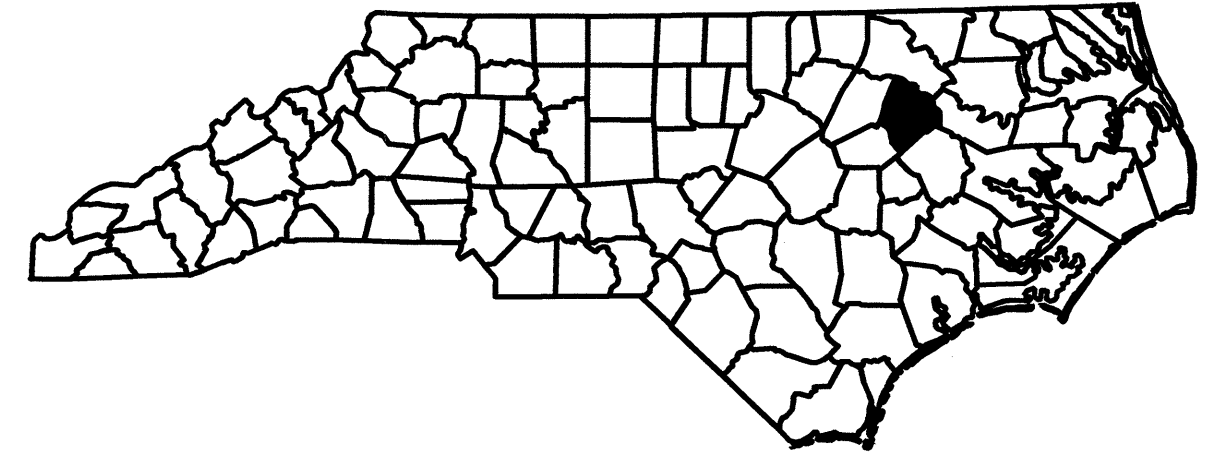


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

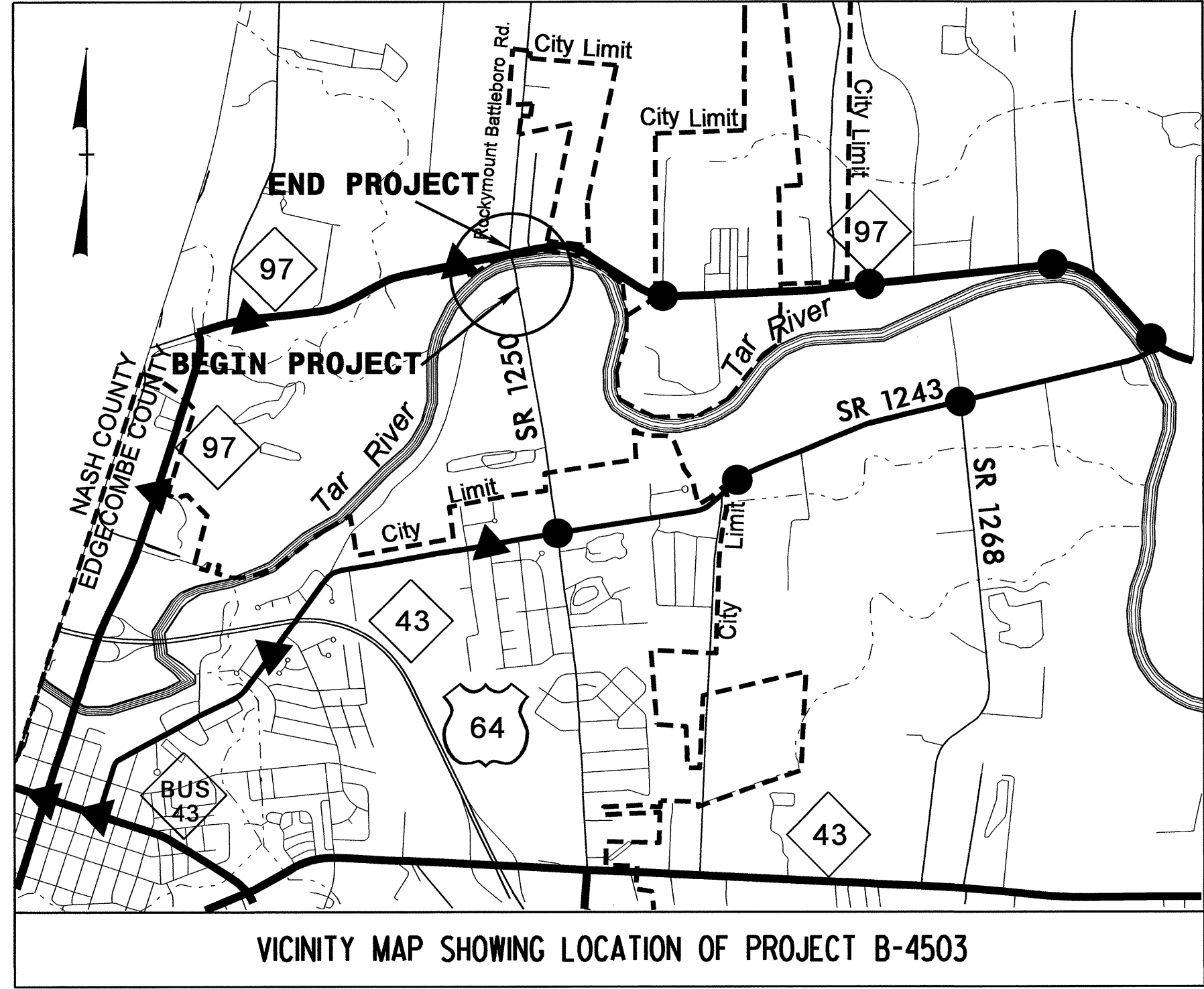
LOCATION: BRIDGE NO. 7 OVER THE TAR RIVER
ON SR 1250 (SPRINGFIELD DR.)

TYPE OF WORK: SIGNALS

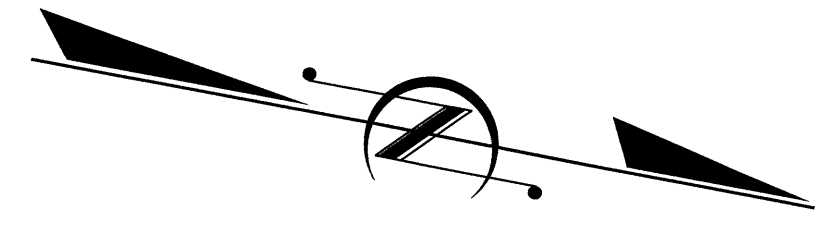


TIP PROJECT: B-4503

CONTRACT: C202730



VICINITY MAP SHOWING LOCATION OF PROJECT B-4503



SR 1250
SPRINGFIELD DR.
TO US 64 A

-L-

TAR RIVER
TAR RIVER
ROCKY MOUNT
CITY LIMIT

04-0687

NC 97
NC 97

SR 1400
RED OAK BATTLEBORO RD.
TO E. MAIN ST.

Refer to "Roadway Standard Drawings
NCDOT" dated July, 2006 and
"Standard Specifications for Roads
and Structures" dated July, 2006.

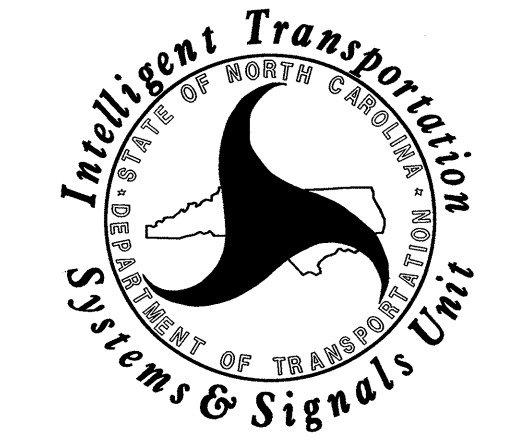
Sheet #	Reference #	Index of Plans	Location/Description
Sig. 1	-----	Title Sheet	
Sig. 2-5	04-0687	NC 97 at SR 1400/SR 1250	
Sig. 6-8	N/A	Inductive Detection Loops	

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

Jason Galloway, PE - East Region Signal Project Engineer
John Rowe, PE - Signal Equipment Design Engineer

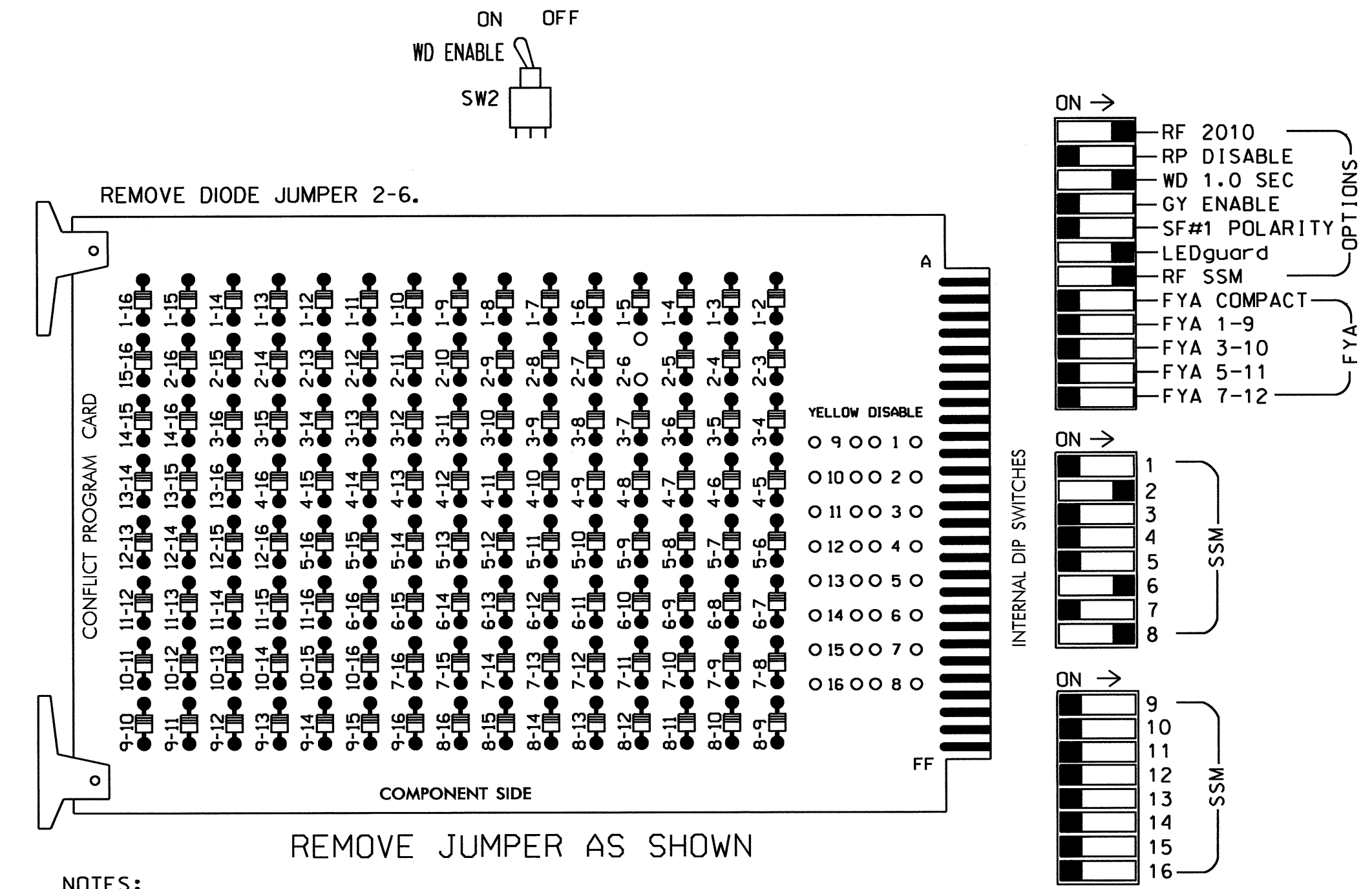
Prepared In the Office of:
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY AND SAFETY
DIVISION



07-JUL-2011 10:29
R:\Traffic\Signals\Titlesheet\B4503_sig_1_tsh.dgn
jgalloway

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumper 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.
- Make sure jumpers SEL2-SEL5 are present on the monitor board.

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.
- To prevent red failures on unused monitor channels, see Red Monitor Board Programming Detail this sheet.
- 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.

EQUIPMENT INFORMATION

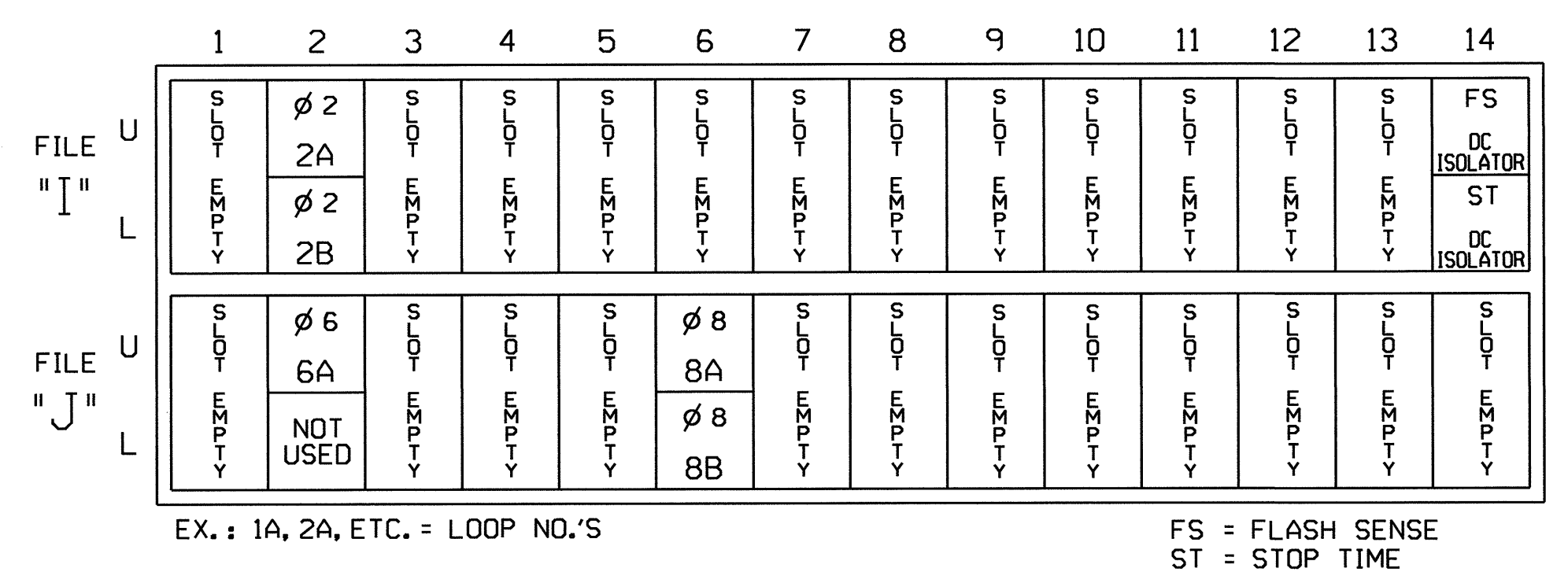
CONTROLLER.....EAGLE TYPE 2070L
 CABINET.....McCain/CONTROL TECHNOLOGIES (DWG.NO. 9500-332-NCDDOT)
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S2,S6,S8
 PHASES USED.....2,6,8
 OVERLAPS.....NONE

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	NU	21,22	NU	NU	NU	NU	NU	61,62	NU	NU	81,82	NU
RED		128						134			107	
YELLOW		129						135			108	
GREEN		130						136			109	
RED ARROW												
YELLOW ARROW												
GREEN ARROW												
Hand icon												
Person icon												

NU = Not Used

INPUT FILE POSITION LAYOUT (front view)



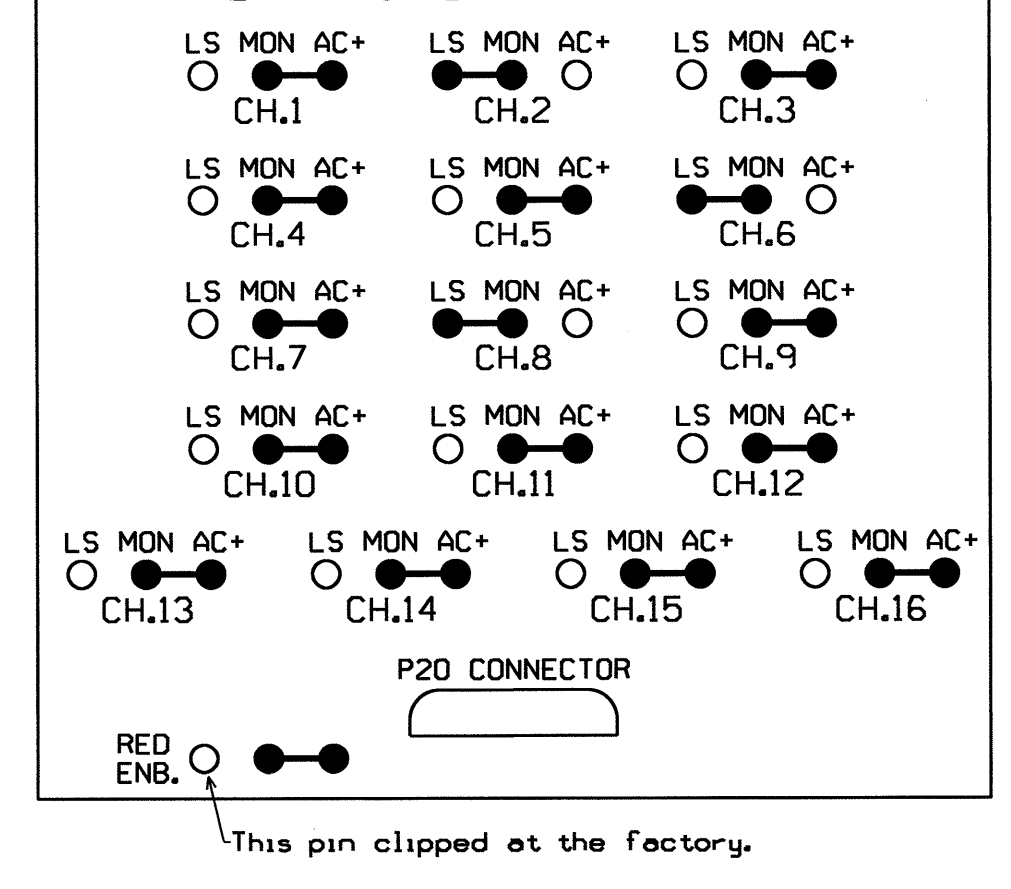
INPUT FILE CONNECTION & PROGRAMMING CHART

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	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y	Y		3
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			10

INPUT FILE POSITION LEGEND: J2L
 FILE J
 SLOT 2
 LOWER

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-0687T1
 DESIGNED: June 2011
 SEALED: 7/5/11
 REVISED: N/A

RED MONITOR BOARD PROGRAMMING (position jumpers as shown below)



Signal Upgrade - Temp 1

ELECTRICAL AND PROGRAMMING DETAILS FOR:
 Prepared in the Offices of:

 750 N. Greenfield Pkwy, Garner, NC 27529

NC 97 at SR 1400 (Old Battleboro Rd) / SR 1250 (Springfield Rd)
 Division 04 Edgecombe County Rocky Mount
 PLAN DATE: June 2011 REVIEWED BY: JTK
 PREPARED BY: S. Armstrong REVIEWED BY:
 REVISIONS: INIT. DATE

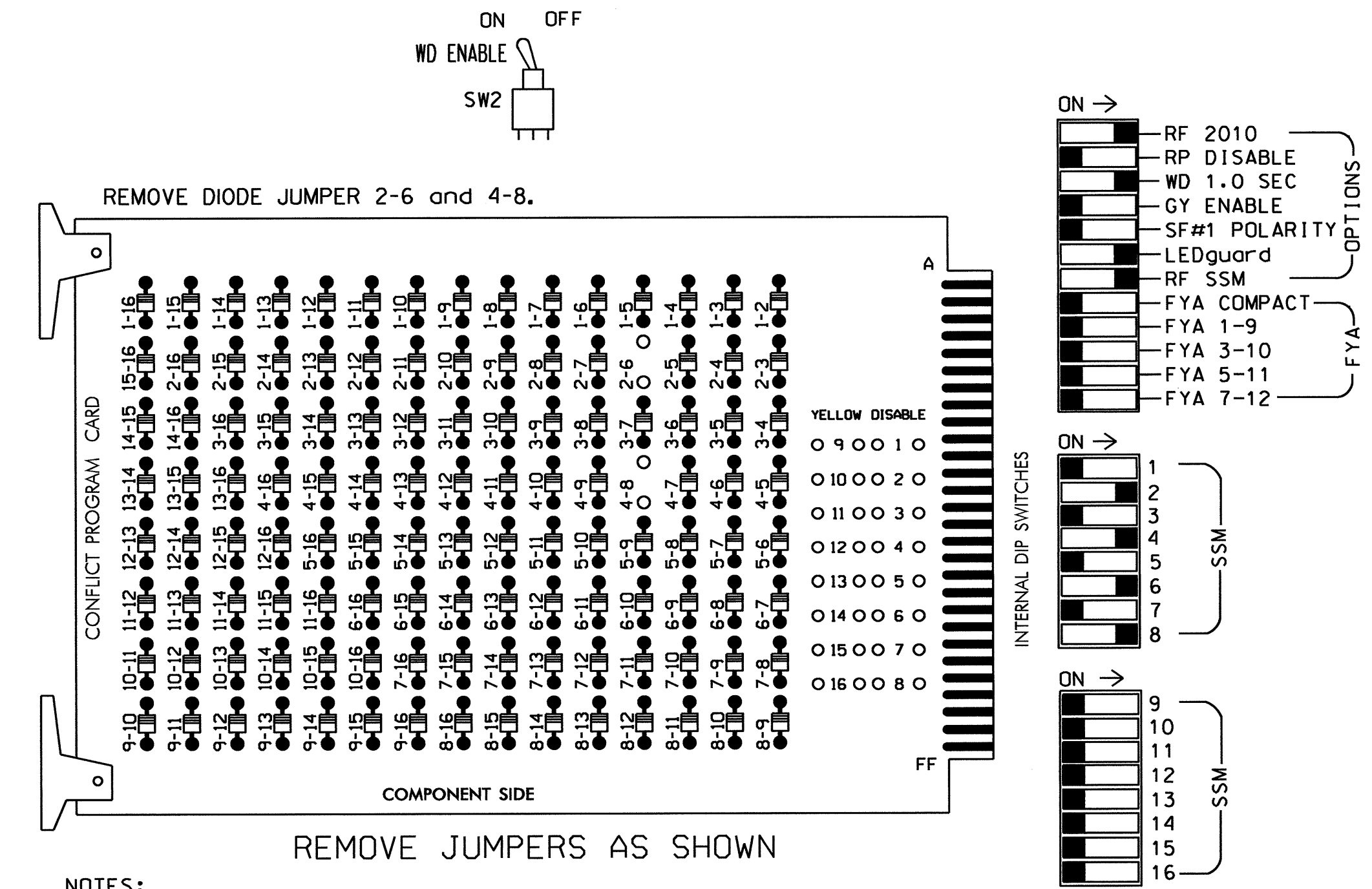
SEAL

 SIGNATURE: John T. Rowe DATE: 7-5-11
 SIG. INVENTORY NO. 04-0687T1

09-JUL-2011 15:50 S:\TSS\JMS\TSS\Sig\ed\work\pops\sig_MonMstrmstrng\040687T_sml.dwg (e....xxx.dgn) somestrng

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

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

NOTES

1. 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.
2. To prevent red failures on unused monitor channels, see Red Monitor Board Programming Detail this sheet.
3. Program phases 4 and 8 for Dual Entry.
4. Enable Simultaneous Gap-Out for all phases.
5. Program phases 2 and 6 for Variable Initial and Gap Reduction.
6. Program phases 2 and 6 for Start Up In Green.
7. Program phases 2 and 6 for Yellow Flash.

EQUIPMENT INFORMATION

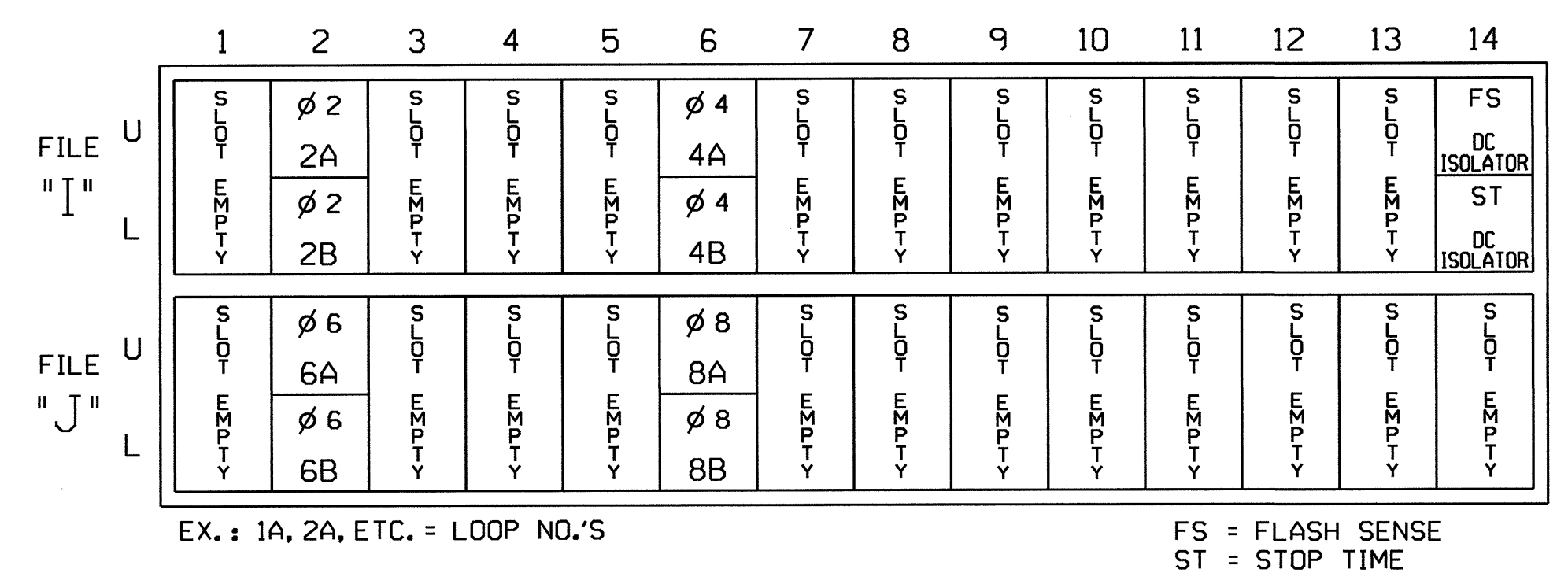
CONTROLLER.....EAGLE TYPE 2070L
 CABINET.....McCain/CONTROL TECHNOLOGIES (DWG.NO.9500-332-NCDDOT)
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S2,S4,S6,S8
 PHASES USED.....2,4,6,8
 OVERLAPS.....NONE

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42	NU	NU	61,62	NU	NU	81,82	NU
RED		128			101			134			107	
YELLOW		129			102			135			108	
GREEN		130			103			136			109	
RED ARROW												
YELLOW ARROW												
GREEN ARROW												
Hand icon												
Person icon												

NU = Not Used

INPUT FILE POSITION LAYOUT (front view)



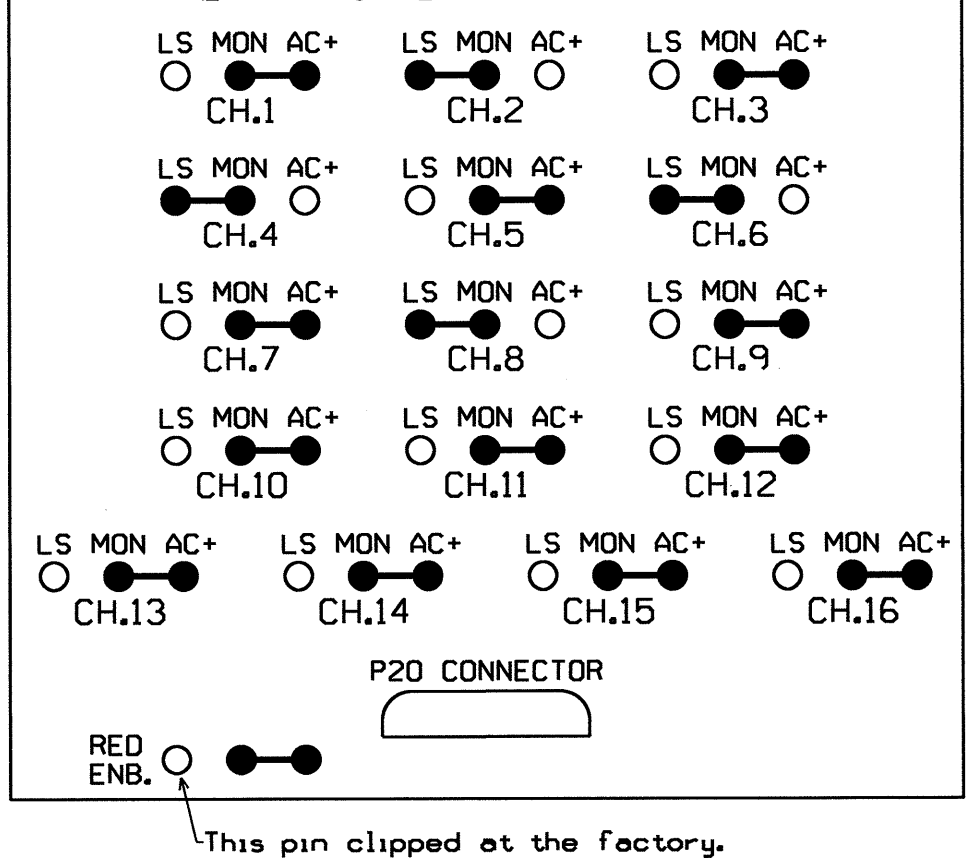
INPUT FILE CONNECTION & PROGRAMMING CHART

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	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y	Y		3
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			3
4B	TB4-11,12	I6L	45	7	14	4	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	Y		3
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			15

INPUT FILE POSITION LEGEND: J2L
 FILE J
 SLOT 2
 LOWER

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-0687
 DESIGNED: June 2011
 SEALED: 7/5/11
 REVISED: N/A

RED MONITOR BOARD PROGRAMMING (position jumpers as shown below)



Signal Upgrade - Final

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
 Public, Professional and Safety Services Bureau
 STATE OF NORTH CAROLINA
 Signal Management System
 750 N. Greenfield Pkwy, Garner, NC 27529

NC 97 at SR 1400 (Old Battleboro Rd)/ SR 1250 (Springfield Rd)

Division 04 Edgecombe County Rocky Mount

PLAN DATE: June 2011 REVIEWED BY: JTR

PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS INIT. DATE

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 008453
 JOHN T. ROWE, JR.
 SIGNATURE DATE 7-5-11
 SIG. INVENTORY NO. 04-0687

05-JUL-2011 15:50 S:\TSS\AS\WTS\Sig\04\swkr\kgroups\sig.Mam\armstrong\040687_sml.dwg

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

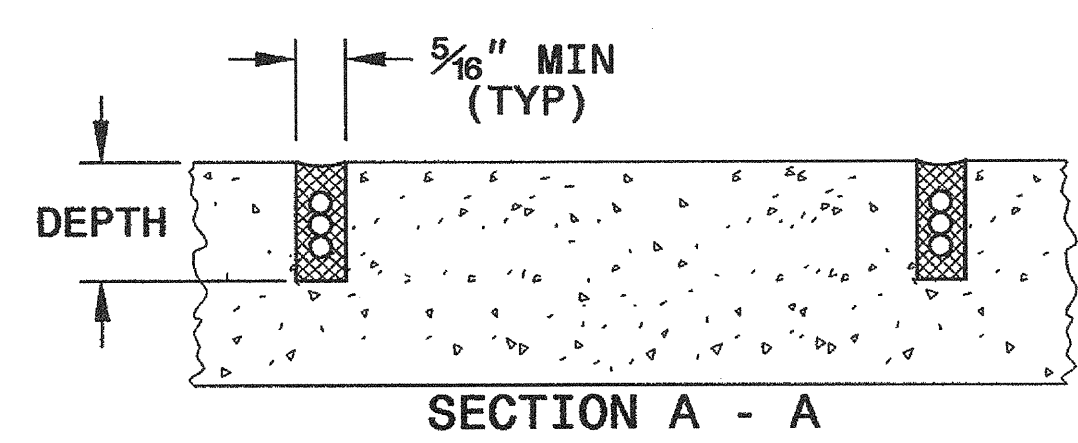
SHEET 1 OF 3
1725D01

CONVENTIONAL 4-SIDED LOOP

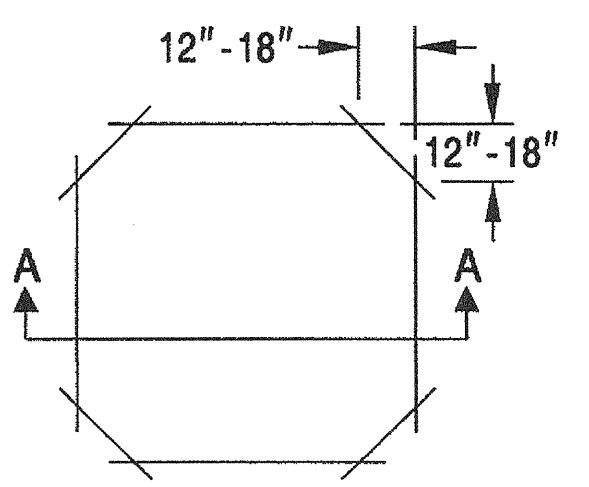
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

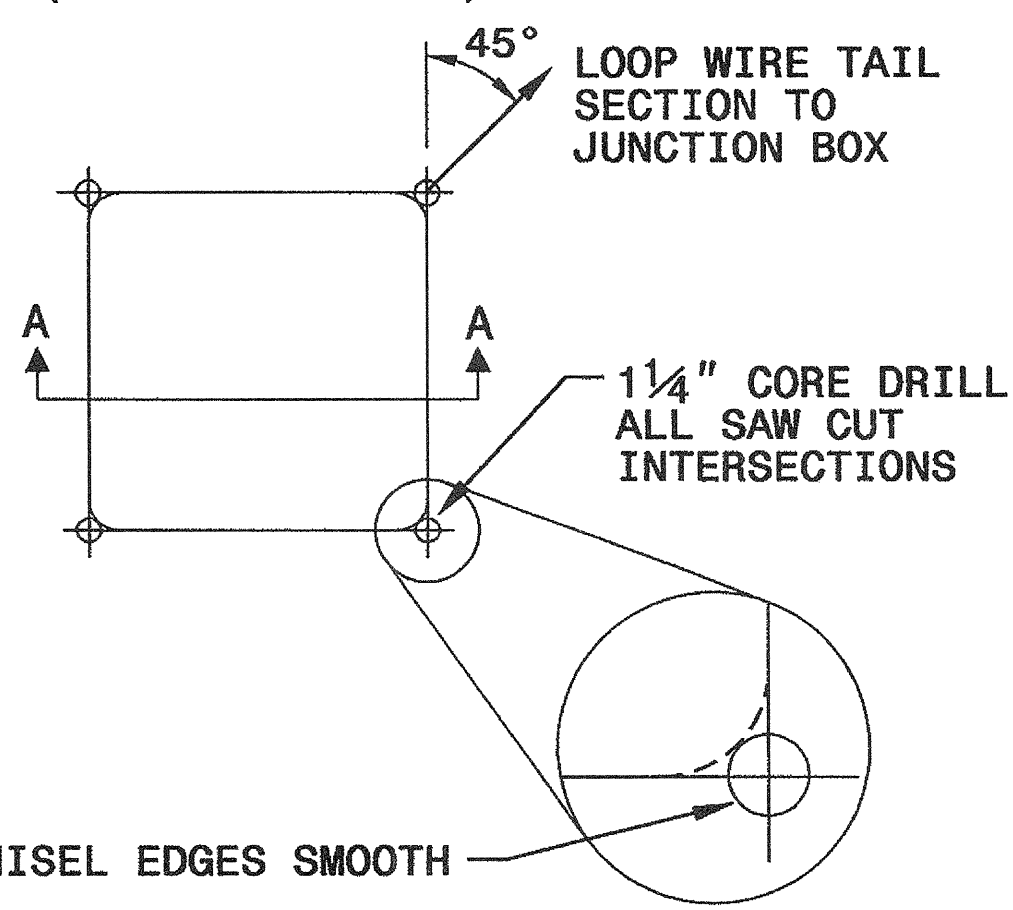
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



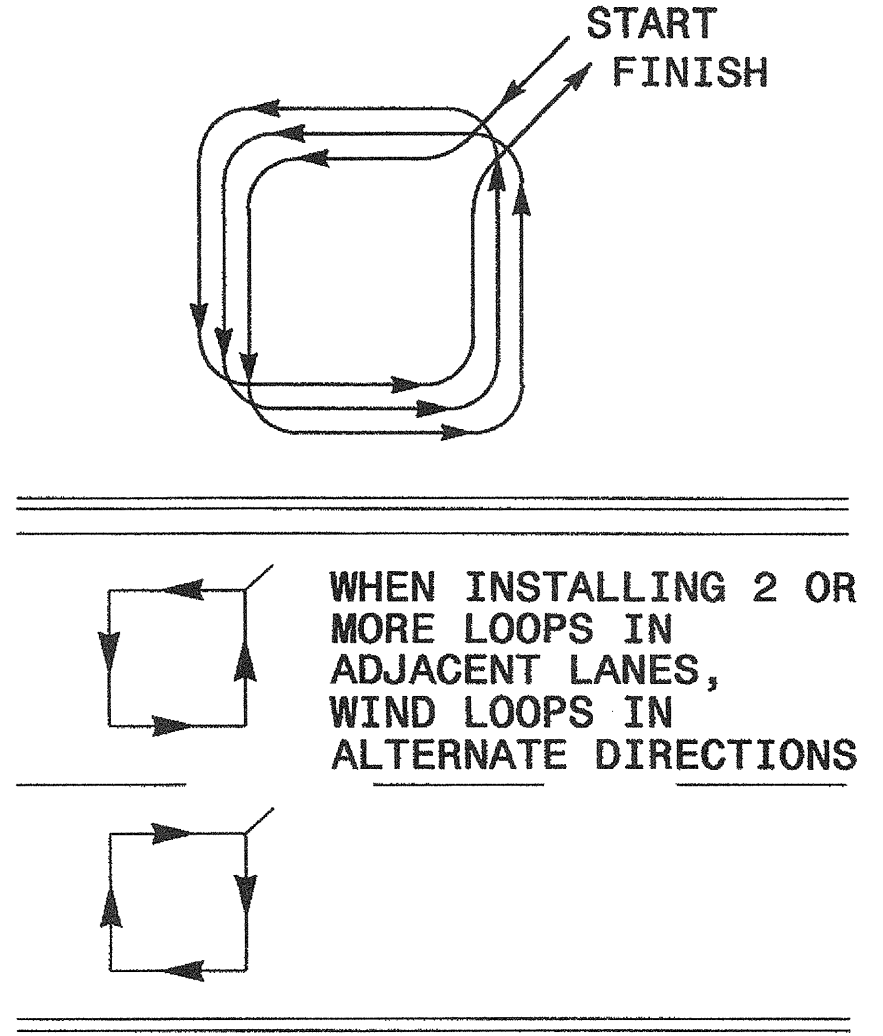
OPTION 1



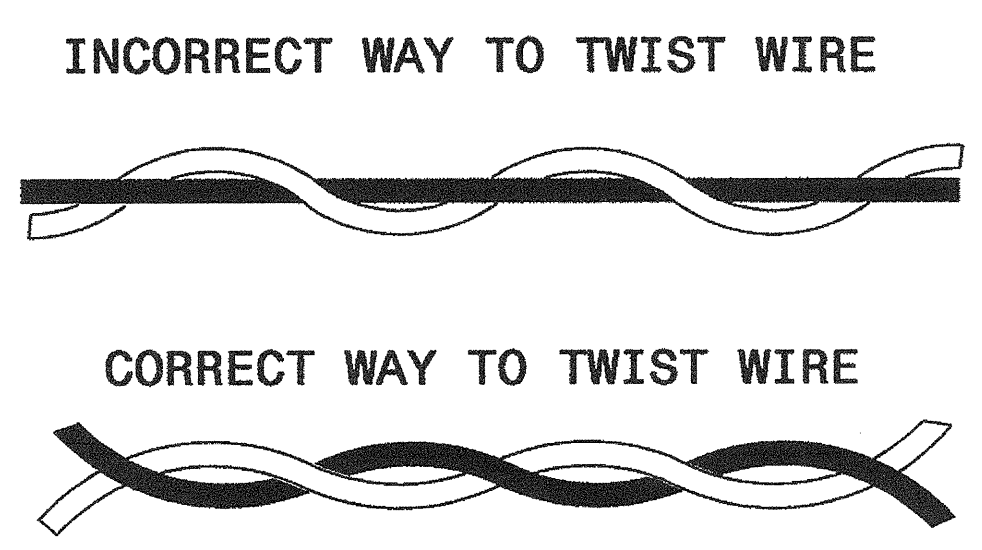
OPTION 2 (POOR PAVEMENT)



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD



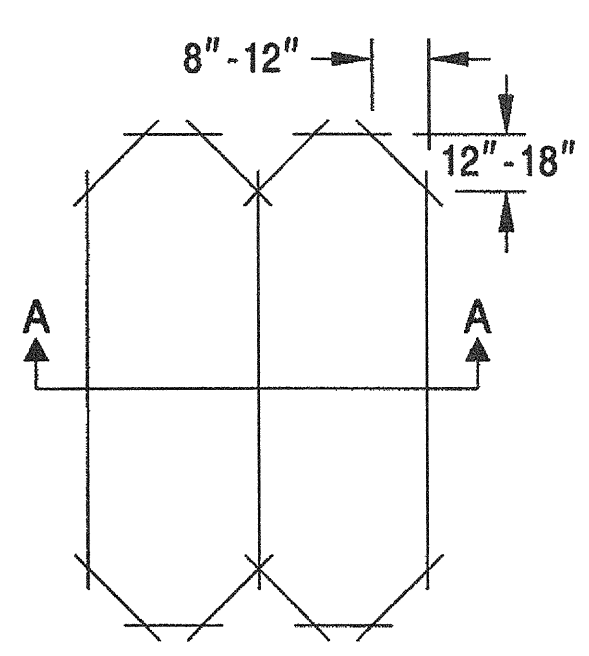
NOTES

1. OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
2. MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
3. WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
4. LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

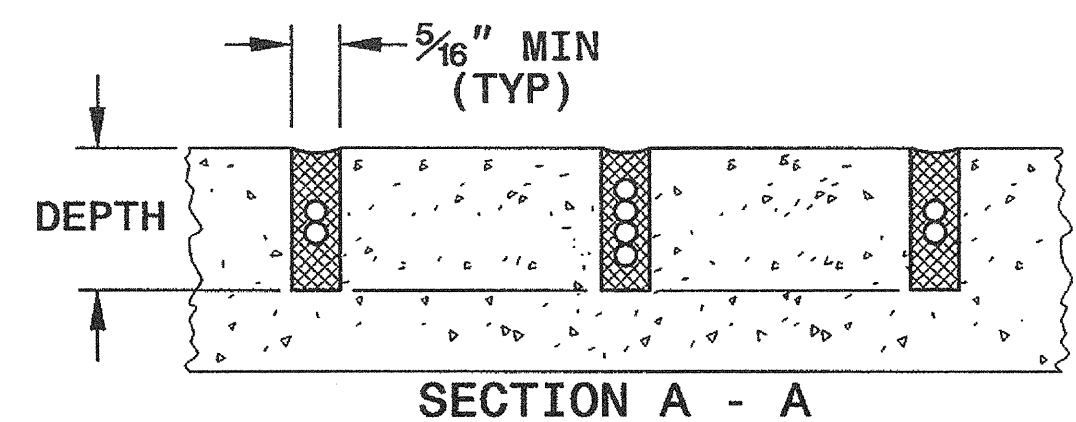
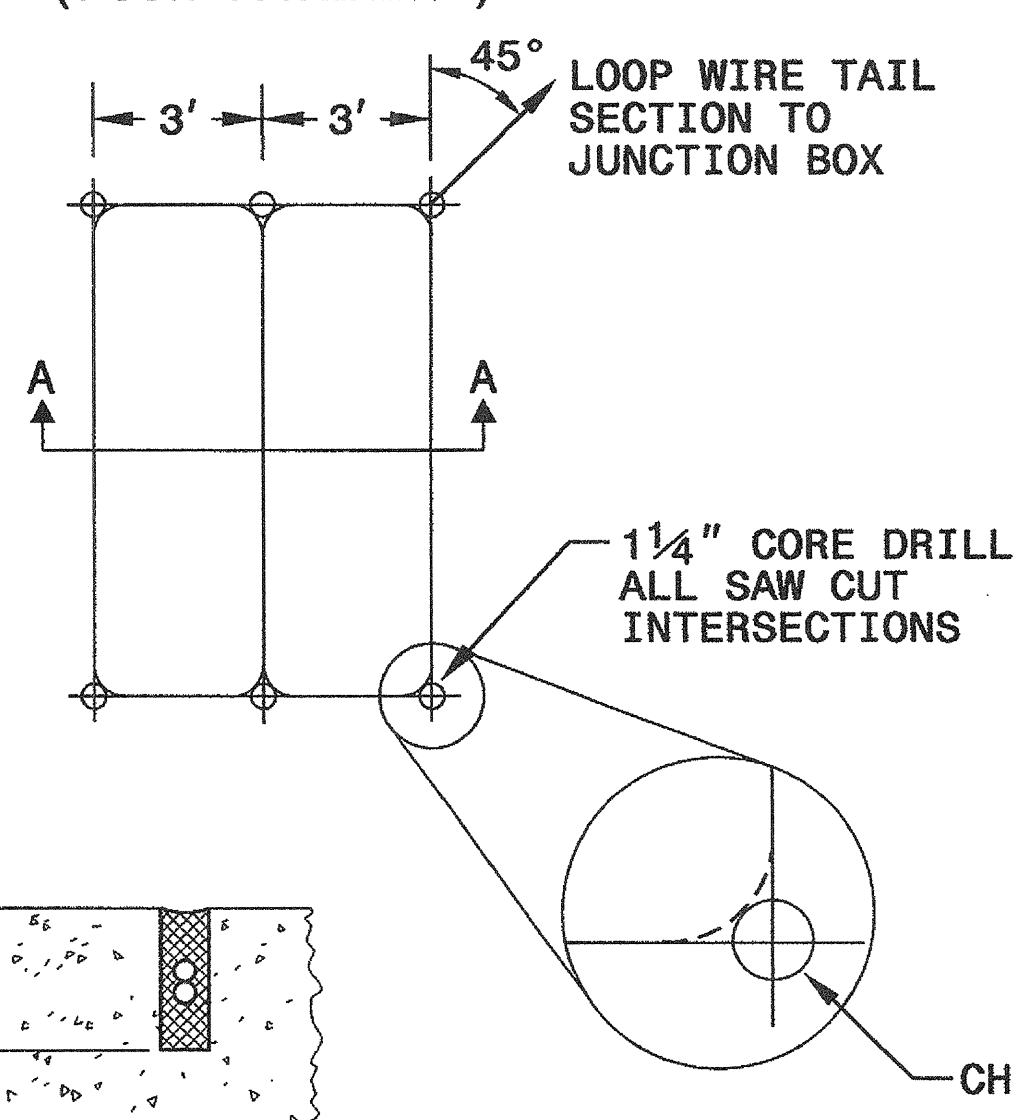
QUADRUPOLE LOOP

SAW CUT OPTIONS

OPTION 1

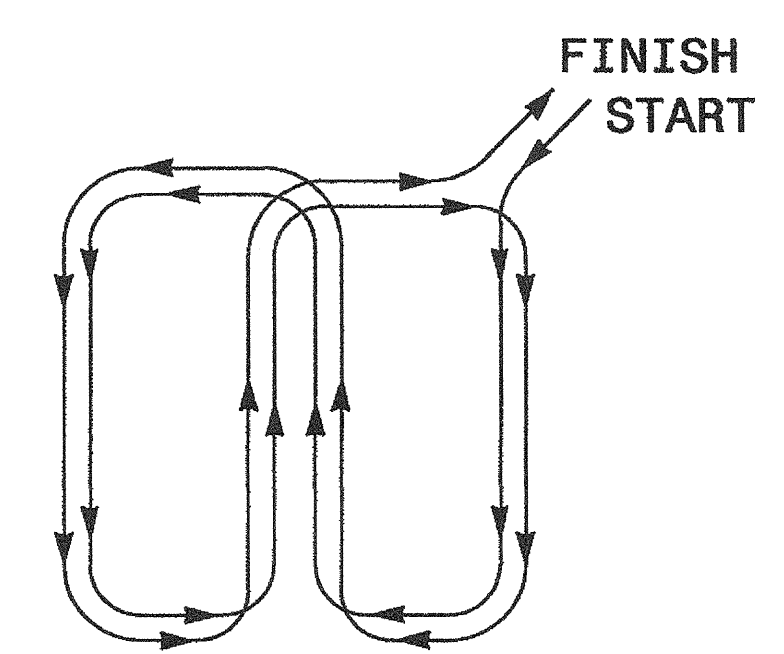


OPTION 2 (POOR PAVEMENT)



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:
Intelligent Transportation Systems & Signals Unit
750 N. Greenfield Parkway
Garner, NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 16286
MILTON I. DEAN
Signature: *Milton I. Dean* 11/24/08
DATE

24-nov-2008 09:28
C:\Users\standard\p\c\c\sheet\1725D01.dwg
Sam 11/18

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

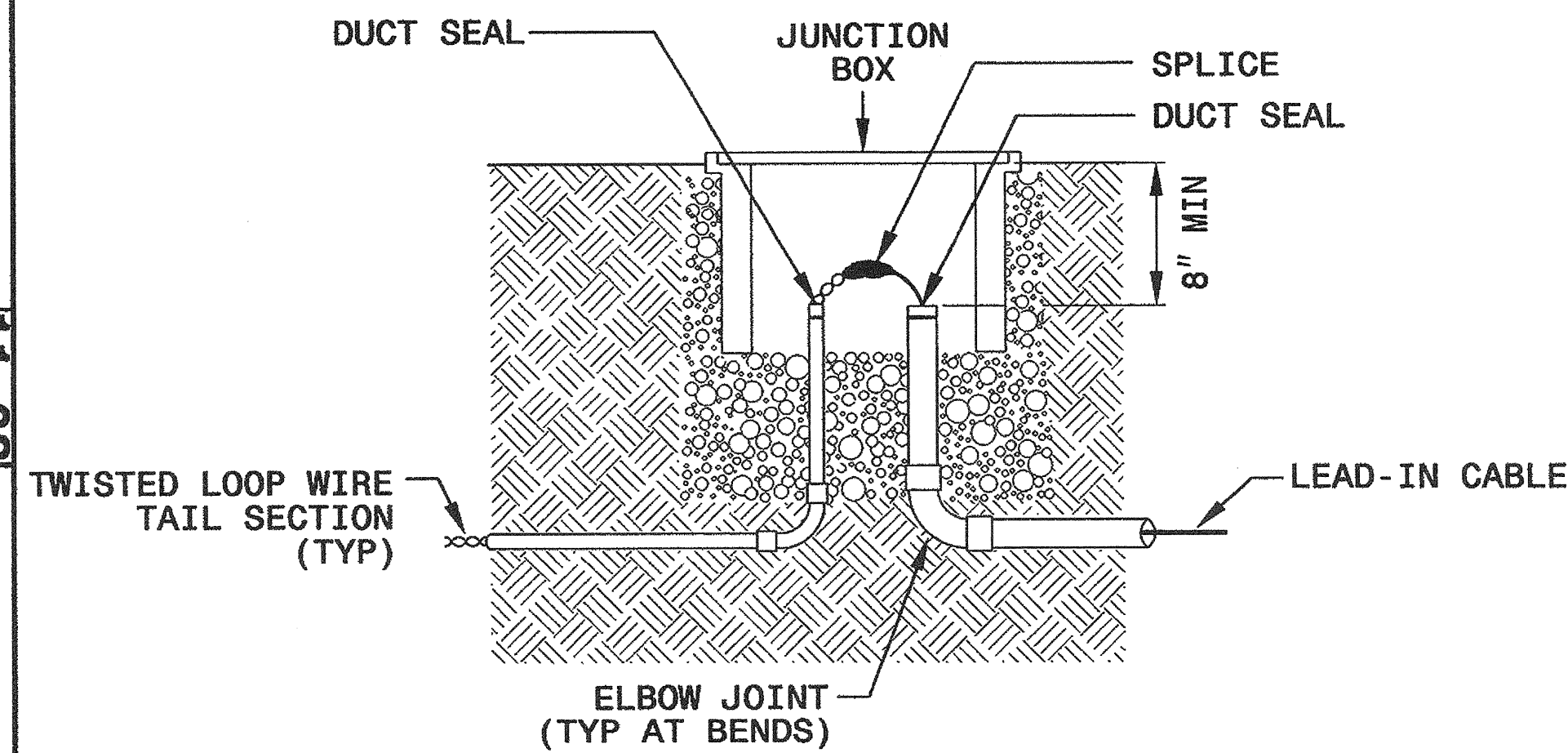
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

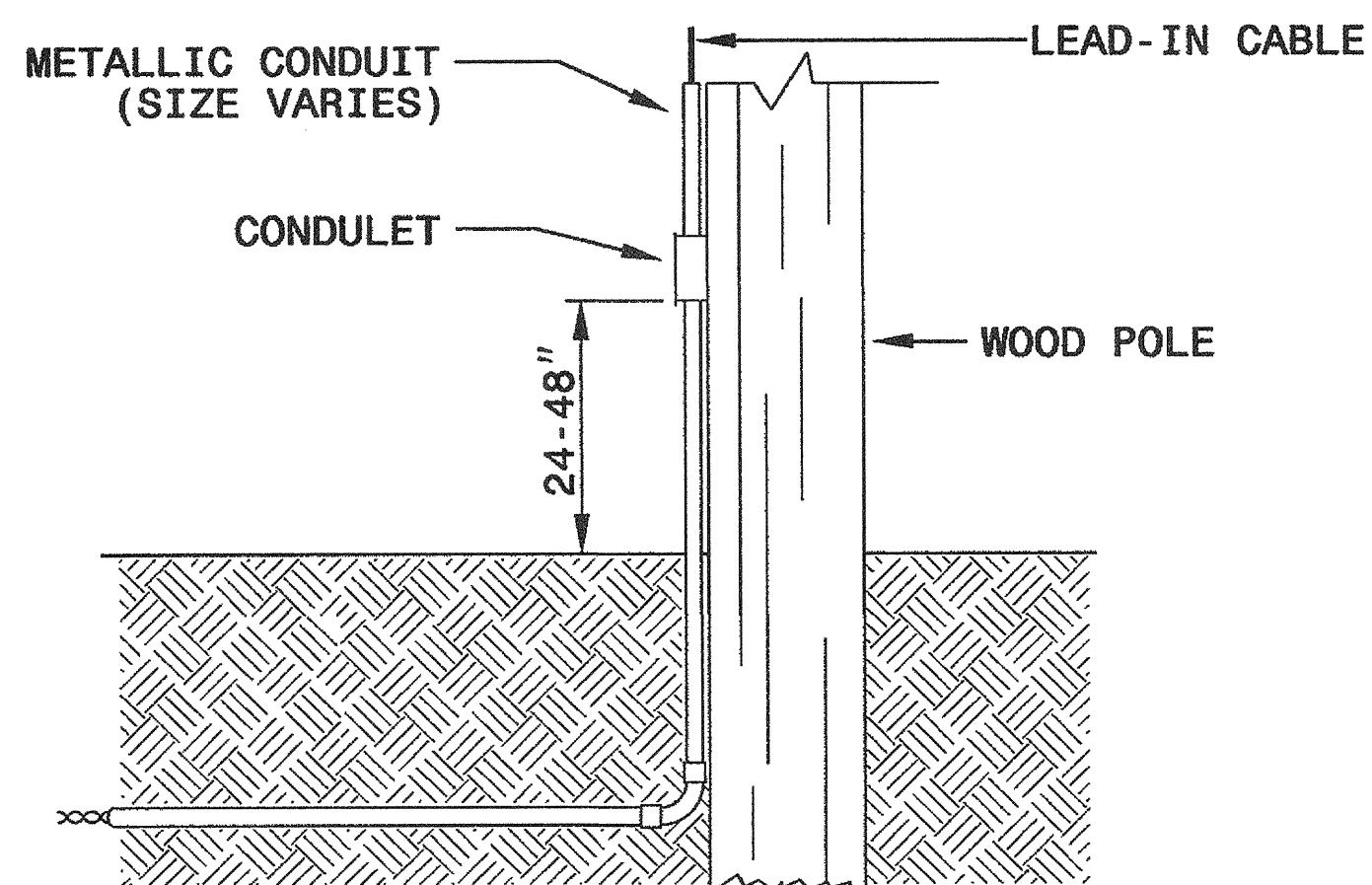
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

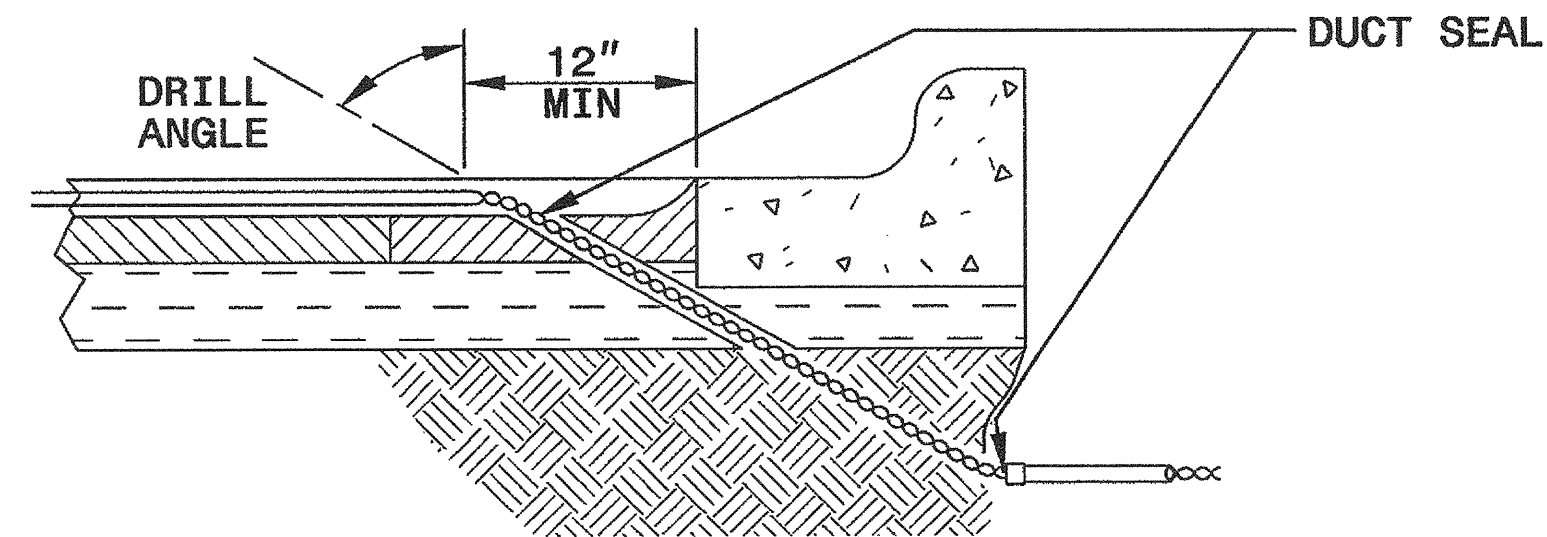


NOTE

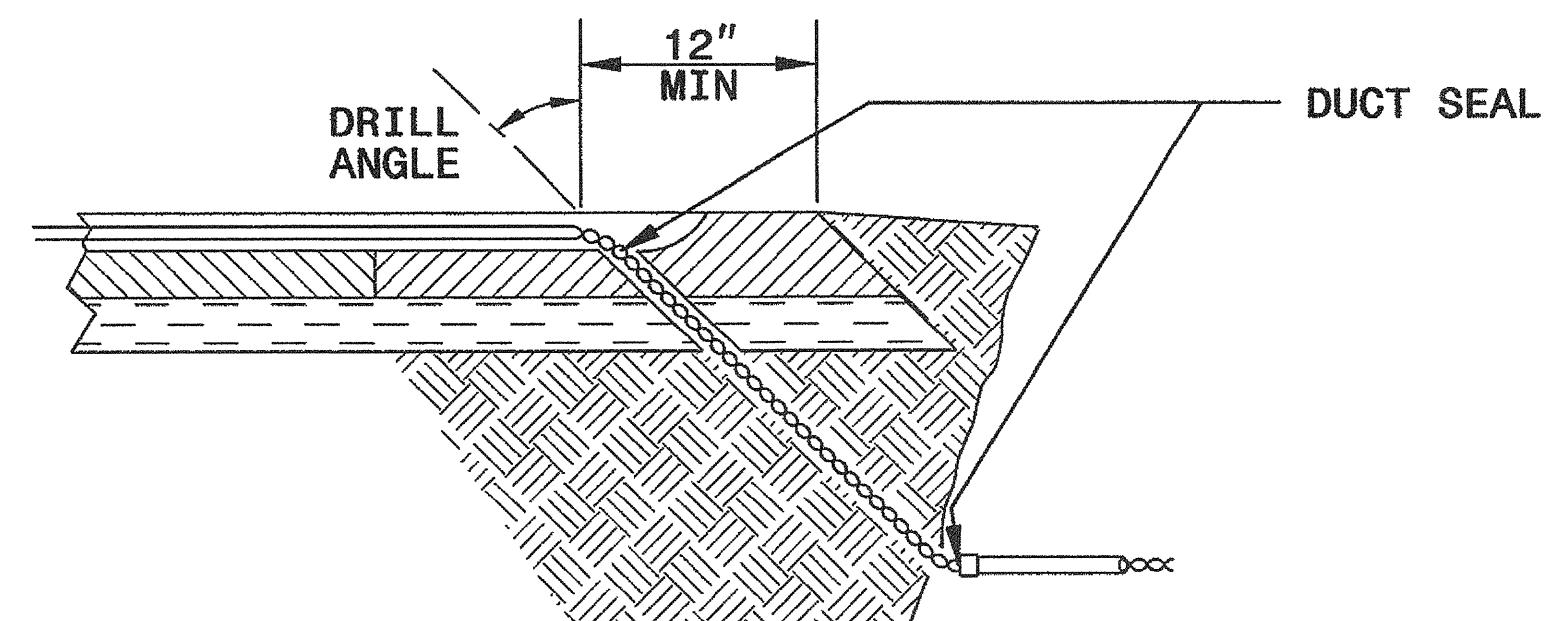
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS

LOOP WIRE AT CURB & GUTTER SECTION



LOOP WIRE AT PAVEMENT SECTION



NOTES

- DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
- TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
- BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE OF CONDUIT TO JUNCTION BOX.

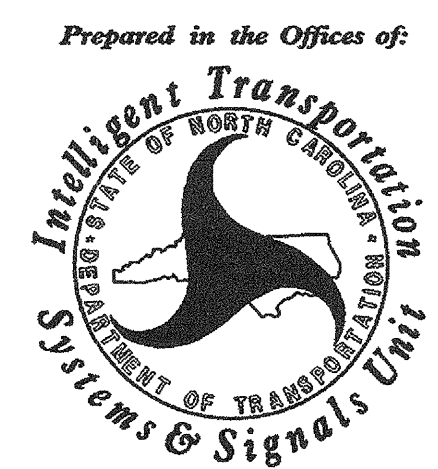
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

See Plate for Title



750 N. Greenfield Parkway
Garner, NC 27529



Milton I. Dean 11/24/08
SIGNATURE DATE

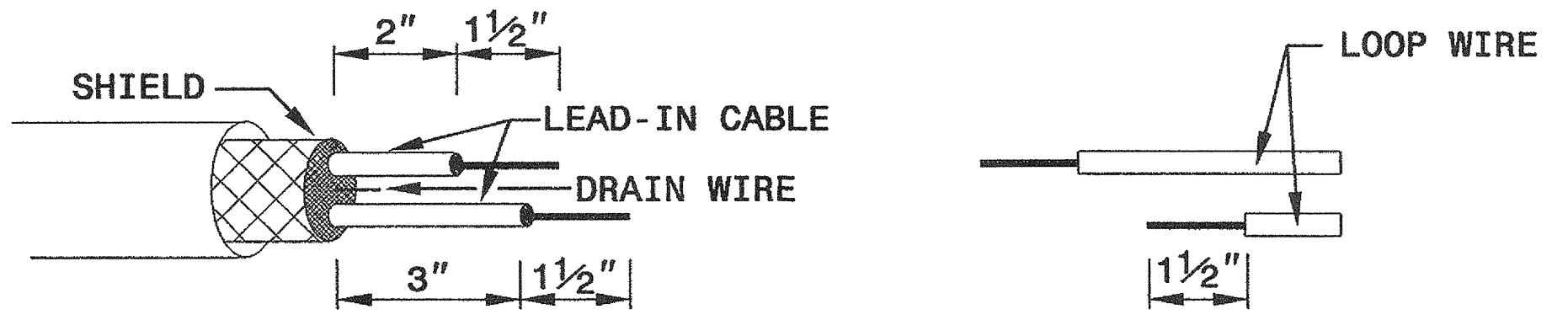
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

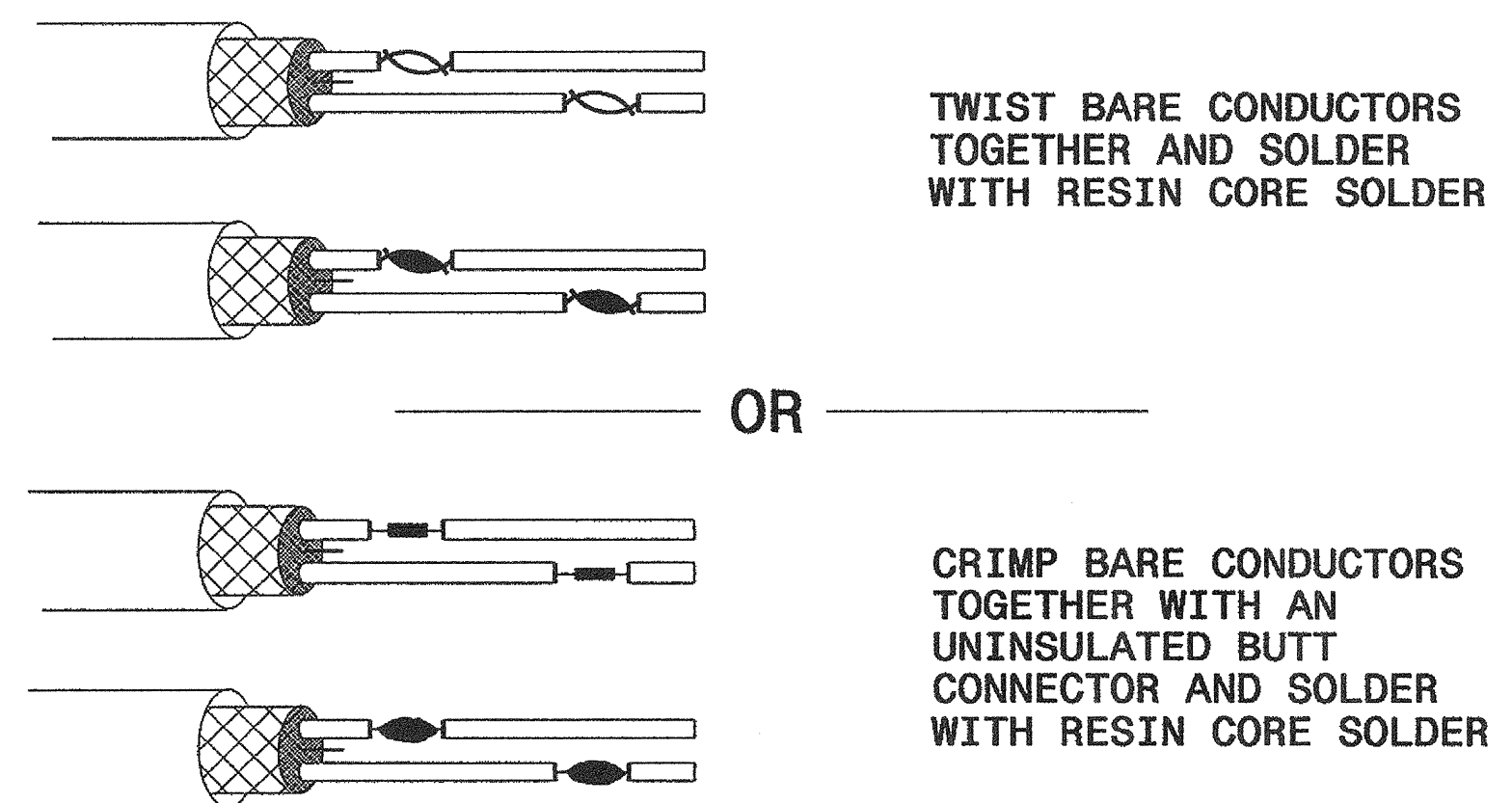
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

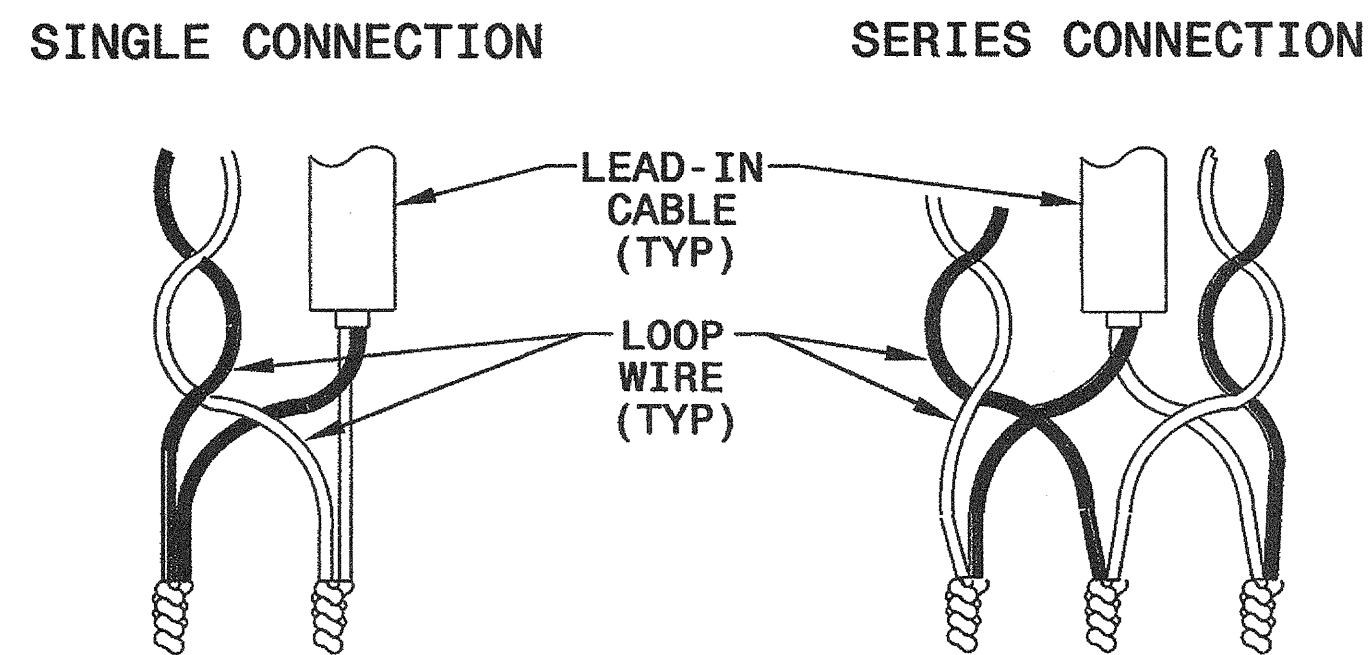
STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE



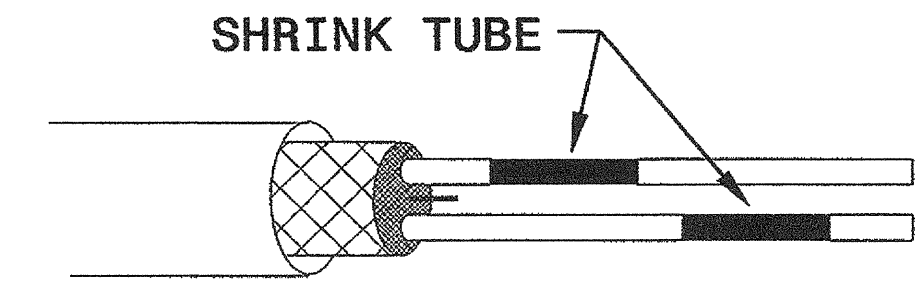
STEP 2. CONNECT AND SOLDER



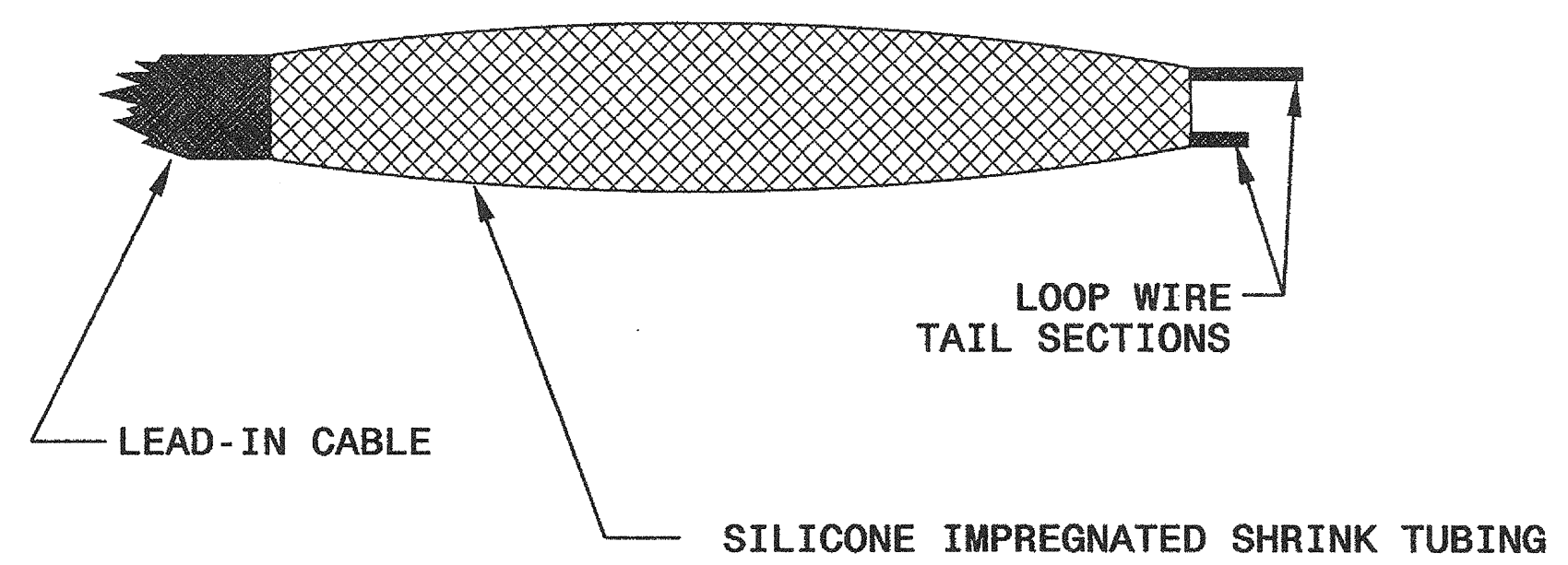
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:
Intelligent Transportation Systems & Signals Unit
DEPARTMENT OF TRANSPORTATION
750 N. Greenfield Parkway
Garner, NC 27529

SEAL

Milton L. Dean 11/24/08
SIGNATURE DATE

24-INDV-2008 09:36
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2/11/11