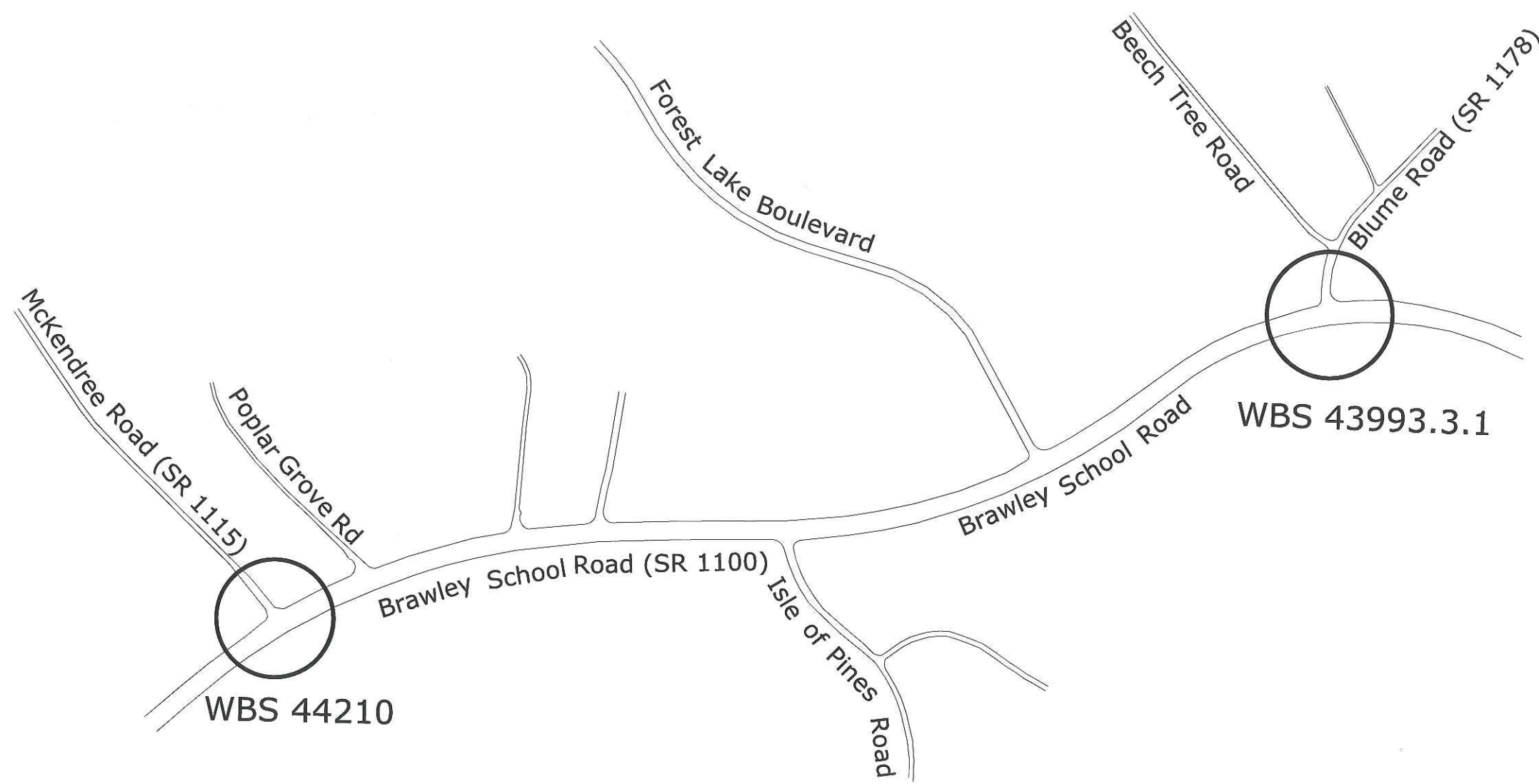


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

LOCATION: Intersection of Brawley School Rd and Mckendree Rd
and Intersection of Brawley School Rd and Blume Rd
TYPE OF WORK: SIGNAL, CONCRETE STRAIN POLE, FIBER OPTIC COMMUNICATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.		1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
43993.3.1			
44210			



INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT: DL00090

GRAPHIC SCALES

PLANS

PROFILE (HORIZONTAL)

PROFILE (VERTICAL)

DESIGN DATA

ADT =

ADT =

K = %

D = %

T = % *

V = MPH

* TTST = DUAL

FUNC CLASS =

PROJECT LENGTH

TIER =

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE:
JANUARY 26, 2016

ERIC CONNER
PROJECT ENGINEER

BYRON ENGLE P.E.
PROJECT DESIGN ENGINEER

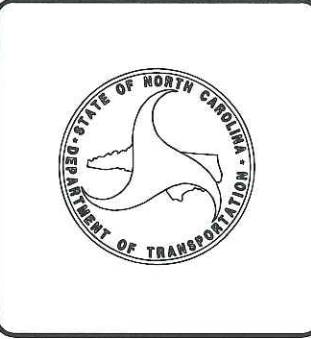
HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

TIMOTHY WILLIAMS P.E.

SIGNATURE: _____



28-DEC-2015 15:38 C:\Users\dolehan\Documents\Steve Hefner\BRAWLEY_Ray_Tsh.dgn \$\$\$USERNAME\$\$\$

- 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

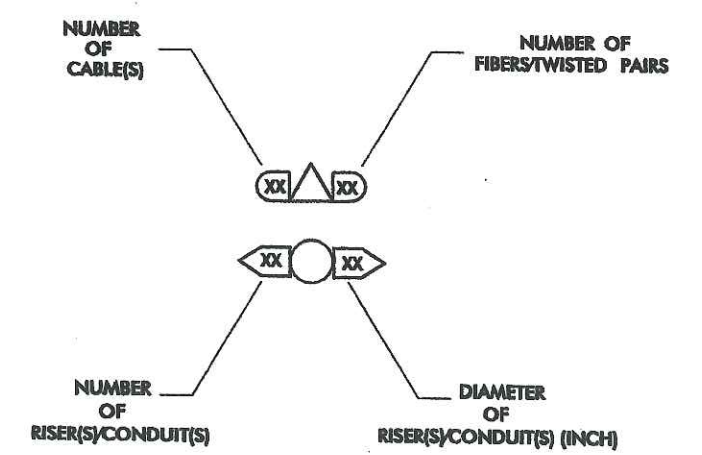
- 34 INSTALL CABINET FOUNDATION
- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 REMOVE EXISTING JUNCTION BOX
- 42 INSTALL 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



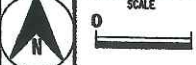

LEGEND

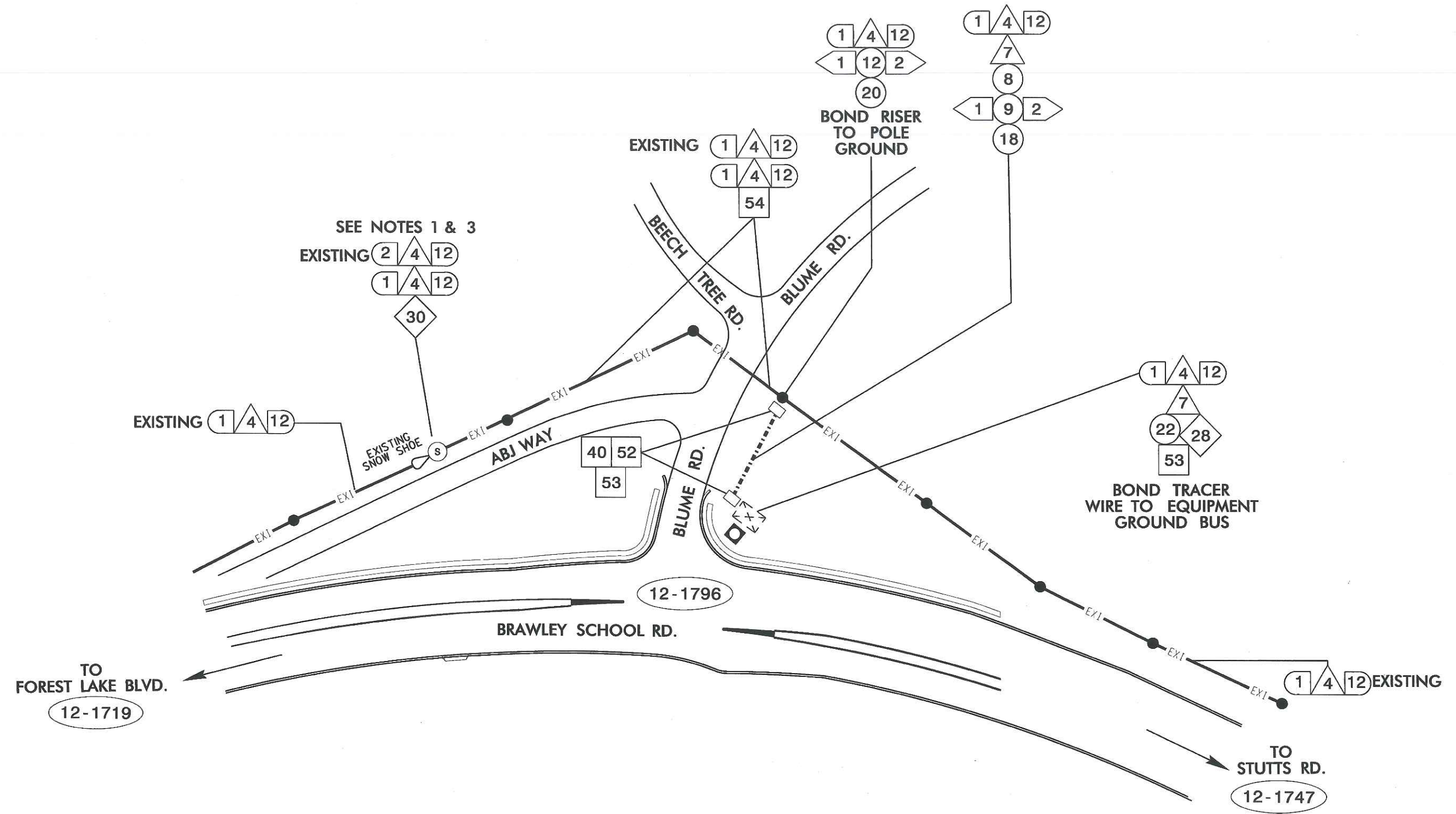
- FO NEW FIBER OPTIC COMMUNICATIONS CABLE
- TWIST PR NEW TWISTED PAIR COMMUNICATIONS CABLE
- EXI EXISTING COMMUNICATIONS CABLE
- REM EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW AERIAL GUY ASSEMBLY
- NEW CONDUIT
- EXISTING CONDUIT
- DD NEW DIRECTIONAL DRILLED CONDUIT
- B&J NEW BORED AND JACKED CONDUIT
- NEW JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW WOOD POLE
- EXISTING WOOD POLE
- AERIAL SPLICE ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- NEW CCTV ASSEMBLY
- NEW STANDARD GUY ASSEMBLY
- NEW SIDEWALK GUY ASSEMBLY
- NEW CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING CONTROLLER AND CABINET
- EXISTING SPLICE CABINET
- NEW SPLICE CABINET
- 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)



 <small>Prepared in the Office of The State of North Carolina Department of Transportation Traffic Management System</small>	CONSTRUCTION NOTES		SEAL						
	<small>PLAN DATE:</small> <small>PREPARED BY:</small>	<small>REVIEWED BY:</small> G. A. FULLER	 <small>PROFESSIONAL ENGINEER GREGORY A. FULLER</small>						
<small>SCALE</small> 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISIONS</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	DATE					<small>SIGNATURE</small> 	<small>DATE</small> 10/21/02
REVISIONS	DATE								
CAD: F11enost									



- NOTES:**
1. CONTACT BYRON ENGLE, PE ((704) 480-9032) 5 WORKING DAYS PRIOR TO CUTTING FIBER OPTIC CABLE.
 2. ALL WORK IS NOT COMPLETE UNTIL THE BRAWLEY SCHOOL RD. CLOSED LOOP SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
 3. STORE 100 FEET OF FIBER OPTIC CABLE ON EXISTING SNOW SHOE.

	COMMUNICATIONS CABLE AND CONDUIT ROUTING PLAN		
	DIVISION 12 PLAN DATE: APRIL 2014 PREPARED BY: H. T. BERGGREN	IREDELL CO. REVIEWED BY: I. N. AVERY REVIEWED BY: G. A. FULLER, PE	
SCALE: 0	REVISIONS:	INIT. DATE:	SIGNATURE:

**NEW AERIAL SPLICE ENCLOSURE
ALONG ABJ WAY**

Notes:
Unused fibers left coiled and stored in splice tray/enclosure.
Unused Buffer Tubes left coiled and stored in splice tray/enclosure.

LEGEND
X = FUSION SPLICE

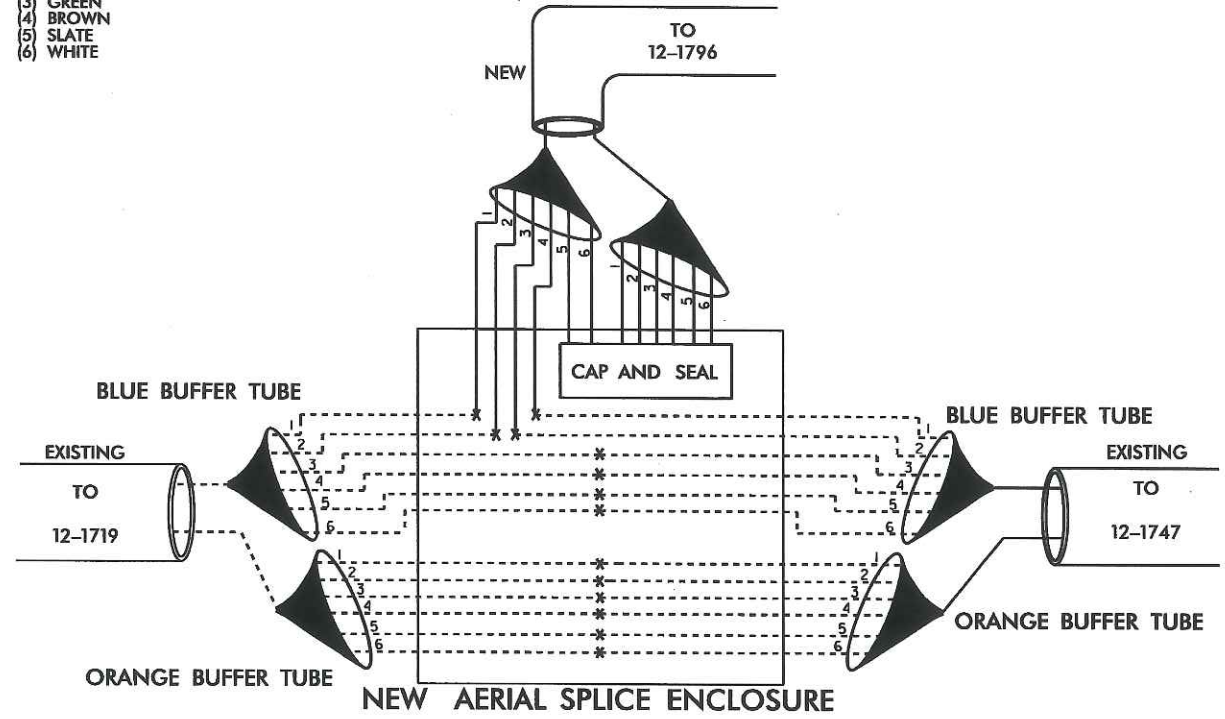
COLOR CODE
TIA/EIA 598-A

- (1) BLUE
- (2) ORANGE
- (3) GREEN
- (4) BROWN
- (5) SLATE
- (6) WHITE

**INCLUDE ON THE COVER OF EACH SPLICE TRAY
THE FOLLOWING:
REFERENCE SECTION 1731 - "FIBER OPTIC SPLICE ENCLOSURE"**

- 1) SPLICE LOCATION
- 2) DATE
- 3) COMPANY NAME
- 4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE
SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH
SHOWING THE SPLICE TRAY AND INFORMATION
SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH
ALONG WITH OTDR TEST RESULTS.



**BRAWLEY SCHOOL RD.
AT
BLUME RD.
SIG. INV. # 12-1796**

Notes:
Unused fibers left coiled and stored in splice tray/enclosure.
Unused Buffer Tubes left coiled and stored in splice tray/enclosure.

LEGEND
X = FUSION SPLICE

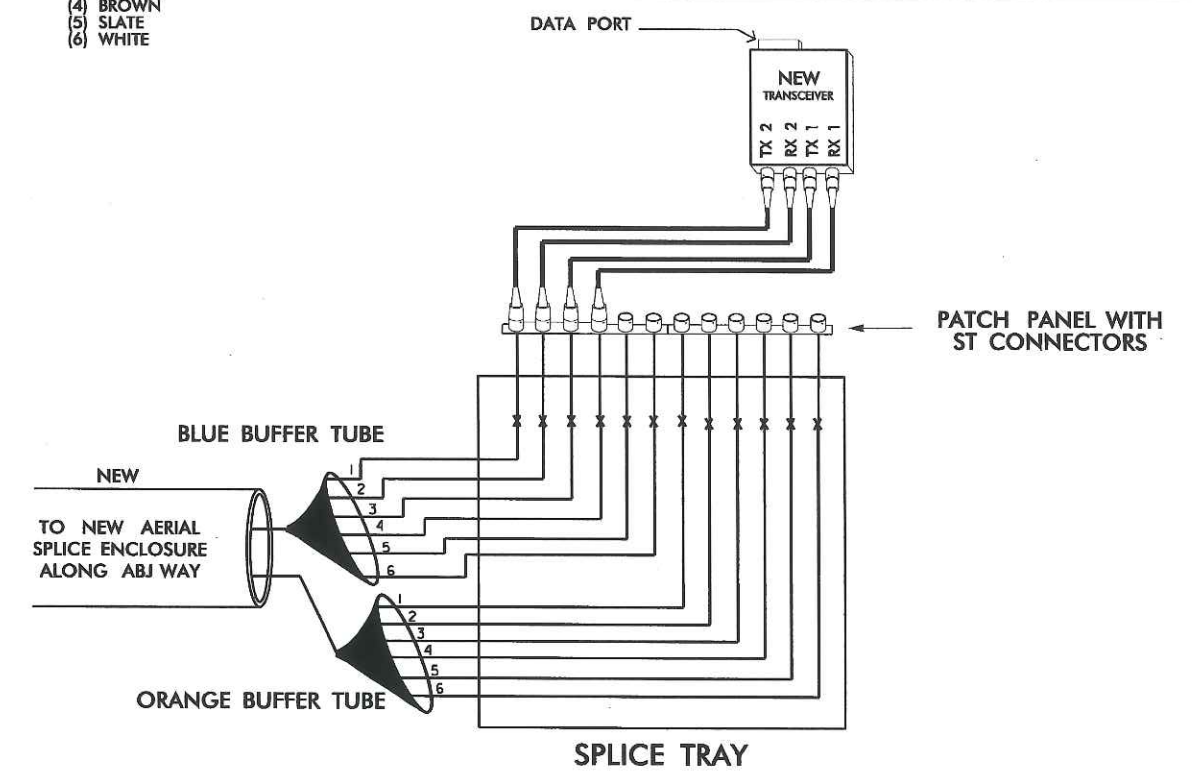
COLOR CODE
TIA/EIA 598-A

- (1) BLUE
- (2) ORANGE
- (3) GREEN
- (4) BROWN
- (5) SLATE
- (6) WHITE

**INCLUDE ON THE COVER OF EACH SPLICE TRAY
THE FOLLOWING:
REFERENCE SECTION 1731 - "FIBER OPTIC SPLICE ENCLOSURE"**

- 1) SPLICE LOCATION
- 2) DATE
- 3) COMPANY NAME
- 4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE
SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH
SHOWING THE SPLICE TRAY AND INFORMATION
SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH
ALONG WITH OTDR TEST RESULTS.

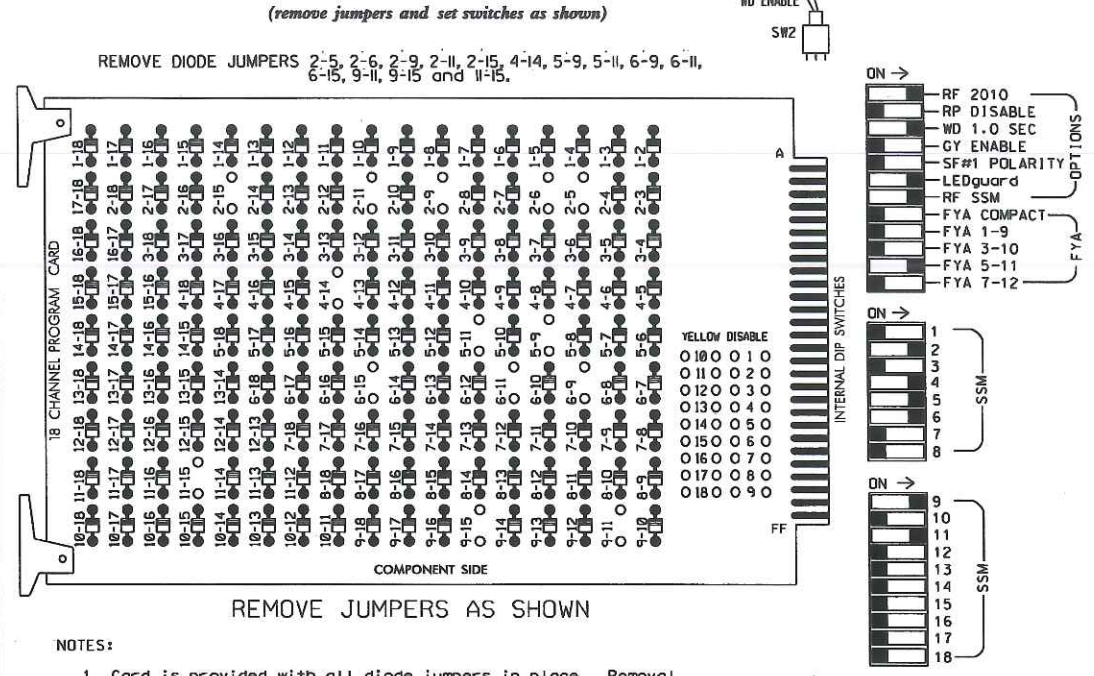


NOTES:

- 1. CONTACT BYRON ENGLE, PE ((704) 480-9032) 5 WORKING DAYS PRIOR TO CUTTING FIBER OPTIC CABLE.
- 2. ALL TRANSCEIVER CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATIONS.
- 3. ALL WORK IS NOT COMPLETE UNTIL THE BRAWLEY SCHOOL RD. CLOSED LOOP SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.

	SPLICE DETAIL	
	DIVISION 12 IREDELL CO. MOORESVILLE	
PLAN DATE: APRIL 2014	REVIEWED BY: I. N. AVERY	
PREPARED BY: H. T. BERGGREN	REVIEWED BY: G. A. FULLER, PE	
SCALE 0 N/A	REVISIONS	INIT. DATE
		SIGNATURE: <i>Gregory A. Fuller</i> DATE: 4/22/14

EDI MODEL 2018ECL-NC CONFLICT MONITOR
PROGRAMMING DETAIL
(remove jumpers and set switches as shown)



- REMOVE DIODE JUMPERS 2-5, 2-6, 2-9, 2-11, 2-15, 4-14, 5-9, 5-11, 6-9, 6-11, 6-15, 9-11, 9-15 and 11-15.
- REMOVE JUMPERS AS SHOWN
- NOTES:
- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
 - Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
 - Ensure that Red Enable is active at all times during normal operation.
 - Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Variable Initial and Gap Reduction.
- Program phases 2 and 6 for Start Up In Green.
- Program phases 4 and 6 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 SR 1100 (Brawley School Rd CLS).

EQUIPMENT INFORMATION

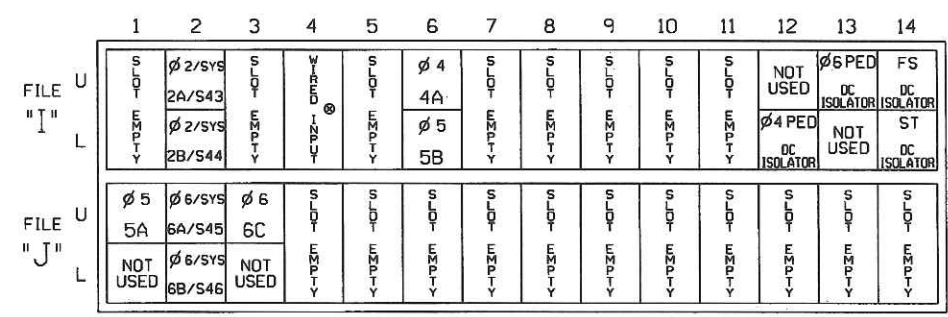
CONTROLLER.....2070L
 CABINET.....332 /W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S2,S5,S6,S7,S8,S9,
 AUX S1,AUX S4
 PHASES USED.....2,4,4 PED,5,6,6 PED
 OVERLAP "A".....2
 OVERLAP "B".....NOT USED
 OVERLAP "C".....5+6
 OVERLAP "D".....NOT USED

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42	63	P41, P42	51	42	62,63	P61, P62	NU	NU	NU	61	NU	51	NU
RED		128			101				*	134								
YELLOW		129			102					135								
GREEN		130			103					136								
RED ARROW													A121			A114		
YELLOW ARROW						102			132				A122			A115		
FLASHING YELLOW ARROW													A123			A116		
GREEN ARROW						103		133	133									
Hand							104				119							
Person								106				121						

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

INPUT FILE POSITION LAYOUT
(front view)

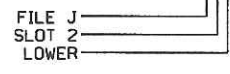


EX.: 1A, 2A, ETC. = LOOP NO.'S
 FS = FLASH SENSE
 ST = STOP TIME
 * Wired Input - Do not populate slot with detector card

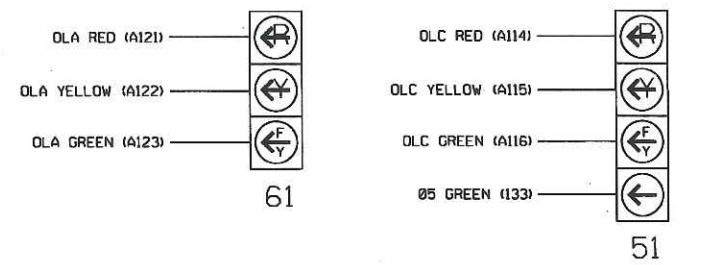
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A/S43	TB2-5,6	I2U	39	1	2	2/SYS	Y	Y			
2B/S44	TB2-7,8	I2L	43	5	12	2/SYS	Y	Y			
4A	TB4-9,10	I6U	41	3	4	Y	Y				3
5A ¹	TB3-1,2	J1U	55	17	5	Y	Y				15
	-	I4U	47	9	22	Y	Y	Y			3
5B	TB4-11,12	I6L	45	7	14	Y	Y				15
6A/S45	TB3-5,6	J2U	40	2	6	6/SYS	Y	Y			
6B/S46	TB3-7,8	J2L	44	6	15	6/SYS	Y	Y			
6C	TB3-9,10	J3U	64	26	36	6	Y	Y	Y		5
PED PUSH BUTTONS											
P41,P42	TB8-5,6	I12L	69	31	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					

¹ Add jumper from J1-W to I4-W, on rear of input file.
 * See Input Page Assignment programming detail on sheet 3.
 INPUT FILE POSITION LEGEND: J2L



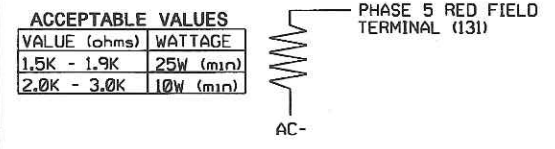
3 & 4 SECTION FYA SIGNAL WIRING DETAIL
(wire signal heads as shown)



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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 12-1796
 DESIGNED: March 2014
 SEALED: 4/25/14
 REVISED: N/A

LOAD RESISTOR INSTALLATION DETAIL



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 channel that does 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.

Electrical Detail - Sheet 1 of 4

ELECTRICAL AND PROGRAMMING DETAILS FOR: SR 1100 (Brawley School Road) at SR 1178 (Blume Road)

Division 12 Iredell County Mooresville

PLAN DATE: April 2014 REVIEWED BY: T. J. J...

PREPARED BY: B. SIMMONS REVIEWED BY:

REVISIONS: INIT. DATE

750 H. Greenfield Pkwy, Garner, NC 27529

SEAL: GEORGE C. BROWN, PROFESSIONAL ENGINEER, SEAL 022013

SIGNATURE: George C. Brown 5/1/14 DATE: 5/1/14

SIG. INVENTORY NO. 12-1796

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

```

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE:      :12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0.0
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)...0.0
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

OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS), PRESS 'NEXT' TO ADVANCE TO PAGE 2.

NOTICE PAGE 2 →

```

PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
PHASE:      :12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0.0
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

NOTICE PAGE 2 →

```

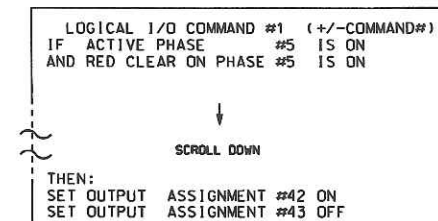
PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
PHASE:      :12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC)...0.0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)...0
    
```

OVERLAP PROGRAMMING COMPLETE

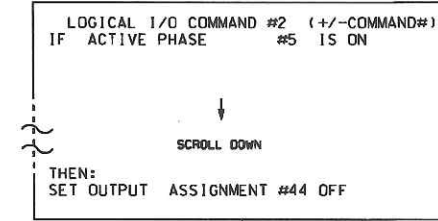
LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

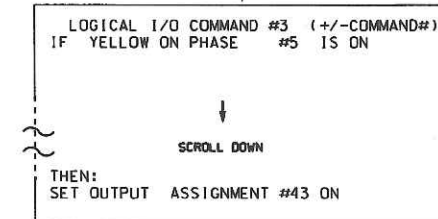
- FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS), SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, AND 3.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).



NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 5 (HEAD 51).



NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).


LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 42 = Overlap C Red
 OUTPUT 43 = Overlap C Yellow
 OUTPUT 44 = Overlap C Green

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 12-1796
 DESIGNED: March 2014
 SEALED: 4/25/14
 REVISED: N/A

Electrical Detail - Sheet 2 of 4

Prepared in the Office of:  750 N. Greenfield Pkwy, Garner, NC 27579	ELECTRICAL AND PROGRAMMING DETAILS FOR SR 1100 (Brawley School Road) at SR 1178 (Blume Road)	SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 GEORGE C. BROWN
	Division 12 Iredell County Mooresville PLAN DATE: April 2014 REVIEWED BY: T. J. J. J. PREPARED BY: B. SIMMONS REVIEWED BY: REVISIONS:	SIGNATURE: <i>George C. Brown</i> 5/1/14 DATE: 5/1/14 SIG. INVENTORY NO. 12-1796

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

<u>PHASING</u>	<u>INPUTS PAGE</u>	<u>OVERLAPS PAGE</u>
ACTIVE PAGES REQUIRED TO RUN <u>NORMAL PHASING</u>	1	1
ACTIVE PAGES REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	2

NOTE: PAGES NOT SHOWN (i.e. sequence, phase control, etc.) SHOULD REMAIN AS '1', OR AS DEFINED BY TIMING ENGINEER.

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY PAGE CHANGE EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN PAGE CHANGE EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).



ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

- OVERLAPS PAGE 2: Modifies overlap parent phases for head 51 to run protected turns only.
- INPUTS PAGE 2: Disables phase 2 call on loop 5A and modifies delay time.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-1796
DESIGNED: March 2014
SEALED: 4/25/14
REVISED: N/A

Electrical Detail - Sheet 4 of 4

 <small>750 N. Greenfield Place, Garner, NC 27529</small>	ELECTRICAL AND PROGRAMMING DETAILS FOR: SR 1100 (Brawley School Road) at SR 1178 (Blume Road)	SEAL 
	Division 12 Iredell County Mooresville	
	PLAN DATE: April 2014 REVIEWED BY: <i>T. J. J.</i>	
	PREPARED BY: B. SIMMONS REVIEWED BY:	
REVISIONS	INIT. DATE	
		<i>George C. Brown</i> 5/1/14 SIGNATURE DATE SIG. INVENTORY NO. 12-1796

- 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

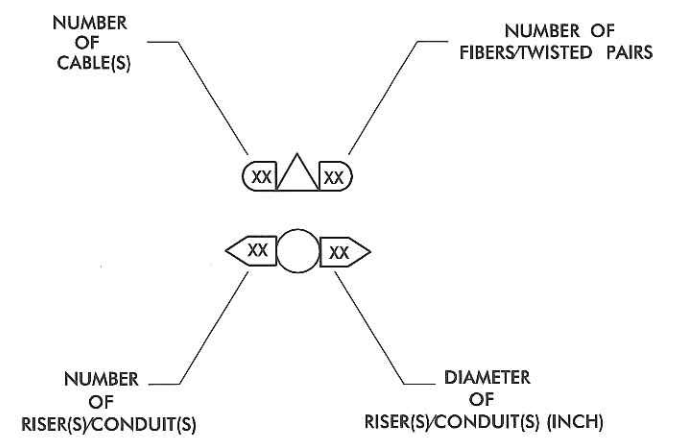
- 34 INSTALL CABINET FOUNDATION
- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 REMOVE EXISTING JUNCTION BOX
- 42 INSTALL 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

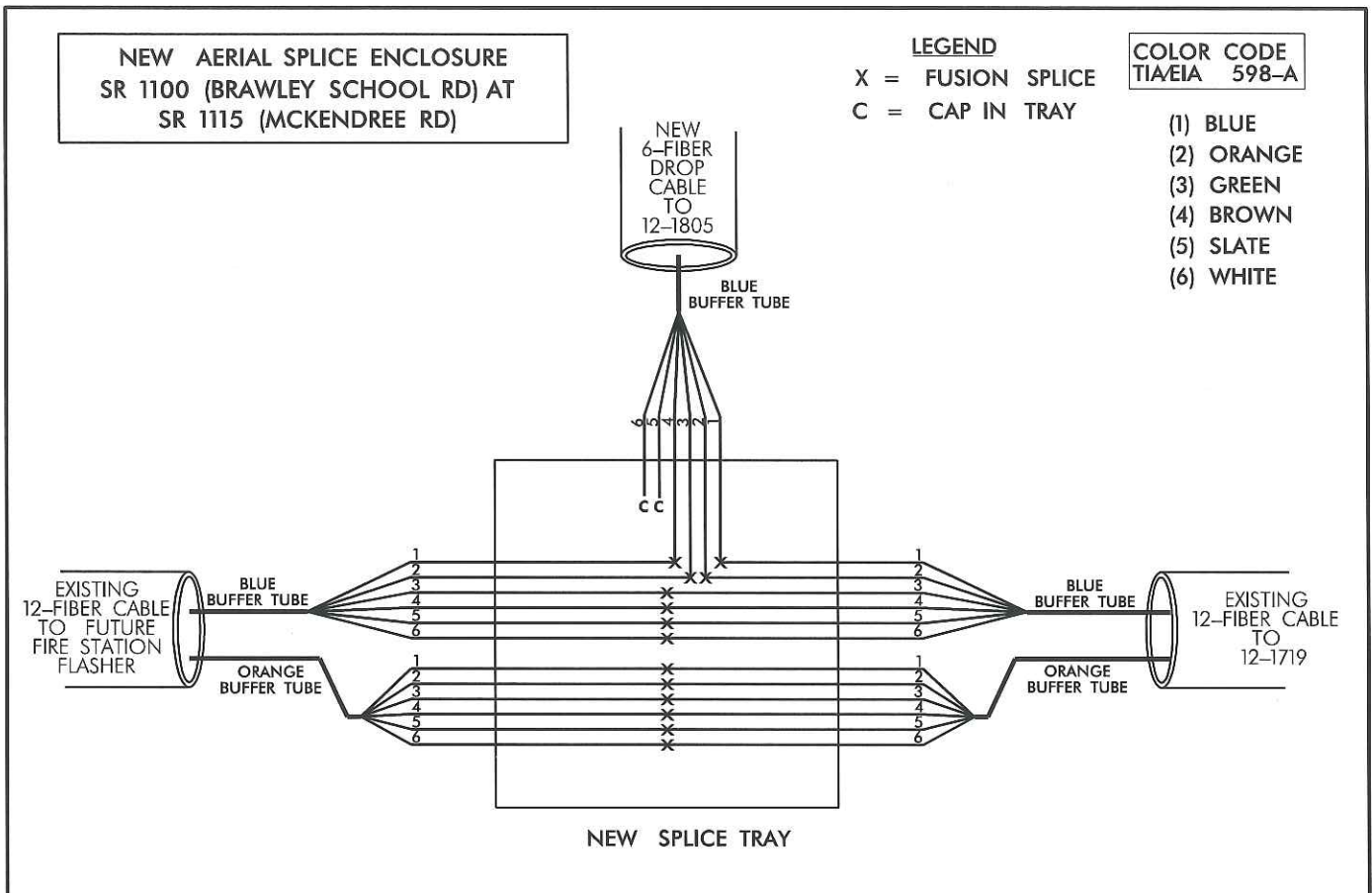
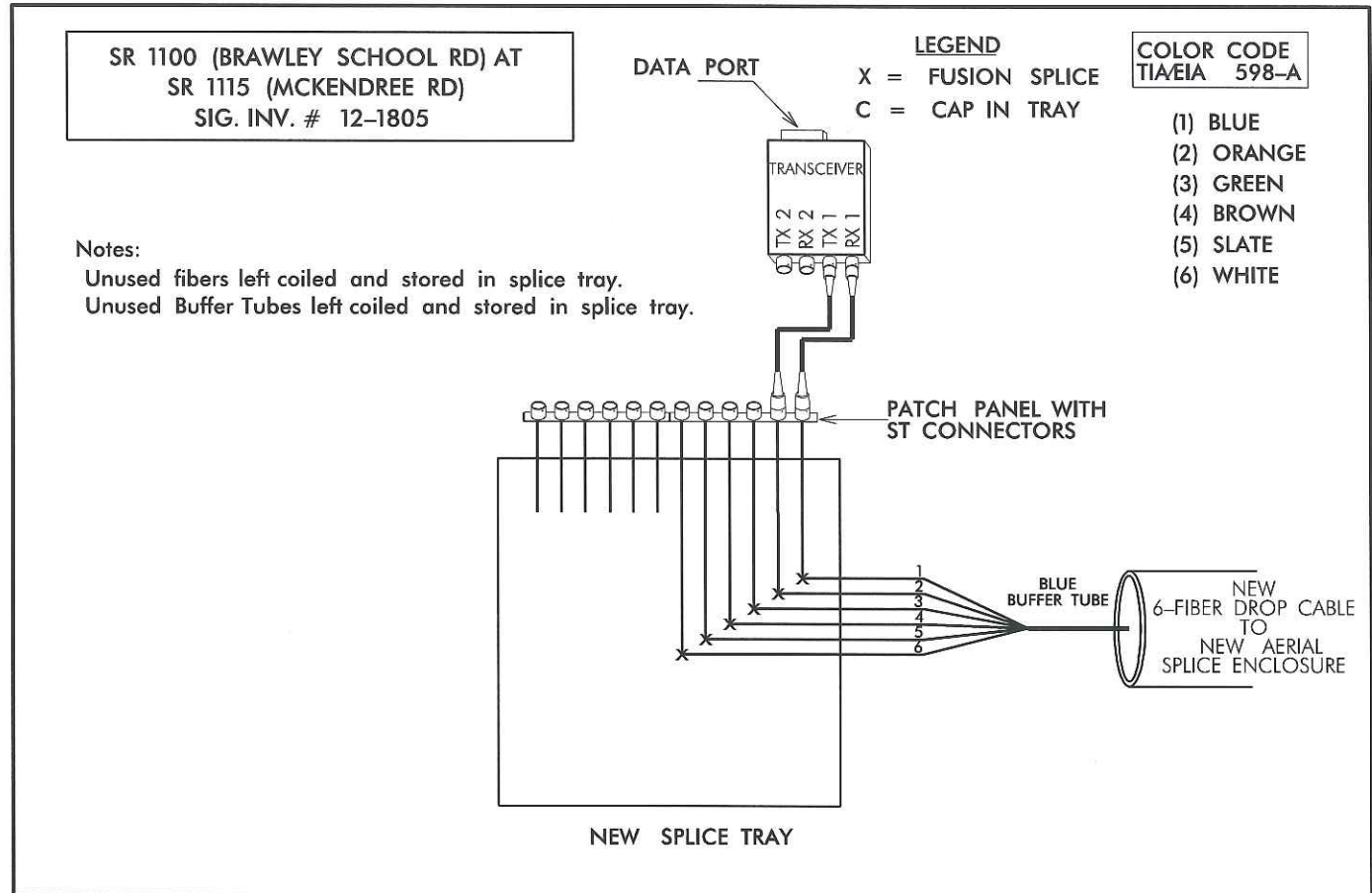
- FO NEW FIBER OPTIC COMMUNICATIONS CABLE
- TWIST PR NEW TWISTED PAIR COMMUNICATIONS CABLE
- EXI EXISTING COMMUNICATIONS CABLE
- REM EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW AERIAL GUY ASSEMBLY
- NEW CONDUIT
- EXISTING CONDUIT
- DD NEW DIRECTIONAL DRILLED CONDUIT
- B&J NEW BORED AND JACKED CONDUIT
- NEW JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW WOOD POLE
- EXISTING WOOD POLE
- AERIAL SPlice ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- NEW CCTV ASSEMBLY
- NEW STANDARD GUY ASSEMBLY
- NEW SIDEWALK GUY ASSEMBLY
- NEW CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING CONTROLLER AND CABINET
- EXISTING SPlice CABINET
- NEW SPlice CABINET
- SIGNAL POLE
- SP
- 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		SEAL
	DIVISION 12 IREDELL COUNTY PLAN DATE: AUGUST 2015 PREPARED BY: A. J. SKUCE REVIEWED BY: A. J. Skuce		
750 N. Greenfield Pkwy., Garner, NC 27529		REVISIONS INIT. DATE	CADD FILE NAME:



NOTES:

- 1) TRANSCEIVER TERMINATION CONFIGURATIONS ARE GENERIC CONTRACTOR IS RESPONSIBLE FOR DETERMINING /ENSURING THE PROPER TERMINATIONS.
- 2) NOTIFY THE DIVISION 12 TRAFFIC SIGNAL SUPERVISOR, ROBERT MAULT, AT (704) 480-5423 A MINIMUM OF 5 DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEMS COMMUNICATION CABLE. NOTIFY THE DIVISION 12 TRAFFIC SIGNAL SUPERVISOR AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY.
- 3) INCLUDE ON THE COVER OF EACH SPlice TRAY THE FOLLOWING:
 REFERENCE SECTION 1731 "FIBER OPTIC SPlice ENCLOSURE"
 1) SPlice LOCATION
 2) DATE
 3) COMPANY NAME
 4) NAME OF INDIVIDUAL PERFORMING THE SPlicing

PRIOR TO INSTALLING THE COVER ON THE SPlice TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPlice TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

Prepared in the Offices of: 	SPlice DETAILS DIVISION 12 IREDELL COUNTY PLAN DATE: AUGUST 2015 PREPARED BY: A. J. SKUCE REVIEWED BY: <i>Gregory A. Fuller</i>	SEAL DATE: 8/18/2015									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			REVISIONS	INIT.	DATE						
REVISIONS	INIT.	DATE									

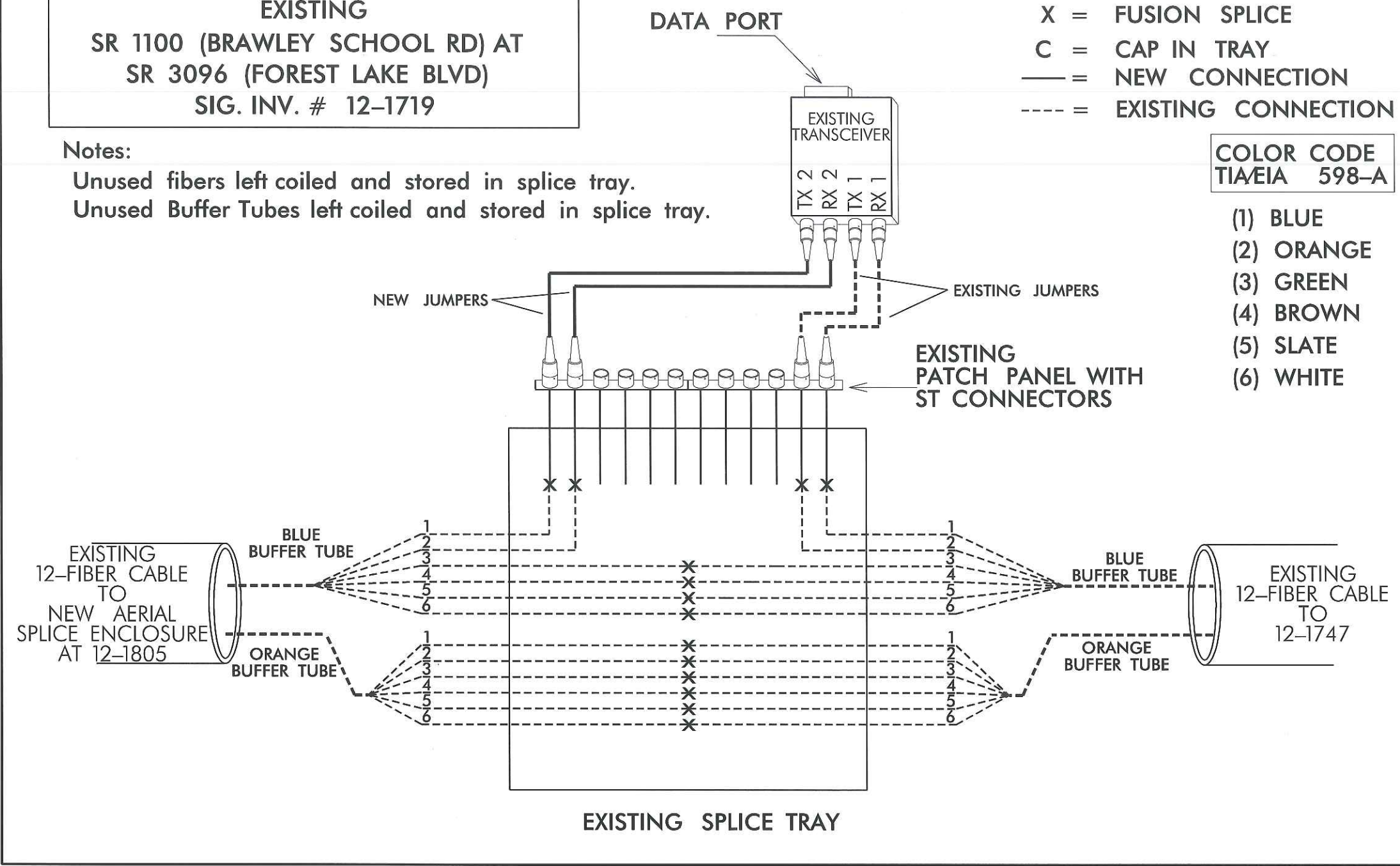
EXISTING
SR 1100 (BRAWLEY SCHOOL RD) AT
SR 3096 (FOREST LAKE BLVD)
SIG. INV. # 12-1719

Notes:
 Unused fibers left coiled and stored in splice tray.
 Unused Buffer Tubes left coiled and stored in splice tray.

LEGEND
 X = FUSION SPLICE
 C = CAP IN TRAY
 — = NEW CONNECTION
 - - - = EXISTING CONNECTION



COLOR CODE
TIA/EIA 598-A

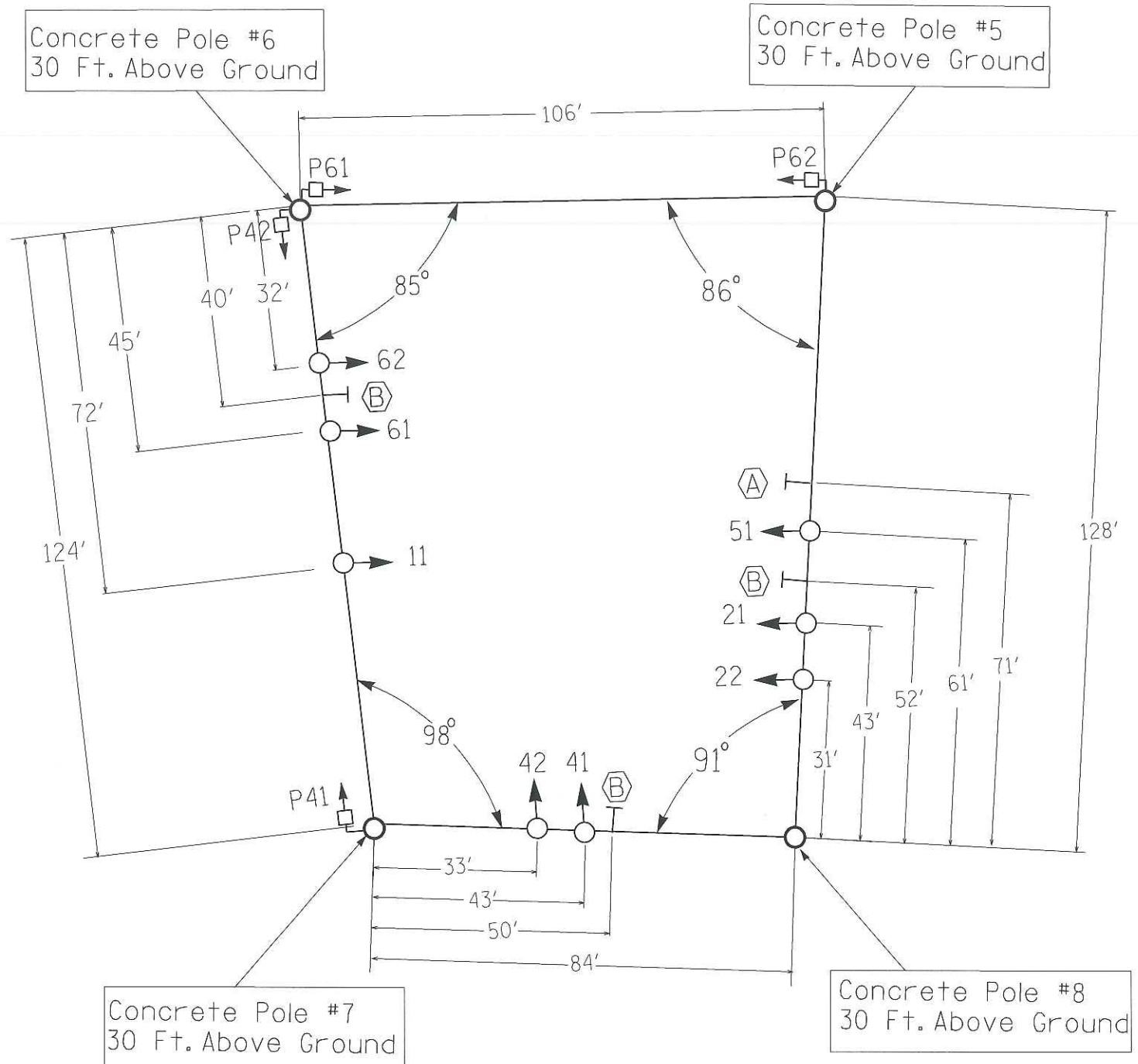
- (1) BLUE
- (2) ORANGE
- (3) GREEN
- (4) BROWN
- (5) SLATE
- (6) WHITE



- NOTES:**
- 1) TRANSCEIVER TERMINATION CONFIGURATIONS ARE GENERIC CONTRACTOR IS RESPONSIBLE FOR DETERMINING /ENSURING THE PROPER TERMINATIONS.
 - 2) NOTIFY THE DIVISION 12 TRAFFIC SIGNAL SUPERVISOR, ROBERT MAULT, AT (704) 480-5423 A MINIMUM OF 5 DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEMS COMMUNICATION CABLE. NOTIFY THE DIVISION 12 TRAFFIC SIGNAL SUPERVISOR AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY.
 - 3) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:
 REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"
- 1) SPLICE LOCATION
 - 2) DATE
 - 3) COMPANY NAME
 - 4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

 Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529	SPLICE DETAILS		SEAL  Gregory A. Fuller 8/18/2015
	DIVISION 12 IREDELL COUNTY PLAN DATE: AUGUST 2015 PREPARED BY: A. J. SKUCE REVIEWED BY: [Signature]		

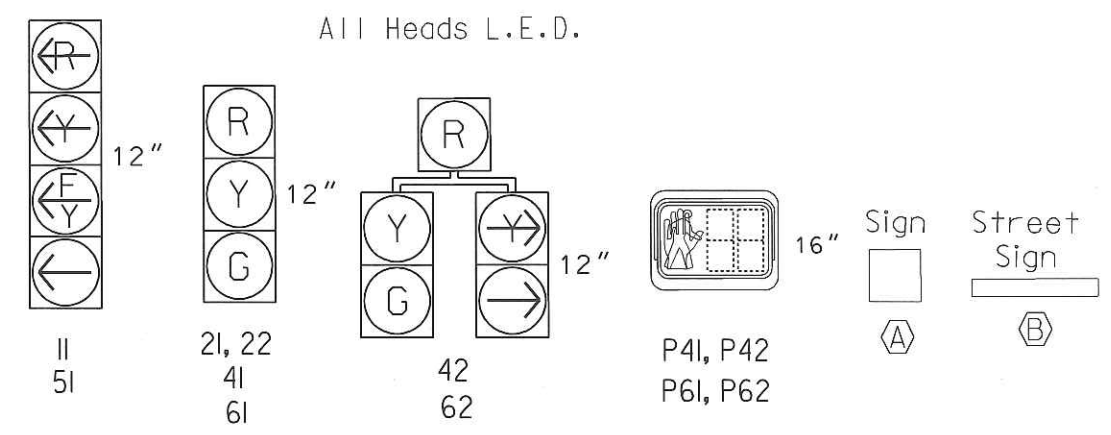


CONCRETE POLE LOADING SCHEDULE				
LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	SIGNAL HEAD 12" - 5 SECTION HEAD WITH BACKPLATE, AND BALANCE AJUSTER	16.3 S.F.	42.0' W X 56.0' L	89 LBS
	SIGNAL HEAD 12" - 4 SECTION HEAD WITH BACKPLATE, AND BALANCE AJUSTER	11.6 S.F.	25.5' W X 65.5' L	69 LBS
	SIGNAL HEAD 12" - 3 SECTION HEAD WITH BACKPLATE, AND BALANCE AJUSTER	9.2 S.F.	25.5.0' W X 52.0' L	56 LBS
	(A) SIGN WITH HANGER	7.5 S.F.	30.0' W X 36.0' L	14 LBS
	(B) STREET NAME SIGN SIGN WITH HANGER	12.0 S.F.	18.0' W X 96.0' L	27 LBS
	PEDESTRIAN SIGNAL HEAD WITH MOUNTING HARDWARE	2.2 S.F.	18.5" W X 17.0" L	21 LBS

NOTES

1. Design the traffic signal structure in accordance with the traffic signal project plans and special provisions.
2. Design the traffic signal structure using the loading conditions shown in the plan view. These are anticipated worst case "Design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
3. The contractor may contact the Signal Design Structural Engineer for assistance at (919) 773-2800.
4. Use soil penetration testing data (SPT) included with plans and special provisions to determine embedment depths and anchoring methods for each pole.
5. Boring label numbering matches pole numbering shown. Include pole number on each pole identification tag.
6. Provide factory preps for wire access to pedestrian signals on poles 5, 6 and 7. Comply with Standard Drawing 1705.02 for mounting heights.
7. Contractor must provide pole designer with mounting bracket dimensions and verify radial orientation of prep locations based on actual equipment to be installed. Show all factory preps on shop drawings.

SIGNAL FACE I.D.



Concrete Pole - Loading Diagram

Prepared in the Offices of:

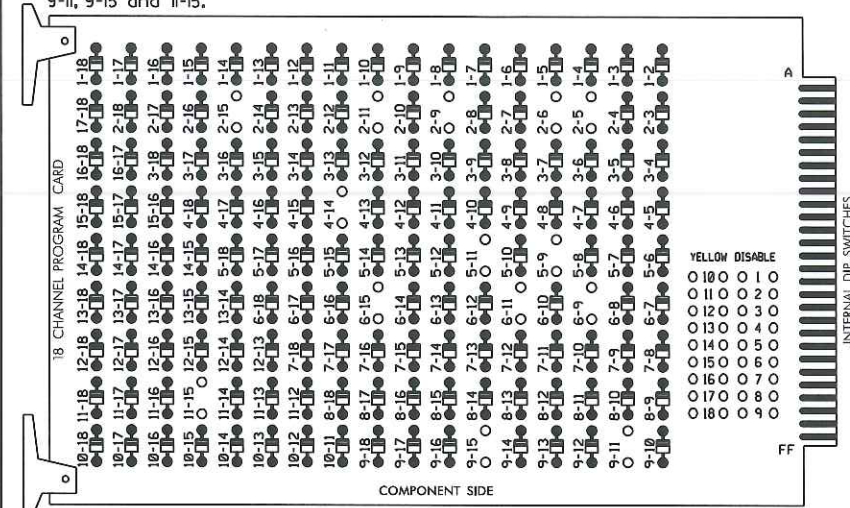
 SR 1100 (Brawley School Road)
 at
 SR 1115 (McKendree Road)
 Division 12 Iredell County Mooresville
 PLAN DATE: September 2015 REVIEWED BY:
 PREPARED BY: C. Pierce RKA PROJ. NO.:
 SCALE: 0 N/A
 REVISIONS: INIT. DATE
 J. G. Williams 9/30/2015
 SIG. INVENTORY NO. 12-1805

30-SEP-2015 08:33
 S:\MTCAS\175-51\proj\sig\signal Design_Sch1 for wire term Req on 01 v-12 m12-1805 m12 1805.s19.dwg 20150928.dgn
 cep/arc

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

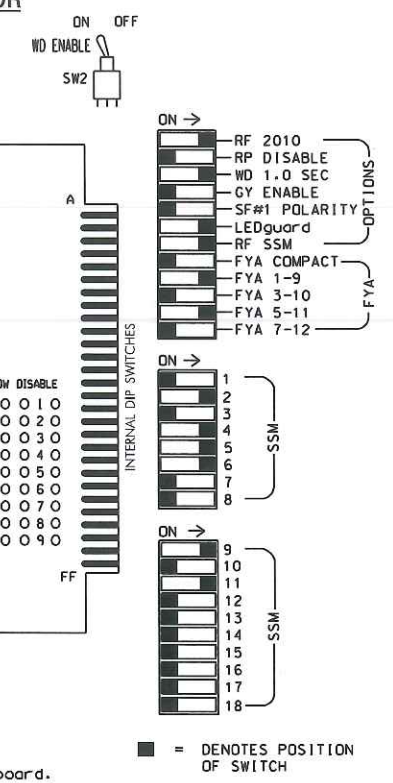
REMOVE DIODE JUMPERS 2-5, 2-6, 2-9, 2-11, 2-15, 4-14, 5-9, 5-11, 6-9, 6-11, 6-15, 9-11, 9-15 and 11-15.



REMOVE JUMPERS AS SHOWN

NOTES:

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



NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Enable Simultaneous Gap-Out for all phases.
3. Program phases 2 and 6 for Variable Initial and Gap Reduction.
4. Program phases 2 and 6 for Start Up In Green.
5. Program phases 4 and 6 for 'STARTUP PED CALL'.
6. Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
7. The cabinet and controller are part of the SR 1100 (Brawley School Rd.) Closed Loop System.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
 CABINET.....332 /W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S2,S5,S6,S7,S8,S9,AUX S1,AUX S4
 PHASES USED.....2,4,4 PED,5,6,6 PED
 OVERLAP "A".....2
 OVERLAP "B".....NOT USED
 OVERLAP "C".....5+6
 OVERLAP "D".....NOT USED

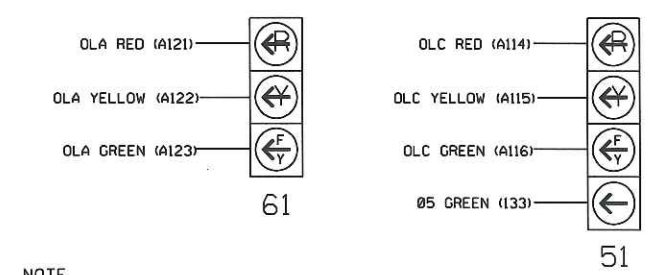
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6			
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18			
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE			
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42	63	P41, P42	42	51*	62,63	P61, P62	NU	NU	NU	61*	NU	NU	51*	NU	NU	
RED		128			101			*		134											
YELLOW		129			102					135											
GREEN		130			103					136											
RED ARROW																A121			A114		
YELLOW ARROW																A122			A115		
FLASHING YELLOW ARROW																A123			A116		
GREEN ARROW																					
Hand																					
Person																					

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

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)

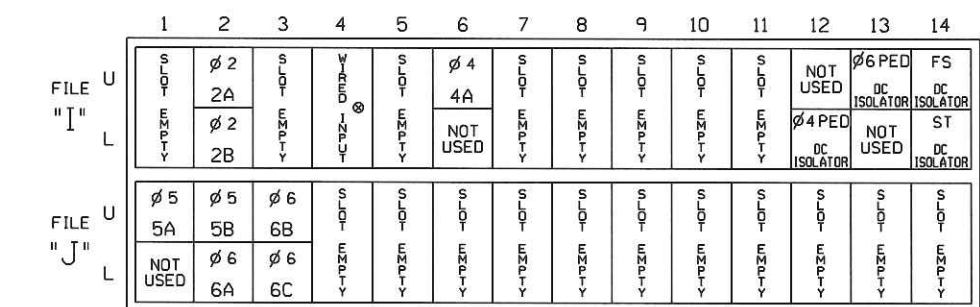


NOTE

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

INPUT FILE POSITION LAYOUT

(front view)



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

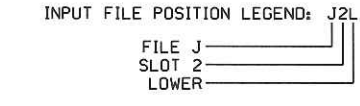
⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A	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
5A ¹	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	TB3-7,8	J2L	44	6	16	6	Y	Y			
6B	TB3-9,10	J3U	64	26	36	6	Y	Y			
6C	TB3-11,12	J3L	77	39	46	6	Y	Y	Y		5
PEO PUSH BUTTONS											
P41,P42	TB8-5,6	I12L	69	31	PEO 4	4 PED					
P61,P62	TB8-7,9	I13U	68	30	PEO 6	6 PED					

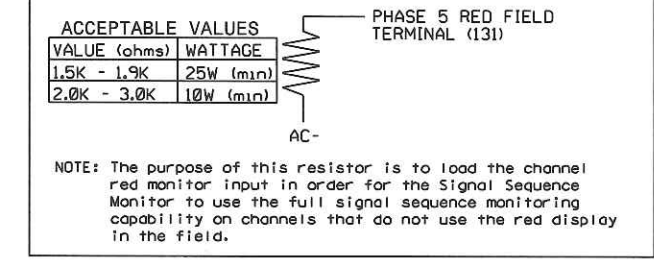
NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

- ¹Add jumper from J1-W to I4-W, on rear of input file.
 * See Input Page 2 Assignment programming details on sheet 3.



LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)



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: 12-1805
 DESIGNED: September 2015
 SEALED: 9/23/2015
 REVISED: N/A

Electrical Detail - Sheet 1 of 4

Electrical and Programming Details For: SR 1100 (Brawley School Road) at SR 1115 (McKendree Road)

Prepared In the Offices of:

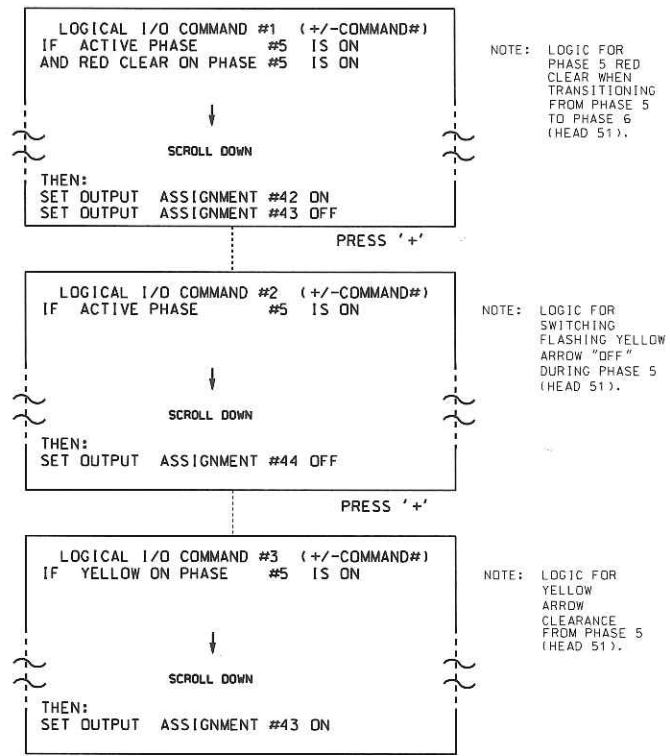
Division 12 Iredell County Mooresville
 PLAN DATE: September 2015 REVIEWED BY: GCB
 PREPARED BY: C. Strickland REVIEWED BY:
 REVISIONS INIT. DATE
 9/25/2015
 Sig. Inventory No. 12-1805

25-SEP-2015 08:52: Signal Designer: gcbrown@ncs.com; Monitor: fcd; (order# 21805; sub# 1); xxx.dgn

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

(program controller as shown below)

- FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2 AND 3.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE	
OUTPUT 42 =	Overlap C Red
OUTPUT 43 =	Overlap C Yellow
OUTPUT 44 =	Overlap C Green

OVERLAP PROGRAMMING DETAIL FOR NORMAL OPERATION - PAGE 1

(program controller as shown below)

- FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE: |12345678910111213141516
VEH OVL PARENTS: | X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
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

OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING - PAGE 2

(program controller as shown below)

- FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS). PRESS 'NEXT' TO ADVANCE TO PAGE 2.

NOTICE PAGE 2 → PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
PHASE: |12345678910111213141516
VEH OVL PARENTS: | X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
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

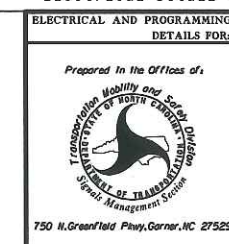
NOTICE PAGE 2 → PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
PHASE: |12345678910111213141516
VEH OVL PARENTS: | X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER 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

OVERLAP PROGRAMMING COMPLETE

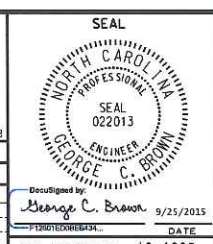
05-SEP-2015 08:53
 C:\WORKING\SR1100\Sig\121805_Sig.dgn
 C:\WORKING\SR1100\Sig\121805_Sig.dgn
 C:\WORKING\SR1100\Sig\121805_Sig.dgn

Electrical Detail - Sheet 2 of 4

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-1805
DESIGNED: September 2015
SEALED: 9/23/2015
REVISED: N/A



ELECTRICAL AND PROGRAMMING DETAILS FOR:		SR 1100 (Brawley School Road) at SR 1115 (McKendree Road)	
Division 12	Iredell County	Mooreville	
PLAN DATE: September 2015	REVIEWED BY: GCB		
PREPARED BY: C. Strickland	REVIEWED BY:		
REVISIONS	INIT.	DATE	

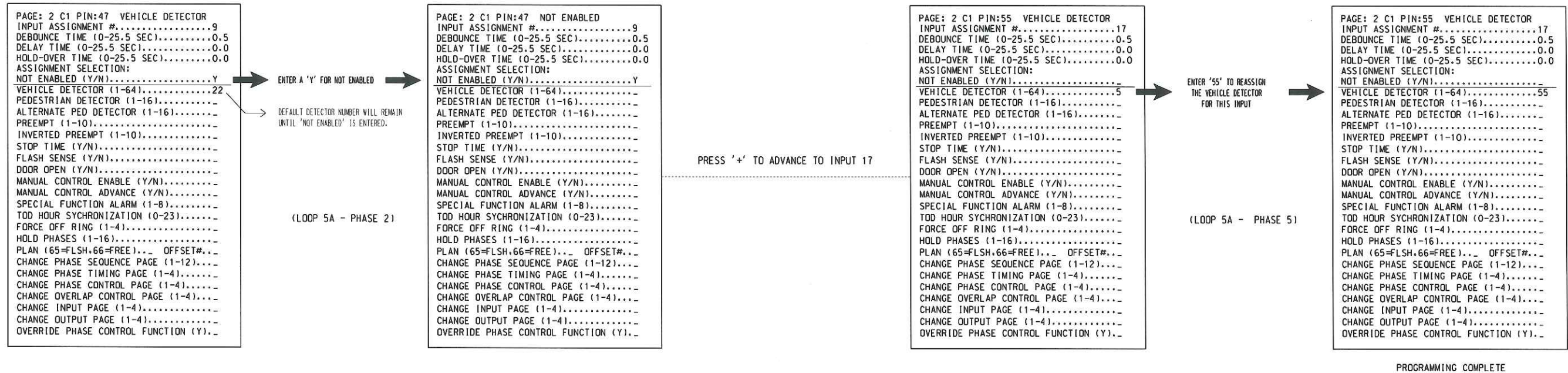


INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 5A

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #9 (DETECTOR 22) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 2 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 55 TO INPUT #17 SO THAT THE DELAY ON LOOP 5A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

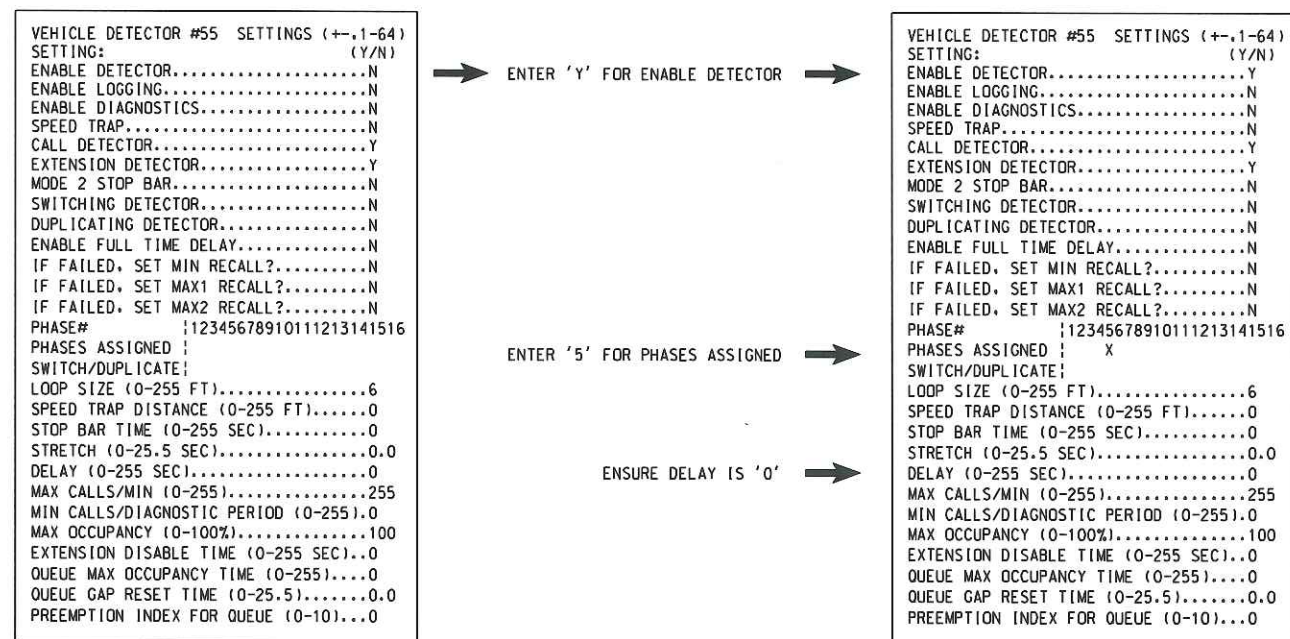
FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 9 IS REACHED.



SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 5A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #55.



NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 12-1805
DESIGNED: September 2015
SEALED: 9/23/2015
REVISED: N/A

Electrical Detail - Sheet 3 of 4

	SR 1100 (Brawley School Road) at SR 1115 (McKendree Road)		
	Division 12 PLAN DATE: September 2015 PREPARED BY: C. Strickland	Iredell County REVIEWED BY: GCB REVIEWED BY:	

750 N. Greenfield Pkwy, Garner, NC 27529

DocuSigned by: George C. Brown 9/25/2015

SIG. INVENTORY NO. 12-1805

26-SEP-2015 08:54
 S:\TFS\BMTS\Sig\p01\awork\p01\p01\121805.dwg
 User: gcb
 Plot: 121805.dwg

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

<u>PHASING</u>	<u>INPUTS PAGE</u>	<u>OVERLAPS PAGE</u>
ACTIVE PAGES REQUIRED TO RUN <u>NORMAL PHASING</u>	1	1
ACTIVE PAGES REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	2

NOTE: PAGES NOT SHOWN (i.e. sequence, phase control, etc.) SHOULD REMAIN AS '1', OR AS DEFINED BY TIMING ENGINEER.

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY PAGE CHANGE EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN PAGE CHANGE EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING PAGE CHANGE SUMMARY



THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAPS PAGE 2: Modifies overlap parent phases for head 51 to run protected turns only.

INPUTS PAGE 2: Disables phase 2 call on loop 5A and modifies delay time.

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 12-1805
 DESIGNED: September 2015
 SEALED: 9/23/2015
 REVISED: N/A

Electrical Detail - Sheet 4 of 4

<p style="font-size: small;">ELECTRICAL AND PROGRAMMING DETAILS FOR:</p> <p style="font-size: x-small;">Prepared in the Offices of:  TRANSPORTATION MOBILITY AND SAFETY DEPARTMENT CITY OF CHARLOTTE 750 N. Grant/Ida Hwy, Corner, NC 27329</p>	<p>SR 1100 (Brawley School Road) at SR 1115 (McKendree Road)</p> <p style="font-size: x-small;">Division 12 Iredell County Mooresville</p> <p style="font-size: x-small;">PLAN DATE: September 2015 REVIEWED BY: GCB</p> <p style="font-size: x-small;">PREPARED BY: C. Strickland REVIEWED BY:</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	REVISIONS	INIT.	DATE							<p style="font-size: x-small;">SEAL</p>  <p style="font-size: x-small;">Sealed by: George C. Brown 9/25/2015</p> <p style="font-size: x-small;">DATE</p>
REVISIONS	INIT.	DATE									
SIG. INVENTORY NO. 12-1805											

25-SEP-2015 08:55
 C:\IT\ASUM\IS\Sig\12-1805\SR1100\12-1805_Sig.dgn
 C:\IT\ASUM\IS\Sig\12-1805\SR1100\12-1805_Sig.dgn