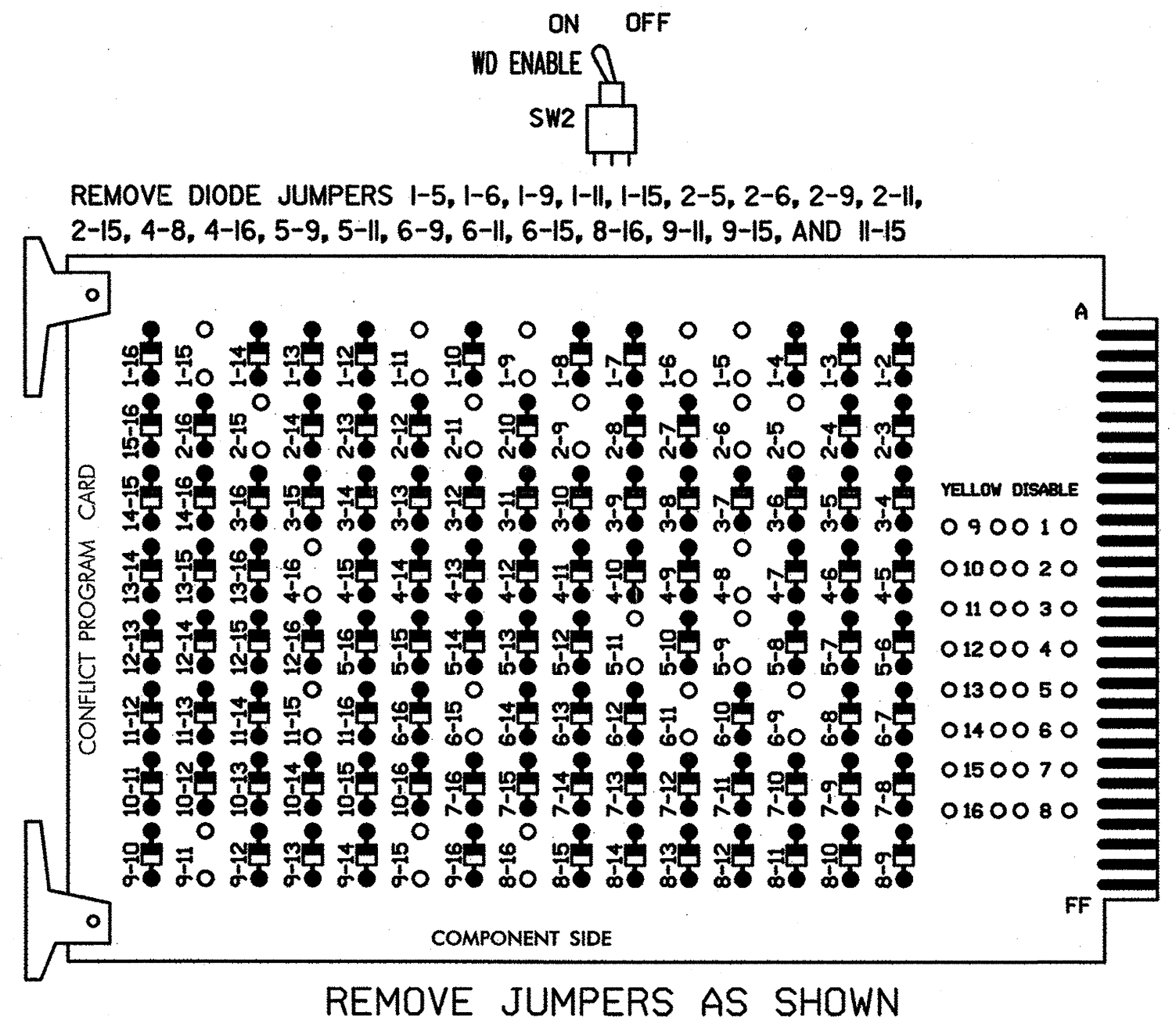


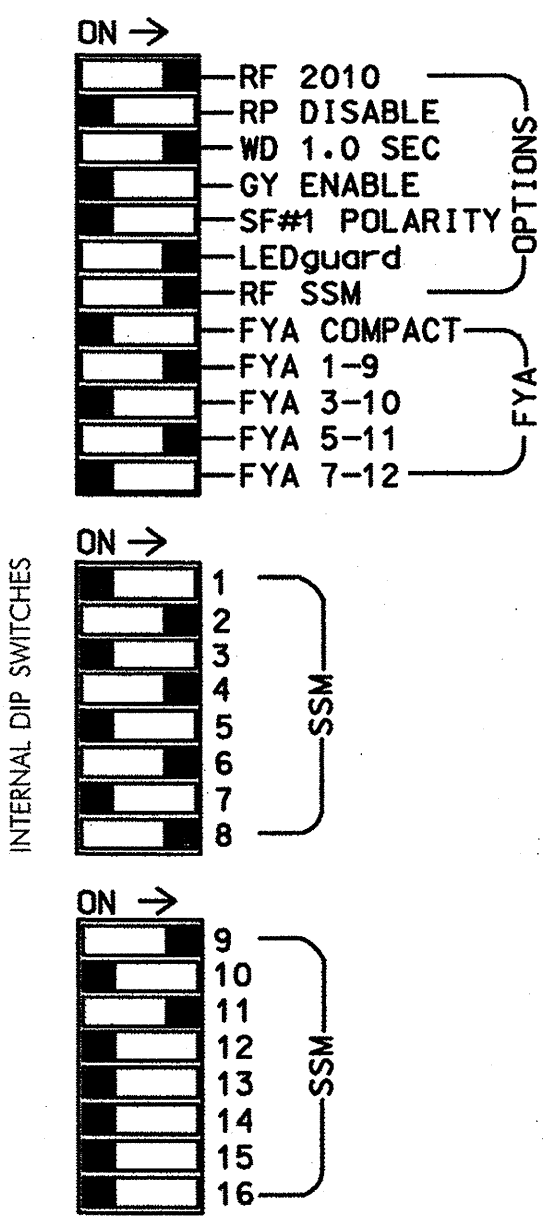
EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

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



NOTES

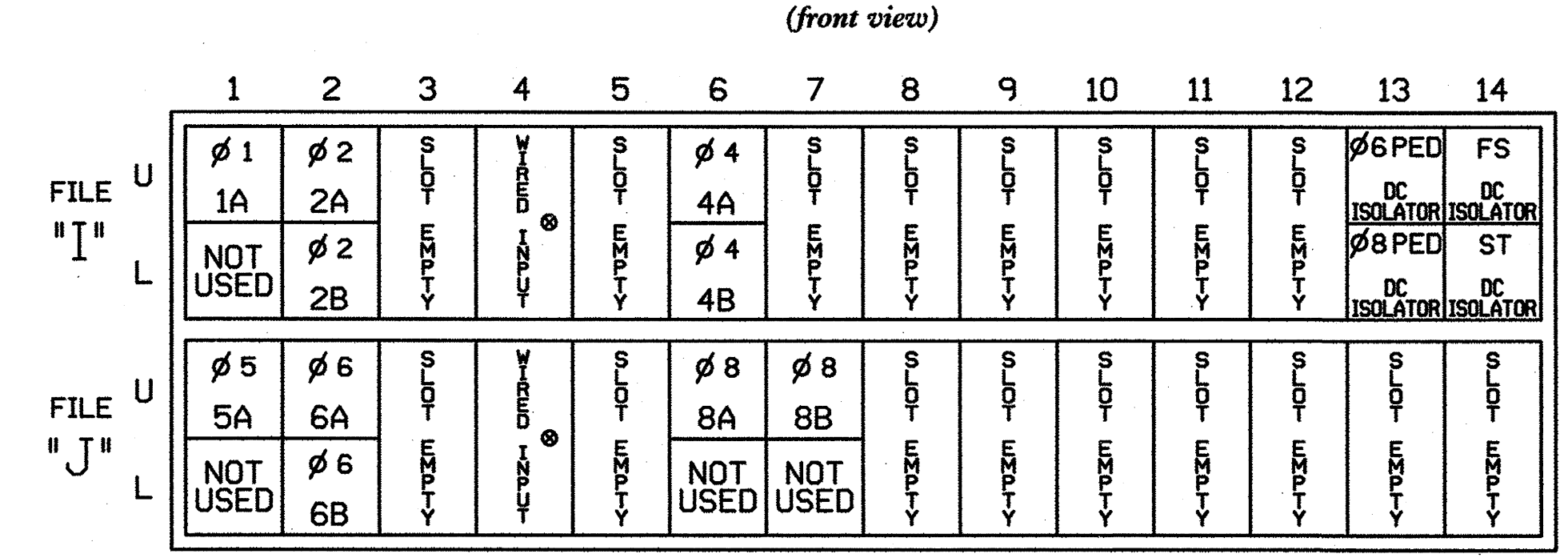
- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 1,3,5,7, 10,12,13,14,15 & 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 and Gap Reduction.
- Program phases 2 and 6, for Start Up In Green.
- Program phases 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.

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	2L,22	NU	NU	4L,42	NU	51	6L,62	P6L, P62	NU	8L,82	P8L, 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 icon										119								110
Walker icon											121							112

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

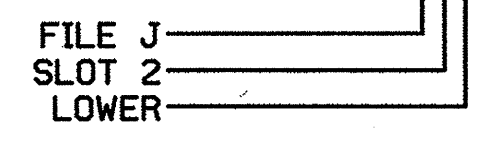
INPUT FILE POSITION LAYOUT



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

FS = FLASH SENSE
ST = STOP TIME

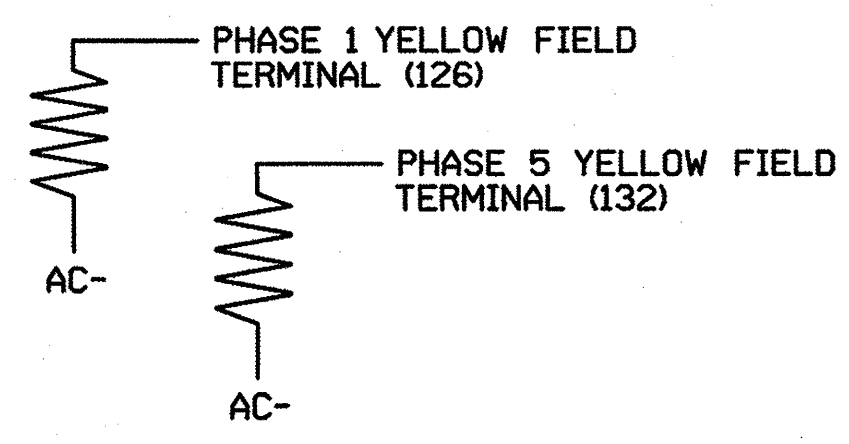
INPUT FILE POSITION LEGEND: J2L



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

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



EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
CABINET.....CONTRACTOR SUPPLIED 332 /W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S4,S5,S6,S6P,S8,S8P,S9,S12.
PHASES USED.....1,2,4,5,6,8,6PED,8PED.
OVERLAP "A".....1+2
OVERLAP "B".....NOT USED
OVERLAP "C".....5+6
OVERLAP "D".....NOT USED

INPUT FILE CONNECTION & PROGRAMMING CHART

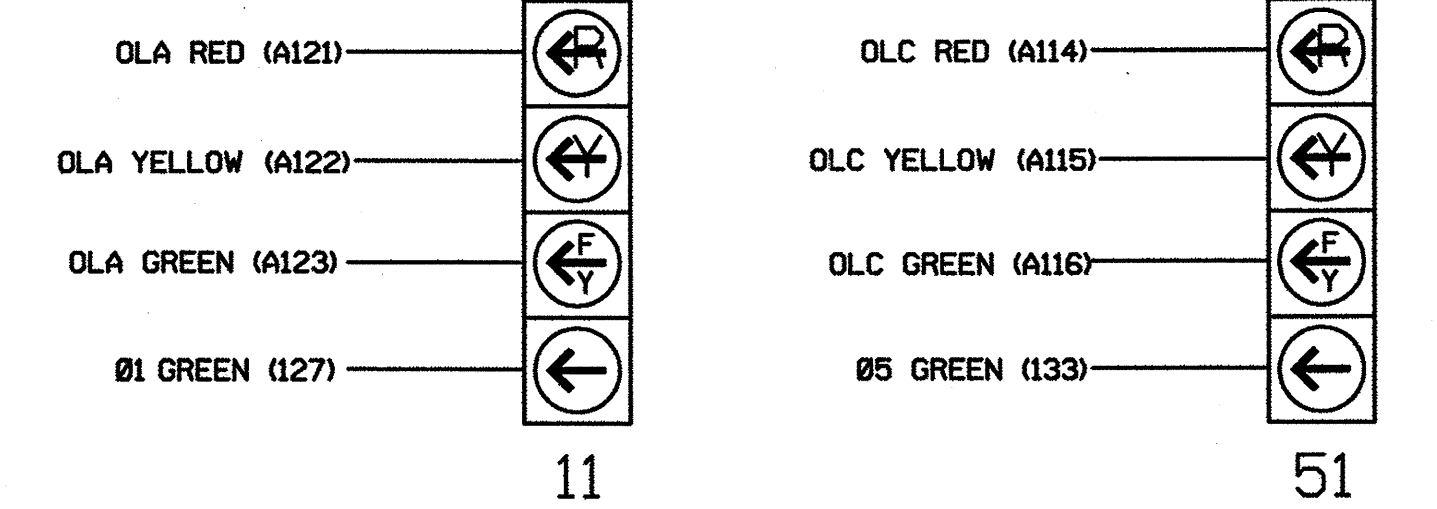
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y	Y		5
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			3
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			10
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9	22	2	Y	Y	Y		5
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3
8B	TB7-1,2	J7U	66	28	38	8	Y	Y			10
PED PUSH BUTTONS											
P6L,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					
P8L,P82	TB8-8,9	I13L	70	32	PED 8	8 PED					

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOT I13.

- 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.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

- The sequence display for this signal requires special logic programming. See sheet 2 of 2 for programming instructions.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-1200
DESIGNED: 1/2010
SEALED: 3/31/10
REVISED:

ELECTRICAL DETAIL SHEET 1 OF 2

Prepared in the Office of:
Traffic Engineering and Safety Services
CUMBERLAND COUNTY
Signal Management Services

US 401 (Ramsey Street) at Treetop Drive

Division 6 Cumberland County Fayetteville
PLAN DATE: JANUARY 2010 REVIEWED BY:
PREPARED BY: A. ARCHER REVIEWED BY:
REVISIONS: INIT. DATE

SEAL 15491
ENGINEER
WALTER WATSON
1/10/10

801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448

ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM

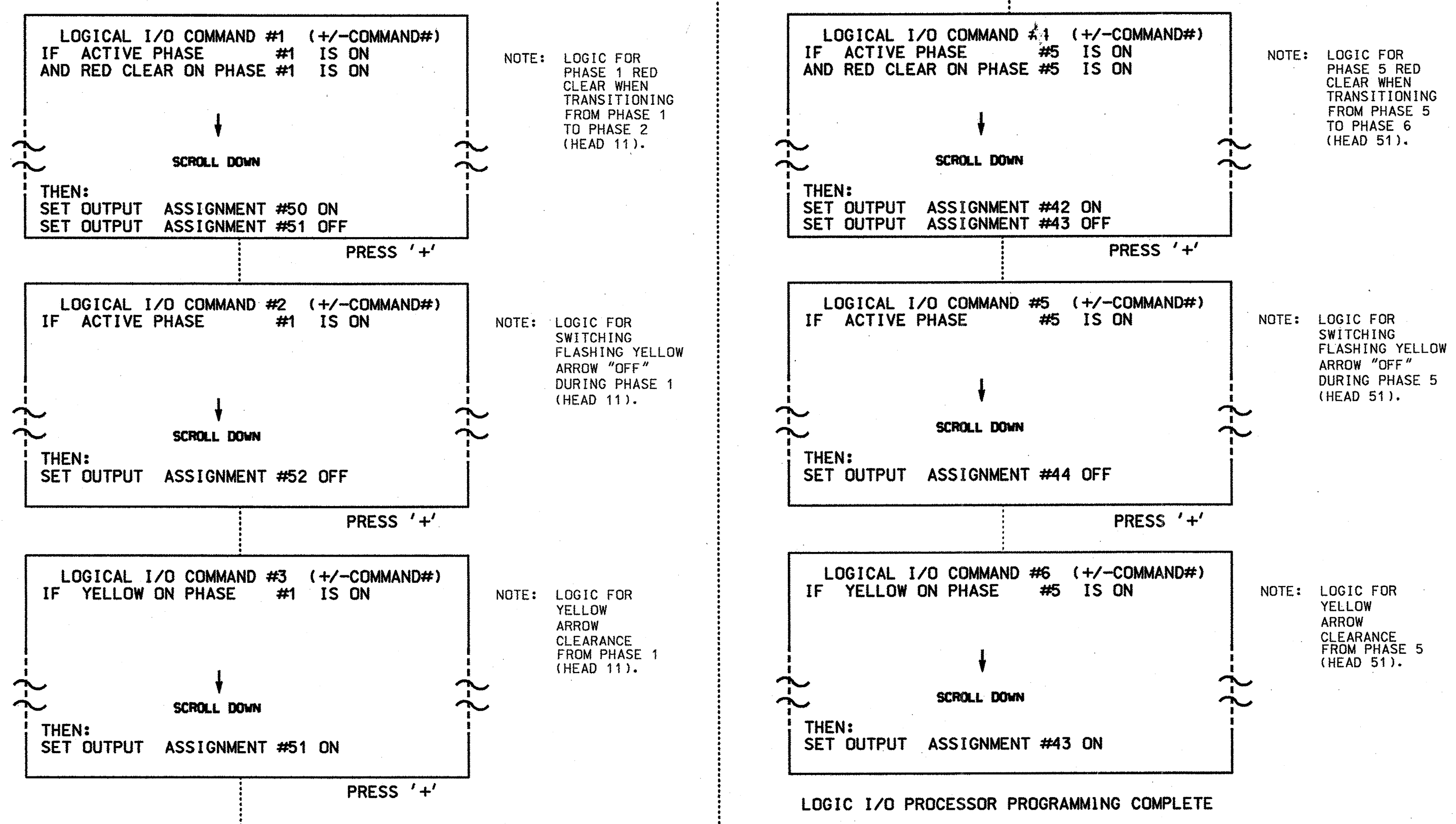
750 N. Greenfield Pkwy, Garner, NC 27529

SIGNATURE DATE
SIG. INVENTORY NO. 06-1200

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, 3, 4, 5 AND 6.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



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
 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

← 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
 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

← NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

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: 06-1200
 DESIGNED: 1/2010
 SEALED: 3/31/10
 REVISED:

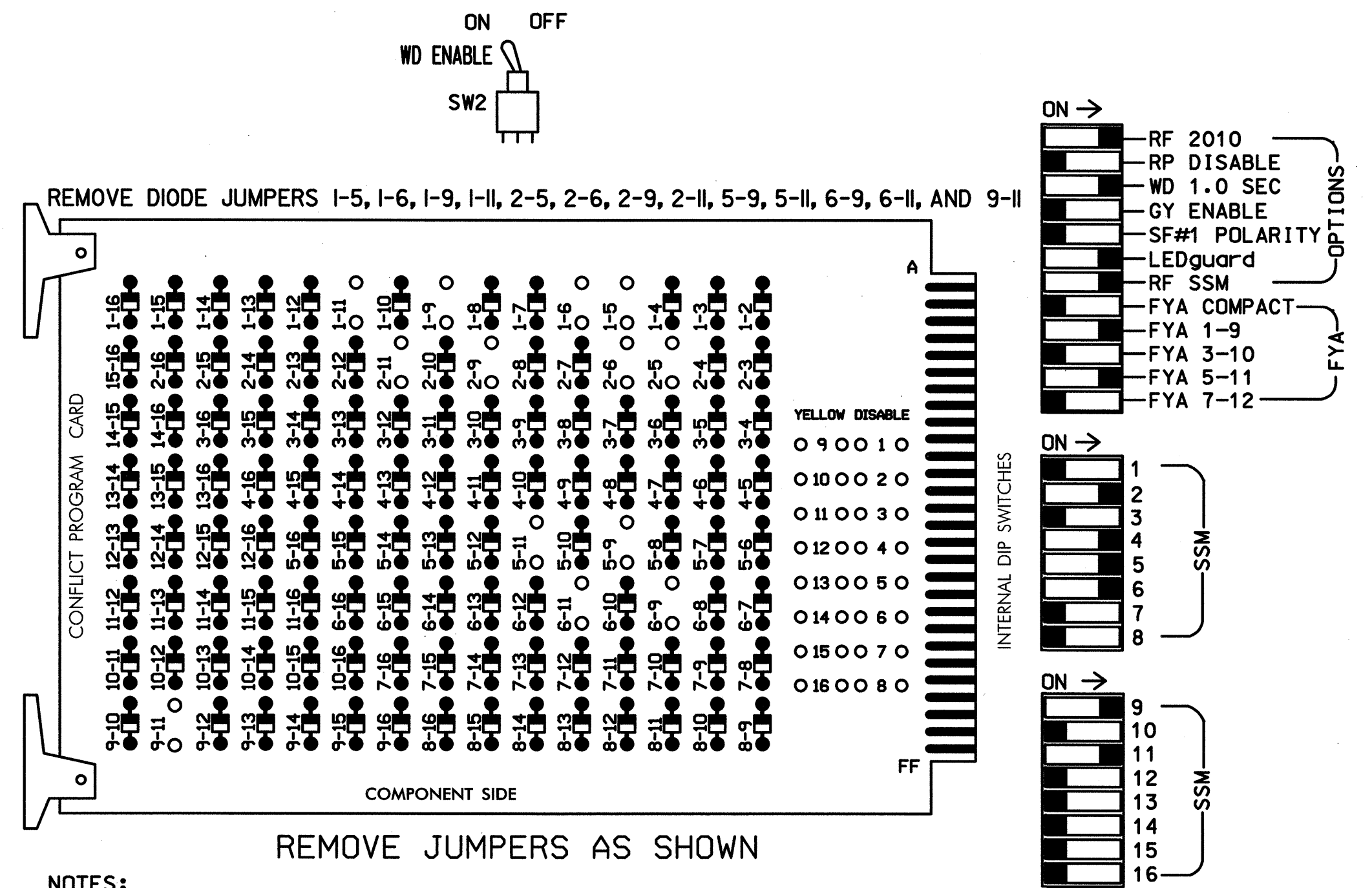
ELECTRICAL DETAIL SHEET 2 OF 2

Prepared in the Offices of: 	US 401 (Ramsey Street) at Treetop Drive	
	Division 6 PLAN DATE: JANUARY 2010 PREPARED BY: A. ARCHER	Cumberland County REVIEWED BY: REVIEWED BY:

*****SYSTEMS*****
 *****DESIGN*****
 *****DRAWING*****
 *****REVISION*****

EDI MODEL 2010ECL-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.
 - 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, 10,12,13,14,15 & 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 Fayetteville 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	9	10	11	12	13	14
SIGNAL HEAD NO.	11*	21,22	NU	NU	41,42	NU	51*	42	61,62	NU	NU	NU	11	NU	NU	51	NU	NU
RED		128			101		*	134										
YELLOW	*	129			102			135										
GREEN		130			103			136										
RED ARROW													A121			A114		
YELLOW ARROW							132						A122			A115		
FLASHING YELLOW ARROW													A123			A116		
GREEN ARROW	127						133	133										

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

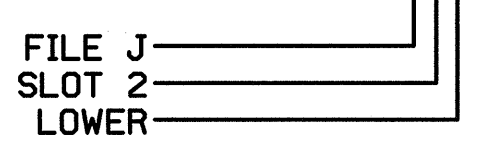
INPUT FILE POSITION LAYOUT

(from view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	∅ 1 1A	∅ 2 2A	∅ 3 3A	∅ 4 4A	∅ 5 5A	∅ 6 6A	∅ 7 7A	∅ 8 8A	∅ 9 9A	∅ 10 10A	∅ 11 11A	∅ 12 12A	∅ 13 13A	∅ 14 14A
FILE "J"	∅ 5 5A	∅ 6 6A	∅ 7 7A	∅ 8 8A	∅ 9 9A	∅ 10 10A	∅ 11 11A	∅ 12 12A	∅ 13 13A	∅ 14 14A	∅ 15 15A	∅ 16 16A	∅ 17 17A	∅ 18 18A

EX. : 1A, 2A, ETC. = LOOP NO.'S
 FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE POSITION LEGEND: J2L

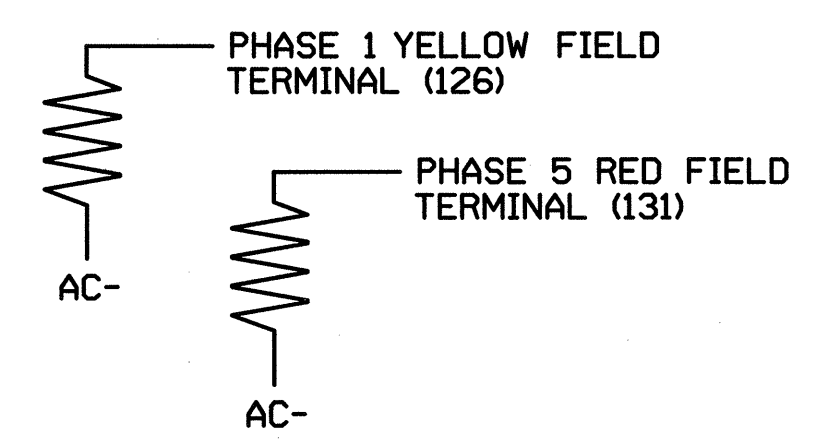


LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES

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



EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
 CABINET.....CONTRACTOR SUPPLIED 332 /W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S4,S5,S6,S9,S12.
 PHASES USED.....1,2,4,5,6.
 OVERLAP "A".....1+2
 OVERLAP "B".....NOT USED
 OVERLAP "C".....5+6
 OVERLAP "D".....NOT USED

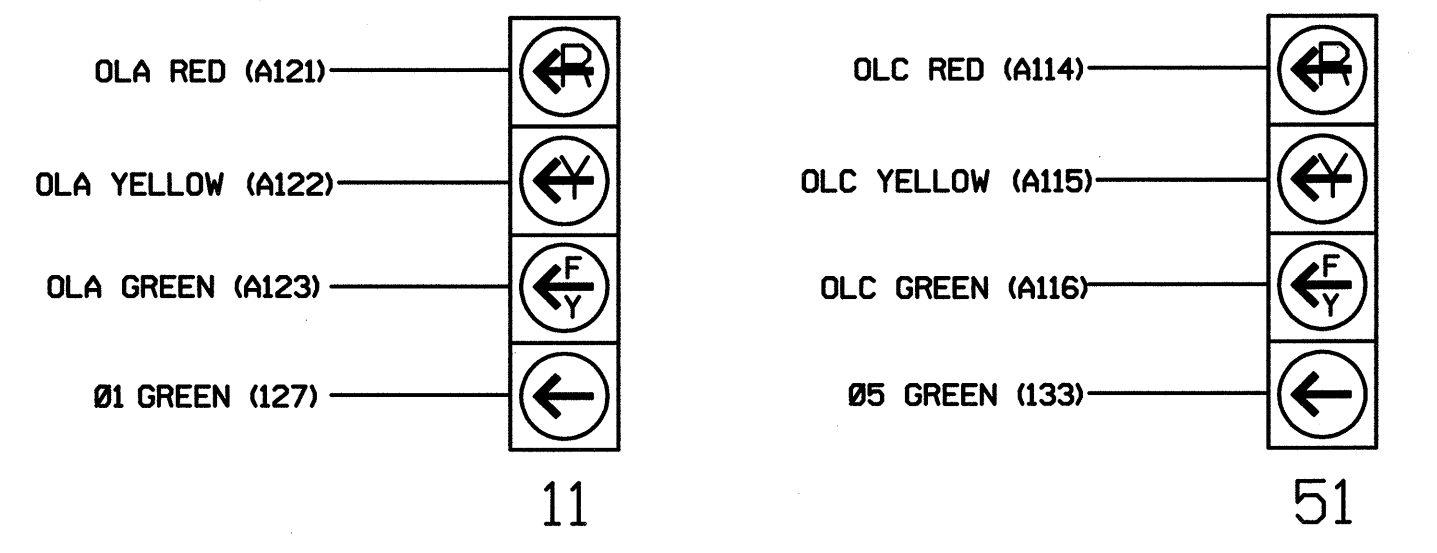
INPUT FILE CONNECTION & PROGRAMMING CHART

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	-	---	---
4A	TB4-9,10	I8U	41	3	4	4	Y	Y	-	---	---
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y	-	---	15
	-	I4U	47	9	22	2	Y	Y	Y	---	3
5B	TB3-5,6	J2U	40	2	6	5	Y	Y	-	---	15
6A	TB3-9,10	J3U	64	26	36	6	Y	Y	-	---	---
6B	TB3-11,12	J3L	77	39	46	6	Y	Y	-	---	---

- 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.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

- The sequence display for this signal requires special logic programming. See sheet 2 of 2 for programming instructions.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 06-1313
 DESIGNED: 1/20/10
 SEALED: 3/10/10
 REVISED: _____

ELECTRICAL DETAIL SHEET 1 OF 2

Prepared in the Offices of:
ARCADIS
 G & M of North Carolina, Inc.
 WWW.ARCADIS-US.COM
 801 Corporate Center Drive, Suite 300
 Raleigh, NC 27607-5073
 Tel: 919/854-1282 Fax: 919/854-5448

Division 6
 PLAN DATE: JANUARY 2010
 PREPARED BY: A. ARCHER
 REVIEWED BY: _____

US 401 (Ramsey St.)
 at
 Shawcroft Road
 Cumberland County
 Fayetteville

Division 6
 PLAN DATE: JANUARY 2010
 PREPARED BY: A. ARCHER
 REVIEWED BY: _____

REVISIONS

NO.	INIT.	DATE

SIGNATURE _____ DATE _____
 SEAL 15491
 PROFESSIONAL ENGINEER
 STATE OF NORTH CAROLINA
 SPECIAL MANAGEMENT SECTION

SIG. INVENTORY NO. 06-1313

*****SYTIME*****
 *****EDON*****
 *****SERNAME*****

- 1 INSTALL REA, PE - 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
- 2 INSTALL REA, PE - 38, (FIGURE - 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
- 3 INSTALL REA, PE - 39, (UNDERGROUND) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
- 4 INSTALL SMFO CABLE
- 5 INSTALL MMFO CABLE
- 6 INSTALL FIBER OPTIC DROP CABLE
- 7 INSTALL TRACER WIRE
- 8 TRENCH
- 9 INSTALL PVC CONDUIT
- 10 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 12 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 13 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
- 14 INSTALL POLYETHYLENE CONDUIT
- 15 DIRECTIONAL DRILL CONDUIT
- 16 BORE AND JACK CONDUIT
- 17 INSTALL CABLE(S) IN EXISTING CONDUIT
- 18 INSTALL CABLE(S) IN NEW CONDUIT
- 19 INSTALL CABLE(S) IN EXISTING RISER
- 20 INSTALL CABLE(S) IN NEW RISER
- 21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
- 22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 24 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 26 TERMINATE COMMUNICATIONS CABLE ON EXISTING TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 27 INSTALL NEW TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPlice CABLE IN CABINET
- 29 INSTALL UNDERGROUND SPlice ENCLOSURE
- 30 INSTALL AERIAL SPlice ENCLOSURE
- 31 INSTALL POLE MOUNTED SPlice CABINET
- 32 INSTALL BASE MOUNTED SPlice CABINET
- 33 REMOVE EXISTING SPlice CABINET
- 34 INSTALL CABINET FOUNDATION

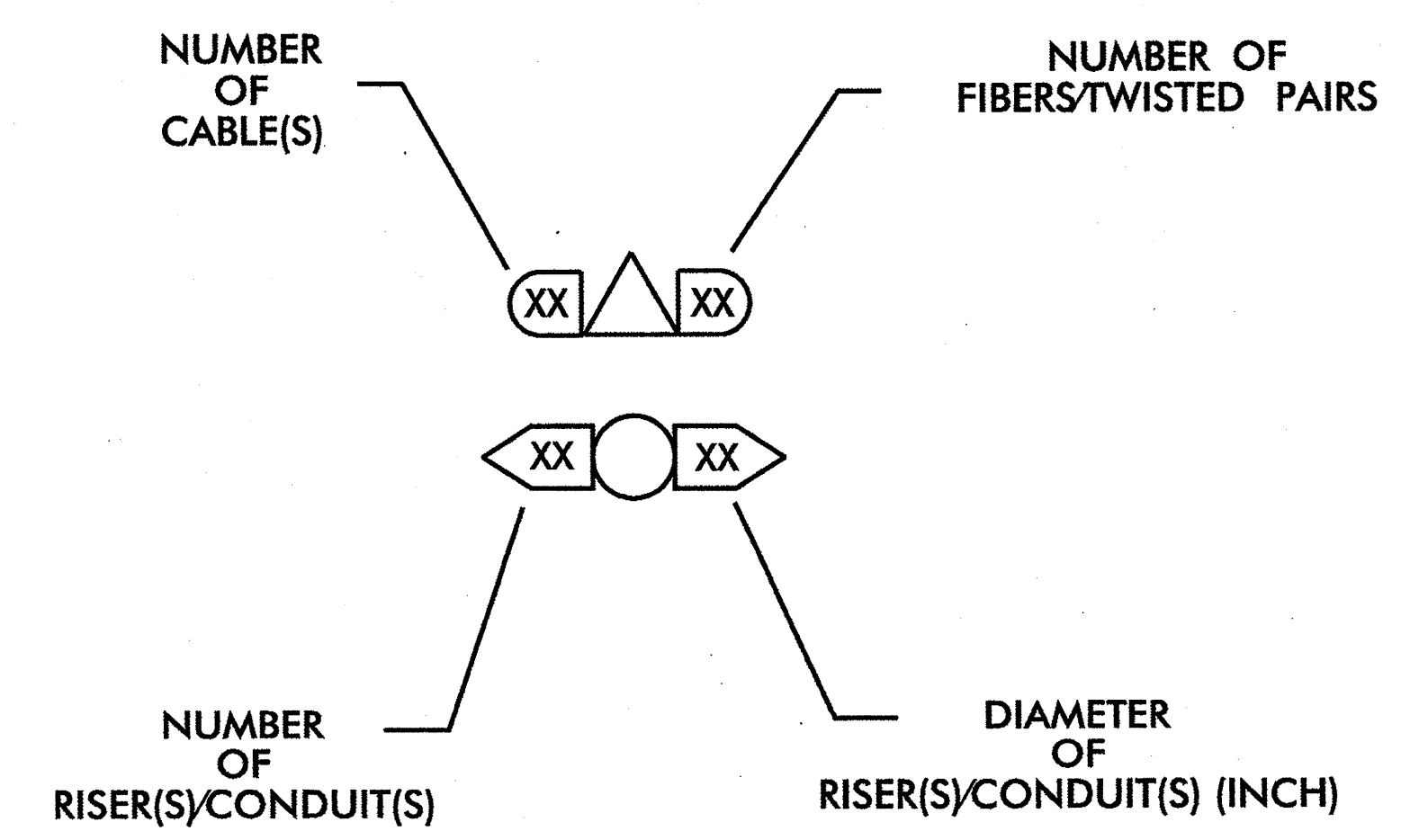
- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 REMOVE EXISTING JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 REMOVE EXISTING WOOD POLE
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
- 49 REMOVE EXISTING COMMUNICATIONS CABLE
- 50 INSTALL TELEPHONE SERVICE
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52 INSTALL DELINEATOR MARKER
- 53 STORE 20 FEET OF COMMUNICATIONS CABLE
- 54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
- 55 LASH CABLE(S) TO EXISTING MESSENGER CABLE
- 56 LASH CABLE(S) TO NEW MESSENGER CABLE
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE

LEGEND

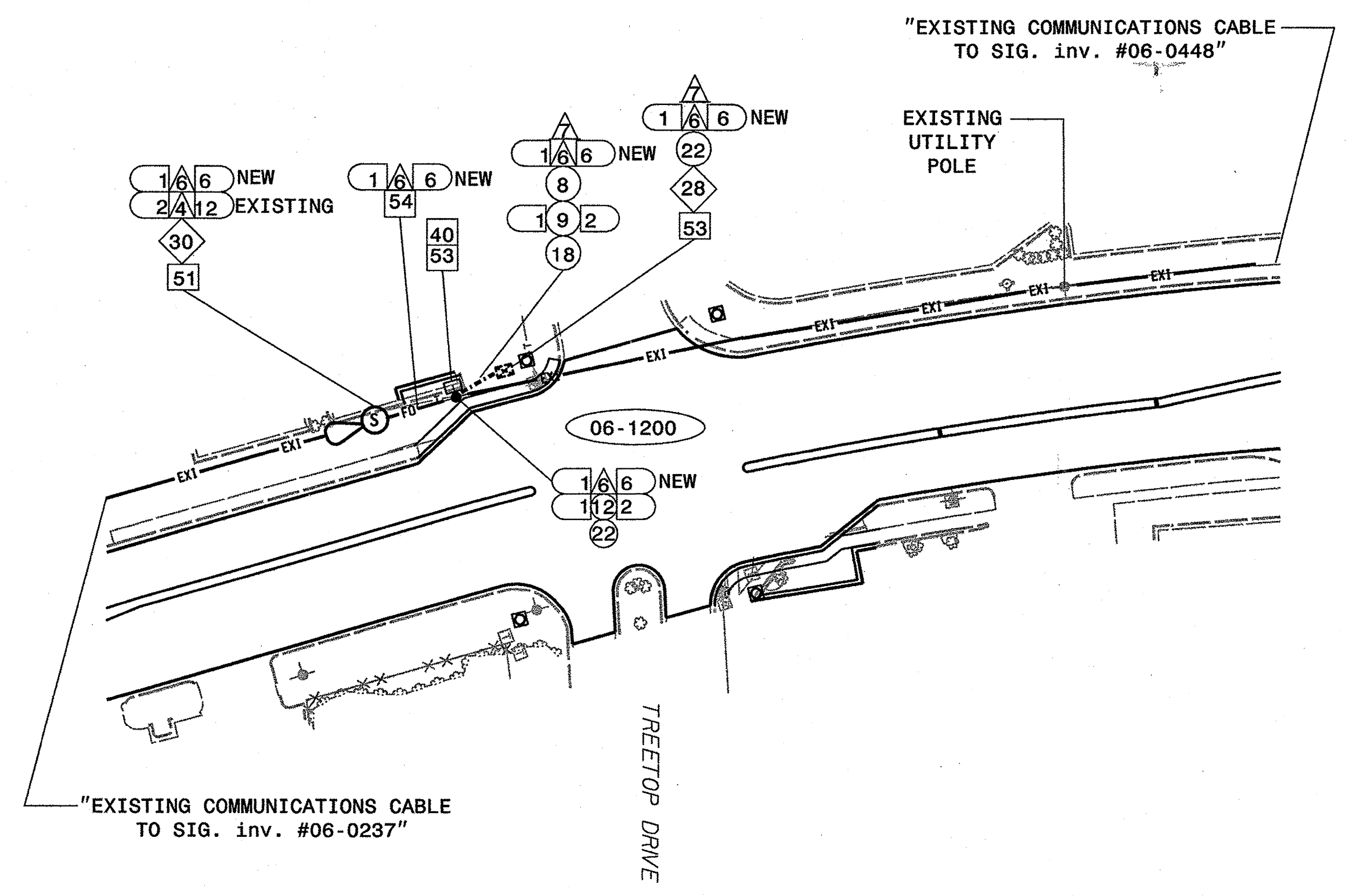
- FO NEW FIBER OPTIC COMMUNICATIONS CABLE
- TWIST PR NEW TWISTED PAIR COMMUNICATIONS CABLE
- EXT EXISTING COMMUNICATIONS CABLE
- REM EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW AERIAL GUY ASSEMBLY
- NEW CONDUIT
- EXISTING CONDUIT
- DD NEW DIRECTIONAL DRILLED CONDUIT
- BAJ NEW BORED AND JACKED CONDUIT
- NEW JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW WOOD POLE
- EXISTING WOOD POLE
- NEW AERIAL SPlice ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- NEW CCTV CAMERA ASSEMBLY
- NEW STANDARD GUY ASSEMBLY
- NEW STANDARD GUY USING EXISTING ANCHOR
- NEW SIDEWALK GUY ASSEMBLY
- NEW CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING CONTROLLER AND CABINET
- EXISTING SPlice CABINET
- NEW SPlice CABINET
- SP SIGNAL POLE
- XX-XXXX SIGNAL INVENTORY NUMBER

CONSTRUCTION NOTE SYMBOLOGY KEY

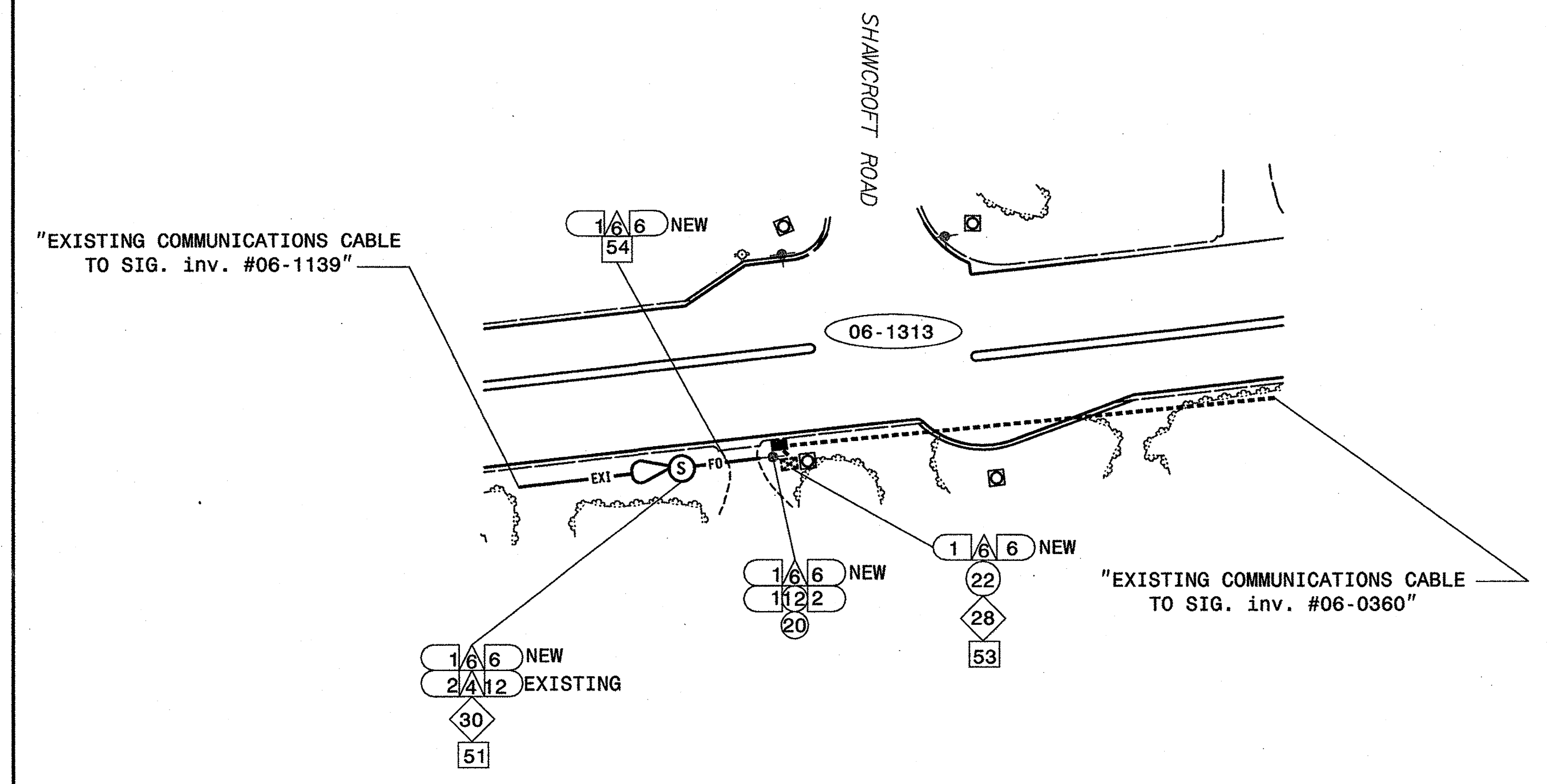
- XX INDICATES NUMBER OF CABLES, LOOPS, ETC.
- XX INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
- XX INDICATES NUMBER OF RISER(S)/CONDUIT(S)
- XX INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)



	CONSTRUCTION NOTES		
	PLAN DATE: JANUARY 2010 PREPARED BY: A. Archer	REVIEWED BY: REVIEWED BY:	
SCALE 0 N/A	SIGNATURE DATE		SEAL NOT VALID UNLESS SIGNED AND DATED CADD FILE NAME



NOTE
Install IFS Self Healing Ring Modem (D19130SHR)



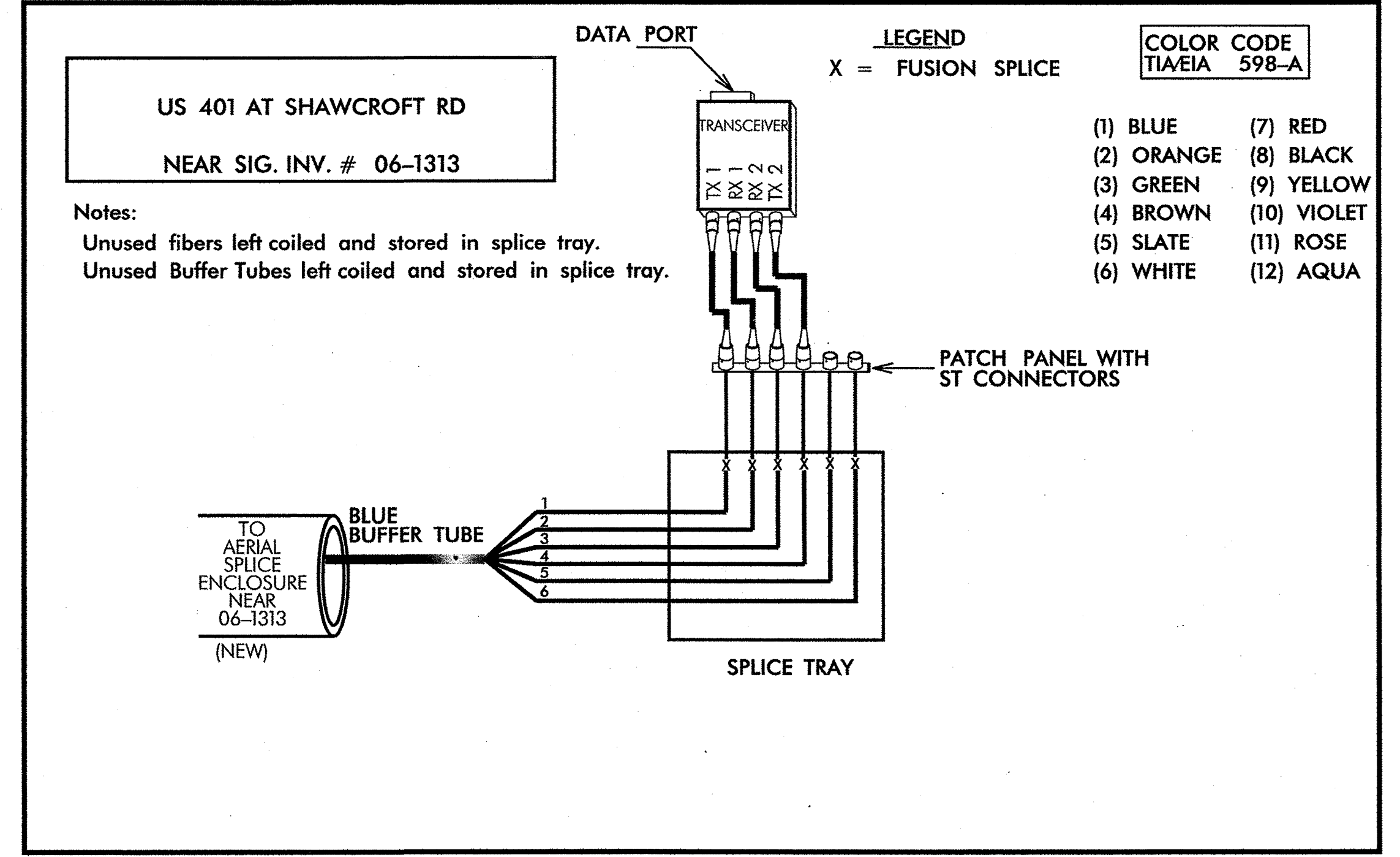
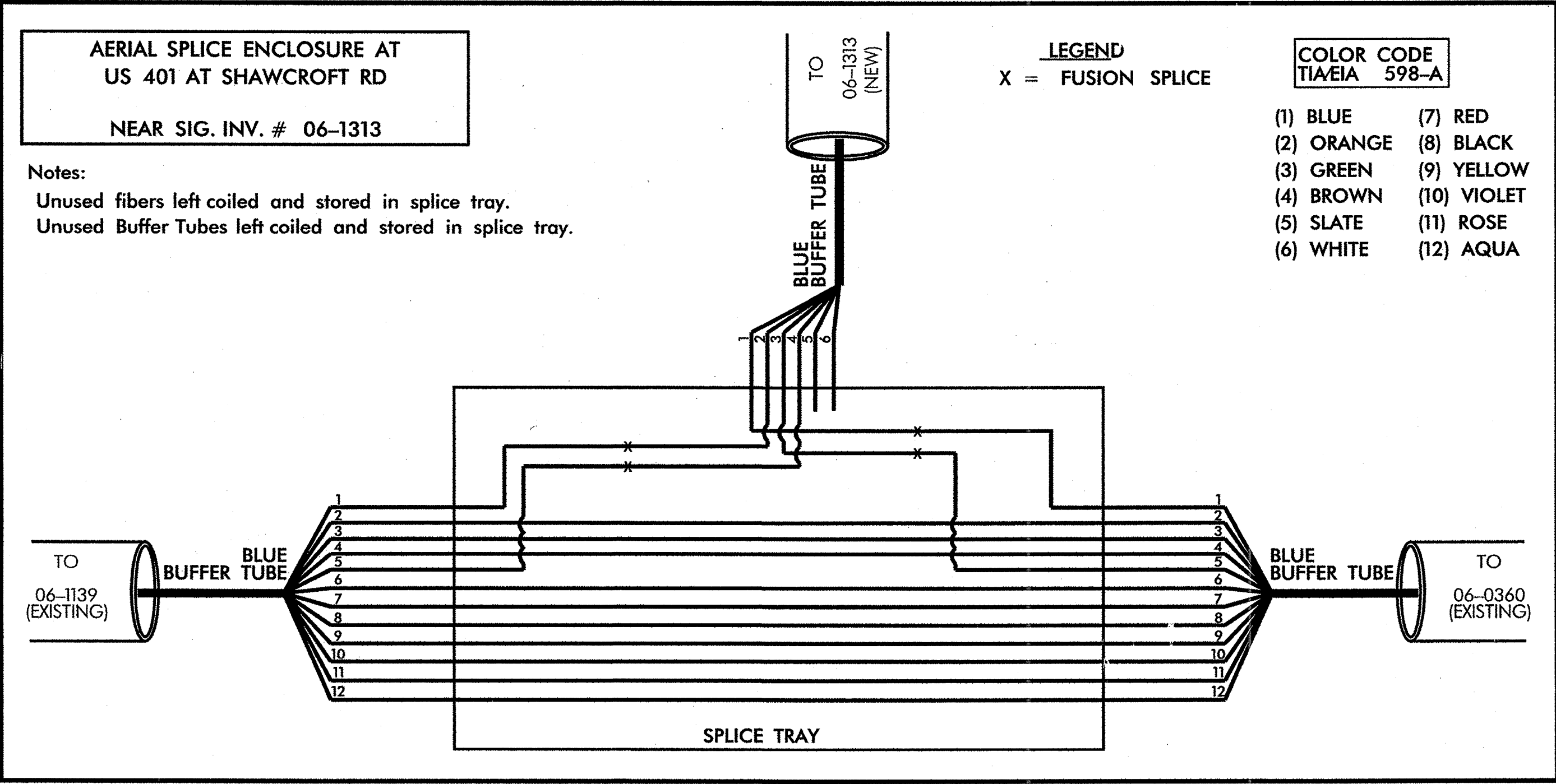
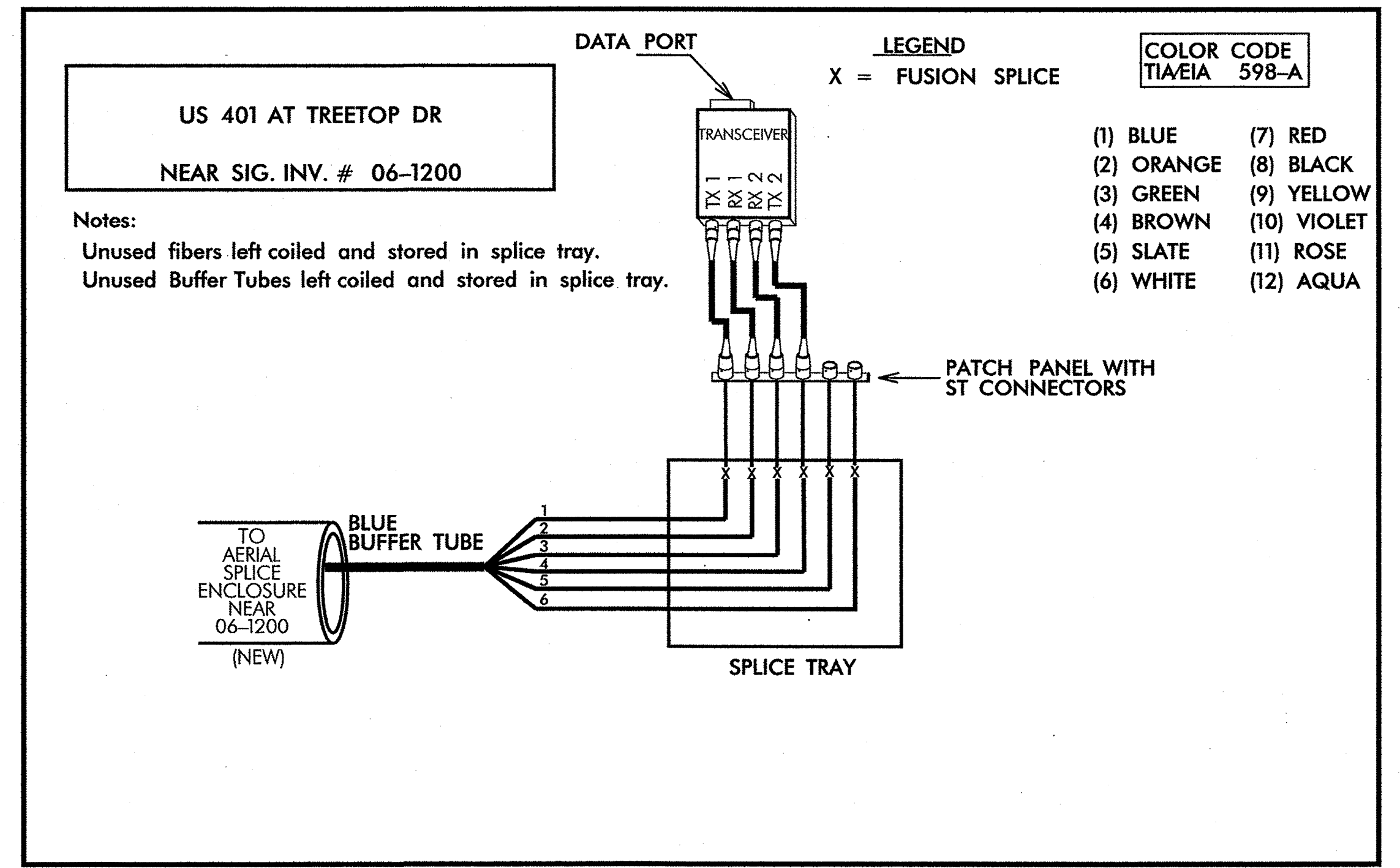
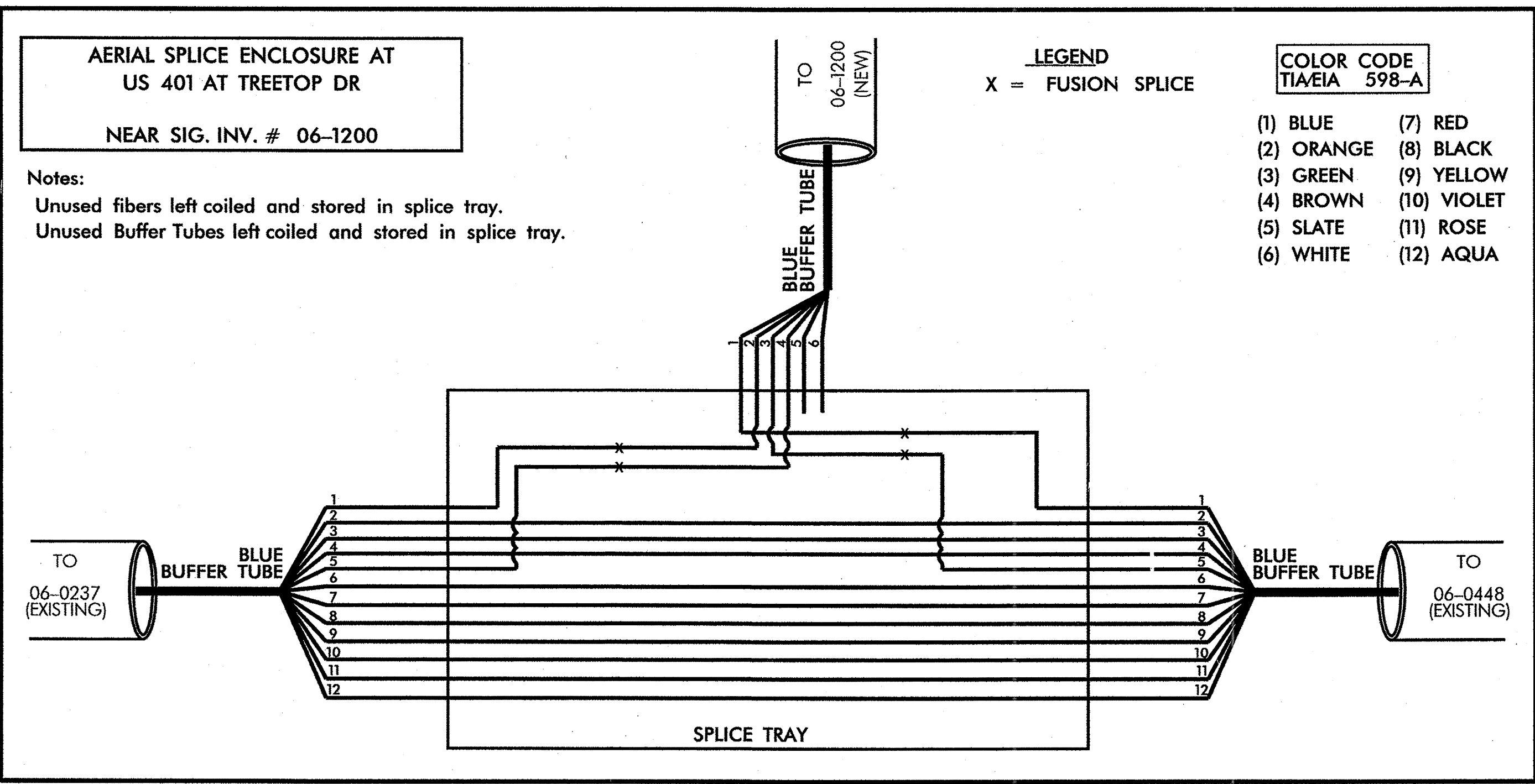
NOTE
Install IFS Self Healing Ring Modem (D19130SHR)

NEW INSTALLATION

	<p>Cable Routing Plans US 401 at Treetop Dr and US 401 at Shawcroft Rd.</p>													
	<p>Division 6 Cumberland County Fayetteville</p>													
<p>750 N. Greenfield Place, Garner, NC 27529</p>	<p>PREPARED BY: A. Archer</p>	<p>REVIEWED BY:</p>												
<p>SCALE 0 50'</p>	<table border="1"> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	REVISIONS	INIT.	DATE				<table border="1"> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	REVISIONS	INIT.	DATE			
REVISIONS	INIT.	DATE												
REVISIONS	INIT.	DATE												
<p>SEAL NOT VALID UNLESS SIGNED AND DATED</p>		<p>SIGNATURE DATE</p>												
<p>SIG. INVENTORY NO.</p>														

SYSTEM NAME

FIBER OPTIC CABLE



NOTES:

1. PROVIDE IFS MODEL D19130 SHR TRANSCEIVER OR AN APPROVED EQUIVALENT FOR COMPATIBILITY WITH FAYETTEVILLE SIGNAL SYSTEM.
2. ONLY BLUE BUFFER TUBE IS SHOWN IN EXISTING CABLES. FOR REMAINING BUFFER TUBES, EXPRESS OR LEAVE AS IS. CONTACT RESIDENT ENGINEER WITH QUESTIONS REGARDING THESE BUFFER TUBES.

TRANSCEIVER TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING \ ENSURING PROPER TERMINATIONS

NEW INSTALLATION

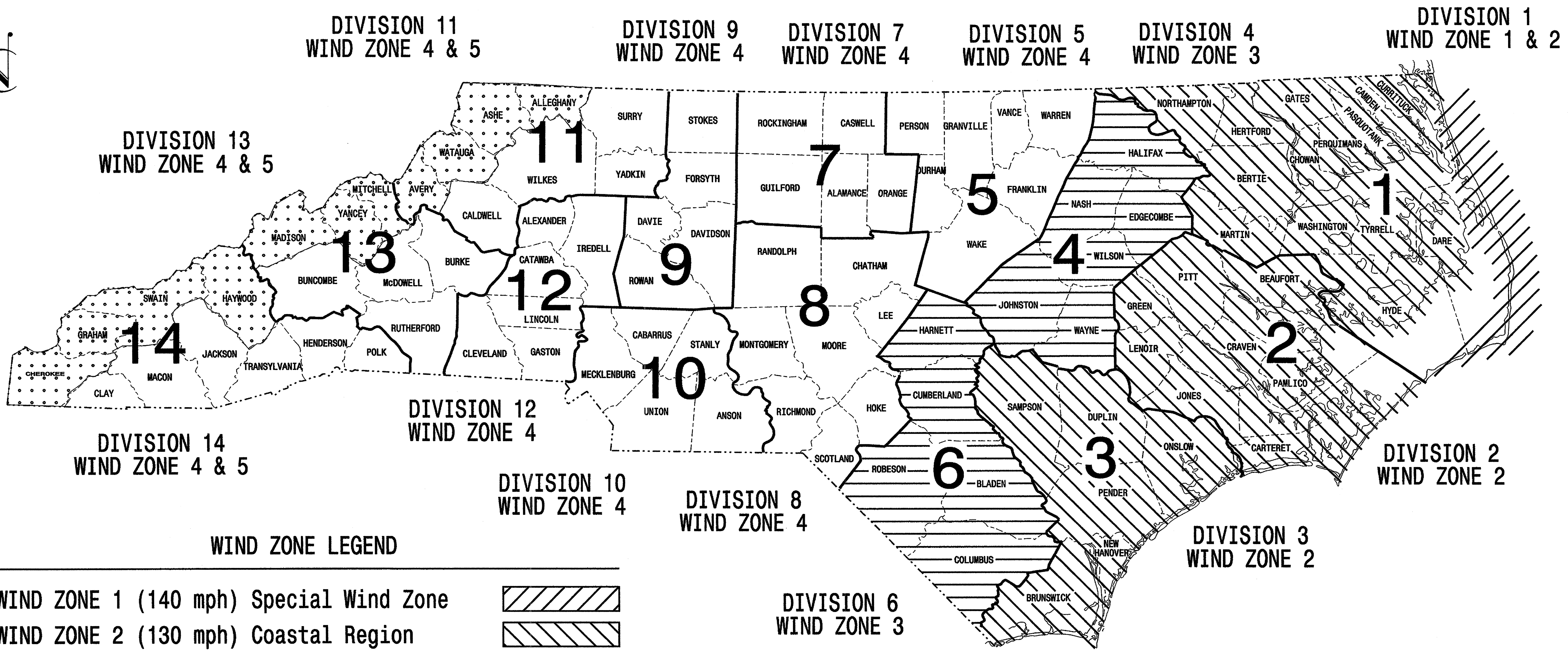
	Splice Plans US 401 at Treetop Dr and US 401 at Shawcroft Rd. Division 6 Cumberland County Fayetteville		
	PLAN DATE: JANUARY 2010 PREPARED BY: A. Archer	REVIEWED BY:	

*****SYTIME*****
*****DON*****
*****USER*****

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

STATE	PROJECT NO.	SHEET NO.
N.C.	W-5000	Sig. 10
F.A. PROJ. NO.		M 1
PROJECT ID. NO.		

STANDARD DRAWINGS FOR METAL POLES



WIND ZONE LEGEND

WIND ZONE 1 (140 mph) Special Wind Zone	
WIND ZONE 2 (130 mph) Coastal Region	
WIND ZONE 3 (110 mph) Eastern Region	
WIND ZONE 4 (90 mph) Central & Mtn. Region	
WIND ZONE 5 (120 mph) Special Wind Zone	

<http://www.ncdot.org/doh/preconstruct/traffic/ITSS/ws/mpoles/poles.html>

Prepared In the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

Designed in conformance with the
2002 Interim to the
4th Edition 2001
AASHTO
Standard Specifications for
Structural Supports for
Highway Signs, Luminaires,
and Traffic Signals

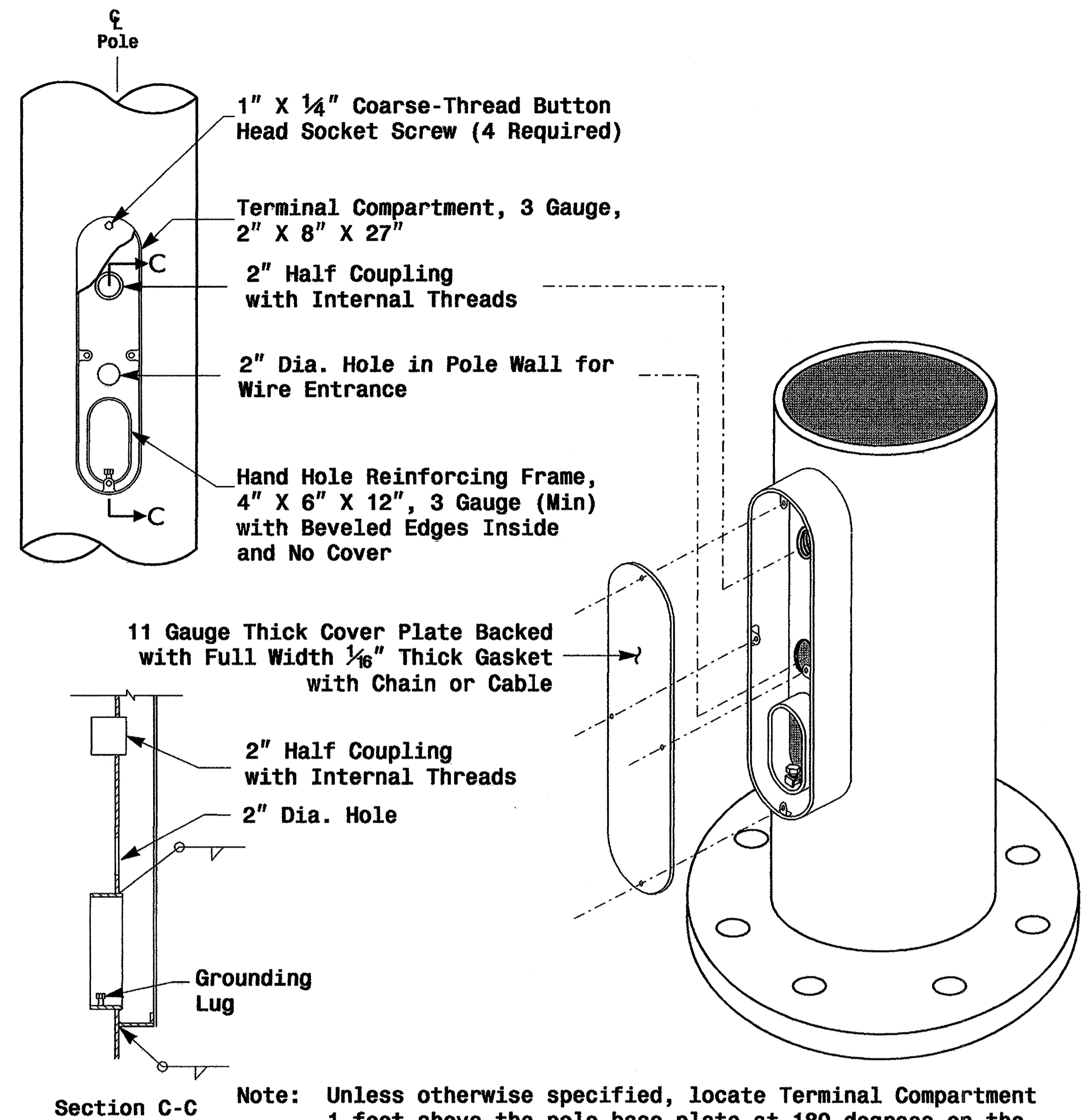
INDEX OF PLANS	
DRAWING NUMBER	DESCRIPTION
M 1	Title Sheet
M 2	Fabrication Details - All Poles
M 3	Fabrication Details - Strain Poles
M 4,5	Fabrication Details - Mast Arm Poles
M 6	Construction Details - Strain Poles
M 7	Construction Details - Foundations
M 8	Standard Strain Poles

NCDOT CONTACTS:
MOBILITY AND SAFETY DIVISION - ITS and SIGNALS UNIT

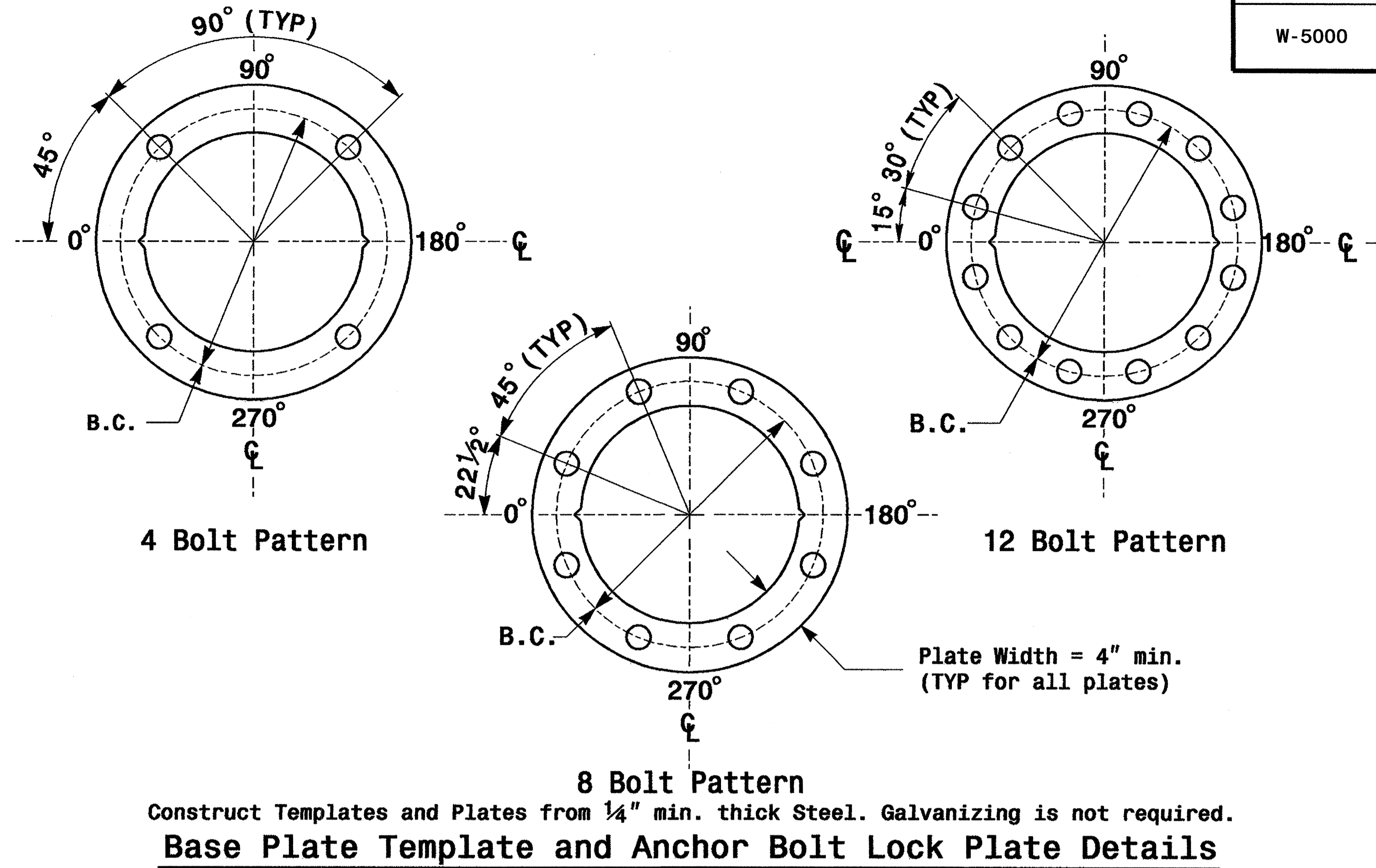
G. A. Fuller, P.E. - State ITS and Signals Engineer
 G. G. Murr, Jr., P.E. - State Signals Engineer
 D. C. Sarkar, P.E. - ITS and Signals Senior Structural Engineer
 C. F. Andrews, Jr. - ITS and Signals Structural Project Engineer
 M. Aslam - ITS and Signals Structural Project Engineer
 N. Bitting, P.E. - ITS and Signals Structural Project Engineer

SEAL

D. Sarkar 7.26.2009
 SIGNATURE DATE



Terminal Compartment Detail



Base Plate Template and Anchor Bolt Lock Plate Details

MFG _____ MFG. DATE: MM/YY _____	MFG _____ MFG. DATE: MM/YY _____
SHAFT D/T/L/Y _____	SECTION D/T/L/Y _____
ARM-A D/T/L/Y _____	NCDOT STANDARD _____
ARM-B D/T/L/Y _____	
A.B. DIA./B.C./L/Y _____	
NCDOT STANDARD _____	

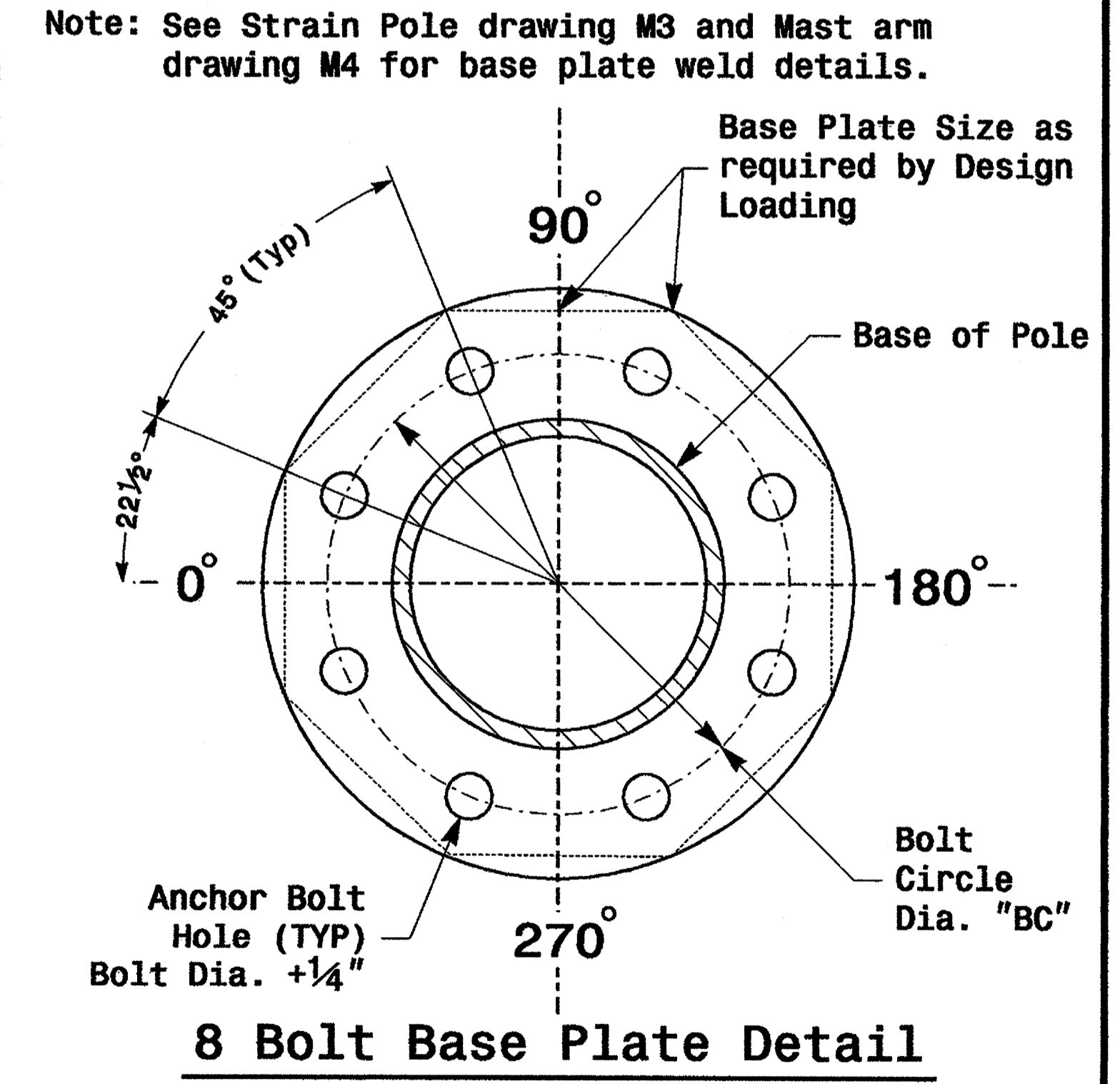
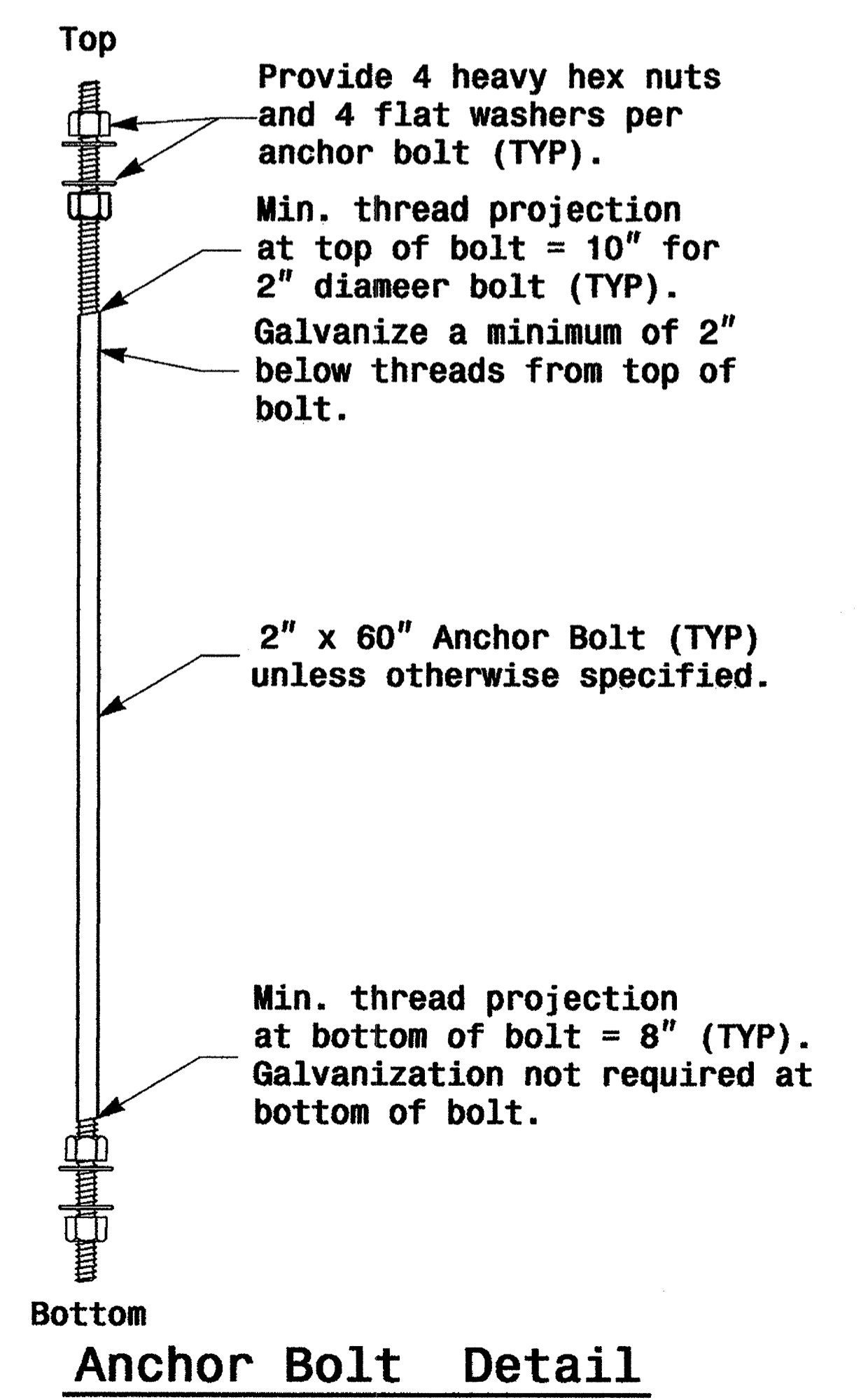
Arm I.D. Tag
(Provide on each section of a multi-section mast arm)

Shaft I.D. Tag
(Provide on Strain Poles and Mast Arm Poles)

Notes:

- 1) D= Diameter, T= Thickness, L= Length, Y= Yield Strength
- 2) A.B. = Anchor Bolt
- 3) B.C. = Bolt Circle of Anchor Bolts
- 4) If Custom Design, use "NCDOT STANDARD" line for plan pole I.D.
- 5) See drawing M4 for mounting positions of I.D. tags.

Identification Tag Details



Prepared in the Office of:

Typical Fabrication Details Common To All Metal Poles

PLAN DATE: May 2005 REVIEWED BY: C.F. Andrews

PREPARED BY: P.L. Alexander REVIEWED BY: A.W. Esposito

REVISIONS: _____ INIT. DATE

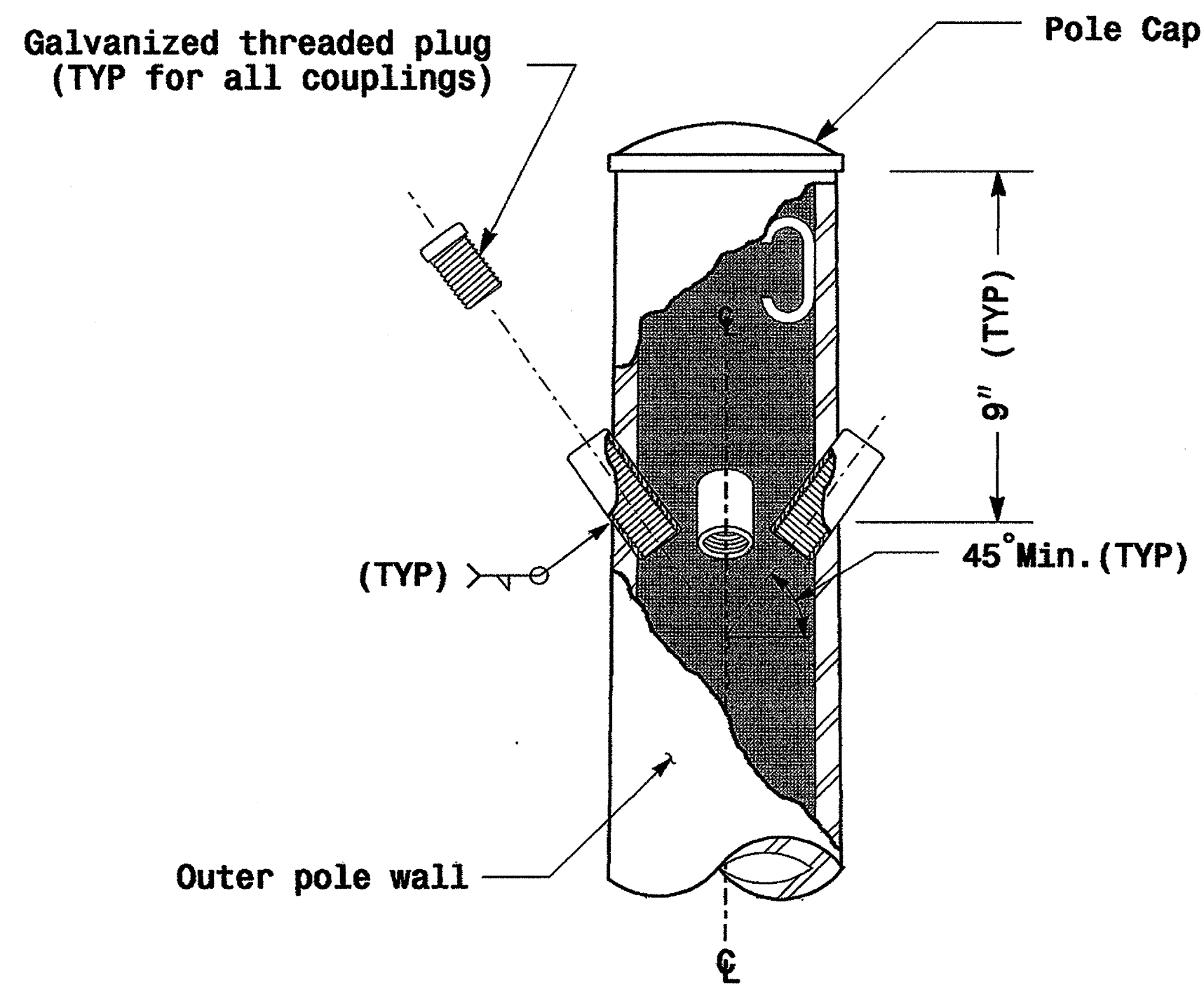
SCALE: 0 NA NONE

SIGNATURE: *D. Sarker* 9.2.2005 DATE

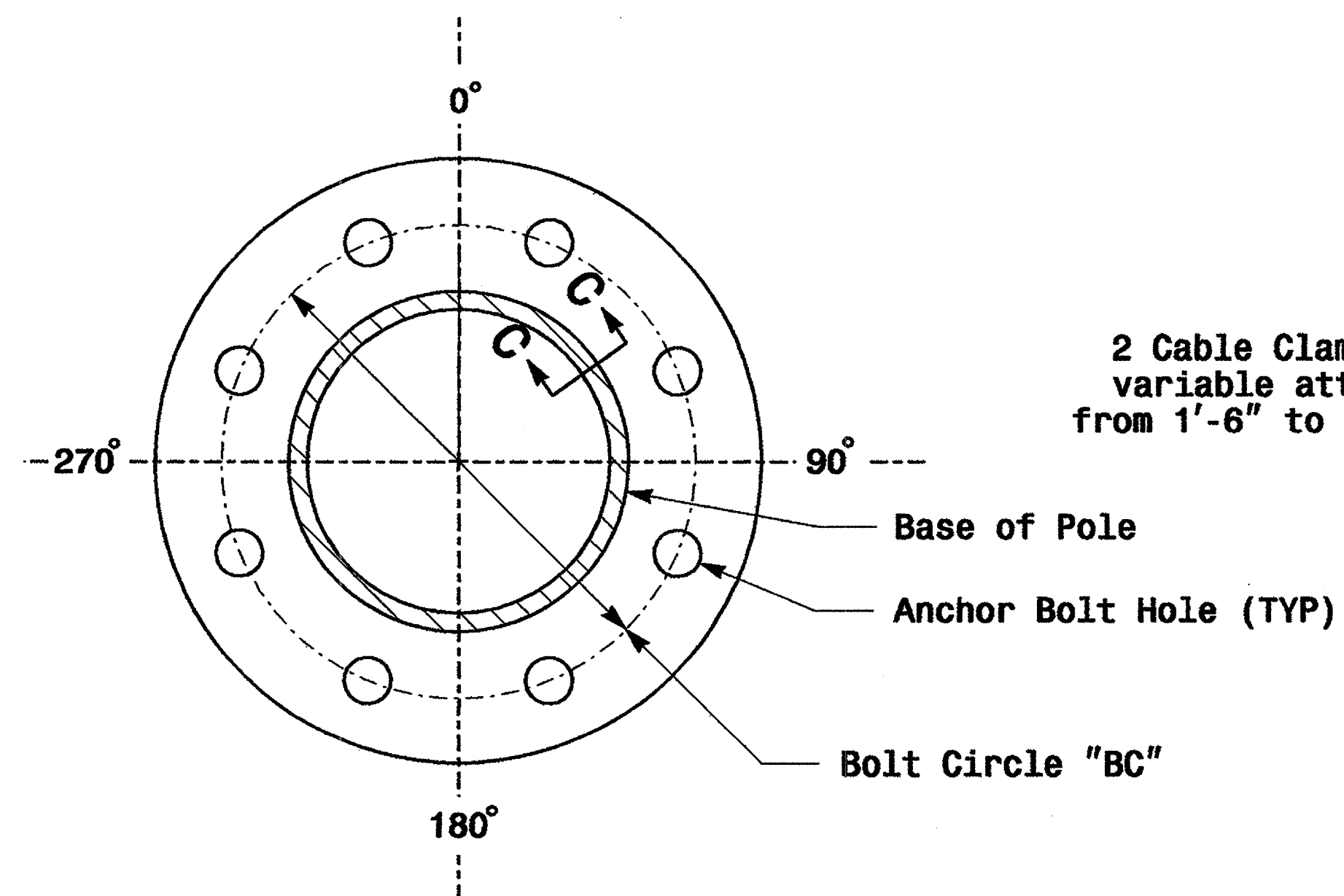
SIG. INVENTORY NO. _____

Fabrication Details - All Poles

01-SEP-2005 18:22 C:\pwork\mtr\pole\mtr\pole.standards\004.mtr\mtr.dgn

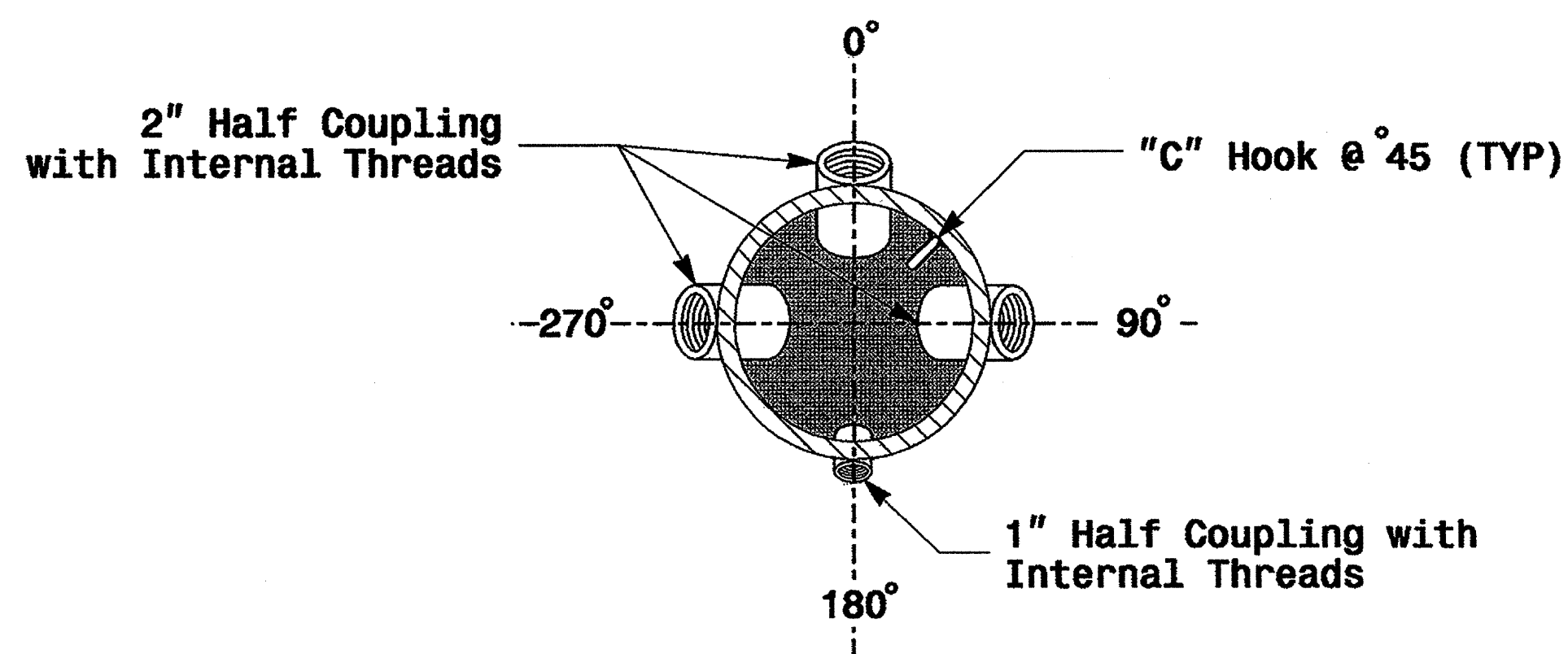
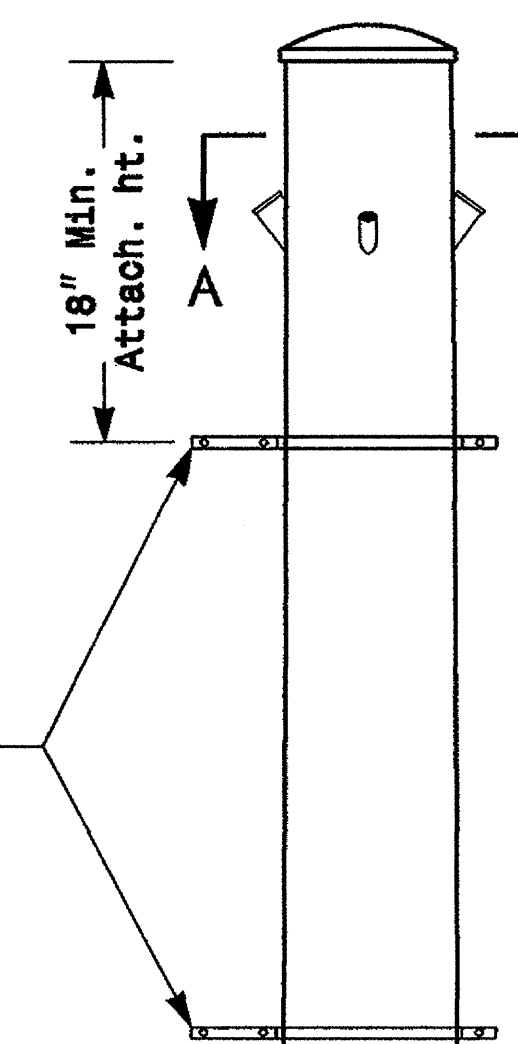


Cable Entrances at Top of Pole



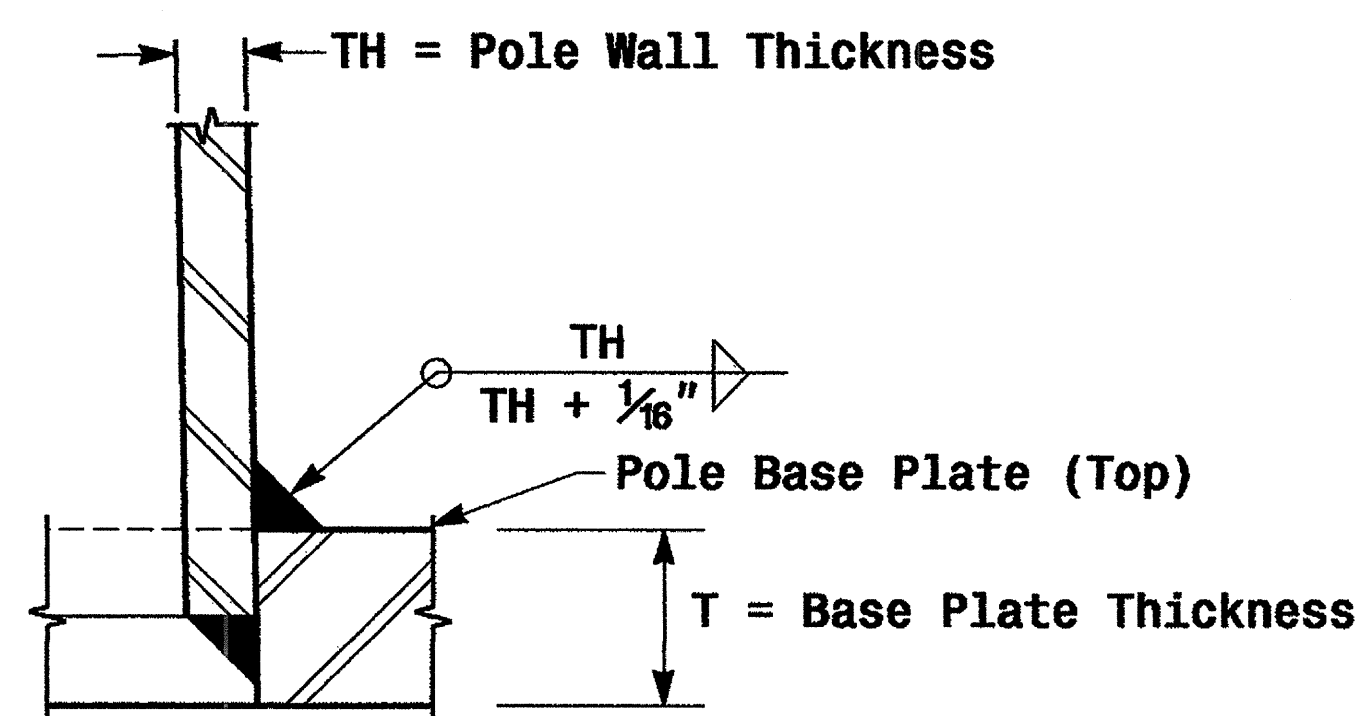
Section B-B
(See drawing M2)
Pole Base Plate

2 Cable Clamps designed for variable attachment heights from 1'-6" to 10' blow the top of the pole.



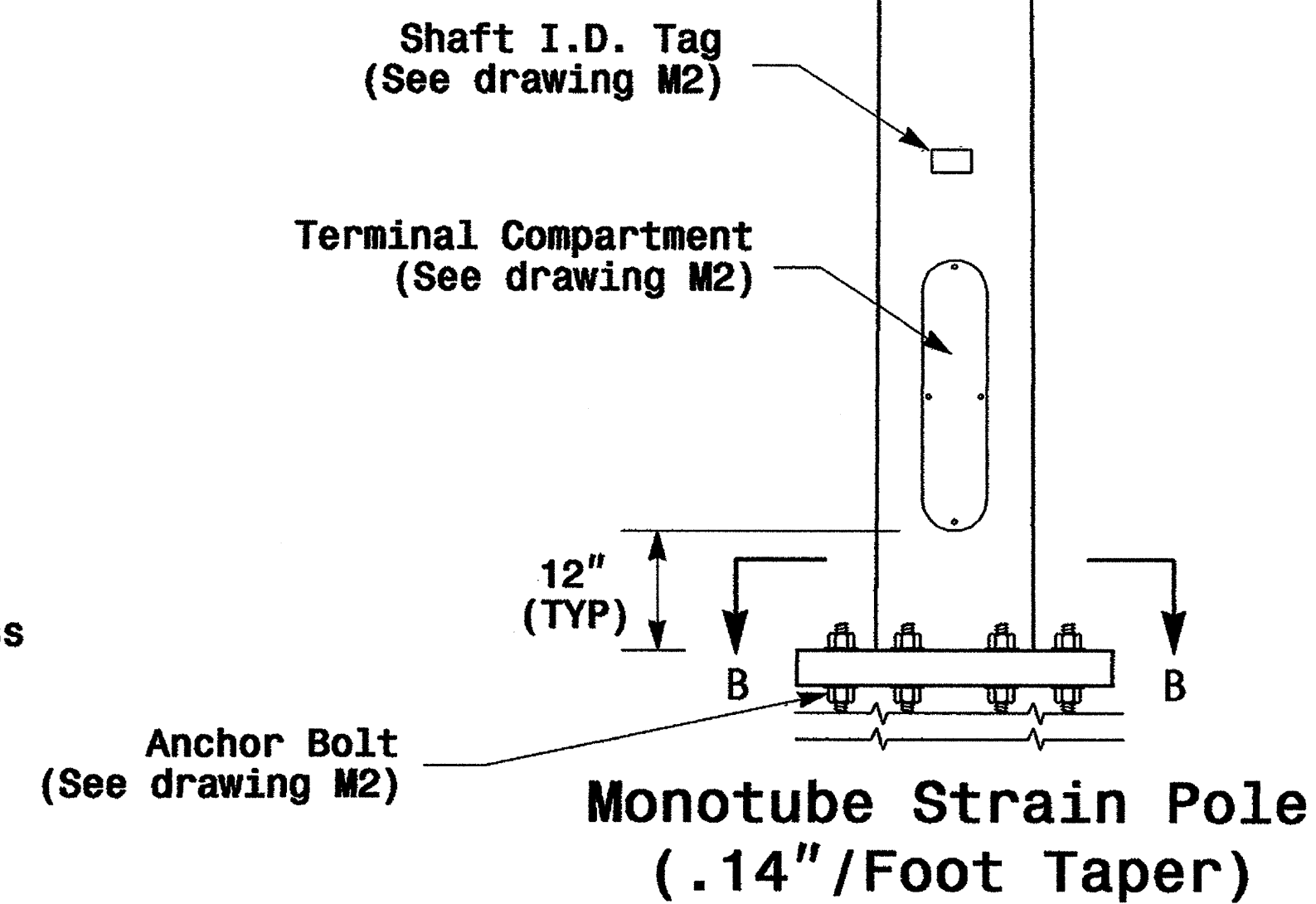
Section A-A

Radial Orientation for Factory Installed Accessories at Top of Pole



Section C-C

Socket Connection Weld Detail

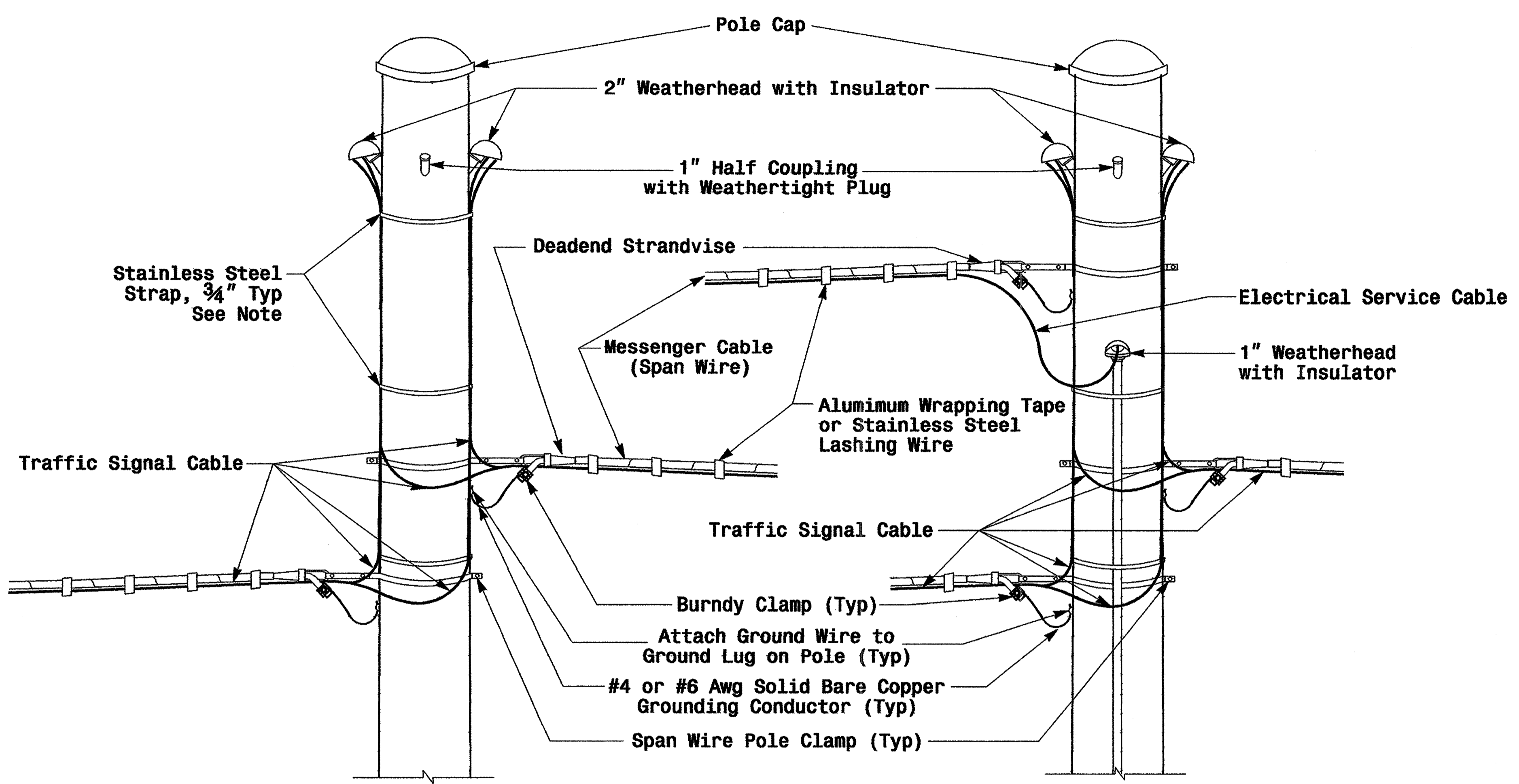


Fabrication Details - Strain Poles

01-SEP-2005 14:07
C:\Users\palexander\Documents\2004 metal pole stender.dwg
palexander

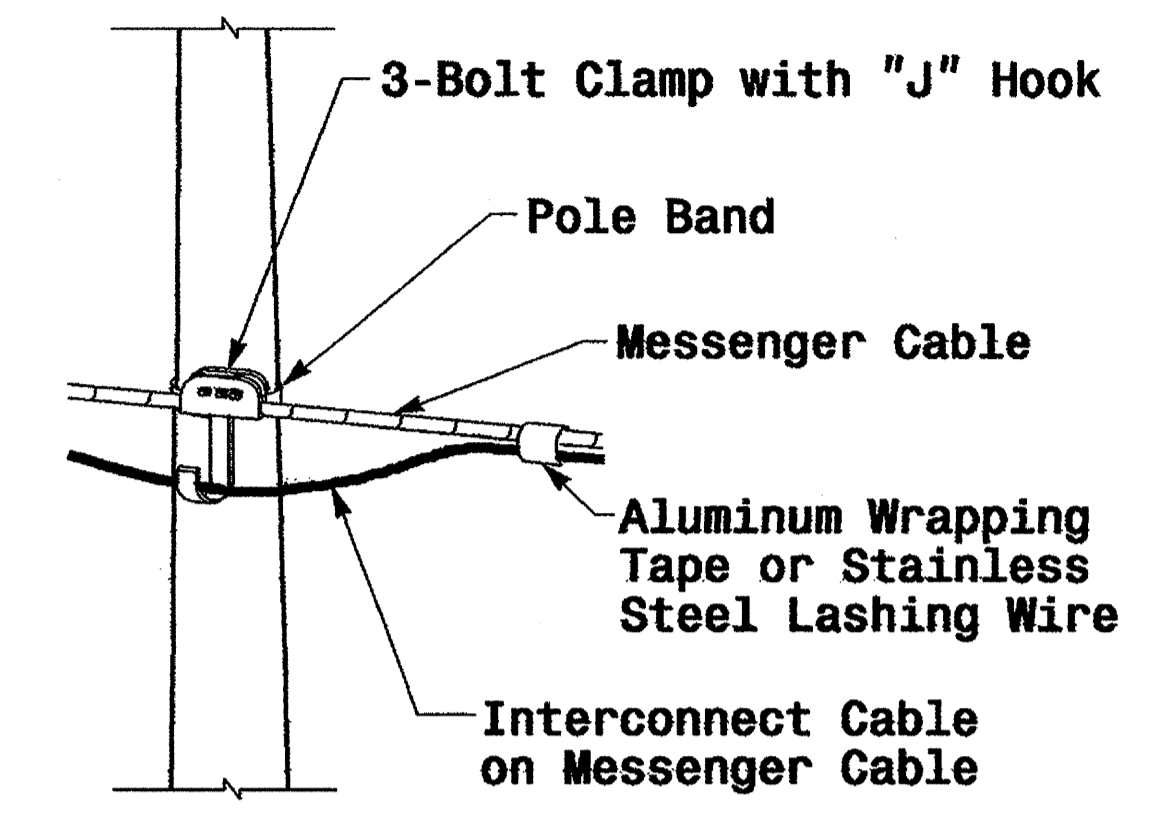
	Typical Fabrication Details For Strain Poles		
	PLAN DATE: May 2005 PREPARED BY: P.L. Alexander	REVIEWED BY: C.F. Andrews REVIEWED BY: A.M. Esposito	
REVISIONS: _____ INIT. DATE _____		SIGNATURE: <i>D. Sarker</i> DATE: 9.2.2005 SIG. INVENTORY NO. _____	

Construction Details - Strain Poles

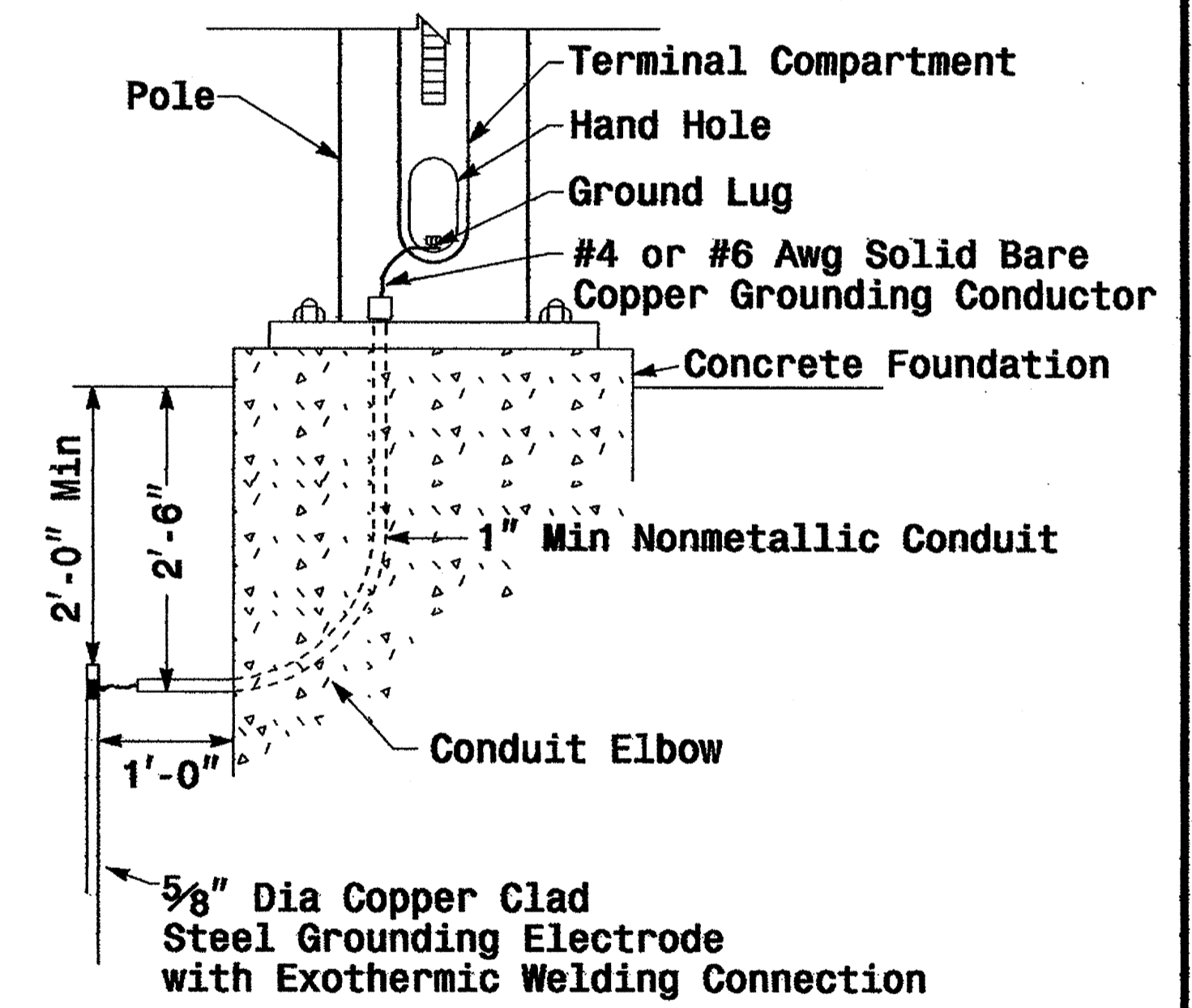


Note: Strap all signal cables to the side of the pole with 3/4" stainless steel straps when the distance between the spanwire attachment clamp and the weatherheads exceeds 36"

Strain Pole Attachments



Attachment of Cable to Intermediate Metal Pole



Metal Pole Grounding Detail

01-SEP-2005 16:13
w:\p04\es-un1\workgroups\2004 metal pole standard\2004 m6.dgn
p04ecruder

	Construction Details Strain Poles		
	PLAN DATE: May 2005 PREPARED BY: C.F. ANDREWS	REVIEWED BY: P.L. ALEXANDER REVIEWED BY: D.C. SARKAR	
SCALE 0 NA NONE	SIGNATURE: <i>P.L. Alexander</i> 9-1-05 DATE		SEAL SIG. INVENTORY NO.

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

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

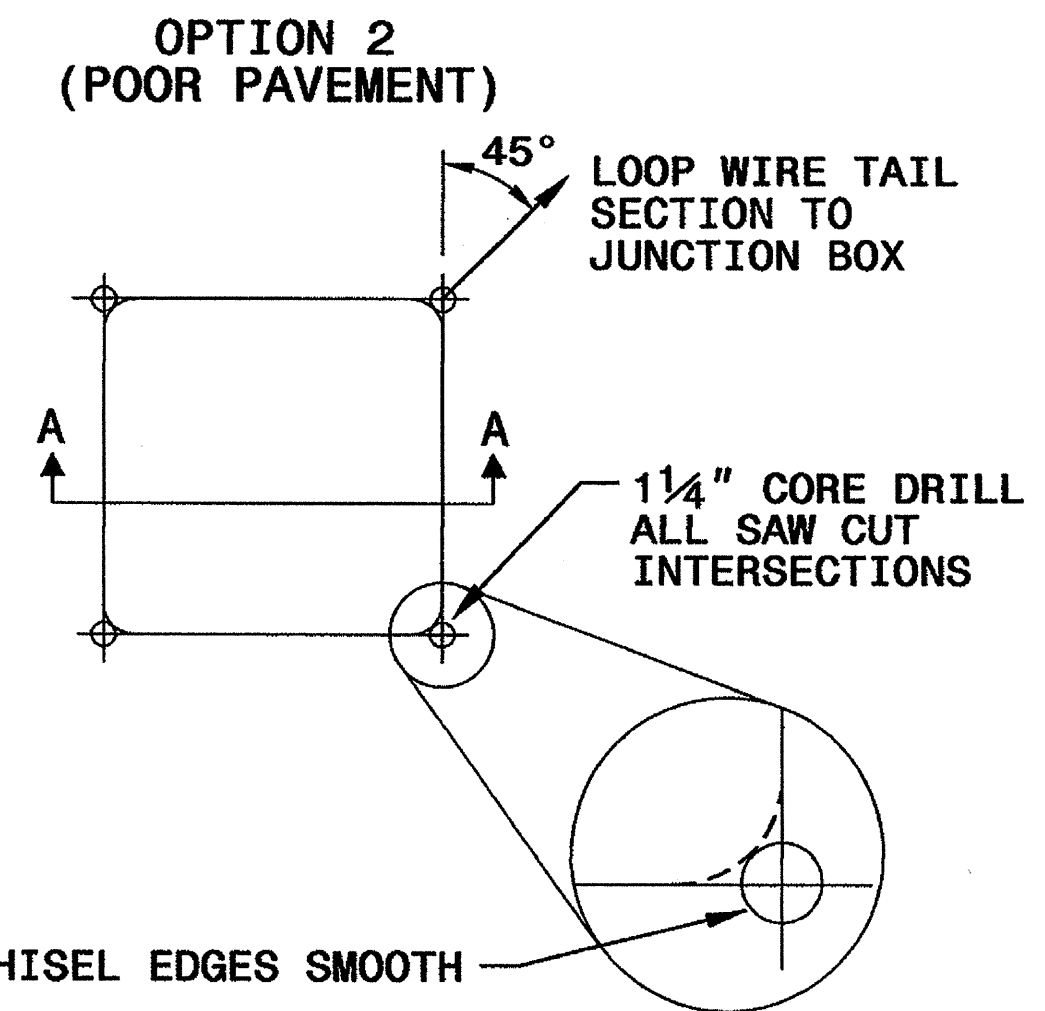
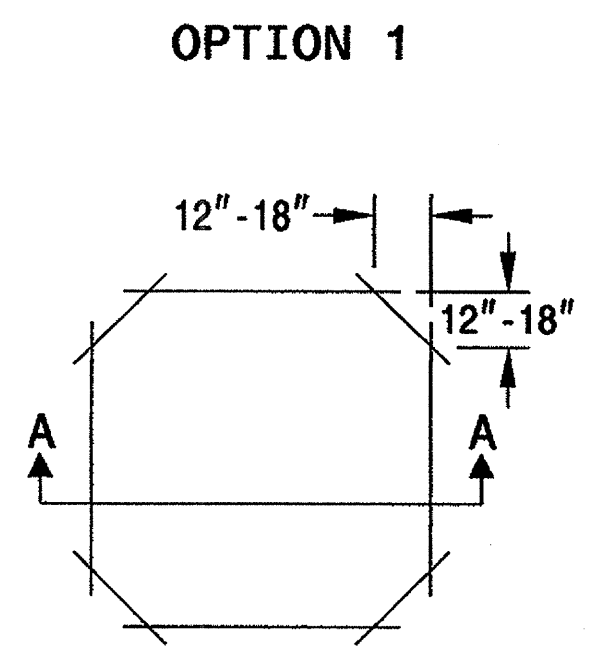
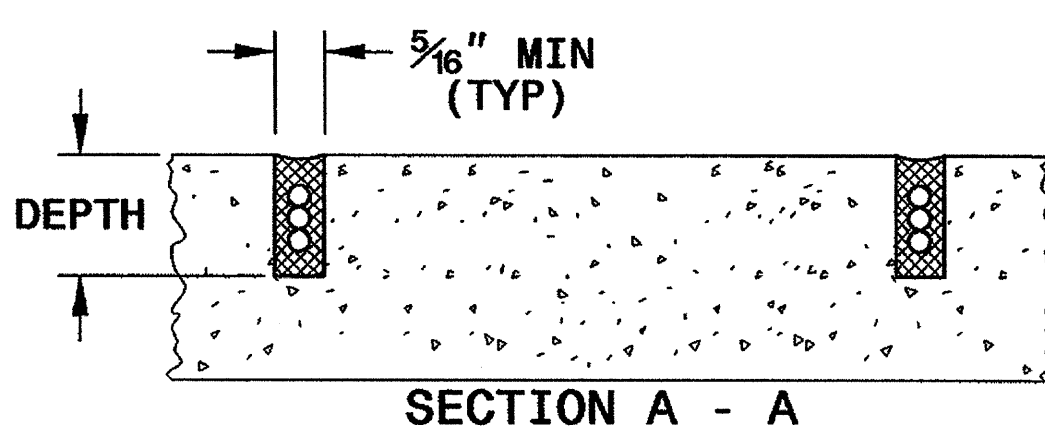
SHEET 1 OF 3
1725D01

CONVENTIONAL 4-SIDED LOOP

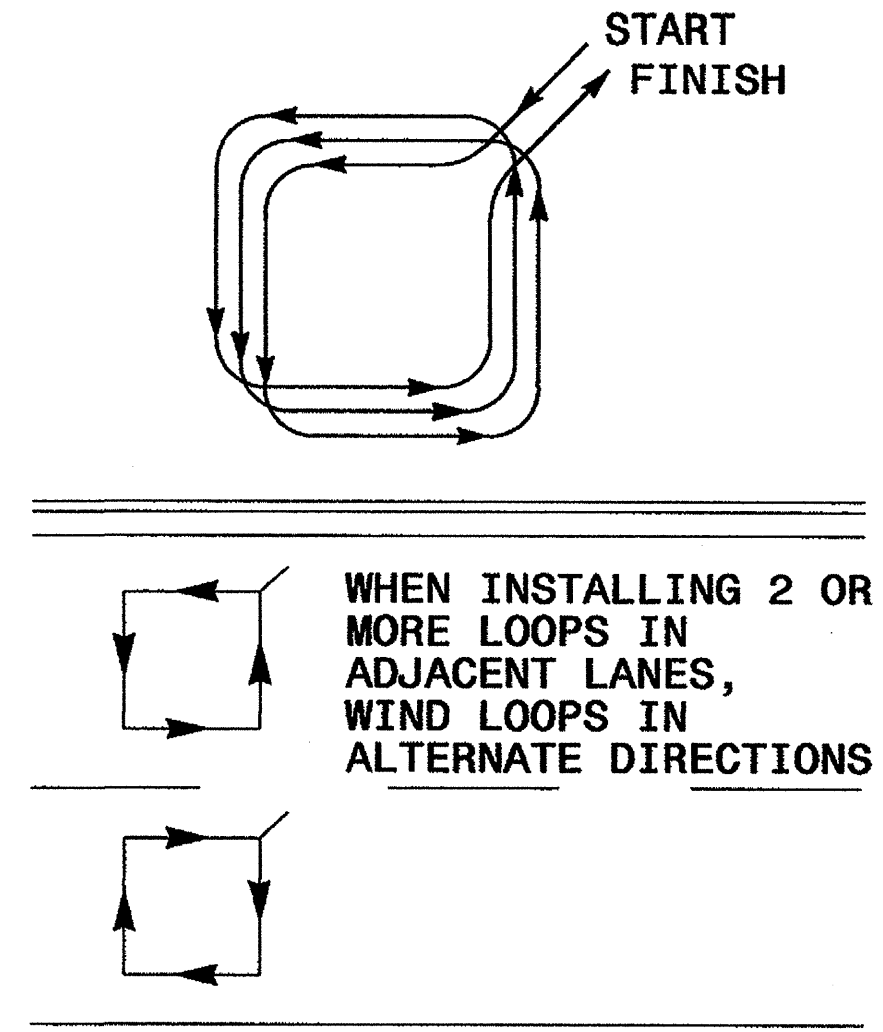
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

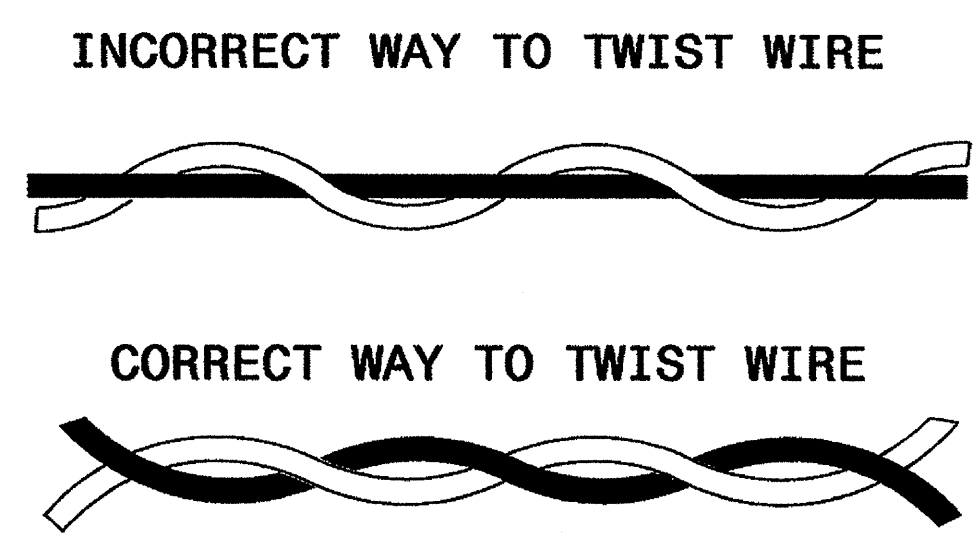
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

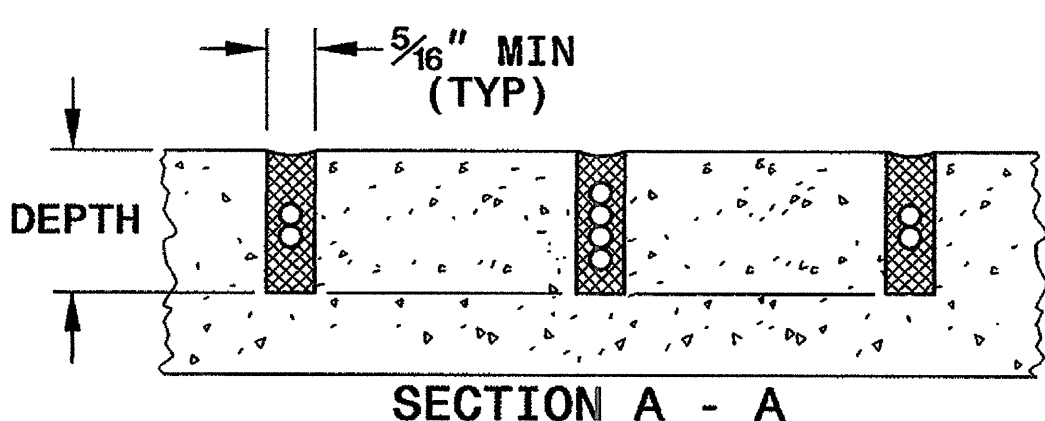
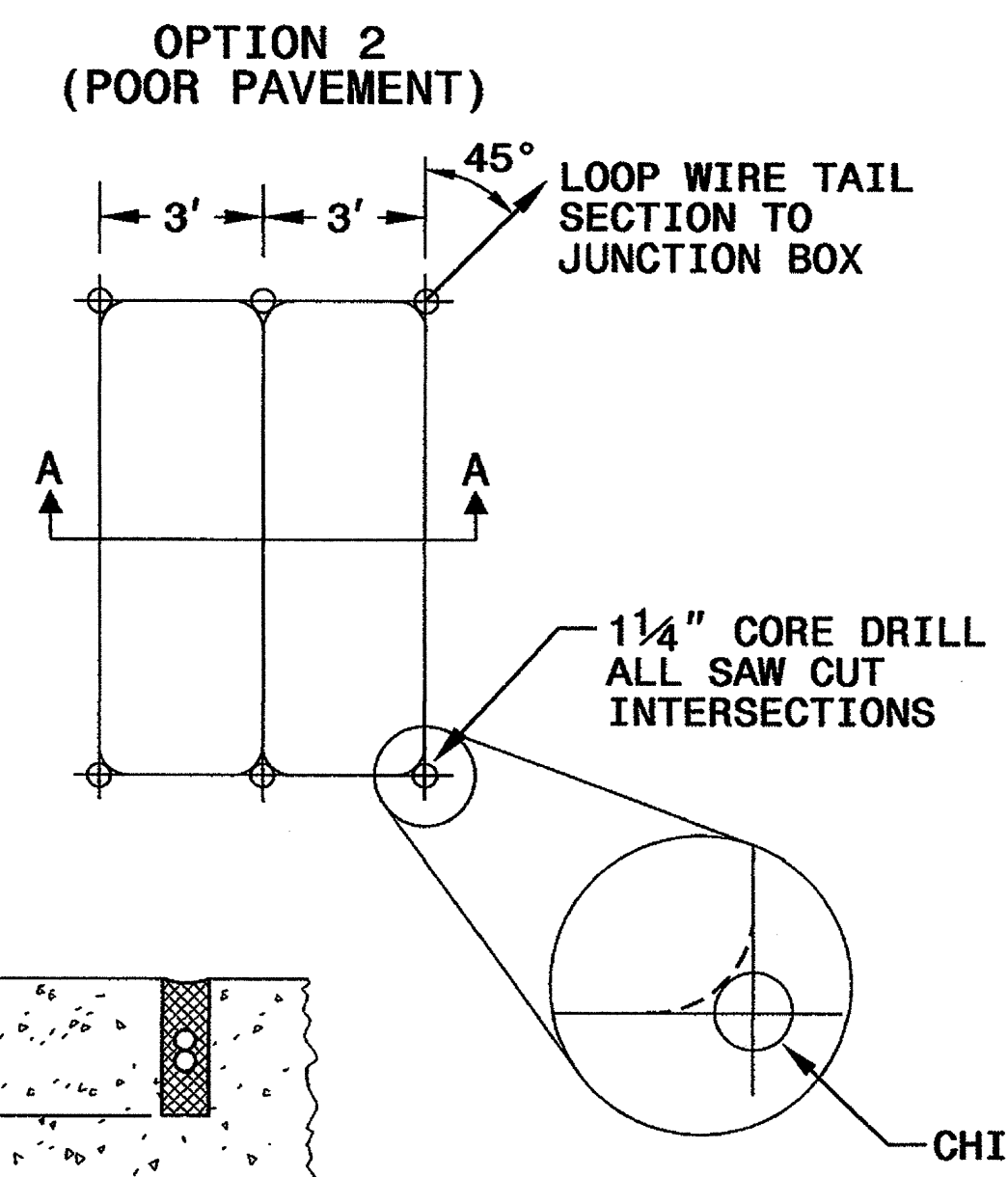
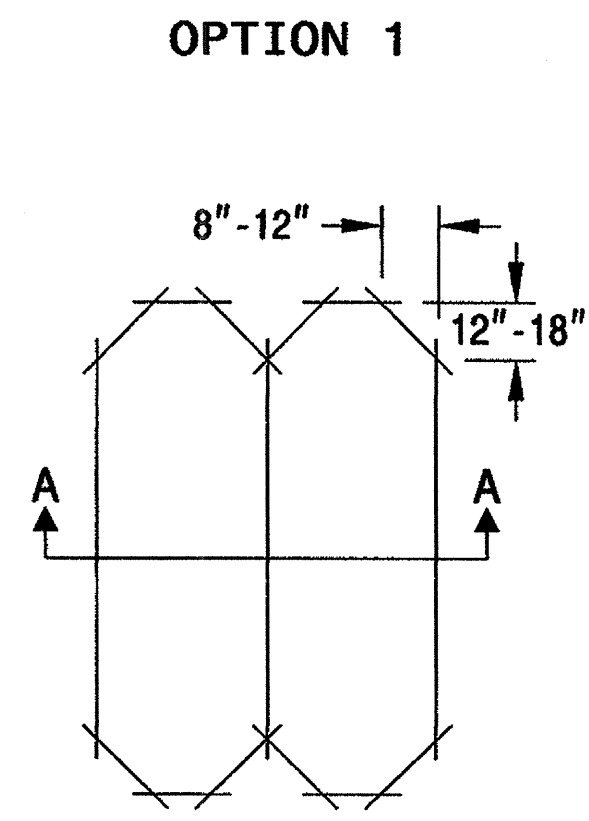


NOTES

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.

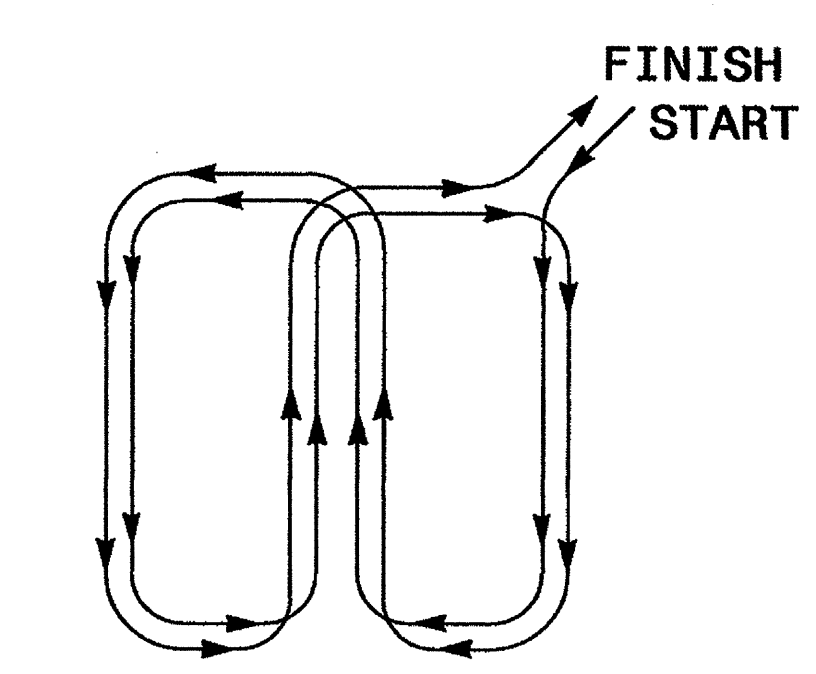
QUADRUPOLE LOOP

SAW CUT OPTIONS



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:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

SIGNATURE: *Michael J. Dean* DATE: 11/24/08

24-Nov-2008 09:28
F:\asw-standard\p1cte sheets\1725D01_mj2407.dgn
20111116

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

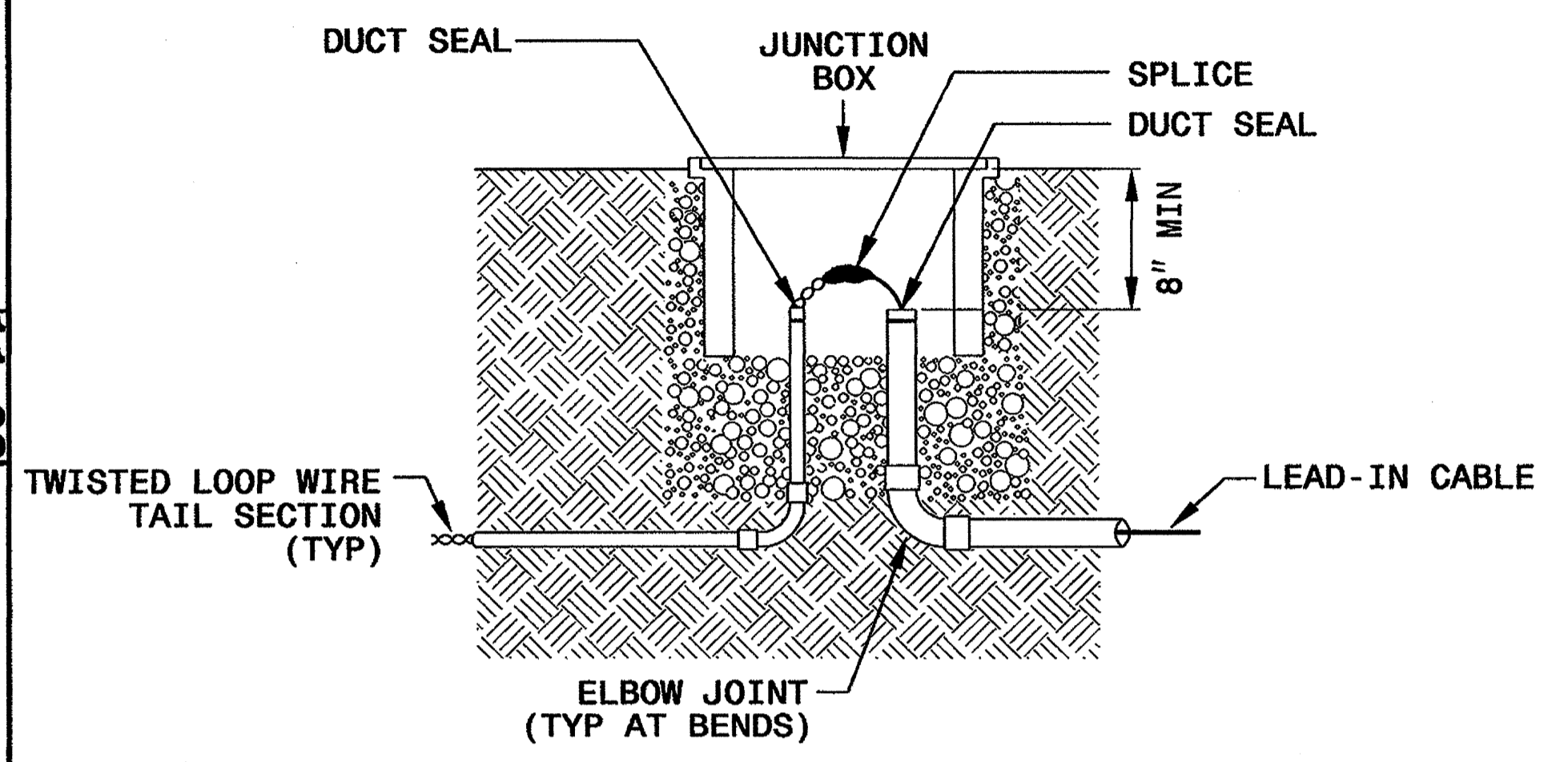
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

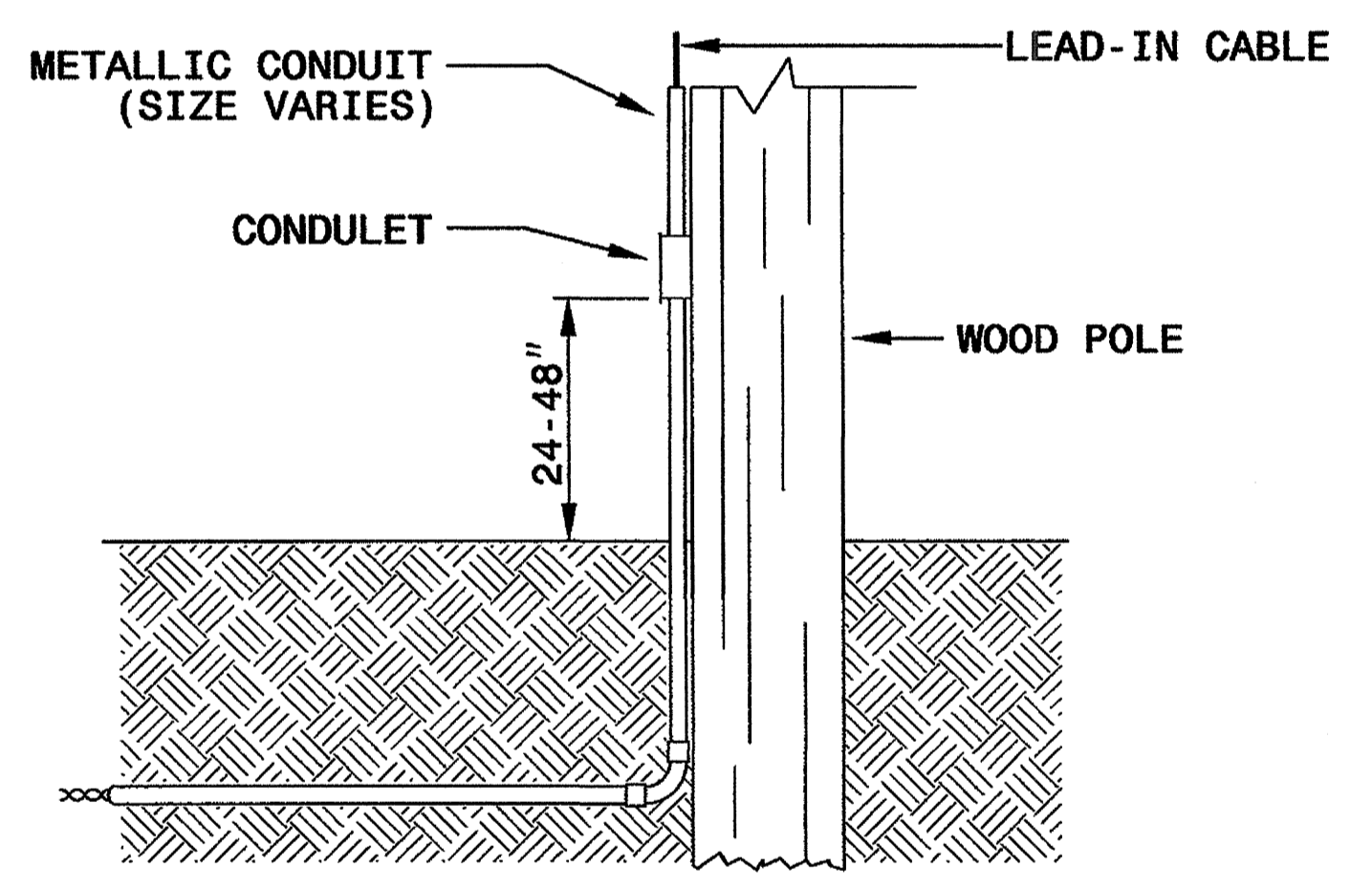
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

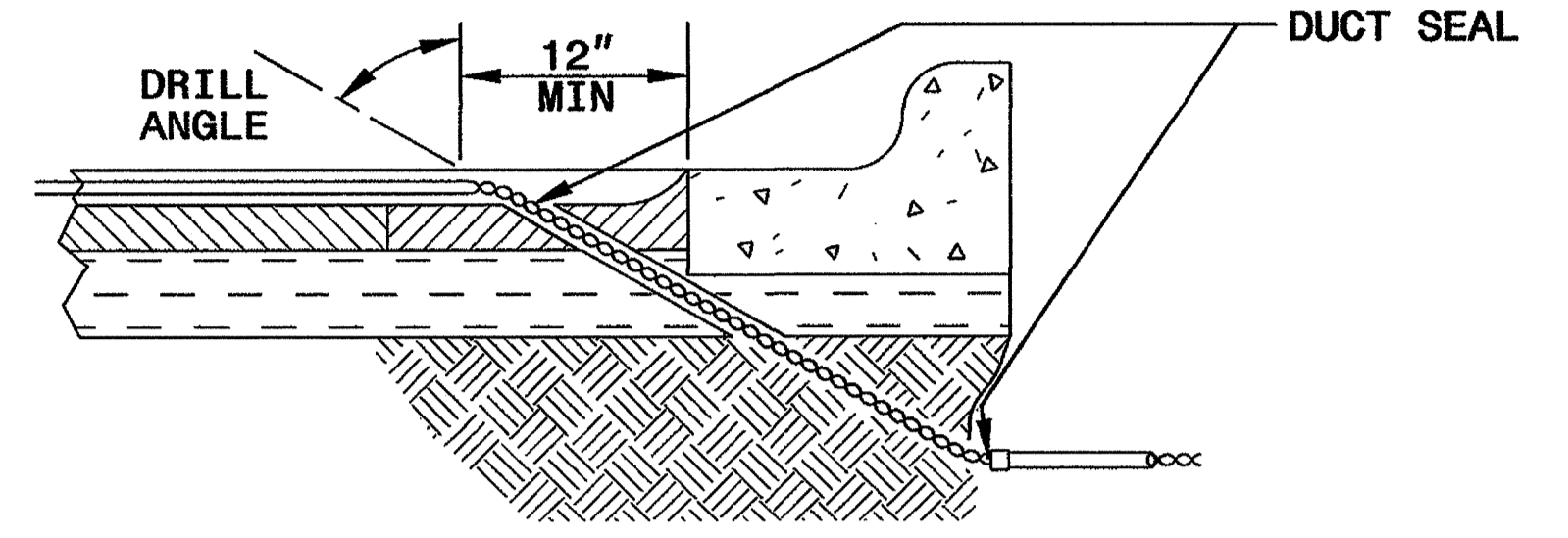


NOTE

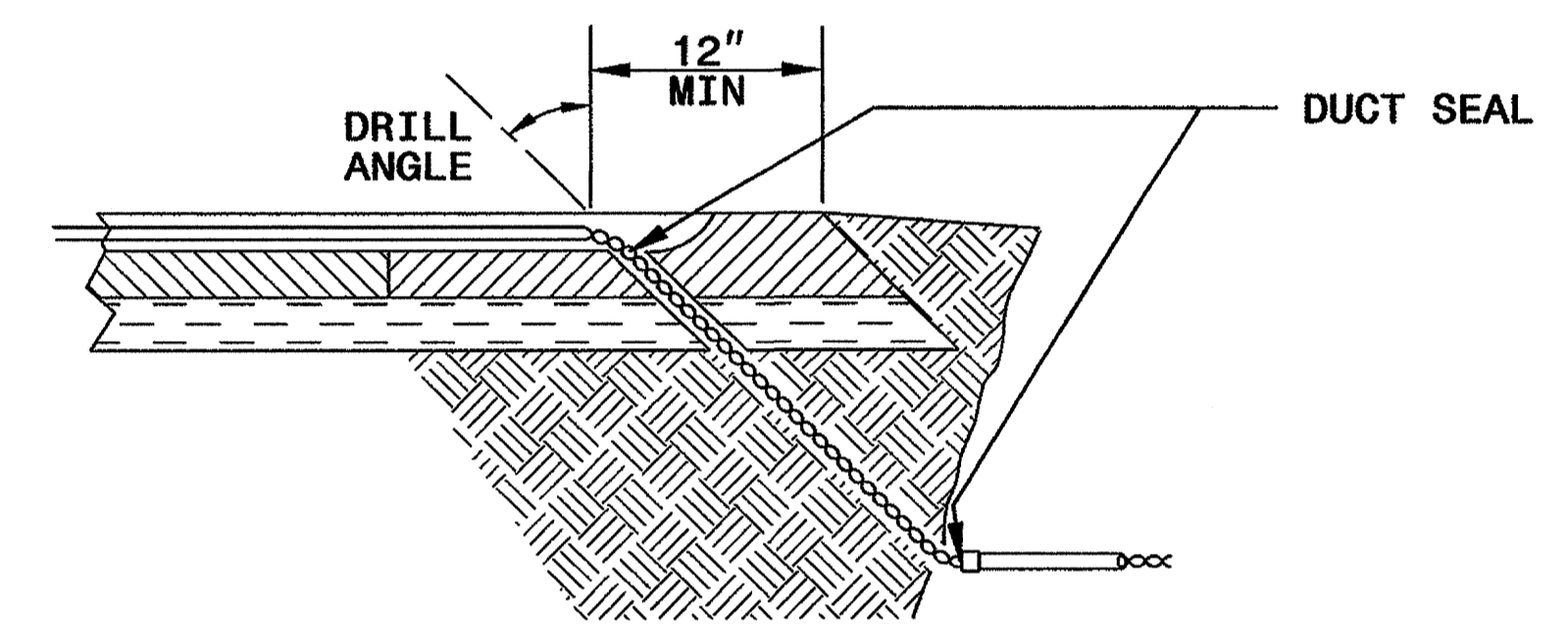
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

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.

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 RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
 Garner, NC 27529

SEAL

Milton I. Dean 11/24/08
 SIGNATURE DATE

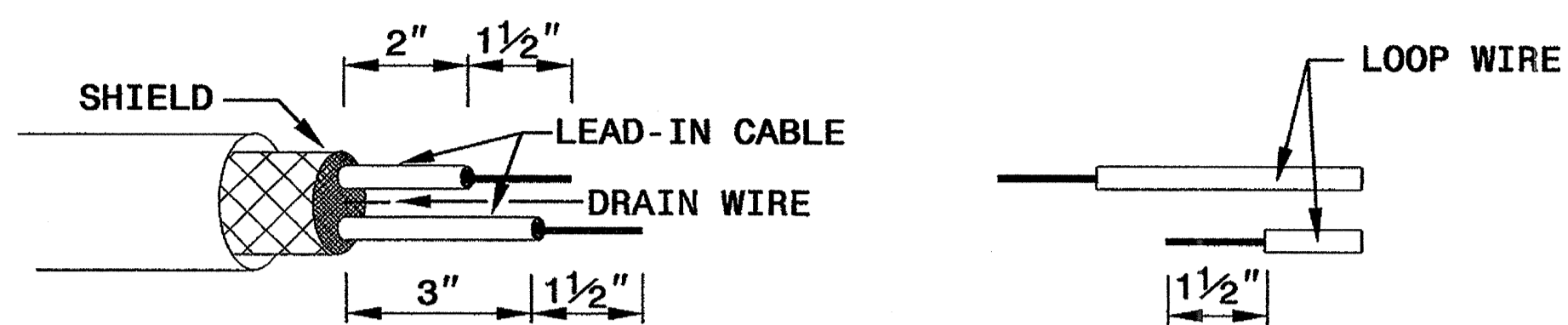
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

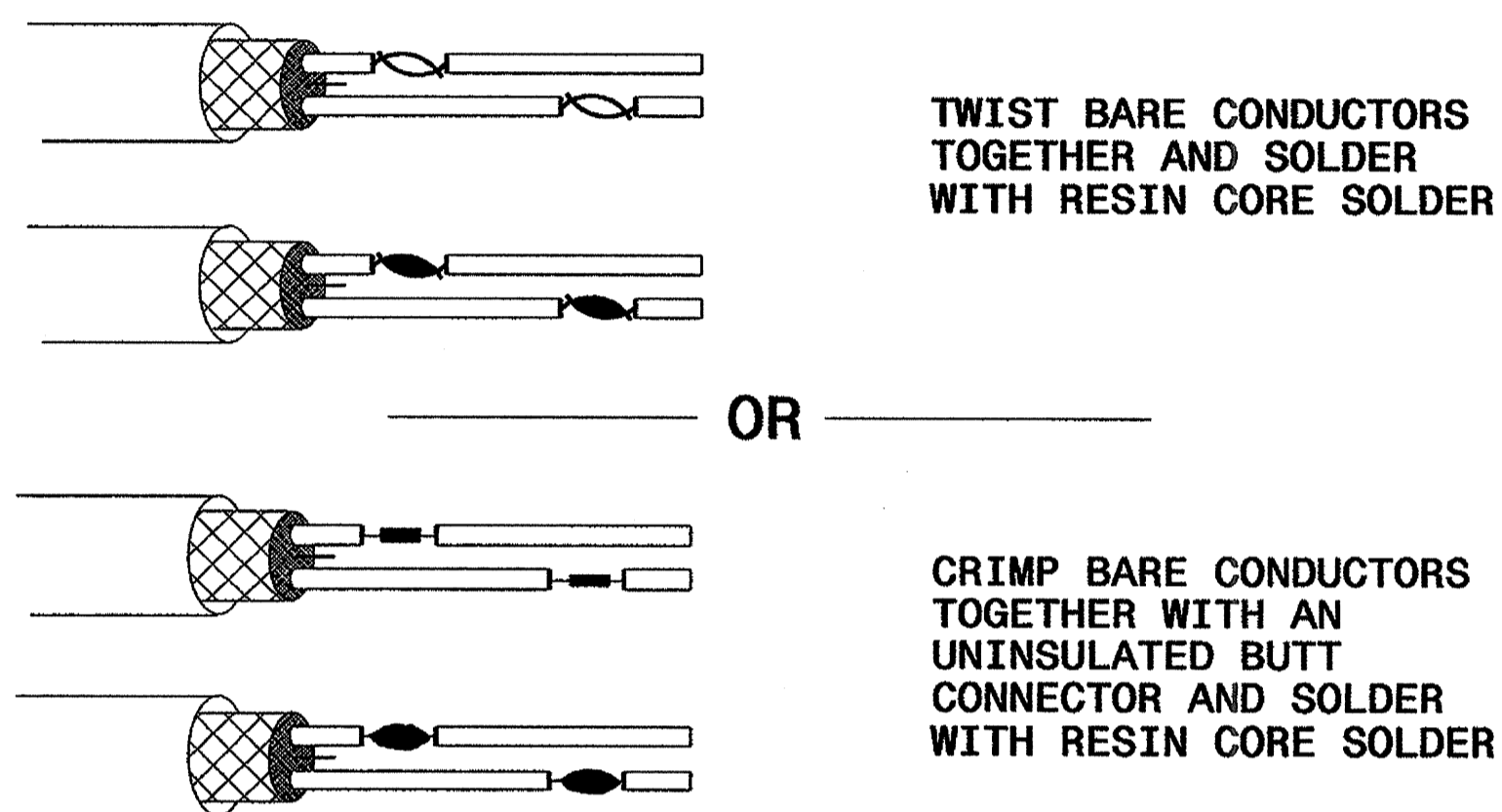
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE



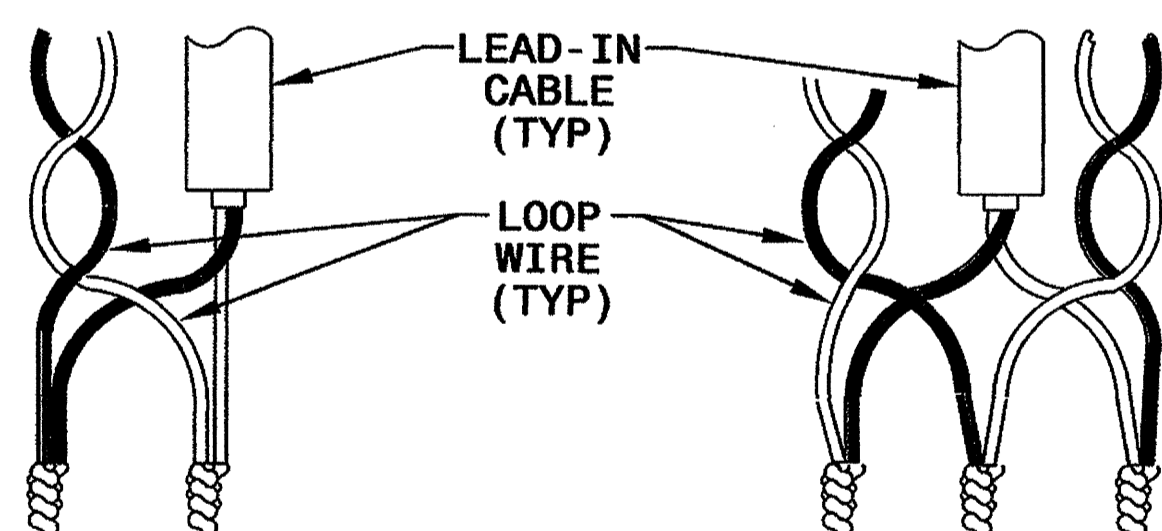
STEP 2. CONNECT AND SOLDER



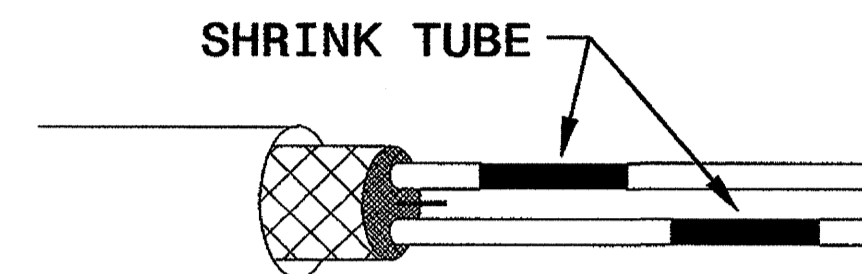
BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS

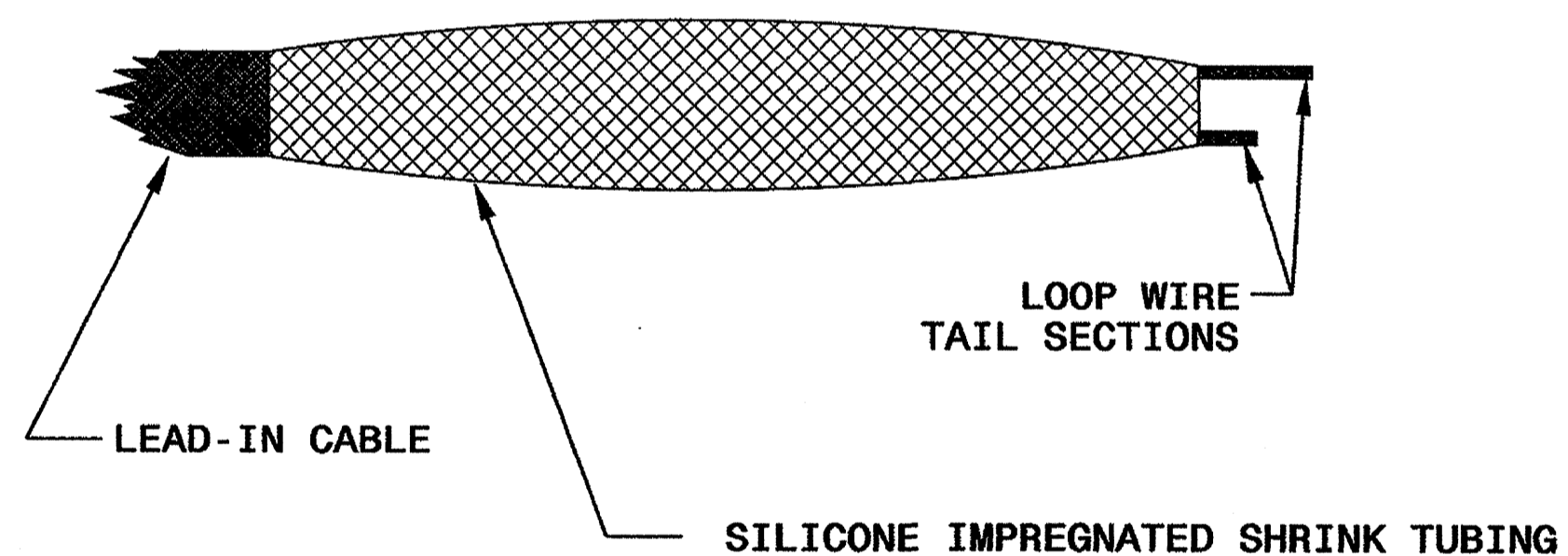
SINGLE CONNECTION SERIES CONNECTION



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



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

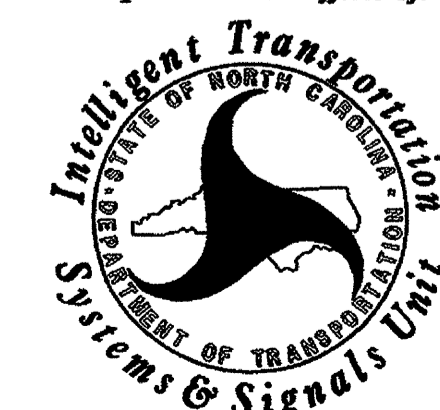
11-08

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:



750 N. Greenfield Parkway
Garner, NC 27529

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Milton I. Dean 11/24/08
SIGNATURE DATE