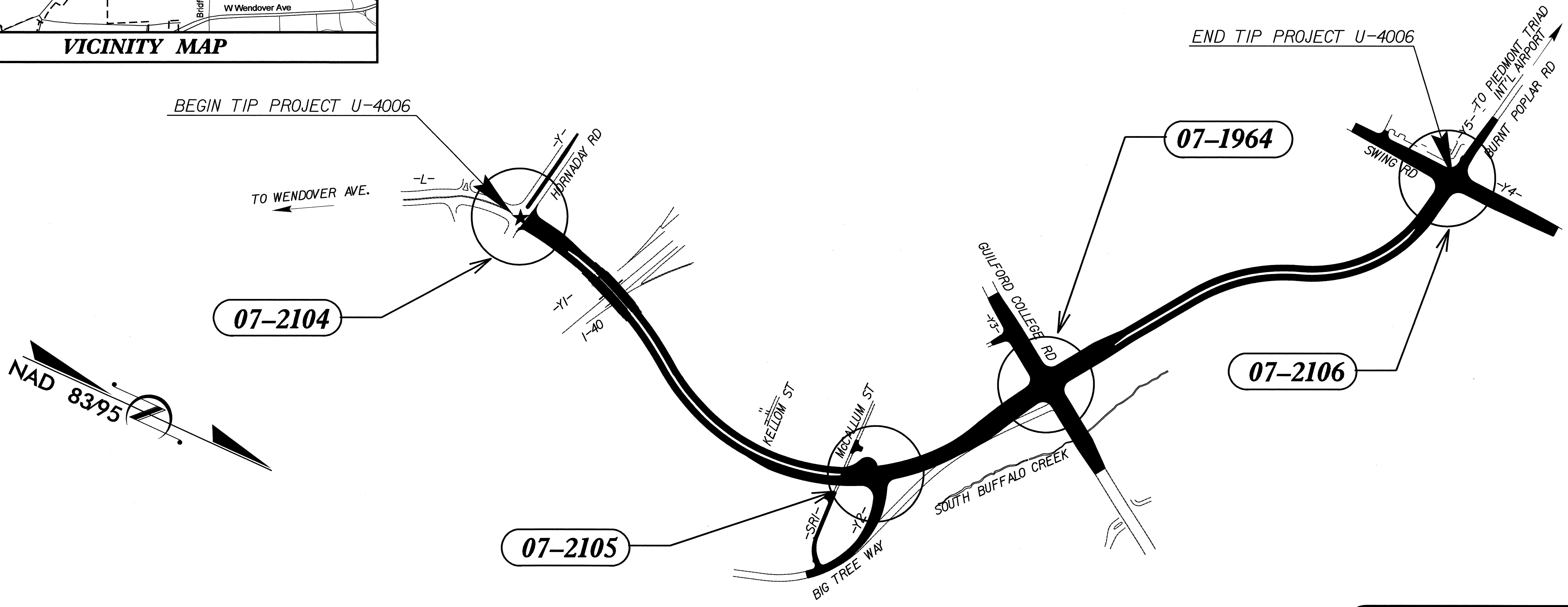
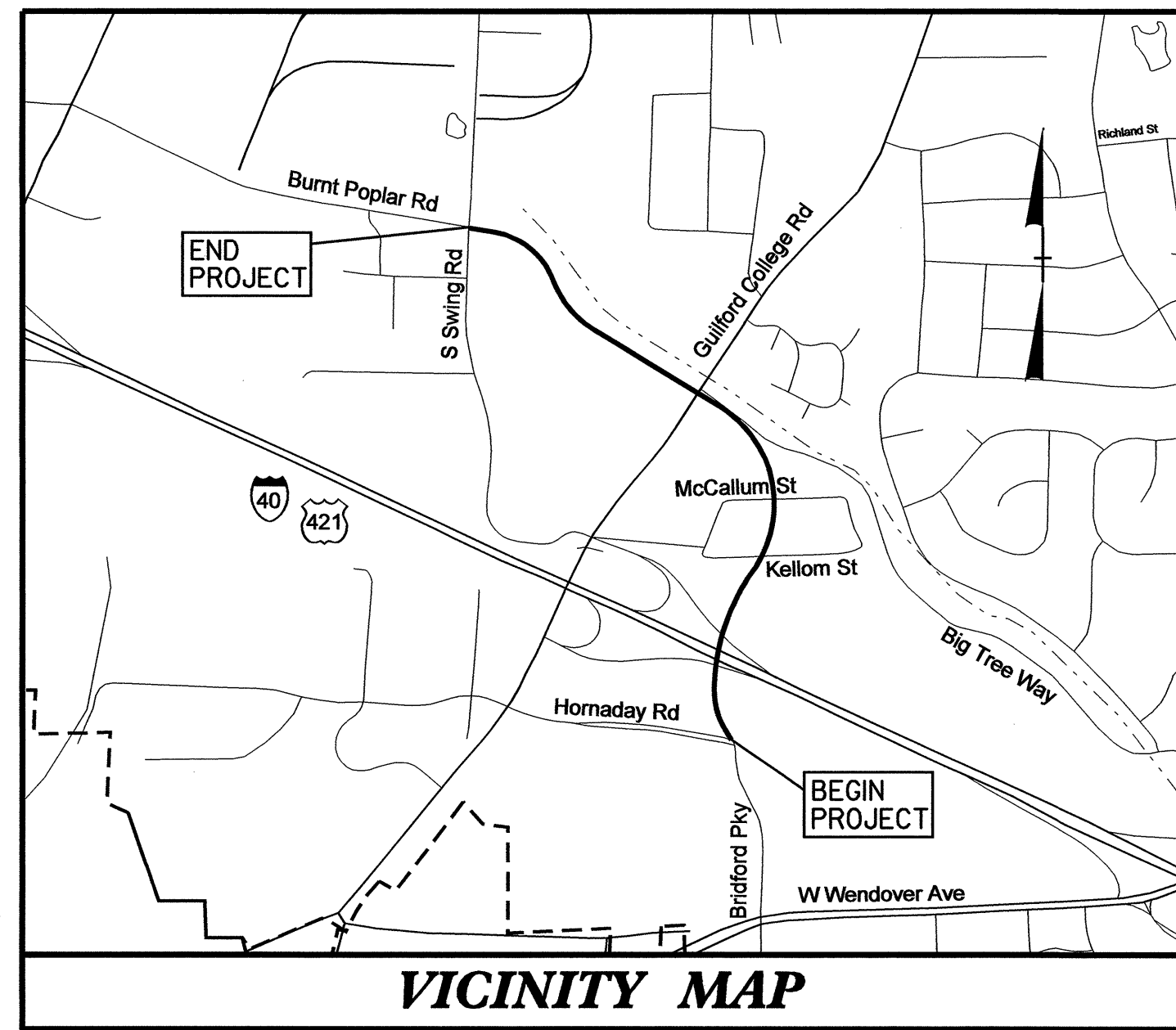


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

LOCATION: SR 4126 (BRIDFORD PKWY) FROM HORNADAY RD TO SR 1607 (BURNT POPLAR RD) AND SWING RD IN GREENSBORO
TYPE OF WORK: TRAFFIC SIGNALS, COMMUNICATION CABLE ROUTING DETAILS

Project: U-4006



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. 2-4	07-2104	SR 4126 (Bridford Parkway) at Hornaday Road	
Sig. 5-10	07-1964	SR 4126 (Bridford Parkway) at SR 1546 (Guilford College Road)	
Sig. 11-12	07-2105	SR 4126 (Bridford Parkway) at Big Tree Way	
Sig. 13-14	07-2106	SR 1609 (Swing Road) at SR 4126 (Bridford Parkway)/SR 1607 (Burnt Poplar Road)	
Sig. 15-17	N/A	Inductive Detection Loops Details	
Sig. 18-31	N/A	Communication Cable Routing Details	

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT
Contacts:
Robert J. Ziemba, P.E. - Central Region Signals Project Engineer
George C. Brown, P.E. - Signal Equipment Design Engineer
I. Neil Avery - Signal Communications Project Engineer

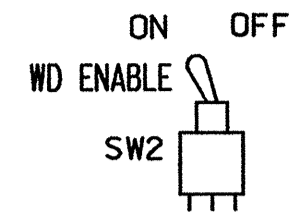
Prepared In the Office of:
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY AND SAFETY
DIVISION

750 N. Greenfield Parkway, Garner, NC 27529

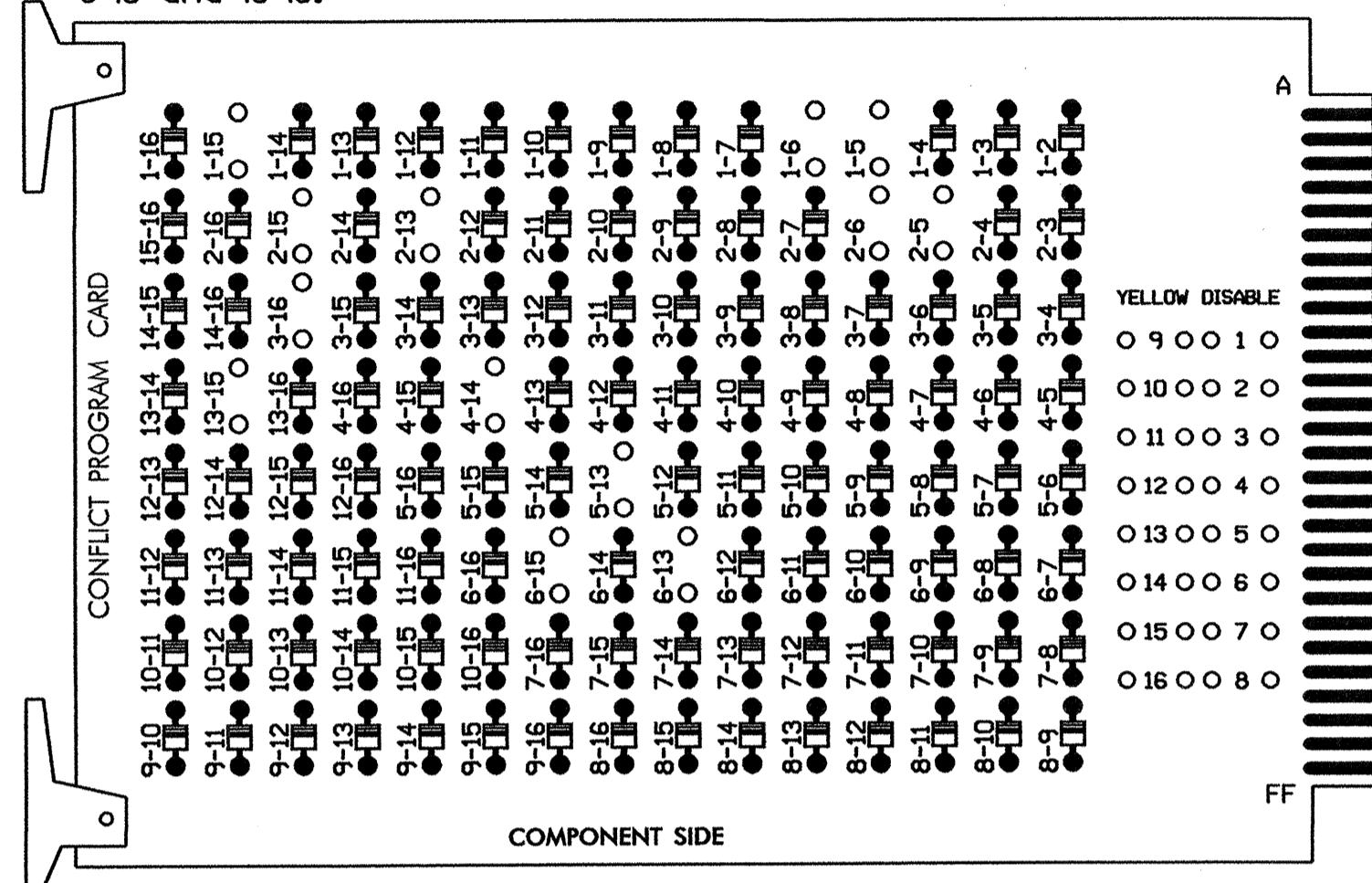
18-MAY-2009 08:13 s:\its_signals\workgroups\tp_projects\ur-4006\roadway\ur4006_tsh.dgn

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

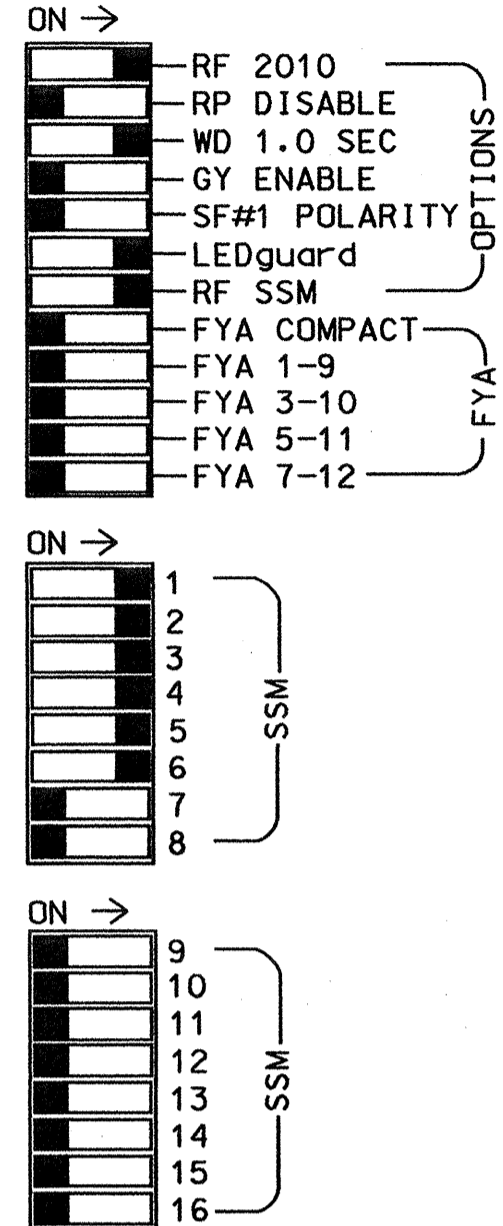
(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 1-5, 1-6, 1-15, 2-5, 2-6, 2-13, 2-15, 3-16, 4-14, 5-13, 6-13, 6-15 and 13-15.



REMOVE JUMPERS AS SHOWN



■ = DENOTES POSITION OF SWITCH

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 7, 8, 9, 10, 11, 12, 13, 14, 15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Initialize database in Naztec 2070 local software (Apogee) as FULL-CALTRANS. This initialization should be done prior to programming controller.
- Program phases 2 and 6 for Start Up In Walk.
- Program "Start Up Flash" for 0 sec. The conflict monitor will govern start-up flash time.
- Program controller "Local Flash Start" feature to "ON".
- Program controller to provide a 1 second delay on the Flash Sense/Local Flash input. Use the following logic statement to provide this functionality:

FROM MAIN MENU->1->8->7 (I/O LOGIC)	Result	Fcn Oper	Fcn Oper	Fcn	Timer
	I208=	I208	I 0	I 0	DLY 1
- Remap output 05-6 (C1 pin 101) as function 124 (LdSwth Flsh).
- The cabinet and controller are part of the City of Greensboro Signal System.

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	3 PED				
SIGNAL HEAD NO.	11	21,22	P21, P22	31	32	41	42	62	P41, P42	42	51	61,62	P61, P62	NU	NU	P31, P32
RED		128		116	116	101	101					134				
YELLOW		129		117	117	102	102					135				
GREEN		130		118	118	103	103					136				
RED ARROW	125											131				
YELLOW ARROW	126						102		132	132						
GREEN ARROW	127			118		103	103		133	133						
Hand icon				113					104				119			110
Person icon				115					106				121			112

NU = Not Used

EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
 CABINET.....CONTRACTOR SUPPLIED 332
 SOFTWARE.....NAZTEC APOGEE
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S2P,S3,S4,S4P,S5,S6,S6P,S8P
 PHASES USED.....1,2,2 PED,3,3 PED,4,4 PED,5,6,6 PED
 OVERLAPS.....NONE

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	∅ 3	∅ 4	∅ 5	∅ 6	∅ 7	∅ 8	∅ 9	∅ 10	∅ 11	∅ 12	∅ 13	∅ 14
L	1A	2A,2B	3A	3B	4A	4B	5A	5B	6A,6B	7A	7B	8A	8B	9A,9B
U	∅ 5	∅ 6	∅ 7	∅ 8	∅ 9	∅ 10	∅ 11	∅ 12	∅ 13	∅ 14	∅ 15	∅ 16	∅ 17	∅ 18
L	5A	5B	6A,6B	7A	7B	8A	8B	9A,9B	10A	10B	11A	11B	12A	12B

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

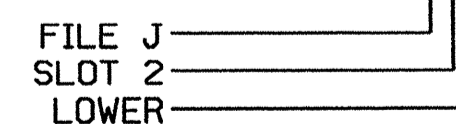
FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	CALL PHASE	SWITCH	DELAY TIME	EXTEND TIME	CALL	EXTEND	ADDED INIT.
1A	TB2-1,2	I1U	56	1	1				X	X	
2A,2B	TB2-5,6	I2U	39	2	2				X	X	
3A	TB4-9,10	I6U	41	8	3		3		X	X	
3B	TB4-11,12	I6L	45	9	3		10		X	X	
4A	TB6-1,2	I7U	65	10	4				X	X	
4B	TB6-3,4	I7L	78	11	4				X	X	
5A	TB3-1,2	J1U	55	15	5				X	X	
5B	TB3-5,6	J2U	40	16	5		15		X	X	
6A,6B	TB3-9,10	J3U	64	18	6				X	X	
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED						
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED						
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED						
P31,P32	TB8-8,9	I13L	70	PED 8	3 PED						

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

INPUT FILE POSITION LEGEND: J2L



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 07-2104
 DESIGNED: February 2009
 SEALED: 04/20/09
 REVISED: N/A

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.

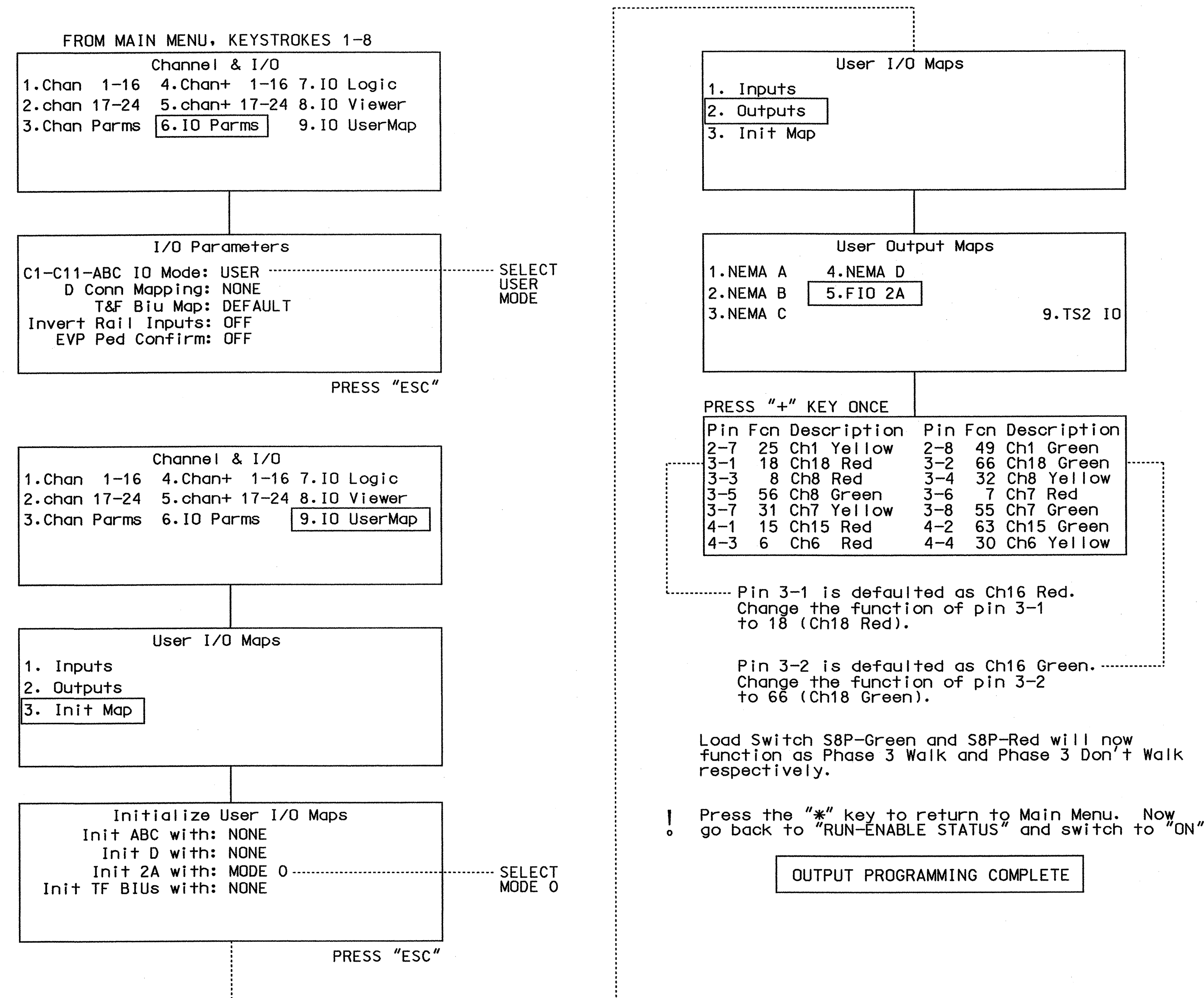
New Installation - Sheet 1 of 2

	ELECTRICAL AND PROGRAMMING DETAILS FOR:		SR 4126 (Bridford Parkway) at Hornaday Road		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 GEORGE C. BROWN
	Division 7 Guilford County		REVIEWED BY: <i>T. Jaffe</i>		
PLAN DATE: March 2009		PREPARED BY: C. Strickland		REVIEWED BY:	
REVISIONS		INIT.		DATE	
750 N. Greenfield Pkwy, Garner, NC 27529		SIGNATURE: <i>George C. Brown</i>		DATE: 4/21/09	
PREPARED IN THE OFFICES OF:		TRANSPORTATION MOBILITY AND SAFETY DIVISION		SIG. INVENTORY NO. 07-2104	

21-095-2009_16:30
 S:\114_81001\electrical\cousins\g_mansett\lck\lnd\072104_sml.ele.xxx.dgn
 CASH/CLK/AND

**SIGNAL DRIVER OUTPUT PROGRAMMING
DETAIL FOR PHASE 3 PED**
(program controller as shown below)

1. Before proceeding with output programming, be sure to switch the "RUN ENABLE STATUS" to "OFF". The "RUN ENABLE STATUS" setting is located from Main Menu, key strokes 1-7.

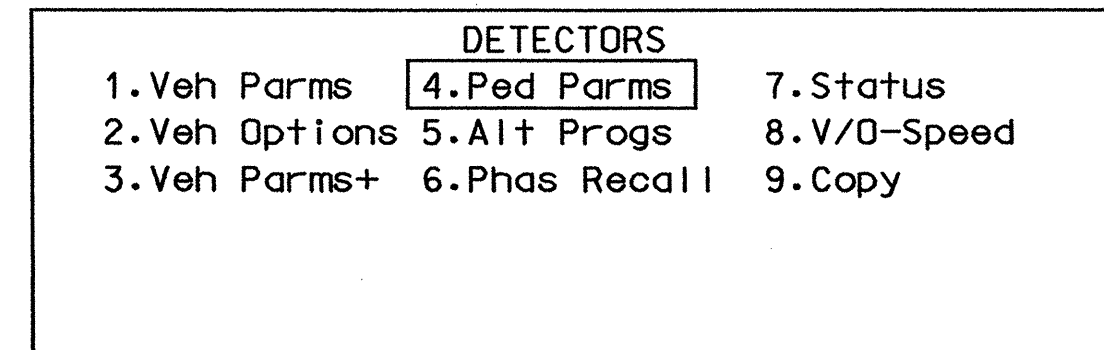


**CONTROLLER PED DETECTOR
ASSIGNMENT PROGRAMMING**

(program controller as shown below)

The programming below uses Det# 8 to call phase 3.

FROM MAIN MENU PRESS 5 (Detectors)
THEN PRESS 4 (Ped Parm's)



PRESS "+" KEY ONCE

Det#	Call	NoAct	Max Pres	ErrCnt
2	2	0	0	0
3	0	0	0	0
4	4	0	0	0
5	0	0	0	0
6	6	0	0	0
7	0	0	0	0
8	3	0	0	0

PED DETECTOR PROGRAMMING COMPLETE

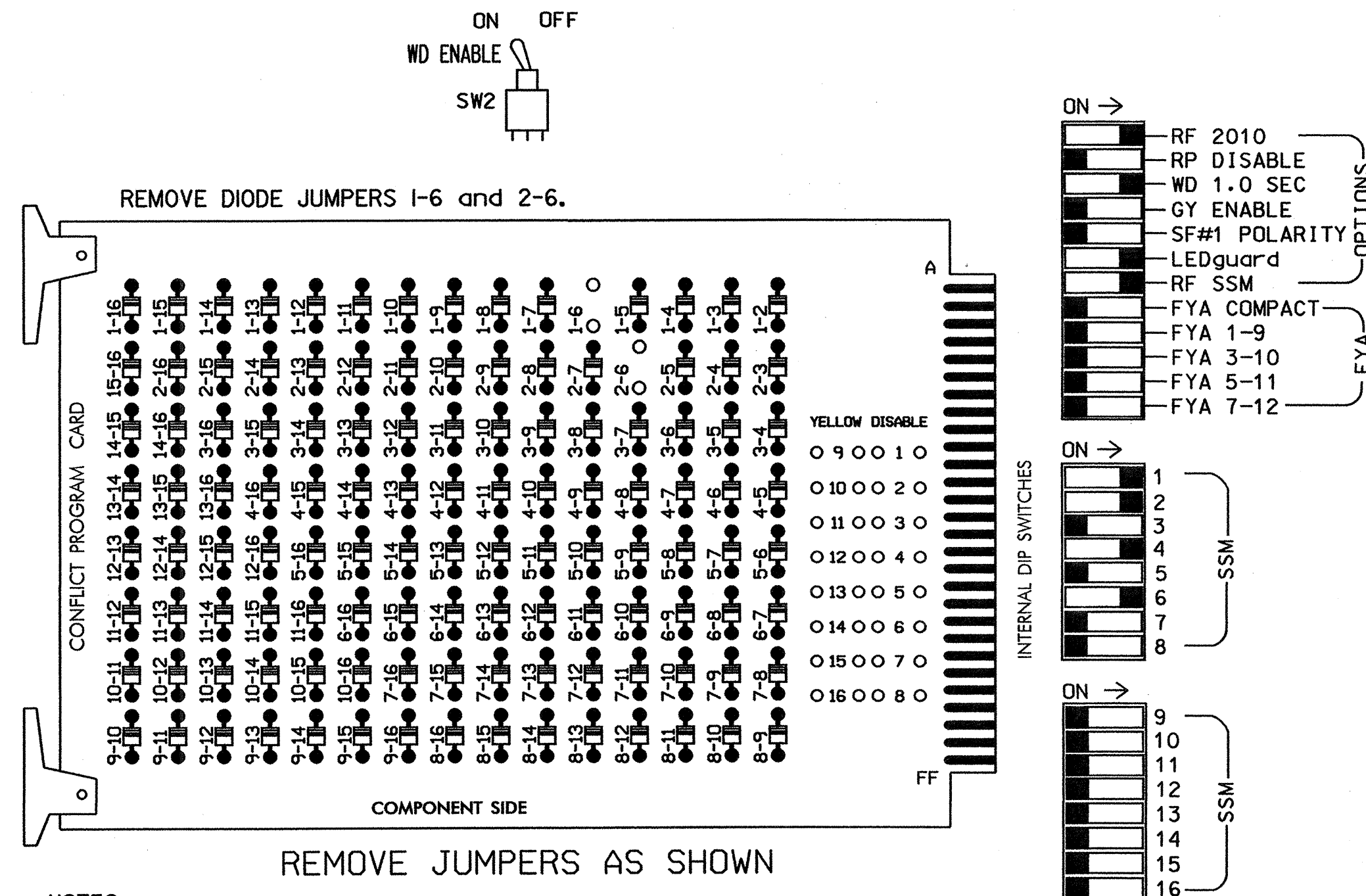
THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-2104
DESIGNED: February 2009
SEALED: 04/20/09
REVISED: N/A

New Installation - Sheet 2 of 2

	SR 4126 (Bridford Parkway) at Hornaday Road Guilford County, Greensboro		
	PLAN DATE: March 2009 PREPARED BY: C. Strickland	REVIEWED BY: <i>[Signature]</i> REVIEWED BY:	

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 3,5,7,8,9,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Initialize database in Naztec 2070 local software (Apogee) as FULL-CALTRANS. This initialization should be done prior to programming controller.
- Program phases 2 and 6 for Start Up In Green.
- Enable Simultaneous Gap-Out, on the controller unit, for all phases.
- Program "Start Up Flash" for 0 sec. The conflict monitor will govern start-up flash time.
- Program controller "Local Flash Start" feature to "ON".
- Program controller to provide a 1 second delay on the Flash Sense/Local Flash input. Use the following logic statement to provide this functionality:
FROM MAIN MENU->1->8->7 (I/O LOGIC)

Result	Fcn Oper	Fcn Oper	Fcn	Timer
I208=	I208	I 0	I 0	DLY 1
- Remap output 05-6 (C1 pin 101) as function 124 (LdSwch Flsh).
- The cabinet and controller are part of the City of Greensboro Signal System.

SIGNAL HEAD HOOK-UP CHART

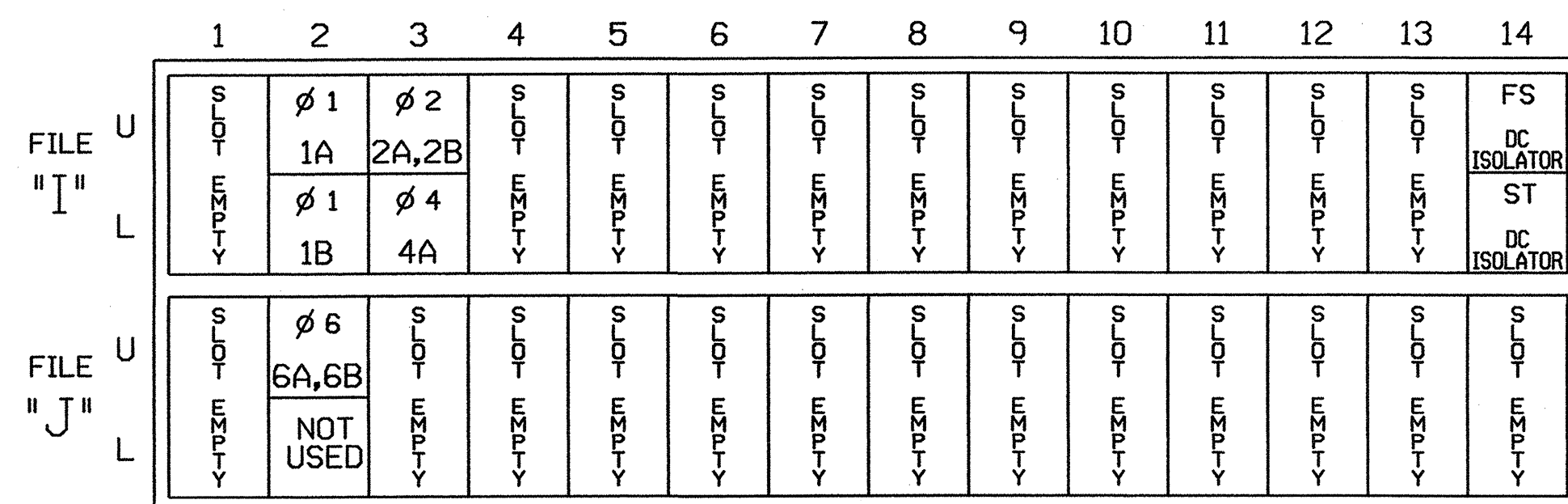
LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	42,61	21,22	NU	NU	41,42	NU	NU	61,62	NU	NU	NU	NU
RED	*	128			101			134				
YELLOW		129			102			135				
GREEN		130			103			136				
RED ARROW												
YELLOW ARROW	126											
GREEN ARROW	127											

NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

INPUT FILE POSITION LAYOUT

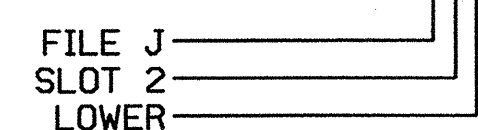
(front view)



INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	CALL PHASE	SWITCH	DELAY TIME	EXTEND TIME	CALL	EXTEND	ADDED INIT.
1A	TB2-5,6	I2U	39	2	1		15		X	X	
1B	TB2-7,8	I2L	43	3	1		15		X	X	
2A,2B	TB2-9,10	I3U	63	4	2				X	X	
4A	TB2-11,12	I3L	76	5	4		3		X	X	
6A,6B	TB3-5,6	J2U	40	16	6				X	X	

INPUT FILE POSITION LEGEND: J2L



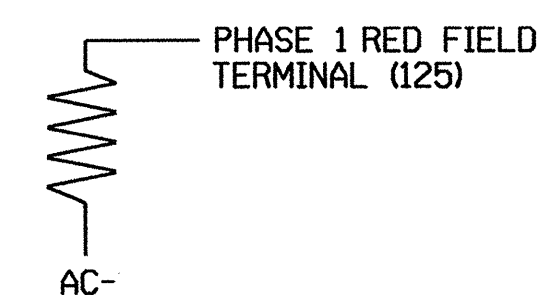
EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
 CABINET.....CONTRACTOR SUPPLIED 332
 SOFTWARE.....NAZTEC APOGEE
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S4,S6
 PHASES USED.....1,2,4,6
 OVERLAPS.....NONE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 07-1964T1
 DESIGNED: March 2009
 SEALED: 04-20-09
 REVISED: N/A

LOAD RESISTOR INSTALLATION DETAIL

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



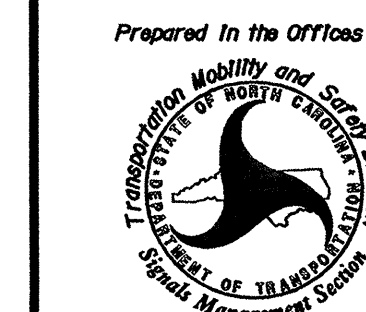
NOTE: The purpose of this resistor is to load the channel red monitor input in order for the Signal Sequence Monitor to use the full signal sequence monitoring capability on channels that do not use the red display in the field.

Signal Upgrade - Temporary Design 1 (Construction Phase I)

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1546 (Guilford College Road)

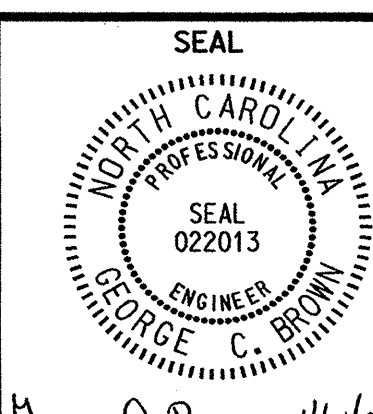
at Big Tree Way



Division 07 Guilford County Greensboro

PLAN DATE: April 2009 REVIEWED BY: T. J. Jyll
 PREPARED BY: S. Armstrong REVIEWED BY:

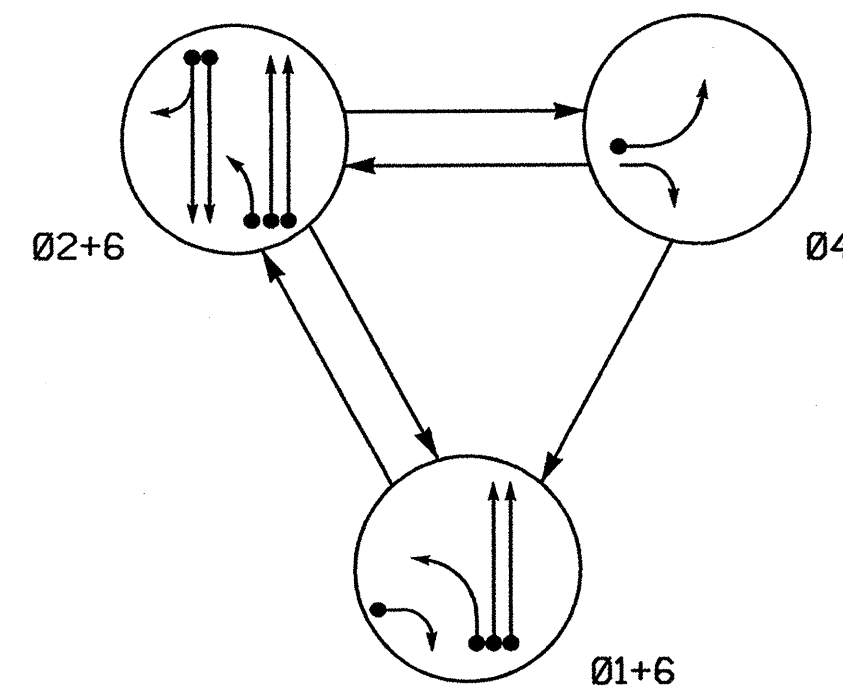
REVISIONS INIT. DATE



Signature: George C. Brown 4/21/09
 DATE

SIG. INVENTORY NO. 07-1964T1

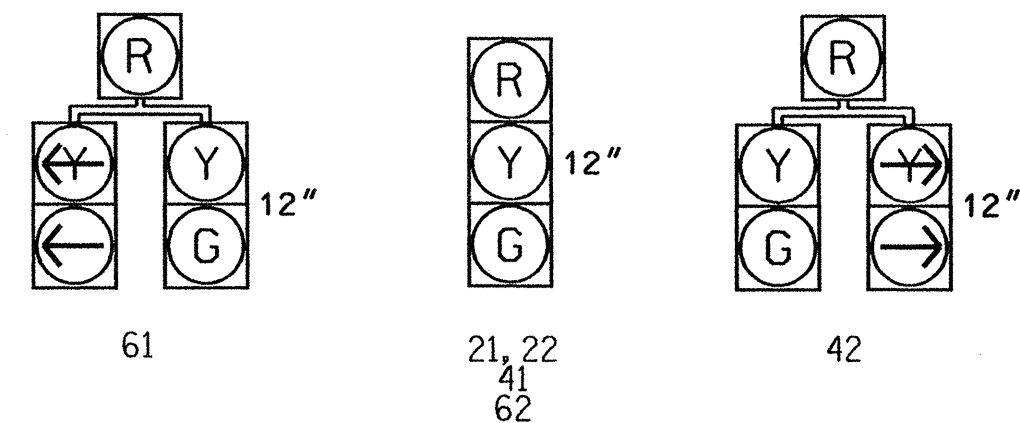
PHASING DIAGRAM



SIGNAL FACE	PHASE			
	Ø 1 + 6	Ø 2 + 6	Ø 4	F LEGAL HEAD
21, 22	R	G	R	Y
41	R	R	G	R
42	R	R	G	R
61	G	G	R	Y
62	G	G	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.

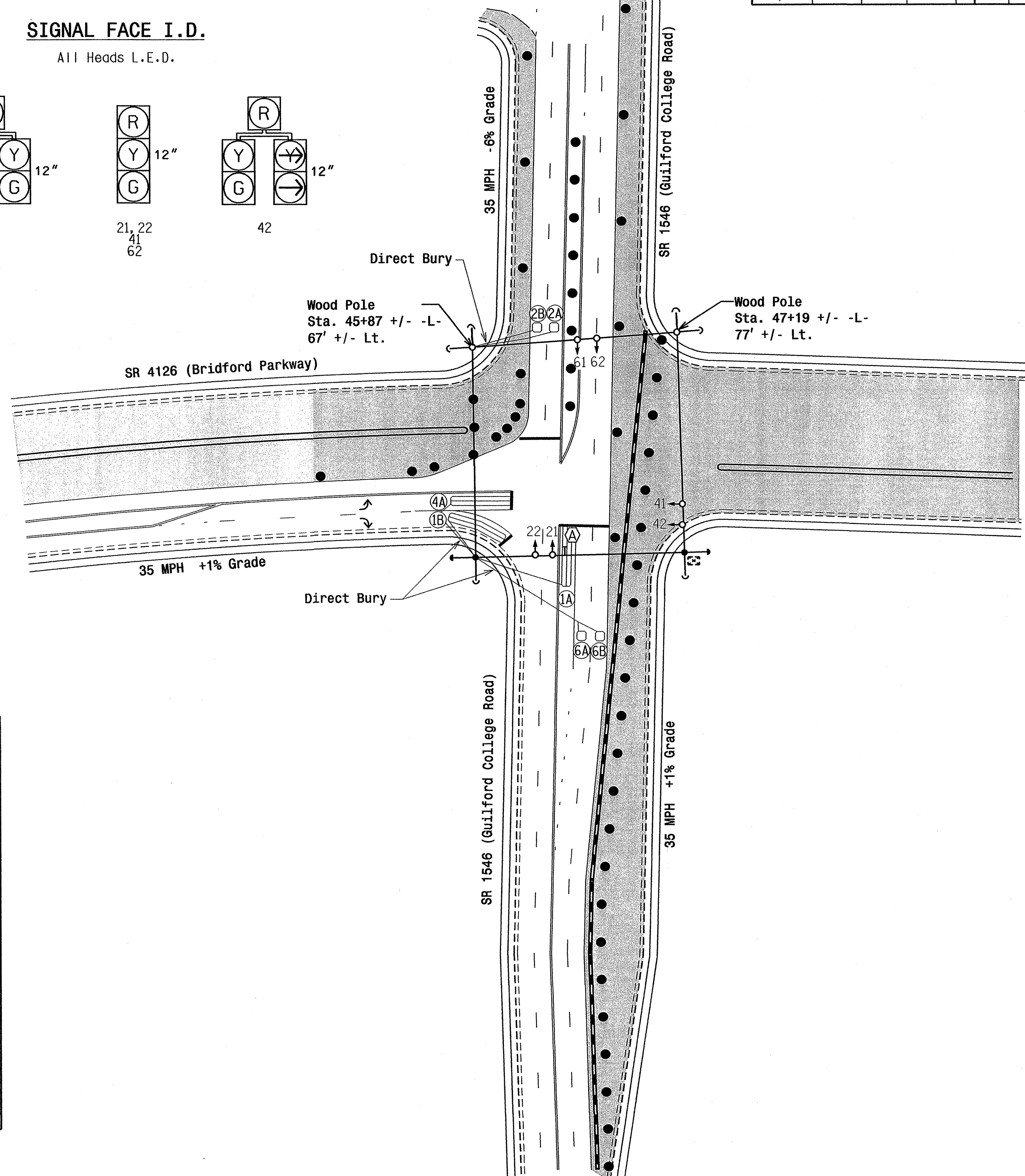


LOOP & DETECTOR UNIT INSTALLATION CHART											
NAZTEC APOGEE SOFTWARE 2070 CONTROLLER WITH 170 CABINET											
INDUCTIVE LOOPS						DETECTOR PROGRAMMING					
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	SWITCH (PHASE)	DELAY TIME	STRETCH TIME	CALLING EXTENSION	ADDED INIT.	NEW LOOP SYSTEM
1A	6X40	0	2-4-2	Y	1	6	15	-	Y	Y	-
1B	6X40	0	2-4-2	Y	1	-	15	-	Y	Y	-
2A, 2B	6X6	70	4	Y	2	-	-	-	Y	Y	-
4A	6X40	0	2-4-2	Y	4	-	3	-	Y	Y	-
6A, 6B	6X6	70	4	Y	6	-	-	-	Y	Y	-

3 Phase Fully Actuated (Greensboro Signal System)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Set all detector units to presence mode.
5. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

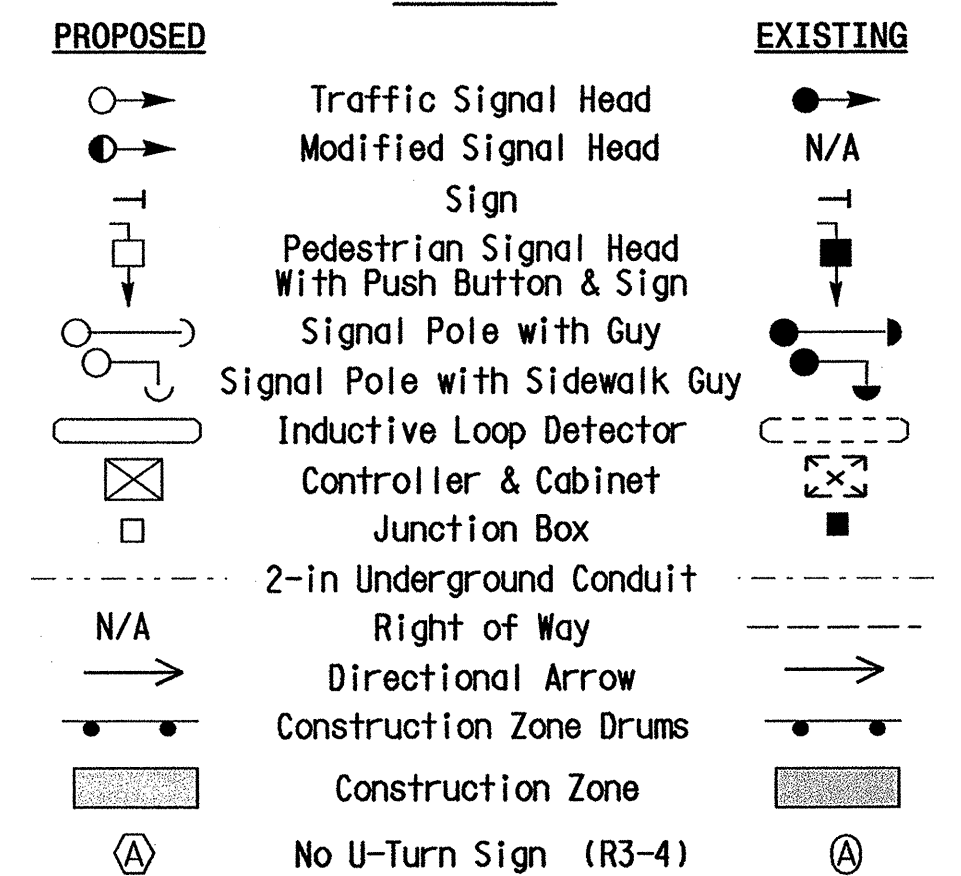


NAZTEC APOGEE 2070 TIMING CHART

FEATURE	PHASE			
	1	2	4	6
Min Green *	7	10	7	10
Gap, Extension *	2.0	3.0	2.0	3.0
Maximum Green 1 *	15	50	20	50
Maximum Green 2 *	0	0	0	0
Yellow Clear	3.0	4.3	3.0	3.8
Red Clear	1.6	1.6	1.6	1.0
Walk *	-	-	-	-
Pedestrian Clear	-	-	-	-
Added Initial *	-	-	-	-
Maximum Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	-	MIN RECALL	-	MIN RECALL
Lock Calls	NO	YES	NO	YES
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.

LEGEND



Signal Upgrade - Temporary Design 2 (Construction Phase III)

SR 1546 (Guilford College Road) at SR 4126 (Bridford Parkway)

Division 7 Guilford County Greensboro

PLAN DATE: March 2009 REVIEWED BY:

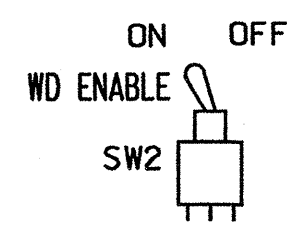
PREPARED BY: TS Thigpen REVIEWED BY:

REVISIONS: _____ INIT. DATE

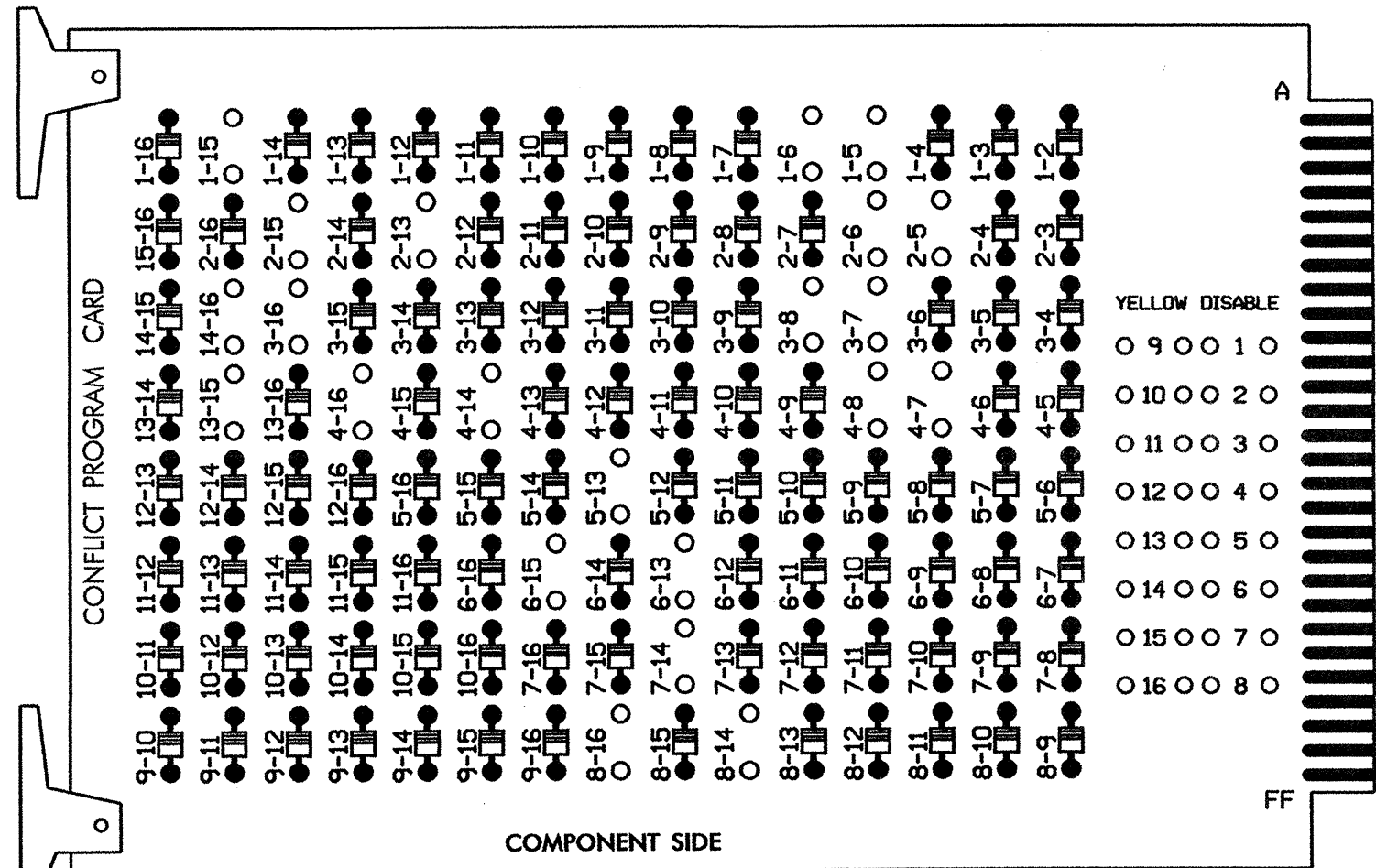
SCALE: 1"=50'

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



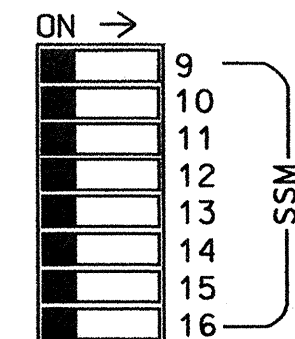
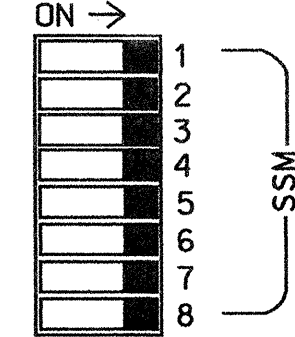
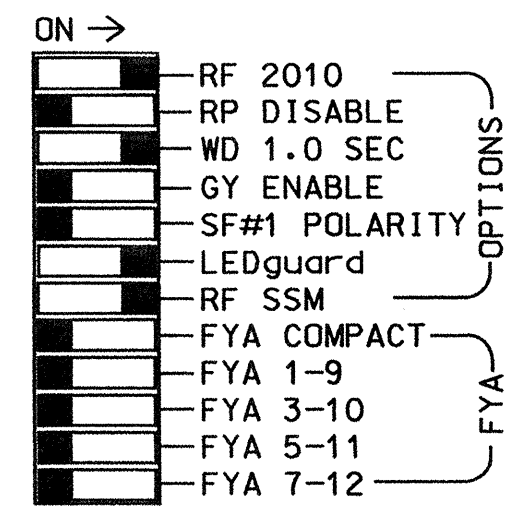
REMOVE DIODE JUMPERS 1-5, 1-6, 1-15, 2-5, 2-6, 2-13, 2-15, 3-7, 3-8, 3-16, 4-7, 4-8, 4-14, 4-16, 5-13, 6-13, 6-15, 7-14, 8-14, 8-16, 13-15, and 14-16.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- 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 9,10, 11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Initialize database in Naztec 2070 local software (Apogee) as FULL-CALTRANS. This initialization should be done prior to programming controller.
- Program phases 2 and 6 for Start Up In Walk.
- Enable Simultaneous Gap-Out, on the controller unit, for all phases.
- Program "Start Up Flash" for 0 sec. The conflict monitor will govern start-up flash time.
- Program controller "Local Flash Start" feature to "ON".
- Program controller to provide a 1 second delay on the Flash Sense/Local Flash input. Use the following logic statement to provide this functionality:
FROM MAIN MENU->1->8->7 (I/O LOGIC) Result Fcn Oper Fcn Oper Fcn Timer
I208= I208 I 0 I 0 DLY 1
- Remap output 05-6 (C1 pin 101) as function 124 (LdSwth Flsh).
- The cabinet and controller are part of the City of Greensboro Signal System.

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.	11,12	82	21,22	P21, P22	22	31,32	41,42	P41, P42	42	51,52	61,62	P61, P62
RED		128			101			134			107	
YELLOW		129			102			135			108	
GREEN		130			103			136			109	
RED ARROW	125				116			131			122	
YELLOW ARROW	126	126		117	117			132	132		123	123
GREEN ARROW	127	127		118	118			133	133		124	124
Hand				113				104			119	
Person				115				106			121	

NU = Not Used

EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
 CABINET.....CONTRACTOR SUPPLIED 332
 SOFTWARE.....NAZTEC APOGEE
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S2P,S3,S4,S4P,S5,S6,S6P,S7,S8,S8P
 PHASES USED.....1,2,2 PED,3,4,4 PED,5,6,6 PED,7,8,8 PED
 OVERLAPS.....NONE

INPUT FILE POSITION LAYOUT

(front view)

FILE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	∅ 1	∅ 1	∅ 3	∅ 4	∅ 5	∅ 7	∅ 8	∅ 9	∅ 10	∅ 11	∅ 12	∅ 13	∅ 14	FS
I	1A	1C	3A	4A	5A	7A	8A	9A	10A	11A	12A	13A	14A	ST
L	1B	2A,2B	3B	4B	5B	7B	8B	9B	10B	11B	12B	13B	14B	
U	∅ 5	∅ 5	∅ 7	∅ 8	∅ 9	∅ 10	∅ 11	∅ 12	∅ 13	∅ 14	∅ 15	∅ 16	∅ 17	∅ 18
I	5A	5C	7A	8A	9A	10A	11A	12A	13A	14A	15A	16A	17A	18A
L	5B	6A,6B	7B	8B	9B	10B	11B	12B	13B	14B	15B	16B	17B	18B

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

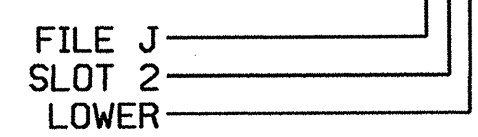
FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	CALL PHASE	SWITCH	DELAY TIME	EXTEND TIME	CALL	EXTEND	ADDED INIT.
1A	TB2-5,6	I2U	39	2	1				X	X	
1B	TB2-7,8	I2L	43	3	1				X	X	
1C	TB2-9,10	I3U	63	4	1		15		X	X	
2A,2B	TB2-11,12	I3L	76	5	2				X	X	
3A	TB4-9,10	I6U	41	8	3				X	X	
3B	TB4-11,12	I6L	45	9	3				X	X	
4A	TB6-1,2	I7U	65	10	4				X	X	
4B	TB6-3,4	I7L	78	11	4				X	X	
5A	TB3-5,6	J2U	40	16	5				X	X	
5B	TB3-7,8	J2L	44	17	5				X	X	
5C	TB3-9,10	J3U	64	18	5		15		X	X	
6A,6B	TB3-11,12	J3L	77	19	6				X	X	
7A	TB5-9,10	J6U	42	22	7				X	X	
7B	TB5-11,12	J6L	46	23	7				X	X	
8A	TB7-1,2	J7U	66	24	8				X	X	
8B	TB7-3,4	J7L	79	25	8				X	X	

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

INPUT FILE POSITION LEGEND: J2L



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.

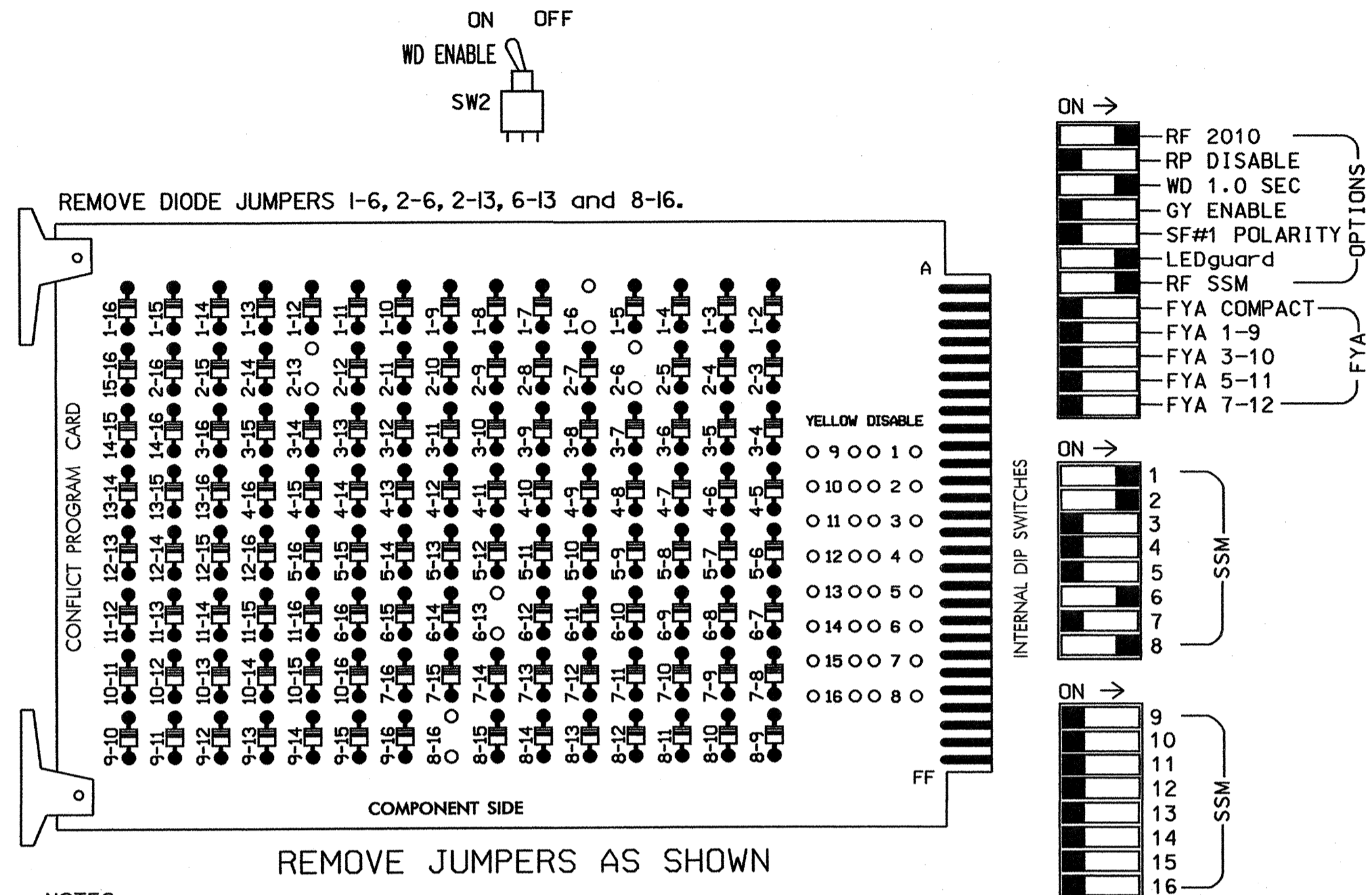
THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 07-1964
 DESIGNED: February 2009
 SEALED: 04-20-09
 REVISED: N/A

Signal Upgrade - Final Design

	SR 4126 (Bridford Parkway) at SR 1546 (Guilford College Road)	
	Division 07	Guilford County Greensboro
	PLAN DATE: April 2009	REVIEWED BY: T. J. J.
	PREPARED BY: S. Armstrong	REVIEWED BY:
REVISIONS: _____ INIT. _____ DATE _____		
Signature: <i>George C. Brown</i> 4/20/09 DATE: _____		
SIG. INVENTORY NO. 07-1964		

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 3,4, 5,7,9,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Initialize database in Naztec 2070 local software (Apogee) as FULL-CALTRANS. This initialization should be done prior to programming controller.
- Program phase 6 for Start Up In Green and Phase 2 for Start Up in Walk.
- Program "Start Up Flash" for 0 sec. The conflict monitor will govern start-up flash time.
- Program controller "Local Flash Start" feature to "ON".
- Program controller to provide a 1 second delay on the Flash Sense/Local Flash input. Use the following logic statement to provide this functionality:
FROM MAIN MENU->1->8->7 (I/O LOGIC)
Result Fcn Oper Fcn Oper Fcn Timer
I208= I208 I 0 I 0 DLY 1
- Remap output 05-6 (C1 pin 101) as function 124 (LdSwth Flsh).
- The cabinet and controller are part of the City of Greensboro Signal System.

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.	61,82	21, 22,23	P21, P22	NU	NU	NU	NU	61,62	NU	NU	23	81,82
RED	*	128						134				107
YELLOW		129						135				108
GREEN		130						136				109
RED ARROW												
YELLOW ARROW	126										108	
GREEN ARROW	127										109	
Hand			113									110
Person			115									112

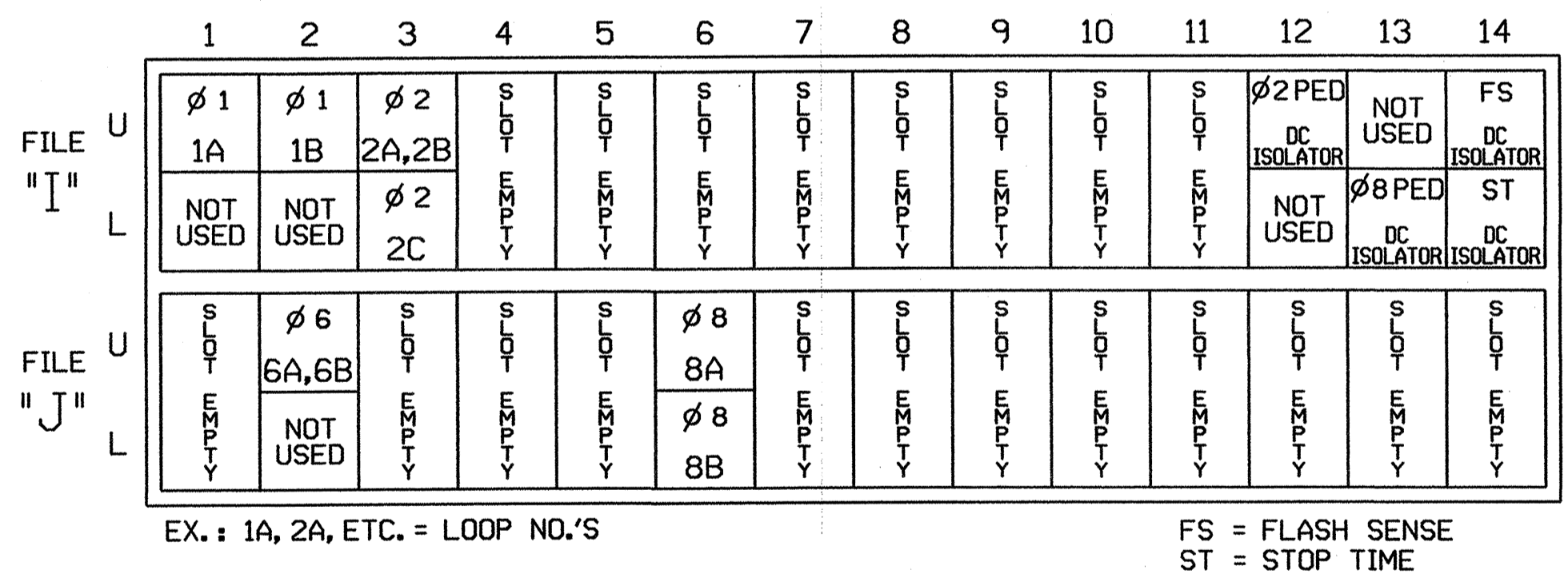
NU = Not Used
* Denotes install load resistor. See load resistor installation detail this sheet.

EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
CABINET.....CONTRACTOR SUPPLIED 332
SOFTWARE.....NAZTEC APOGEE
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...12
LOAD SWITCHES USED.....S1,S2,S2P,S6,S8,S8P
PHASES USED.....1,2,2 PED,6,8,8 PED
OVERLAPS.....NONE

INPUT FILE POSITION LAYOUT

(front view)

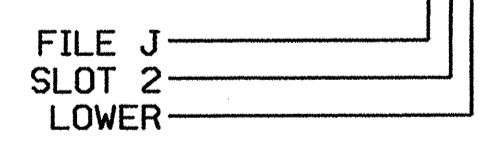


INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	CALL PHASE	SWITCH	DELAY TIME	EXTEND TIME	CALL	EXTEND	ADDED INIT.
1A	TB2-1,2	I1U	56	1	1	6	15		X	X	
1B	TB2-5,6	I2U	39	2	1		15		X	X	
2A,2B	TB2-9,10	I3U	63	4	2				X	X	
2C	TB2-11,12	I3L	76	5	2				X	X	
6A,6B	TB3-5,6	J2U	40	16	6				X	X	
8A	TB5-9,10	J6U	42	22	8				X	X	
8B	TB5-11,12	J6L	46	23	8				X	X	
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED						
P81,P82	TB8-8,9	I13L	70	PED 8	8 PED						

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

INPUT FILE POSITION LEGEND: J2L



CALL, INHIBIT, REDIRECT PROGRAMMING DETAIL

(USED FOR BACK-UP PROTECTION)

(program controller as shown below)

From Main Menu press '1' (Controller), then '1' (Phases), then '5' (CALL, Inh, Redirect).

```

P ..Call.Ps.. Inhibit Ps 1111111 >
1 0 0 0 0 12345678 90123456
2 0 0 0 0 0 .....
3 0 0 0 0 0 .....
4 0 0 0 0 0 .....
5 0 0 0 0 0 .....
6 0 0 0 0 0 .....
7 0 0 0 0 0 .....
8 0 0 0 0 0 .....
    
```

OPERATIONAL NOTE

This programming will omit phase 1 when phase 2 is "ON".

LOAD RESISTOR INSTALLATION DETAIL

ACCEPTABLE VALUES	
VALUE (ohms)	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.

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.

New Installation

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 4126 (Bridford Parkway) at Big Tree Way

Division 7 Guilford County Greensboro

PLAN DATE: April 2009 REVIEWED BY: T. V. J. J.

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS INIT. DATE

750 N. Greenfield Pkwy, Garner, NC 27529

SEAL

PROF. ENGINEER

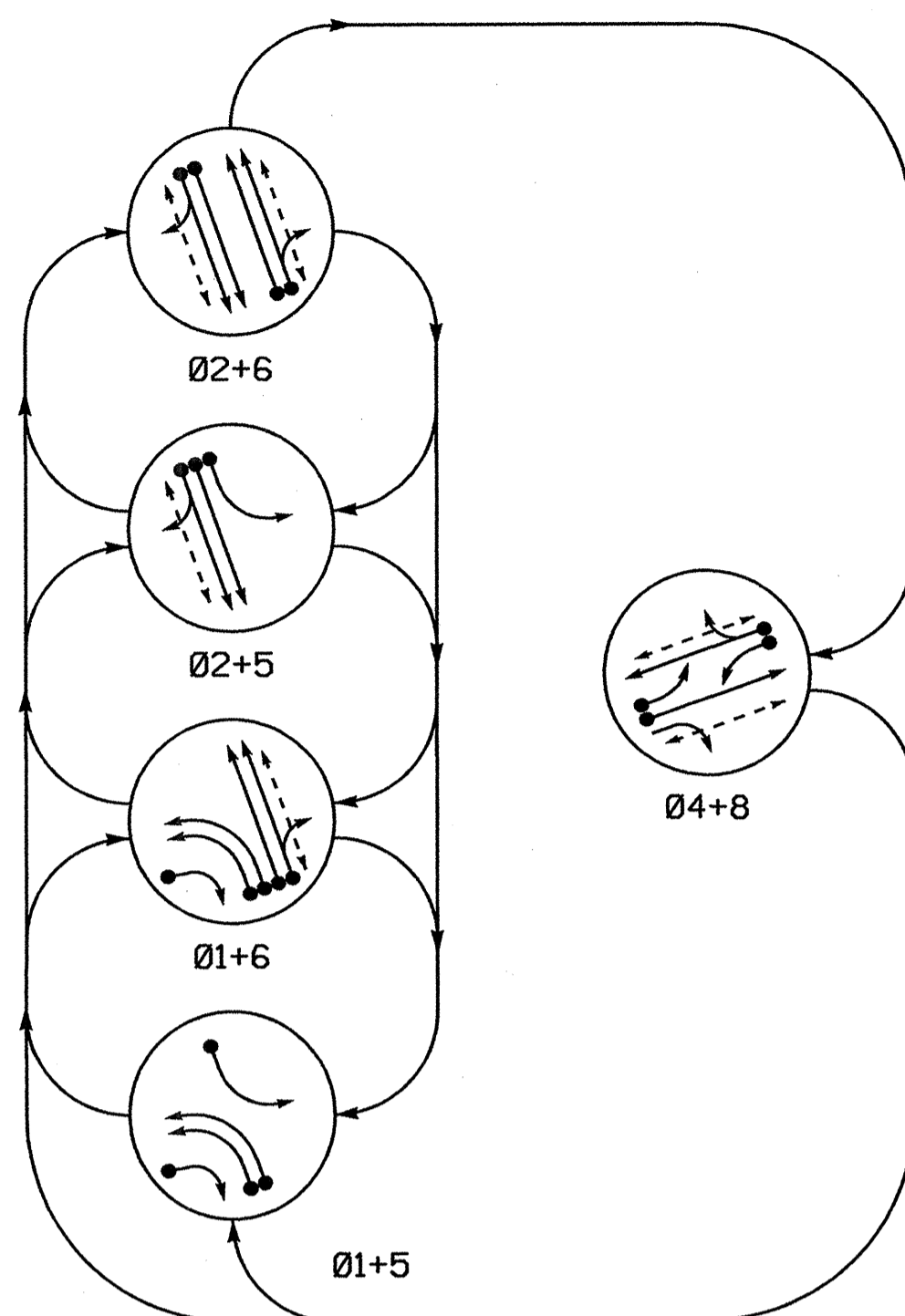
GEORGE C. BROWN

4/21/09

SIG. INVENTORY NO. 07-2105

21-Apr-2009 13:40
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cestrickland

PHASING DIAGRAM



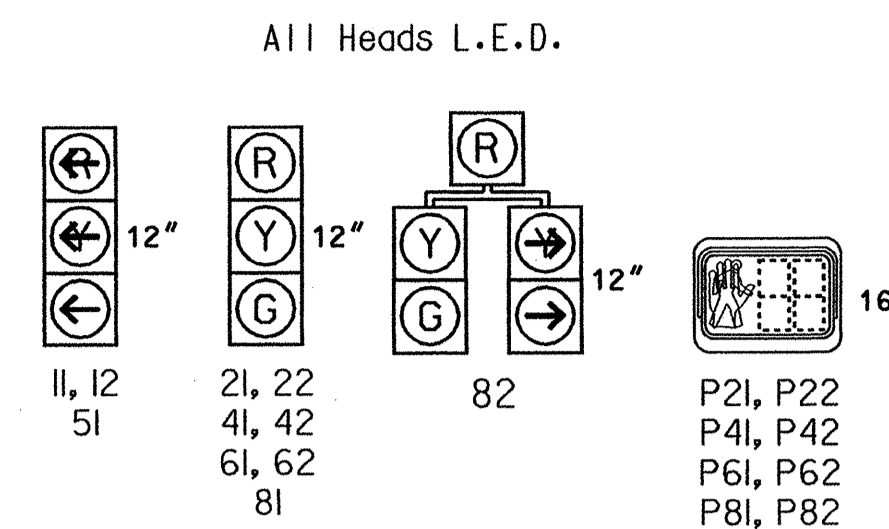
PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATION

SIGNAL FACE	PHASE					
	01+5	01+6	02+5	02+6	04+8	PEDESTRIAN
11, 12	←	←	←	←	←	←
21, 22	R	R	G	G	R	Y
41, 42	R	R	R	R	G	R
51	←	←	←	←	←	←
61, 62	R	G	R	G	R	Y
81	R	R	R	R	G	R
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

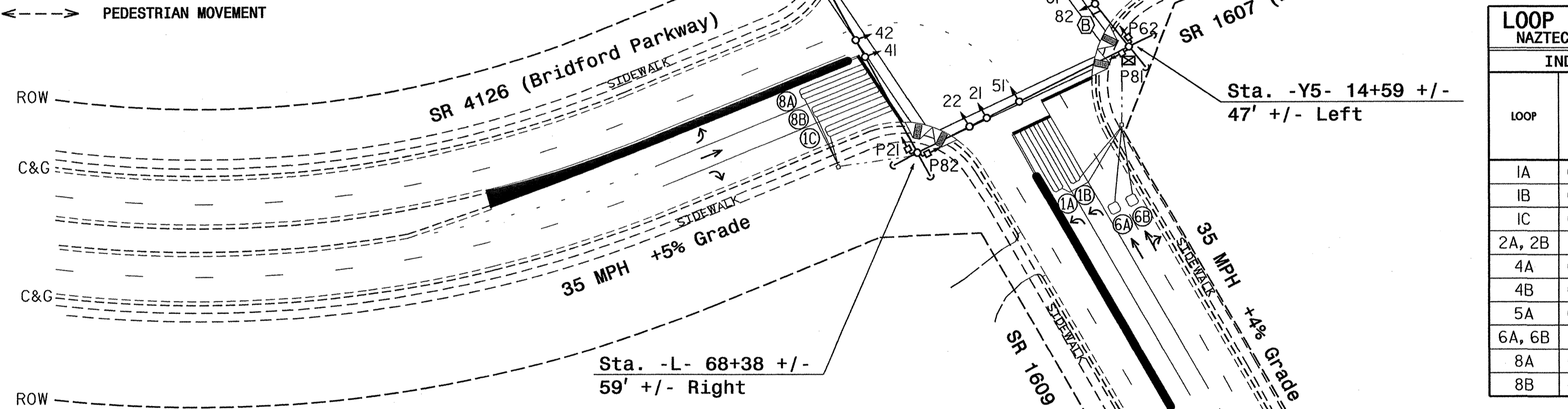
SIGNAL FACE I.D.



5 Phase Fully Actuated (Greensboro Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or Phase 5 may be lagged.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS		DETECTOR PROGRAMMING											
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	SWITCH (PHASE)	DELAY TIME	STRETCH TIME	CALLING	EXTENSION	ADDED INIT.	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y	1	-	3	-	Y	Y	-	-	Y
1B	6X40	0	2-4-2	Y	1	-	-	-	Y	Y	-	-	Y
1C	6X40	0	2-4-2	Y	1	-	15	-	Y	Y	-	-	Y
2A, 2B	6X6	70	4	Y	2	-	-	-	Y	Y	-	-	Y
4A	6X40	0	2-4-2	Y	4	-	3	-	Y	Y	-	-	Y
4B	6X40	0	2-4-2	Y	4	-	10	-	Y	Y	-	-	Y
5A	6X40	0	2-4-2	Y	5	-	3	-	Y	Y	-	-	Y
6A, 6B	6X6	70	4	Y	6	-	-	-	Y	Y	-	-	Y
8A	6X40	0	2-4-2	Y	8	-	-	-	Y	Y	-	-	Y
8B	6X40	0	2-4-2	Y	8	-	-	-	Y	Y	-	-	Y

NAZTEC APOGEE 2070 TIMING CHART

FEATURE	PHASE					
	1	2	4	5	6	8
Min Green *	7	10	7	7	10	7
Gap, Extension *	2.0	3.0	2.0	2.0	3.0	2.0
Maximum Green 1 *	15	45	20	15	45	20
Maximum Green 2 *	0	0	0	0	0	0
Yellow Clear	3.0	4.2	4.2	3.1	3.6	3.6
Red Clear	3.6	2.3	2.5	3.8	2.0	2.5
Walk *	-	7	7	-	7	7
Pedestrian Clear	-	20	21	-	13	21
Added Initial *	-	-	-	-	-	-
Maximum Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-
Lock Calls	NO	YES	NO	NO	YES	NO
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.

LEGEND

- | | |
|--|--|
| PROPOSED | EXISTING |
| ○ Traffic Signal Head | ● Traffic Signal Head |
| ○ Modified Signal Head | N/A |
| ○ Pedestrian Signal Head | ○ Pedestrian Signal Head |
| ○ Signal Pole with Guy | ○ Signal Pole with Guy |
| ○ Signal Pole with Sidewalk Guy | ○ Signal Pole with Sidewalk Guy |
| ○ Inductive Loop Detector | ○ Inductive Loop Detector |
| ○ Controller & Cabinet | ○ Controller & Cabinet |
| ○ Junction Box | ○ Junction Box |
| ○ 2-in Underground Conduit | ○ 2-in Underground Conduit |
| N/A Right of Way | --- Right of Way |
| → Directional Arrow | → Directional Arrow |
| ○ Signal Pedestal | ○ Signal Pedestal |
| N/A Wheelchair Ramp | ○ Wheelchair Ramp |
| ○ "U-TURN YIELD TO RIGHT TURN" Sign (R10-16) | ○ "U-TURN YIELD TO RIGHT TURN" Sign (R10-16) |
| ○ Right Arrow "ONLY" Sign (R3-5R) | ○ Right Arrow "ONLY" Sign (R3-5R) |

New Installation

Prepared in the Offices of
 Transportation Mobility and Safety Division
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 Signal Design Section

SR 1609 (Swing Road)
 at
 SR 4126 (Bridford Parkway) /
 SR 1607 (Burnt Poplar Road)
 Division 7 Guilford County Greensboro

PLAN DATE: January 2009 REVIEWED BY: C.E. Carter
 PREPARED BY: C.E. Carter REVIEWED BY: [Signature]

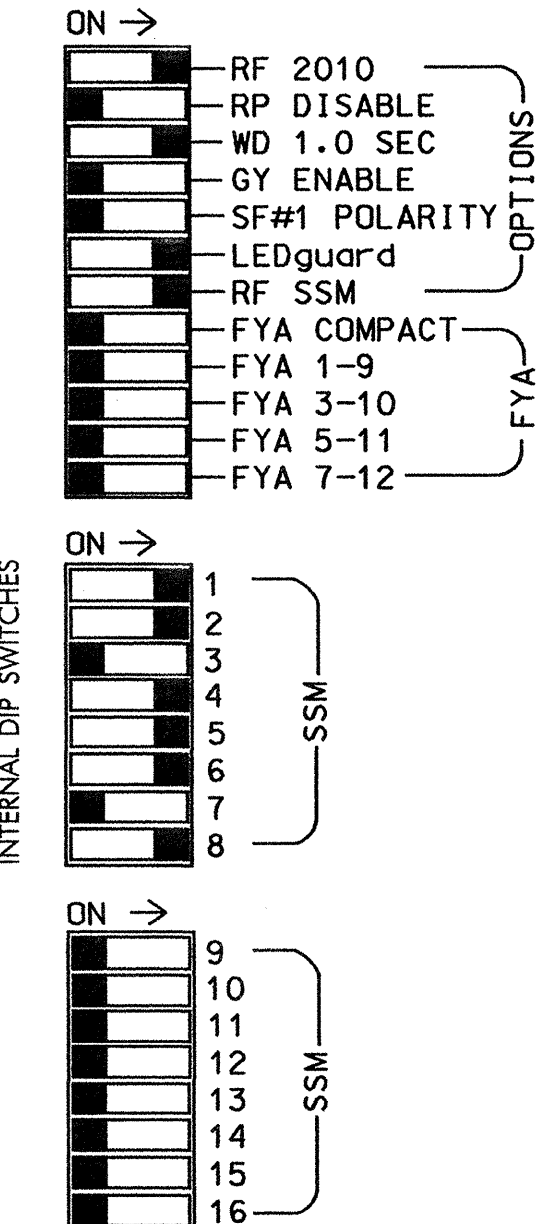
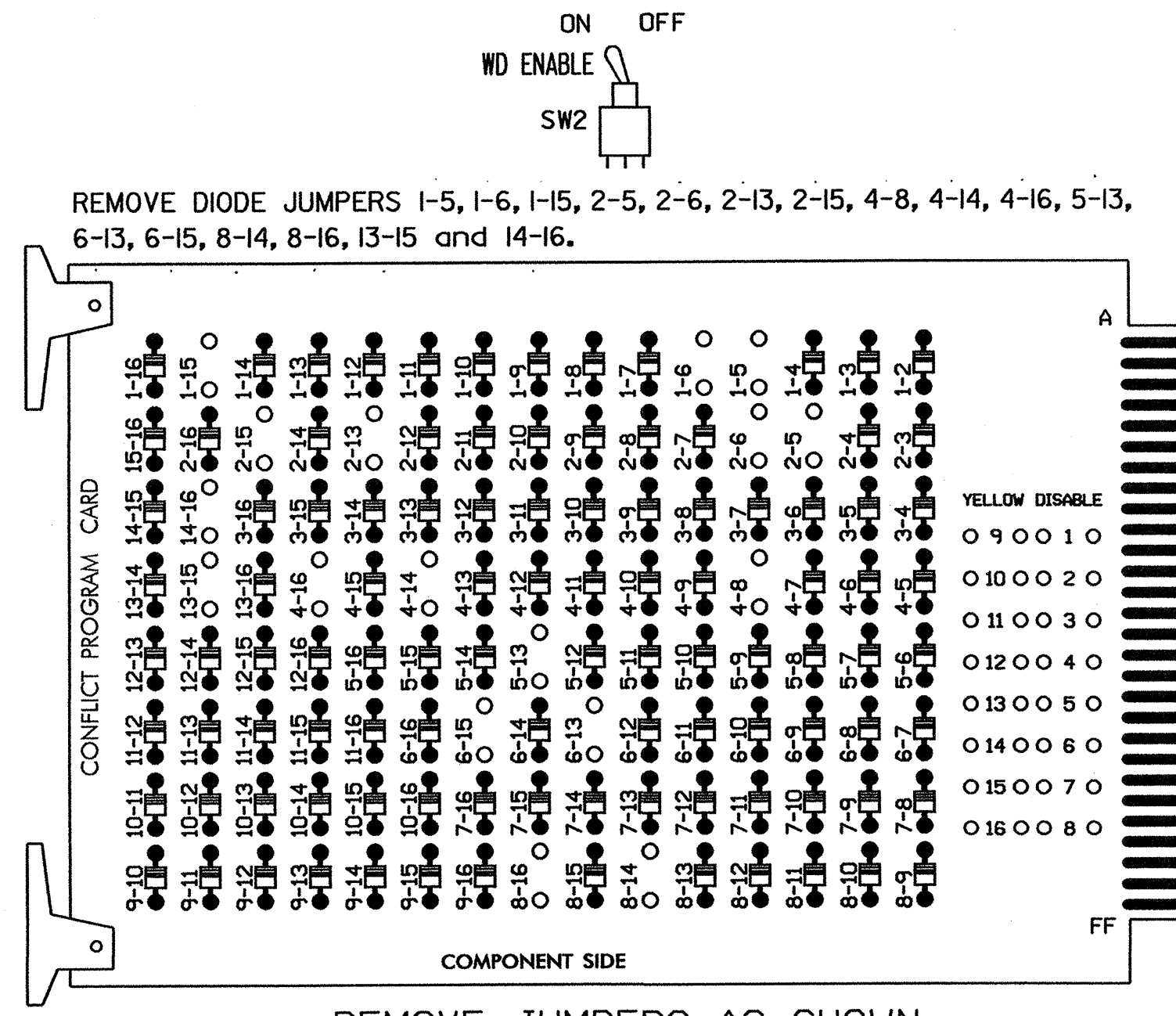
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 P21.dwg

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 3,7,9,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
 - Initialize database in Naztec 2070 local software (Apogee) as FULL-CALTRANS. This initialization should be done prior to programming controller.
 - Program phases 2 and 6 for Start Up In Walk.
 - Program "Start Up Flash" for 0 sec. The conflict monitor will govern start-up flash time.
 - Program controller "Local Flash Start" feature to "ON".
 - Program controller to provide a 1 second delay on the Flash Sense/Local Flash input. Use the following logic statement to provide this functionality:

Result	Fcn	Oper	Fcn	Oper	Fcn	Timer
I208=	I208	I	0	I	0	DLY 1
 - Remap output 05-6 (C1 pin 101) as function 124 (LdSwthc Flsh).
 - Program phases 4 and 8 for Dual Entry.
 - The cabinet and controller are part of the City of Greensboro Signal System.

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.	11,12	82	21,22	P21, P22	NU	41,42	P41, P42	51	61,62	P61, P62	NU	81,82	P81, P82
RED			128		101			134				107	
YELLOW			129		102			135				108	
GREEN			130		103			136				109	
RED ARROW	125							131					
YELLOW ARROW	126	126						132					
GREEN ARROW	127	127						133					
Hand icon				113				104		119		110	
Walking person icon				115				106		121		112	

NU = Not Used

EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
 CABINET.....CONTRACTOR SUPPLIED 332
 SOFTWARE.....NAZTEC APOGEE
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S2P,S4,S4P,S5,S6,S6P,S8,S8P
 PHASES USED.....1,2,2 PED,4,4 PED,5,6,6 PED,8,8 PED
 OVERLAPS.....NONE

INPUT FILE POSITION LAYOUT (front view)

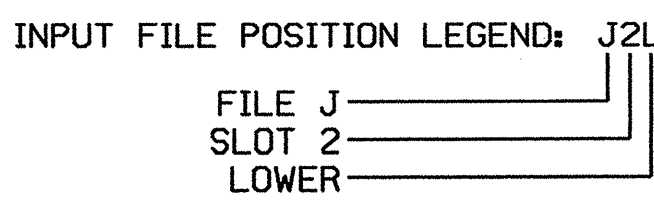
FILE "I"	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	∅ 1	∅ 1	∅ 2	∅ S	∅ S	∅ 4	∅ S	∅ S	∅ S	∅ S	∅ S	∅ 2 PED	∅ 6 PED	FS
L	1A	1B	2A,2B	∅ S	∅ S	4A	∅ S	∅ S	∅ S	∅ S	∅ S	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR
U	NOT USED	∅ 1	NOT USED	∅ S	∅ S	4B	∅ S	∅ S	∅ S	∅ S	∅ S	∅ 4 PED	∅ 8 PED	ST
L	1C	1C	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR
U	∅ 5	∅ 6	∅ S	∅ S	∅ S	∅ 8	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S
L	5A	6A,6B	∅ S	∅ S	∅ S	8A	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S
	NOT USED	NOT USED	∅ S	∅ S	∅ S	8B	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S	∅ S

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.	DETECTOR NO.	CALL PHASE	SWITCH	DELAY TIME	EXTEND TIME	CALL	EXTEND	ADDED INIT.
1A	TB2-1,2	I1U	56	1	1		3		X	X	
1B	TB2-5,6	I2U	39	2	1				X	X	
1C	TB2-7,8	I2L	43	3	1		15		X	X	
2A,2B	TB2-9,10	I3U	63	4	2				X	X	
4A	TB4-9,10	I6U	41	8	4		3		X	X	
4B	TB4-11,12	I6L	45	9	4		10		X	X	
5A	TB3-1,2	J1U	55	15	5		3		X	X	
6A,6B	TB3-5,6	J2U	40	16	6				X	X	
8A	TB5-9,10	J6U	42	22	8				X	X	
8B	TB5-11,12	J6L	46	23	8				X	X	
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED						
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED						
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED						
P81,P82	TB8-8,9	I13L	70	PED 8	8 PED						

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.



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: 07-2106
 DESIGNED: January 2009
 SEALED: 04/20/09
 REVISED: N/A

New Installation

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1609 (Swing Road) at SR 4126 (Bridford Parkway)/SR 1607 (Burnt Poplar Road)

Division 7 Guilford County Greensboro

PLAN DATE: April 2009 REVIEWED BY: T. J. [Signature]

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS: INIT. DATE

750 N. Greenfield Pkwy, Garner, NC 27529

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

Signature: George C. Brown 4/21/09 DATE: 4/21/09

SIG. INVENTORY NO. 07-2106

21-APR-2009 14:34
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 cstrickland

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

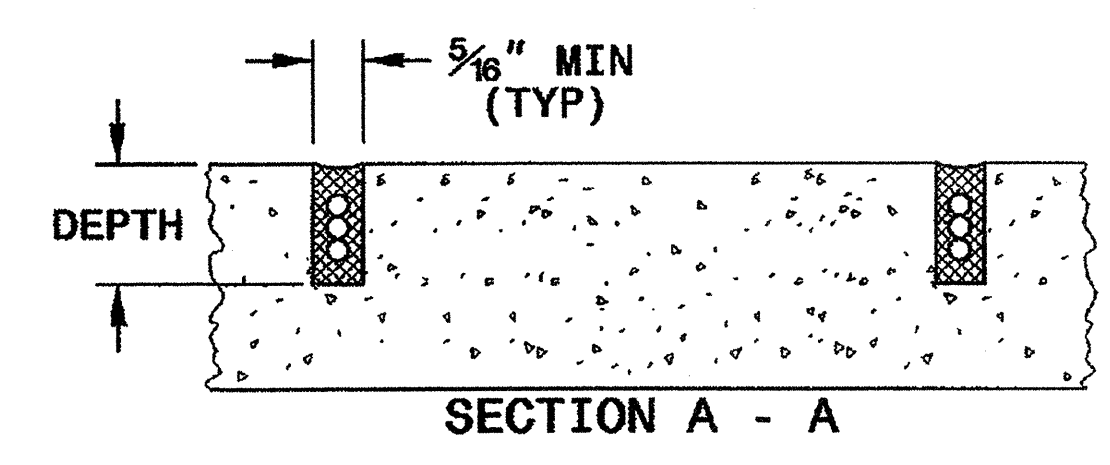
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

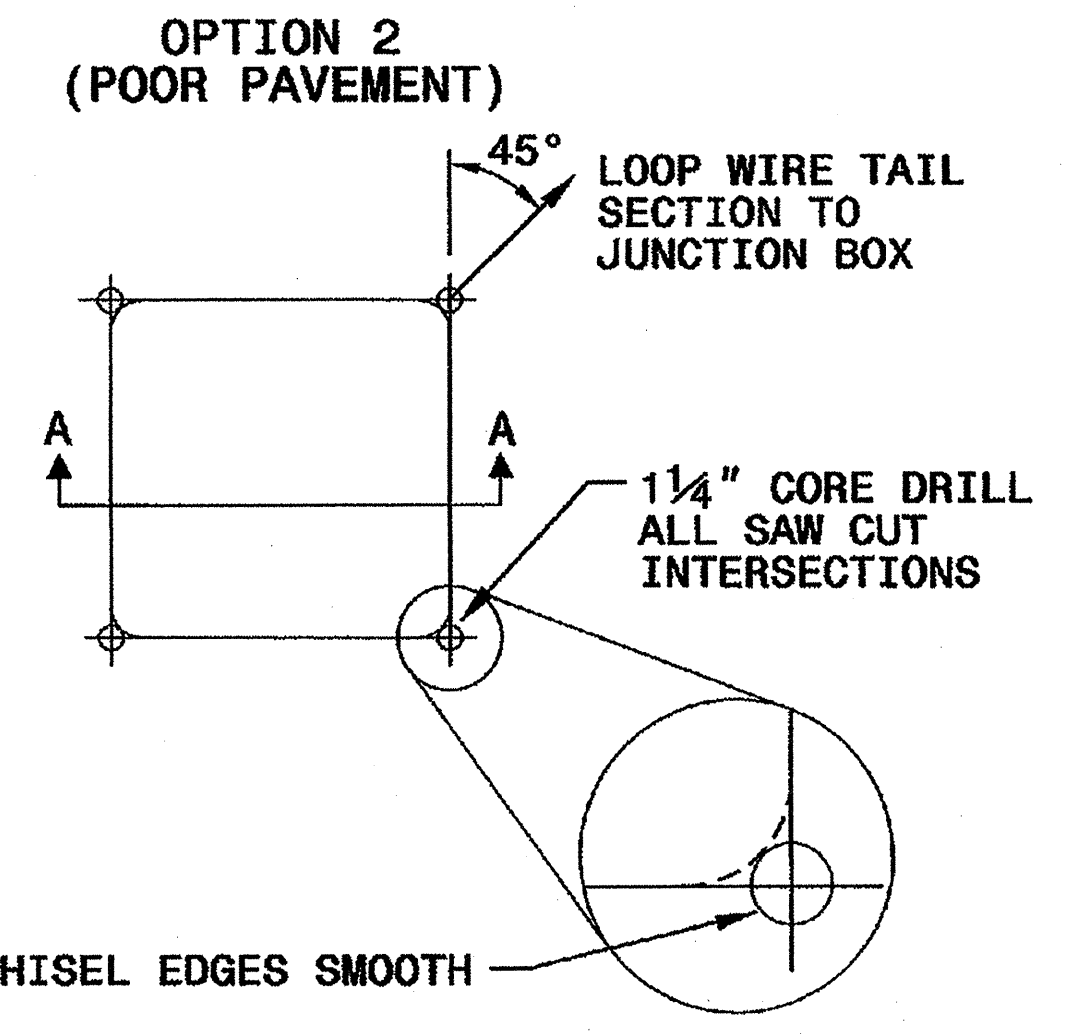
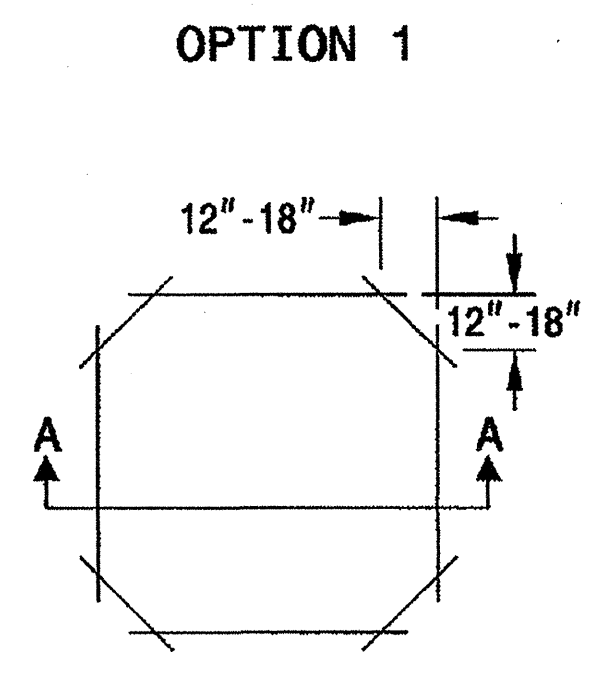
SAW SLOT DEPTH CHART

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	

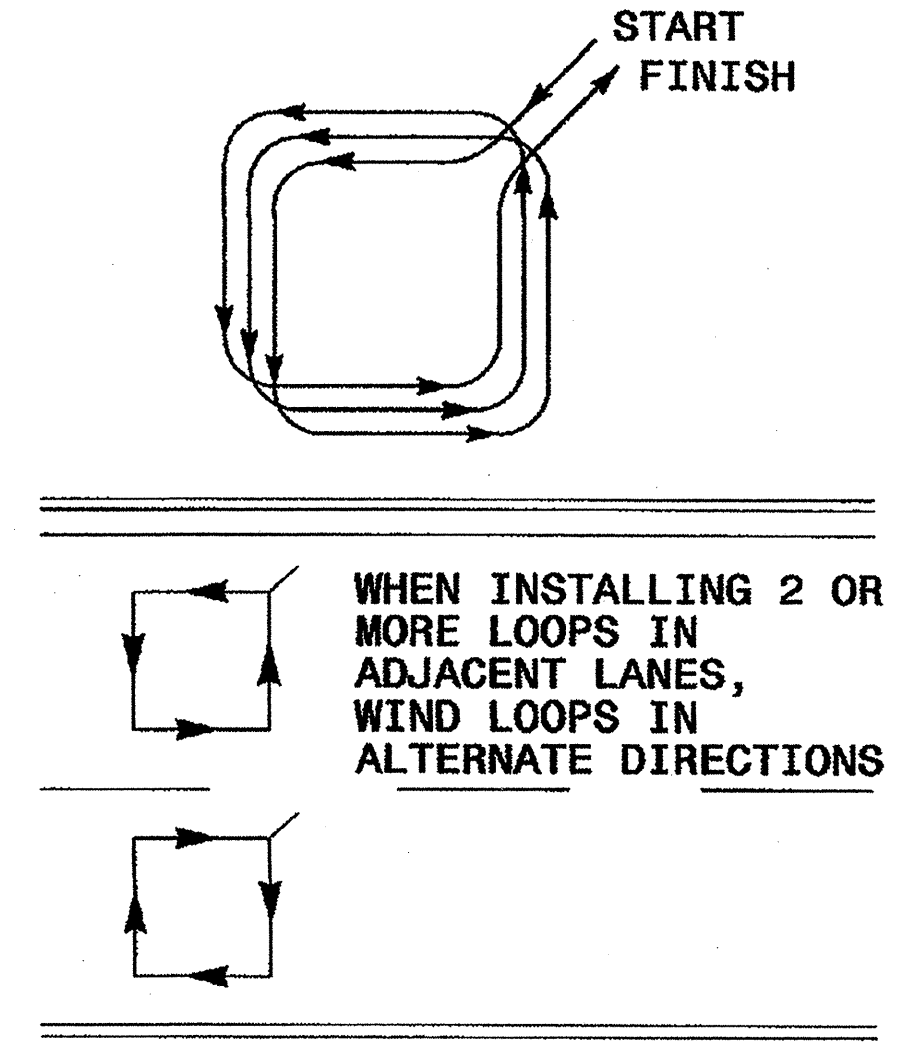


CONVENTIONAL 4-SIDED LOOP

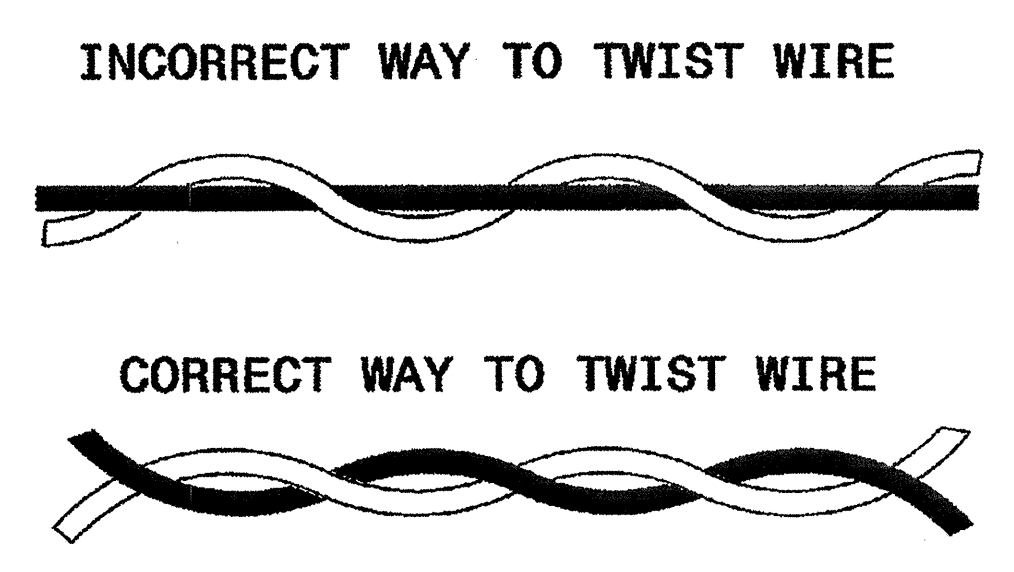
SAW CUT OPTIONS



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

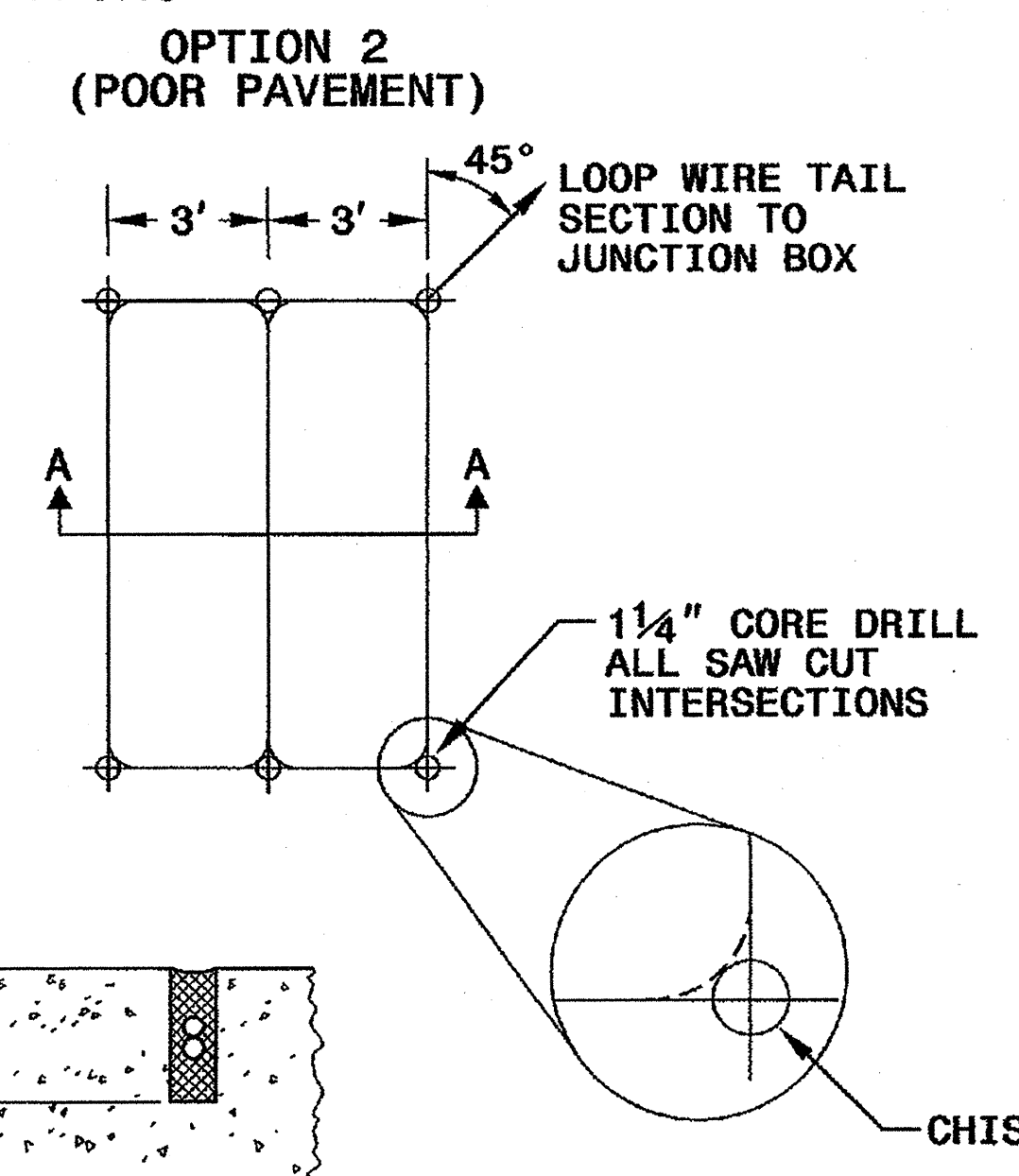
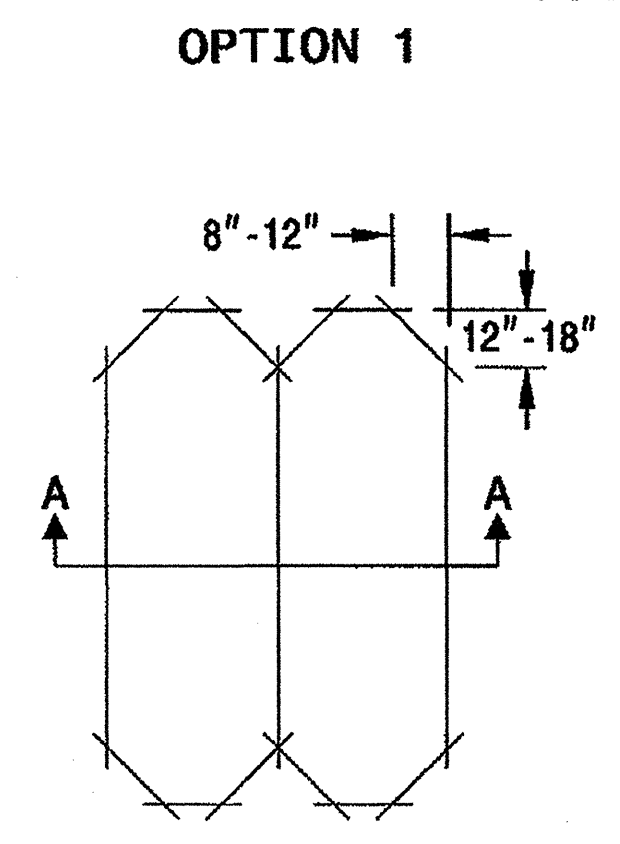


NOTES

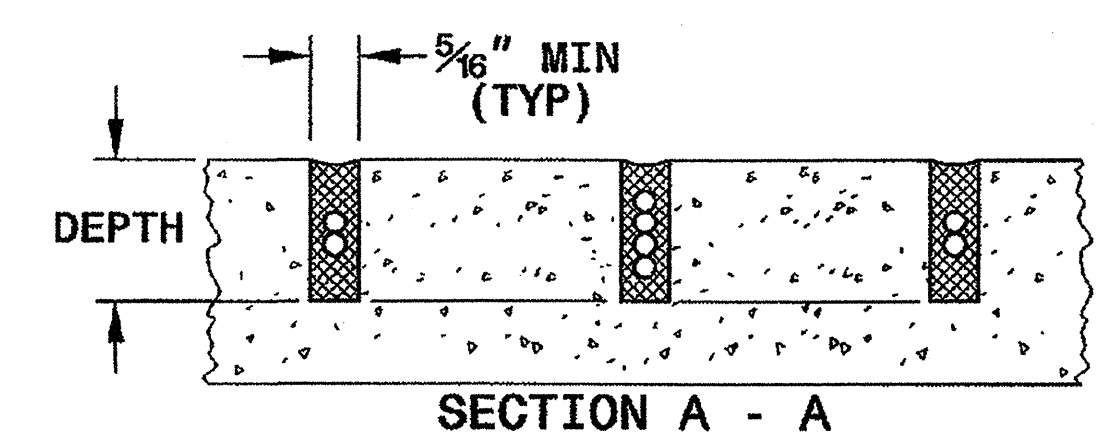
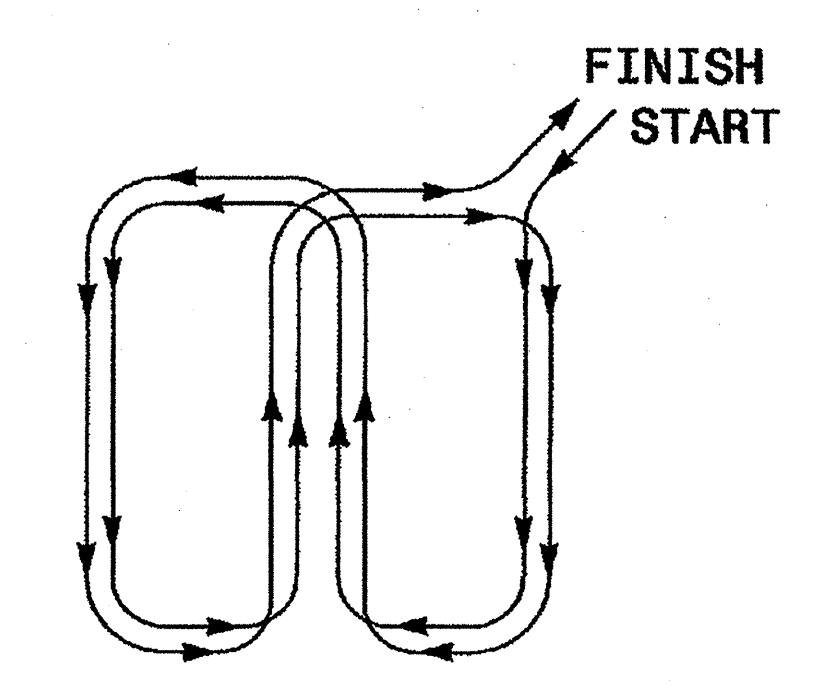
1. OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
2. MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
3. WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
4. LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

QUADRUPOLE LOOP

SAW CUT OPTIONS



LOOP WINDING METHOD



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

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

Wilton T. Dean 11/24/08
SIGNATURE DATE

24-NOV-2008 09:28 d:\work_files\1725D01_1725D01.dgn

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

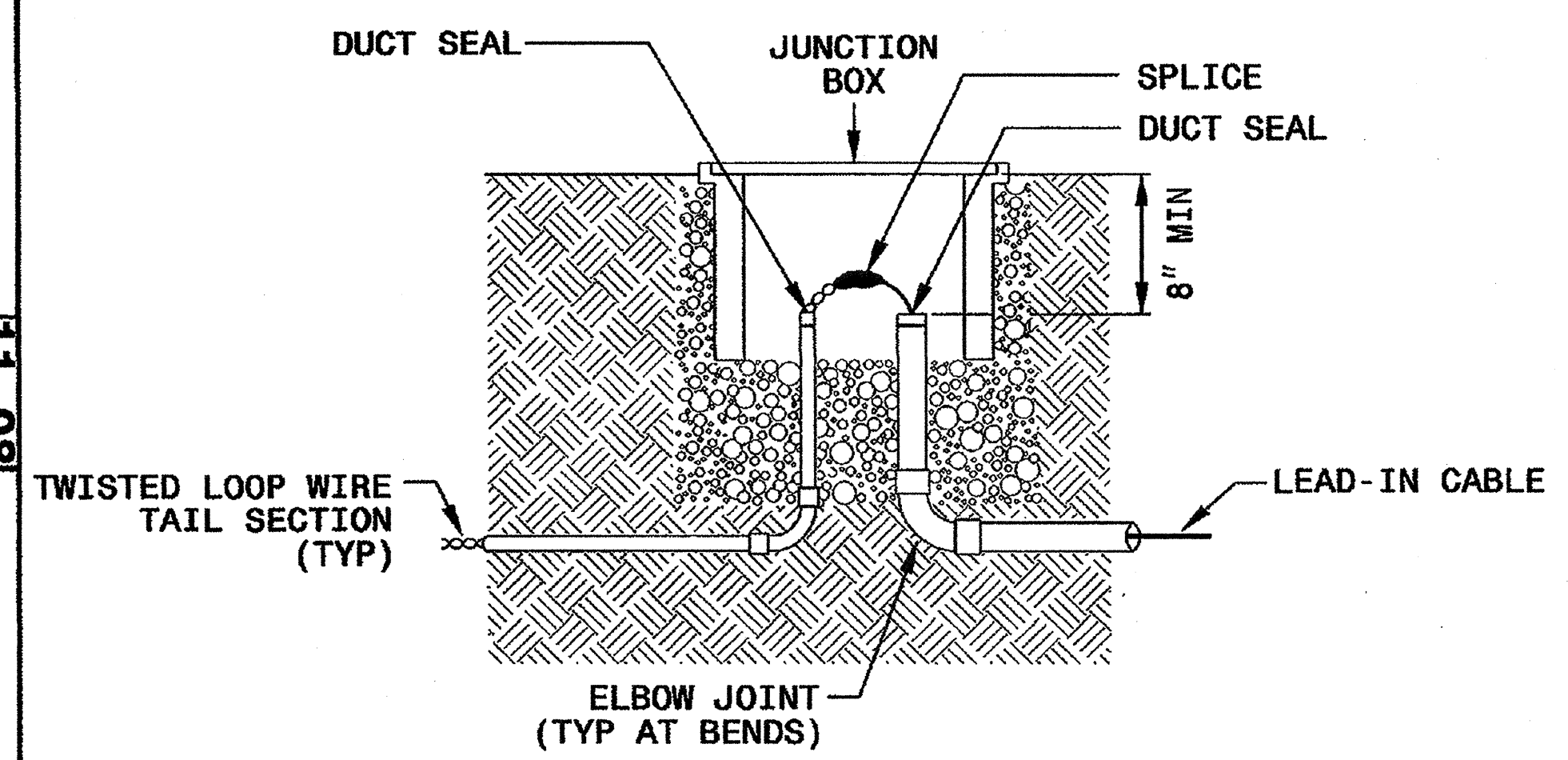
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
LOOP WIRE DETAILS

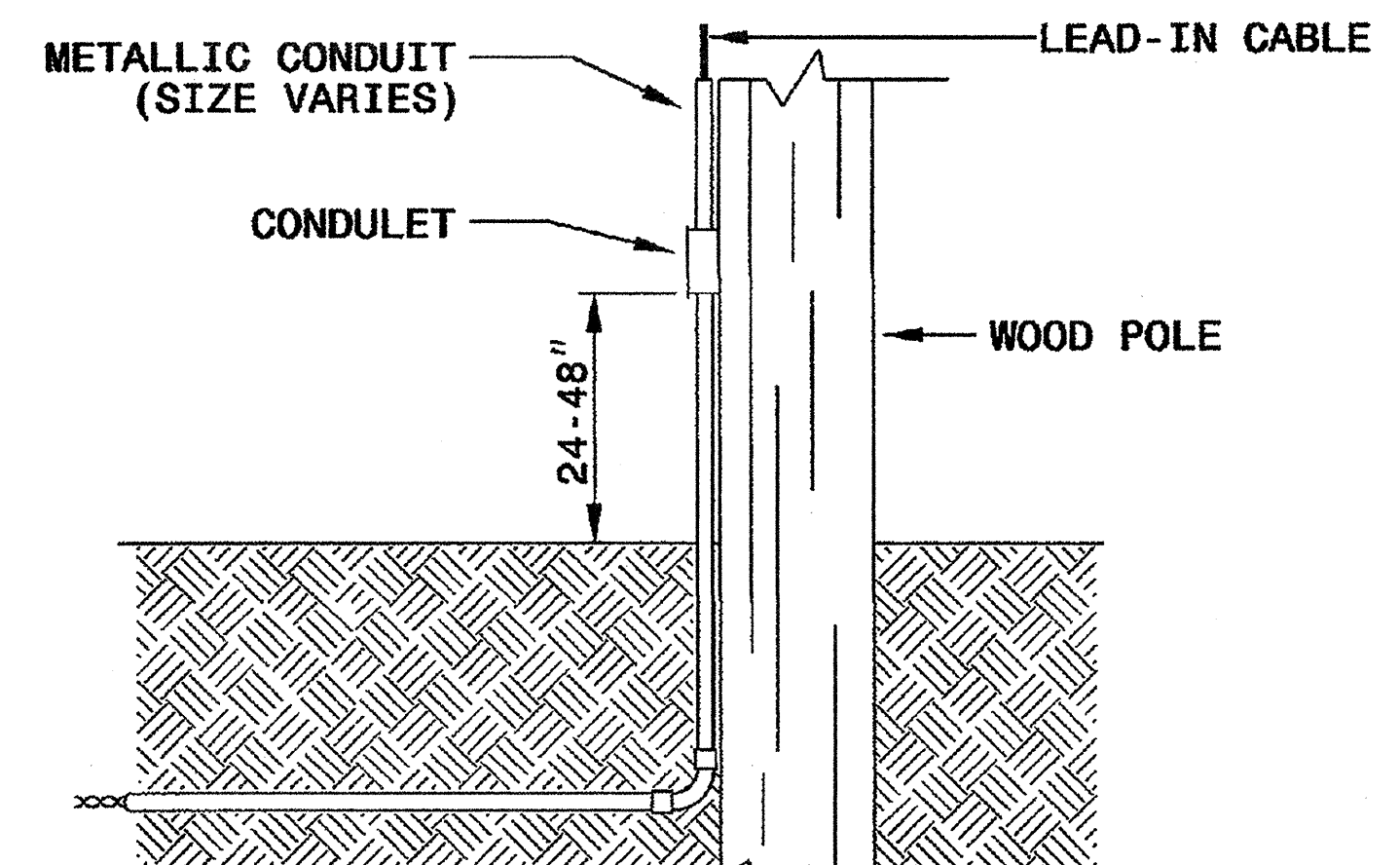
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

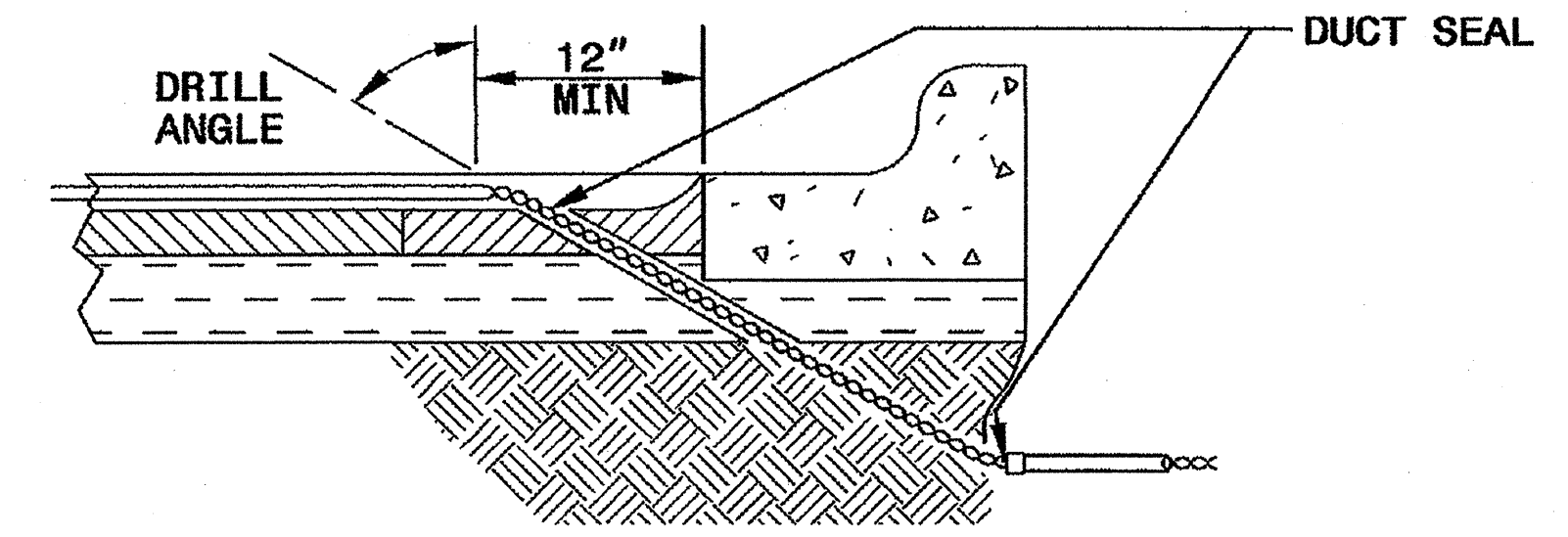


NOTE

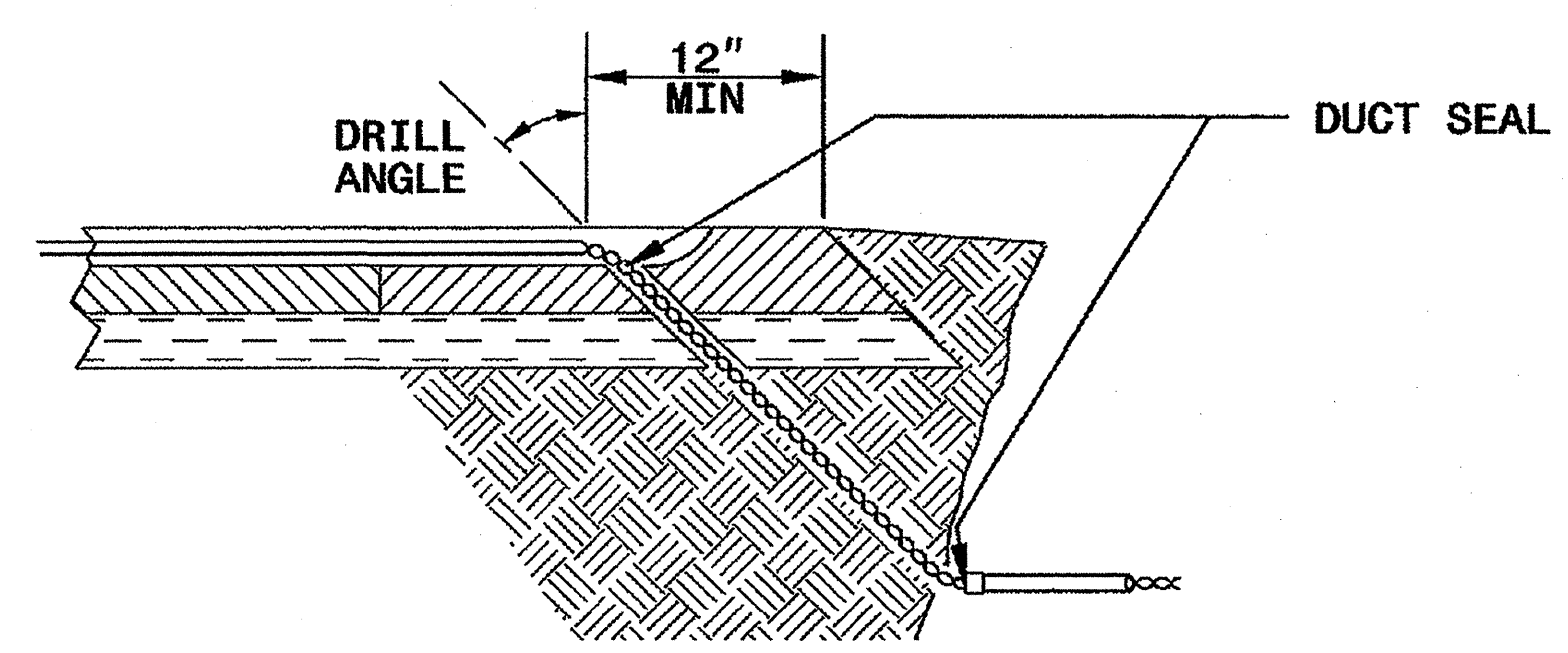
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

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

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

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 16286 ENGINEER WILTON I. DEAN
Wilton I. Dean 11/24/08
SIGNATURE DATE

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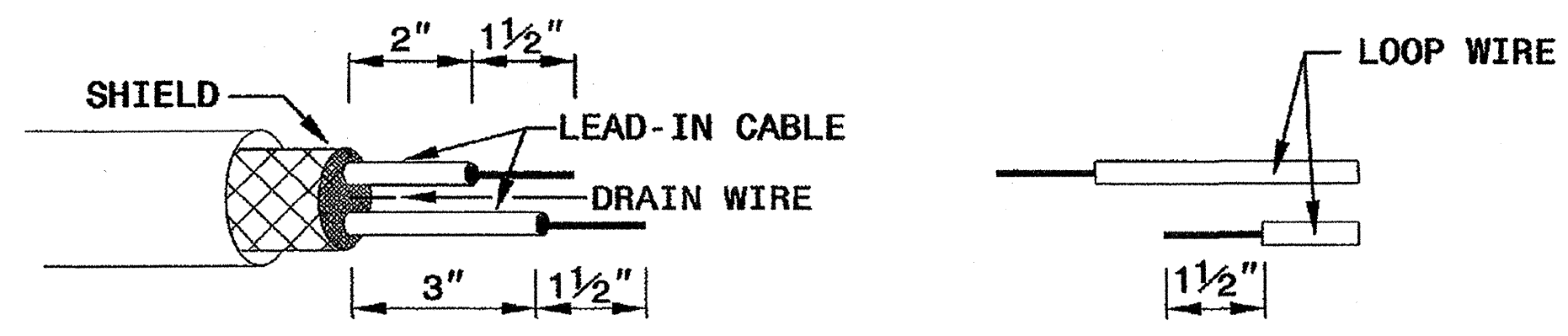
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

11-08

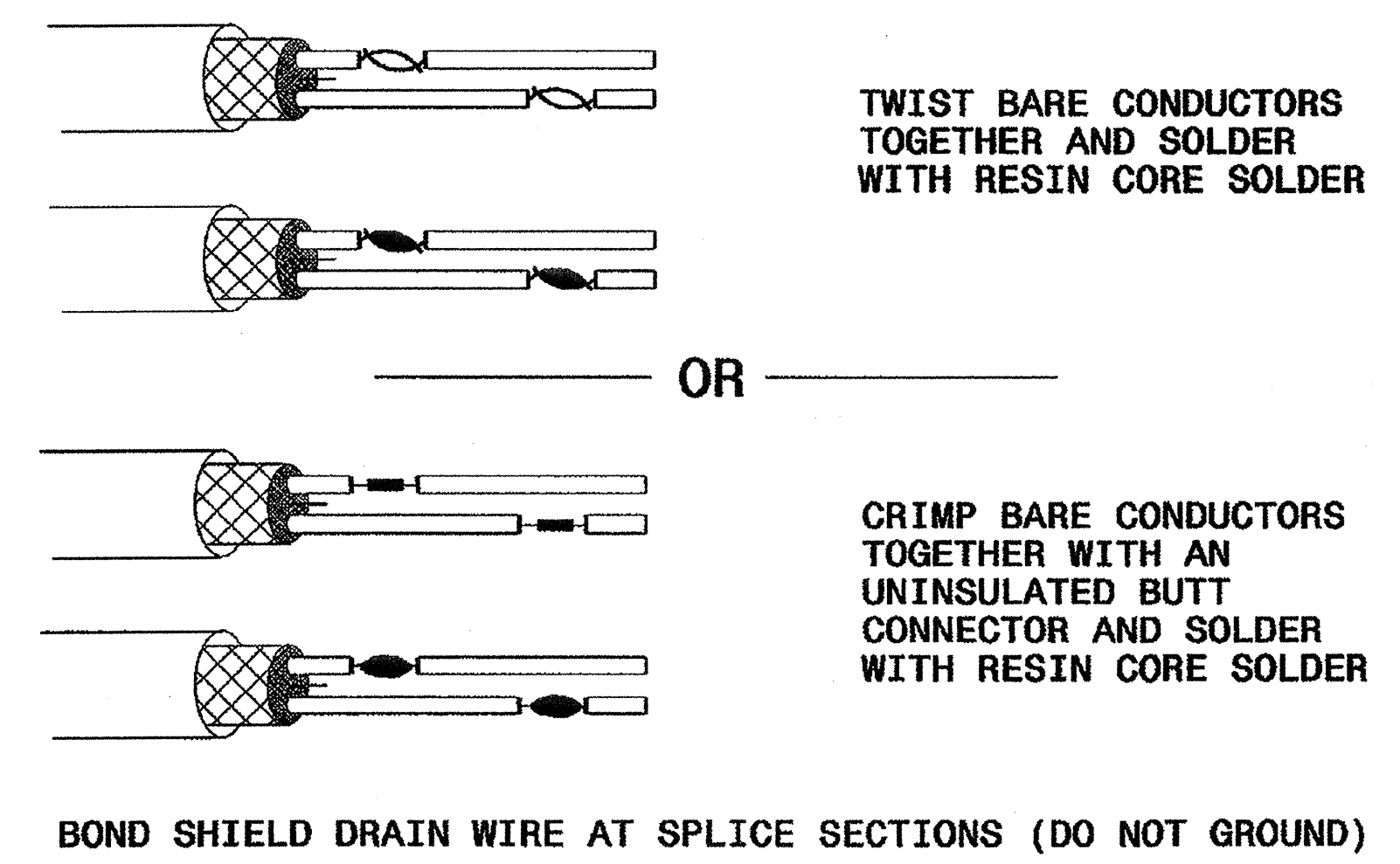
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

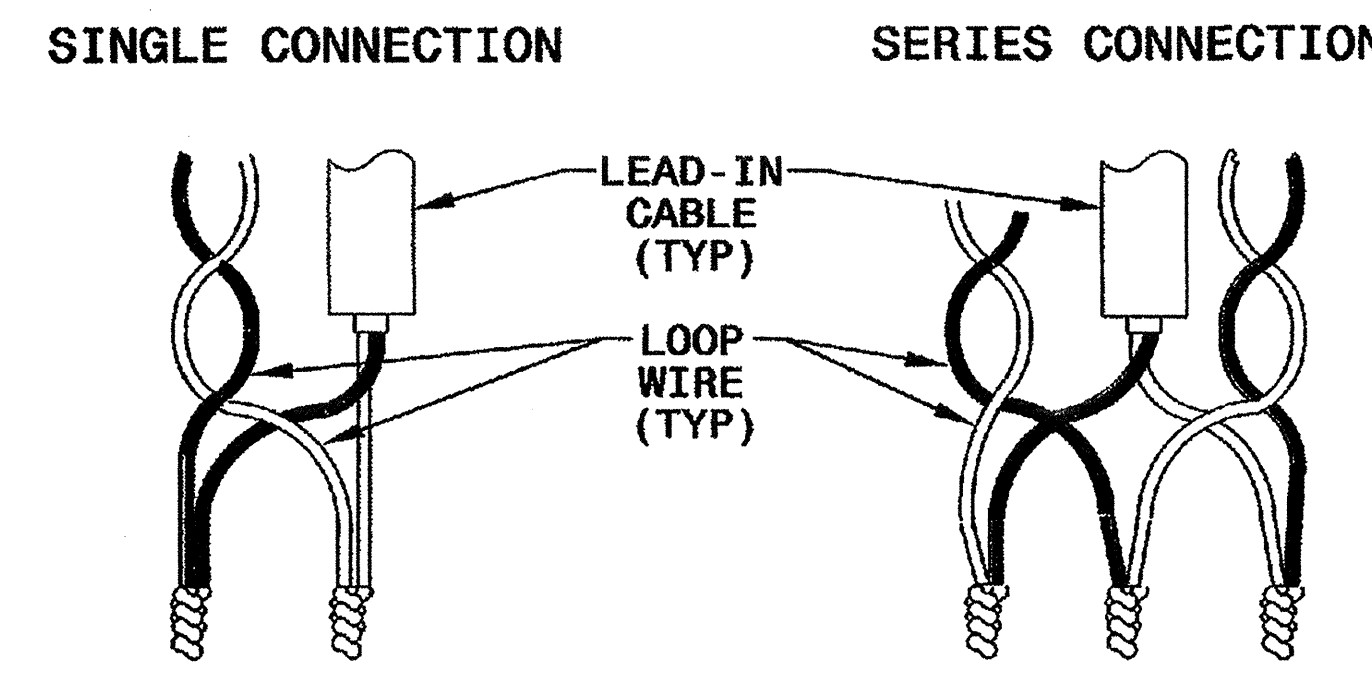
STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE



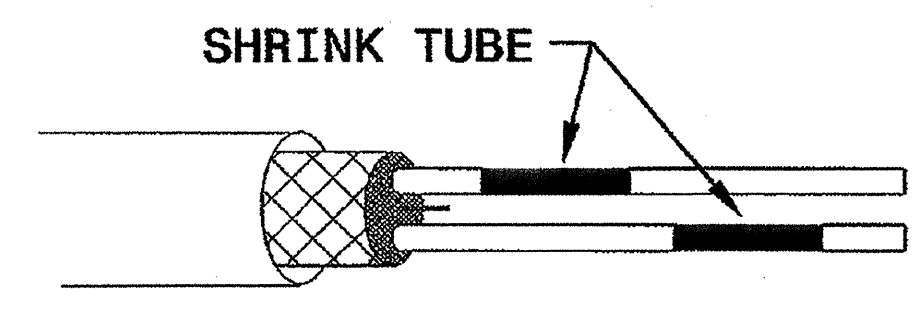
STEP 2. CONNECT AND SOLDER



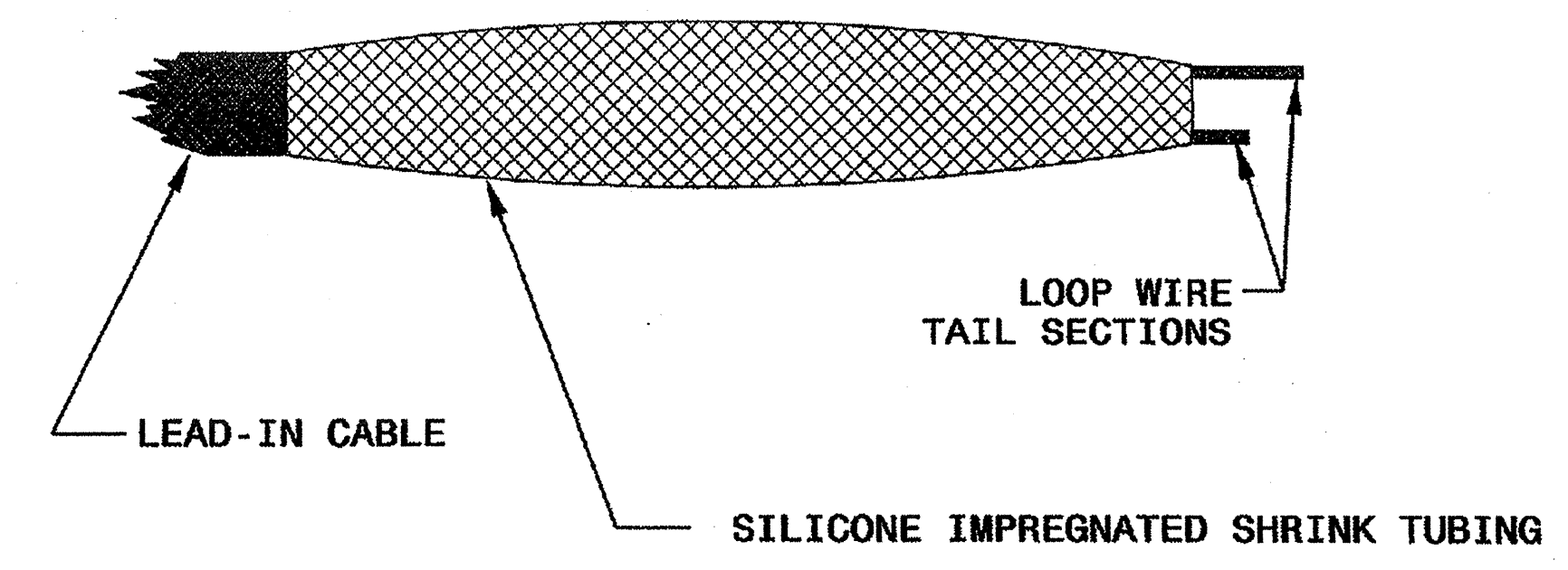
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



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:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

Milton I. Dean 11/24/08
SIGNATURE DATE

24-NOV-2008 09:35
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zml title

- 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 STUB-OUTS
- 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

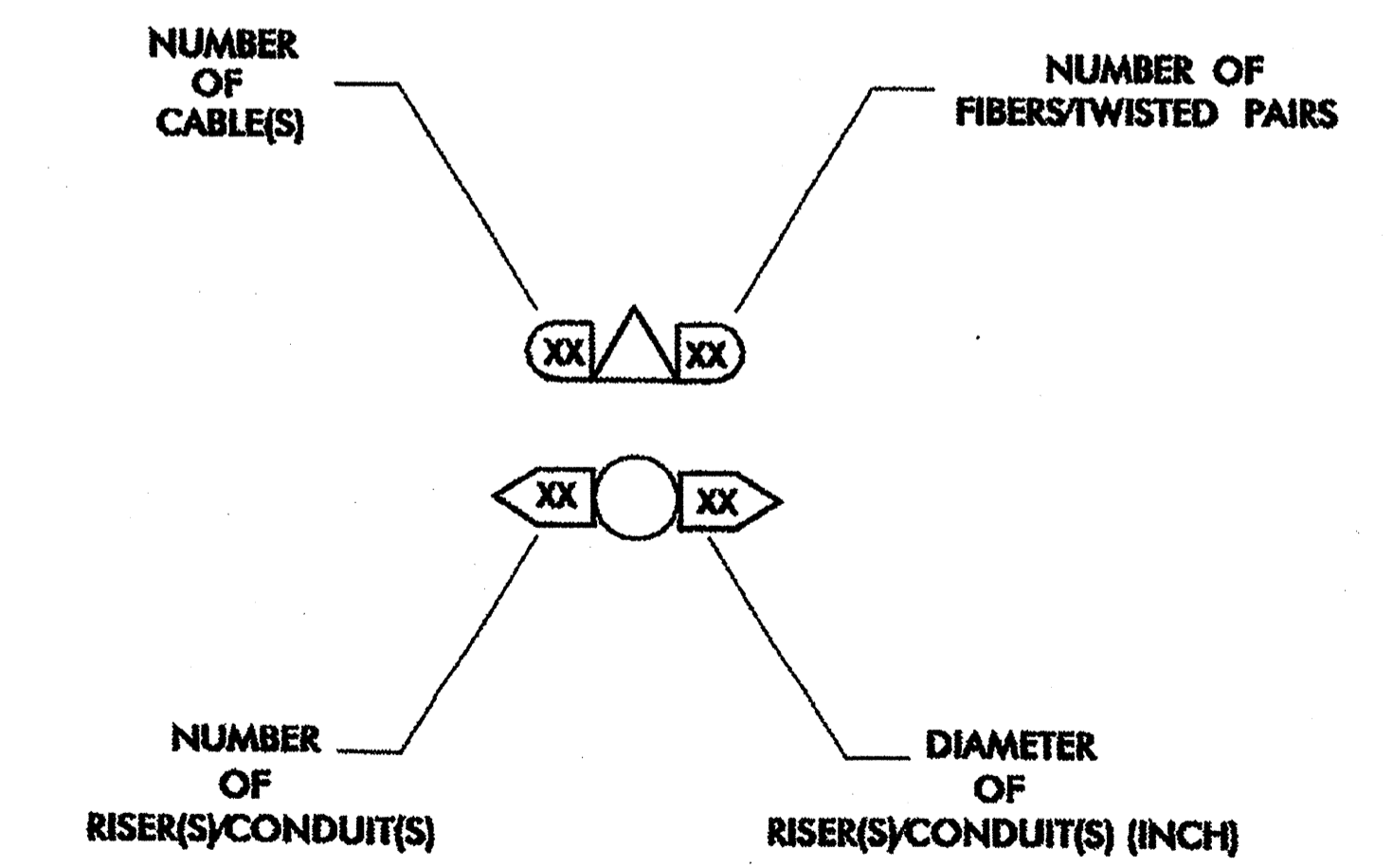
- 34 INSTALL CABINET FOUNDATION
- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 REMOVE EXISTING JUNCTION BOX
- 42 INSTALL 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 AND MESSENGER CABLE
- 49 REMOVE EXISTING MESSENGER 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
EXI	EXISTING COMMUNICATIONS CABLE
REM	EXISTING COMMUNICATIONS CABLE TO BE REMOVED
(Solid line)	NEW AERIAL GUY ASSEMBLY
(Dashed line)	NEW CONDUIT
(Dotted line)	EXISTING CONDUIT
DD	NEW DIRECTIONAL DRILLED CONDUIT
B&J	NEW BORED AND JACKED CONDUIT
(Square)	NEW JUNCTION BOX
(Shaded Square)	EXISTING JUNCTION BOX
(Circle)	NEW WOOD POLE
(Shaded Circle)	EXISTING WOOD POLE
(S in Circle)	AERIAL SPlice ENCLOSURE
(Square with X)	NEW METAL POLE
(Shaded Square with X)	EXISTING METAL POLE
(Square with T)	NEW CCTV ASSEMBLY
(Square with T and arrow)	NEW STANDARD GUY ASSEMBLY
(Square with T and arrow)	NEW SIDEWALK GUY ASSEMBLY
(Square with S)	NEW CABLE STORAGE RACKS (SNOW SHOES)
(Square with X)	EXISTING CONTROLLER AND CABINET
(Square with S)	EXISTING SPlice CABINET
(Square with S)	NEW SPlice CABINET
SP	SIGNAL POLE
(XX-XXXX)	SIGNAL INVENTORY NUMBER

CONSTRUCTION NOTE SYMBOLOGY KEY

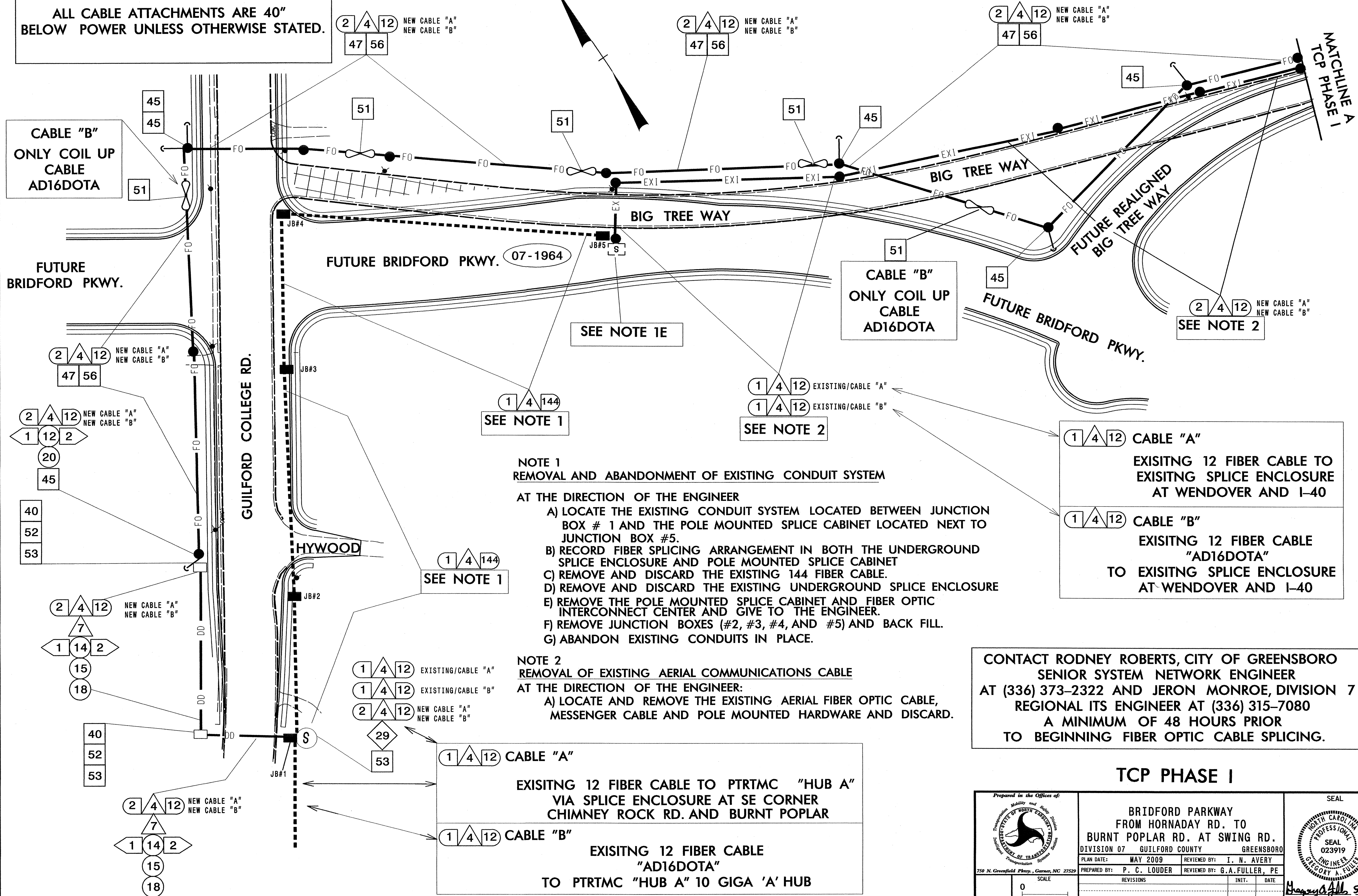
- XX INDICATES NUMBER OF CABLES, LOOPS, ETC.
- XX INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
- XX INDICATES NUMBER OF RISER(S)/CONDUIT(S)
- XX INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)



	CONSTRUCTION NOTES		
	PLAN DATE: _____ PREPARED BY: _____	REVIEWED BY: _____ REVIEWED BY: G. A. FULLER	
REVISIONS: _____			SEAL: _____ DATE: _____

ALL CABLE ATTACHMENTS ARE 40" BELOW POWER UNLESS OTHERWISE STATED.

EXISTING ROADWAY



CABLE "B" ONLY COIL UP CABLE AD16DOTA

CABLE "B" ONLY COIL UP CABLE AD16DOTA

SEE NOTE 1

SEE NOTE 2

SEE NOTE 1

1 4 12 CABLE "A"
EXISTING 12 FIBER CABLE TO EXISTING SPLICE ENCLOSURE AT WENDOVER AND I-40

1 4 12 CABLE "B"
EXISTING 12 FIBER CABLE "AD16DOTA" TO EXISTING SPLICE ENCLOSURE AT WENDOVER AND I-40

NOTE 1
REMOVAL AND ABANDONMENT OF EXISTING CONDUIT SYSTEM

- AT THE DIRECTION OF THE ENGINEER
- A) LOCATE THE EXISTING CONDUIT SYSTEM LOCATED BETWEEN JUNCTION BOX # 1 AND THE POLE MOUNTED SPLICE CABINET LOCATED NEXT TO JUNCTION BOX #5.
 - B) RECORD FIBER SPlicing ARRANGEMENT IN BOTH THE UNDERGROUND SPLICE ENCLOSURE AND POLE MOUNTED SPLICE CABINET
 - C) REMOVE AND DISCARD THE EXISTING 144 FIBER CABLE.
 - D) REMOVE AND DISCARD THE EXISTING UNDERGROUND SPLICE ENCLOSURE
 - E) REMOVE THE POLE MOUNTED SPLICE CABINET AND FIBER OPTIC INTERCONNECT CENTER AND GIVE TO THE ENGINEER.
 - F) REMOVE JUNCTION BOXES (#2, #3, #4, AND #5) AND BACK FILL.
 - G) ABANDON EXISTING CONDUITS IN PLACE.

NOTE 2
REMOVAL OF EXISTING AERIAL COMMUNICATIONS CABLE

- AT THE DIRECTION OF THE ENGINEER:
- A) LOCATE AND REMOVE THE EXISTING AERIAL FIBER OPTIC CABLE, MESSENGER CABLE AND POLE MOUNTED HARDWARE AND DISCARD.

CONTACT RODNEY ROBERTS, CITY OF GREENSBORO SENIOR SYSTEM NETWORK ENGINEER AT (336) 373-2322 AND JERON MONROE, DIVISION 7 REGIONAL ITS ENGINEER AT (336) 315-7080 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING FIBER OPTIC CABLE SPlicing.

1 4 12 CABLE "A"
EXISTING 12 FIBER CABLE TO PRTMTC "HUB A" VIA SPLICE ENCLOSURE AT SE CORNER CHIMNEY ROCK RD. AND BURNT POPLAR

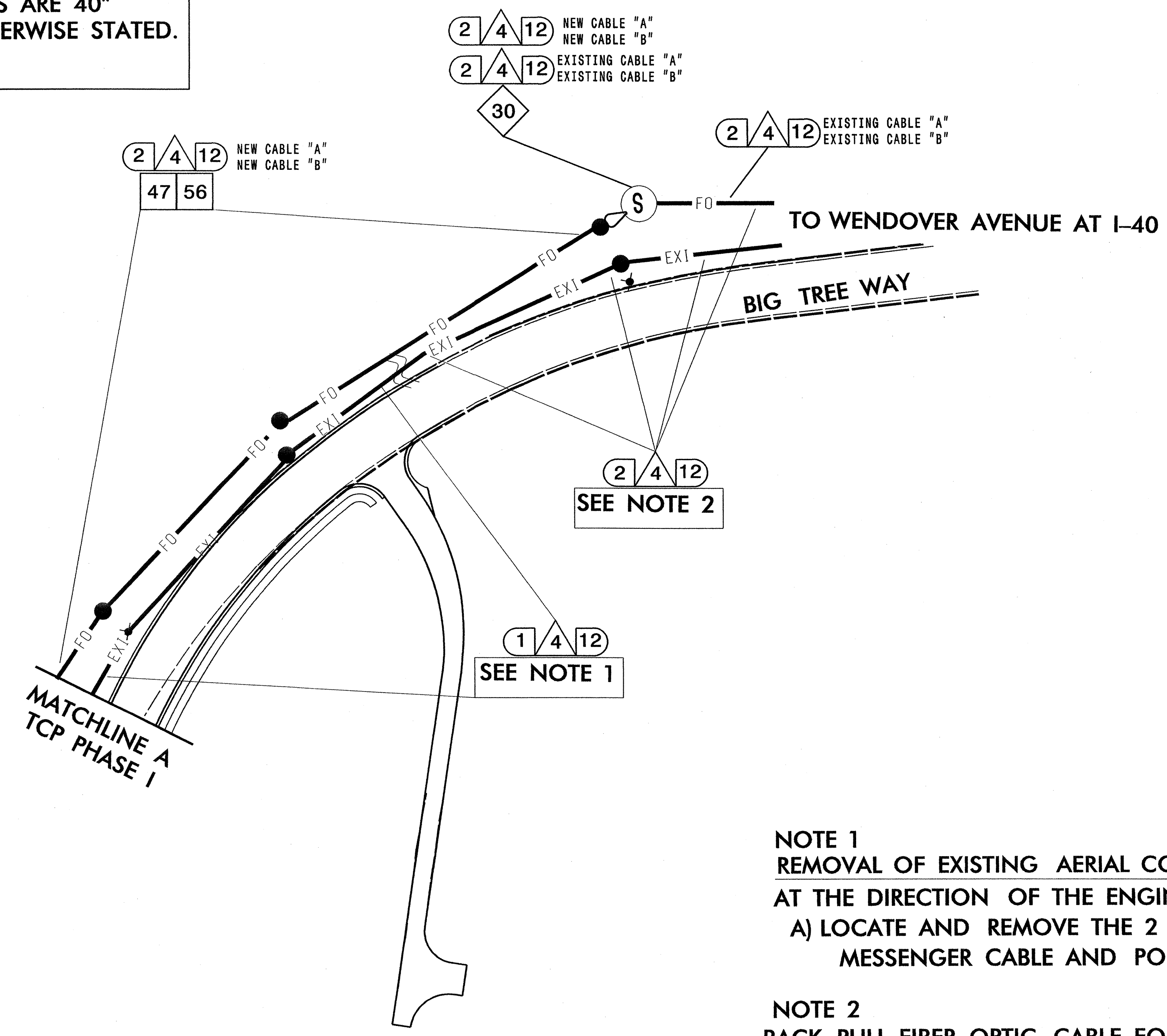
1 4 12 CABLE "B"
EXISTING 12 FIBER CABLE "AD16DOTA" TO PRTMTC "HUB A" 10 GIGA 'A' HUB

TCP PHASE I

	BRIDFORD PARKWAY FROM HORNADAY RD. TO BURNT POPLAR RD. AT SWING RD. DIVISION 07 GUILFORD COUNTY GREENSBORO	
	PLAN DATE: MAY 2009 PREPARED BY: P. C. LOUDER	REVIEWED BY: I. N. AVERY REVIEWED BY: G. A. FULLER, PE
SCALE: 0	REVISIONS:	INT. DATE:
Signature: <i>Gregory A. Fuller</i>		DATE: 5/14/09

EXISTING ROADWAY

ALL CABLE ATTACHMENTS ARE 40" BELOW POWER UNLESS OTHERWISE STATED.



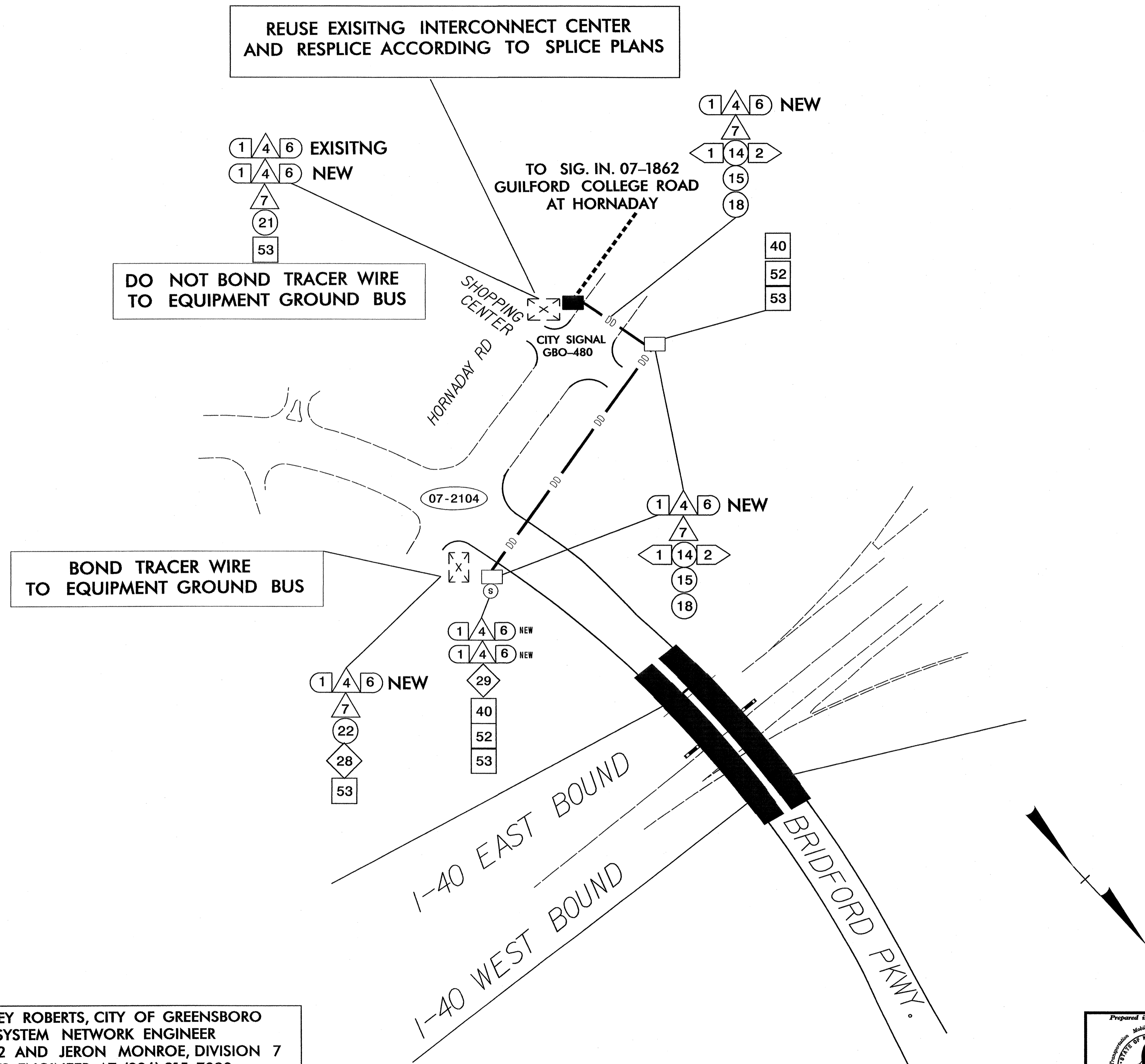
NOTE 1
REMOVAL OF EXISTING AERIAL COMMUNICATIONS CABLE
 AT THE DIRECTION OF THE ENGINEER:
 A) LOCATE AND REMOVE THE 2 EXISTING AERIAL FIBER OPTICAL CABLES, MESSENGER CABLE AND POLE MOUNTING HARDWARE AND DISCARD.

NOTE 2
BACK PULL FIBER OPTIC CABLE FOR FUTURE USE
 A) CUT FIBER OPTIC CABLES AND BACK PULL TO THE EXISTING POLE. RELOCATE THE BACK PULLED FIBER OPTIC CABLES OVER TO THE NEW POLE.
 B) INSTALL A NEW AERIAL SPLICE ENCLOSURE.

CONTACT RODNEY ROBERTS, CITY OF GREENSBORO SENIOR SYSTEM NETWORK ENGINEER AT (336) 373-2322 AND JERON MONROE, DIVISION 7 REGIONAL ITS ENGINEER AT (336) 315-7080 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING FIBER OPTIC CABLE SPLICING.

TCP PHASE I

	BRIDFORD PARKWAY FROM HORNADAY RD. TO BURNT POPLAR RD. AT SWING RD.		SEAL
	DIVISION 07 GUILFORD COUNTY GREENSBORO PLAN DATE: MAY 2009 PREPARED BY: P. C. LOUDER	REVIEWED BY: I. N. AVERY REVIEWED BY: G.A. FULLER, PE	



REUSE EXISTING INTERCONNECT CENTER AND RESPLICE ACCORDING TO SPLICE PLANS

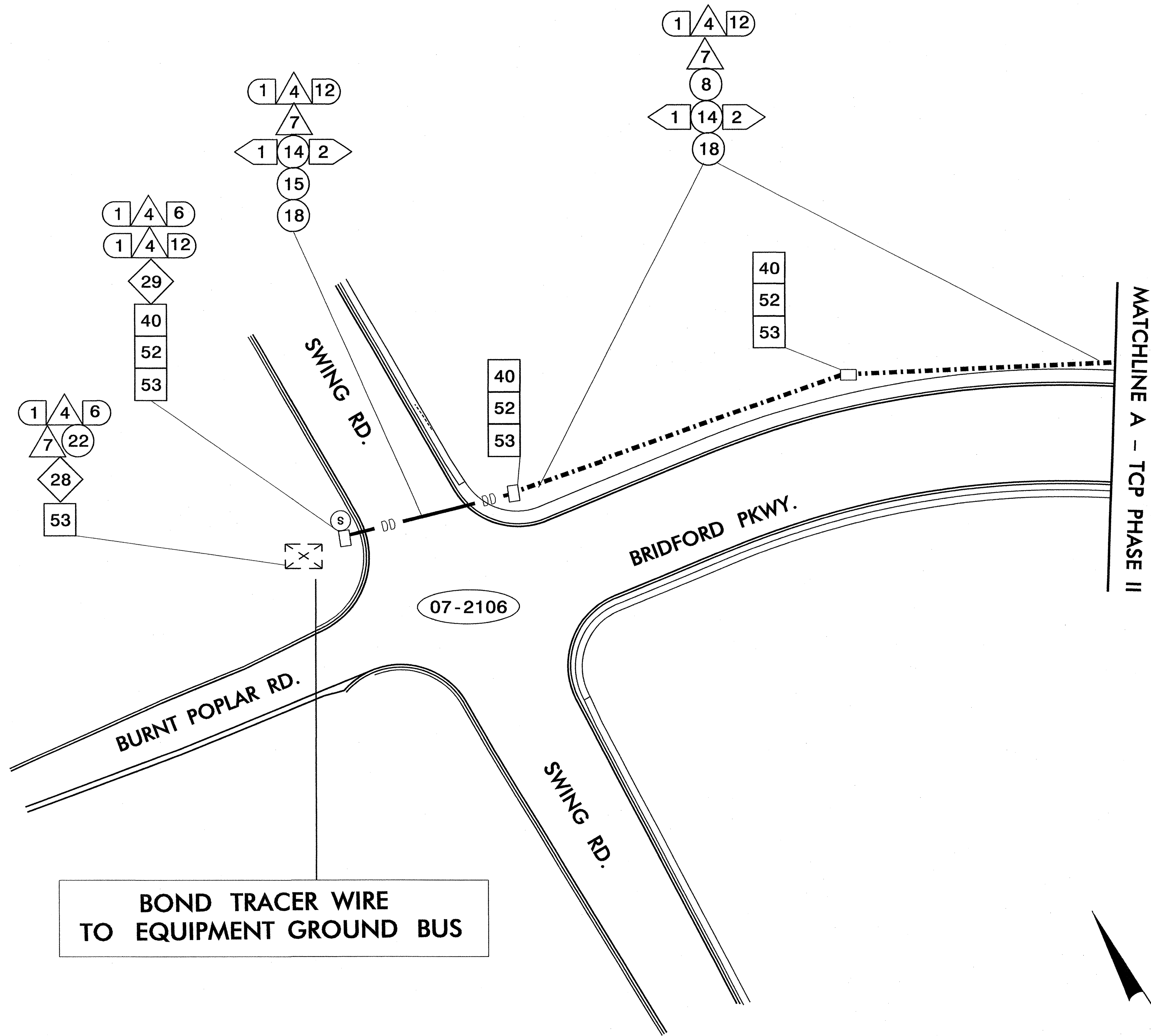
DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS

BOND TRACER WIRE TO EQUIPMENT GROUND BUS

CONTACT RODNEY ROBERTS, CITY OF GREENSBORO SENIOR SYSTEM NETWORK ENGINEER AT (336) 373-2322 AND JERON MONROE, DIVISION 7 REGIONAL ITS ENGINEER AT (336) 315-7080 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING FIBER OPTIC CABLE SPLICING.

TCP FINAL

	BRIDFORD PARKWAY FROM HORNADAY RD. TO BURNT POPLAR RD. AT SWING RD. DIVISION 07 GUILFORD COUNTY GREENSBORO		
	PLAN DATE: MAY 2009 PREPARED BY: P. C. LOUDER	REVIEWED BY: I. N. AVERY REVIEWED BY: G.A. FULLER, PE	
SCALE: 0	REVISIONS	INIT.	DATE

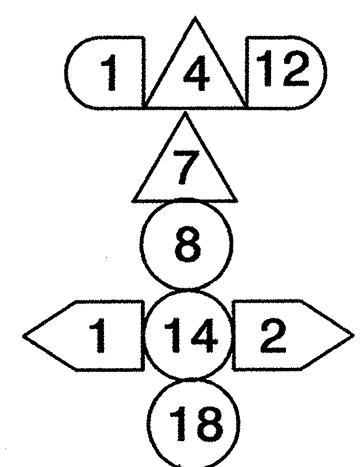


CONTACT RODNEY ROBERTS, CITY OF GREENSBORO
 SENIOR SYSTEM NETWORK ENGINEER
 AT (336) 373-2322 AND JERON MONROE, DIVISION 7
 REGIONAL ITS ENGINEER AT (336) 315-7080
 A MINIMUM OF 48 HOURS PRIOR
 TO BEGINNING FIBER OPTIC CABLE SPLICING.

TCP FINAL

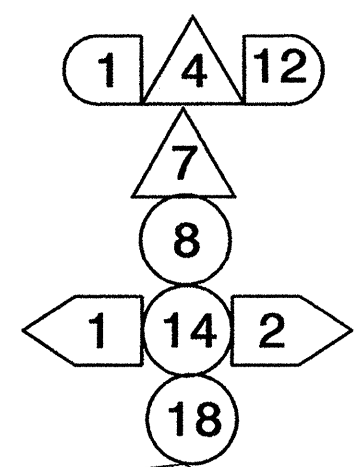
	BRIDFORD PARKWAY FROM HORNADAY RD. TO BURNT POPLAR RD. AT SWING RD. DIVISION 07 GUILFORD COUNTY GREENSBORO		SEAL 							
	PLAN DATE: MAY 2009 PREPARED BY: P. C. LOUDER	REVIEWED BY: I. N. AVERY REVIEWED BY: G.A. FULLER, PE		REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	INIT.	DATE		
NO.	DATE	INIT.	DATE							
SCALE 	SIGNATURE: <i>Gregory A. Fuller</i> 5/14/09 DATE		CADD Filename:							

MATCHLINE A - TCP PHASE II



40
52

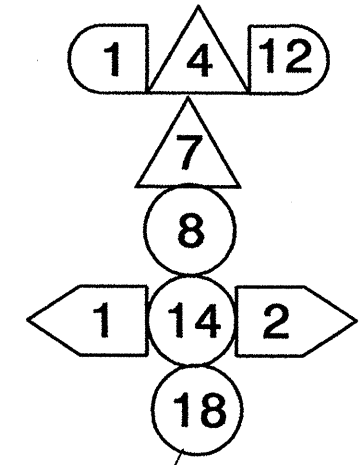
APPROXIMATELY 500 FT BETWEEN JUNCTION BOXES



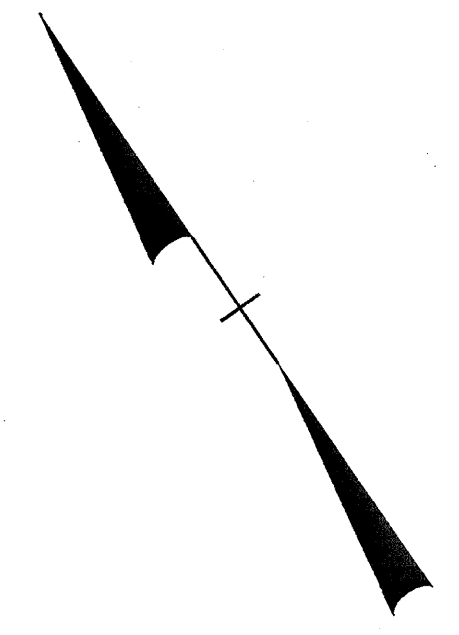
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52

APPROXIMATELY 500 FT BETWEEN JUNCTION BOXES

40
52
53



MATCHLINE B - TCP PHASE II



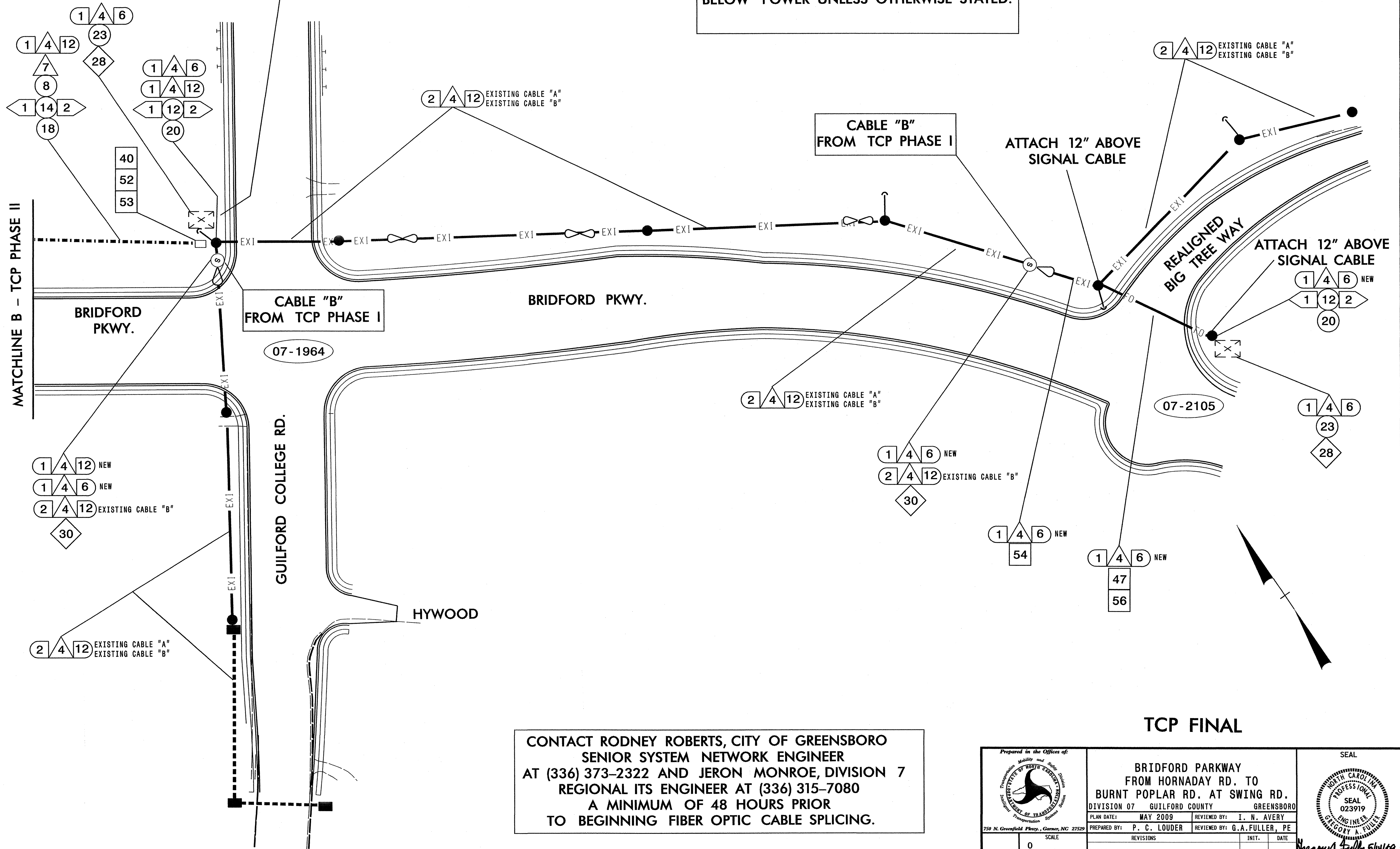
CONTACT RODNEY ROBERTS, CITY OF GREENSBORO
SENIOR SYSTEM NETWORK ENGINEER
AT (336) 373-2322 AND JERON MONROE, DIVISION 7
REGIONAL ITS ENGINEER AT (336) 315-7080
A MINIMUM OF 48 HOURS PRIOR
TO BEGINNING FIBER OPTIC CABLE SPLICING.

TCP FINAL

	BRIDFORD PARKWAY FROM HORNADAY RD. TO BURNT POPLAR RD. AT SWING RD.		SEAL
	DIVISION 07 GUILFORD COUNTY GREENSBORO		
PREPARED BY: P. C. LOUDER REVISIONS:	REVIEWED BY: I. N. AVERY G.A. FULLER	DATE:	DATE: 5/19/09
SCALE:	REVISIONS:	INIT.:	DATE:

DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS

ALL CABLE ATTACHMENTS ARE 40" BELOW POWER UNLESS OTHERWISE STATED.



CONTACT RODNEY ROBERTS, CITY OF GREENSBORO SENIOR SYSTEM NETWORK ENGINEER AT (336) 373-2322 AND JERON MONROE, DIVISION 7 REGIONAL ITS ENGINEER AT (336) 315-7080 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING FIBER OPTIC CABLE SPLICING.

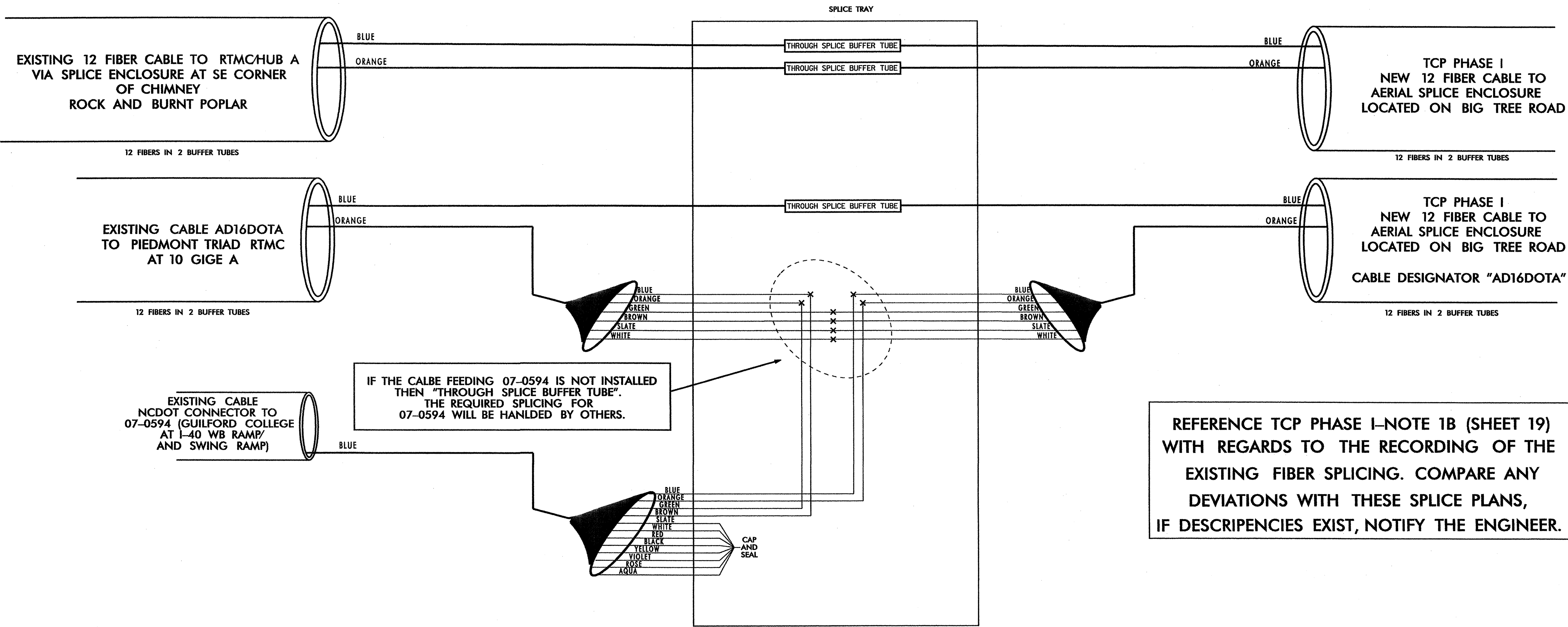
TCP FINAL

	BRIDFORD PARKWAY FROM HORNADAY RD. TO BURNT POPLAR RD. AT SWING RD.		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 023919 GREGORY A. FULLER
	DIVISION 07 GUILFORD COUNTY GREENSBORO		
PLAN DATE: MAY 2009	REVIEWED BY: I. N. AVERY		SIGNATURE: <i>Gregory A. Fuller</i> DATE: 5/11/09
PREPARED BY: P. C. LOUDER	REVIEWED BY: G.A. FULLER, PE		
SCALE: 0	REVISIONS:	INIT. DATE:	CADD File Name:

**GROUP AD16
SPLICE ENCLOSURE
ON GUILFORD COLLEGE NORTH
OF I-40 AND SWING**

LEGEND

COLOR CODE TIA/EIA 598-A		ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING / ENSURING PROPER TERMINATION.
(1) BLUE	(7) RED	
(2) ORANGE	(8) BLACK	X - FUSION SPLICE INDIVIDUAL FIBER
(3) GREEN	(9) YELLOW	BUFFER TUBE SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED
(4) BROWN	(10) VIOLET	
(5) SLATE	(11) ROSE	
(6) WHITE	(12) AQUA	



REFERENCE TCP PHASE I-NOTE 1B (SHEET 19) WITH REGARDS TO THE RECORDING OF THE EXISTING FIBER SPLICING. COMPARE ANY DEVIATIONS WITH THESE SPLICE PLANS, IF DESCRIPENCIES EXIST, NOTIFY THE ENGINEER.

CONTACT RODNEY ROBERTS, CITY OF GREENSBORO SENIOR SYSTEM NETWORK ENGINEER AT (336) 373-2322 AND JERON MONROE, DIVISION 7 REGIONAL ITS ENGINEER AT (336) 315-7080 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING FIBER OPTIC CABLE SPLICING.

GROUP AD.16 - AD.16.07-1964

TCP PHASE I

<p>750 N. Greenfield Pkwy., Garner, NC 27529</p>	<p>SPLICE PLAN BRIDFORD PARKWAY</p>		<p>SEAL</p>				
	<p>DIVISION 07 GUILFORD CO. GREENSBORO</p> <p>PLAN DATE: MAY 2009 REVIEWED BY: I. N. AVERY</p> <p>PREPARED BY: P.C. LOUDER REVIEWED BY: G. A. FULLER</p>	<p>REVISIONS</p> <table border="1"> <tr> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	INIT.	DATE			<p>SCALE</p> <p>0</p>
INIT.	DATE						

**GROUP AD16
AERIAL SPLICE ENCLOSURE
LOCATED ALONG BIG TREE ROAD**

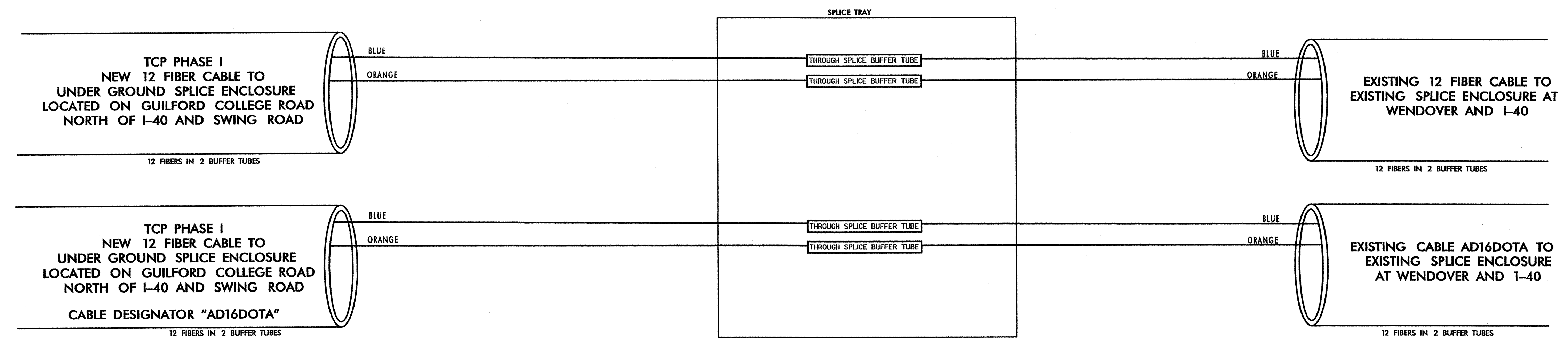
LEGEND

ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING / ENSURING PROPER TERMINATION.

X - FUSION SPLICE INDIVIDUAL FIBER

THROUGH SPLICE BUFFER TUBE - SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED

COLOR CODE TIA/EIA 598-A	
(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA



REFERENCE TCP PHASE I-NOTE 1B (SHEET 19) WITH REGARDS TO THE RECORDING OF THE EXISTING FIBER SPlicing. COMPARE ANY DEVIATIONS WITH THESE SPLICE PLANS, IF DESCRIPENCIES EXIST, NOTIFY THE ENGINEER.

GROUP AD.16 - AD.16.07-1964

CONTACT RODNEY ROBERTS, CITY OF GREENSBORO SENIOR SYSTEM NETWORK ENGINEER AT (336) 373-2322 AND JERON MONROE, DIVISION 7 REGIONAL ITS ENGINEER AT (336) 315-7080 A MINIMUM OF 48 HOURS PRIOR TO BEGINNING FIBER OPTIC CABLE SPlicing.

TCP PHASE I

	SPLICE PLAN BRIDFORD PARKWAY		
	DIVISION 07 GUILFORD CO. GREENSBORO		
PLAN DATE: MAY 2009	REVIEWED BY: I. N. AVERY		SIGNATURE: <i>Gregory A. Fuller</i> DATE: 5/14/09
PREPARED BY: P. C. LOUDER	REVIEWED BY: G. A. FULLER		
SCALE: 0	REVISIONS	INIT. DATE	CADD Filename:

GROUP AD16
 SPLICE ENCLOSURE
 HORNADAY RD AT
 SHOPPING CENTER
 (GBO-480)

LEGEND

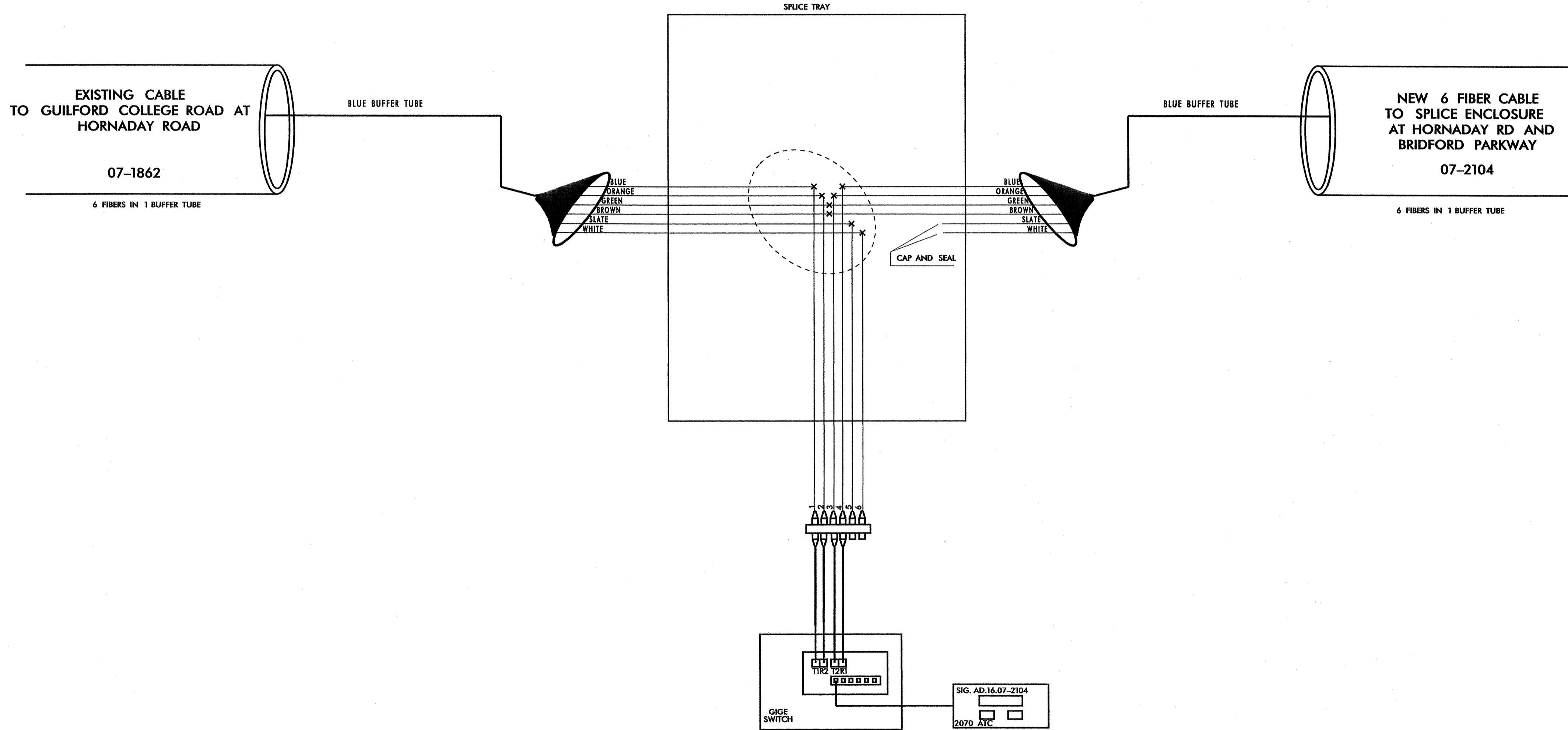
COLOR CODE
 TIA/EIA 598-A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE
 GENERIC. CONTRACTOR IS RESPONSIBLE FOR
 DETERMINING / ENSURING PROPER TERMINATION.

X - FUSION SPLICE INDIVIDUAL FIBER

BUFFER TUBE SPLICE OR EXPRESS ENTIRE BUFFER TUBE
 AS NOTED



CONTACT RODNEY ROBERTS, CITY OF GREENSBORO
 SENIOR SYSTEM NETWORK ENGINEER
 AT (336) 373-2322 AND JERON MONROE, DIVISION 7
 REGIONAL ITS ENGINEER AT (336) 315-7080
 A MINIMUM OF 48 HOURS PRIOR
 TO BEGINNING FIBER OPTIC CABLE SPLICING.

TCP FINAL

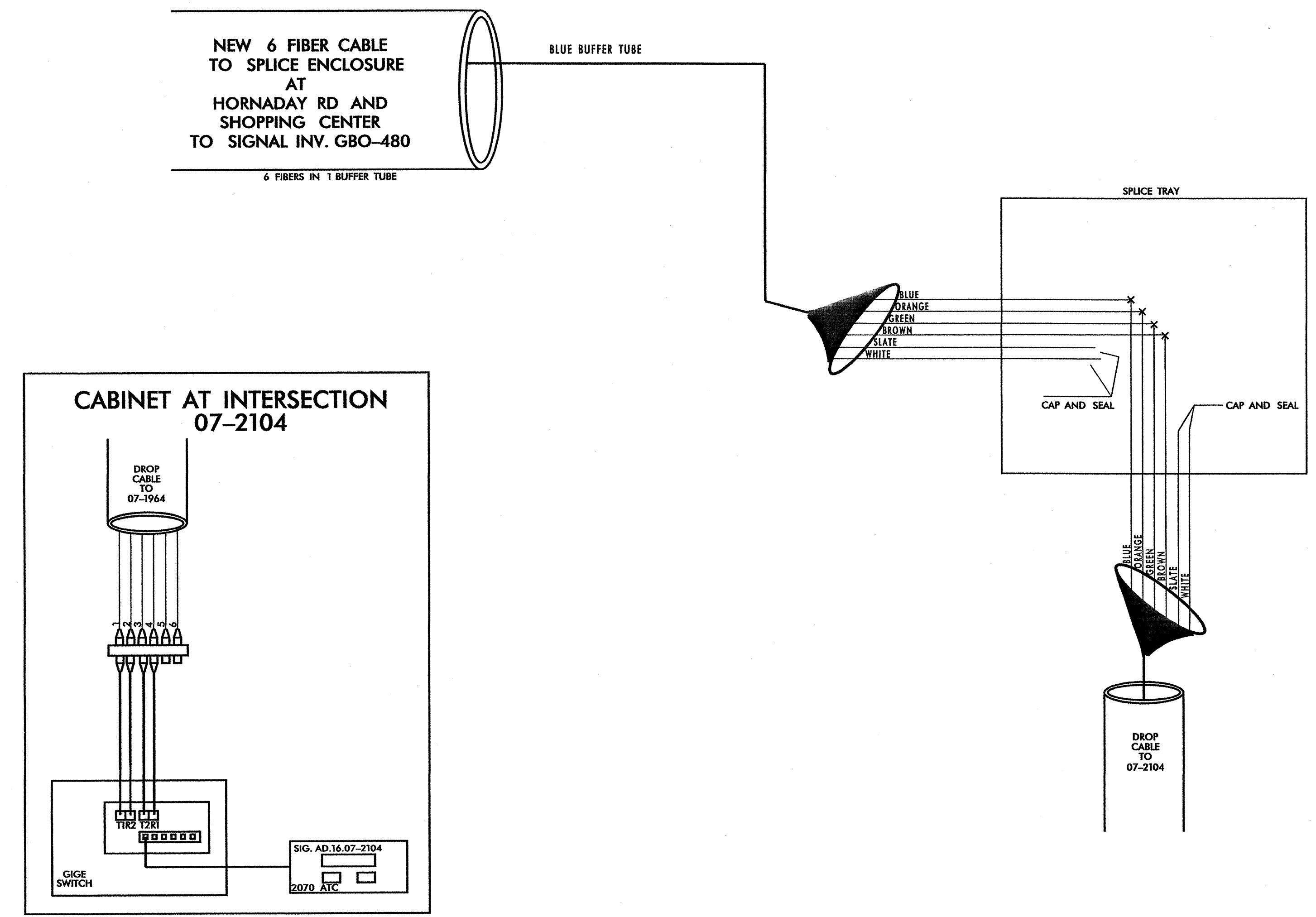
	SPLICE PLAN BRIDFORD PARKWAY		SEAL
	DIVISION 07 GUILFORD CO. GREENSBORO		
PLAN DATE: MAY 2009	REVIEWED BY: I. N. AVERY		
PREPARED BY: P. C. LOUDER	REVIEWED BY: G. A. FULLER		
SCALE 	REVISIONS	INIT. DATE	
SIGNATURE: <i>Gregory A. Fuller</i> DATE: 5/14/09			

GROUP AD16

BIRDFORD PARKWAY
AT
HORNADAY ROAD
SIG. INV. 07-2104

LEGEND

<div style="border: 1px solid black; padding: 2px;">COLOR CODE TIA/EIA 598-A</div>		ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING / ENSURING PROPER TERMINATION.
(1) BLUE	(7) RED	X - FUSION SPLICE INDIVIDUAL FIBER
(2) ORANGE	(8) BLACK	<div style="border: 1px solid black; padding: 2px;">BUFFER TUBE</div> SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED
(3) GREEN	(9) YELLOW	
(4) BROWN	(10) VIOLET	
(5) SLATE	(11) ROSE	
(6) WHITE	(12) AQUA	



CONTACT RODNEY ROBERTS, CITY OF GREENSBORO
SENIOR SYSTEM NETWORK ENGINEER
AT (336) 373-2322 AND JERON MONROE, DIVISION 7
REGIONAL ITS ENGINEER AT (336) 315-7080
A MINIMUM OF 48 HOURS PRIOR
TO BEGINNING FIBER OPTIC CABLE SPLICING.

TCP FINAL

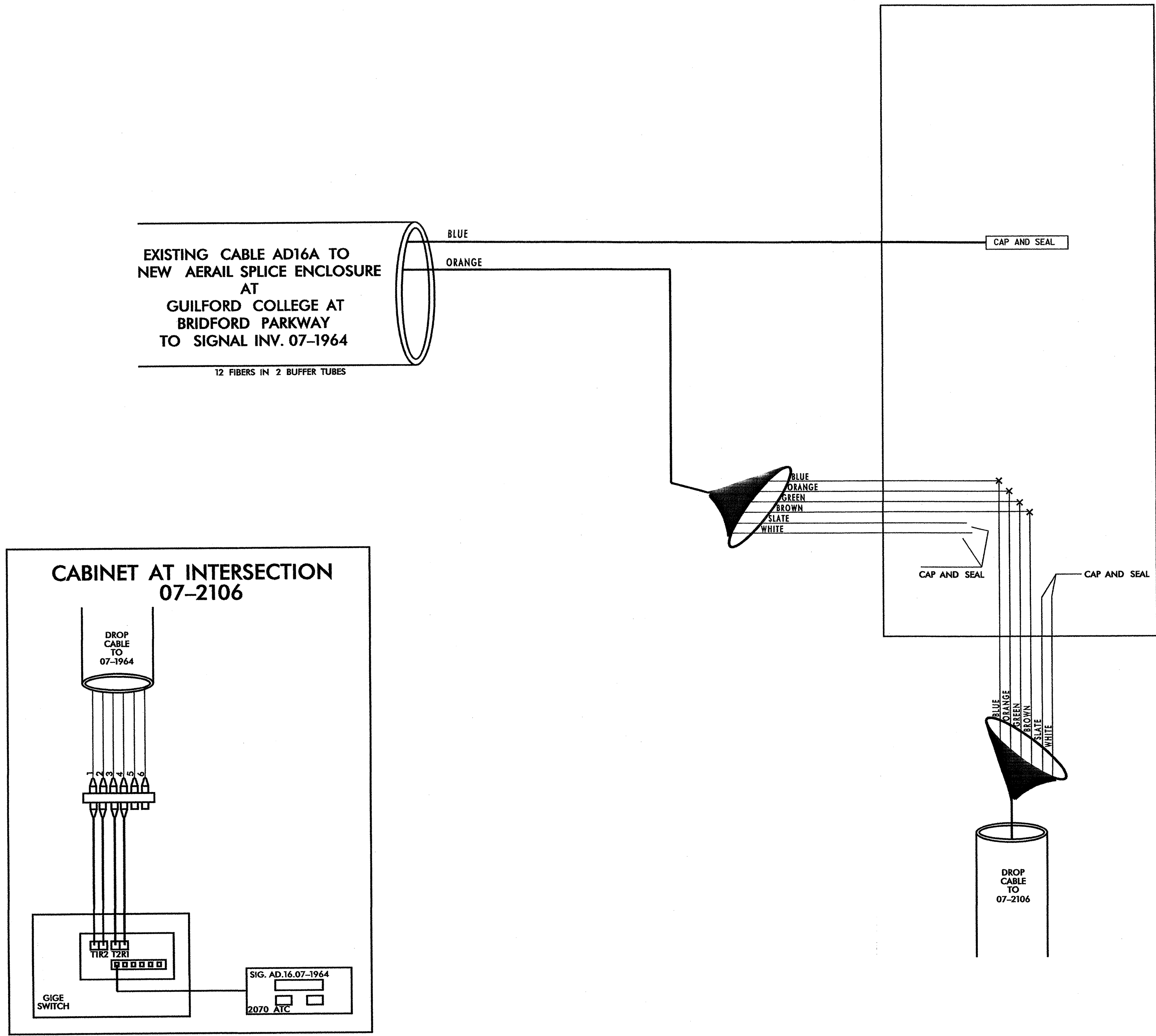
	SPLICE PLAN BRIDFORD PARKWAY		
	DIVISION 07 GUILFORD CO. GREENSBORO		
PLAN DATE: MAY 2009 PREPARED BY: P. C. LOUDER SCALE: 0	REVIEWED BY: I. N. AVERY REVIEWED BY: G. A. FULLER REVISIONS:	INIT. DATE SIGNATURE: <i>Gregory A. Fuller</i> 5/14/09 DATE:	SEAL

CADD Filename:

GROUP AD16
NEW AERIAL SPLICE ENCLOSURE
AT
BRIDFORD PARKWAY/BURNT POPLAR ROAD
AT
SWING ROAD
SIG. INV. 07-2106

LEGEND

COLOR CODE <small>TIA/EIA 598-A</small>		ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING / ENSURING PROPER TERMINATION.
(1) BLUE (2) ORANGE (3) GREEN (4) BROWN (5) SLATE (6) WHITE	(7) RED (8) BLACK (9) YELLOW (10) VIOLET (11) ROSE (12) AQUA	
X - FUSION SPLICE INDIVIDUAL FIBER		BUFFER TUBE SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED
(Empty space for additional notes)		



CONTACT RODNEY ROBERTS, CITY OF GREENSBORO
SENIOR SYSTEM NETWORK ENGINEER
AT (336) 373-2322 AND JERON MONROE, DIVISION 7
REGIONAL ITS ENGINEER AT (336) 315-7080
A MINIMUM OF 48 HOURS PRIOR
TO BEGINNING FIBER OPTIC CABLE SPLICING.

GROUP AD.16 - AD.16.07-1964

TCP FINAL

	SPLICE PLAN BRIDFORD PARKWAY		
	DIVISION 07 GUILFORD CO. GREENSBORO		
PLAN DATE: MAY 2009	REVIEWED BY: I. N. AVERY		PREPARED BY: P. C. LOUDER REVIEWED BY: G. A. FULLER
SCALE: 0	REVISIONS	INIT. DATE	
SIGNATURE: <i>Gregory A. Fuller</i> DATE: 5/14/09			CADD FILE NAME:

GROUP AD16
 NEW AERIAL SPLICE ENCLOSURE
 AT
 GUILFORD COLLEGE ROAD
 AT BRIDFORD PARKWAY
 SIG. INV. 07-1964

LEGEND

COLOR CODE
 TIA/EIA 598-A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE
 GENERIC. CONTRACTOR IS RESPONSIBLE FOR
 DETERMINING / ENSURING PROPER TERMINATION.

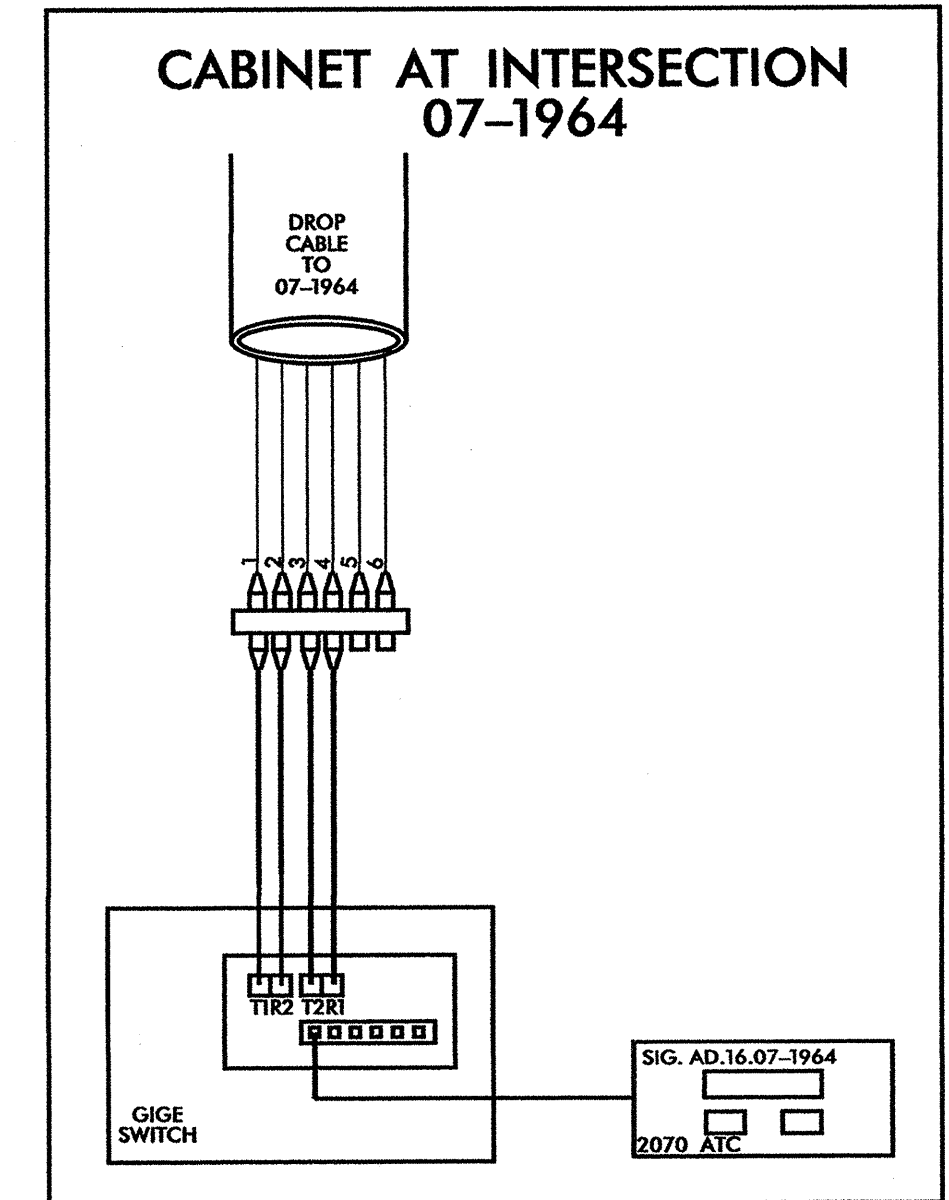
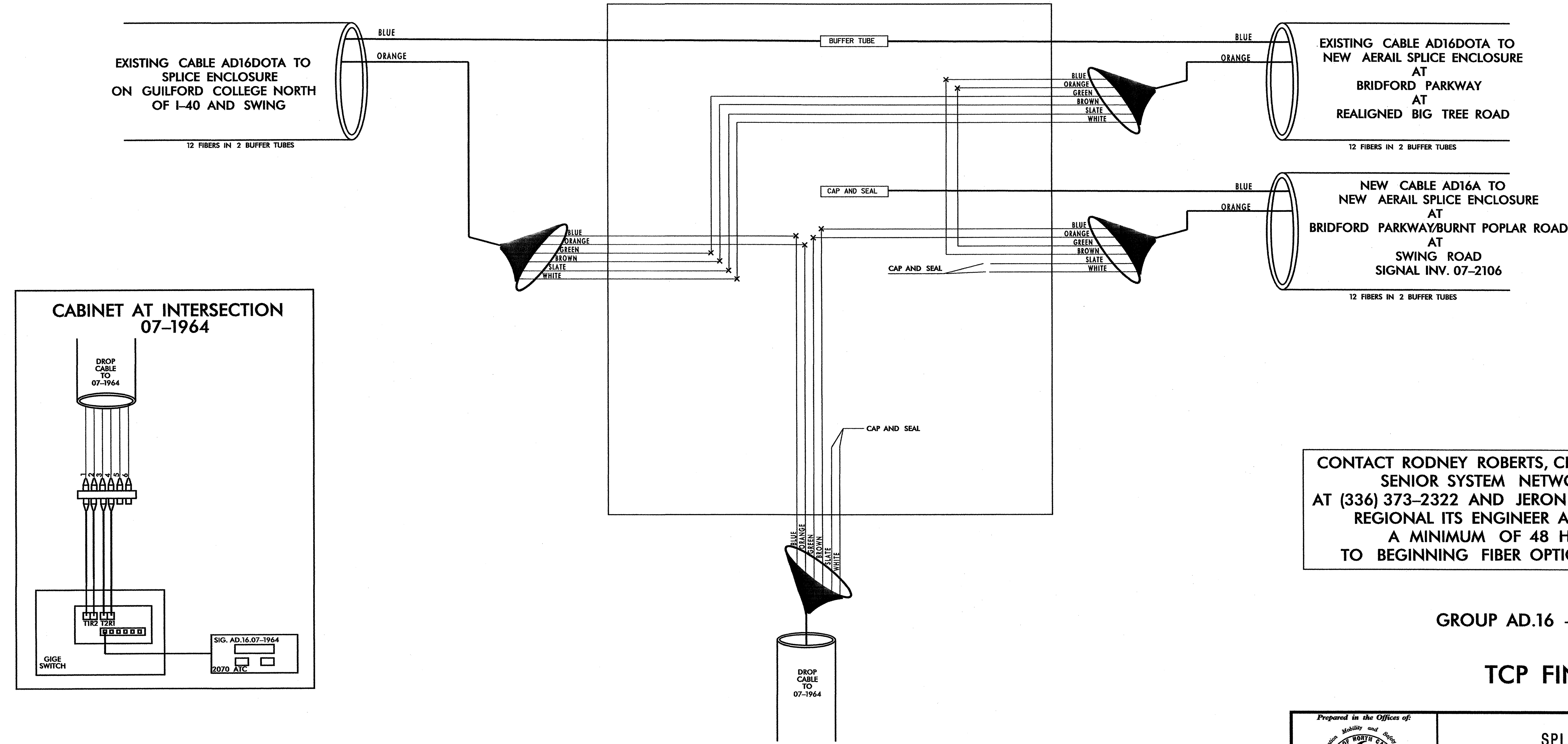
X - FUSION SPLICE INDIVIDUAL FIBER

BUFFER TUBE SPLICE OR EXPRESS ENTIRE BUFFER TUBE
 AS NOTED

EXISTING 12 FIBER CABLE TO PTRMCHUB A
 VIA SPLICE ENCLOSURE ON GUILFORD COLLEGE
 NORTH OF I-40 AND SWING ROAD

DO NOT CUT FIBER

EXISTING 12 FIBER CABLE TO
 EXISTING AERIAL SPLICE ENCLOSURE
 LOCATED ALONG BIG TREE ROAD



CONTACT RODNEY ROBERTS, CITY OF GREENSBORO
 SENIOR SYSTEM NETWORK ENGINEER
 AT (336) 373-2322 AND JERON MONROE, DIVISION 7
 REGIONAL ITS ENGINEER AT (336) 315-7080
 A MINIMUM OF 48 HOURS PRIOR
 TO BEGINNING FIBER OPTIC CABLE SPLICING.

GROUP AD.16 - AD.16.07-1964

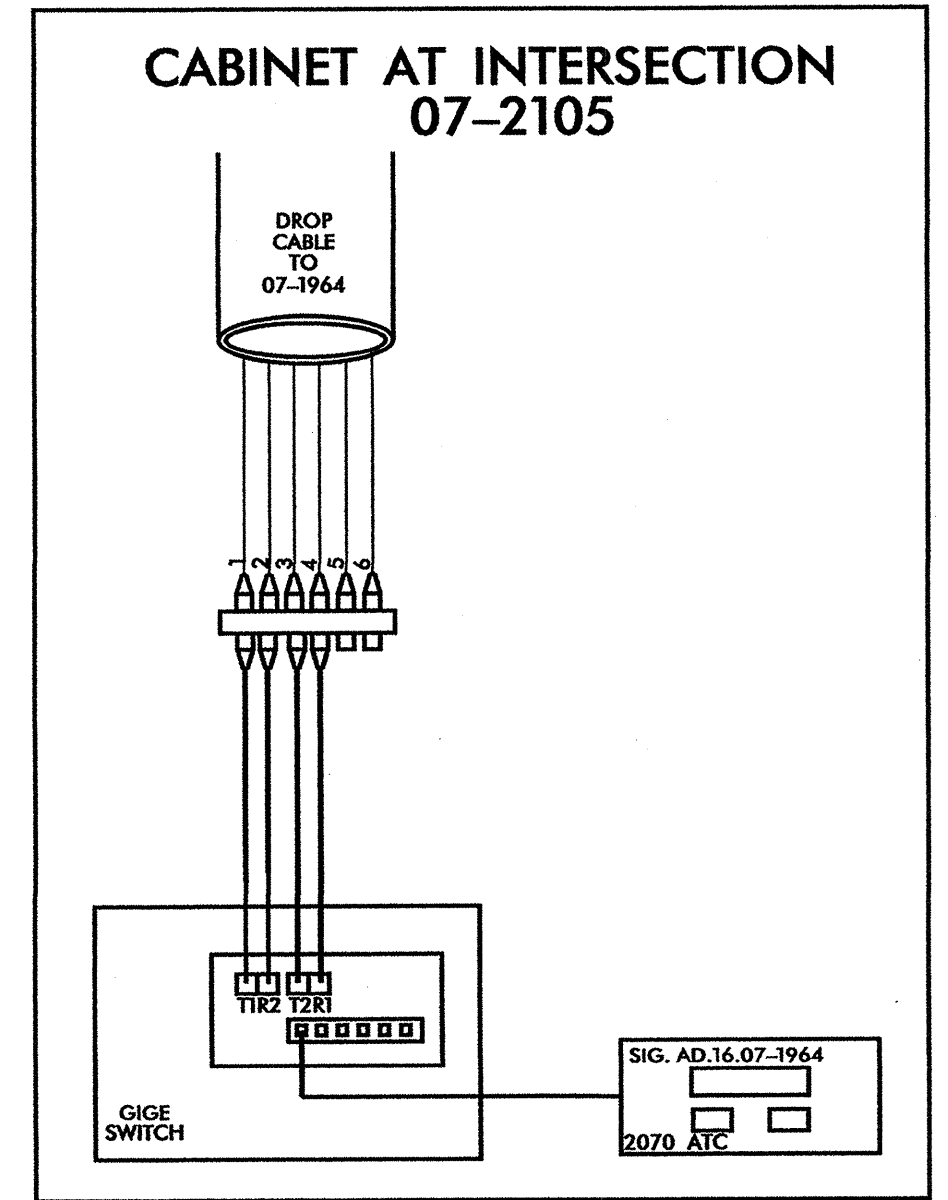
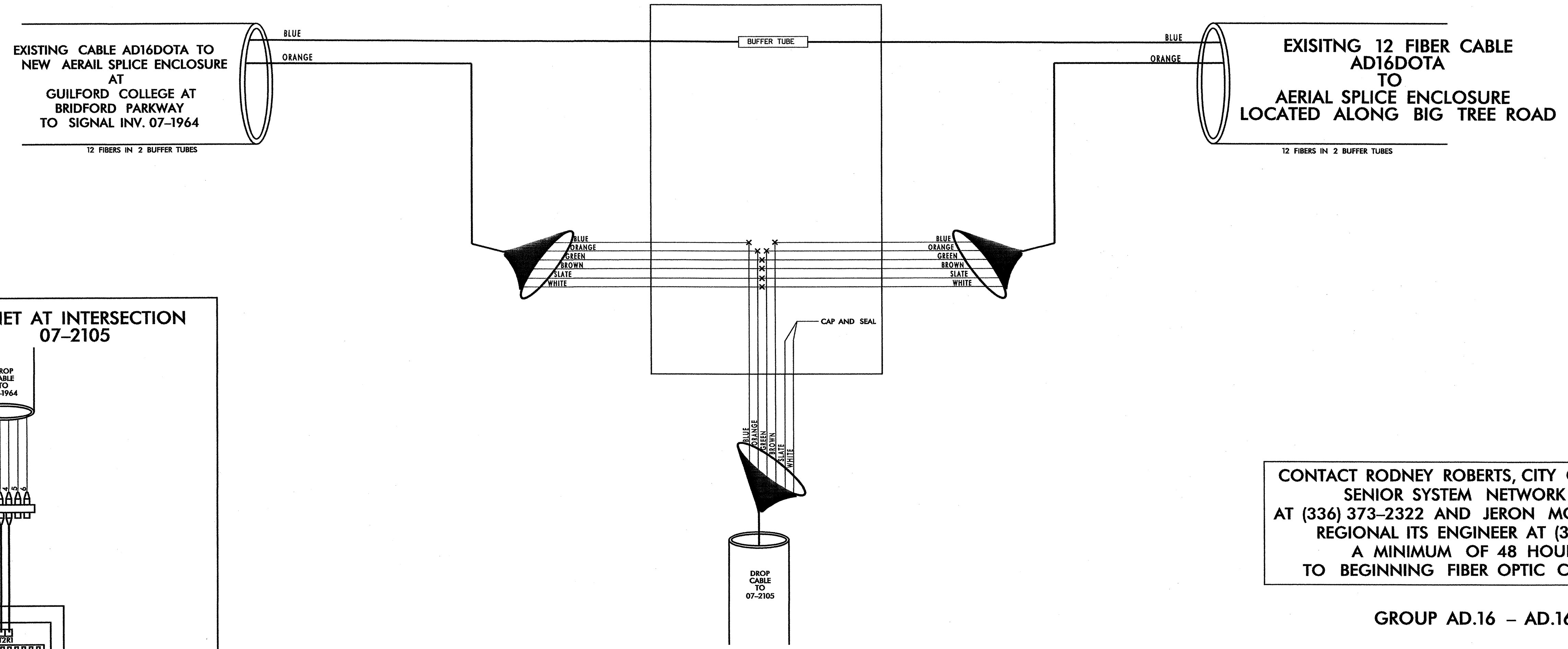
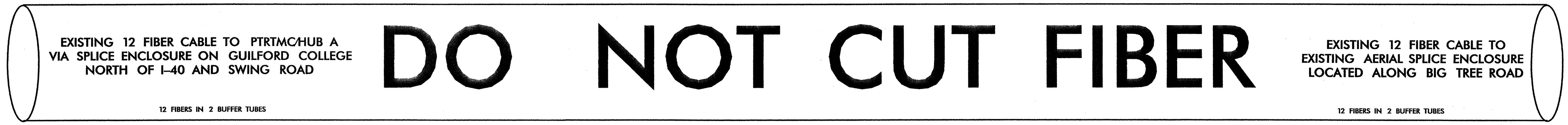
TCP FINAL

	SPLICE PLAN BRIDFORD PARKWAY		
	DIVISION 07 GUILFORD CO. GREENSBORO		
PLAN DATE: MAY 2009	REVIEWED BY: I. N. AVERY		
PREPARED BY: P. C. LOUDER	REVIEWED BY: G. A. FULLER		
SCALE 0	REVISIONS	INET. DATE	
SIGNATURE: <i>Gregory A. Fuller</i> DATE: 5/14/09			

GROUP AD16
NEW AERIAL SPLICE ENCLOSURE
AT
BRIDFORD PARKWAY
AT
RELAINED BIG TREE ROAD
SIG. INV. 07-2105

LEGEND

COLOR CODE TIA/EIA 598-A		ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING / ENSURING PROPER TERMINATION.
(1) BLUE	(7) RED	X - FUSION SPLICE INDIVIDUAL FIBER
(2) ORANGE	(8) BLACK	
(3) GREEN	(9) YELLOW	[BUFFER TUBE] SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED
(4) BROWN	(10) VIOLET	
(5) SLATE	(11) ROSE	
(6) WHITE	(12) AQUA	



CONTACT RODNEY ROBERTS, CITY OF GREENSBORO
SENIOR SYSTEM NETWORK ENGINEER
AT (336) 373-2322 AND JERON MONROE, DIVISION 7
REGIONAL ITS ENGINEER AT (336) 315-7080
A MINIMUM OF 48 HOURS PRIOR
TO BEGINNING FIBER OPTIC CABLE SPLICING.

GROUP AD.16 - AD.16.07-1964

TCP FINAL

	SPLICE PLAN BRIDFORD PARKWAY		
	DIVISION 07 GUILFORD CO. GREENSBORO		
PLAN DATE: MAY 2009	REVIEWED BY: I. N. AVERY	PREPARED BY: P. C. LOUDER	REVIEWED BY: G. A. FULLER
SCALE: 0	REVISIONS	INIT.	DATE
Signature: <i>Gregory A. Fuller</i> Date: <i>5/14/09</i>			