

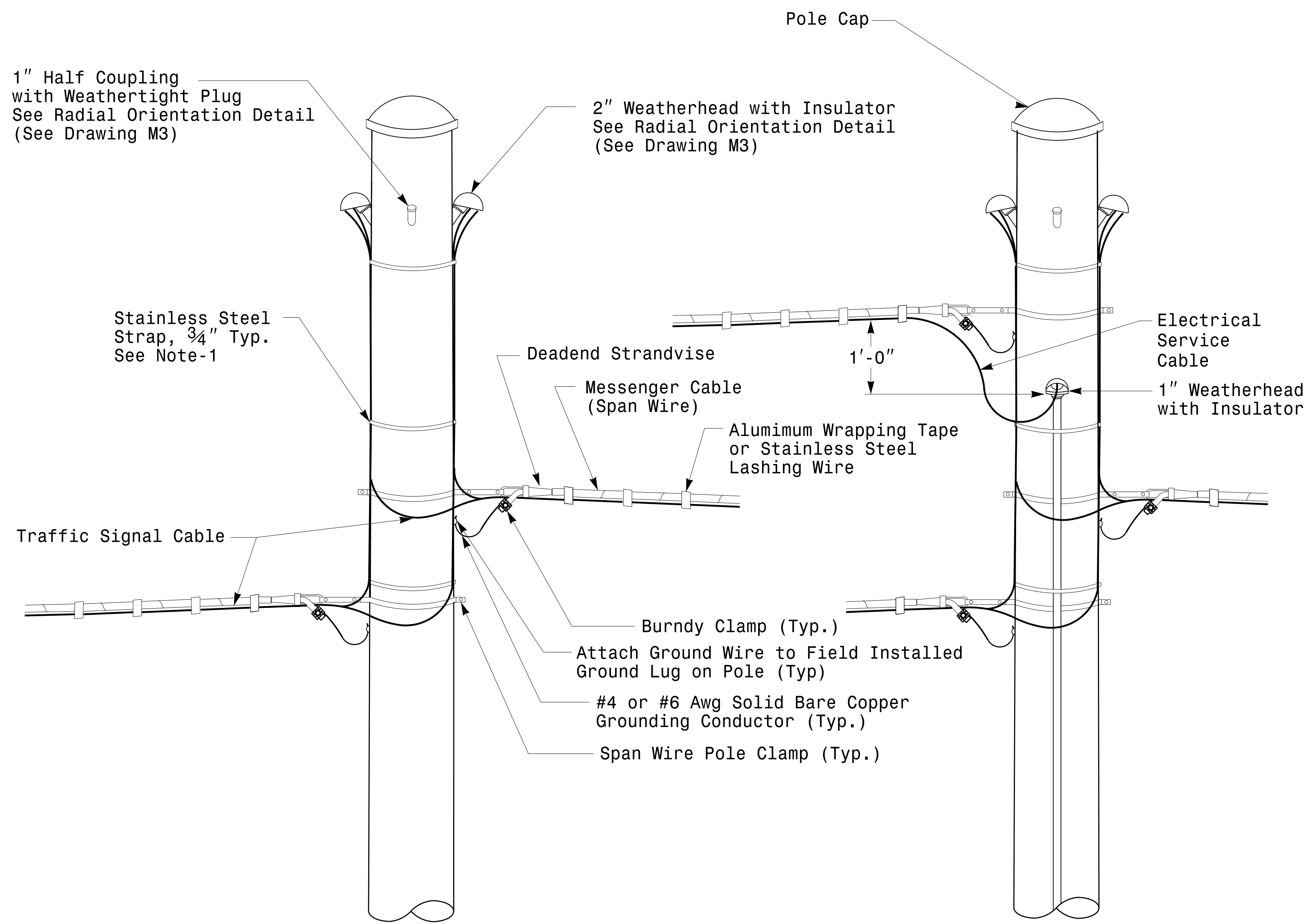
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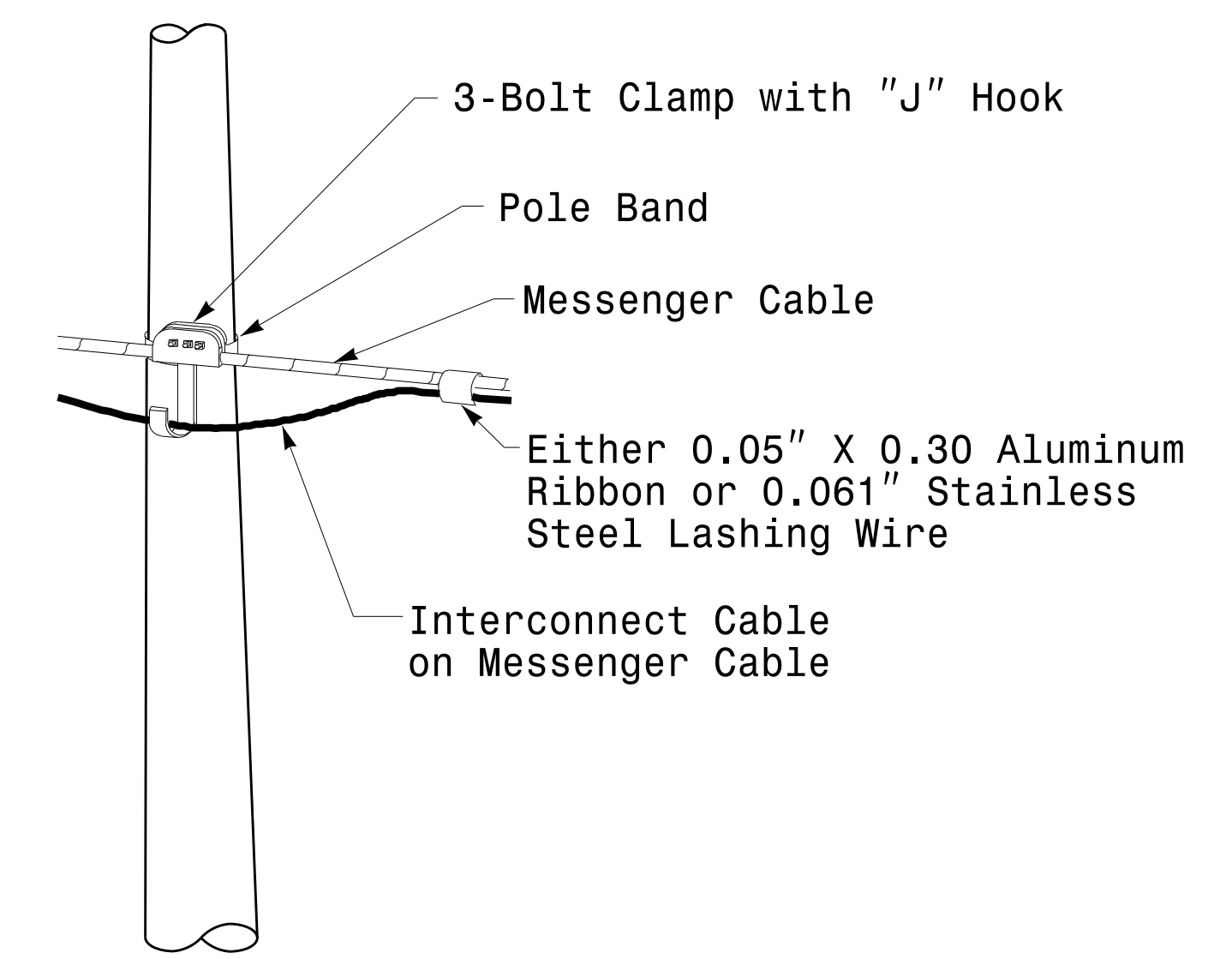




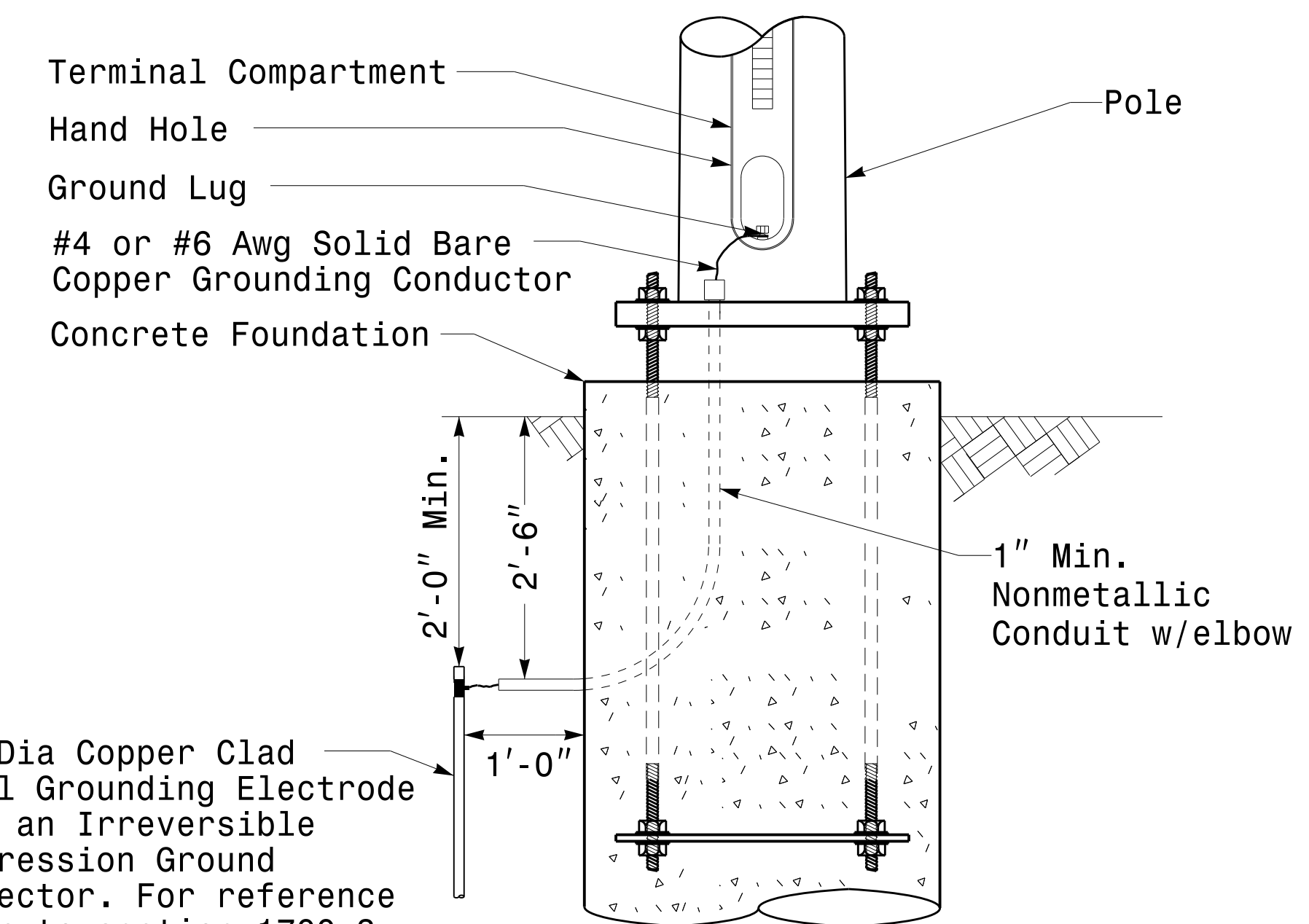
**Strain Pole Attachments**

**NOTE:**

1. Strap all signal cables to the side of the pole with 3/4" stainless steel straps when the distance between the spanwire attachment clamp and the weatherheads exceeds 3'-0".
2. Provide minimum two spanwire pole clamps per pole.
3. It is prohibited to attach two span wires at one pole clamp.
4. For general requirements refer to NCDOT Standard Specifications for Roadway and Structures, January 2018.



**Attachment of Cable to Intermediate Metal Pole**



5/8" Dia Copper Clad Steel Grounding Electrode with an Irreversible Compression Ground Connector. For reference refer to section 1700-3 K and L for electrical grounding and bonding requirements, See Note 4.

**Metal Pole Grounding Detail For Strain Pole and Mast Arm**

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE: 0 NA NONE

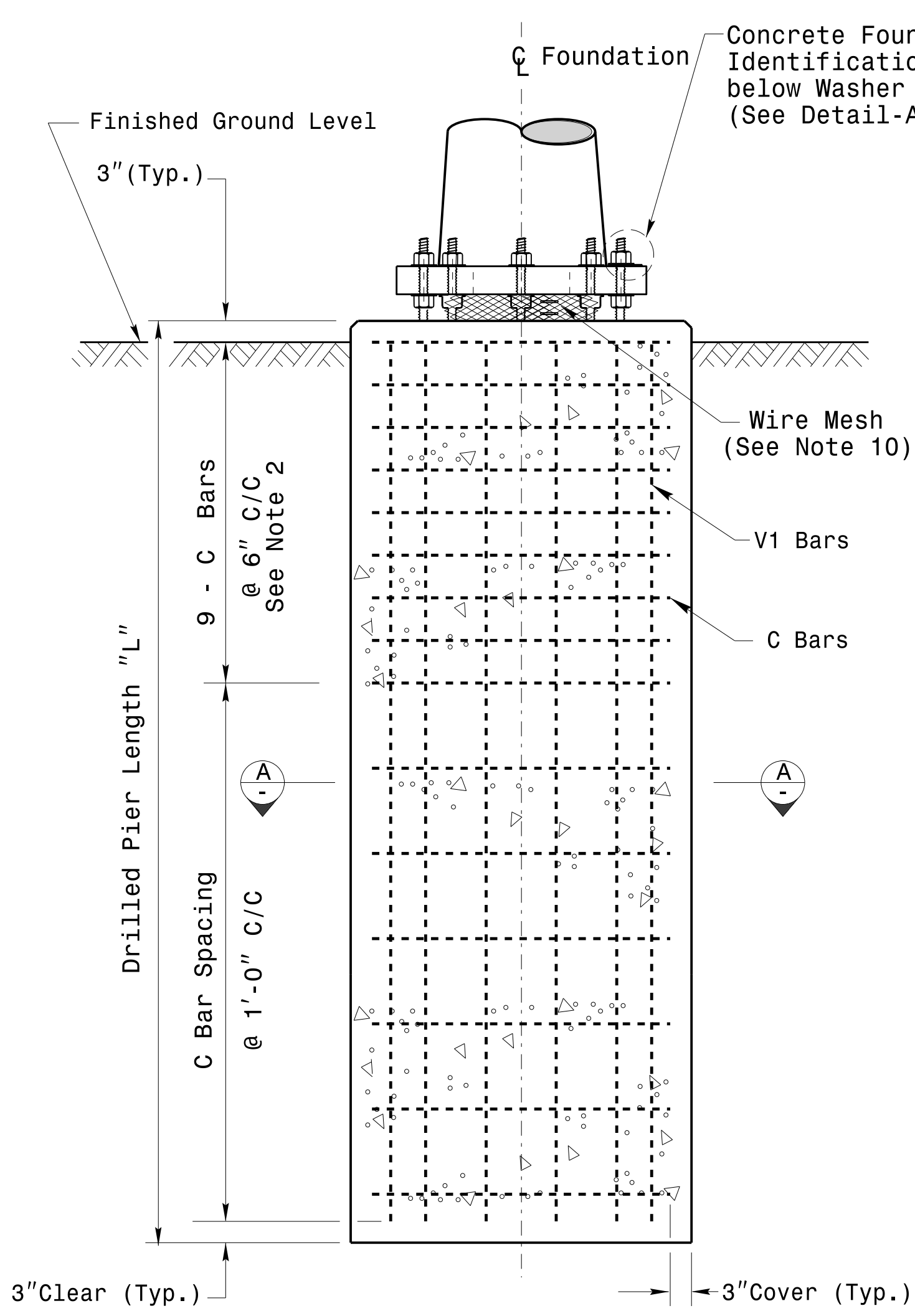
Typical Fabrication Details For Strain Pole Attachments	
PLAN DATE: OCTOBER 2017	DESIGNED BY: C.F. ANDREWS
PREPARED BY: N. BITTING	REVIEWED BY: D.C. SARKAR
REVISIONS	INIT. DATE

SEAL

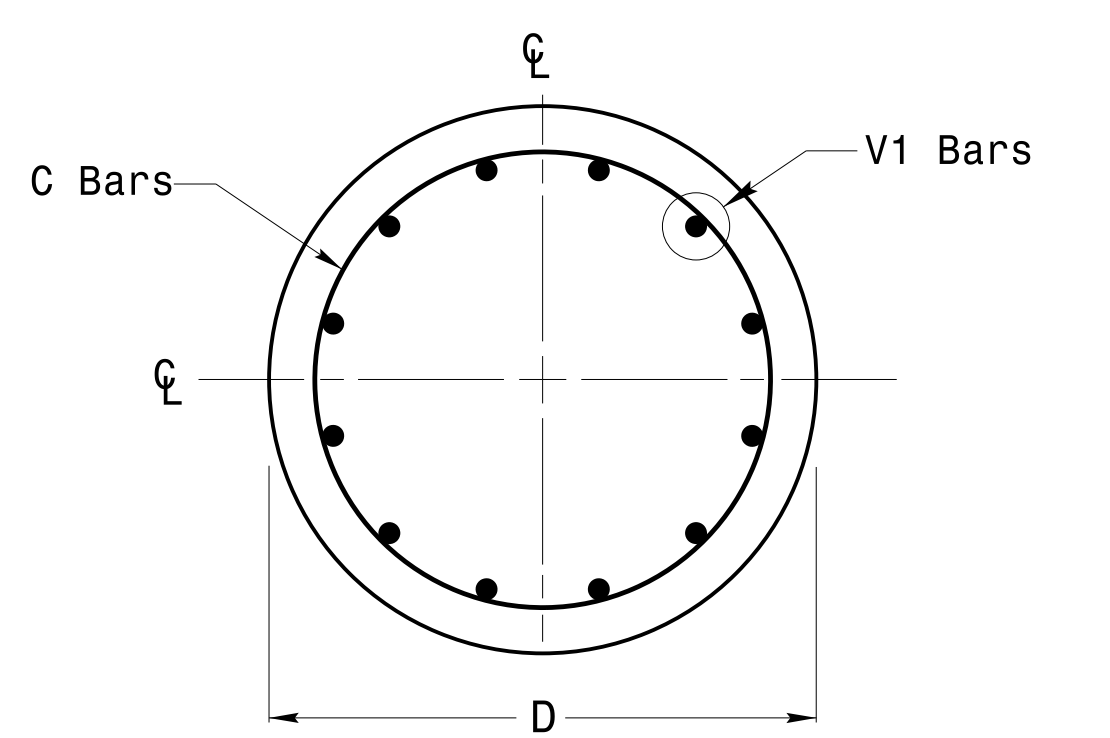
DocuSigned by: D. C. Sarkar  
DATE: 10/11/2017

11-OCT-2017 08:36 136504115 Signal&Signal Design Section\Eastern Region\m6 Sheets\2016\2014 Sig.M6 Std. Fabrication Details-Strain Poles.dgn

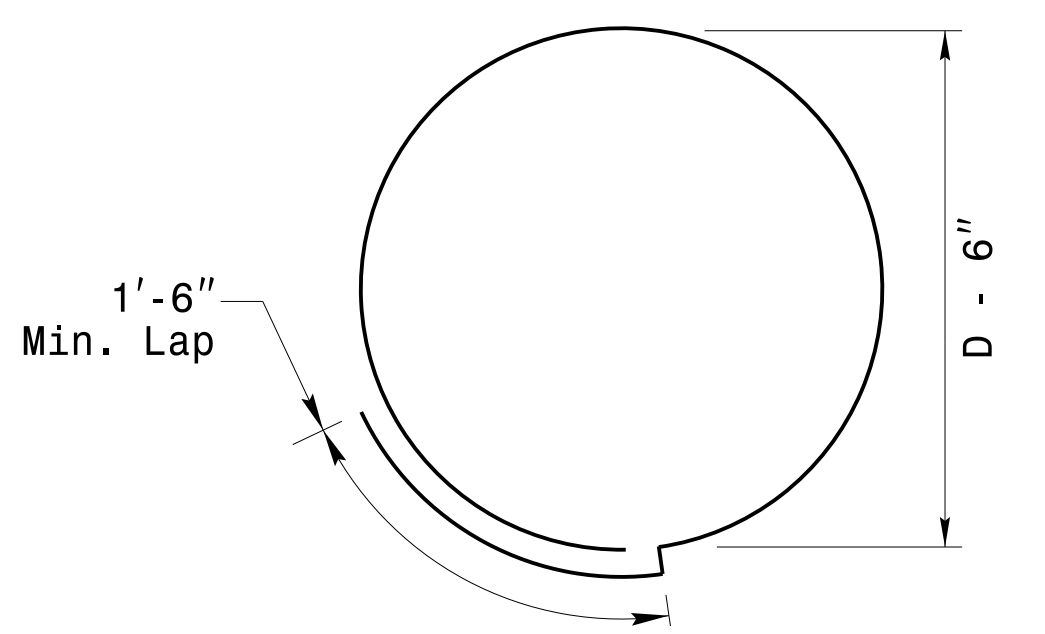




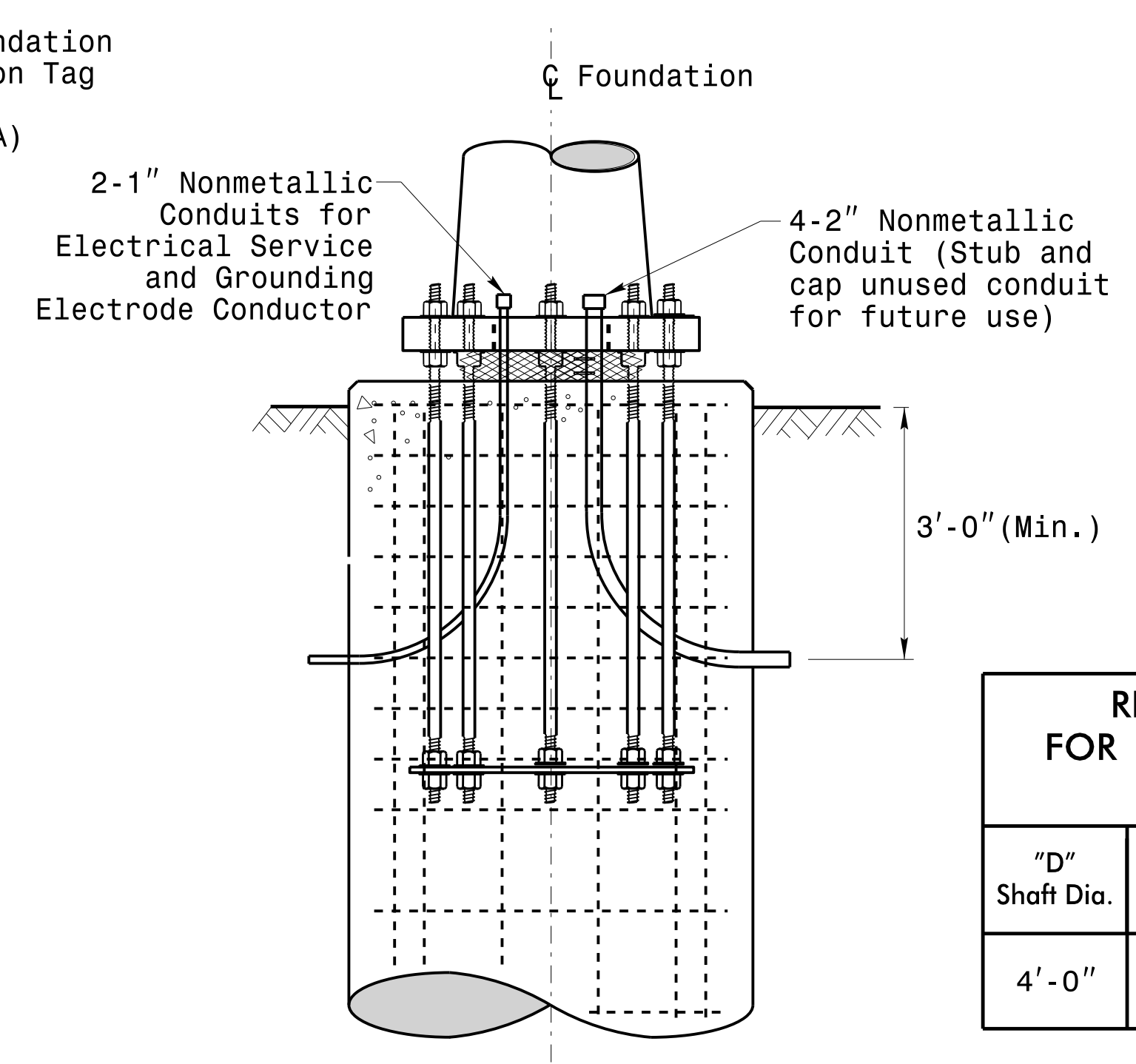
**Concrete Shaft Elevation**



**Section A-A**



**Typical "C" Bar Detail**



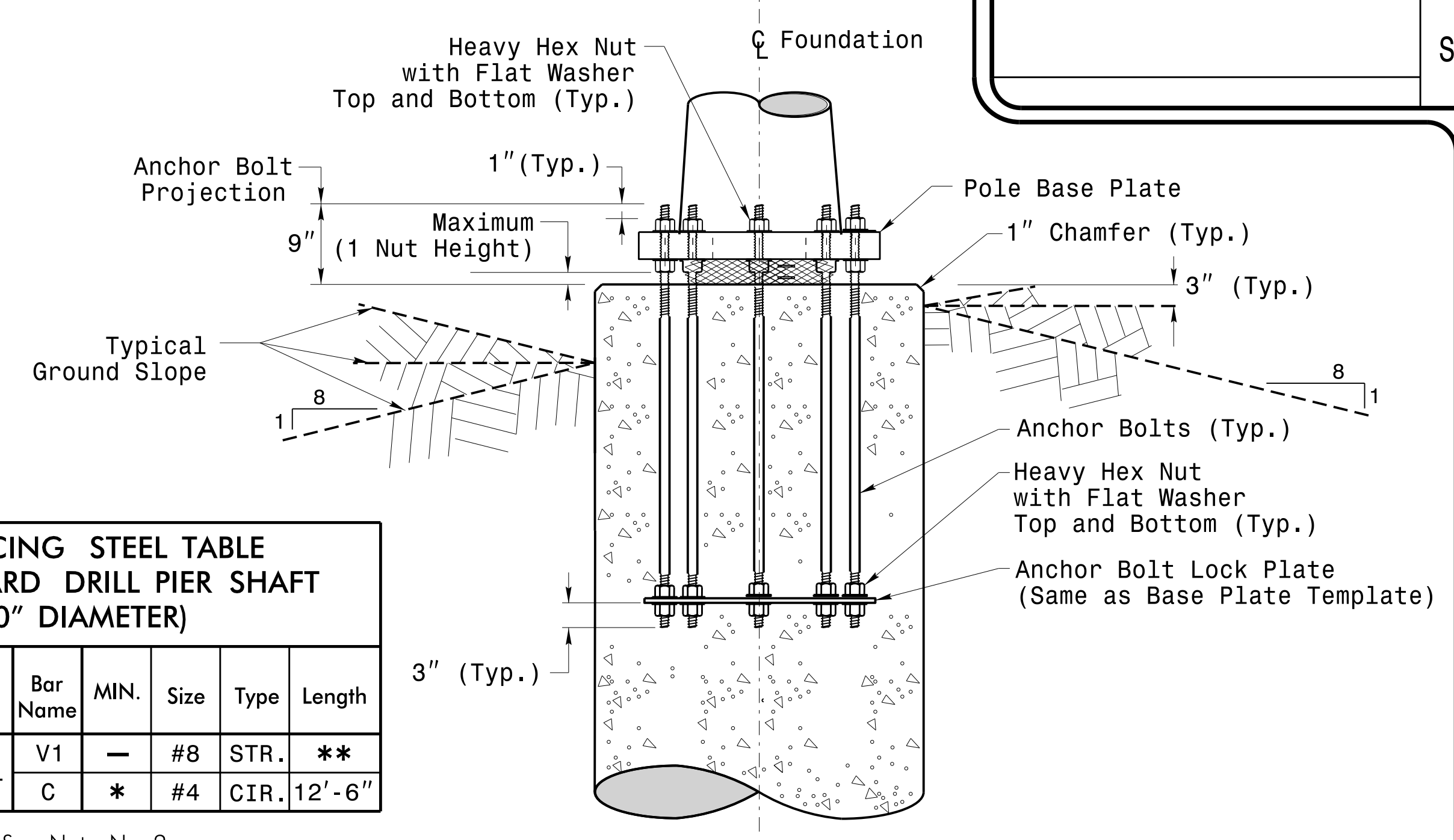
**Typical Foundation Conduit Details**

**General Notes:**

1. If actual subsurface conditions differ significantly from boring data contact the Engineer before excavating or placing concrete.
2. 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.
3. 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.
4. Provide 2" to 5" foundation projection above ground level depending on the ground slope.
5. 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.
6. 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](https://connect.ncdot.gov/resources/Specifications%20and%20Special%20Provisions.aspx)
7. Use air entrained AA concrete mix with a compression strength of f'c=4500 psi.(min.) after 28 days.
8. Use ASTM A615 grade 60 deformed bars for all reinforcing steel. Maintain at least 3" cover on all reinforcement.
9. Locate the Identification Tag on the top of the base plate, directly above the conduit's entry point.
10. 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.
11. Preferred location for the I.D. Tag is as shown in Detail-A; directly above the conduit entering the foundation.

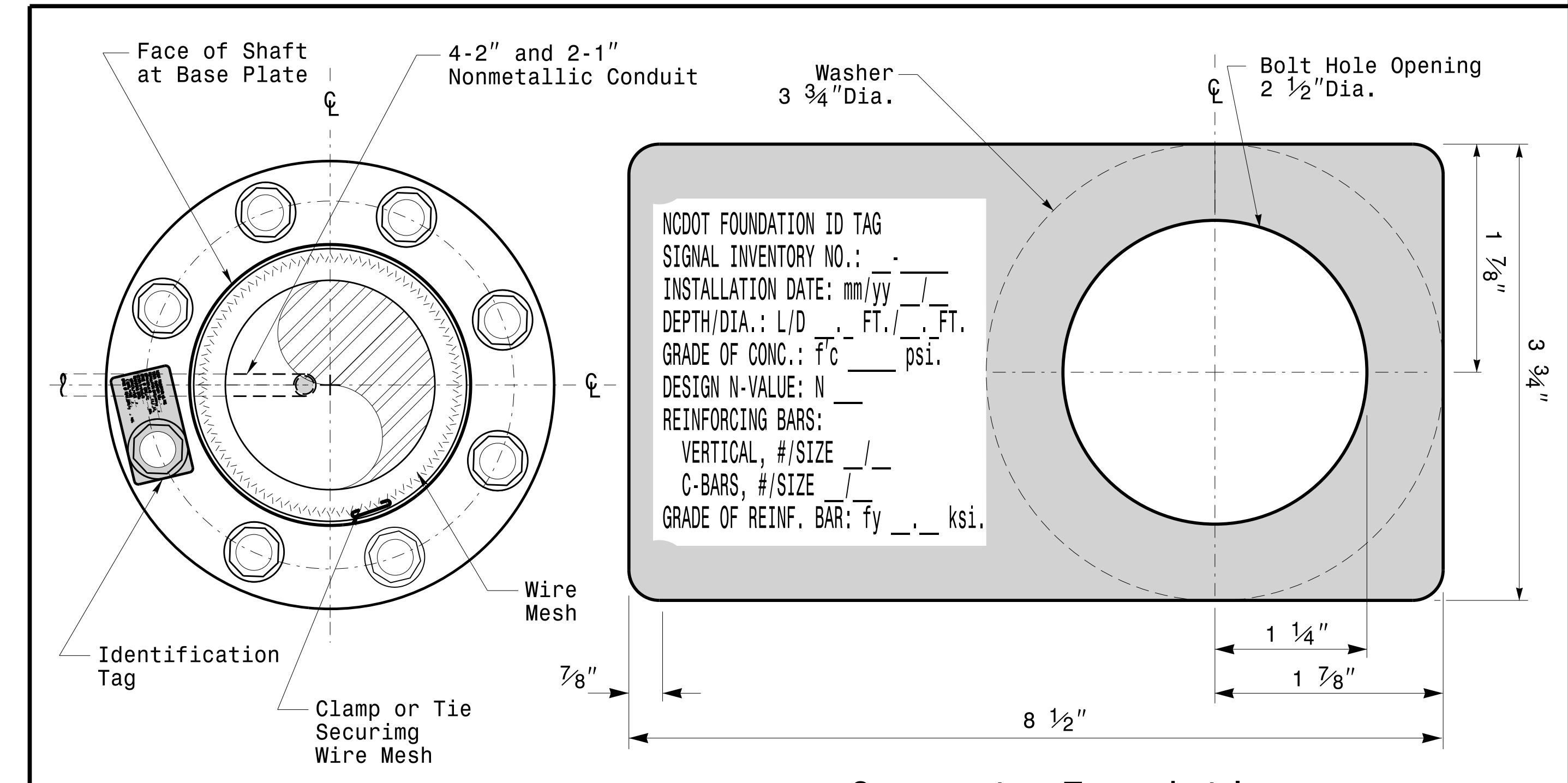
"D" Shaft Dia.	Conc. Volume (cu. yds.)	Bar Name	MIN. Size	Type	Length
4'-0"	.465 x L	V1	#8	STR.	**
		C	#4	CIR.	12'-6"

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



**Typical Foundation Anchor Bolt Details**

(Reinforcing Cage Not Shown for Clarity)



**Concrete Foundation Identification Tag Details**

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

**Detail-A**

	<p>Construction Details For Foundations</p>		
	<p>PLAN DATE: OCTOBER 2018</p>	<p>DESIGNED BY: C.B. COGDILL</p>	
<p>PREPARED BY: N. BITTING</p>	<p>REVIEWED BY: D.C. SARKAR</p>	<p>REV. NO. 1</p>	<p>DATE: 5/11/2015</p>

**Construction Details - Foundations**

11-001-2017-08:33T  
13560W115-Strain&sigal Design Section Eastern Region 11/16/2014 Sig.M7 Std. Construction Detail Is-Strain Poles.dgn  
P21



# SOIL CONDITION

		STANDARD STRAIN POLES					STANDARD FOUNDATIONS 48" Diameter Drilled Pier Length (L) - Feet							Reinforcement				
		Case No.	Pole Height (Ft.)	Base Plate BC (In.)	Reactions at the Pole Base			Clay				Sand			Longitudinal		Stirrups	
					Axial (kip)	Shear (kip)	Moment (ft-kip)	Medium N-Value 4-8	Stiff N-Value 9-15	Very Stiff N-Value 16-30	Hard N-Value >30	Loose N-Value 4-10	Medium N-Value 11-30	Dense N-Value >30	Bar Size (#)	Quantity (ea.)	Bar Size (#)	Spacing (in.)
WIND ZONE 1	LIGHT	S26L3	26	25	2	11	270	19	13	10	8	17	14.5	12.5	8	12	4	12
		S30L3	30	25	2	11	300	19.5	13.5	10	8	17.5	15	13	8	14	4	12
		S35L3	35	25	3	11	320	20	13.5	10.5	8	17.5	15	13	8	14	4	12
	HEAVY	S30H3	30	29	3	16	450	24.5	16	12	9	21	17.5	15	8	16	4	6
		S35H3	35	29	4	16	515	26	17	12.5	9.5	22	18.5	16	8	16	4	6
WIND ZONE 2	LIGHT	S26L2	26	23	2	10	245	18	12.5	9.5	8	16.5	14	12	8	12	4	12
		S30L2	30	23	2	10	270	18.5	12.5	10	8	16.5	14	12.5	8	12	4	12
		S35L2	35	23	3	10	300	19.5	13	10	8	17	14.5	13	8	12	4	12
	HEAVY	S30H2	30	29	3	15	415	23	15.5	11.5	9	20	17	14.5	8	16	4	6
		S35H2	35	29	4	15	475	25	16.5	12	9.5	21	17.5	15.5	8	16	4	6
WIND ZONE 3	LIGHT	S26L2	26	23	2	10	245	18	12.5	9.5	8	16.5	14	12	8	12	4	12
		S30L2	30	23	2	10	270	18.5	12.5	10	8	16.5	14	12.5	8	12	4	12
		S35L2	35	23	3	10	300	19.5	13	10	8	17	14.5	13	8	12	4	12
	HEAVY	S30H2	30	29	3	15	415	23	15.5	11.5	9	20	17	14.5	8	16	4	6
		S35H2	35	29	4	15	475	25	16.5	12	9.5	21	17.5	15.5	8	16	4	6
WIND ZONE 4	LIGHT	S26L1	26	22	2	8	190	16	11.5	8.5	8	15	12.5	11	8	12	4	12
		S30L1	30	22	2	8	205	16.5	11.5	9	8	15	13	11.5	8	12	4	12
		S35L1	35	22	3	8	230	17	12	9	8	15.5	13.5	11.5	8	12	4	12
	HEAVY	S30H1	30	25	3	12	320	20.5	13.5	10.5	8	18	15	13.5	8	16	4	6
		S35H1	35	25	4	12	350	21	14	10.5	8.5	18.5	15.5	13.5	8	16	4	6
WIND ZONE 5	LIGHT	S26L2	26	23	2	10	245	18	12.5	9.5	8	16.5	14	12	8	12	4	12
		S30L2	30	23	2	10	270	18.5	12.5	10	8	16.5	14	12.5	8	12	4	12
		S35L2	35	23	3	10	300	19.5	13	10	8	17	14.5	13	8	12	4	12
	HEAVY	S30H2	30	29	3	15	415	23	15.5	11.5	9	20	17	14.5	8	16	4	6
		S35H2	35	29	4	15	475	25	16.5	12	9.5	21	17.5	15.5	8	16	4	6

**General Notes:**

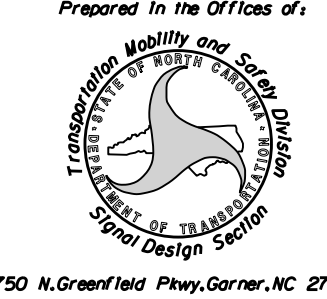
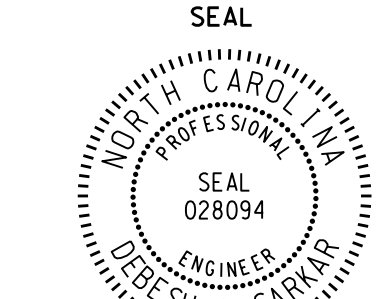
1. Values shown in the "Reactions at the Pole Base" column represent the minimum acceptable capacity allowed for design using a design CSR of 1.00.
2. Use chairs and spacers to maintain proper clearance.
3. For foundation, always use air-entrain concrete mix.

**Foundation Selection:**

1. Perform a standard penetration test at each proposed foundation site to determine "N" value.
2. Select the appropriate wind zone from M 1 drawing.
3. Select the soil type (Clay or Sand) that best describes the soil characteristics.
4. Get the appropriate standard pole case number from the plans or from the Engineer.
5. Select the appropriate column under "Standard Foundations" based on soil type and "N" value. Select the appropriate row based on the pole load case.
6. The foundation depth is the value shown in the "Standard Foundations" category where the column and the row intersect.
7. Use Construction Procedures and Design Methods prescribed by FHWA-NHI-10-016 for Reference Drilled Shafts.

**Standard Strain Pole Foundation-All Soil Condition**

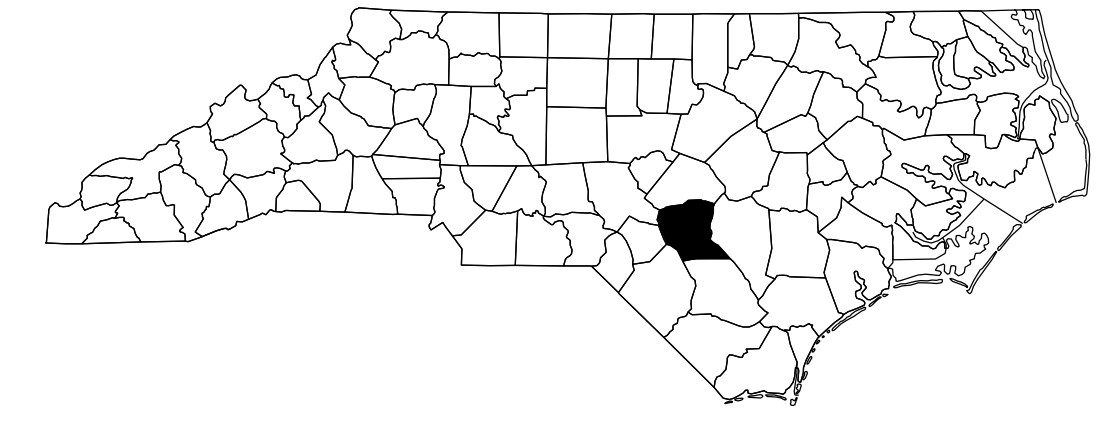
48" Dia. Foundations Concrete Volume (cubic yards) = (0.465) x Drilled Pier Length

	<p><b>Standard Strain Pole Foundation for All Soil Conditions</b></p> <p>PLAN DATE: OCTOBER 2017    DESIGNED BY: C.B. COGDILL                  PREPARED BY: N. BITTING    REVIEWED BY: D.C. SARKAR</p>									
SCALE: 0 NA NONE	REVISIONS: <table border="1" style="font-size: small;"> <tr> <th>NO.</th> <th>DATE</th> <th>INIT.</th> <th>DESCRIPTION</th> </tr> <tr> <td>1</td> <td>7/12/2015</td> <td>N.B.</td> <td>Changed "Foundation Depth" to "Drilled Pier Length" in Conc. Egn.</td> </tr> </table>	NO.	DATE	INIT.	DESCRIPTION	1	7/12/2015	N.B.	Changed "Foundation Depth" to "Drilled Pier Length" in Conc. Egn.	Documented by: <i>D. C. SARKAR</i> DATE: 10/11/2017
NO.	DATE	INIT.	DESCRIPTION							
1	7/12/2015	N.B.	Changed "Foundation Depth" to "Drilled Pier Length" in Conc. Egn.							

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 rnz/insgr



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UNLESS ALL SIGNATURES COMPLETED**

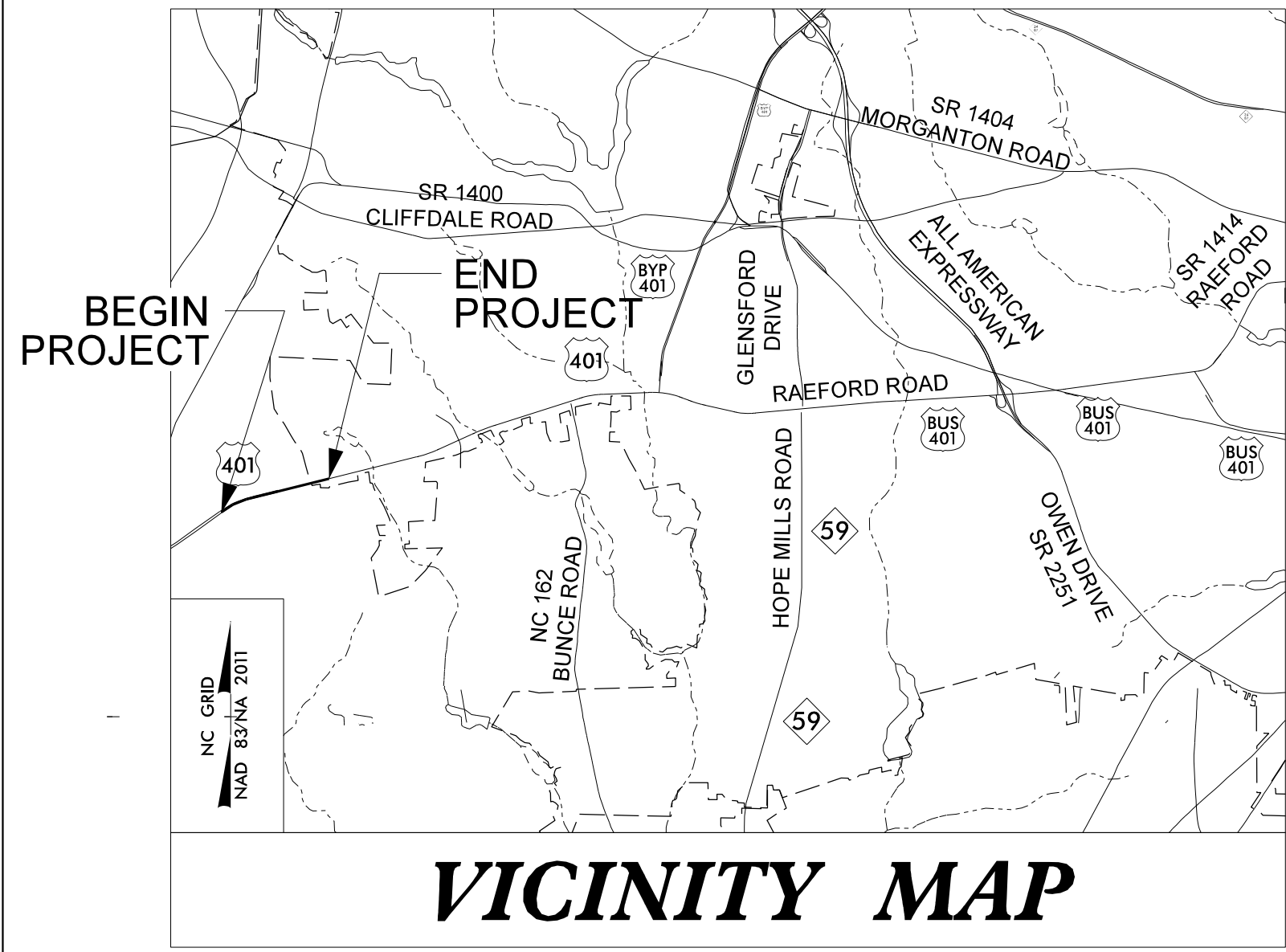


# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## CUMBERLAND COUNTY

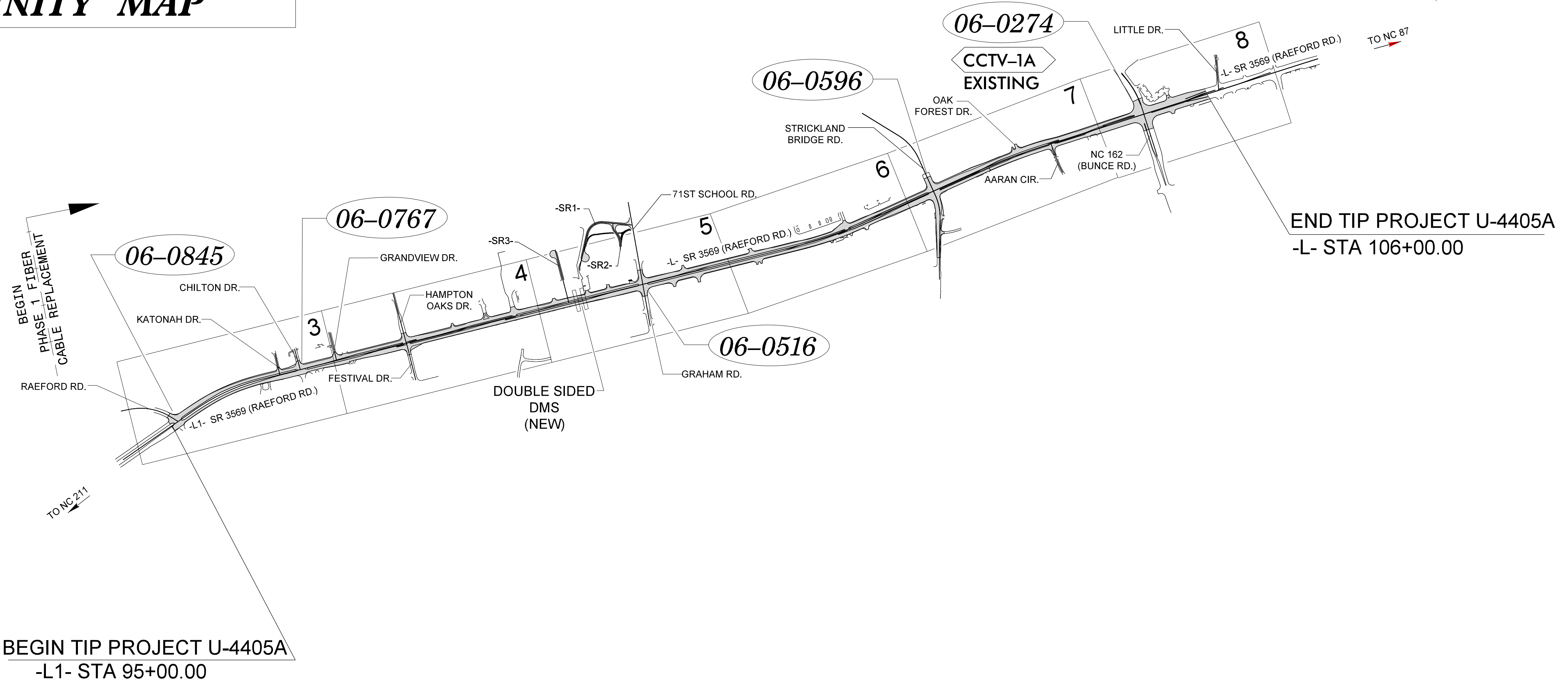
**LOCATION: FAYETTEVILLE - US 401 (RAEFORD ROAD) FROM  
OLD RAEFORD ROAD TO EAST OF NC 126 (BUNCE ROAD)**

**TYPE OF WORK: TRAFFIC SIGNALS COMMUNICATIONS, CCTV, AND DMS**



**TIP PROJECT: U-4405A**

**CONTRACT: C204404**



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**INDEX OF PLANS**

SHEET NUMBER	LOCATION / DESCRIPTION
SCP 1	TITLE SHEET
SCP 2	DRAWING FORMAT ITEMS - CONSTRUCTION NOTES, CABLE INSTALLATION NOTES
SCP 3-8	AERIAL TRUNK FIBER INSTALLTION (US 401 RAEFORD ROAD) FROM OLD RAEFORD ROAD TO EAST OF NC 126 (BUNCE ROAD)
SCP 9-14	FIBER CABLE SPLICING DETAILS
SCP 15-19	SPECIAL DETAILS AND DMS 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
1101.03	TEMPORARY SHOULDER CLOSURE
1715.01	UNDERGROUND CONDUIT
1716.01	JUNCTION BOXES
1722.01	RISER ASSEMBLY
1730.01	FIBER OPTIC CABLE
1731.01	SPLICE ENCLOSURE

**LEGEND**

XX-XXXX SIGNAL INVENTORY No.

**Stantec**

Stantec Consulting Services Inc.  
801 Jones Franklin Rd-Suite 300  
Raleigh, NC 27606  
Tel. 919.851.6866  
Fax. 919.851.7024  
www.stantec.com  
License No. F-0672

**Larry Overn, PE, PTOE**  
Senior Transportation Engineer

**Dean Harris**  
Senior Transportation Designer

**NCDOT CONTACT:**  
TRANSPORTATION SAFETY AND MOBILITY  
INTELLIGENT TRANSPORTATION SYSTEMS SECTION

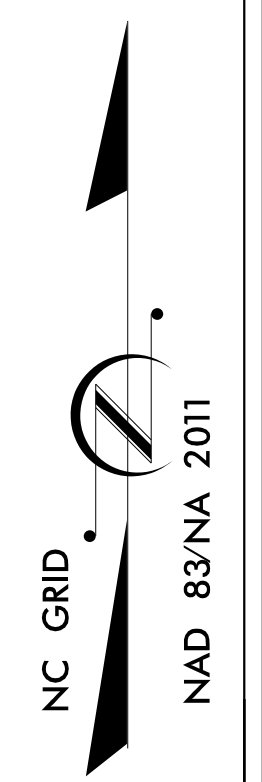
**Gregg Green**  
Signal Communication Project Engineer

**Heidi Berggren, EI**  
Signal Communication Project Design Engineer

Plans Prepared for:  
**DIVISION OF HIGHWAYS**

750 N. Greenfield Parkway, Garner, NC 27529

5/9/2019





- 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 WEATHERPROOF CATEGORY 5e UTP – 4 PAIR 23 AWG CABLE (PoE)
- 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
- 12A INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 12B INSTALL CABLE/DROP CABLE THROUGH NIPPLE ON METAL POLE (SIGNAL OR JOINT USE). INSTALL HEAT SHRINK TUBING OVER NIPPLE.
- 13 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
- 14 INSTALL POLYETHYLENE CONDUIT
- 15 DIRECTIONAL DRILL CONDUIT
- 16 BORE AND JACK CONDUIT
- 17 INSTALL CABLE(S) IN EXISTING CONDUIT
- 18 INSTALL CABLE(S) IN NEW CONDUIT
- 19 INSTALL CABLE(S) IN EXISTING RISER
- 20 INSTALL CABLE(S) IN NEW RISER
- 21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
- 22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 24 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 26 TERMINATE COMMUNICATIONS CABLE ON EXISTING TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 27 INSTALL NEW TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPlice CABLE IN CABINET
- 29 INSTALL UNDERGROUND SPlice ENCLOSURE
- 30 INSTALL AERIAL SPlice ENCLOSURE
- 31 INSTALL POLE MOUNTED CABINET
- 32 INSTALL BASE MOUNTED SPlice CABINET (336) WITH EXTENDED BASE
- 33 REMOVE EXISTING SPlice CABINET
- 34 INSTALL CABINET FOUNDATION

- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 REMOVE EXISTING JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 REMOVE EXISTING WOOD POLE
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
- 49 REMOVE EXISTING COMMUNICATIONS CABLE
- 50 INSTALL ETHERNET SWITCH
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52 INSTALL DELINEATOR MARKER
- 53 STORE 50 FEET OF COMMUNICATIONS CABLE
- 54 LASH CABLE(S) TO EXISTING PWC FIBER OPTIC LINE
- 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 FOR DMS/CCTV
- 59 INSTALL NEW BASE MOUNTED CABINET (336)
- 60 SEAL ALL CONDUIT ENTERING JUNCTION BOXES AND SIGNAL/CCTV/DMS CONTROL CABINETS WITH MOLDABLE DUCT SEAL
- 61 ROUTE CABLE(S) INSIDE METAL POLE AND OUT TO SIGNAL CABINET. USE EXISTING JUNCTION BOXES AND CONDUIT SYSTEMS WHEN AVAILABLE. ENSURE FIBER CABLES DO NOT SHARE JUNCTION BOXES AND CONDUIT SYSTEMS WITH SIGNAL CABLES OR OTHER 120 VOLT CURRENT CARRYING CONDUCTORS.
- 62 INSTALL "TEMPORARY DROP CABLE MAINTENANCE LOOP WITH CABLE BRACKET"

**TEMPORARY DROP CABLE MAINTENANCE LOOP WITH CABLE BRACKET:**

WHERE INDICATED ON THE PLANS, THE CONTRACTOR WILL PROVIDE TEMPORARY SPARE LENGTHS OF DROP CABLE "TEMPORARY DROP CABLE MAINTENANCE LOOP WITH CABLE BRACKET" TO ACCOMMODATE FUTURE RELOCATIONS OF THE SIGNAL CABINETS AS THEY PROGRESS THROUGH THEIR VARIOUS CONSTRUCTION PHASES. THE TEMPORARY SPARE LENGTH OF DROP CABLE SHALL BE COILED AND STORED ON THE NEAREST METAL POLE BETWEEN THE SPlice ENCLOSURE AND THE FIBERS TRANSITION FROM ABOVE GROUND TO BELOW GROUND INSTALLATION AS IT PREPARES TO ENTER THE CONTROLLER CABINET.

UPON A CABINET BEING SET IN ITS FINAL LOCATION AND FINAL SPlicing TO BE PERFORMED, REMOVE THE "TEMPORARY DROP CABLE MAINTENANCE LOOP AND BRACKET". RETURN THE BRACKET TO CITY OF FAYETTEVILLE'S SIGNAL SYSTEMS MANAGEMENT ENGINEER: CARL McCARTNEY AT (910) 433-1660.

**LEGEND**

- NEW FIBER OPTIC COMMUNICATIONS CABLE
- NEW TWISTED PAIR COMMUNICATIONS CABLE
- EXISTING COMMUNICATIONS CABLE
- EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW AERIAL GUY ASSEMBLY
- NEW CONDUIT
- EXISTING CONDUIT
- NEW DIRECTIONAL DRILLED CONDUIT
- NEW BORED AND JACKED CONDUIT
- NEW JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW WOOD POLE
- EXISTING WOOD POLE
- NEW AERIAL SPlice ENCLOSURE
- EXISTING AERIAL SPlice ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- NEW CCTV CAMERA ASSEMBLY
- EXISTING CCTV CAMERA ASSEMBLY
- NEW STANDARD GUY ASSEMBLY
- NEW STANDARD GUY USING EXISTING ANCHOR
- NEW SIDEWALK GUY ASSEMBLY
- NEW CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING CONTROLLER CABINET
- EXISTING SPlice CABINET
- NEW SPlice CABINET, BASE MOUNTED
- EXISTING CCTV CABINET
- SIGNAL POLE
- SIGNAL INVENTORY NUMBER
- CCTV IDENTIFICATION NUMBER
- YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION
- YAGI ANTENNA (SINGLE)
- OMNI ANTENNA
- PROPOSED TEMPORARY DROP CABLE MAINTENANCE LOOP WITH CABLE BRACKET
- EXISTING UTILITY CABLE TO BE RELOCATED OR REMOVED
- EXISTING POWER PEDESTAL
- UTILITY POLE TAG NUMBER
- JOINT USE POLE
- METAL POLE

**CONSTRUCTION NOTE SYMBOLOGY KEY**

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

Diagram illustrating the symbology key for the temporary drop cable maintenance loop with cable bracket:

- NUMBER OF CABLE(S) [XX] [Triangle] [XX] NUMBER OF FIBERS/TWISTED PAIRS
- NUMBER OF RISER(S)/CONDUIT(S) [XX] [Circle] [XX] DIAMETER OF RISER(S)/CONDUIT(S) (INCH)

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Prepared for the Offices of:  
 Transportation, Mobility and Safety Division  
 DEPARTMENT OF TRANSPORTATION  
 STATE OF NORTH CAROLINA  
 750 N. Greenfield Plaza., Garner, NC 27529

US 401 (RAEFORD ROAD)  
 SIGNAL SYSTEM  
 CONSTRUCTION NOTES

DIVISION 06 CUMBERLAND CO. FAYETTEVILLE  
 PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS  
 PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN

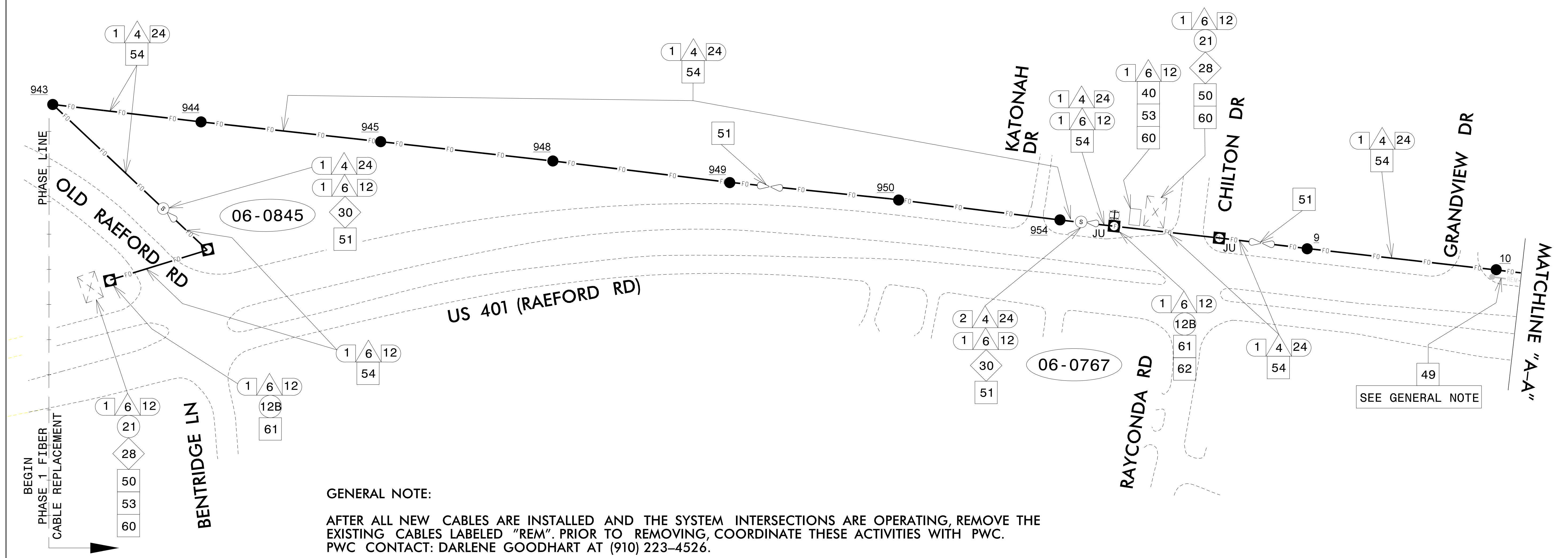
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SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 045933  
 L. OVERN

5/9/2019  
 DATE

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 PWC CONTACT: DARLENE GOODHART AT (910) 223-4526.

- |  |
|--|
| <ul style="list-style-type: none"> <li>1 INSTALL REA, PE - 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE</li> <li>2 INSTALL REA, PE - 38, (FIGURE - 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE</li> <li>3 INSTALL 3-CONDUCTOR, CLASS B, STRANDED UNDERGROUND POWER CABLE</li> <li>4 INSTALL SMFO CABLE</li> <li>5 INSTALL WEATHERPROOF CATEGORY 5e UTP - 4 PAIR 23 AWG CABLE (Pc)</li> <li>6 INSTALL FIBER OPTIC DROP CABLE</li> <li>7 INSTALL TRACER WIRE</li> <li>8 TRENCH</li> <li>9 INSTALL PVC CONDUIT</li> <li>10 INSTALL RIGID, GALVANIZED STEEL CONDUIT</li> <li>11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD</li> <li>12A INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL</li> <li>12B INSTALL CABLES/DROP CABLE THROUGH NIPPLE ON METAL POLE (SIGNAL OR JOINT USE). INSTALL HEAT SHRINK TUBING OVER NIPPLE.</li> <li>13 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT</li> <li>14 INSTALL POLYETHYLENE CONDUIT</li> <li>15 DIRECTIONAL DRILL CONDUIT</li> <li>16 BORE AND JACK CONDUIT</li> <li>17 INSTALL CABLE(S) IN EXISTING CONDUIT</li> <li>18 INSTALL CABLE(S) IN NEW CONDUIT</li> <li>19 INSTALL CABLE(S) IN EXISTING RISER</li> <li>20 INSTALL CABLE(S) IN NEW RISER</li> <li>21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS</li> <li>22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)</li> <li>23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)</li> <li>24 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET</li> <li>25 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET</li> <li>26 TERMINATE COMMUNICATIONS CABLE ON EXISTING TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET</li> <li>27 INSTALL NEW TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET</li> <li>28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPICE CABLE IN CABINET</li> <li>29 INSTALL UNDERGROUND SPICE ENCLOSURE</li> <li>30 INSTALL AERIAL SPICE ENCLOSURE</li> <li>31 INSTALL POLE MOUNTED CABINET</li> <li>32 REMOVE EXISTING COMMUNICATIONS CABLE (336) WITH EXTEND BASE</li> <li>33 REMOVE EXISTING SPICE CABINET</li> <li>34 INSTALL CABINET FOUNDATION</li> <li>35 REMOVE EXISTING CABINET FOUNDATION</li> <li>36 INSTALL CCTV CAMERA ASSEMBLY</li> <li>37 INSTALL CCTV CAMERA WOOD POLE</li> <li>38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION</li> <li>39 INSTALL JUNCTION BOX</li> <li>40 INSTALL OVERSIZED JUNCTION BOX</li> <li>41 REMOVE EXISTING JUNCTION BOX</li> <li>42 INSTALL WOOD POLE</li> <li>43 REMOVE EXISTING WOOD POLE</li> <li>44 INSTALL AERIAL GUY ASSEMBLY</li> <li>45 INSTALL STANDARD GUY ASSEMBLY</li> <li>46 INSTALL SIDEWALK GUY ASSEMBLY</li> <li>47 INSTALL MESSENGER CABLE</li> <li>48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE</li> <li>49 REMOVE EXISTING COMMUNICATIONS CABLE</li> <li>50 INSTALL ETHERNET SWITCH</li> <li>51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE</li> <li>52 INSTALL DELINEATOR MARKER</li> <li>53 STORE 50 FEET OF COMMUNICATIONS CABLE</li> <li>54 LASH CABLE(S) TO EXISTING PWC FIBER OPTIC LINE</li> <li>55 LASH CABLE(S) TO EXISTING MESSENGER CABLE</li> <li>56 LASH CABLE(S) TO NEW MESSENGER CABLE</li> <li>57 MODIFY EXISTING ELECTRICAL SERVICE</li> <li>58 INSTALL NEW ELECTRICAL SERVICE FOR DMS/CCTV</li> <li>59 INSTALL NEW BASE MOUNTED CABINET (336)</li> <li>60 SEAL ALL CONDUIT ENTERING JUNCTION BOXES AND SIGNAL/CCTV/DMS CONTROL CABINETS WITH MOLDABLE DUCT SEAL</li> <li>61 ROUTE CABLE(S) INSIDE METAL POLE AND OUT TO SIGNAL CABINET. USE EXISTING JUNCTION BOXES AND CONDUIT SYSTEMS WHEN AVAILABLE. ENSURE FIBER CABLES DO NOT SHARE JUNCTION BOXES AND CONDUIT SYSTEMS WITH SIGNAL CABLES OR OTHER 120 VOLT CURRENT CARRYING CONDUCTORS.</li> <li>62 INSTALL TEMPORARY DROP CABLE MAINTENANCE LOOP WITH CABLE BRACKET</li> </ul> |
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**PHASE I FIBER TRUNK CABLE INSTALLATION**

Prepared for the Offices of:

750 N. Greenfield Plaza, Garner, NC 27529

**US 401 (RAEFORD ROAD)  
 SIGNAL SYSTEM AND  
 COMMUNICATIONS CABLE /  
 CONDUIT ROUTING PLANS**

DIVISION 06 CUMBERLAND CO. FAYETTEVILLE

PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS

PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN

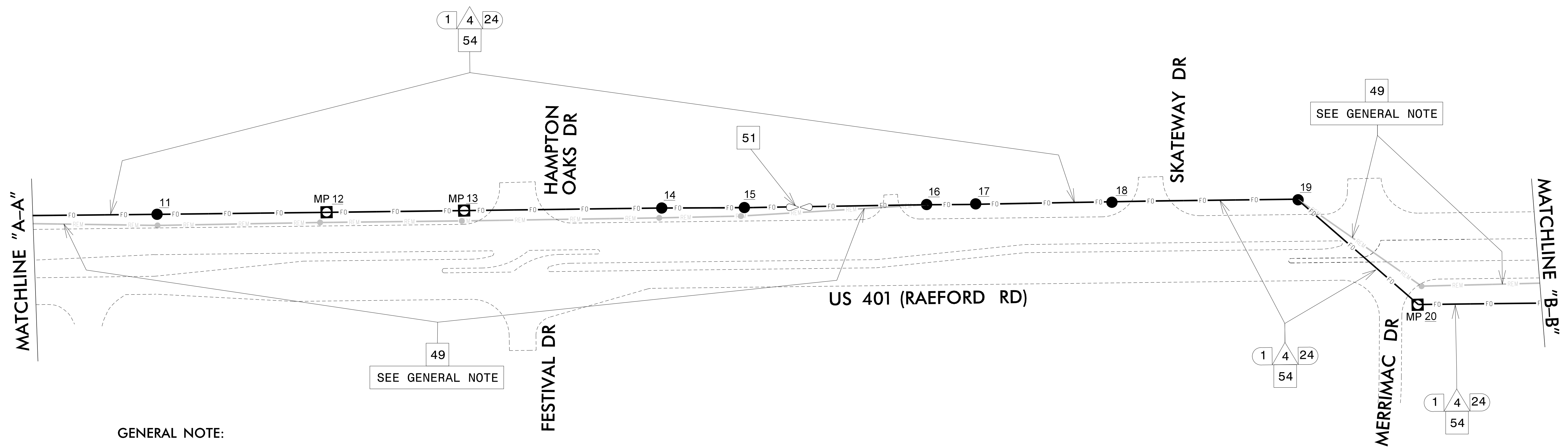
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| 1. INSTALL REA, PE - 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE   | 15. DIRECTIONAL DRILL CONDUIT   | 30. INSTALL AERIAL SPlice ENCLOSURE                            | 46. INSTALL SIDEWALK GUY ASSEMBLY   |
| 2. INSTALL REA, PE - 38, (FIGURE - 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE  | 16. BORE AND JACK CONDUIT   | 31. INSTALL POLE MOUNTED CABINET                               | 47. INSTALL MESSENGER CABLE   |
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| 4. INSTALL SMFO CABLE  | 18. INSTALL CABLE(S) IN NEW CONDUIT   | 33. REMOVE EXISTING SPlice CABINET                             | 49. REMOVE EXISTING COMMUNICATIONS CABLE  |
| 5. INSTALL WEATHERPROOF CATEGORY 5e UTP - 4 PAIR 23 AWG CABLE (PoE)  | 19. INSTALL CABLE(S) IN EXISTING RISER  | 34. INSTALL CABINET FOUNDATION                                 | 50. INSTALL ETHERNET SWITCH   |
| 6. INSTALL FIBER OPTIC DROP CABLE  | 20. INSTALL CABLE(S) IN NEW RISER   | 35. REMOVE EXISTING CABINET FOUNDATION                         | 51. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE                                  |
| 7. INSTALL TRACER WIRE   | 21. INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS   | 36. INSTALL CCTV CAMERA ASSEMBLY                               | 52. INSTALL DELINEATOR MARKER   |
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| 9. INSTALL PVC CONDUIT   | 23. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)              | 38. INSTALL CCTV CAMERA METAL POLE AND FOUNDATION              | 54. LASH CABLE(S) TO EXISTING PWC FIBER OPTIC LINE  |
| 10. INSTALL RIGID, GALVANIZED STEEL CONDUIT  | 24. INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET  | 39. INSTALL JUNCTION BOX                                       | 55. LASH CABLE(S) TO EXISTING MESSENGER CABLE   |
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- 62. INSTALL TEMPORARY DROP CABLE MAINTENANCE LOOP WITH CABLE BRACKET
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- TV. NEW SPlice CABINET, BASE MOUNTED
- EXISTING CCTV CABINET
- FO. NEW FIBER OPTIC COMMUNICATIONS CABLE
- EXISTING COMMUNICATIONS CABLE TO BE REMOVED OR RELOCATED
- PP. EXISTING POWER PEDESTAL
- 174. UTILITY POLE TAG NUMBER
- JU. JOINT USE POLE
- MP. METAL POLE

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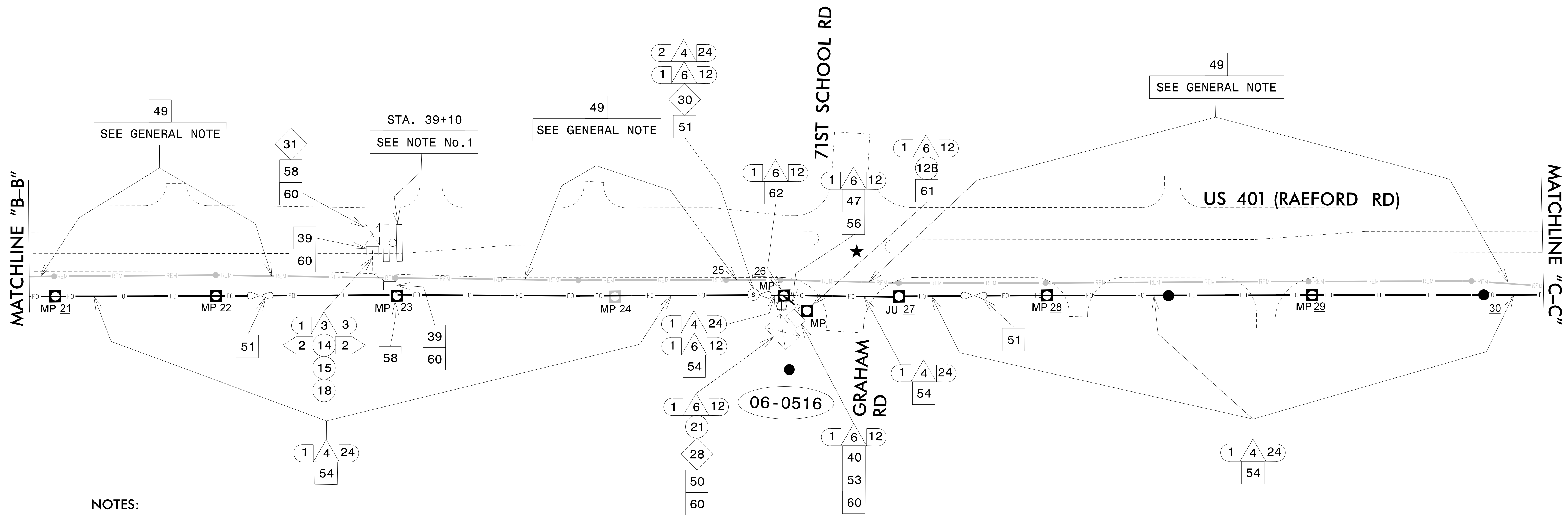
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NOTES:

1. FOR DMS; CONTRACTOR SHALL INSTALL, CENTER SUPPORT STRUCTURE WITH DUAL, BACK TO BACK FRONT ACCESS DMS SIGNS. MOUNT DMS CABINET ON SUPPORT STRUCTURE. THE CONTRACTOR SHALL INSTALL NCDOT PROVIDED CELLULAR MODEM AND TEST THE OPERATION OF DMS SIGNS. CONTRACTOR SHALL CONTACT NCDOT TRAFFIC ENGINEER, FRANK WEST AT 910-364-0606, AT LEAST EIGHT (8) WEEKS IN ADVANCE OF ANTICIPATED INSTALLATION OF CELLULAR MODEM SO THAT THE MODEM MAY BE PROVIDED BY NCDOT. REFER TO DMS DETAIL SHEETS SCP-45, SCP-46 AND SCP-47 FOR ADDITIONAL DETAILS AND INFORMATION.

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DIVISION 06 CUMBERLAND CO. FAYETTEVILLE

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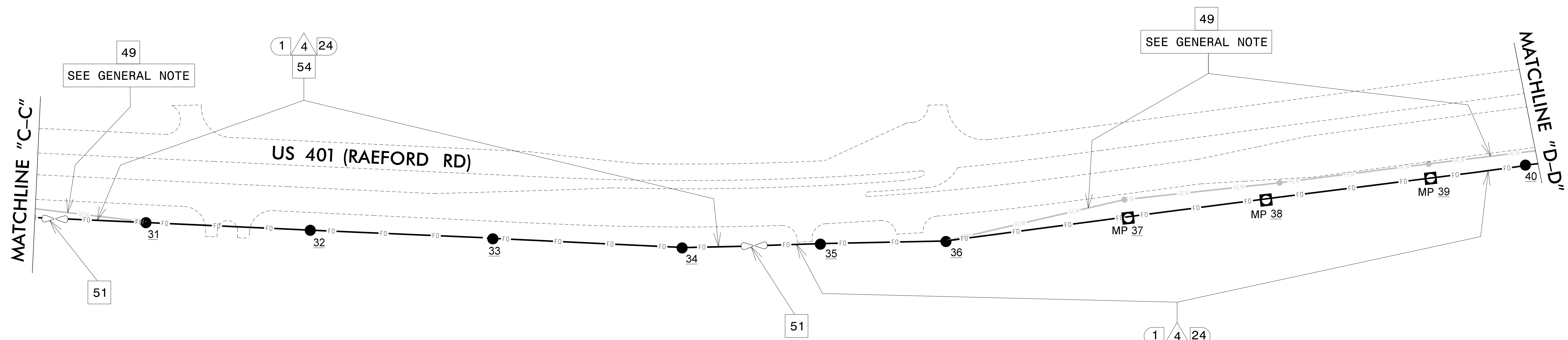
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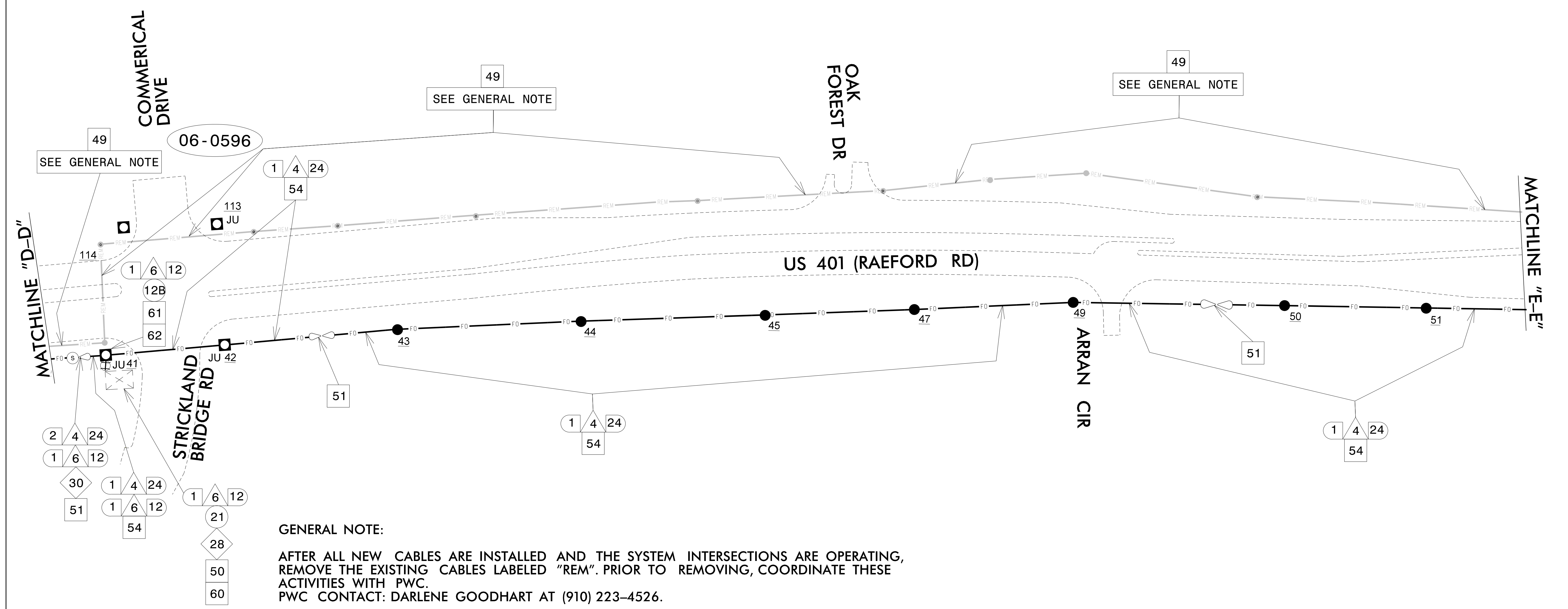
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 L. OVERN  
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**GENERAL NOTE:**  
 AFTER ALL NEW CABLES ARE INSTALLED AND THE SYSTEM INTERSECTIONS ARE OPERATING, REMOVE THE EXISTING CABLES LABELED "REM". PRIOR TO REMOVING, COORDINATE THESE ACTIVITIES WITH PWC.  
 PWC CONTACT: DARLENE GOODHART AT (910) 223-4526.

- |  |   |  |   |
|--|---|--|---|
| 1. INSTALL REA, PE - 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE   | 15. DIRECTIONAL DRILL CONDUIT   | 30. INSTALL AERIAL SPlice ENCLOSURE                            | 46. INSTALL SIDEWALK GUY ASSEMBLY   |
| 2. INSTALL REA, PE - 38, (FIGURE - 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE  | 16. BORE AND JACK CONDUIT   | 31. INSTALL POLE MOUNTED CABINET                               | 47. INSTALL MESSENGER CABLE   |
| 3. INSTALL 3-CONDUCTOR, CLASS B, STRANDED UNDERGROUND POWER CABLE  | 17. INSTALL CABLE(S) IN EXISTING CONDUIT  | 32. INSTALL BASE MOUNTED SPlice CABINET (336) WITH EXTEND BASE | 48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE  |
| 4. INSTALL SMFO CABLE  | 18. INSTALL CABLE(S) IN NEW CONDUIT   | 33. REMOVE EXISTING SPlice CABINET                             | 49. REMOVE EXISTING COMMUNICATIONS CABLE  |
| 5. INSTALL WEATHERPROOF CATEGORY 5e UTP - 4 PAIR 23 AWG CABLE (Pc)   | 19. INSTALL CABLE(S) IN EXISTING RISER  | 34. INSTALL CABINET FOUNDATION                                 | 50. INSTALL ETHERNET SWITCH   |
| 6. INSTALL FIBER OPTIC DROP CABLE  | 20. INSTALL CABLE(S) IN NEW RISER   | 35. REMOVE EXISTING CABINET FOUNDATION                         | 51. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE                                  |
| 7. INSTALL TRACER WIRE   | 21. INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS   | 36. INSTALL CCTV CAMERA ASSEMBLY                               | 52. INSTALL DELINEATOR MARKER   |
| 8. TRENCH  | 22. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)            | 37. INSTALL CCTV CAMERA WOOD POLE                              | 53. STORE 50 FEET OF COMMUNICATIONS CABLE   |
| 9. INSTALL PVC CONDUIT   | 23. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)              | 38. INSTALL CCTV CAMERA METAL POLE AND FOUNDATION              | 54. LASH CABLE(S) TO EXISTING PWC FIBER OPTIC LINE  |
| 10. INSTALL RIGID, GALVANIZED STEEL CONDUIT  | 24. INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET  | 39. INSTALL JUNCTION BOX                                       | 55. LASH CABLE(S) TO EXISTING MESSENGER CABLE   |
| 11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD   | 25. INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET  | 40. INSTALL OVERSIZED JUNCTION BOX                             | 56. LASH CABLE(S) TO NEW MESSENGER CABLE  |
| 12A. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL   | 26. TERMINATE COMMUNICATIONS CABLE ON EXISTING TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET | 41. REMOVE EXISTING JUNCTION BOX                               | 57. MODIFY EXISTING ELECTRICAL SERVICE  |
| 12B. INSTALL CABLES/DROP CABLE THROUGH NIPPLE ON METAL POLE (SIGNAL OR JOINT USE). INSTALL HEAT SHRINK TUBING OVER NIPPLE. | 27. INSTALL NEW TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET                                | 42. INSTALL WOOD POLE  | 58. INSTALL NEW ELECTRICAL SERVICE FOR DMS/CCTV   |
| 13. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT  | 28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPlice CABLE IN CABINET                     | 43. REMOVE EXISTING WOOD POLE                                  | 59. INSTALL NEW BASE MOUNTED CABINET (336)  |
| 14. INSTALL POLYETHYLENE CONDUIT   | 29. INSTALL UNDERGROUND SPlice ENCLOSURE  | 44. INSTALL AERIAL GUY ASSEMBLY                                | 60. SEAL ALL CONDUIT ENTERING JUNCTION BOXES AND SIGNAL/CCTV/DMS CONTROL CABINETS WITH MOLDABLE DUCT SEAL |

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**PHASE I FIBER TRUNK CABLE INSTALLATION**

US 401 (RAEFORD ROAD)  
 SIGNAL SYSTEM AND  
 COMMUNICATIONS CABLE /  
 CONDUIT ROUTING PLANS

Prepared for the Offices of: 	
PLAN DATE: APRIL 2019 PREPARED BY: B. KEFFER	REVIEWED BY: D. HARRIS REVIEWED BY: L. OVERN
DIVISION 06 CUMBERLAND CO. FAYETTEVILLE	SEAL 
REVISIONS INIT. DATE	DATE 5/9/2019

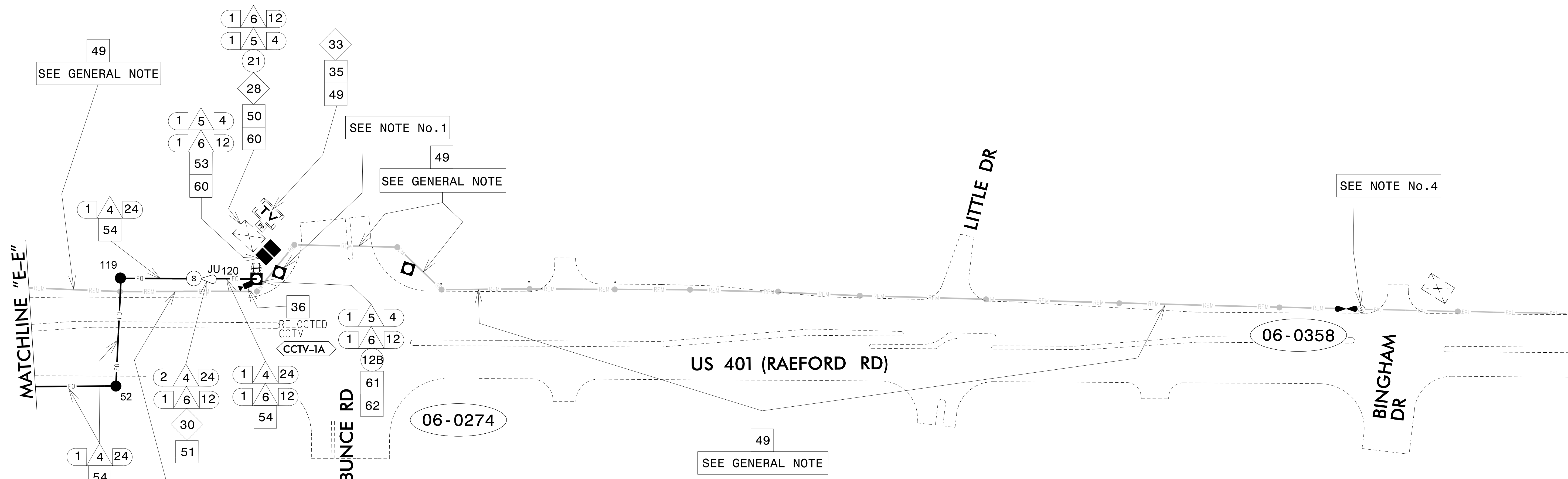
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750 N. Greenfield Plaza, Garner, NC 27529

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 User: jnambright





NOTES:

- FOR 06-0274; THE CONTRACTOR SHALL REMOVE THE EXISTING CCTV CAMERA METAL POLE AND FOUNDATION. THE CCTV CAMERA SHALL BE REINSTALLED ON THE JOINT-USE SIGNAL POLE AND CONNECTED TO THE SIGNAL CABINET BY A NEW CAT 5e/6 PoE. SEE 06-0274 SPLICE DETAIL.
- THE CONTRACTOR SHALL COORDINATE THE DELIVERY OF THE METAL CCTV CAMERA POLE TO THE CITY OF FAYETTEVILLE'S, SIGNAL SYSTEMS MANAGEMENT ENGINEER, CARL McCARTNEY AT (910) 433-1660.
- THE CONTRACTOR SHALL INSTALL NCDOT PROVIDED CELLULAR MODEM AT 06-0274 FOR RELOCATED CCTV-1A. CONTRACTOR SHALL CONTACT NCDOT TRAFFIC ENGINEER, FRANK WEST AT 910-364-0606, AT LEAST EIGHT (8) WEEKS IN ADVANCE OF ANTICIPATED INSTALLATION OF CELLULAR MODEM SO THAT THE MODEM MAY BE PROVIDED BY NCDOT.
- THE CONTRACTOR SHALL REMOVE EXISTING FO CABLE LABELED "REM" BETWEEN BUNCE RD (06-0274) AND BINGHAM RD (06-0358) AS SHOWN, AND LOOP EXISTING FO CABLE LABELED "EXI" IN EXISTING SPLICE ENCLOSURE AT BINGHAM RD AS SHOWN IN SPLICING DETAIL SHEET ON SCP.14.

GENERAL NOTE:

AFTER ALL NEW CABLES ARE INSTALLED AND THE SYSTEM INTERSECTIONS ARE OPERATING, REMOVE THE EXISTING CABLES LABELED "REM". PRIOR TO REMOVING, COORDINATE THESE ACTIVITIES WITH PWC.  
 PWC CONTACT: DARLENE GOODHART AT (910) 223-4526.

1	INSTALL REA, PE - 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	15	DIRECTIONAL DRILL CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	46	INSTALL SIDEWALK GUY ASSEMBLY
2	INSTALL REA, PE - 38, (FIGURE - 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	16	BORE AND JACK CONDUIT	31	INSTALL POLE MOUNTED CABINET	47	INSTALL MESSENGER CABLE
3	INSTALL 3-CONDUCTOR, CLASS B, STRANDED UNDERGROUND POWER CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	32	INSTALL BASE MOUNTED SPLICE CABINET (336) WITH EXTEND BASE	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
4	INSTALL SMFO CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	33	REMOVE EXISTING SPLICE CABINET	49	REMOVE EXISTING COMMUNICATIONS CABLE
5	INSTALL WEATHERPROOF CATEGORY 5e UTP - 4 PAIR 23 AWG CABLE (PoE)	19	INSTALL CABLE(S) IN EXISTING RISER	34	INSTALL CABINET FOUNDATION	50	INSTALL ETHERNET SWITCH
6	INSTALL FIBER OPTIC DROP CABLE	20	INSTALL CABLE(S) IN NEW RISER	35	REMOVE EXISTING CABINET FOUNDATION	51	INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
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14	INSTALL POLYETHYLENE CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	44	INSTALL AERIAL GUY ASSEMBLY	60	SEAL ALL CONDUIT ENTERING JUNCTION BOXES AND SIGNAL/CCTV/DMS CONTROL CABINETS WITH MOLDABLE DUCT SEAL
				45	INSTALL STANDARD GUY ASSEMBLY		

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 Fax. (919) 851-7024  
 www.stantec.com  
 License No. F-0672

**PHASE I FIBER TRUNK CABLE INSTALLATION**

US 401 (RAEFORD ROAD)  
 SIGNAL SYSTEM AND  
 COMMUNICATIONS CABLE /  
 CONDUIT ROUTING PLANS

SEAL  
 NORTH CAROLINA  
 PROFESSIONAL  
 ENGINEER  
 SEAL  
 045933  
 L. OVERN

750 N. Greenfield Plaza, Garner, NC 27529

SCALE  
 NTS

Prepared for the Offices of:

DIVISION 06 CUMBERLAND CO. FAYETTEVILLE

PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS

PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN

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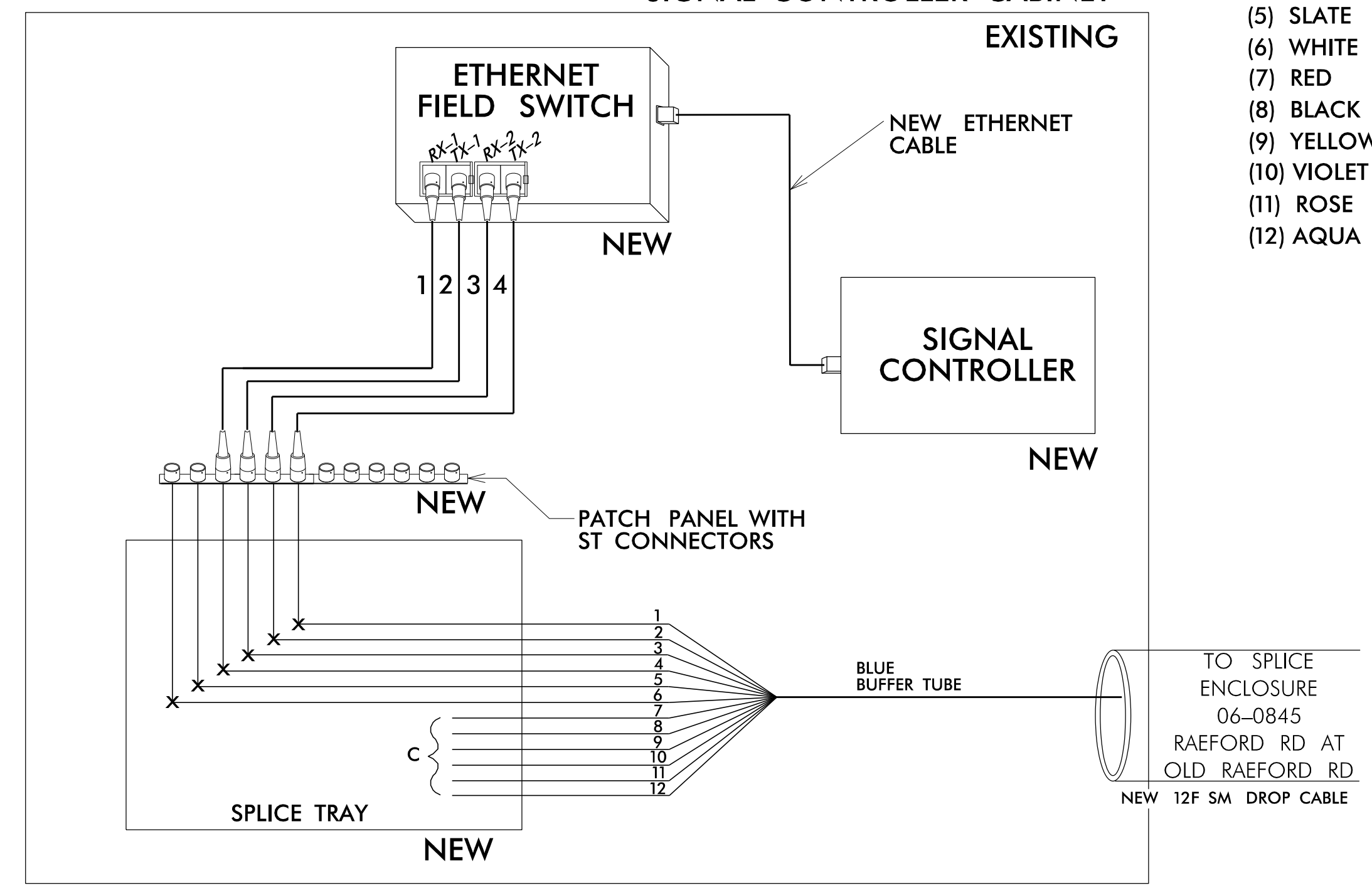
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INTERSECTION 06-0845  
US 401 (South Raeford Rd.)  
at  
SR 3569 (Raeford Rd-Old US 401)  
Bentridge Ln.  
EXISTING SIGNAL CONTROLLER CABINET

**LEGEND**  
X = FUSION SPICE  
C = CAP IN TRAY  
SM FIBER PATCH CORD WITH CONNECTORS

**COLOR CODE TIA/EIA 598-A**

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

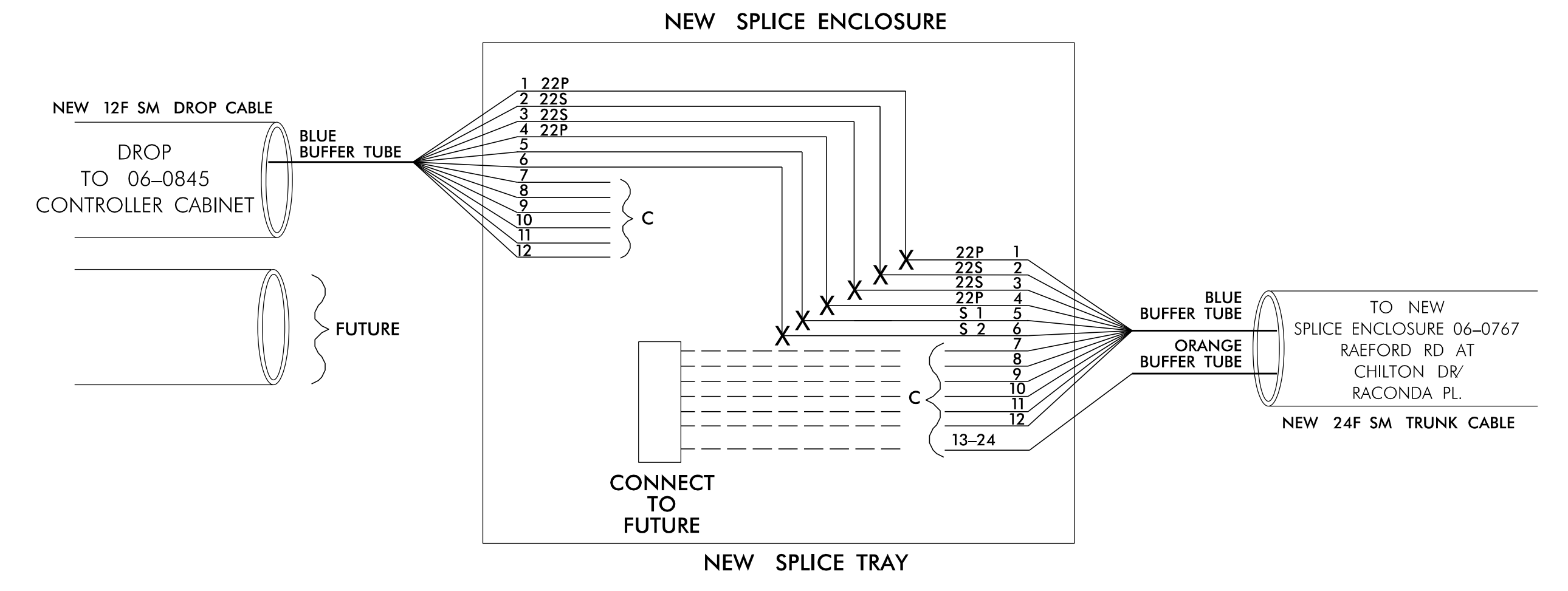


CHANNEL 22  
INTERSECTION 06-0845  
US 401 (South Raeford Rd.)  
at  
SR 3569 (Raeford Rd-Old US 401)  
Bentridge Ln.  
NEW SPLICE ENCLOSURE

**LEGEND**  
X = FUSION SPICE  
C = CAP IN TRAY

**COLOR CODE TIA/EIA 598-A**

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



1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE CITY OF FAYETTEVILLE'S, SIGNAL SYSTEMS MANAGEMENT ENGINEER, CARL McCARTNEY AT (910) 433-1660 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 1.) THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION.
- 2.) NOTIFY THE DEPUTY TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY.
- 3.) WORK IS NOT COMPLETE UNTIL THE SYSTEM IS OPERATIONAL.

2) 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.

3) UNUSED FIBER SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.

4) UNUSED BUFFER TUBES SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.

5) ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND ENSURING PROPER TERMINATIONS.

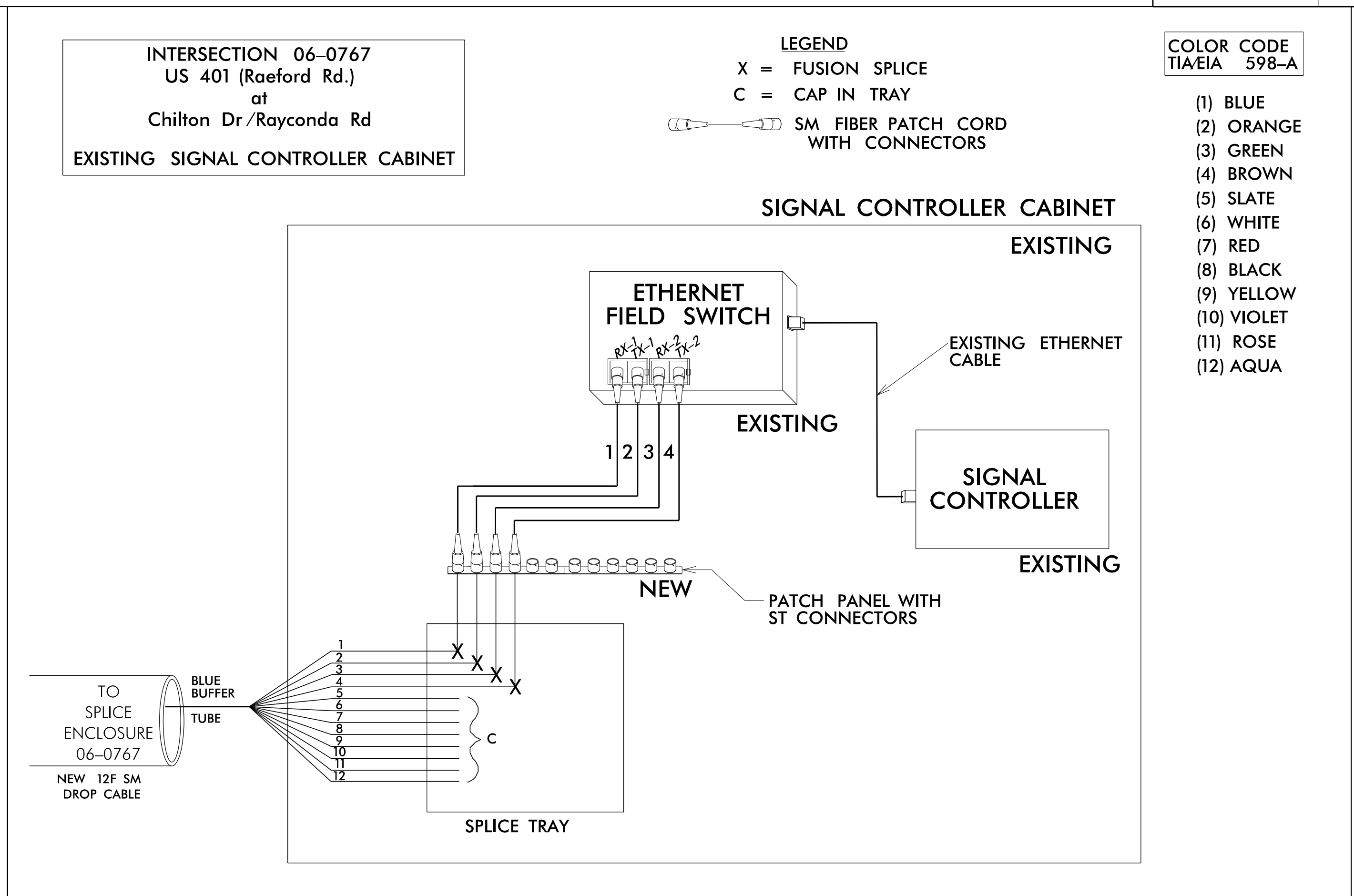
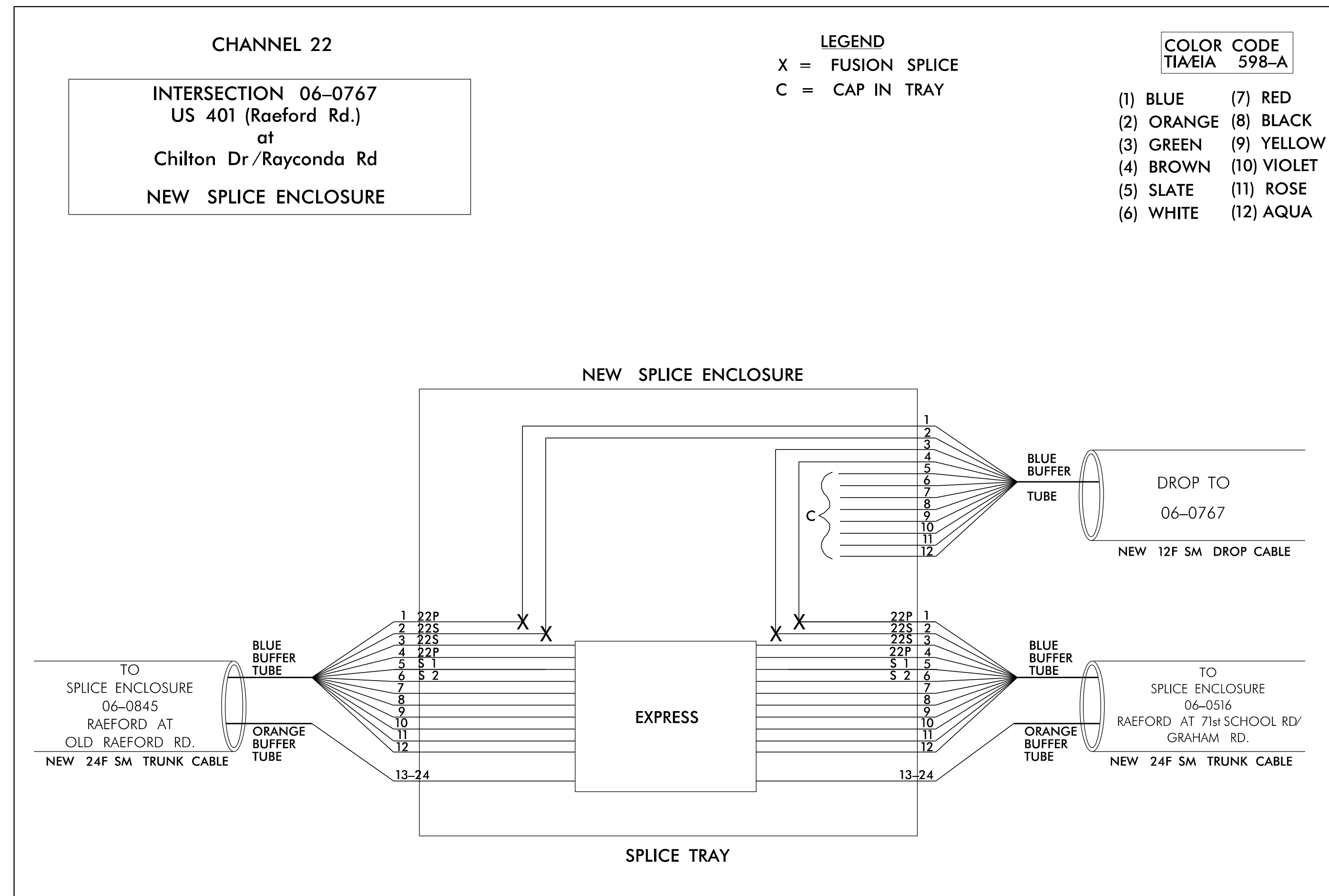
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SR 3569 (Raeford Rd-Old US 401)  
Bentridge Ln.

FINAL

<p>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</p>	<p>Prepared for the Offices of:</p> <p>750 N. Greenfield Pkwy., Garner, NC 27529</p>	<p>FIBER CABLE SPLICING DETAILS INTERSECTION 06-0845</p>		<p>SEAL</p> <p>5/9/2019</p>
		<p>DIVISION 06 CUMBERLAND CO. FAYETTEVILLE</p> <p>PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS</p> <p>PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN</p>	<p>SCALE: N/A</p>	

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1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE CITY OF FAYETTEVILLE'S, SIGNAL SYSTEMS MANAGEMENT ENGINEER, CARL McCARTNEY AT (910) 433-1660 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 1.) THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION.
- 2.) NOTIFY THE DEPUTY TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY.
- 3.) WORK IS NOT COMPLETE UNTIL THE SYSTEM IS OPERATIONAL.

2) 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.

3) UNUSED FIBER SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.

4) UNUSED BUFFER TUBES SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.

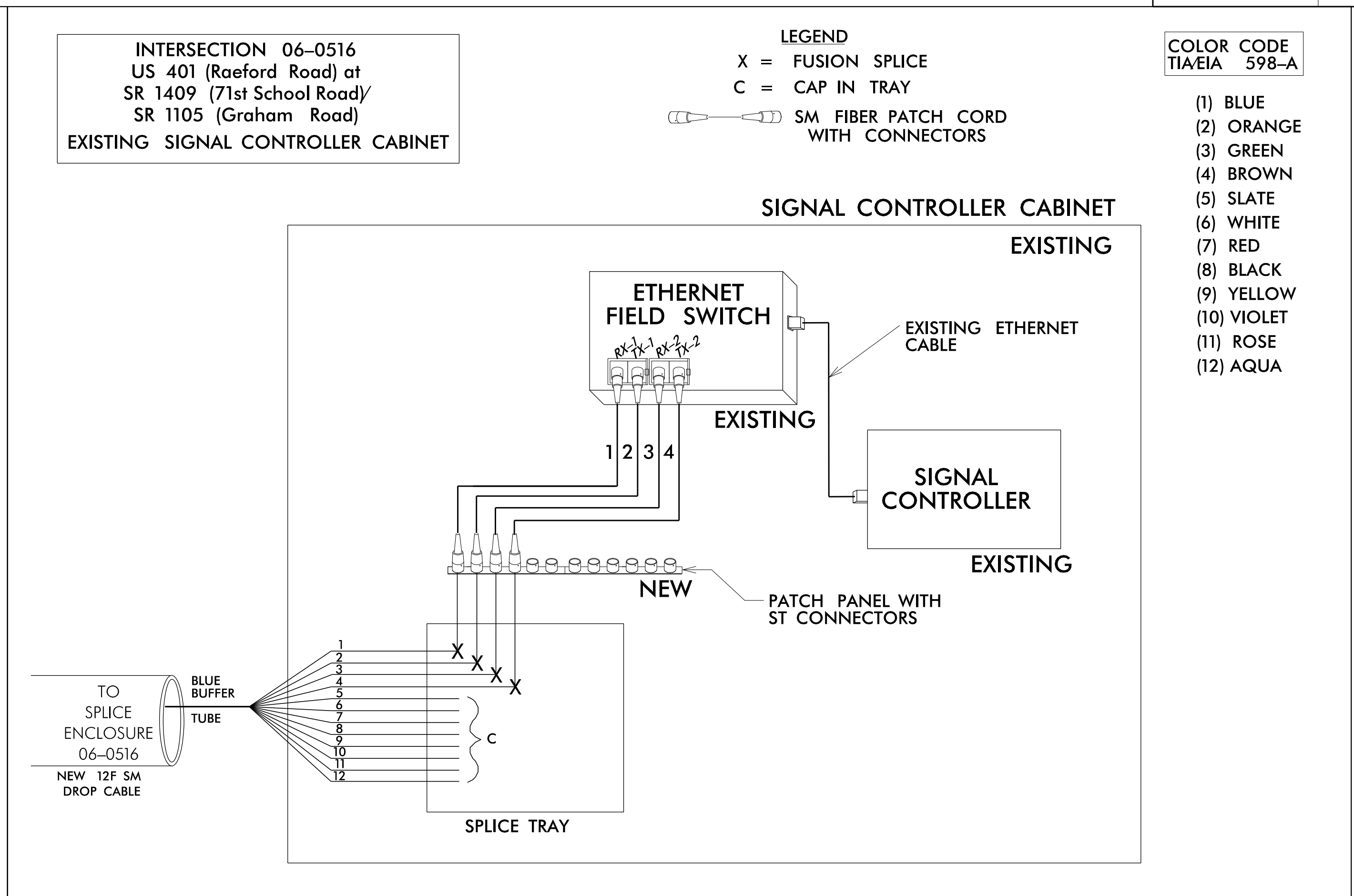
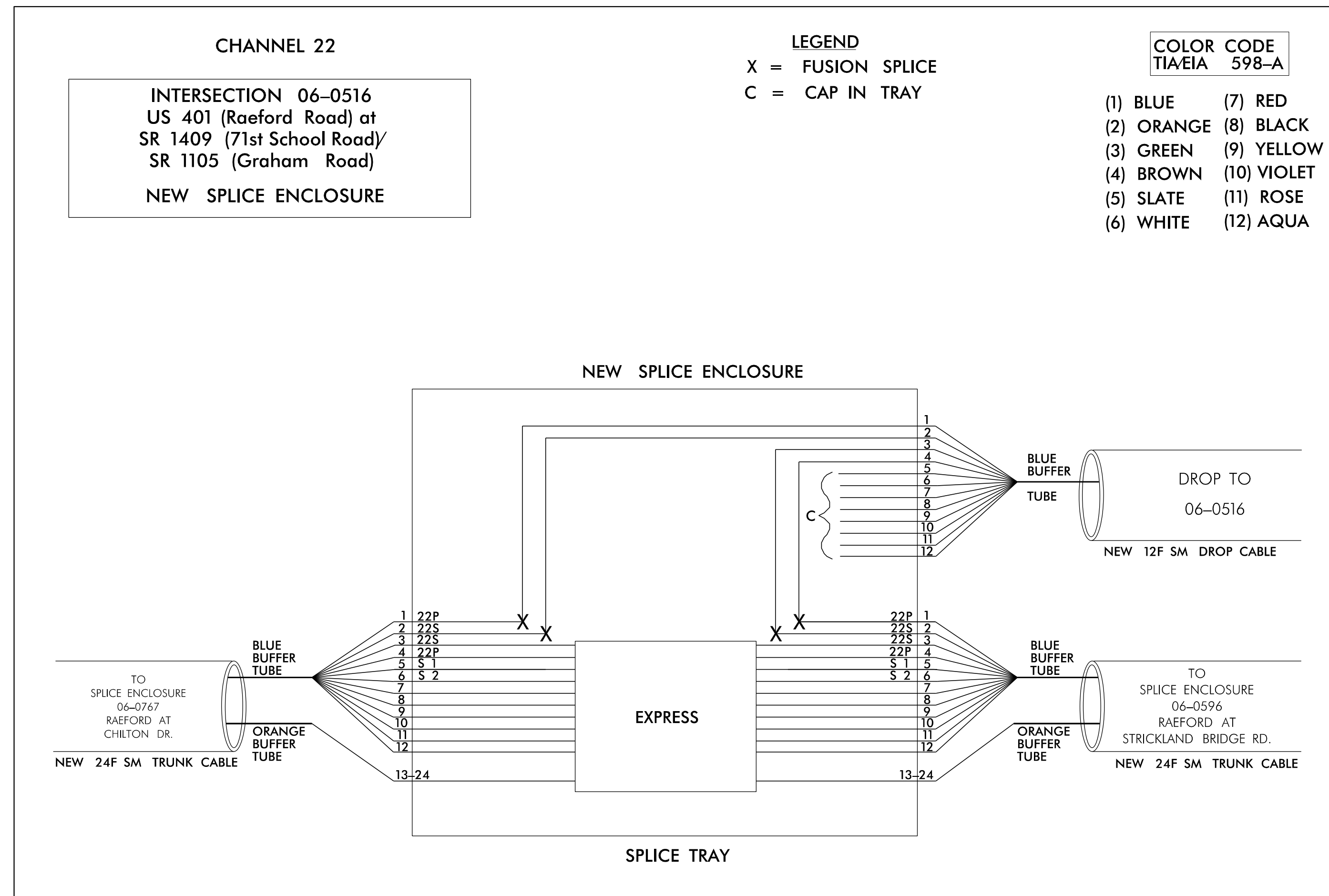
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<p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>		<p>FIBER CABLE SPLICING DETAILS INTERSECTION 06-0767</p>						
		<p>DIVISION 06 CUMBERLAND CO. FAYETTEVILLE</p> <p>PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS</p> <p>PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN</p>	<p>SEAL LAWRENCE E. OVERN ENGINEER 045933</p>					
<p>750 N. Greenfield Pkwy., Garner, NC 27529</p> <p>SCALE: N/A</p>	<table border="1"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	INIT.	DATE				<p>DocuSigned by:  5/9/2019</p> <p>CADD Filename:</p>
REVISIONS	INIT.	DATE						



1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE CITY OF FAYETTEVILLE'S, SIGNAL SYSTEMS MANAGEMENT ENGINEER, CARL McCARTNEY AT (910) 433-1660 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

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2) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:

- REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"
- 1.) SPLICE LOCATION
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- 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.

3) UNUSED FIBER SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.

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US 401 (Raeford Road) at SR 1409 (71st School Road) / SR 1105 (Graham Road)

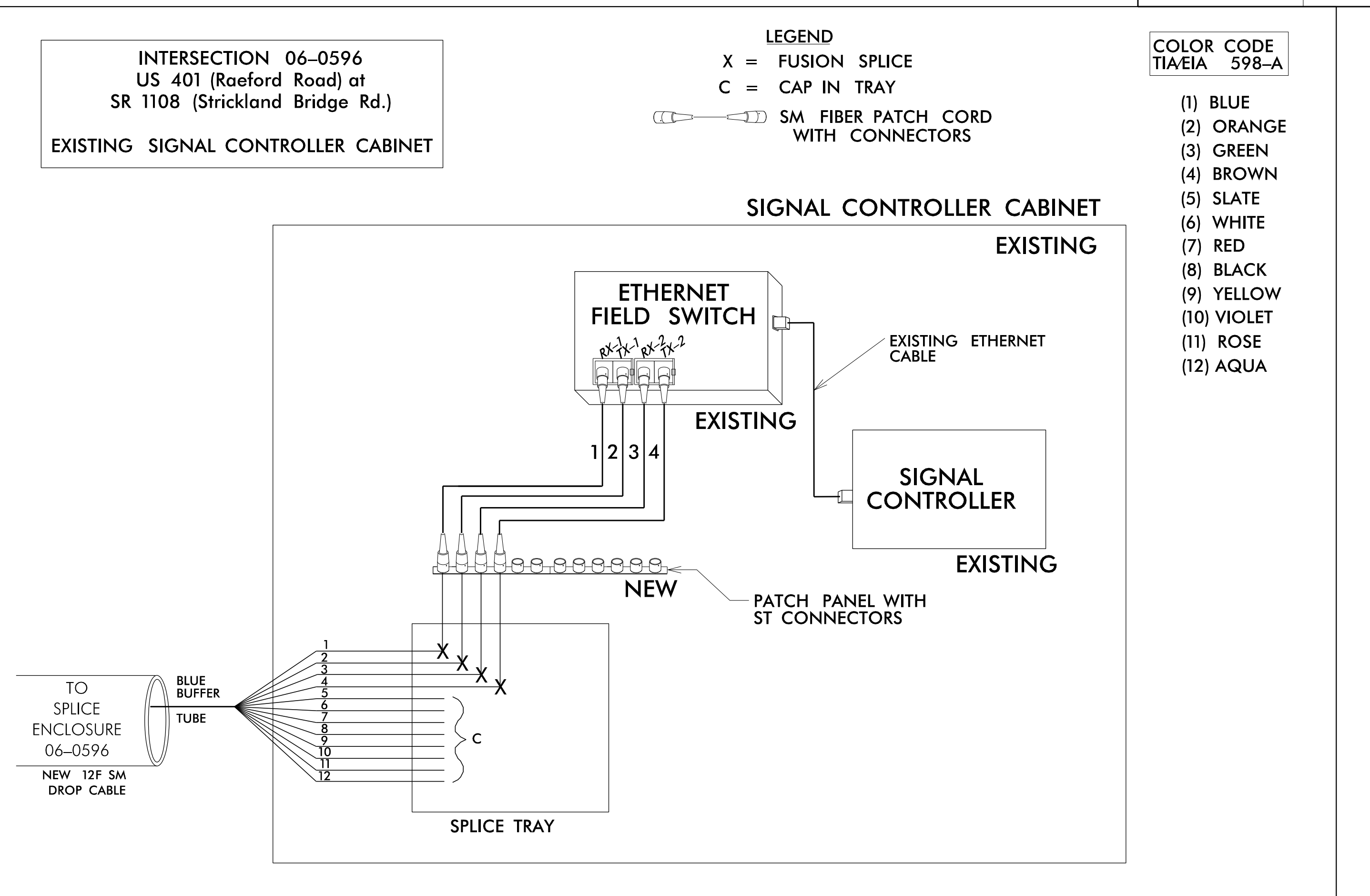
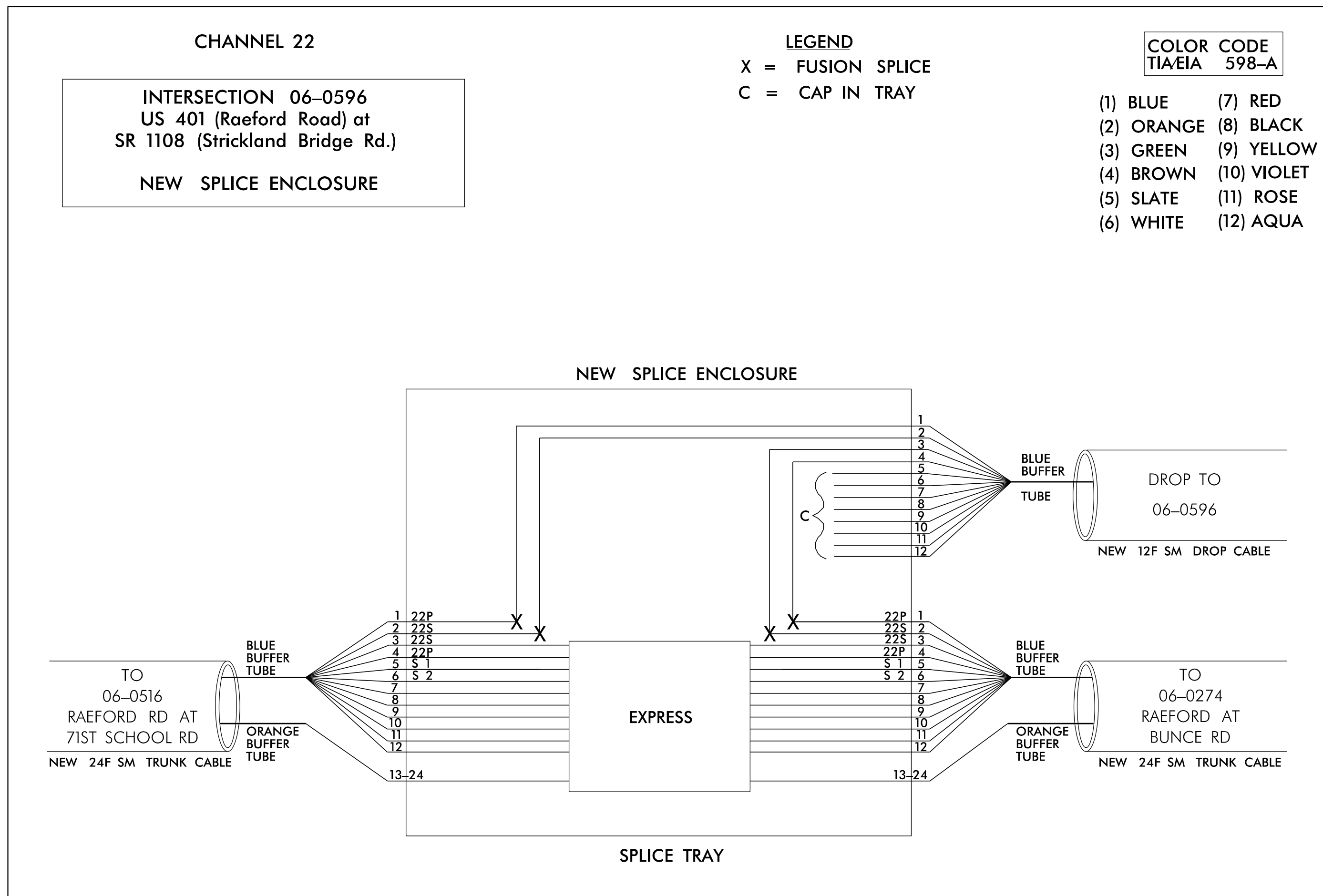
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<p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>		<p><b>FIBER CABLE SPLICING DETAILS</b> <b>INTERSECTION 06-0516</b></p>					
		<p>750 N. Greenfield Pkwy., Garner, NC 27529</p> <p>SCALE: N/A</p>	<p>Prepared for the Offices of:</p> <p>Division 06 CUMBERLAND CO. FAYETTEVILLE</p> <p>PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS</p> <p>PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN</p> <table border="1"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	INIT.	DATE	
REVISIONS	INIT.	DATE					

Seal: LAWRENCE E. OVERN, PROFESSIONAL ENGINEER, STATE OF NORTH CAROLINA, LICENSE NO. 045933, DATE 5/9/2019





1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE CITY OF FAYETTEVILLE'S, SIGNAL SYSTEMS MANAGEMENT ENGINEER, CARL McCARTNEY AT (910) 433-1660 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

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- 2.) NOTIFY THE DEPUTY TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY.
- 3.) WORK IS NOT COMPLETE UNTIL THE SYSTEM IS OPERATIONAL.

2) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:

- REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"
- 1.) SPLICE LOCATION
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  - 4.) NAME OF INDIVIDUAL PERFORMING THE SPLICING
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3) UNUSED FIBER SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.

4) UNUSED BUFFER TUBES SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.

5) ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND ENSURING PROPER TERMINATIONS.

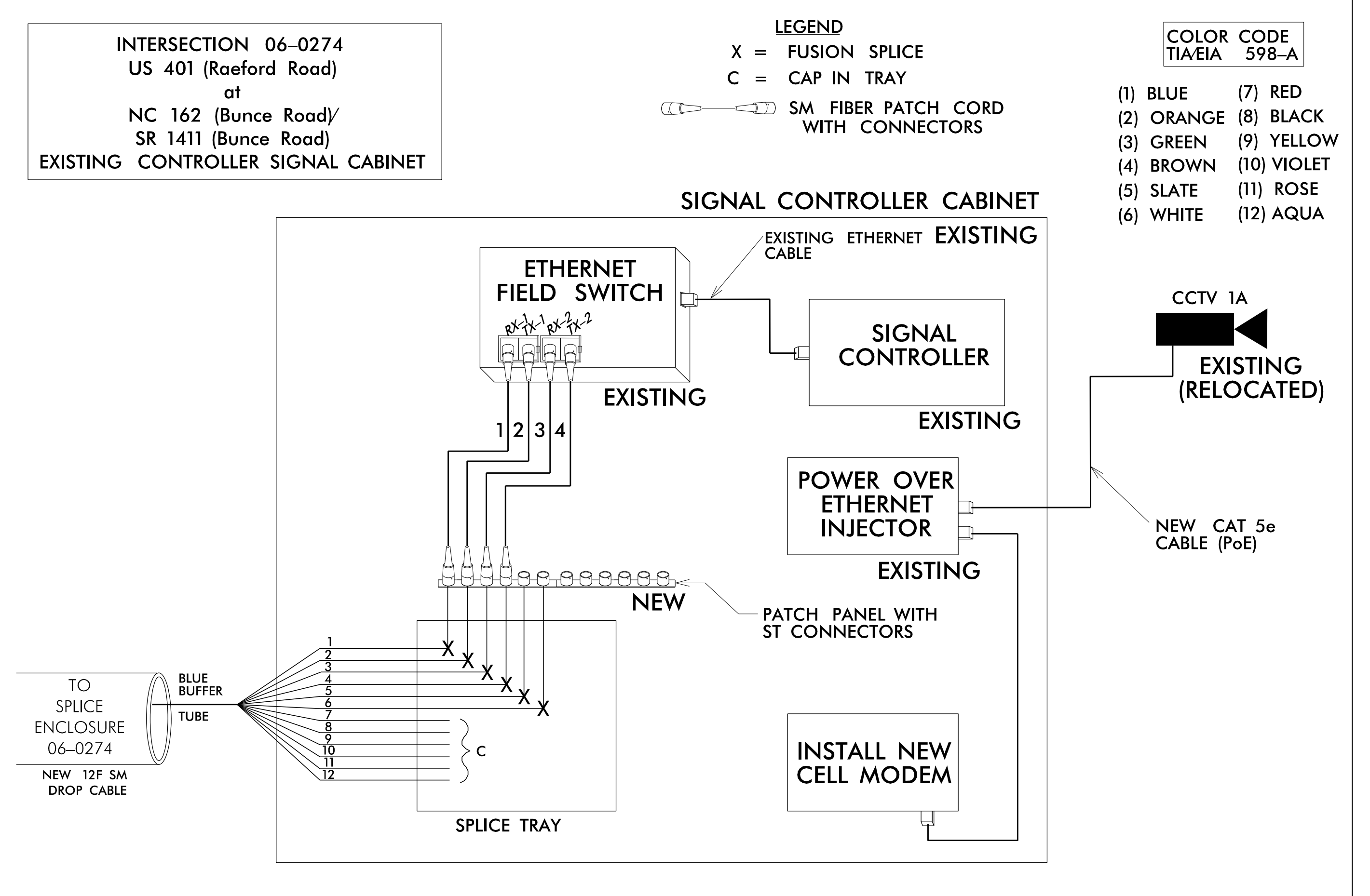
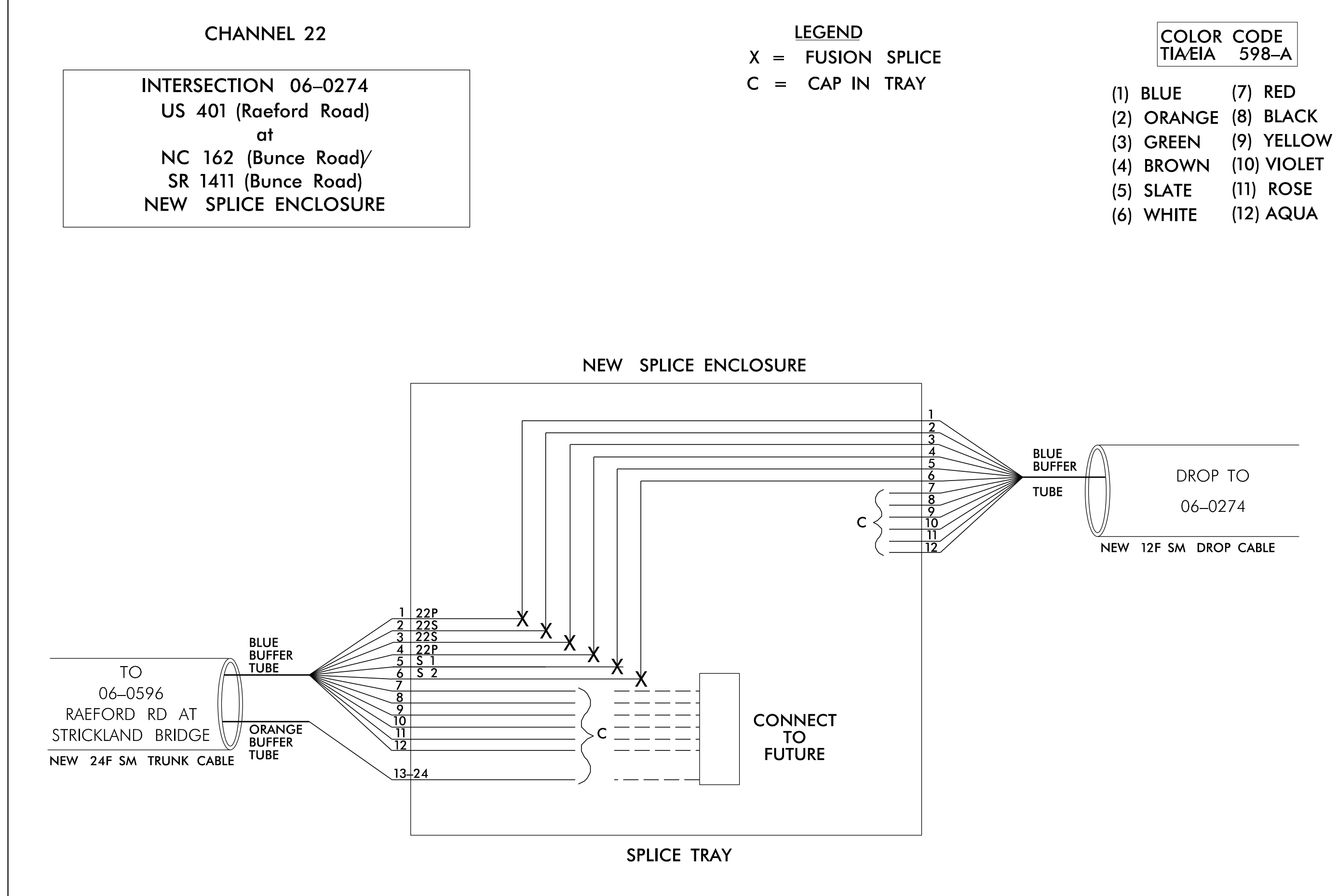
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US 401 (Raeford Road) at  
SR 1108 (Strickland Bridge Rd.)

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<p>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</p>	<p>Prepared for the Offices of:</p> <p>750 N. Greenfield Pkwy., Garner, NC 27529</p>	<p>FIBER CABLE SPLICING DETAILS INTERSECTION 06-0596</p>		<p>SEAL</p>					
		<p>DIVISION 06 CUMBERLAND CO. FAYETTEVILLE</p> <p>PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS</p> <p>PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN</p>							
<p>SCALE: N/A</p>		<table border="1"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	INIT.	DATE				<p>DocuSigned by: Lawrence E. Overn 5/9/2019 DATE</p>
REVISIONS	INIT.	DATE							





- FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE CITY OF FAYETTEVILLE'S, SIGNAL SYSTEMS MANAGEMENT ENGINEER, CARL McCARTNEY AT (910) 433-1660 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION.
  - NOTIFY THE DEPUTY TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY.
  - WORK IS NOT COMPLETE UNTIL THE SYSTEM IS OPERATIONAL.
- INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:
 

REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"

  - SPLICE LOCATION
  - DATE
  - COMPANY NAME
  - 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.
- UNUSED FIBER SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.
- UNUSED BUFFER TUBES SHALL BE LEFT COILED AND STORED IN THE SPLICE TRAY.
- ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND ENSURING PROPER TERMINATIONS.

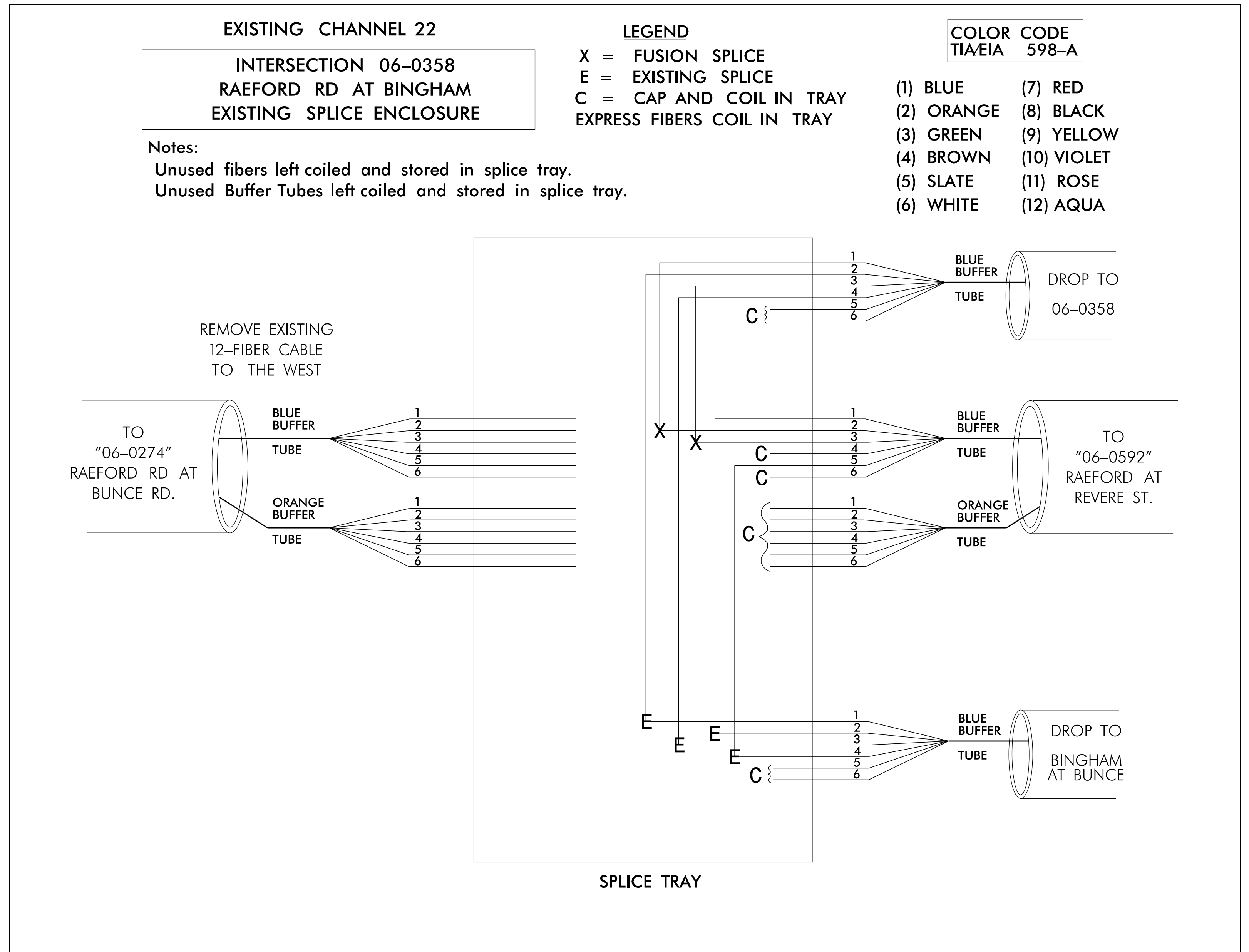
US 401 (Raeford Road)  
at  
NC 162 (Bunce Road)/  
SR 1411 (Bunce Road)

FINAL

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		<p>DIVISION 06 CUMBERLAND CO. FAYETTEVILLE</p> <p>PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS</p> <p>PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN</p> <table border="1"> <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				
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 User: jhambright





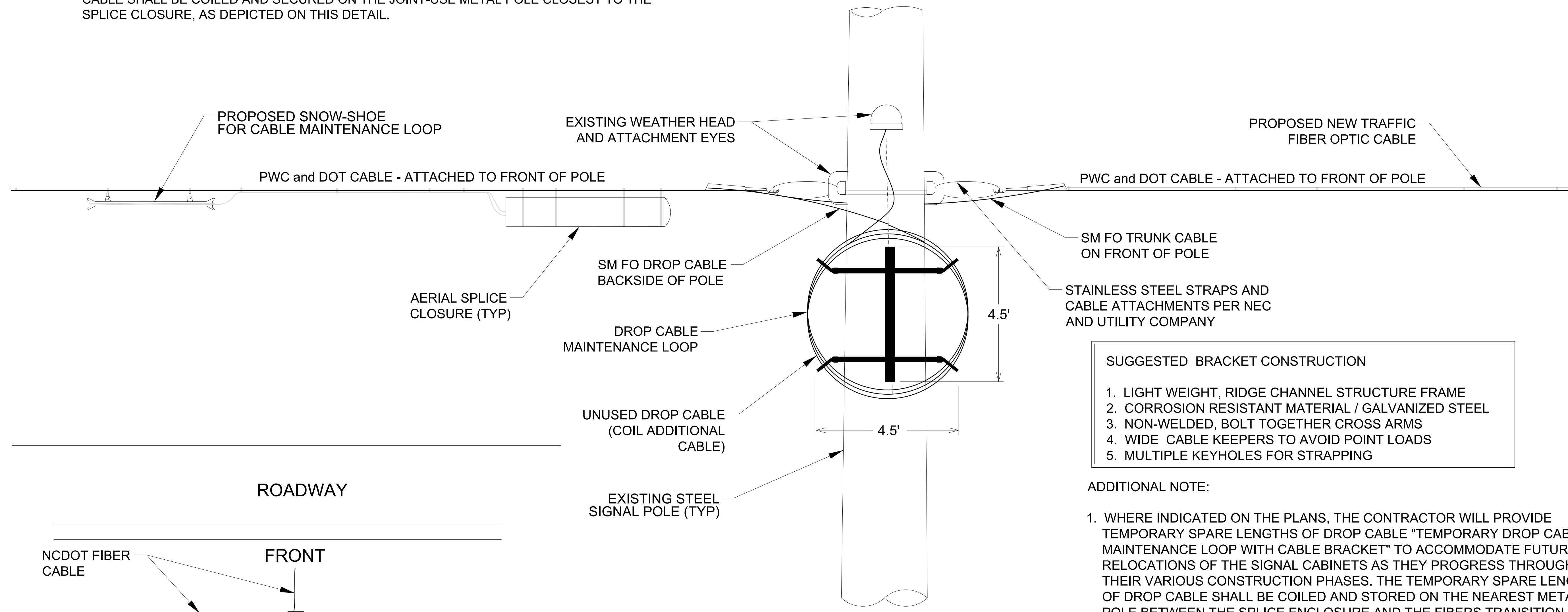
US 401 (Raeford Rd.) at  
SR 1141 (Bingham Dr.)

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	DIVISION 06 CUMBERLAND CO. FAYETTEVILLE		PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS								
	PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">REVISIONS</th> <th style="width: 50%;">INIT. DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	REVISIONS	INIT. DATE						
REVISIONS	INIT. DATE										

NOTES:

- 1. ALL AERIAL SPLICE CLOSURES SHALL BE INSTALLED OPPOSITE FIBER SHOW- SHOES FOR CABLE MAINTENANCE LOOP, PER NCDOT.
- 2. THE CONTRACTOR SHALL REFER TO SECTION "BACK PULL FIBER OPTIC CABLE" OF THE SPECIAL PROVISIONS. THE CONTRACTOR SHALL INSTALL ENOUGH FIBER DROP CABLE TO ENSURE CONNECTION TO THE "FINAL" LOCATION OF THE SIGNAL CONTROL CABINET. THEREFORE, SINCE THE FINAL LOCATION MAY NOT HAVE BEEN DETERMINED BY THE TIME OF DROP CABLE INSTALLATION, THE CONTRACTOR SHALL INSTALL ENOUGH DROP CABLE FOR THE LONGEST RUN OF DROP CABLE TO THE FINAL "BUILD-OUT" LOCATION OF THE SIGNAL CONTROL CABINET. THE CONTRACTOR SHALL BE REQUIRED TO MAKE THE CONNECTION AT THE EXISTING SIGNAL CABINET, AND THEN ANY UNUSED FIBER DROP CABLE SHALL BE COILED AND SECURED ON THE JOINT-USE METAL POLE CLOSEST TO THE SPLICE CLOSURE, AS DEPICTED ON THIS DETAIL.

- 3. DUE TO THE AMOUNT OF TIME THAT THIS MAINTENANCE LOOP MIGHT REMAIN UNTIL THE FINAL INSTALLATION IS MADE, THE CONTRACTOR SHALL USE A BRACKET SIMILAR TO WHAT IS SHOWN ON THE DETAIL BELOW, STRAPPED TO THE STEEL POLE. THE COST OF THE BRACKET, BANDING, LABOR AND ALL ANCILLARY MATERIAL FOR INSTALLATION OF THE BRACKET SHALL BE INCIDENTAL TO THE COST OF THE DROP CABLE. EXPECTED HARDWARE SPECIFICS FOR THE BRACKET ARE BELOW.

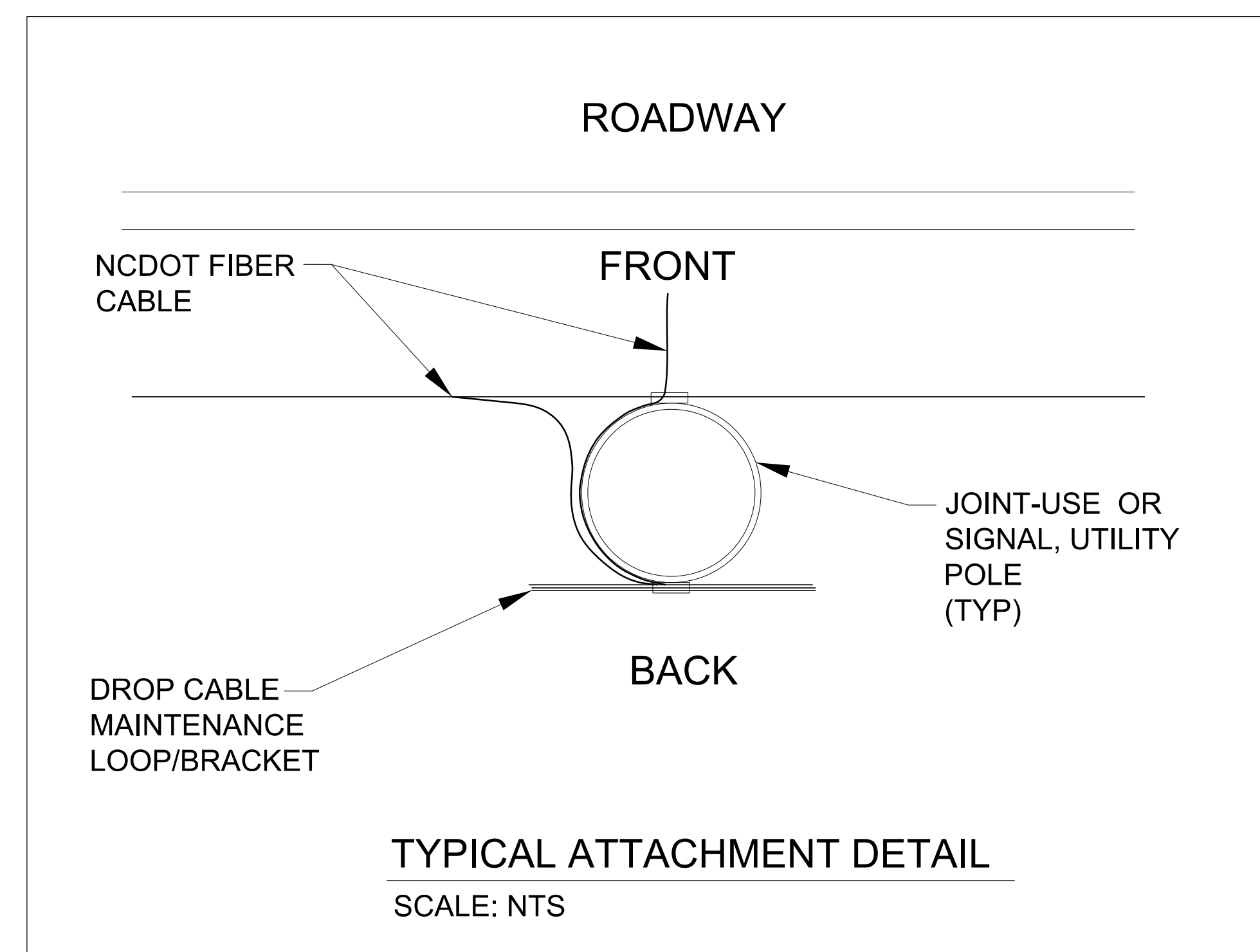


**SUGGESTED BRACKET CONSTRUCTION**

1. LIGHT WEIGHT, RIDGE CHANNEL STRUCTURE FRAME
2. CORROSION RESISTANT MATERIAL / GALVANIZED STEEL
3. NON-WELDED, BOLT TOGETHER CROSS ARMS
4. WIDE CABLE KEEPERS TO AVOID POINT LOADS
5. MULTIPLE KEYHOLES FOR STRAPPING

ADDITIONAL NOTE:

- 1. WHERE INDICATED ON THE PLANS, THE CONTRACTOR WILL PROVIDE TEMPORARY SPARE LENGTHS OF DROP CABLE "TEMPORARY DROP CABLE MAINTENANCE LOOP WITH CABLE BRACKET" TO ACCOMMODATE FUTURE RELOCATIONS OF THE SIGNAL CABINETS AS THEY PROGRESS THROUGH THEIR VARIOUS CONSTRUCTION PHASES. THE TEMPORARY SPARE LENGTH OF DROP CABLE SHALL BE COILED AND STORED ON THE NEAREST METAL POLE BETWEEN THE SPLICE ENCLOSURE AND THE FIBERS TRANSITION FROM ABOVE GROUND TO BELOW GROUND INSTALLATION AS IT PREPARES TO ENTER THE CONTROLLER CABINET. UPON A CABINET BEING SET IN ITS FINAL LOCATION AND FINAL SPLICING TO BE PERFORMED, REMOVE THE "TEMPORARY DROP CABLE MAINTENANCE LOOP AND BRACKET. RETURN THE BRACKET TO CITY OF FAYETTEVILLE'S SIGNAL SYSTEMS MANAGEMENT ENGINEER, CARL MCCARTNEY AT (910) 433-1660.



TYPICAL ATTACHMENT DETAIL  
SCALE: NTS

TYPICAL DETAIL FOR FIBER DROP CABLE COILED ON POLE  
SCALE: NTS

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Prepared for the Offices of:  
TRANSPORTATION MOBILITY AND SAFETY DIVISION  
STATE OF NORTH CAROLINA  
750 N. Greenfield Plaza, Garner, NC 27529  
SCALE: NTS

**FIBER CABLE SPLICING DETAILS  
TEMP FIBER DROP CABLE BRACKET**

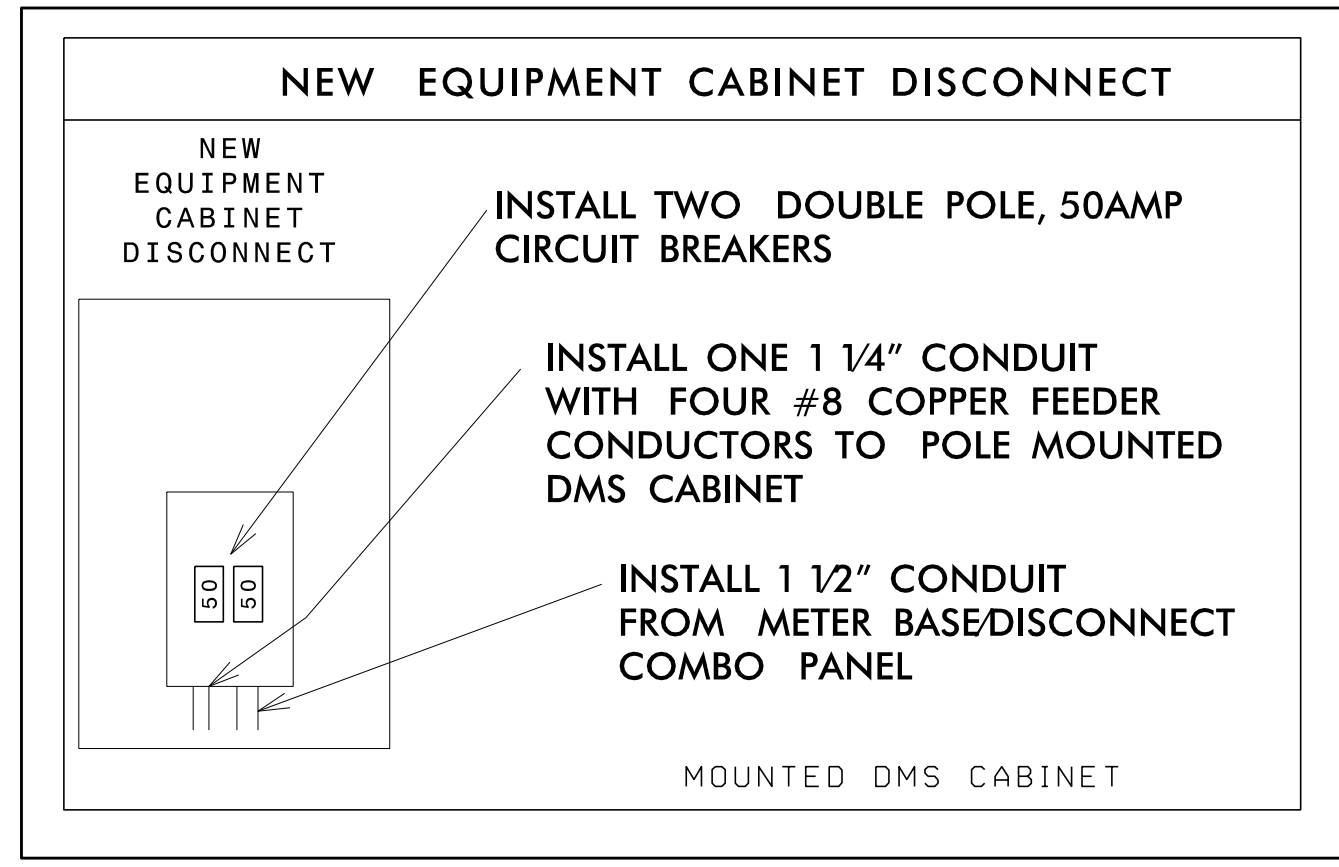
DIVISION 06	CUMBERLAND CO.	FAYETTEVILLE
PLAN DATE: APRIL 2019	REVIEWED BY: D. HARRIS	
PREPARED BY: B. KEFFER	REVIEWED BY: L. OVERN	
REVISIONS	INIT.	DATE

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 045933  
L. OVERN  
DATE 5/9/2019  
CADD FILE NAME

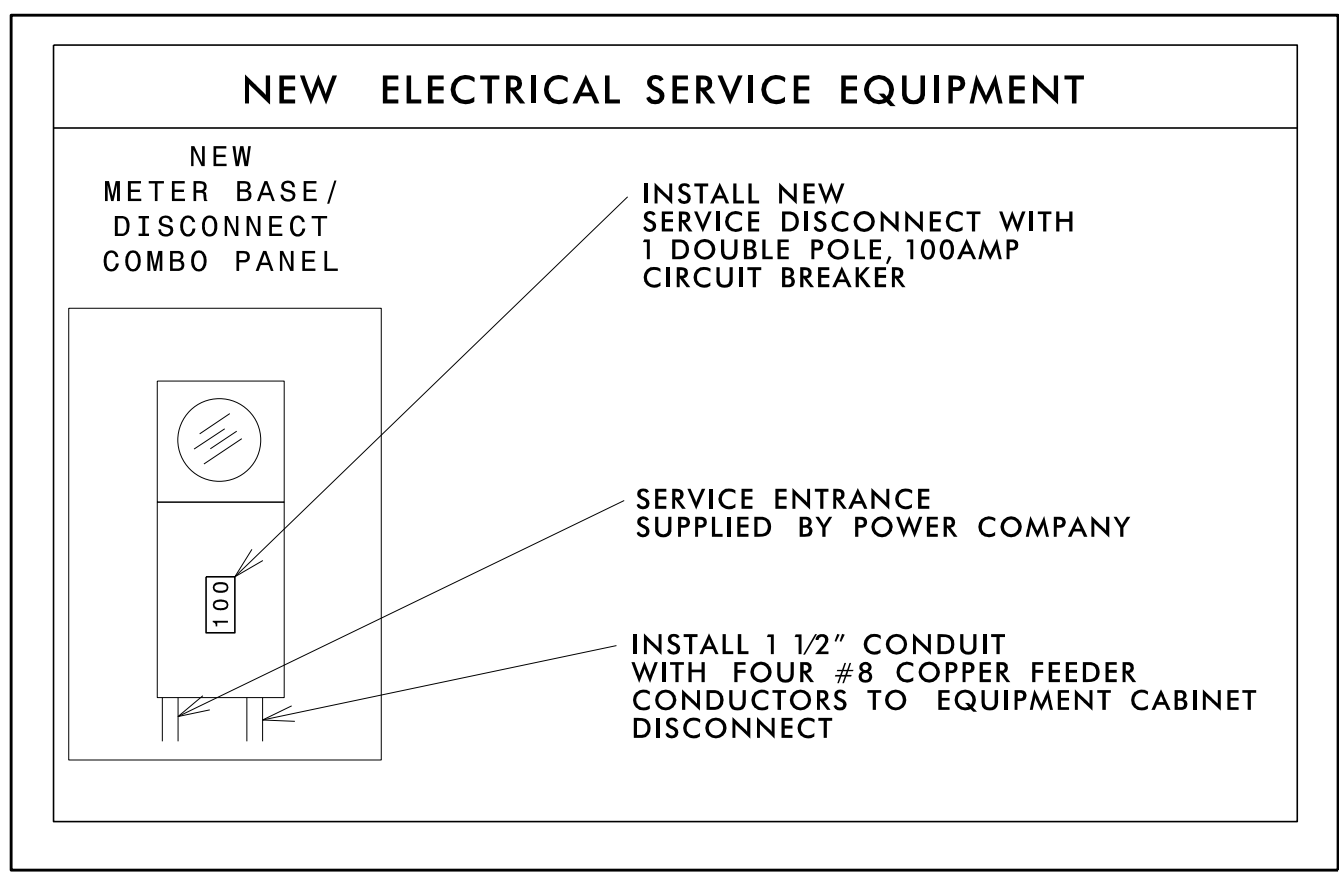
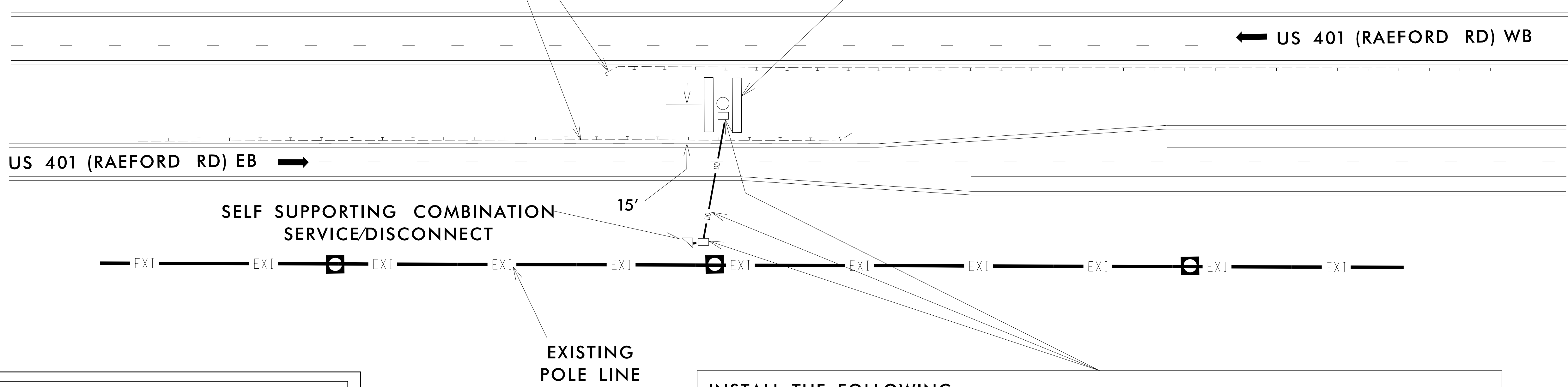


# DMS-1 & 2

35° 2'13.89" N  
79° 0'13.19" W



INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
2	DMS
1	STRUCTURE
1	FOUNDATION
1	EQUIPMENT CABINET DISCONNECT ON DMS STRUCTURE
3	5/8" x 10' COPPER CLAD GROUNDING ELECTRODE
30'	#4 AWG SOLID BARE COPPER GROUNDING CONDUCTOR



INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
1	METER BASE/DISCONNECT COMBINATION PANEL
60'	DIRECTIONAL DRILL (2)(1 1/2")
2	STANDARD SIZE JUNCTION BOX
80'	4-WIRE COPPER FEEDER CONDUCTORS (#8)
3	5/8" x 10' COPPER CLAD GROUNDING ELECTRODE
30'	#4 AWG SOLID BARE COPPER GROUNDING CONDUCTOR

**NOTES:**

1. INSTALL NEW DMS POLE MOUNTED CABINET (1) ON NEW DMS STRUCTURE.
2. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON SHEET SCP-17 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.

WEST OF 71ST SCHOOL ROAD/GRAHAM ROAD

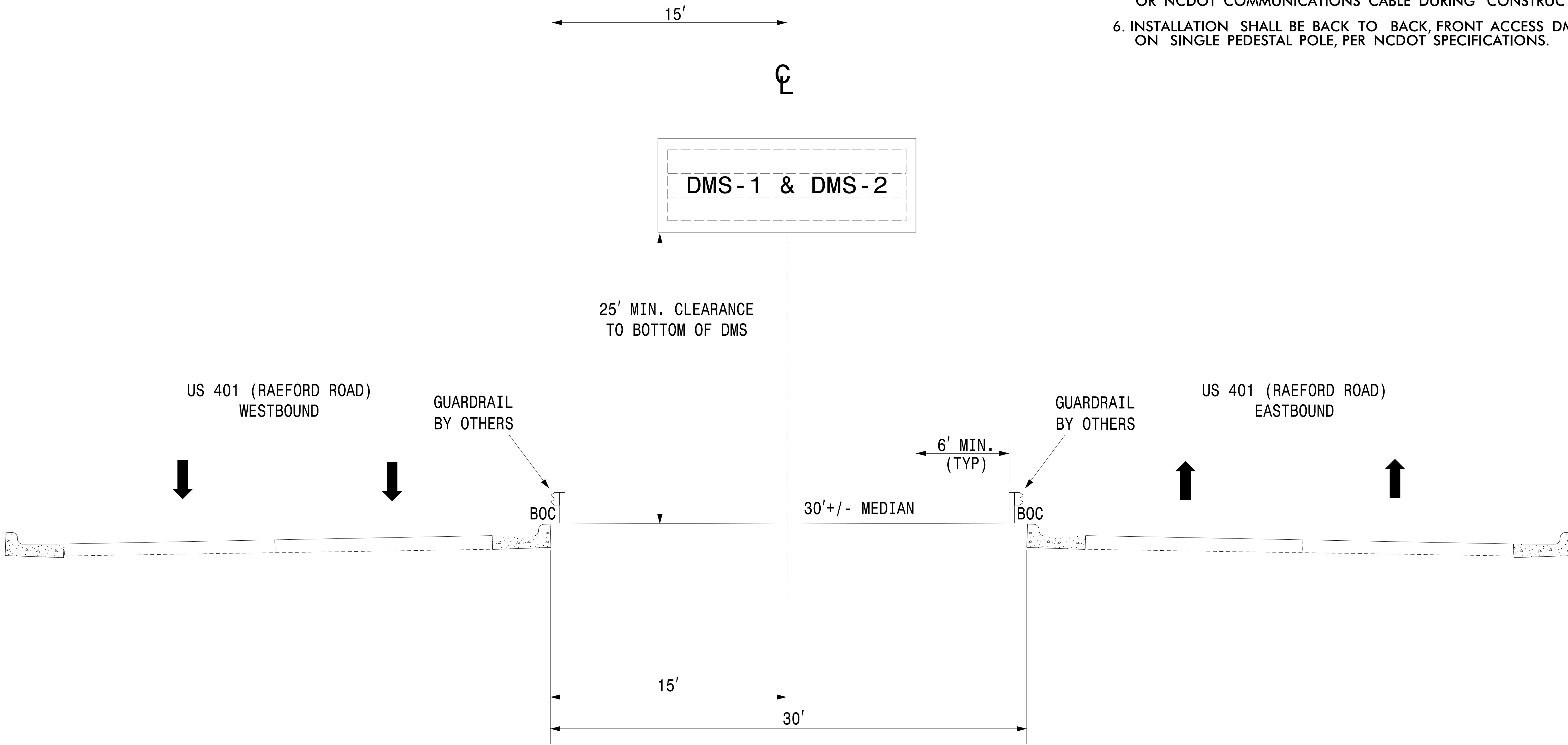
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<p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>		<p><b>DMS 1 &amp; DMS 2 INSTALLATION (DAUL-MOUNTED on SINGLE POLE PEDESTAL)</b></p>		<p>SEAL</p> <p>5/9/2019</p>
		<p>750 N. Greenfield Plaza, Garner, NC 27529</p>	<p>Prepared for the Offices of: TRANSPORTATION MOBILITY AND SAFETY DIVISION DEPARTMENT OF TRANSPORTATION STATE OF NORTH CAROLINA</p>	

ESTIMATED DIMENSION : 15' X 8' (EACH)  
 MAXIMUM DEADLOAD OF 1500 LBS (EACH)

NOTES:

1. USE THE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS PROVIDED BY THE DMS FABRICATOR TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
2. FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTINGS USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
3. ENSURE THAT THE TOP OF THE FOOTING EXTENDS AT LEAST 6 INCHES AND NOT MORE THAN 24 INCHES ABOVE THE HIGHEST POINT OF THE GROUND SURFACE AT THE FOOTING.
4. DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 140 MPH.
5. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT COMMUNICATIONS CABLE DURING CONSTRUCTION.
6. INSTALLATION SHALL BE BACK TO BACK, FRONT ACCESS DMS ON SINGLE PEDESTAL POLE, PER NCDOT SPECIFICATIONS.



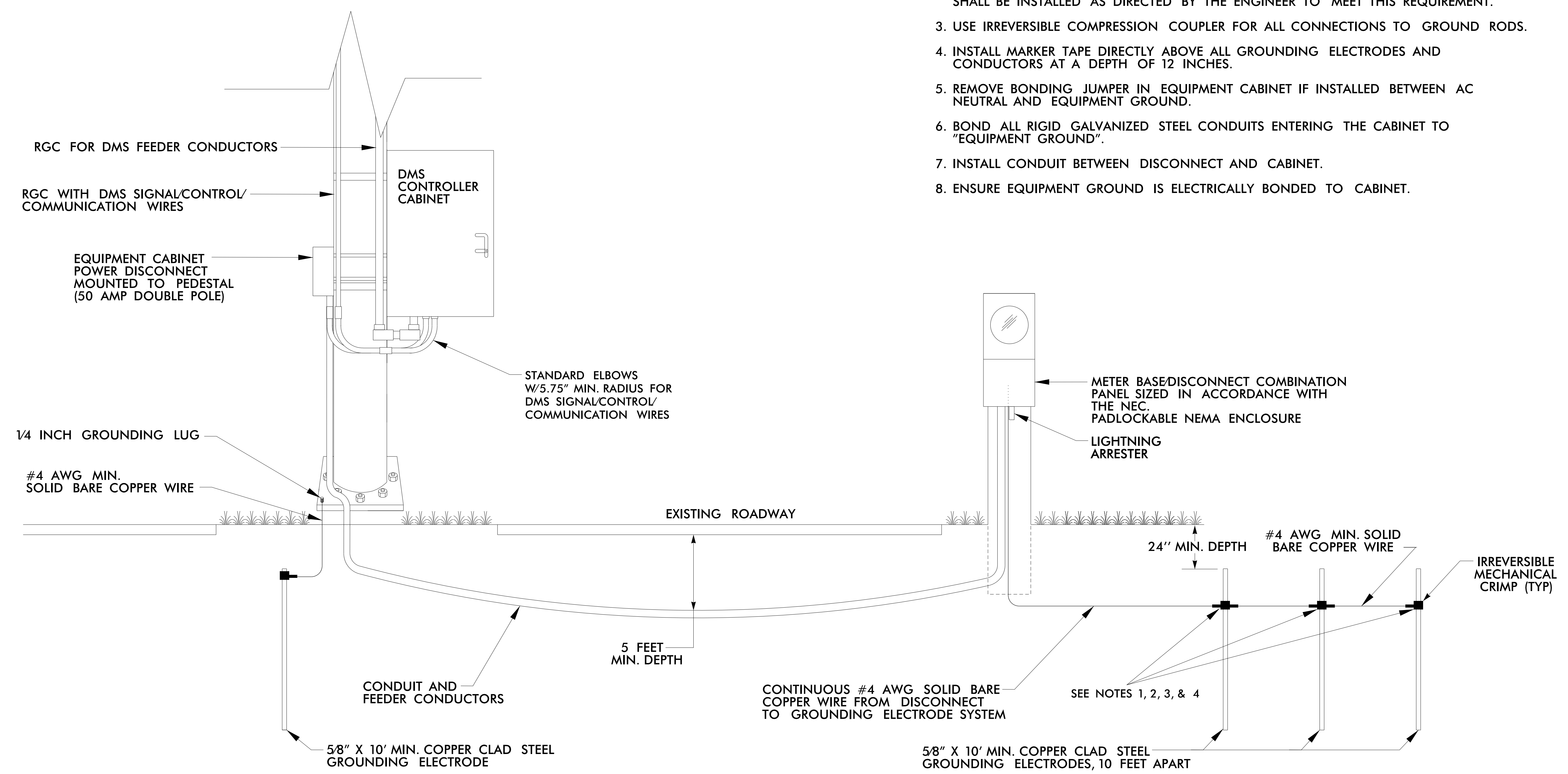
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		DIVISION 06 CUMBERLAND CO. FAYETTEVILLE		PLAN DATE: APRIL 2019 REVIEWED BY: D. HARRIS		
PREPARED BY: B. KEFFER REVIEWED BY: L. OVERN		SCALE: NTS		REVISIONS:		DATE: 5/9/2019



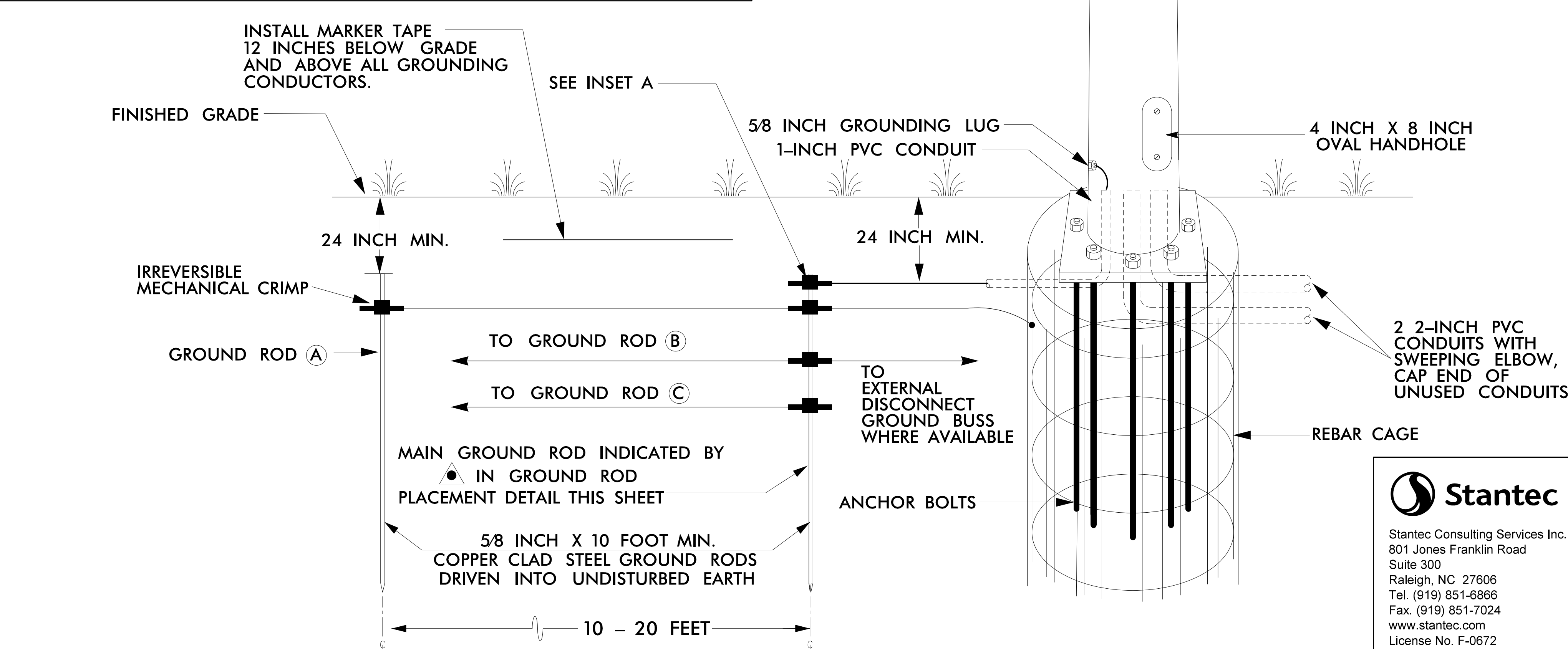
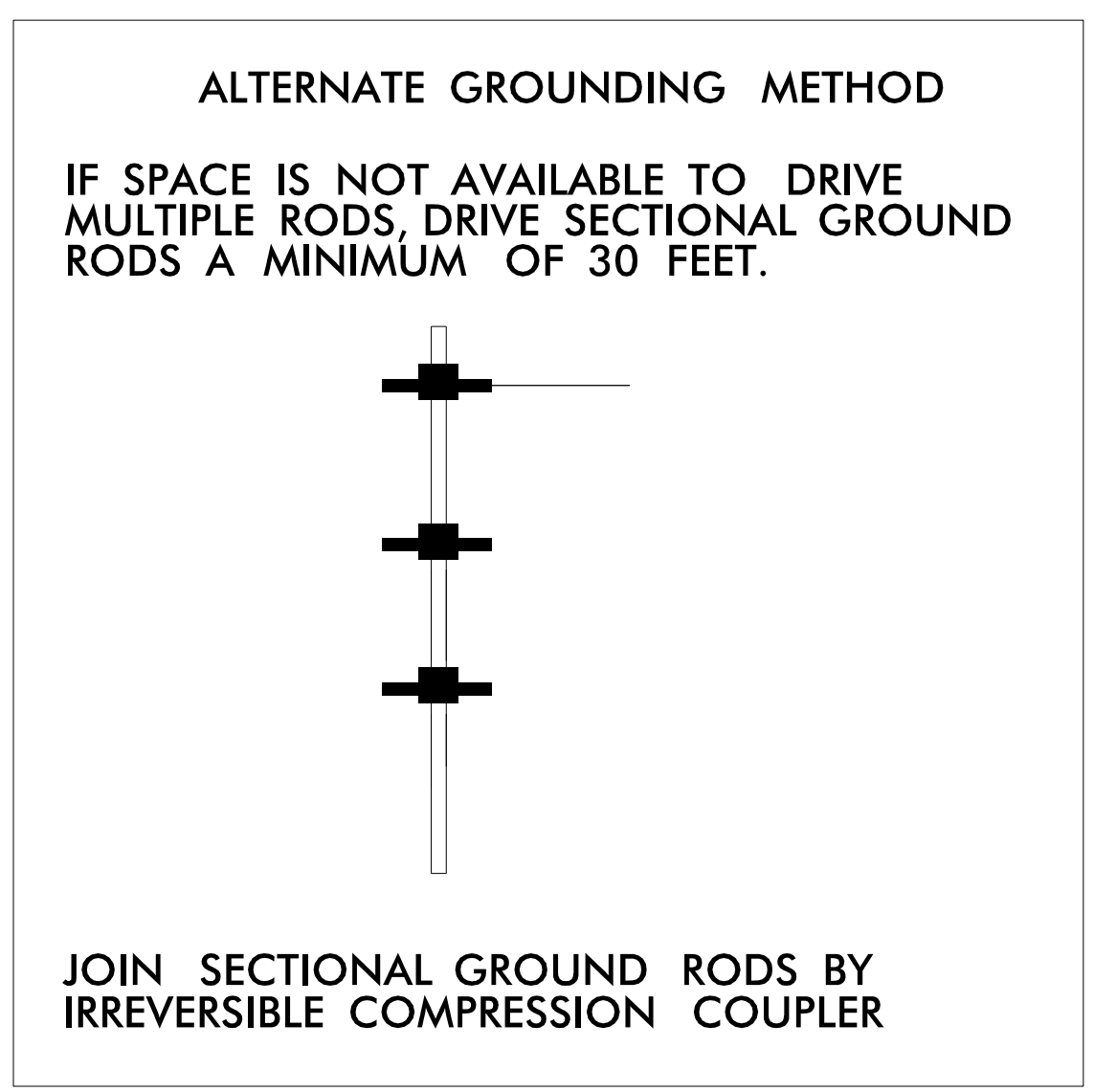
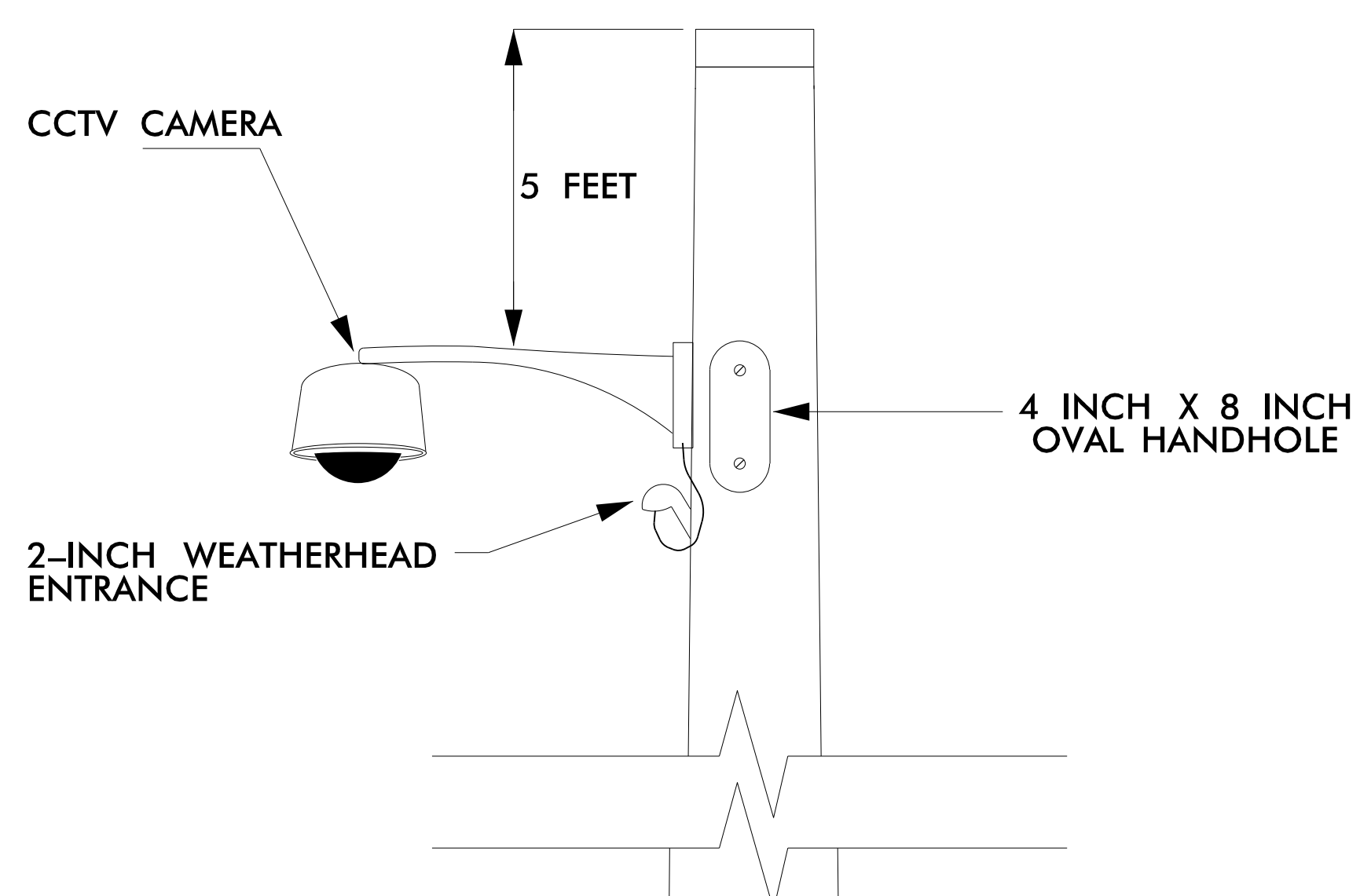
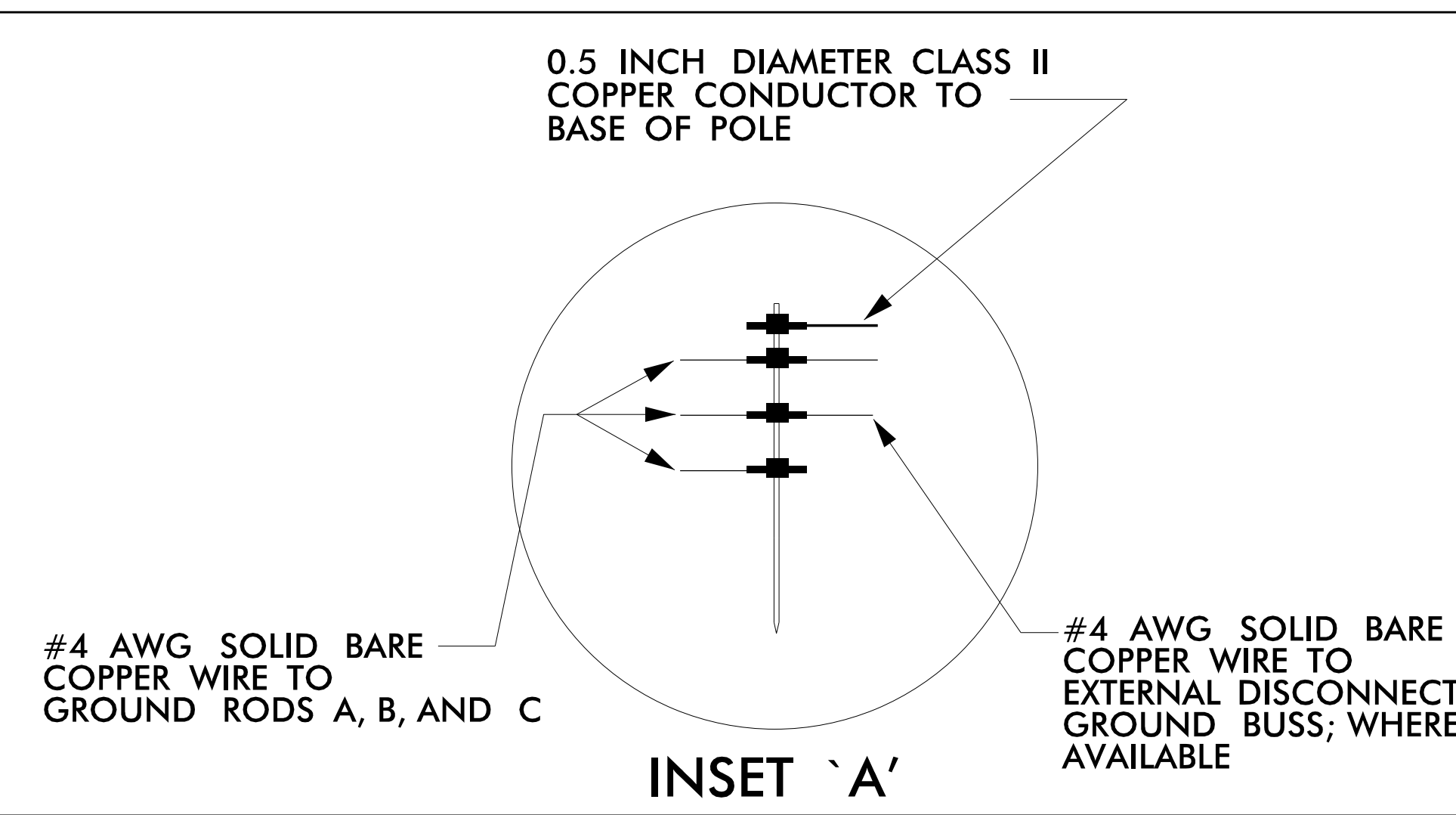
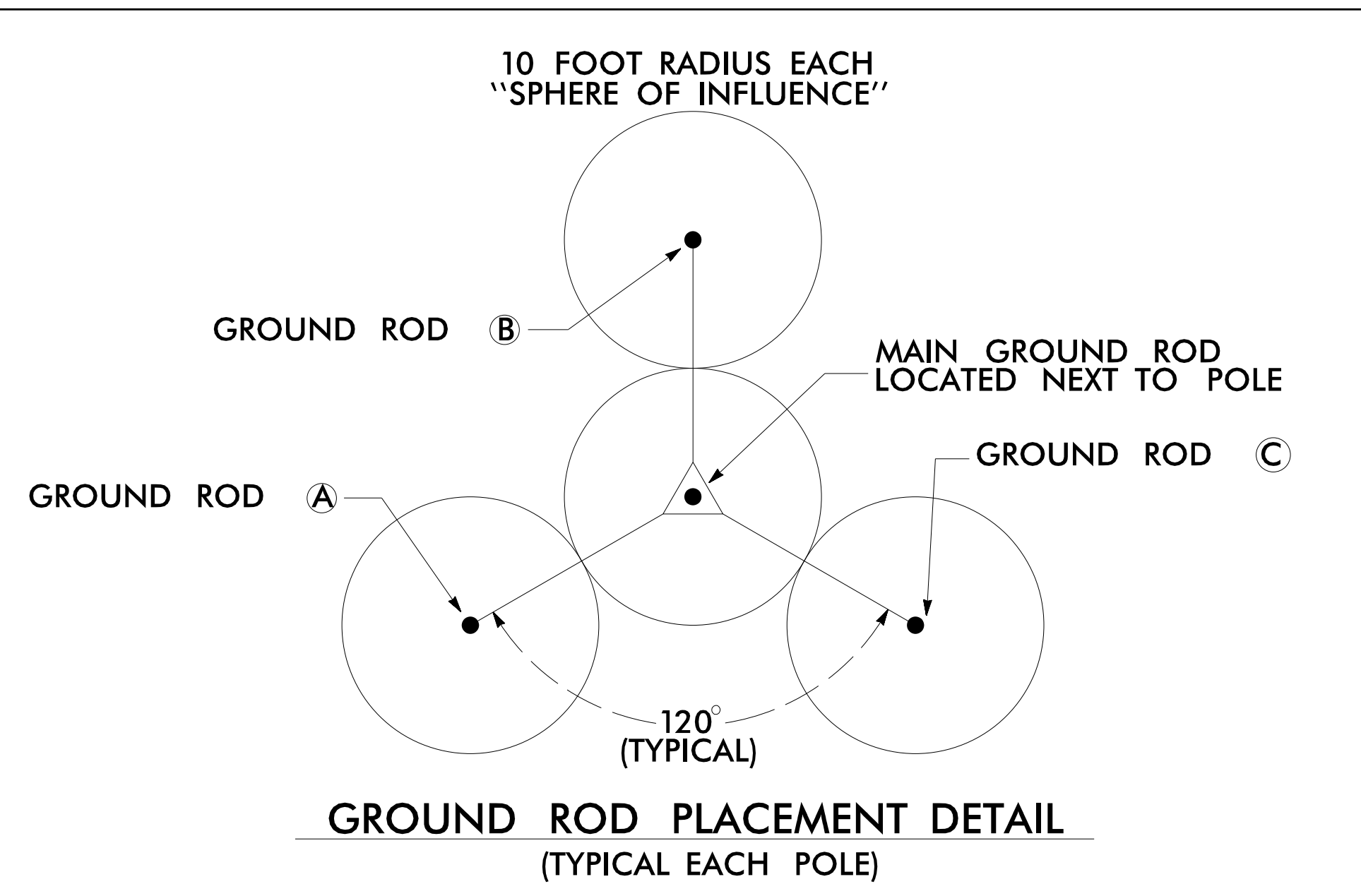
**NOTES**

1. INSTALL A MINIMUM OF THREE (3) GROUNDING ELECTRODES SPACED A MINIMUM OF 10 FEET APART. ENSURE THAT EXISTING UNDERGROUND FACILITIES ARE NOT DAMAGED DURING INSTALLATION.
2. TEST GROUNDING SYSTEM USING AN APPROVED METHOD. SYSTEM SHOULD MEASURE TWENTY (20) OHMS OR LESS. ADDITIONAL GROUNDING ELECTRODES SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER TO MEET THIS REQUIREMENT.
3. USE IRREVERSIBLE COMPRESSION COUPLER FOR ALL CONNECTIONS TO GROUND RODS.
4. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12 INCHES.
5. REMOVE BONDING JUMPER IN EQUIPMENT CABINET IF INSTALLED BETWEEN AC NEUTRAL AND EQUIPMENT GROUND.
6. BOND ALL RIGID GALVANIZED STEEL CONDUITS ENTERING THE CABINET TO "EQUIPMENT GROUND".
7. INSTALL CONDUIT BETWEEN DISCONNECT AND CABINET.
8. ENSURE EQUIPMENT GROUND IS ELECTRICALLY BONDED TO CABINET.



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		NEW ELECTRICAL SERVICE AND GROUNDING DETAIL				
		DIVISION 06	CUMBERLAND CO.		FAYETTEVILLE	
		PLAN DATE: APRIL 2019	REVIEWED BY: D. HARRIS		PREPARED BY: B. KEFFER	REVIEWED BY: L. OVERN
SCALE: NTS						



- NOTES**
1. BOND 0.5 INCH DIAMETER, 28 STRAND (MINIMUM) CLASS II COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN IRREVERSIBLE MECHANICAL CRIMP METHOD.
  2. ALL CONNECTIONS TO GROUND RODS SHOULD BE MADE WITH AN IRREVERSIBLE MECHANICAL CRIMP METHOD.
  3. BOND #4 AWG SOLID BARE COPPER WIRE TO REBAR CAGE AND THE MAIN GROUND ROD BY AN IRREVERSIBLE MECHANICAL CRIMP.
  4. ENSURE CAMERA HOUSING, CAMERA, AND PAN -TILT UNIT ARE BONDED TO POLE.
  5. THE CONTRACTOR MAY, UPON APPROVAL OF THE ENGINEER, INSTALL A 30-FOOT SECTIONAL GROUND ROD WHEN CONDITIONS WILL NOT ALLOW FOR THE INSTALLATION OF THE 3 - RADIAL GROUND RODS.
  6. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12 INCHES.

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Prepared for the Offices of:  
North Carolina State Board of Transportation  
750 N. Greenfield Plaza, Garner, NC 27529

**CCTV CAMERA INSTALLATION FOR METAL POLE TYPICAL DETAIL**

DIVISION 06	CUMBERLAND CO.	FAYETTEVILLE
PLAN DATE: APRIL 2019	REVIEWED BY: D. HARRIS	
PREPARED BY: B. KEFFER	REVIEWED BY: L. OVERN	
SCALE: NTS	REVISIONS:	INIT. DATE

SEAL

Professional Engineer Seal for L. Overn, License No. 045933, State of North Carolina.

5/9/2019