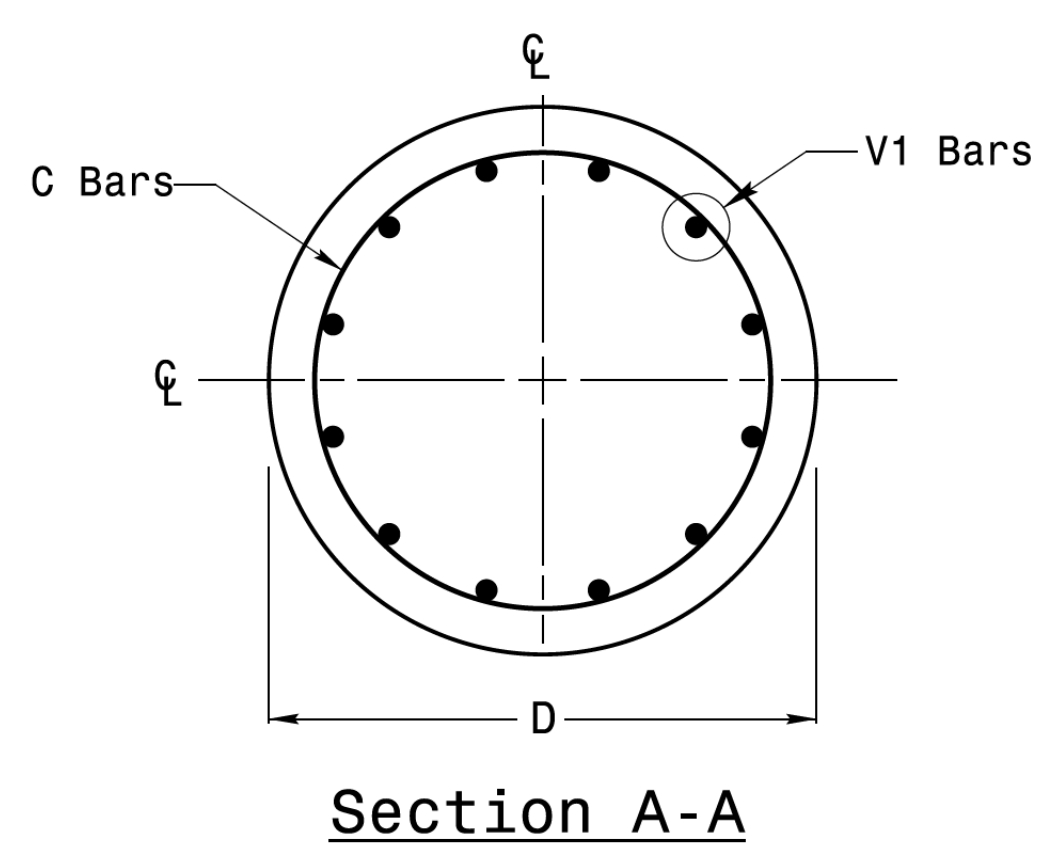
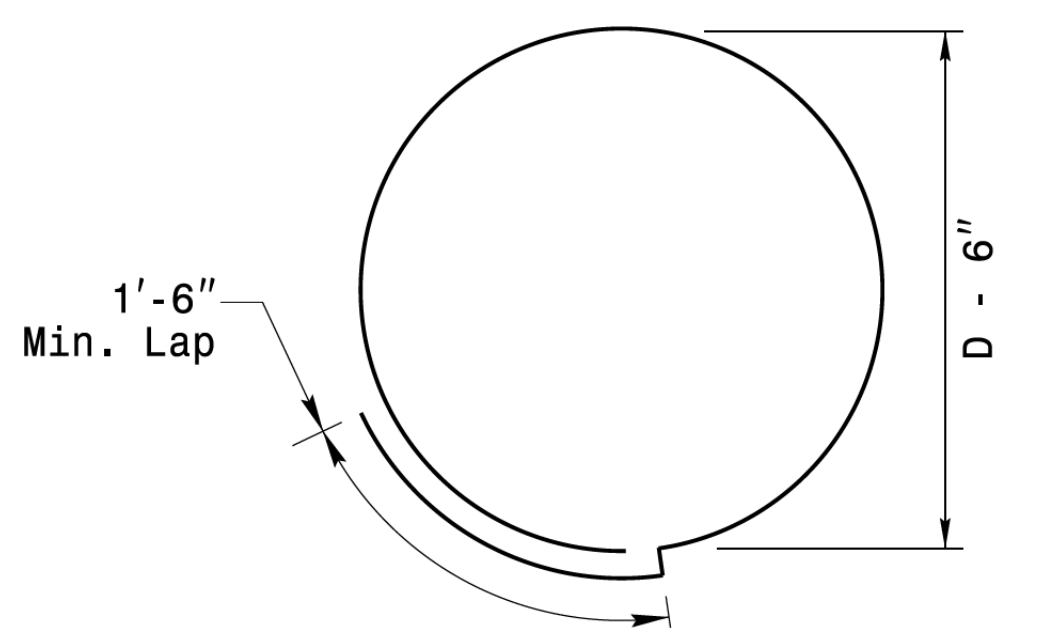


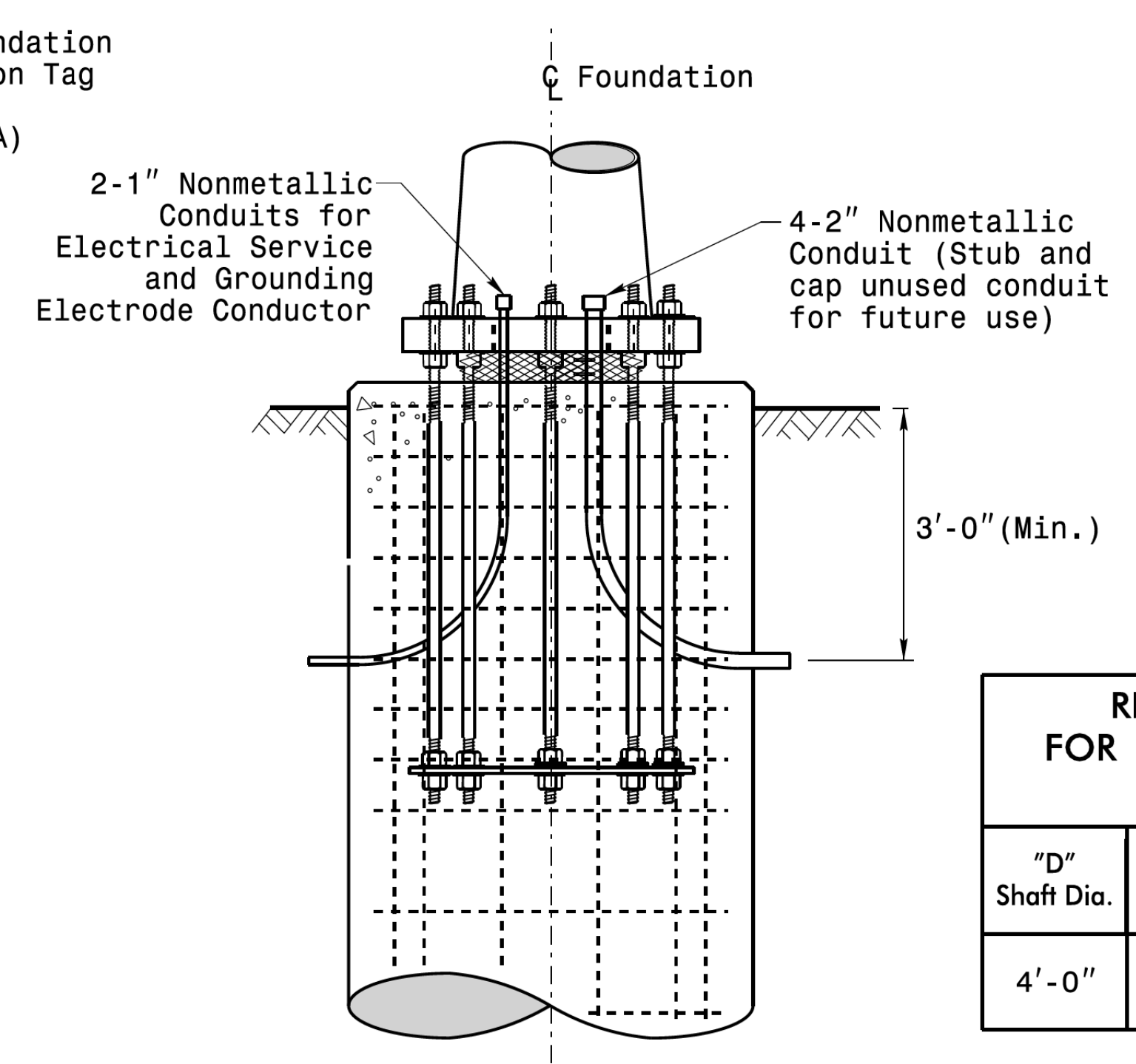
Concrete Shaft Elevation



Section A-A



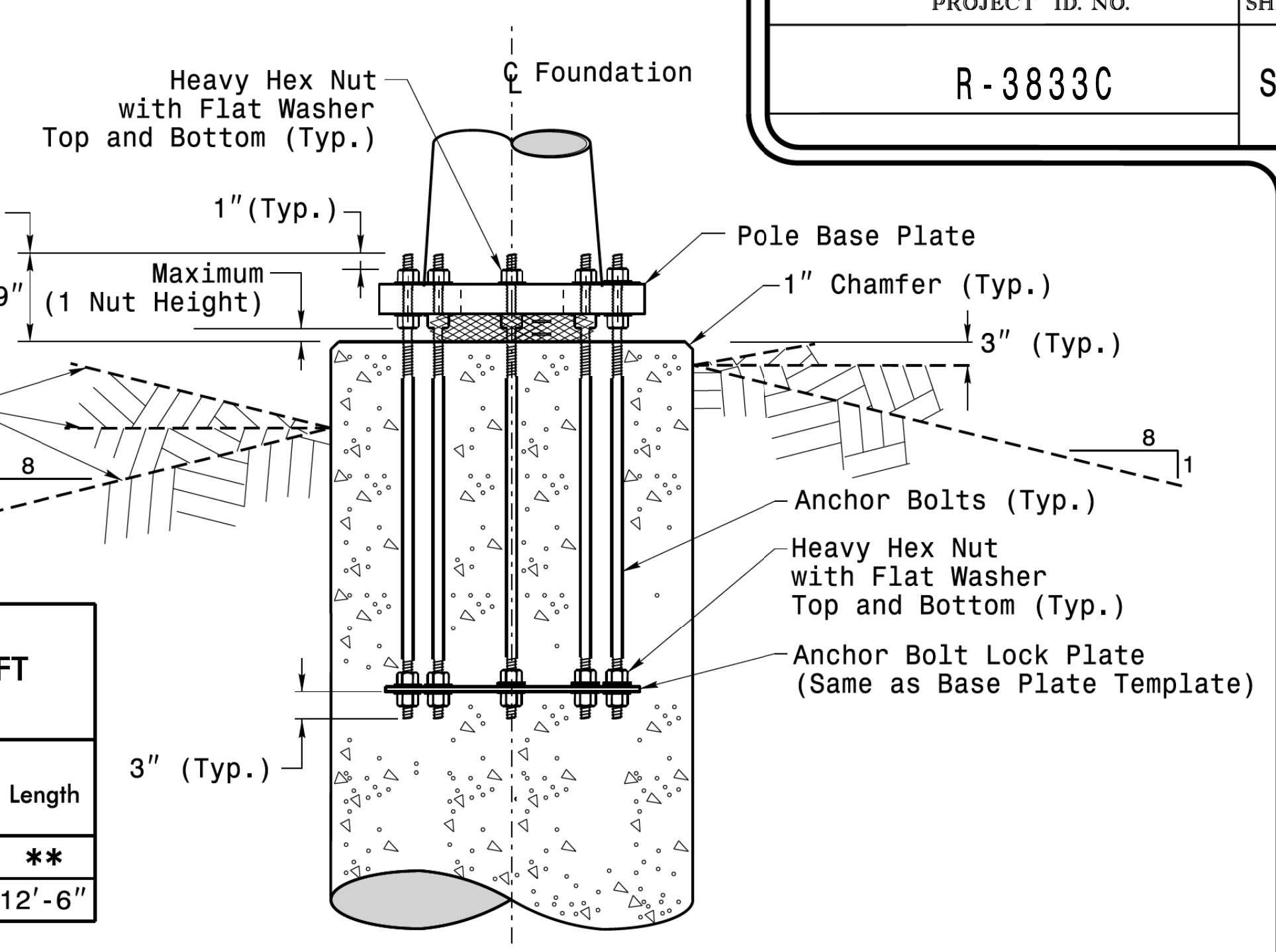
Typical "C" Bar Detail



Typical Foundation Conduit Details

"D" Shaft Dia.	Conc. Volume (cu. yds.)	Bar Name	MIN.	Size	Type	Length
4'-0"	.465 x L	V1	-	#8	STR.	**
		C	*	#4	CIR.	12'-6"

* See Note No. 2
 ** See Note No. 3

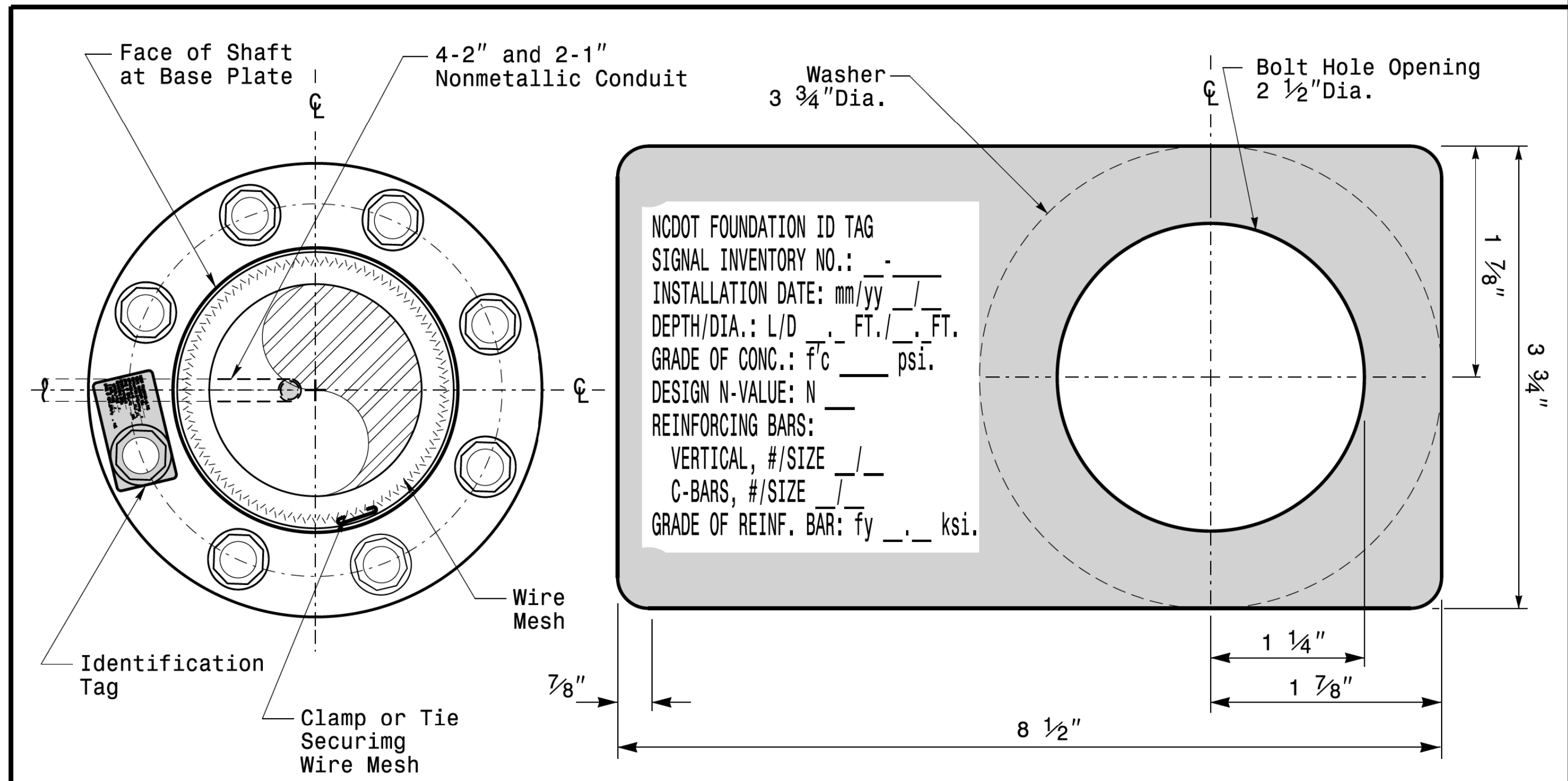


Typical Foundation Anchor Bolt Details

(Reinforcing Cage Not Shown for Clarity)

General Notes:

- If actual subsurface conditions differ significantly from boring data contact the Engineer before excavating or placing concrete.
- Circular tie reinforcing rings may be vertically adjusted by +/-3" at a depth between 2'-0" and 3'-0" to facilitate the installation of electrical conduit entering in the cage.
- For standard foundations, see sheet Sig. M8 for details. Vertical reinforcing bars (V1) may be horizontally adjusted by +/-3" to facilitate the installation of electrical conduit entering into the cage.
- Provide 2" to 5" foundation projection above ground level depending on the ground slope.
- Unless otherwise shown, foundation designs are based on non-sloping level ground surfaces with slope ratios of 8:1 (H:V) or flatter. If actual ground line slopes are steeper contact the Engineer before excavating or placing concrete.
- Construct foundations in accordance with NCDOT Standard Provisions SP09 R005- Foundations and Anchor Rod Assemblies for Metal Poles. All applicable 2018 NCDOT Standard Specifications are referenced in this provision. Refer to the NCDOT Resources/Specifications page located on the Connect NCDOT website.
<https://connect.ncdot.gov/resources/Specifications and Special Provisions.aspx>
- Use air entrained AA concrete mix with a compression strength of f'c=4500 psi.(min.) after 28 days.
- Use ASTM A615 grade 60 deformed bars for all reinforcing steel. Maintain at least 3" cover on all reinforcement.
- Locate the Identification Tag on the top of the base plate, directly above the conduit's entry point.
- Provide two layers of galvanized welded 23 gauge (0.25) 6" wide 4 mesh wire around pipes under the base plate and secure it with ties if necessary.
- Preferred location for the I.D. Tag is as shown in Detail-A; directly above the conduit entering the foundation.



Concrete Foundation Identification Tag Details

D = Diameter
 L = Length/Depth
 mm = Month
 yy = Year

Detail-A

	Construction Details For Foundations		
	PLAN DATE: OCTOBER 2018 PREPARED BY: N. BITTING	DESIGNED BY: C. B. COGDILL REVIEWED BY: D. C. SARKAR	
750 N. Grant Street, Raleigh, NC 27629	REV. NO. 1 COMMENTS: Revised Foundation Tag Details	INIT. N.B. DATE: 5/11/2015	SEAL NORTH CAROLINA PROFESSIONAL ENGINEER D. C. SARKAR 028094 Discussed by: D. C. SARKAR DATE: 10/11/2017

Construction Details - Foundations

11-02-2017 08:37 P:\TSD\WITS\Signal\sig\Design\Section\Eastern_Region\M\Sheets\2016\2014_Sig_M7_Std_Construction_Detail\Is-Strain_Poles.dgn

09/28/2022

TIP PROJECT: R-3833C

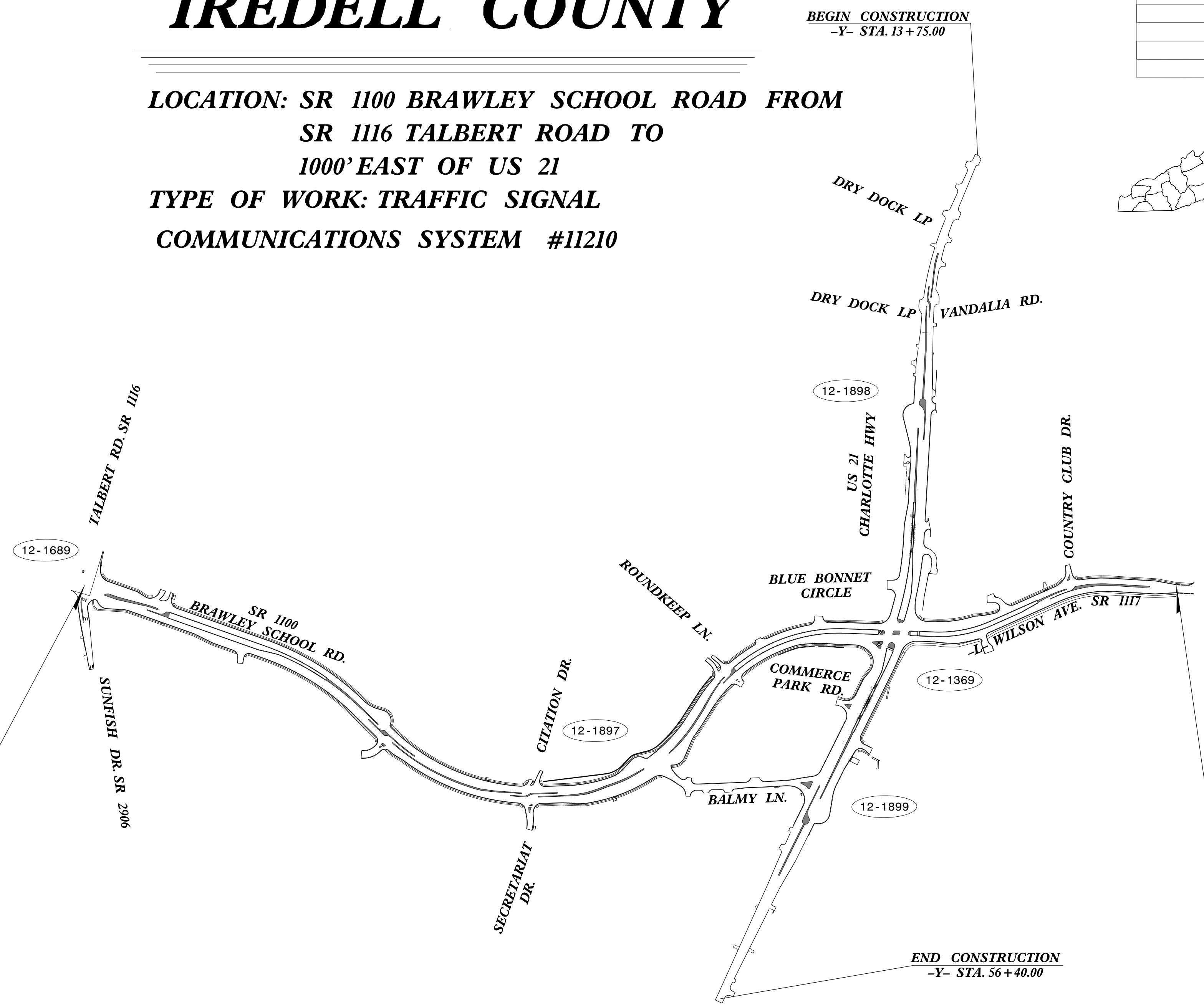
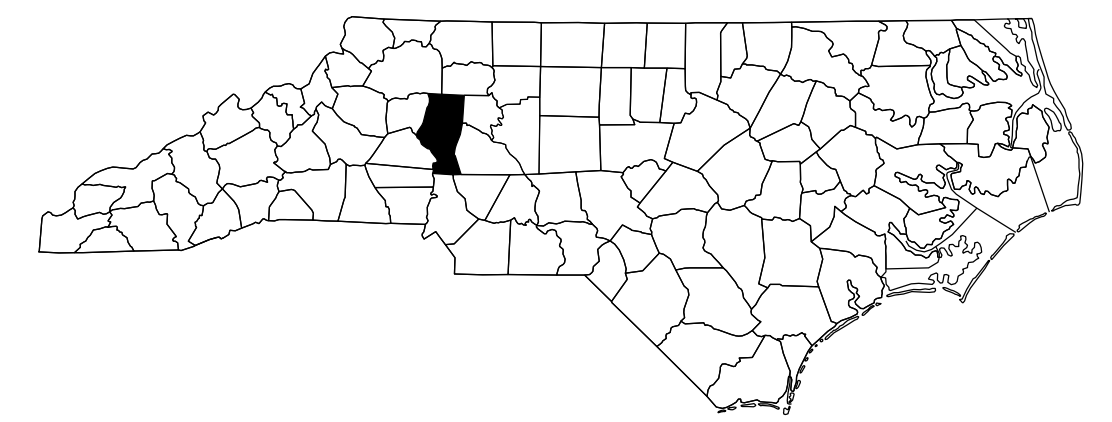
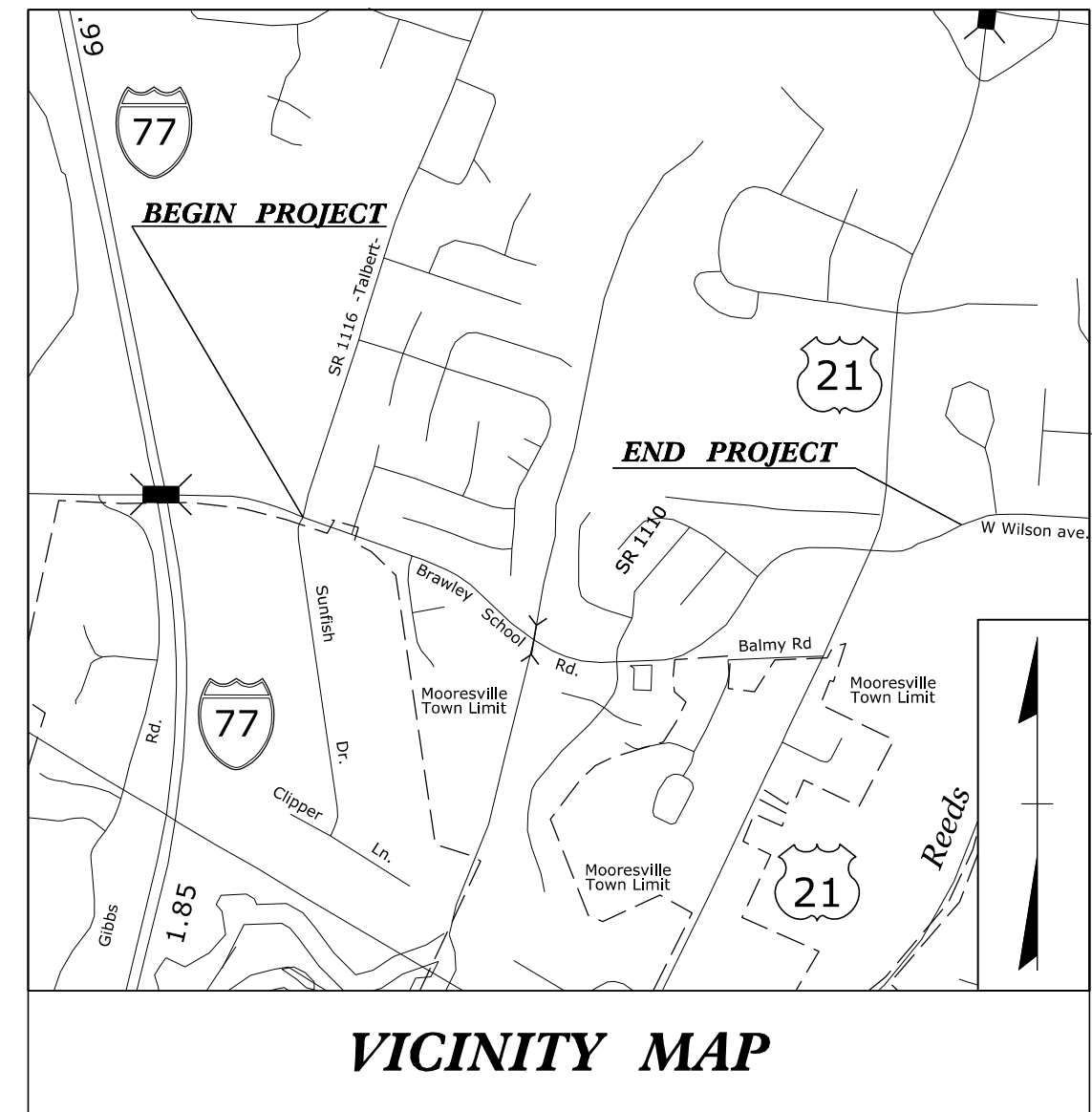
CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

**LOCATION: SR 1100 BRAWLEY SCHOOL ROAD FROM
SR 1116 TALBERT ROAD TO
1000' EAST OF US 21
TYPE OF WORK: TRAFFIC SIGNAL
COMMUNICATIONS SYSTEM #11210**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3833C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34554.1.FD1		P.E	
34554.2.4		R/W	
34554.2.5		UTIL	



BEGIN TIP PROJECT R-3833C
-L- POT STA. 18 + 05.86
BRAWLEY SCHOOL RD.

END TIP PROJECT R-3833C
-L- STA. 75 + 82.64
W. WILSON AVE.

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF MOORESVILLE

2018 STANDARD SPECIFICATIONS	
PROJECT LENGTH:	1.940 MILES
LETTING DATE:	MAY 22nd, 2022
INDEX OF PLANS	
SCP-1	TITLE SHEET
SCP-2	CONSTRUCTION NOTES AND LEGEND
SCP-3 thru SCP-7	CABLE ROUTING PLANS
SCP-8 thru SCP-10	FIBER-OPTIC SPLICING DETAILS

ROADWAY STANDARD DRAWINGS	
THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" ROADWAY DESIGN UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS.	
STD. No.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURE
1101.04	TEMPORARY SHOULDER CLOSURE
1715.01	UNDERGROUND CONDUIT - TRENCHING
1716.01	JUNCTION BOXES
1721.01	GUY ASSEMBLIES
1730.01	FIBER OPTIC CABLE - SPARE CABLE STORAGE
1751.02	CONTROLLERS AND CABINETS - POWER, GROUND, AND AUXILIARY

LEGEND
XX-XXXX SIGNAL INVENTORY No.

Prepared for the Offices of:
TRANSPORTATION SAFETY AND MOBILITY INTELLIGENT TRANSPORTATION SYSTEMS SECTION
 Gregory Green, Signal Communication Project Engineer
 Heidi Berggren, EIT, Signal Communication Project Design Engineer

Stantec Larry Overn, PE, PTO, Senior Transportation Engineer
 Regina Muncey, PE, Transportation Engineer
 Dean Harris, Senior Transportation Designer
 Ryan Costello, EIT, Transportation Engineer In Training

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Professional Engineer Seal for E. OVERN, License No. 11/2/2022

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- 1 INSTALL COAX CABLE
- 2 INSTALL ETHERNET CABLE
- 3 EXISTING ETHERNET (OR COAX) CABLE
- 4 INSTALL SMFO CABLE
- 5 EXISTING SMFO 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 INSTALL NEW ETHERNET EDGE SWITCH
- 27 INSTALL NEW FIBER OPTIC TRANSCEIVER
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS AND FUSION SPLICE CABLE IN CABINET
- 29 INSTALL UNDERGROUND SPLICE ENCLOSURE
- 30 INSTALL AERIAL SPLICE ENCLOSURE
- 31 MODIFY EXISTING INTERCONNECT CENTER /SPLICE ENCLOSURE
- 32 INSTALL POLE MOUNTED SPLICE CABINET
- 33 INSTALL BASE MOUNTED SPLICE CABINET

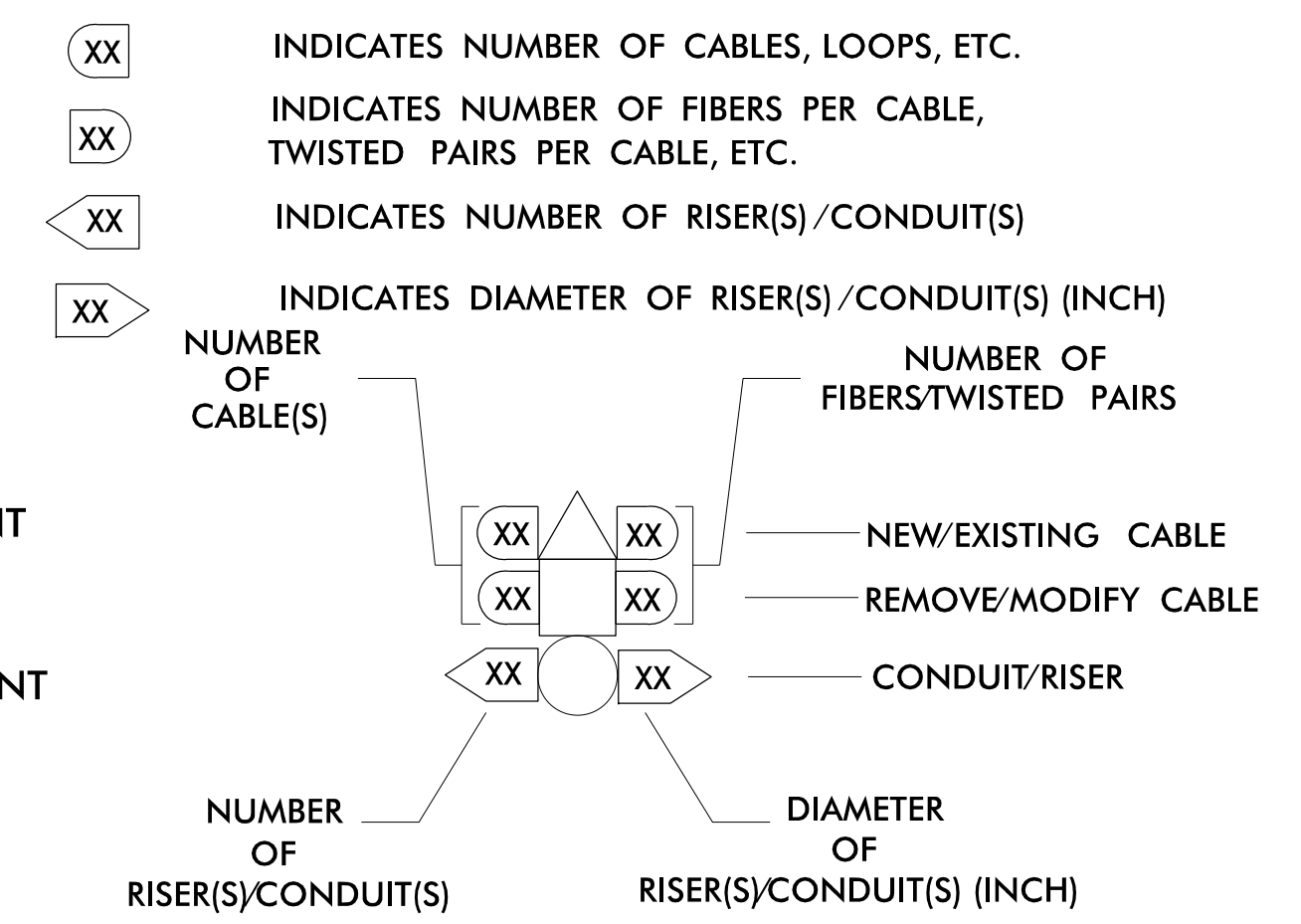
- 34 INSTALL CABINET FOUNDATION
- 35 INSTALL CCTV CAMERA POLE MOUNTED CABINET
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40A INSTALL OVERSIZED JUNCTION BOX
- 40B INSTALL SPECIAL OVERSIZED JUNCTION BOX (36" x 24" x 24")
- 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
- 48A REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE
- 48B REMOVE EXISTING COMMUNICATIONS CABLE
- 49 BACK PULL EXISTING COMMUNICATIONS CABLE
- 50 INSTALL CELL MODEM AND ANTENNA
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52A INSTALL DELINEATOR MARKER
- 52B INSTALL JUNCTION BOX MARKER
- 53A STORE 30 FEET OF COMMUNICATIONS CABLE
- 53B STORE 50 FEET OF EACH COMMUNICATIONS CABLE
- 54 LASH CABLE(S) TO EXISTING 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
- 59 INSTALL NEW EQUIPMENT CABINET DISCONNECT
- 60 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
- 61 DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS
- 62 BOND RISER AND MESSENGER CABLE TO POLE GROUND
- 63 BOND RISER TO POLE GROUND
- 64 BOND MESSENGER CABLE TO POLE GROUND
- 65 INSTALL HEAT SHRINK TUBING RETROFIT KIT
- 66 INSTALL MOLDABLE DUCT SEAL
- 67 SLACK SPAN

LEGEND

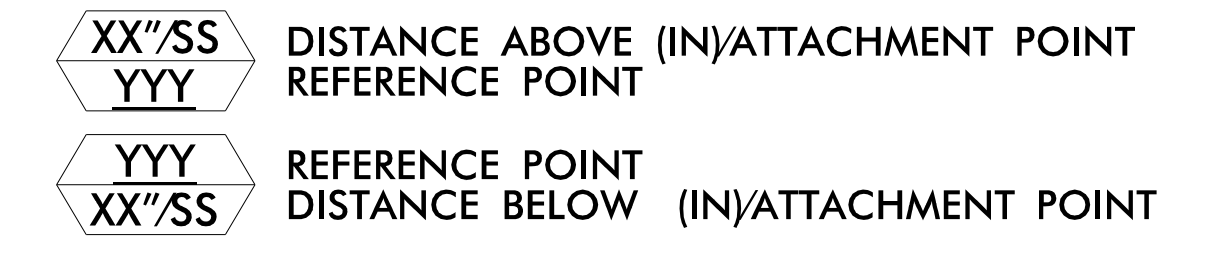
	NEW FIBER OPTIC COMMUNICATIONS CABLE
	EXISTING COMMUNICATIONS CABLE
	EXISTING COMMUNICATIONS CABLE TO BE REMOVED
	NEW AERIAL GUY ASSEMBLY
	NEW CONDUIT
	EXISTING CONDUIT
	NEW DIRECTIONAL DRILLED CONDUIT

NEW		EXISTING
	OVERSIZED JUNCTION BOX	
	WOOD POLE	
	AERIAL SPLICE ENCLOSURE	
	UNDERGROUND SPLICE ENCLOSURE	
	METAL POLE	
	CCTV ASSEMBLY	
	STANDARD GUY ASSEMBLY	
	SIDEWALK GUY ASSEMBLY	
	CABLE STORAGE RACKS (SNOW SHOES)	
	SIGNAL/EQUIPMENT CABINET	
	SPLICE CABINET	
	FLAT PANEL ANTENNA (SINGLE)	
	YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION	
	YAGI ANTENNA (SINGLE)	
	OMNI ANTENNA	
	SIGNAL POLE	
	SIGNAL INVENTORY NUMBER	

CONSTRUCTION NOTE SYMBOLOGY KEY



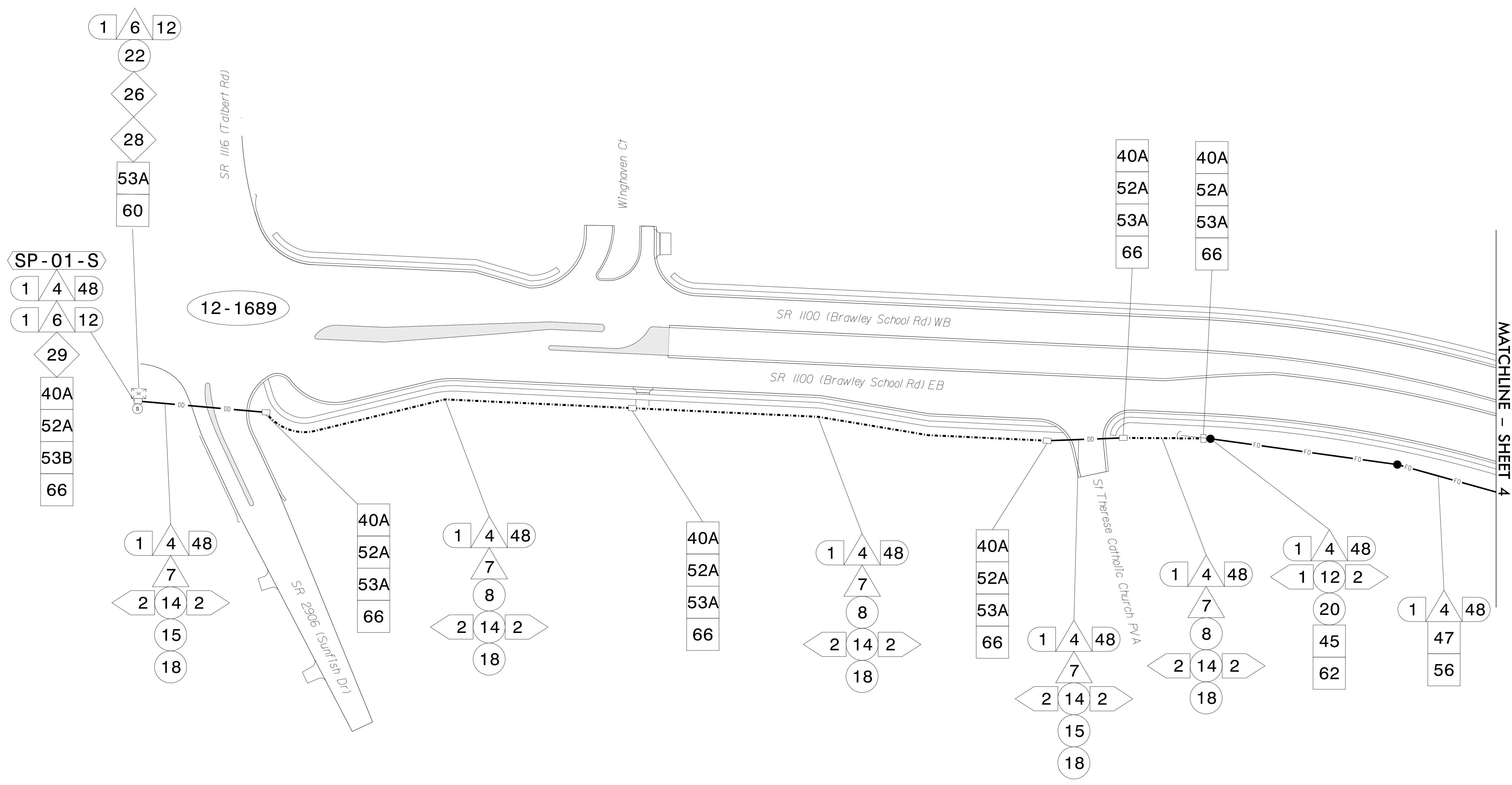
ATTACHMENT POINT:



"SS" REFERENCE LOCATION
 FS = FRONT SIDE OF POLE
 BS = BACK SIDE OF POLE

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 User: rmmuney

 Stantec Consulting Services Inc. 801 Jones Franklin Road-Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672	 R. J. Costello PROFESSIONAL ENGINEER No. 045933 State of North Carolina	Construction Notes and Legend		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED L. Overn PROFESSIONAL ENGINEER No. 045933 State of North Carolina
		Division 12 Catawba and Iredell Co. Mooresville PLAN DATE: May 2022 REVIEWED BY: E D Harris PREPARED BY: R J Costello REVIEWED BY: L Overn	SCALE N. T. S.	



NOTES:

- 1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT DIVISION 12 TRAFFIC ENGINEER AT (980) 552-4214 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
- 2) ALL CABLE ATTACHMENT POINTS ARE 40" BELOW POWER, FRONT SIDE OF POLE (FS) UNLESS OTHERWISE NOTED.
- 3) CELL MODEM FOR MASTER SIGNAL SYSTEM CABINET WILL BE PROVIDED TO CONTRACTOR BY NCDOT. CONTRACTOR MUST CONTACT NCDOT DIVISION 12 TRAFFIC ENGINEER, BYRON ENGLE AT 980-552-4214 SIX (6) WEEKS PRIOR TO INSTALLATION TO ALLOW LEAD TIME FOR ACQUIRING DEVICES.

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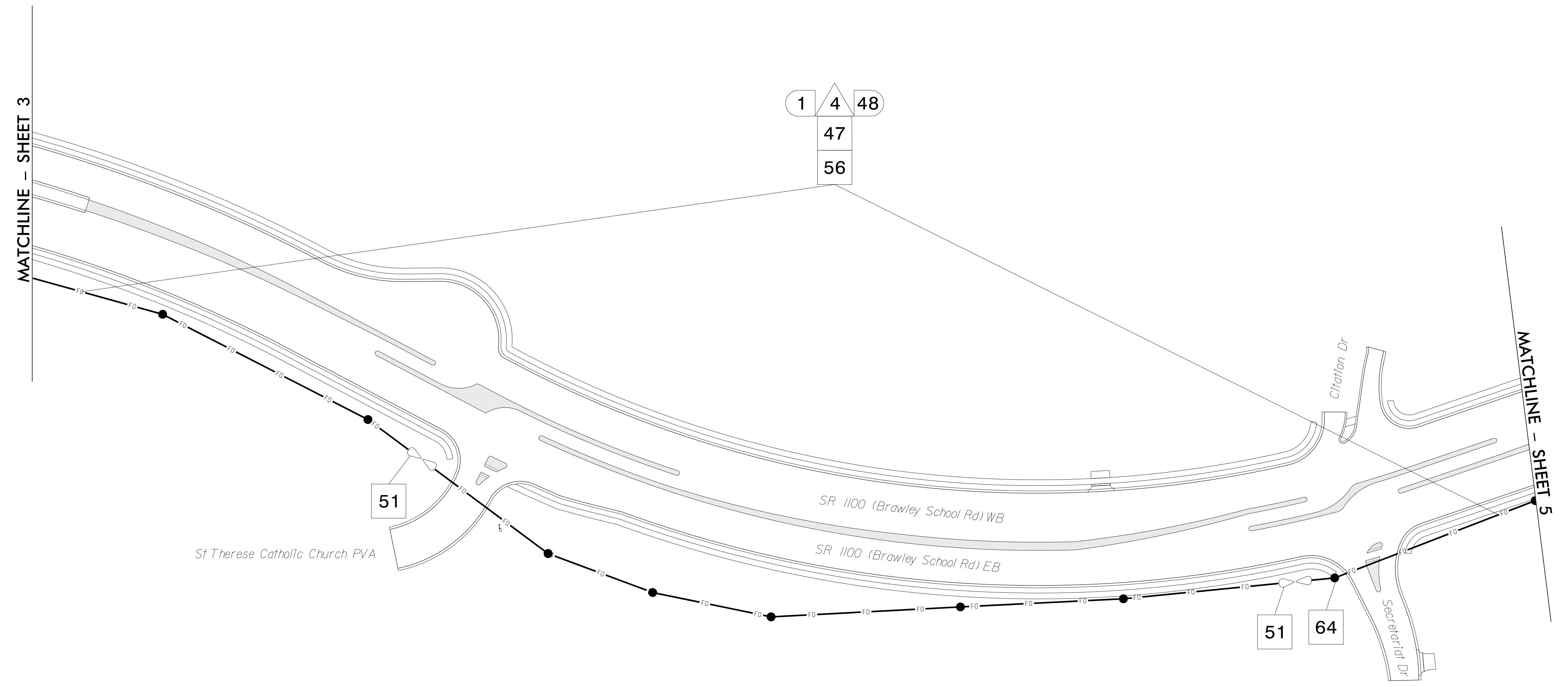
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 750 N. Greenfield Pkwy, Garner, NC 27529
 SCALE: 1"=100'

SR 1100 (Brawley School Road) Cable Routing Plan
 Division 12 Catawba and Iredell Co. Mooresville
 PLAN DATE: May 2022 REVIEWED BY: E D Harris
 PREPARED BY: R J Costello REVIEWED BY: L Overn
 REVISIONS: INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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 PROFESSIONAL ENGINEER
 049933
 LAWRENCE E. OVERN
 11/2/2022
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- NOTES:**
- 1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT DIVISION 12 TRAFFIC ENGINEER AT (980) 552-4214 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
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SCALE
0 100
1"=100'

SR 1100 (Brawley School Road) Cable Routing Plan

Division 12 Catawba and Iredell Co. Mooresville

PLAN DATE: May 2022 REVIEWED BY: E D Harris

PREPARED BY: R J Costello REVIEWED BY: L Overn

REVISIONS	INIT.	DATE

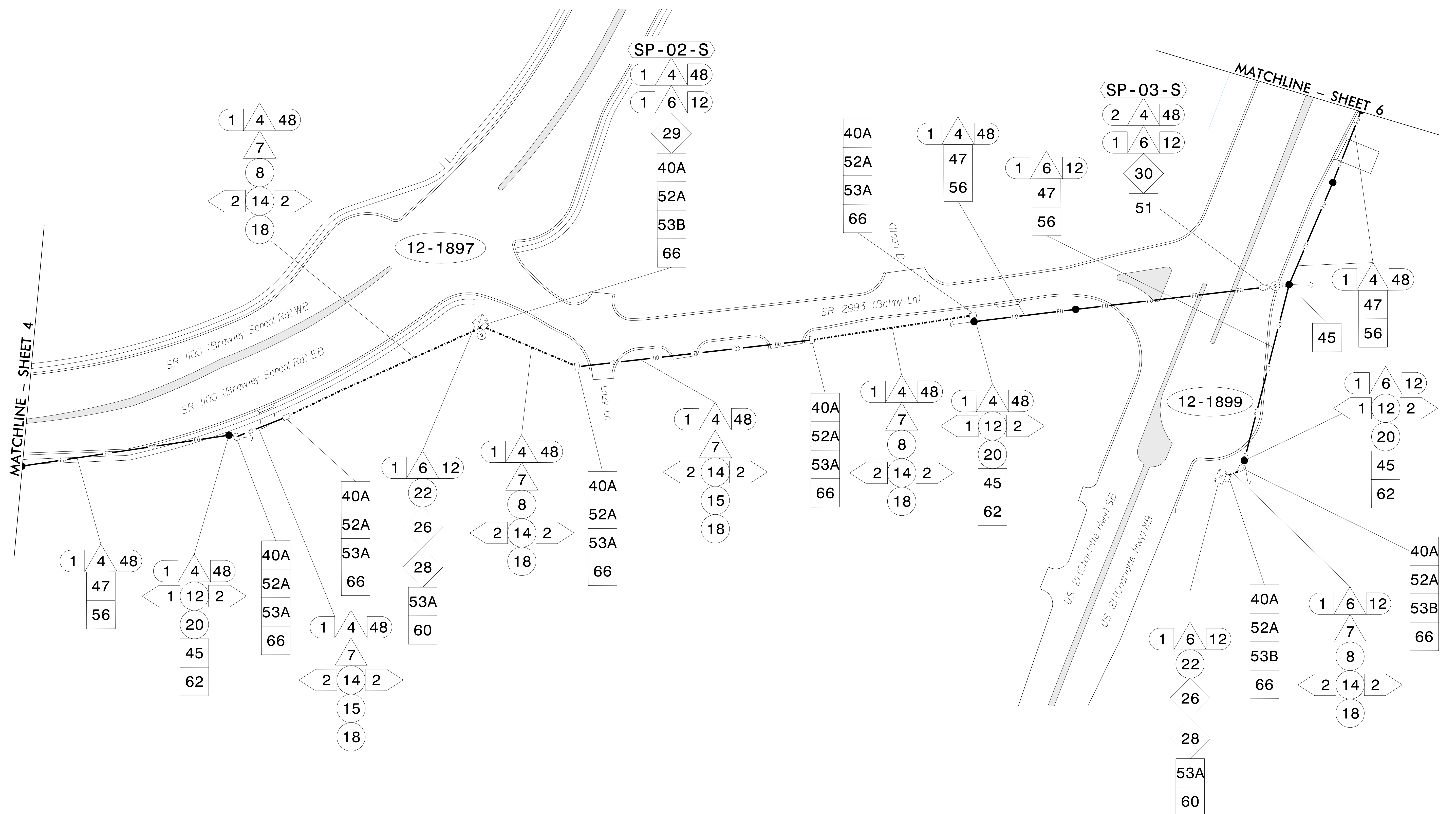
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NOTES:

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SCALE
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 1"=100'

SR 1100 (Brawley School Road) / US 21 (Charlotte Hwy) Cable Routing Plan

Division 12 Catawba and Iredell Co. Mooresville

PLAN DATE: May 2022 REVIEWED BY: E D Harris

PREPARED BY: R J Costello REVIEWED BY: L Overn

REVISIONS	INIT.	DATE

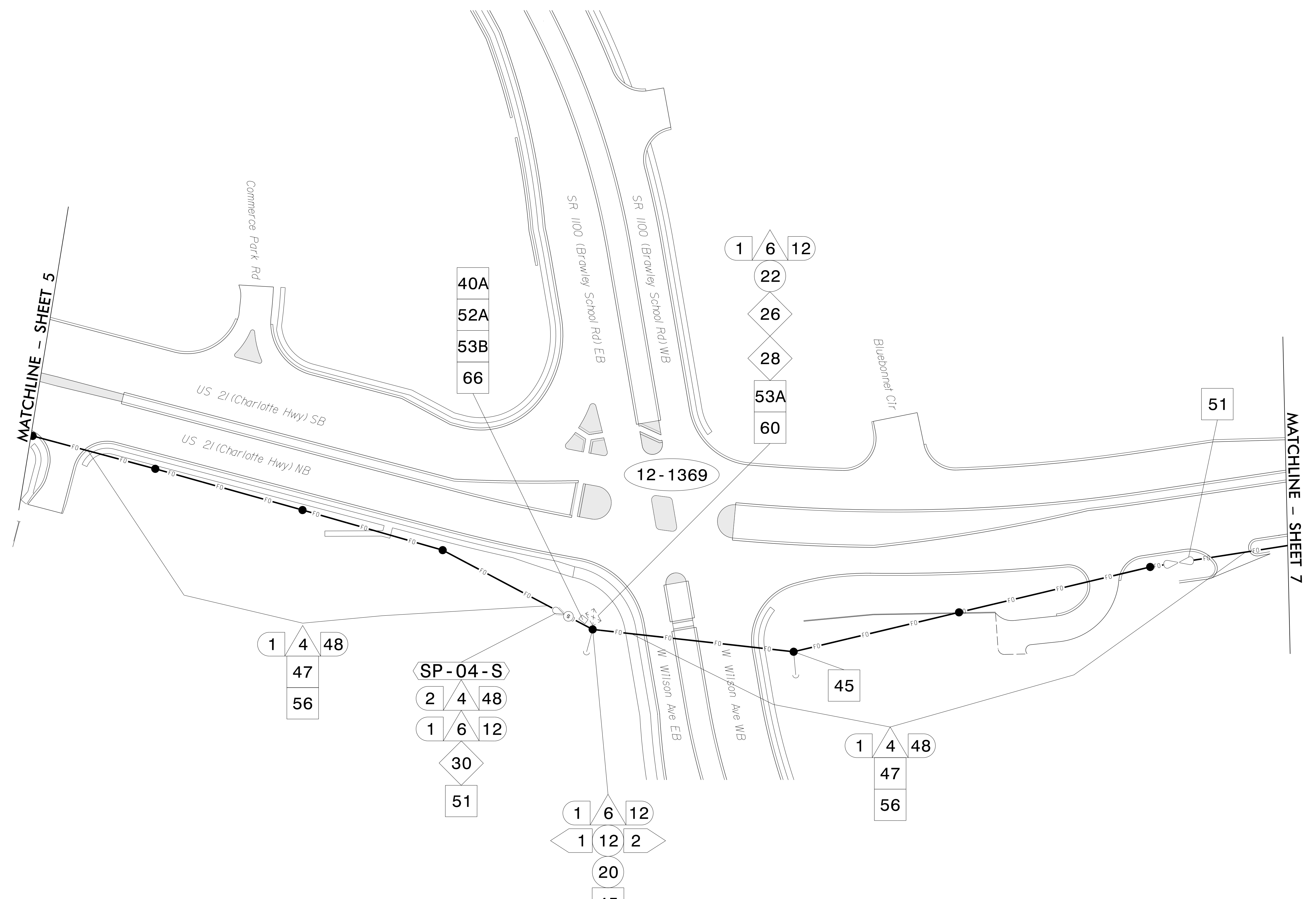
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 049933

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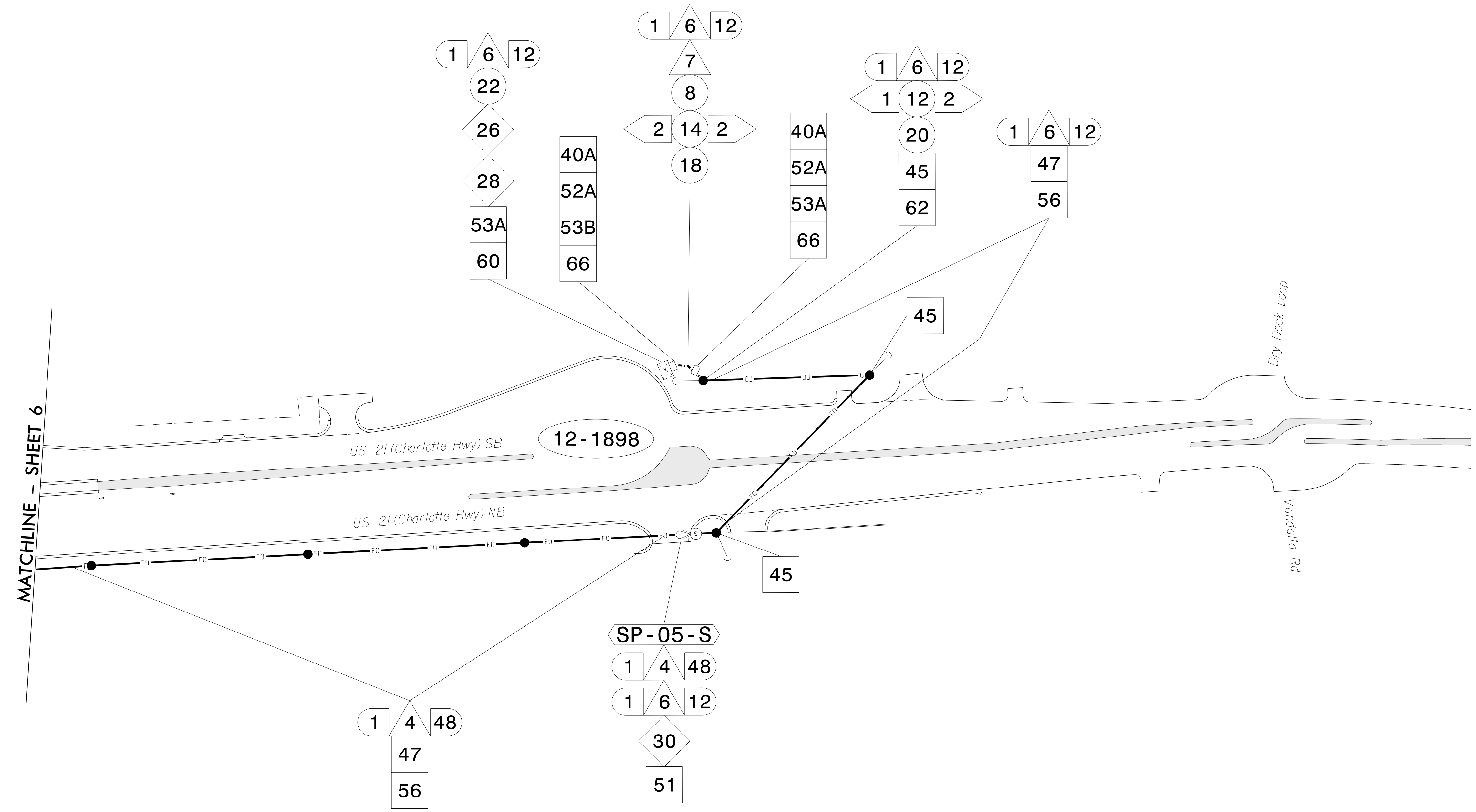
Prepared for the Offices of:
North Carolina Department of Transportation
750 N. Greenfield Pkwy, Garner, NC 27529
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0 100
1"=100'

SR 1100 (Brawley School Road) / US 21 (Charlotte Hwy) Cable Routing Plan
Division 12 Catawba and Iredell Co. Mooresville
PLAN DATE: May 2022 REVIEWED BY: E D Harris
PREPARED BY: R J Costello REVIEWED BY: L Overn

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- NOTES:**
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 - 2) CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.

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Prepared for the Offices of:

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US 21 (Charlotte Hwy) Cable Routing Plan

Division 12 Catawba and Iredell Co. Mooresville

PLAN DATE: May 2022 REVIEWED BY: E D Harris

PREPARED BY: R J Costello REVIEWED BY: L Overn

REVISIONS	INIT.	DATE

SCALE: 0 100
1"=100'

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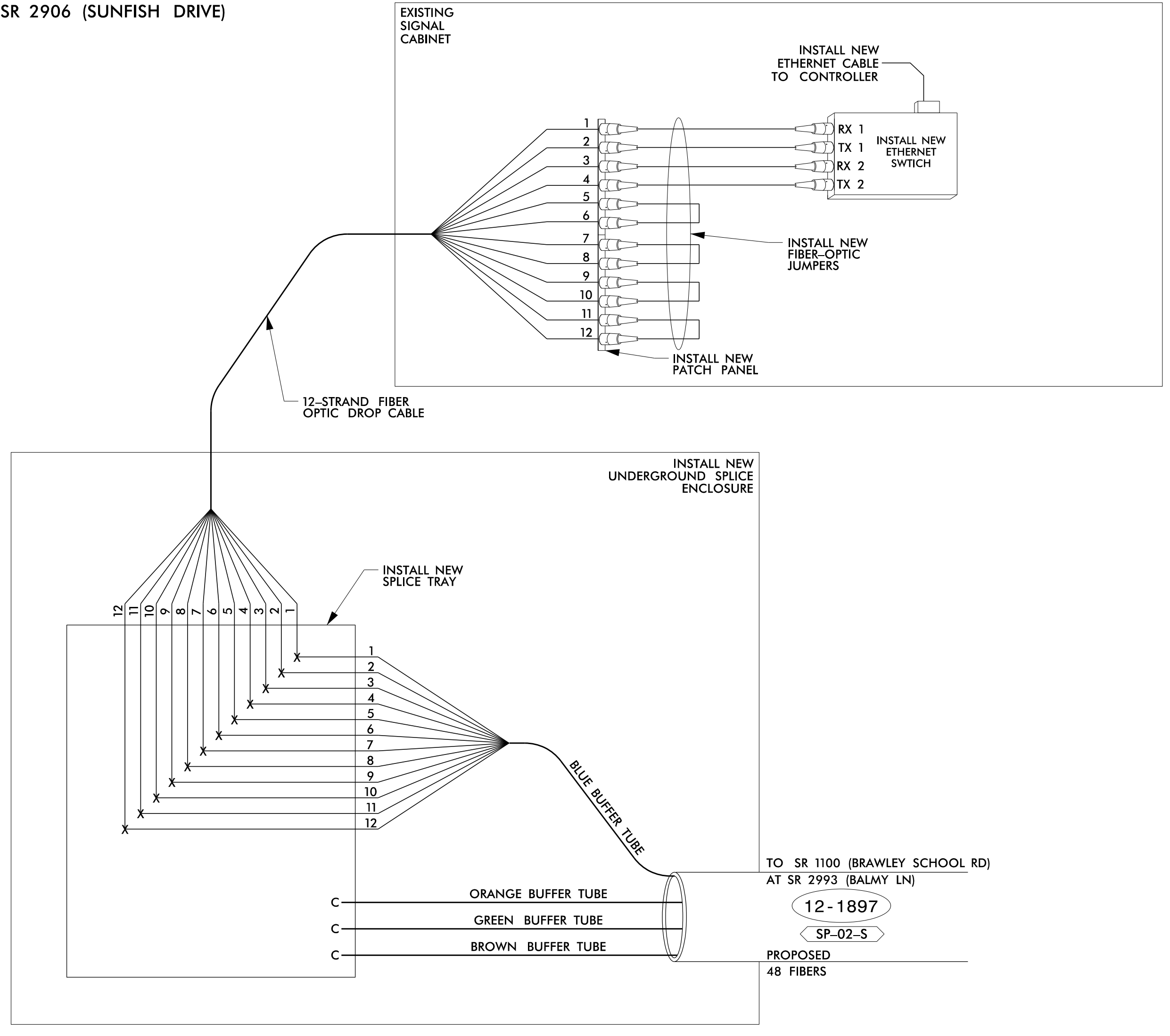
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SPLICE NUMBER:

SP-01-S

12-1689

NEW UNDERGROUND SPLICE ENCLOSURE:
SR 1100 (BRAWLEY SCHOOL ROAD) AT
SR 2906 (SUNFISH DRIVE)

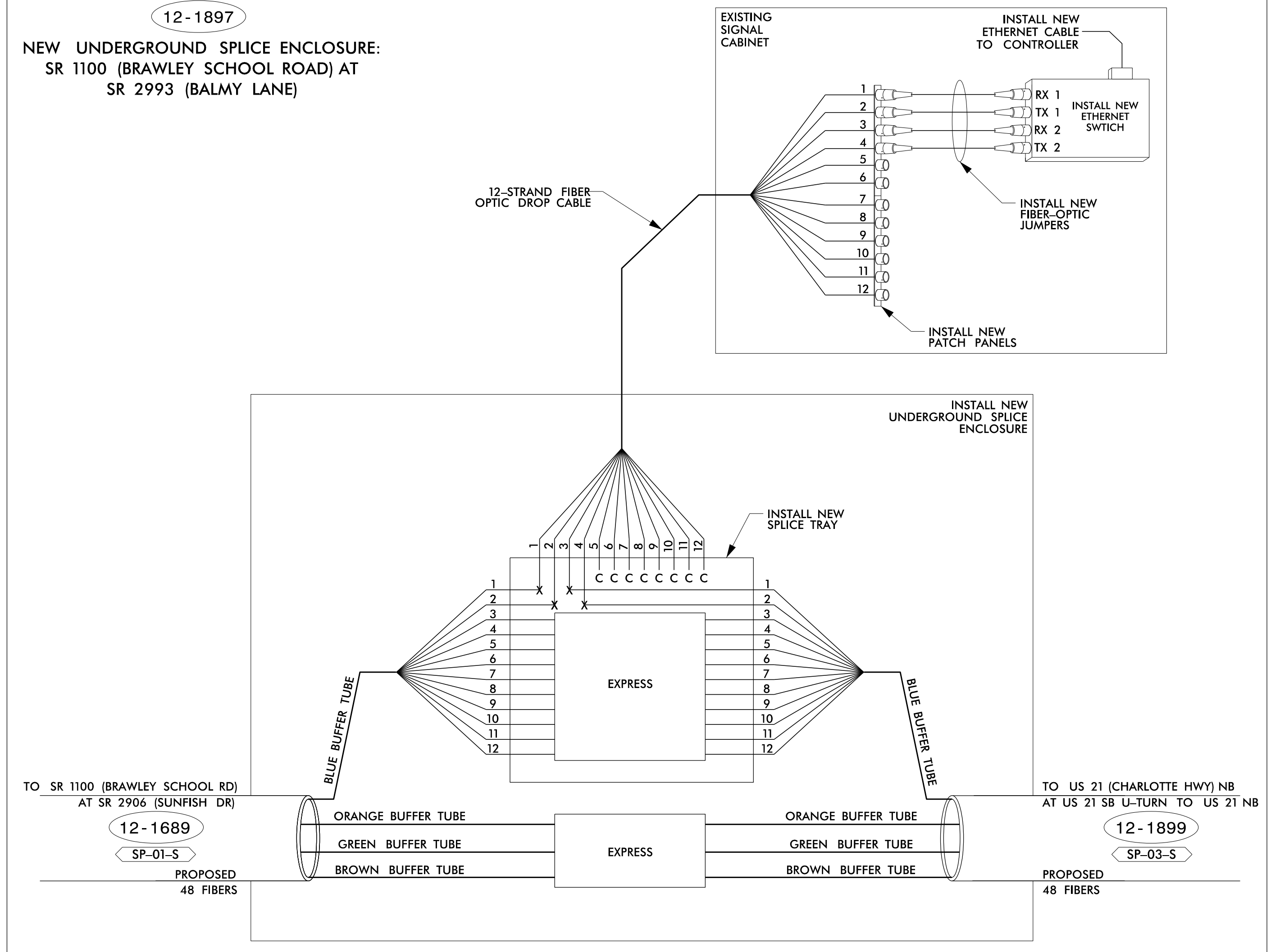


SPLICE NUMBER:

SP-02-S

12-1897

NEW UNDERGROUND SPLICE ENCLOSURE:
SR 1100 (BRAWLEY SCHOOL ROAD) AT
SR 2993 (BALMY LANE)



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LEGEND

COLOR CODE TIA/EIA 598-B		
(1) BLUE	(7) RED	E = EXISTING FUSION SPLICE INDIVIDUAL FIBER TO REMAIN
(2) ORANGE	(8) BLACK	X = FUSION SPLICE INDIVIDUAL FIBER
(3) GREEN	(9) YELLOW	C = CAP AND SEAL
(4) BROWN	(10) VIOLET	EXPRESS = EXPRESS ENTIRE BUFFER TUBE/FIBERS THROUGH WITHOUT CUTTING
(5) SLATE	(11) ROSE	BUFFER SPLICE = SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR
(6) WHITE	(12) AQUA	SM FIBER PATCH CORD WITH CONNECTORS

NOTES:

- UNUSED FIBERS AND/OR BUFFER TUBES LEFT COILED AND STORED IN SPLICE TRAY.
 - ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.
 - FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE NCDOT DIVISION 12 TRAFFIC ENGINEER BYRON ENGLE AT 910-552-4214 TO ARRANGE FOR NCDOT TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT ID, ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE NCDOT DIVISION 12 TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS UP AND OPERATIONAL.
 - INCLUDE ON THE COVER OF SPLICE TRAY THE FOLLOWING INFORMATION (REFERENCE STANDARD SPECIFICATIONS SECTION 1731):
A. SPLICE LOCATION
B. DATE
C. COMPANY NAME
D. NAME OF INDIVIDUAL PERFORMING THE SPLICE
- PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY, TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (ITEMS A-D) AND SUBMIT PHOTOGRAPH ALONG WITH ODR TEST RESULTS.

Stantec Consulting Services Inc.
801 Jones Franklin Road-Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

Prepared for the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

N.T.S.

SR 1100 (Brawley School Road) / US 21 (Charlotte Hwy) Fiber Optic Splice Details

Division 12 Iredell County Mooresville

PLAN DATE: March 2022 REVIEWED BY: E D Harris

PREPARED BY: R M Muncey REVIEWED BY: L Overn

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

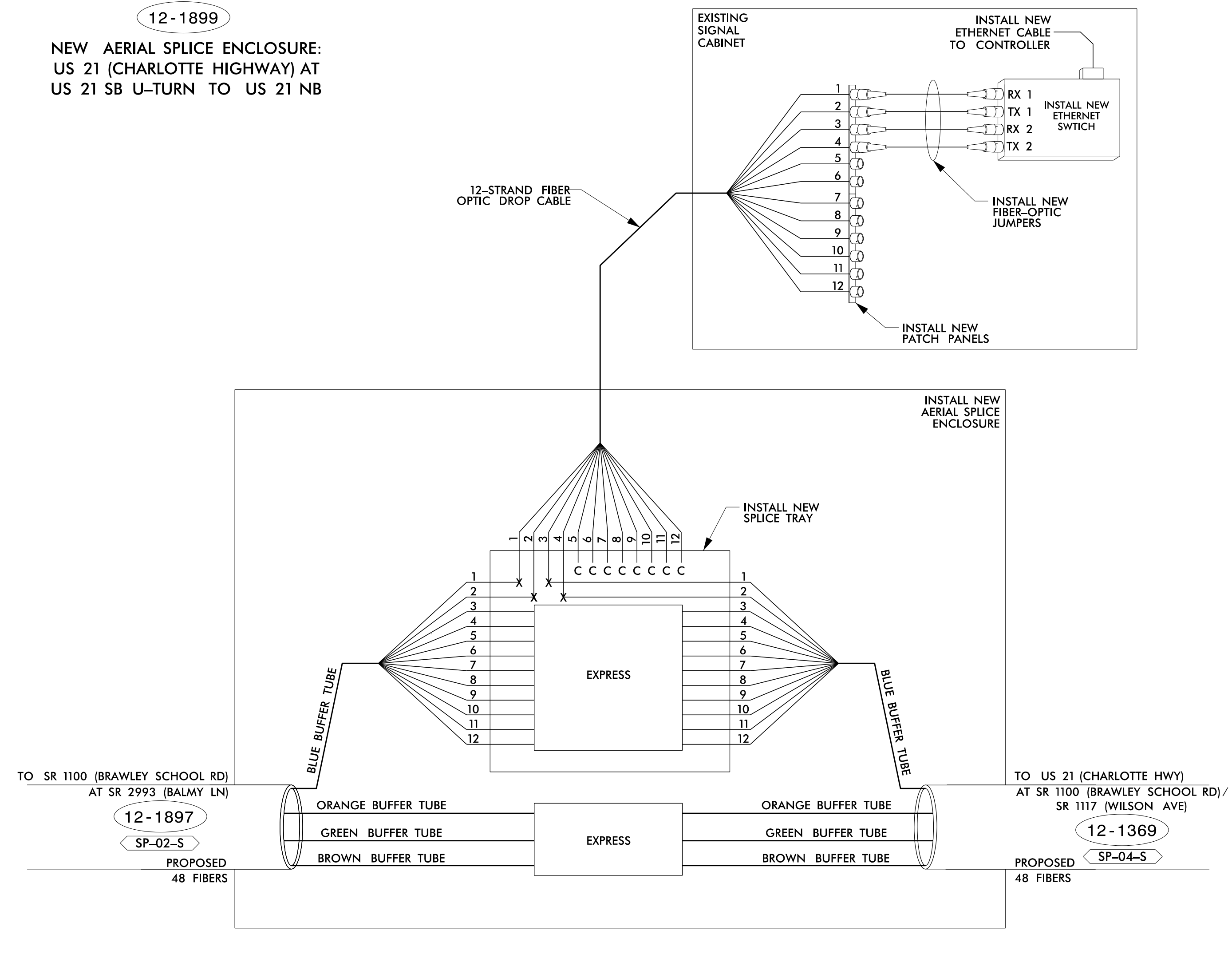
11/2/2022

CADD Filename: _____

SPLICE NUMBER: SP-03-S

12-1899

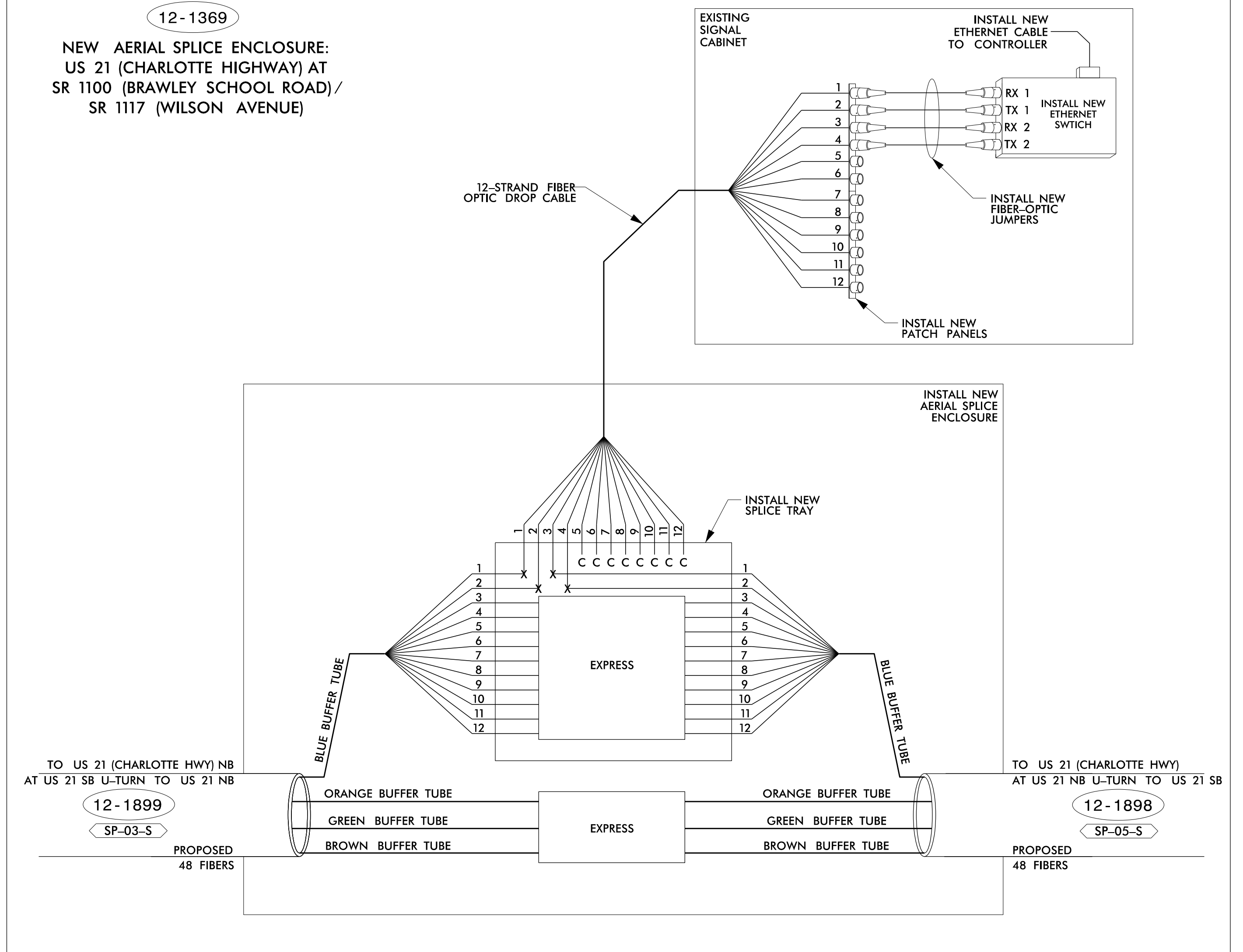
NEW AERIAL SPLICE ENCLOSURE:
US 21 (CHARLOTTE HIGHWAY) AT
US 21 SB U-TURN TO US 21 NB



SPLICE NUMBER: SP-04-S

12-1369

NEW AERIAL SPLICE ENCLOSURE:
US 21 (CHARLOTTE HIGHWAY) AT
SR 1100 (BRAWLEY SCHOOL ROAD) /
SR 1117 (WILSON AVENUE)



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LEGEND

COLOR CODE TIA/EIA 598-B		
(1) BLUE	(7) RED	E = EXISTING FUSION SPLICE INDIVIDUAL FIBER TO REMAIN
(2) ORANGE	(8) BLACK	X = FUSION SPLICE INDIVIDUAL FIBER
(3) GREEN	(9) YELLOW	C = CAP AND SEAL
(4) BROWN	(10) VIOLET	EXPRESS = EXPRESS ENTIRE BUFFER TUBE/FIBERS THROUGH WITHOUT CUTTING
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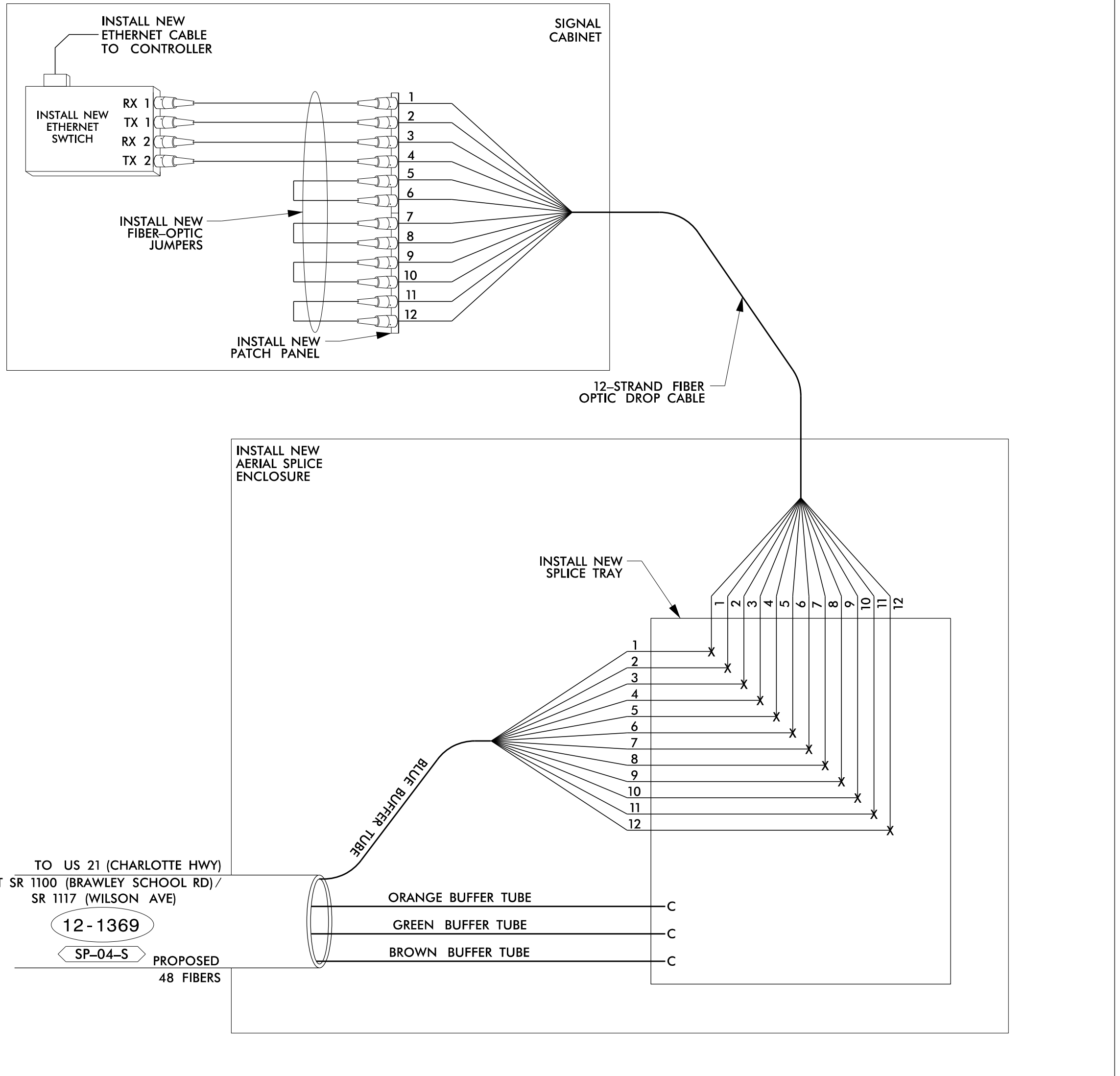
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SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
LAWRENCE E. OVERN
045933

DocuSign
11/2/2022
SIGNATURE DATE
CADD Filename: _____

SPLICE NUMBER:
SP-05-S
 12-1898

NEW AERIAL SPLICE ENCLOSURE:
 US 21 (CHARLOTTE HIGHWAY) AT
 US 21 NB U-TURN TO US 21 SB



1:41:26 PM U:\Projects\Signal\Design\ITS and SCP Design\Fiber Splicing Detail\SP-3833C_SCP_FS.dgn User:rmuncey

LEGEND

COLOR CODE TIA/EIA 598-B		
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