-
Simultaneous Gap	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.

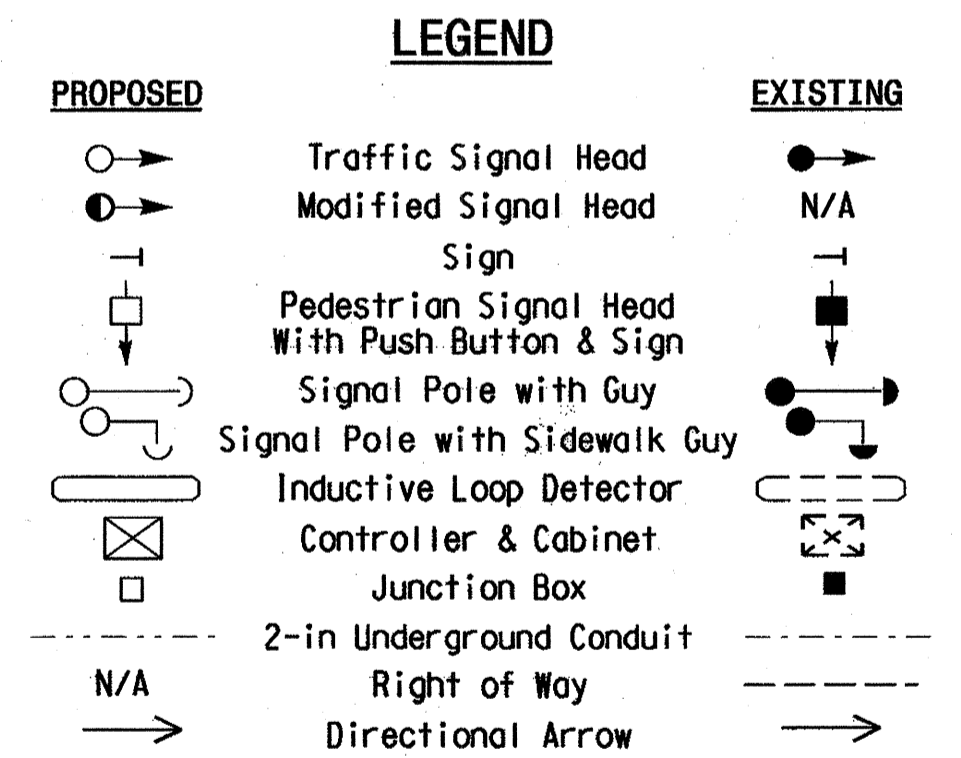
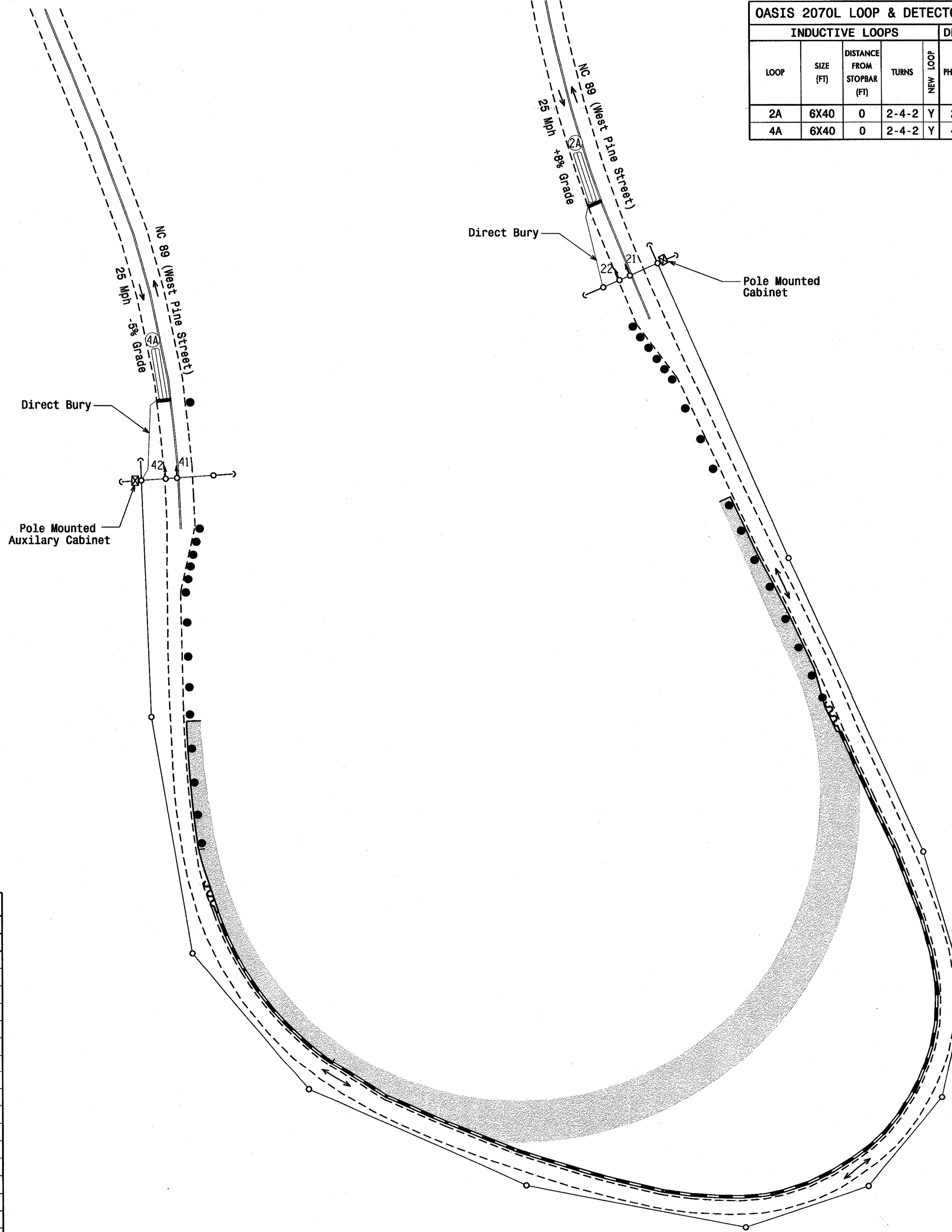
OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X40	0	2-4-2	Y	2	Y	Y	-	-	-	-	Y
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y

2 Phase Fully Actuated (Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation.
3. Program Controller to Start Up in Phase 4 Red Clear.
4. Program controller to rest in red in the absence of vehicle calls.
5. At minimum, use number 12 AWG for all signal cable.
6. Set all detector units to presence mode.
7. Program controller to place a call on phase 3 while phase 2 is on.
8. Program controller to place a call on phase 1 while phase 4 is on.

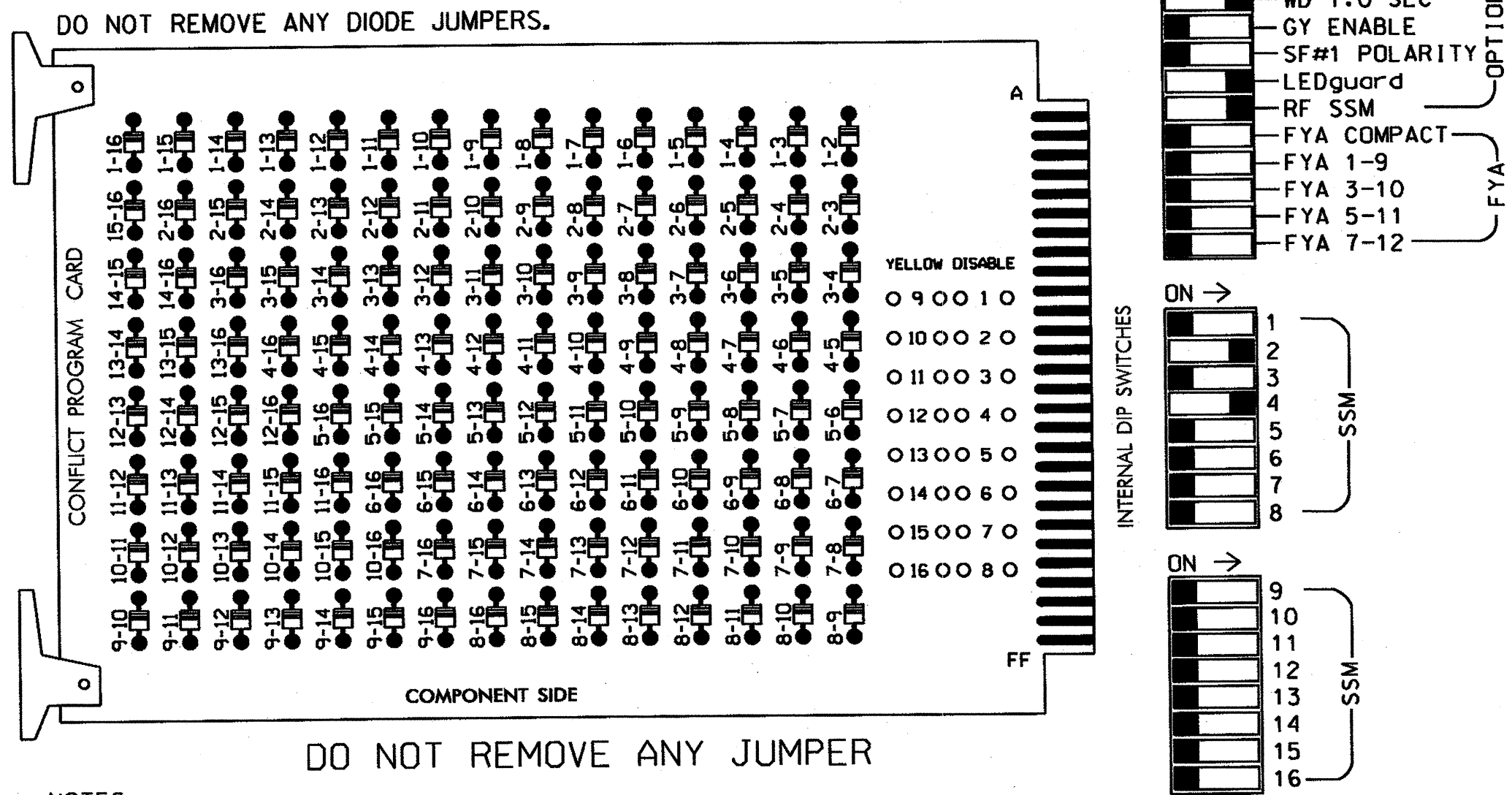
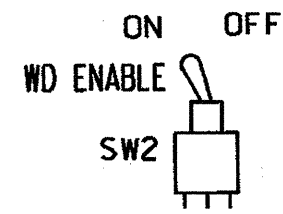


Temporary Signal

	<p>NC 89 (West Pine Street) South of NC 18</p>		<p>Division 11 Surry County Lowgap</p>
	<p>PLAN DATE: April 2012</p>	<p>REVIEWED BY:</p>	
<p>PREPARED BY: B. E. Wynn</p>	<p>REVIEWED BY:</p>	<p>INIT.</p>	<p>DATE</p>
<p>750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>SCALE 1"=50'</p>	<p>SIGNATURE: B. E. Wynn</p>	<p>DATE: 5/8/12</p>

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(set switches as shown)



- DO NOT REMOVE ANY DIODE JUMPERS.
- DO NOT REMOVE ANY JUMPER
- 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.
- Enable Simultaneous Gap-Out for all phases.
- Program controller to remove all phases from Yellow Flash.
- Program controller to start up in phase 4 Red Clearance. (See programming note this sheet.)
- Program controller to Rest in Red when no vehicle calls are present. (See programming note this sheet.)

EQUIPMENT INFORMATION

CONTROLLER.....2070L
 CABINET336
 SOFTWAREECONOLITE OASIS
 CABINET MOUNT.....POLE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S2,S5
 PHASES USED.....1*,2,3*,4
 OVERLAPS.....NONE

* Dummy Phase used for timing purposes only.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU 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.	NC	21,22	NU	NC	41,42	NU	NU	NU	NU	NU	NU	NU
RED		128			101							
YELLOW		129			102							
GREEN		130			103							
RED ARROW												
YELLOW ARROW												
GREEN ARROW												

NU = Not Used
 NC = No Connection, phase used for timing purposes only

'RED REST' OPERATION PROGRAMMING

From Main Menu press '2' (Phase Control). Then '1' (Phase Control Functions). Scroll down on this screen to 'Red Rest' and toggle phases 1 and 3 'On'. (An 'X' will appear under the phase columns to indicate activation.)

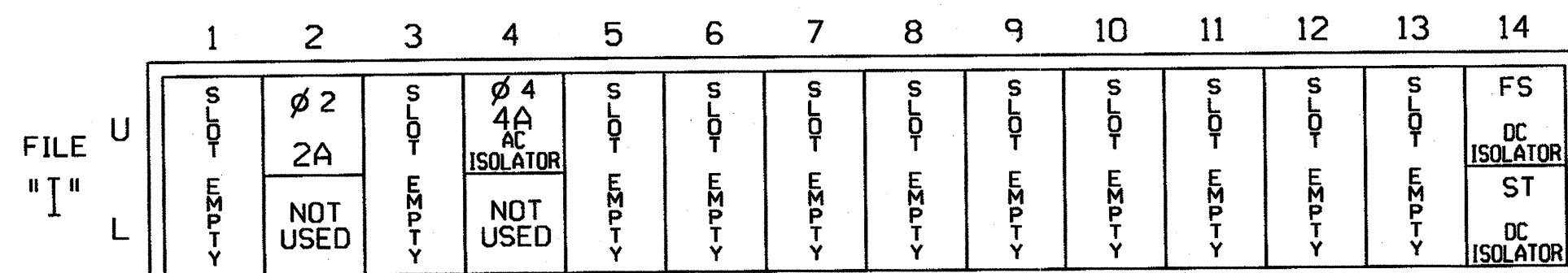
DYNAMIC BACK-UP CONTROL PROGRAMMING

(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 Dynamic/Backup Control Functions 1 and 2.
- From Phase Control Functions Menu press '2' (Dynamic/Backup Control Functions).

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
 ST = STOP TIME

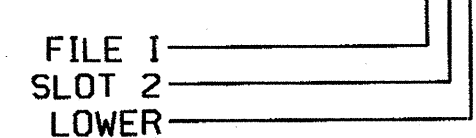
IMPORTANT: REMOVE SURGE PROTECTION FROM TB21-7 AND TB21-8. A DIRECT SHORT WILL OCCUR IF THIS IS NOT DONE.

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	TB21-3,4	12U	39	1	2	2	Y	Y			
* 4A	TB21-7,8	14U	41	3	4	4	Y	Y			

* Remote Detector (see wiring detail sheet 2 of 2)

INPUT FILE POSITION LEGEND: 12L

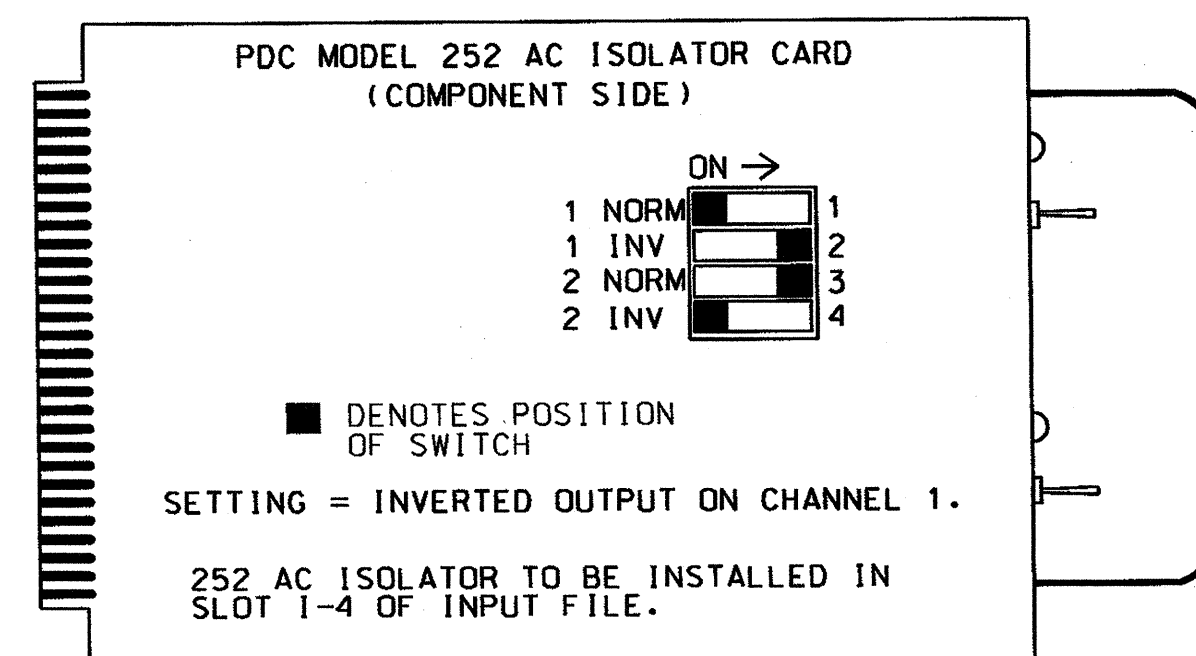


RED CLEARANCE START-UP PROGRAMMING

From Main Menu press '2' (Phase Control). Then '1' (Phase Control Functions). Scroll down on this screen to 'Startup Red Clr' and toggle phase 4 'On'. (An 'X' will appear under this phase column to indicate activation.)

AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL

(set DIP switches as shown below)



NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

DYNAMIC/BACKUP CONTROL FUNCTION #01
 OVERLAPS: ABCDEFGHIJKLMNPO
 IF OVERLAPS ARE ACTIVE: |
 OR PHASES: 12345678910111213141516
 IF PHASES ARE ON: | X
 OMIT PHASES: |
 CALL PHASES: | X

PRESS 'NEXT'

DYNAMIC/BACKUP CONTROL FUNCTION #02
 OVERLAPS: ABCDEFGHIJKLMNPO
 IF OVERLAPS ARE ACTIVE: |
 OR PHASES: 12345678910111213141516
 IF PHASES ARE ON: | X
 OMIT PHASES: |
 CALL PHASES: | X

BACKUP PROTECTION PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1427
 DESIGNED: April 2012
 SEALED: 05/08/12
 REVISED: N/A

Temporary Signal - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

NC 89 (West Pine Street) South of NC 18

Division 11 Surry County Lowgap

PLAN DATE: May 2012 REVIEWED BY: T. Jena

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS INIT. DATE

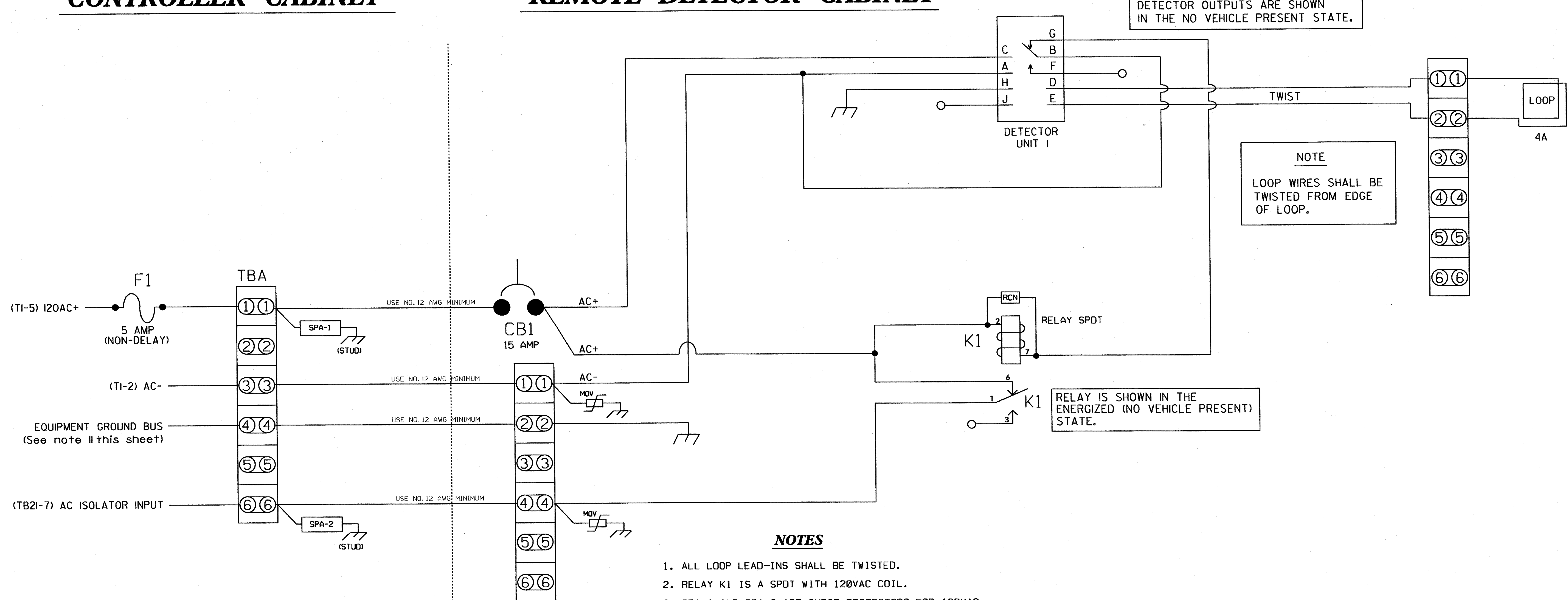
SIG. INVENTORY NO. 11-1427

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 ENGINEER GEORGE C. BROWN

Signature: George C. Brown 5/10/12

CONTROLLER CABINET

REMOTE DETECTOR CABINET



DETECTOR OUTPUTS ARE SHOWN IN THE NO VEHICLE PRESENT STATE.

NOTE
LOOP WIRES SHALL BE TWISTED FROM EDGE OF LOOP.

RELAY IS SHOWN IN THE ENERGIZED (NO VEHICLE PRESENT) STATE.

NOTES

1. ALL LOOP LEAD-INS SHALL BE TWISTED.
2. RELAY K1 IS A SPDT WITH 120VAC COIL.
3. SPA-1 AND SPA-2 ARE SURGE PROTECTORS FOR 120VAC INTERCONNECT CIRCUITS.
4. DETECTOR UNIT NO. 1 IS A SINGLE CHANNEL DETECTOR WITH 'MS' CONNECTOR HARNESS.
5. RC NETWORK ACROSS THE COIL OF K1 IS 1 MICRO FARAD 100 OHM.
6. CABINET IS A TYPE F3 BEACON CONTROLLER ASSEMBLY.
7. MOV'S AND TERMINAL BLOCKS ARE FURNISHED WITH THE FLASHER CABINET.
8. REMOVE BONDING JUMPER BETWEEN AC NEUTRAL AND EQUIPMENT GROUND IN FLASHER CABINET IF A SIMILAR JUMPER IS INSTALLED IN EITHER METER BASE OR DISCONNECT ENCLOSURE.
9. DO NOT INSTALL GROUND RODS AT AUXILIARY CABINET.
10. INSTALL DISCONNECT IF THERE IS NO DISCONNECT PRESENT AT AUXILIARY CABINET.
11. INSTALL EQUIPMENT (EARTH) GROUND FROM CONTROLLER CABINET TO AUXILIARY CABINET IF NOT ALREADY PRESENT.
12. IMPORTANT! A JUMPER MUST BE ADDED BETWEEN INPUT FILE TERMINALS 14-E AND 14-K IF NOT ALREADY PRESENT. ALSO TERMINAL TB23-8 (ON INPUT PANEL) SHALL BE CONNECTED TO AC NEUTRAL (JUMPER MAY HAVE TO BE ADDED).
13. REMOVE SURGE PROTECTION FROM TB21-7 AND TB21-8. A DIRECT SHORT WILL OCCUR IF THIS IS NOT DONE.
14. CONFIGURE AC ISOLATOR CARD TO PLACE CALL UPON REMOVAL OF AC+ FROM THE INPUT.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1427
DESIGNED: April 2012
SEALED: 05/08/12
REVISED: N/A

Temporary Signal - Sheet 2 of 2

	<p>NC 89 (West Pine Street) South of NC 18</p>		
	<p>Division 11 Surry County Lowgap</p>	<p>PLANNING AND PROGRAMMING DETAILS FOR:</p>	
<p>PLAN DATE: May 2012</p>	<p>REVIEWED BY: T. J. J...</p>	<p>SEAL</p>	
<p>PREPARED BY: C. Strickland</p>	<p>REVIEWED BY:</p>	<p>ENGINEER</p>	
<p>REVISIONS</p>	<p>INIT.</p>	<p>DATE</p>	<p>SIGNATURE</p>
<p>SIG. INVENTORY NO. 11-1427</p>			<p>DATE</p>

08-JUN-2012 11:02
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