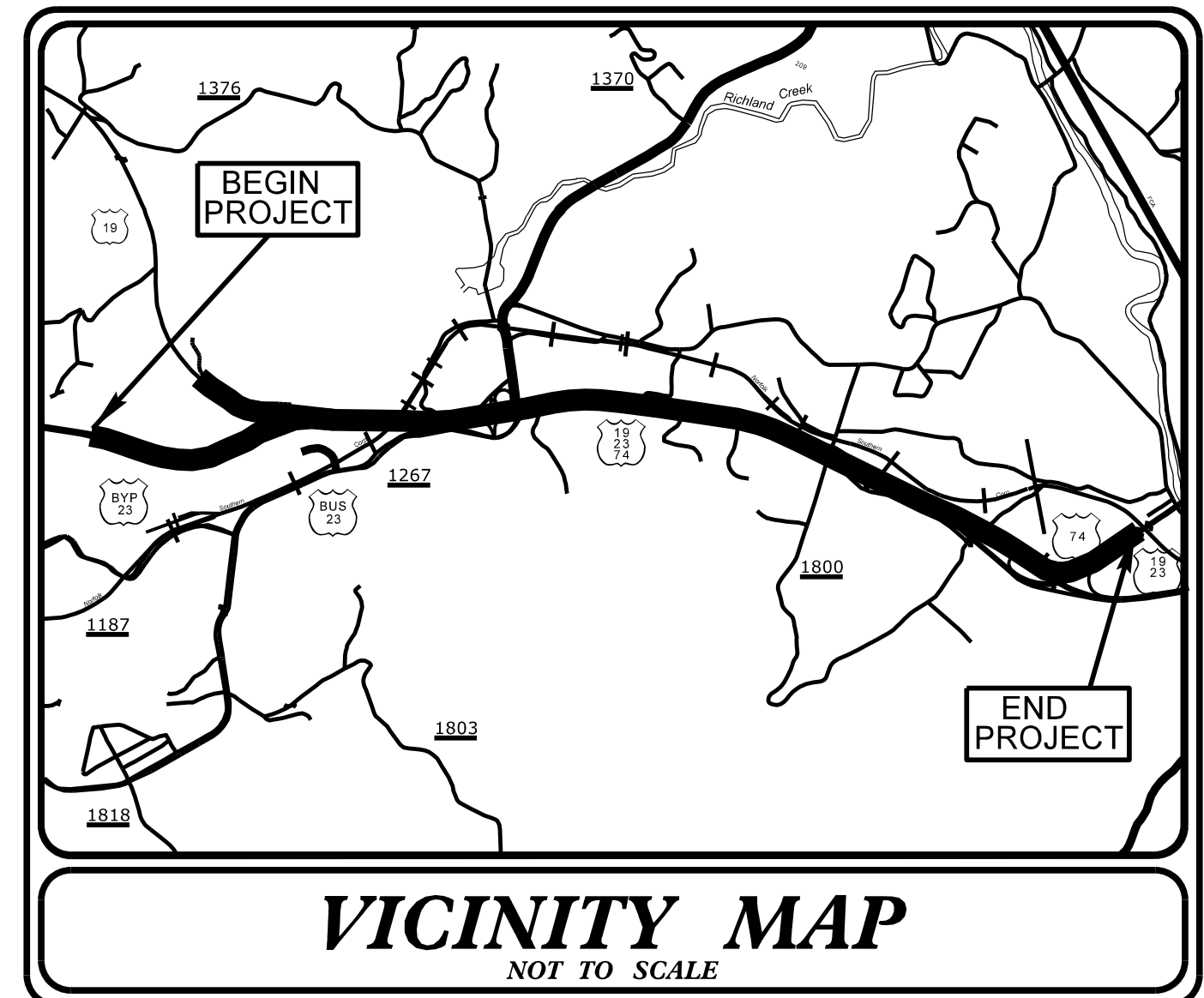


CONTRACT: C204684 TIP Project: B-3186/B-5898

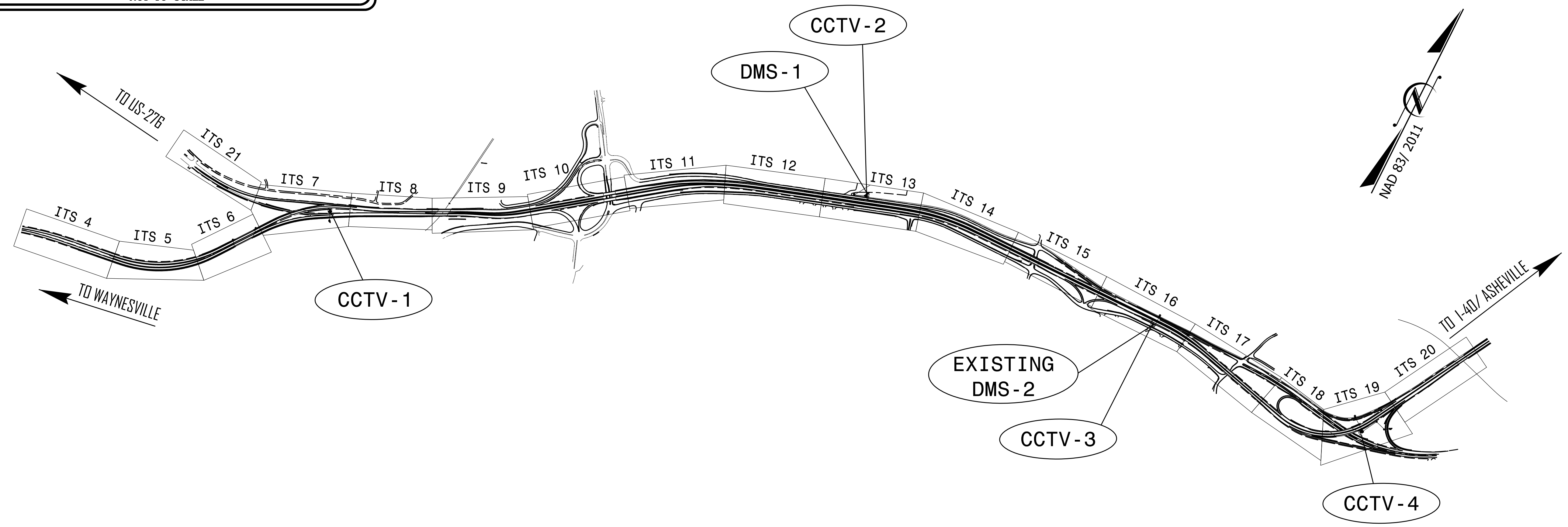
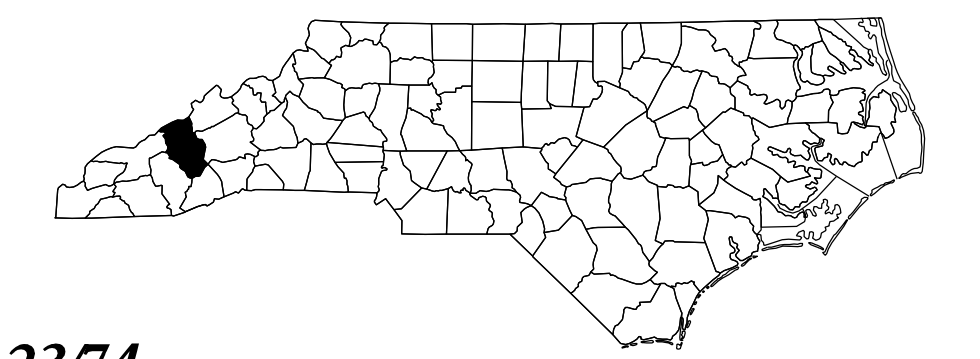


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HAYWOOD COUNTY

LOCATION: B-3186, BRIDGES 430155 AND 430158 OVER RICHLANDS CREEK ON US 23/74
B-5898, BRIDGE 430168 OVER US 19/23 ON US 23/74

TYPE OF WORK: ITS - COMMUNICATIONS CABLE AND CONDUIT ROUTING SYSTEM, ONE (1) DYNAMIC MESSAGE SIGN AND FOUR (4) CCTV'S



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Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.

Sheet #	Description
ITS 1	Project Titlesheet
ITS 2	Construction Notes
ITS 3	General Notes
ITS 4 - 21	ITS Communication Cable and Conduit Routing Plans
ITS 22	ITS Devices and Communications Block Diagram
ITS 23 - 25	Fiber Optic Splice Details
ITS 26 - 27	Elevation Views
ITS 28 - 29	Typical Details

**NCDOT TRANSPORTATION SYSTEMS
MANAGEMENT AND OPERATIONS UNIT**
Contacts:
Jennifer Portanova, PE - State Traffic Systems Operations Engineer
Steven Buchanan - Division 14 Traffic Engineer

AECOM
Contact:
Gregory Cols, PE - Project Engineer

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

750 N. Greenfield Parkway, Garner, NC 27529

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- 1 INSTALL 3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
- 2 INSTALL 4-WIRE COPPER FEEDER CONDUCTORS
- 3 INSTALL 3-WIRE COPPER FEEDER CONDUCTORS
- 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 NEW 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

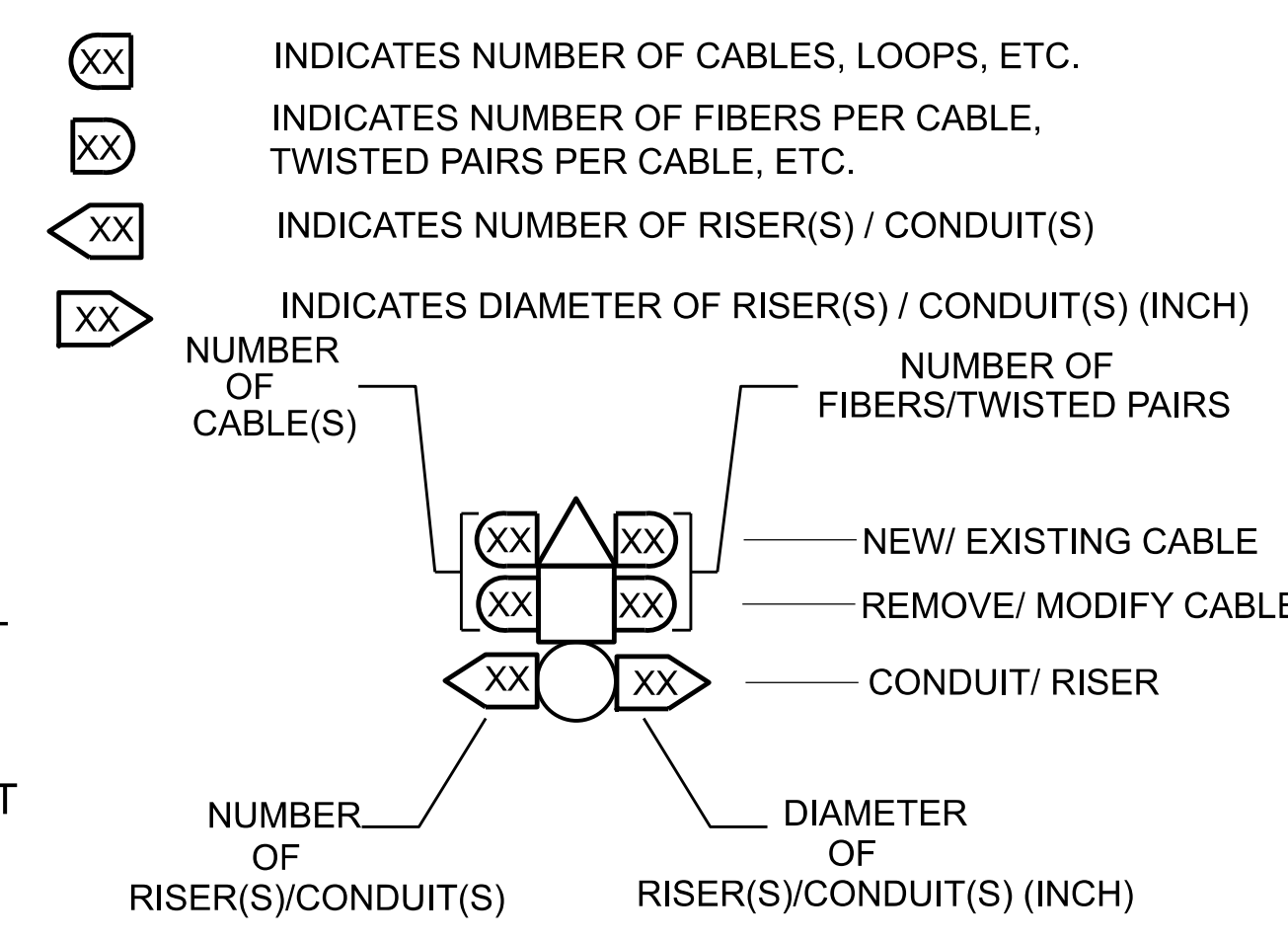
- 34 INSTALL CABINET FOUNDATION
- 35 INSTALL CCTV CAMERA POLE MOUNTED CABINET
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40A INSTALL OVERSIZED JUNCTION BOX
- 40B INSTALL SPECIAL OVERSIZED JUNCTION 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 20 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
DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS
- 61 BOND RISER AND MESSENGER CABLE TO POLE GROUND
- 62 BOND RISER TO POLE GROUND
- 63 BOND MESSENGER CABLE 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

- 68 INSTALL PEDESTAL TYPE SIGN STRUCTURE FOUNDATION AND DMS ASSEMBLY
- 69 INSTALL EQUIPMENT CABINET DISCONNECT ON CCTV POLE OR DMS STRUCTURE
- 70 INSTALL CCTV CAMERA ON EXTENSION POLE ATTACHED TO DMS
- 71 INTERCEPT AND REROUTE EXISTING CONDUITS
- 72 INSTALL 2-HOUR UPS

NEW		EXISTING	
	OVERHEAD FIBER OPTIC CABLE		N/A
	CONDUIT (TRENCH, PLOW, OR BRIDGE MOUNT)		N/A
	DIRECTIONAL DRILLED CONDUIT		N/A
	OVERSIZED JUNCTION BOX		N/A
	WOOD POLE		N/A
	AERIAL SPLICE ENCLOSURE		N/A
	UNDERGROUND SPLICE ENCLOSURE		N/A
	METAL POLE		N/A
	CCTV ASSEMBLY		N/A
	STANDARD GUY ASSEMBLY		N/A
	SIDEWALK GUY ASSEMBLY		N/A
	CABLE STORAGE RACKS (SNOW SHOES)		N/A
	SIGNAL/EQUIPMENT CABINET		N/A
	SPLICE CABINET		N/A
	DMS SIGN ASSEMBLY		N/A
	HIGHWAY ADVISORY RADIO		N/A
	ELECTRICAL SERVICE		N/A
	SIGNAL INVENTORY NUMBER		N/A
	CCTV CAMERA /DMS NUMBER		N/A

ATTACHMENT POINT:
 DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT
 REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT
"SS" REFERENCE LOCATION
 FS = FRONT SIDE OF POLE
 BS = BACK SIDE OF POLE

CONSTRUCTION NOTE SYMBOLOGY KEY



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CONSTRUCTION NOTES			
Division 14 Haywood County Waynesville		PLAN DATE: August 2023 REVIEWED BY: R. Garrett	
PREPARED BY: M. Tindal		REVIEWED BY:	
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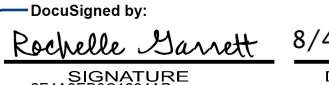
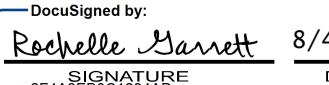
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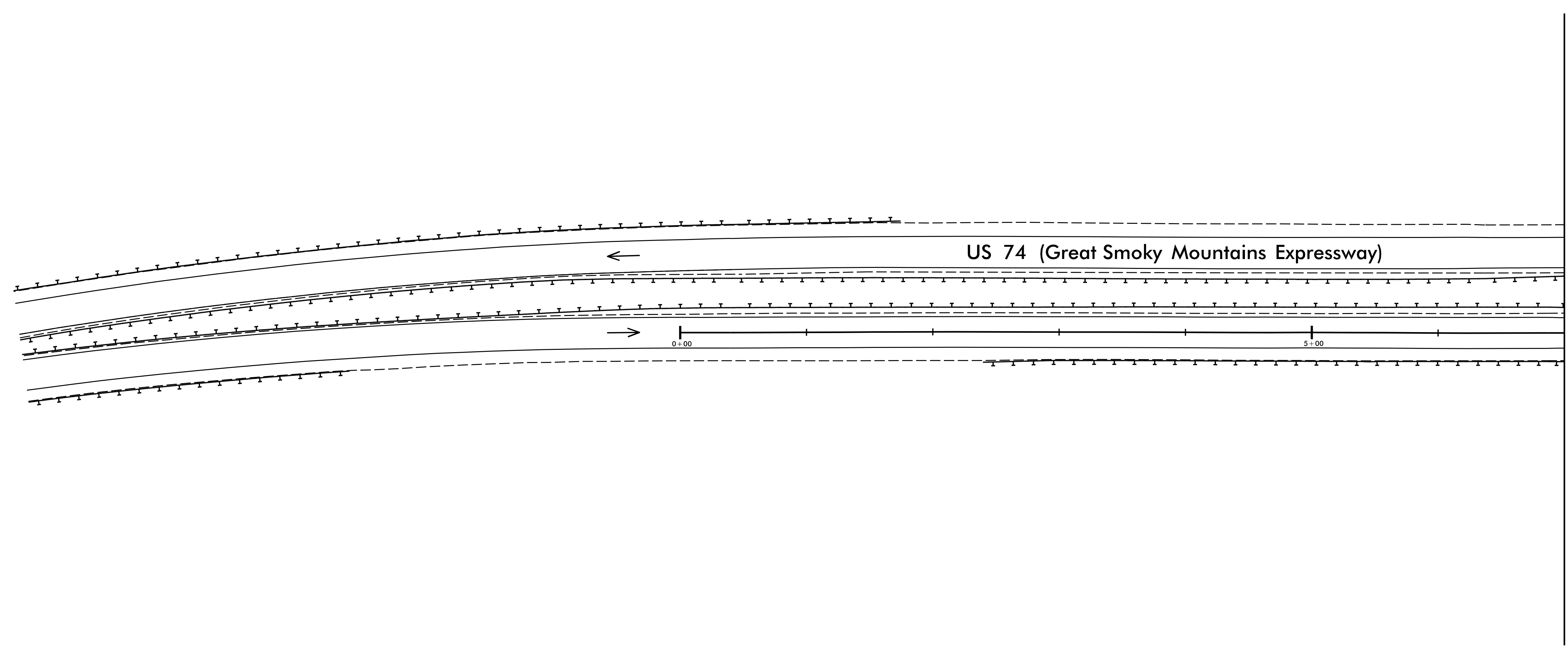
1. CONTRACTOR SHALL MEET ALL REQUIREMENTS CONTAINED IN THE NCDOT 2018 STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES AND THE B-3186B-5898 INTELLIGENT TRANSPORTATION SYSTEMS PROJECT SPECIAL PROVISIONS FOR MATERIALS, INSTALLATION, AND OTHER RELATED ITS AND NETWORKING DETAILS.
2. INSTALL CONDUIT A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO A ROADWAY.
3. MAINTAIN A MINIMUM TRENCH DEPTH OF 24 INCHES (OR 12 INCHES IN AREAS BLOCKED BY ROCK OR IMPENETRABLE OBSTRUCTIONS) BELOW FINISHED GRADE OR 6 INCHES BELOW ROADWAY SUB-BASE, WHICHEVER IS DEEPER.
4. IF DITCHES ARE PRESENT, INSTALL CONDUIT A MINIMUM OF FOUR (4) FEET FROM THE BOTTOM OF THE DITCH LINE WHEN TRENCHING.
5. THE FINAL LOCATION OF THE NCDOT ITS DEVICES MUST BE APPROVED BY THE NCDOT REGIONAL ITS ENGINEER PRIOR TO THE START OF INSTALLATION.
6. INSTALL EQUIPMENT CABINETS ON NEW ITS POLES.
7. CCTV CAMERAS ARE TO BE MOUNTED APPROXIMATELY 45 FEET ABOVE FINISHED GRADE AND SUCH THAT A MINIMUM OF 5 FEET OF CLEARANCE IS MAINTAINED BETWEEN THE CAMERA AND TOP OF THE POLE.
8. FINAL POWER LOCATION TO BE DETERMINED BY DUKE ENERGY. WIRE SIZE PER NEC.
9. INSTALL NEW GROUNDING SYSTEM FOR CCTV's, AND DMS's AS SHOWN ON SHEETS ITS 28 THROUGH ITS 29, AND AS DESCRIBED IN THE ITS SPECIAL PROVISIONS.
10. CONTACT THE NCDOT REGIONAL ITS ENGINEER TO COORDINATE WITH DUKE ENERGY TO OBTAIN POWER FEED TO NEW ELECTRICAL SERVICES.
11. CONTRACTOR SHALL MEET NCDOT 2018 STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTION 1091 ELECTRICAL MATERIALS FOR ALL CONDUIT, WIRE AND CABLE, AND ELECTRICAL JUNCTION BOX MATERIALS.
12. SEAL CONDUIT ENDS WITH MOLDABLE DUCT SEALS AT ALL JUNCTION BOX/CABINET ENTRANCES.
13. REMOVAL OF TREES AND VEGETATION FOR A CLEAR LINE OF SIGHT IS CONSIDERED INCIDENTAL TO THE INSTALLATION OF CCTV OR DMS.

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GENERAL NOTES			
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Waynesville			
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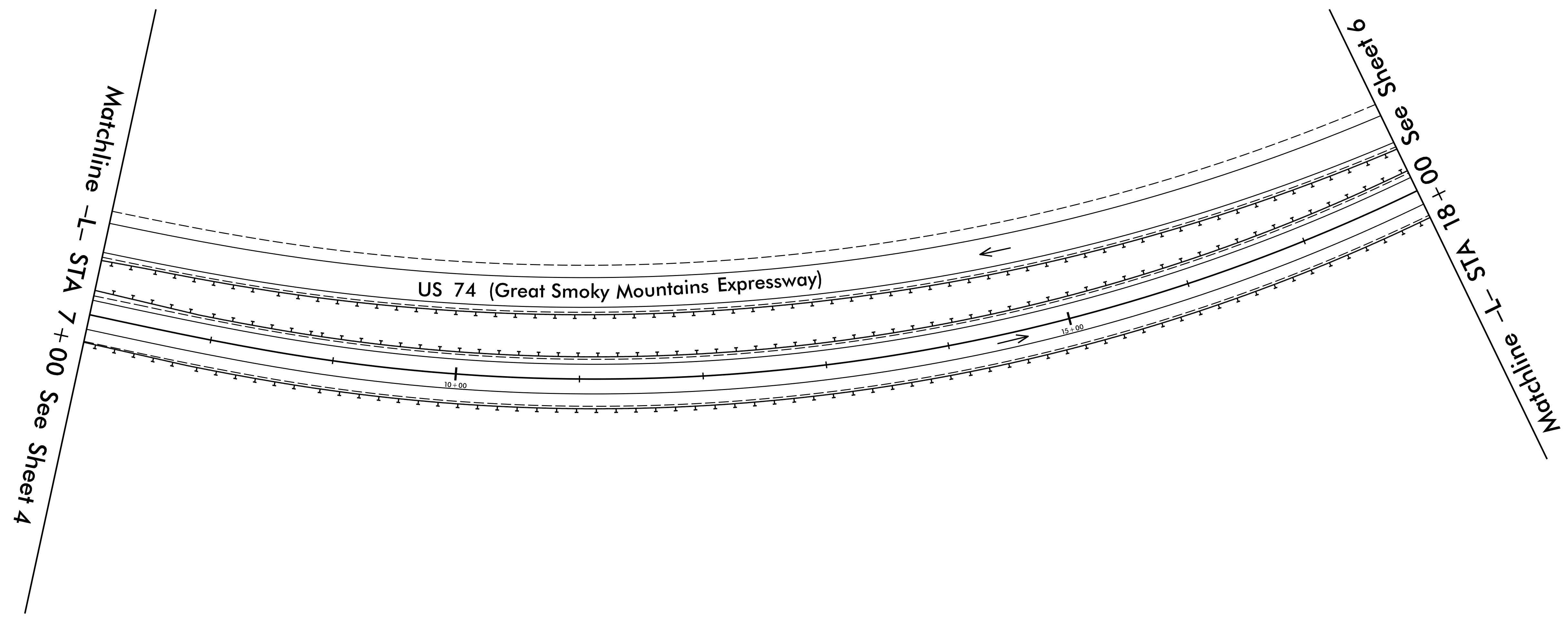
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ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County Waynesville
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
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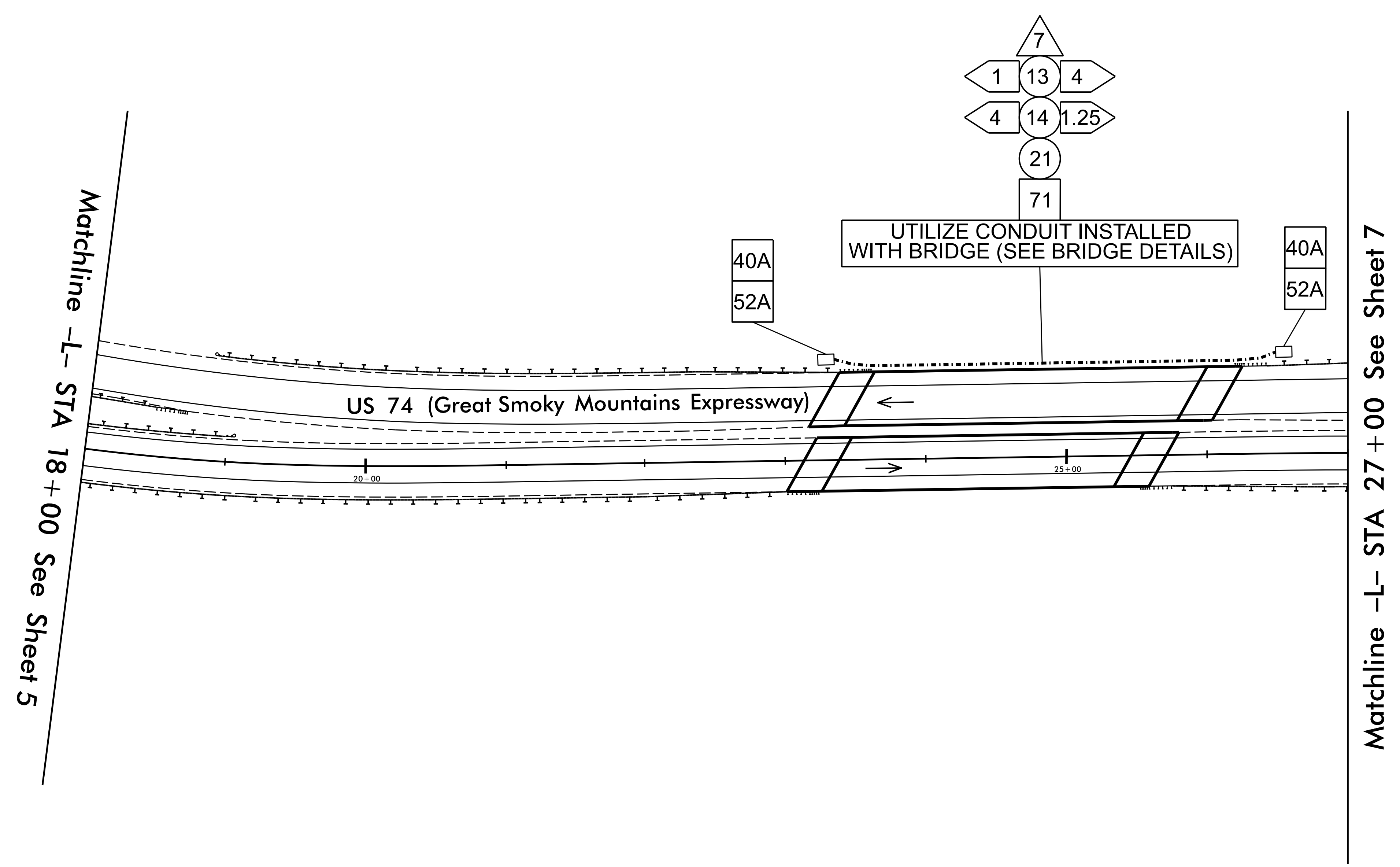
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Matchline -L- STA 18+00 See Sheet 5

Matchline -L- STA 27+00 See Sheet 7

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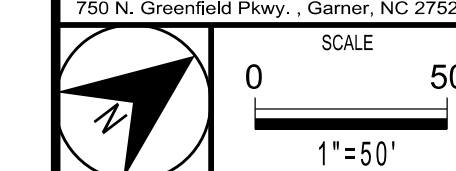
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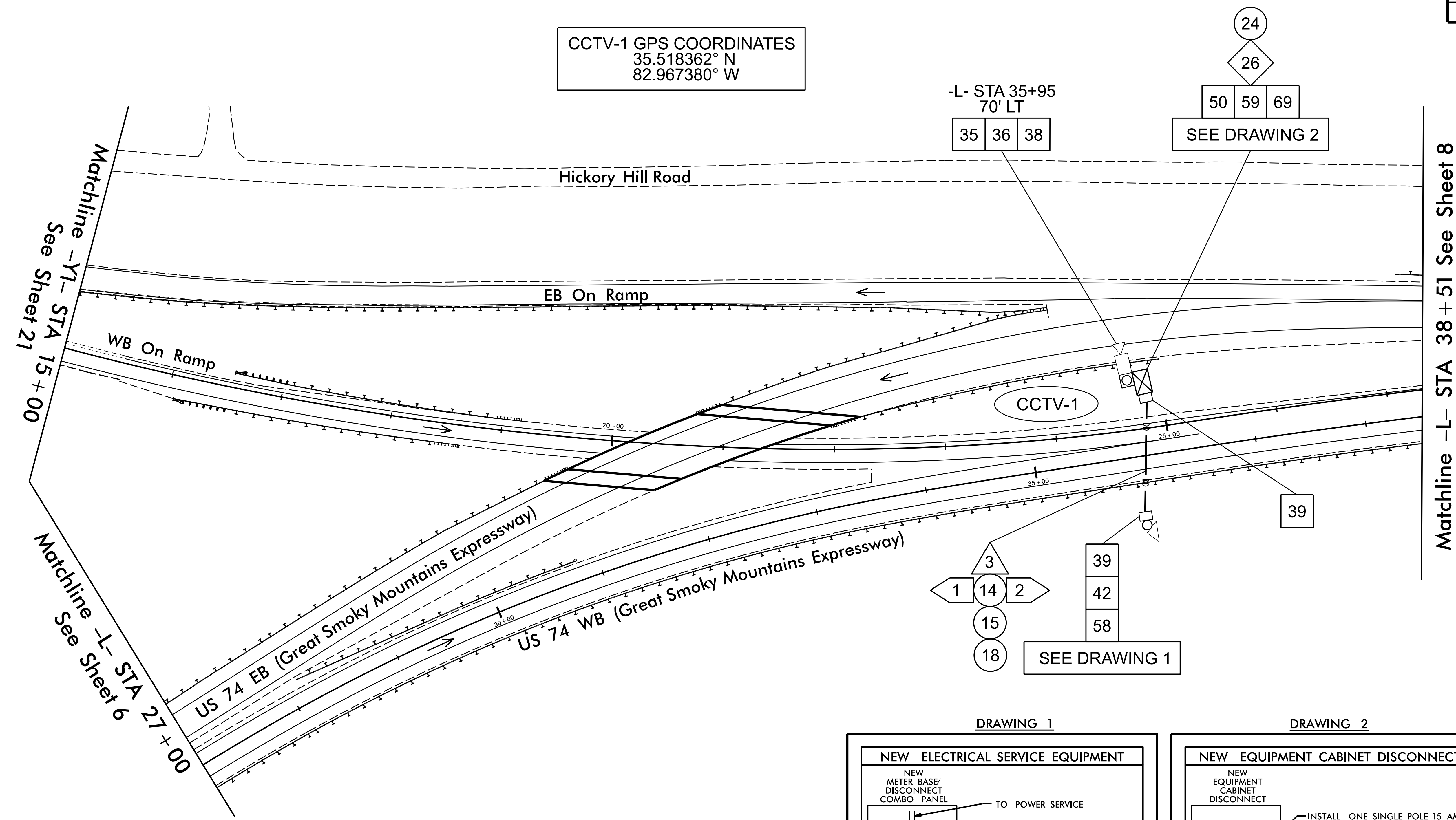
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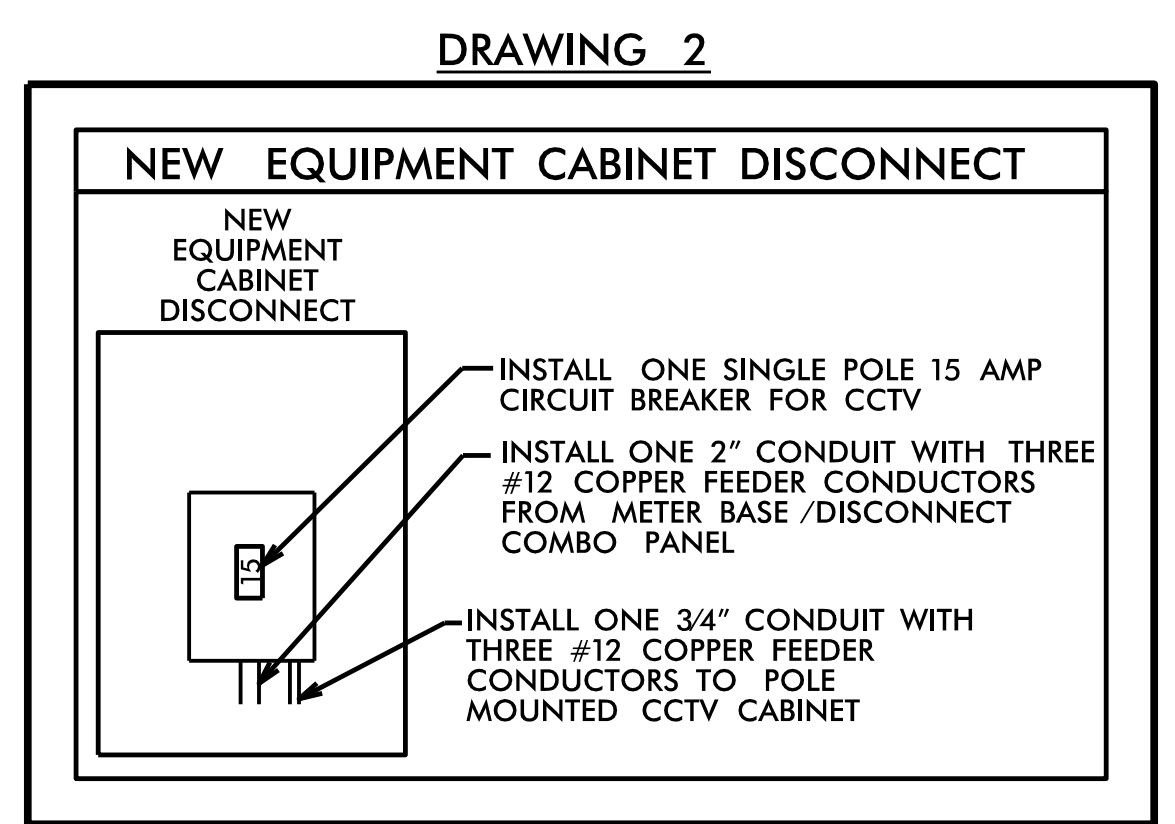
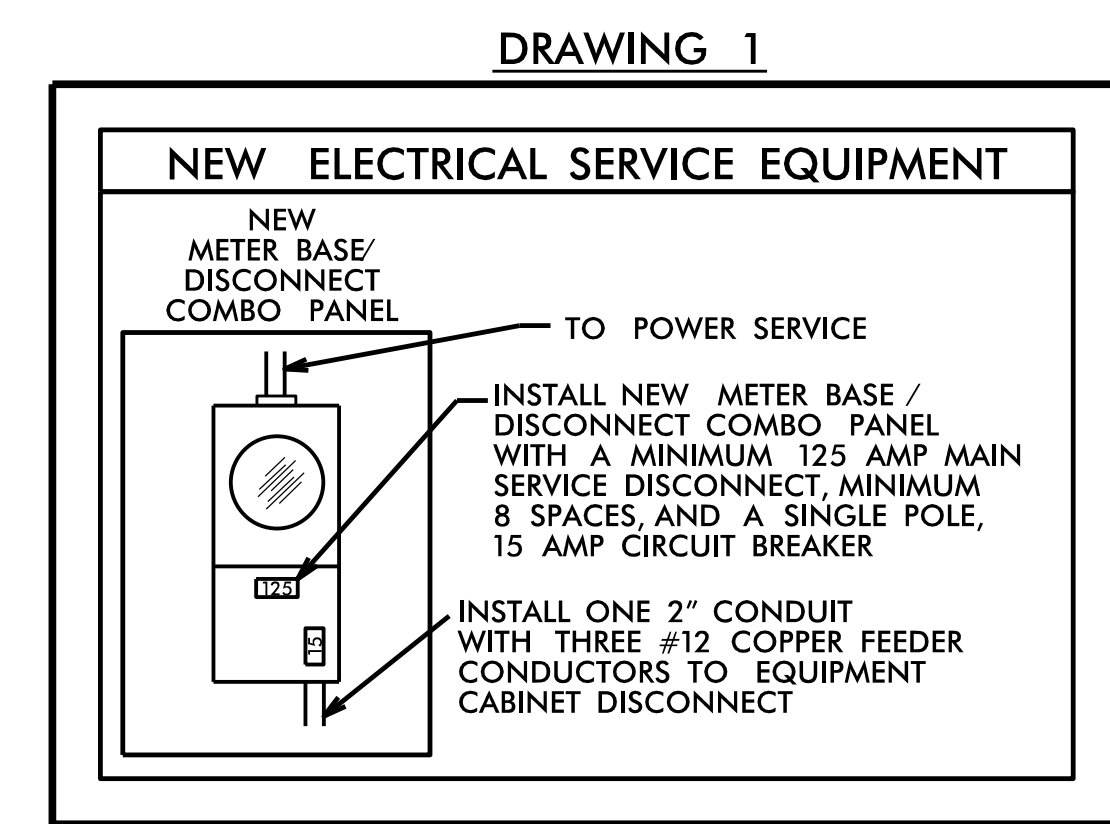
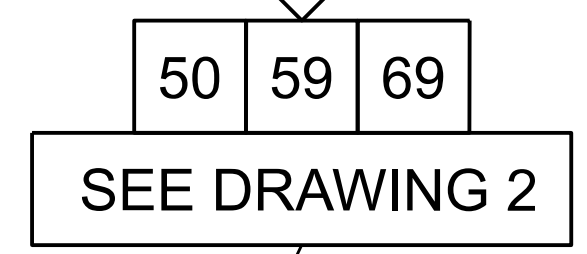
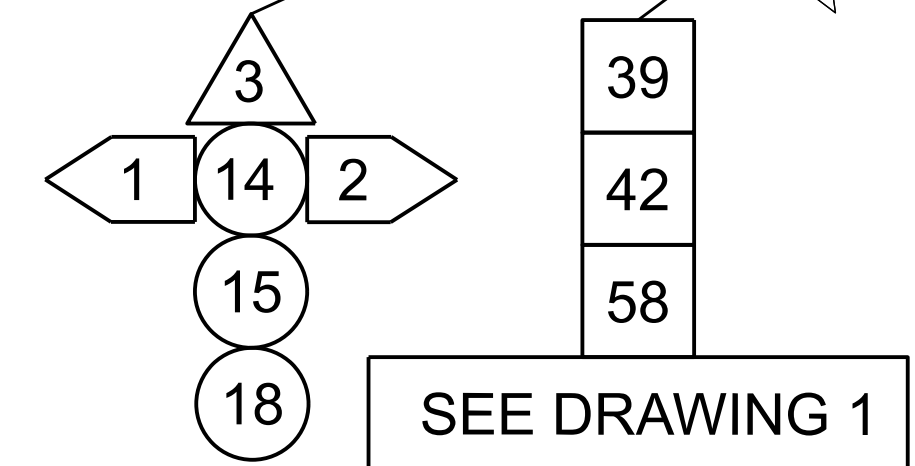
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CCTV-1 GPS COORDINATES
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82.967380° W

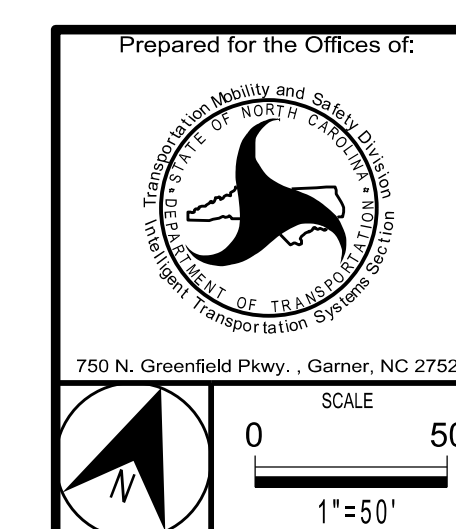


NOTE:
Cellular Modem Antenna Mounting Bracket:
Fabricate, furnish and install an L-Shaped mounting bracket to be secured to the outside of the cabinet to hold the cellular modem antenna. Design the L-Shape bracket out of 5052-H32 aluminum that is 0.125" thick by 3" wide by 6" long. Place a 90-degree bend along the 6" axis at it's length. Provide 2" mounting holes on one side of the L-Bend and provide 1/4" stainless-steel bolts, washers and nuts, for mounting the L-Bracket to the outside of the cabinet. On the other half of the bracket provide a 5/8" hole centered in the plate to accept the cellular antenna coaxial cable.



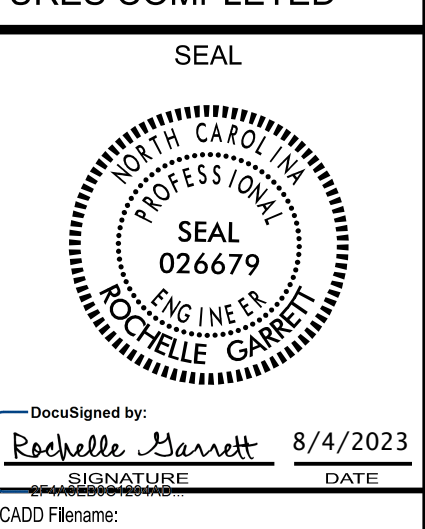
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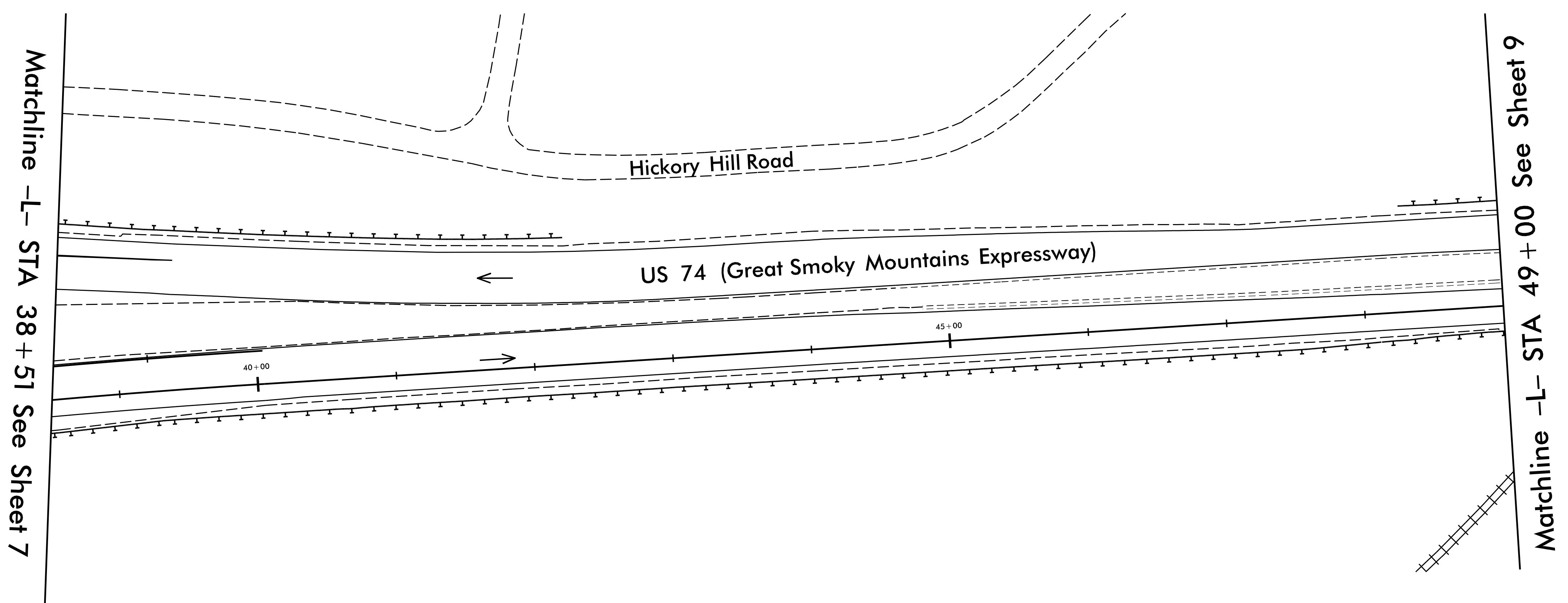


ITS Communication Cable and Conduit Routing Plans

Division 14	Haywood County	Waynesville
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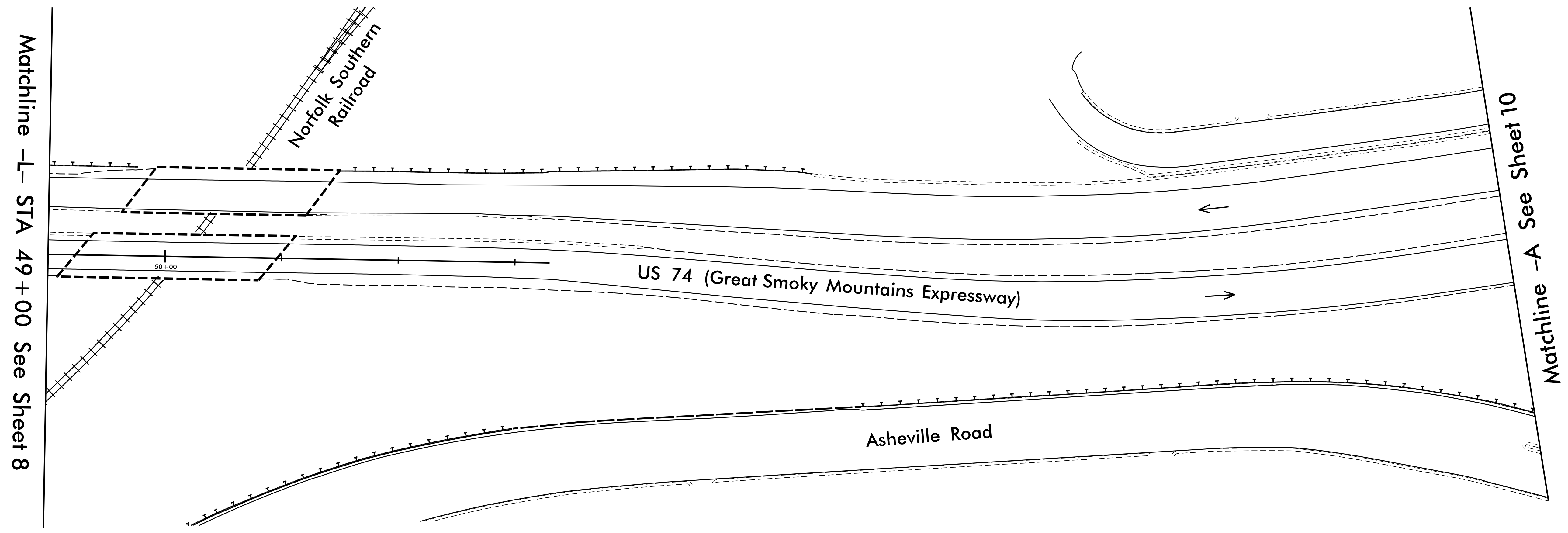
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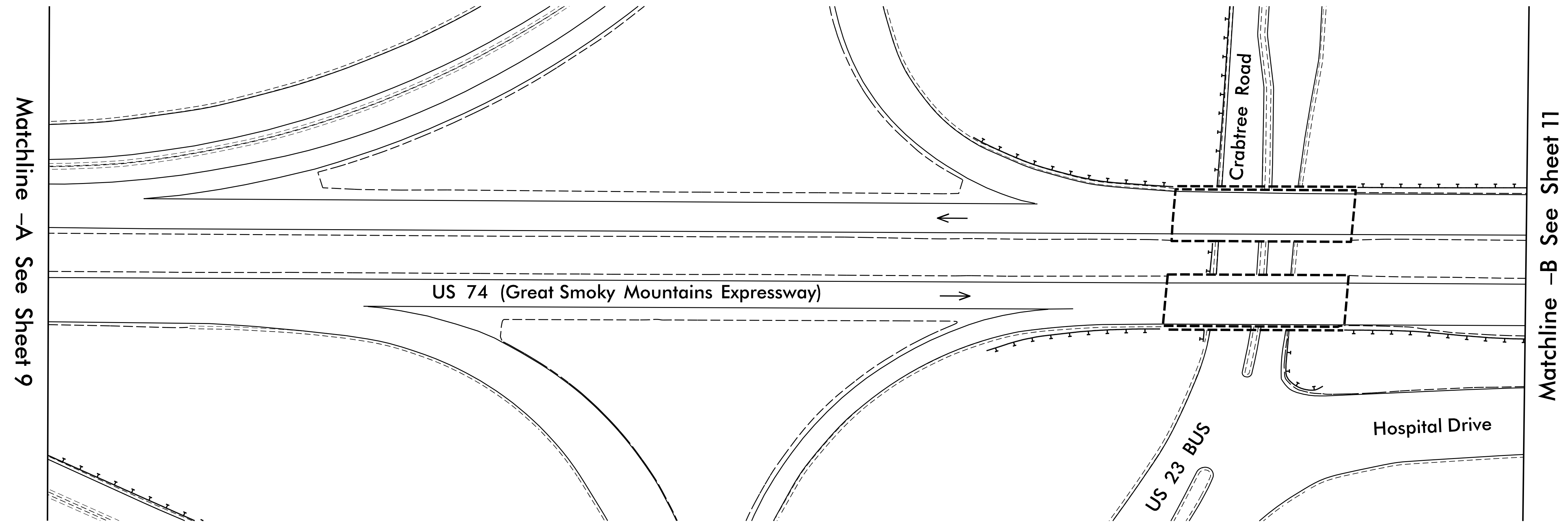
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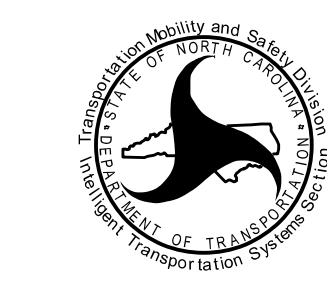
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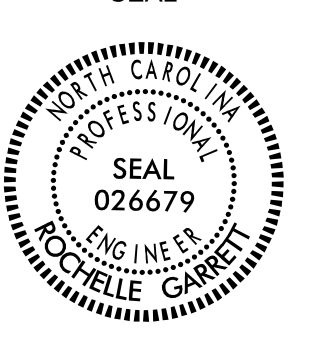
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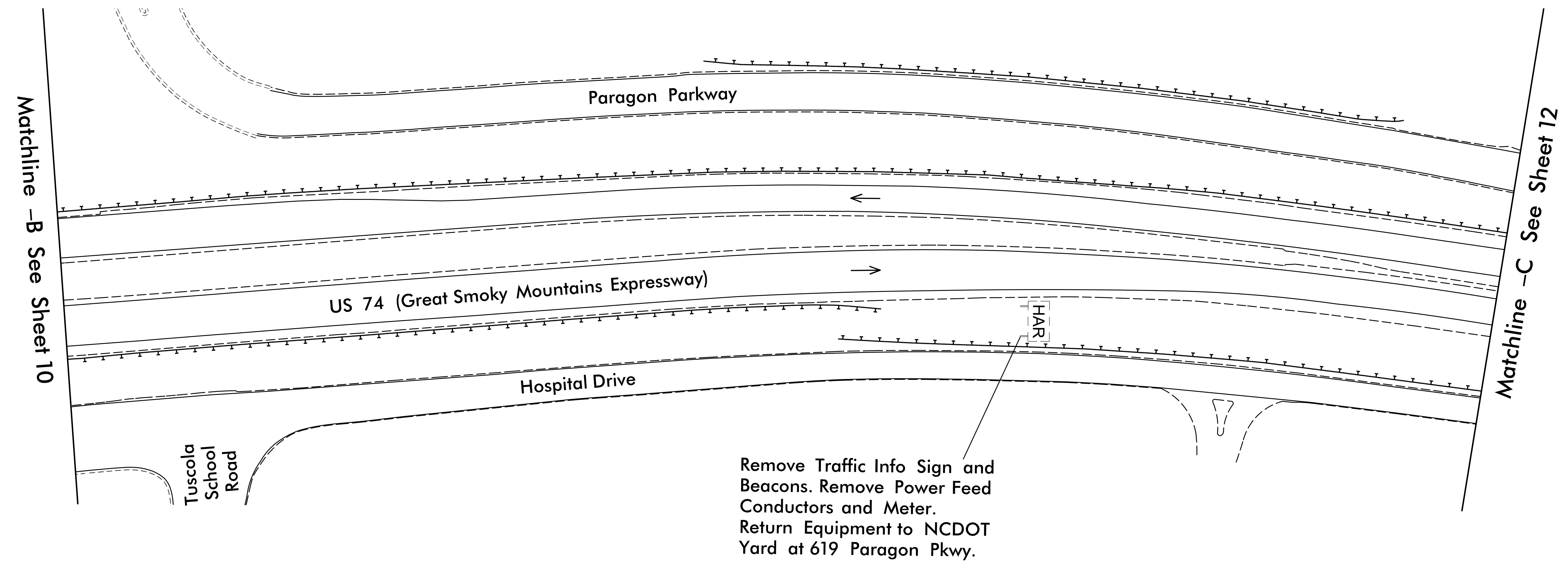
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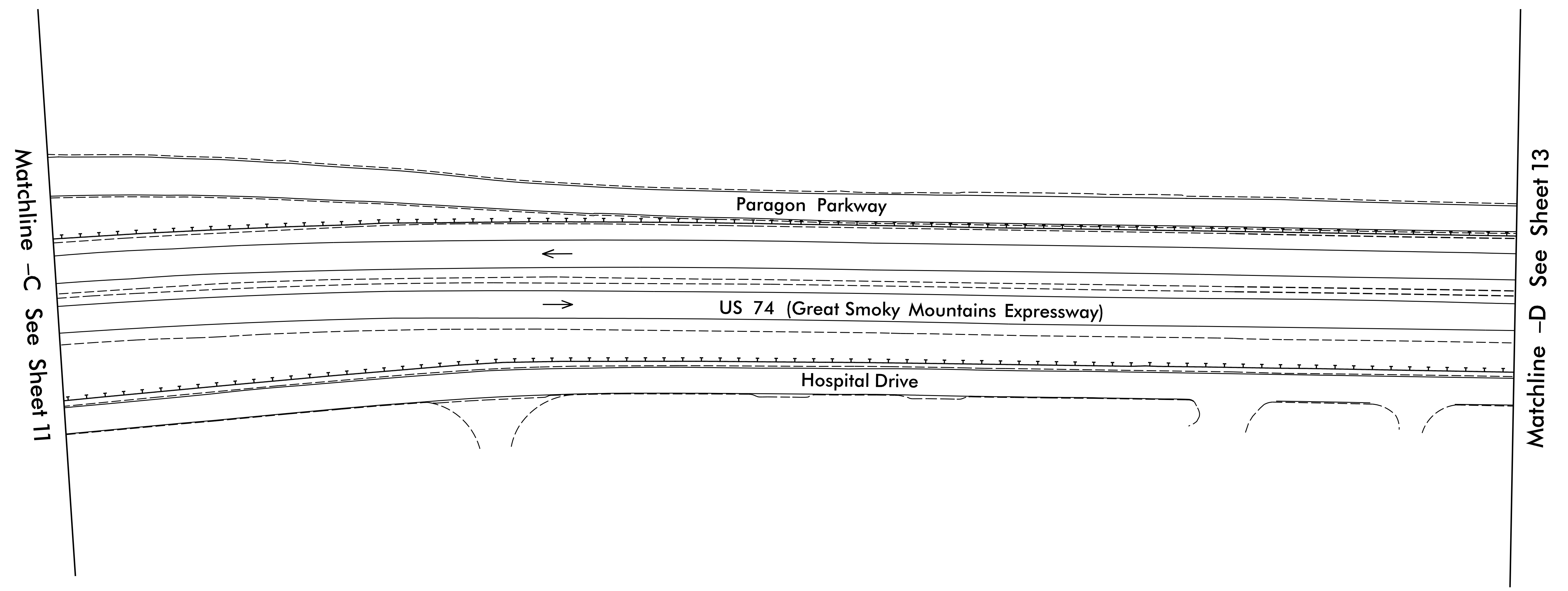
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5438 Wade Park Boulevard
Suite 200 Raleigh, NC 27607
Phone: 919-461-1100

Prepared for the Offices of:

750 N. Greenfield Pkwy., Garner, NC 27529

SCALE
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1"=50'

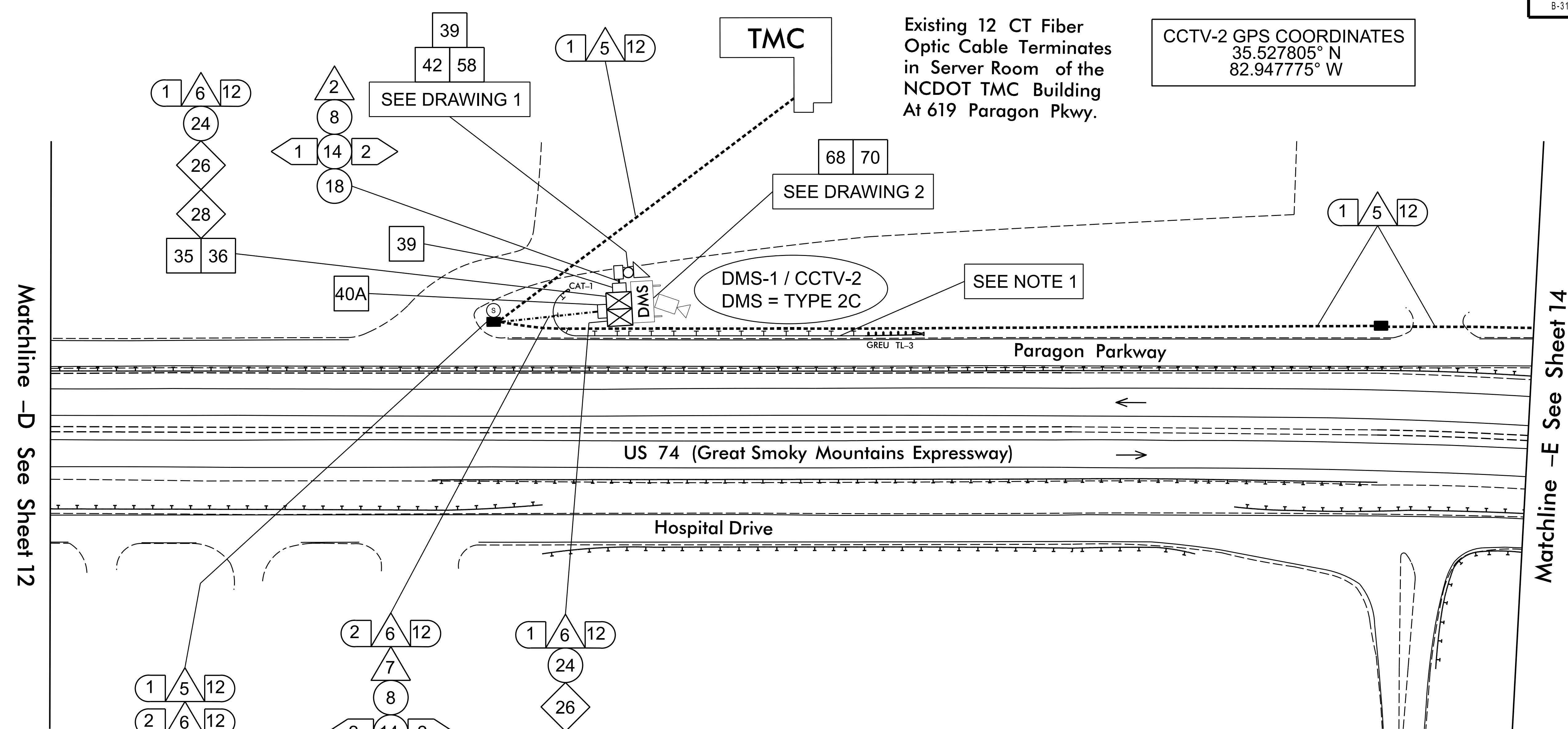
ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County Waynesville
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL

DocuSigned by:
Rochelle Garrett 8/4/2023

SIGNATURE DATE

CADD Filename:



Existing 12 CT Fiber Optic Cable Terminates in Server Room of the NCDOT TMC Building At 619 Paragon Pkwy.

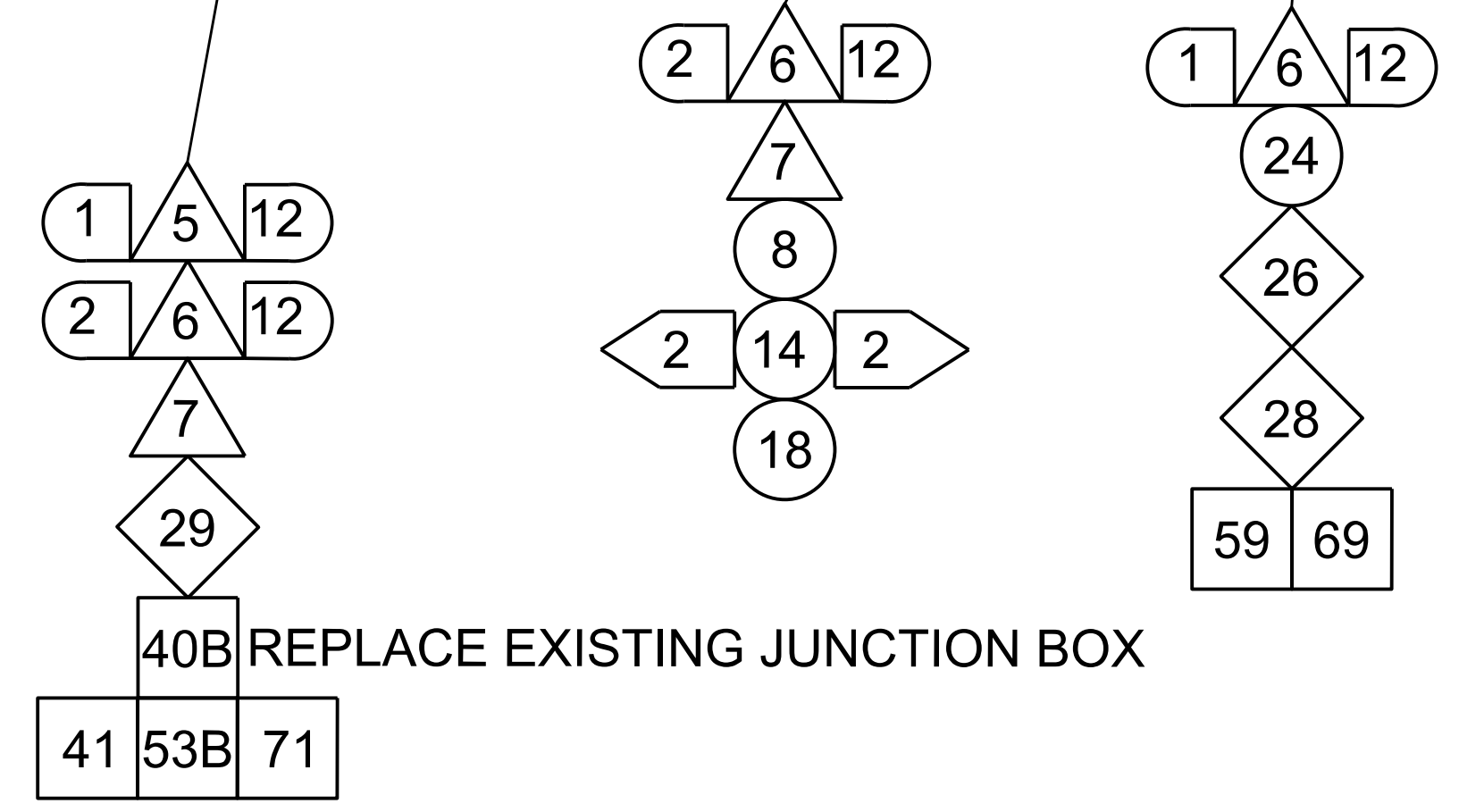
CCTV-2 GPS COORDINATES
35.527805° N
82.947775° W

DMS-1 / CCTV-2
DMS = TYPE 2C

SEE NOTE 1

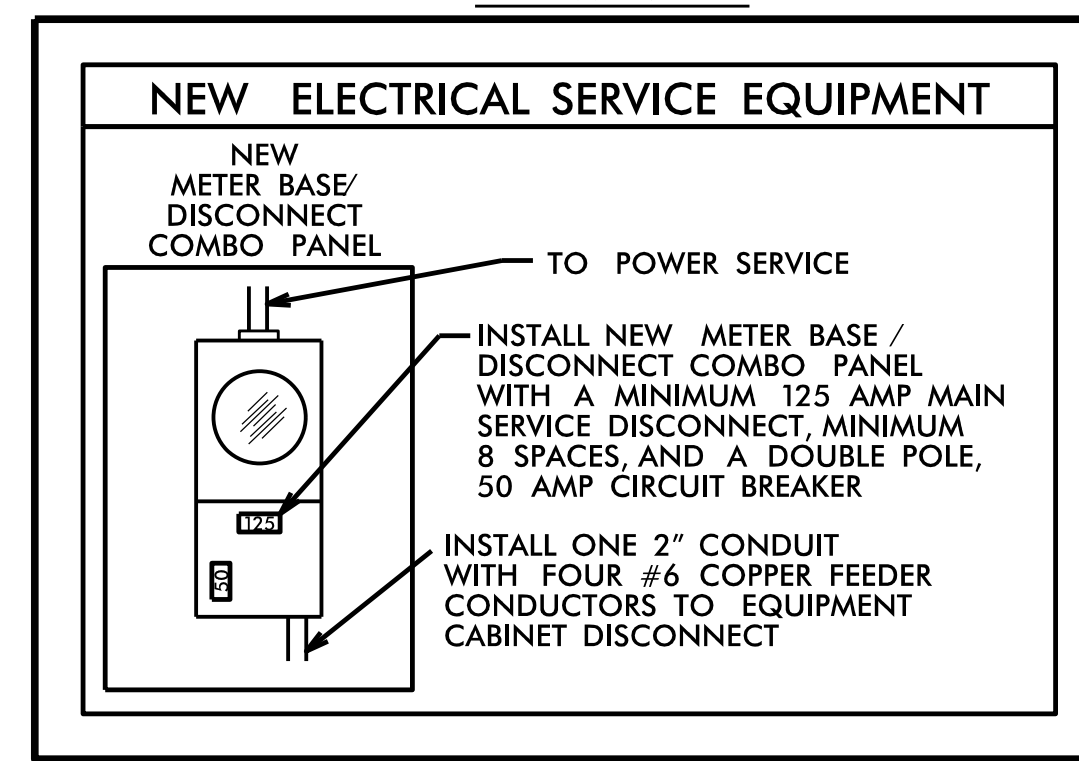
Matchline -D See Sheet 12

Matchline -E See Sheet 14

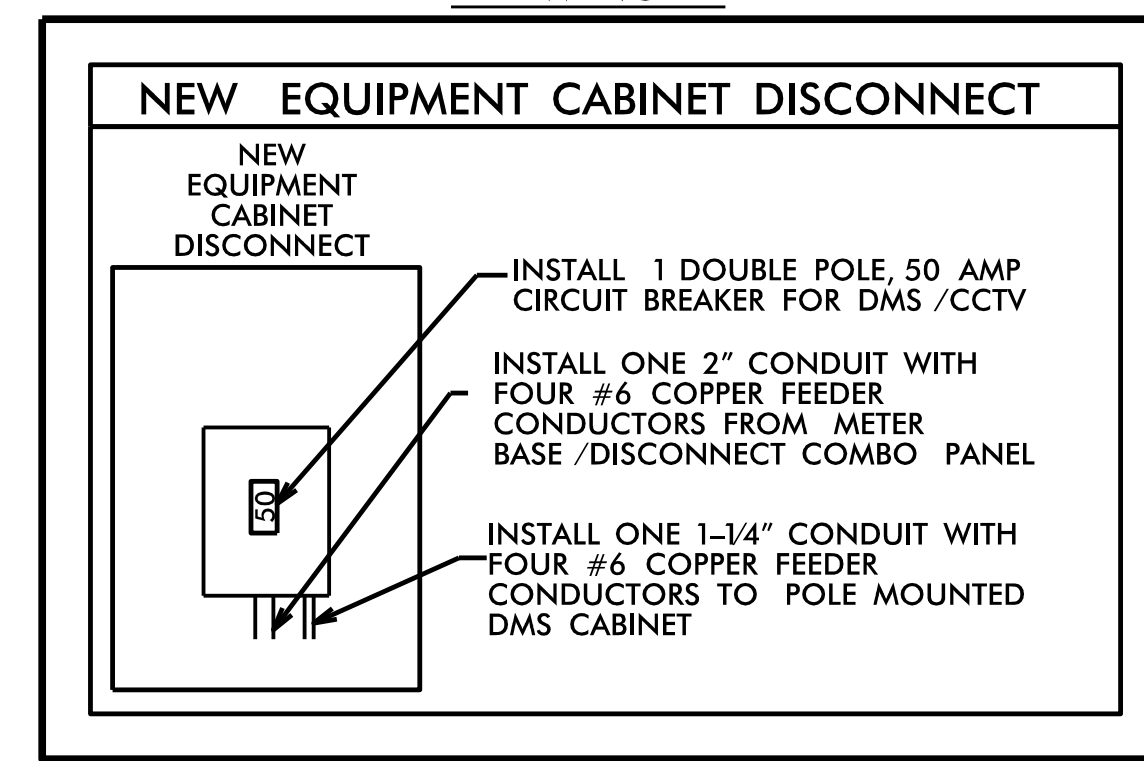


40B REPLACE EXISTING JUNCTION BOX

DRAWING 1



DRAWING 2



NOTES:

1. PROPOSED 294 FEET OF GUARDRAIL.

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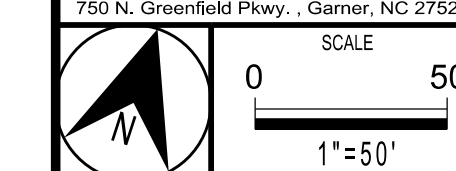
Prepared for the Offices of:

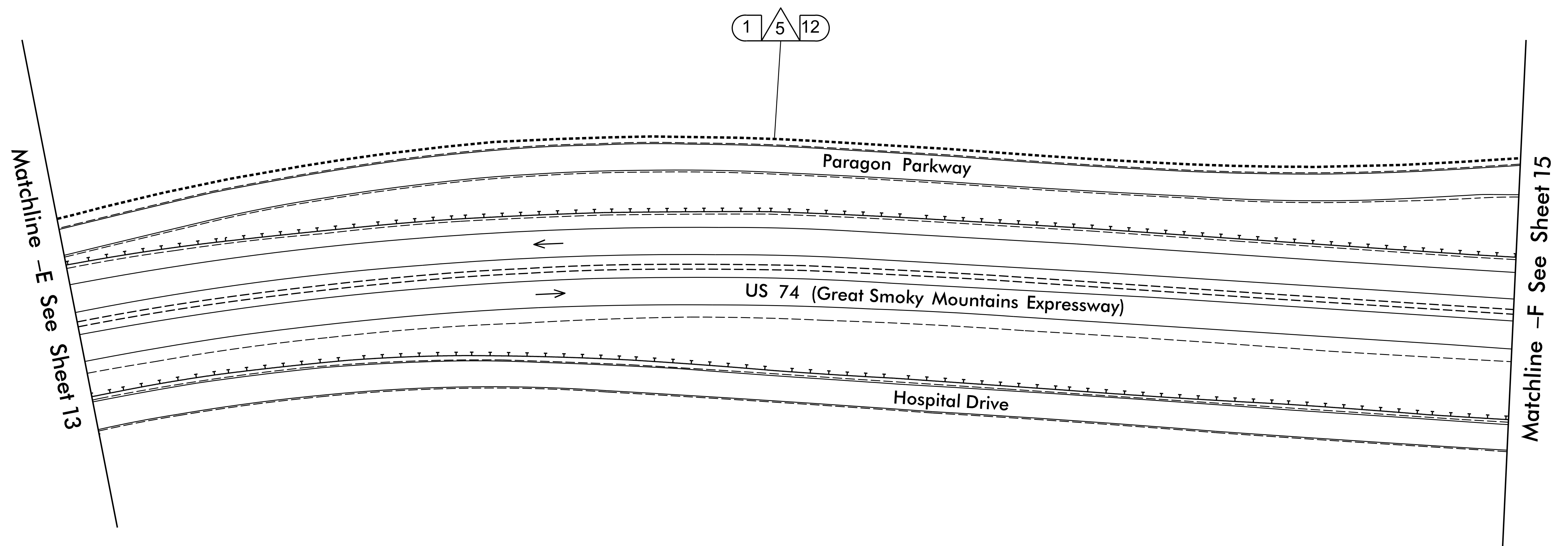
750 N. Greenfield Pkwy., Garner, NC 27529

ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County
Waynesville	
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL

DocuSigned by:
Rochelle Garrett
8/4/2023





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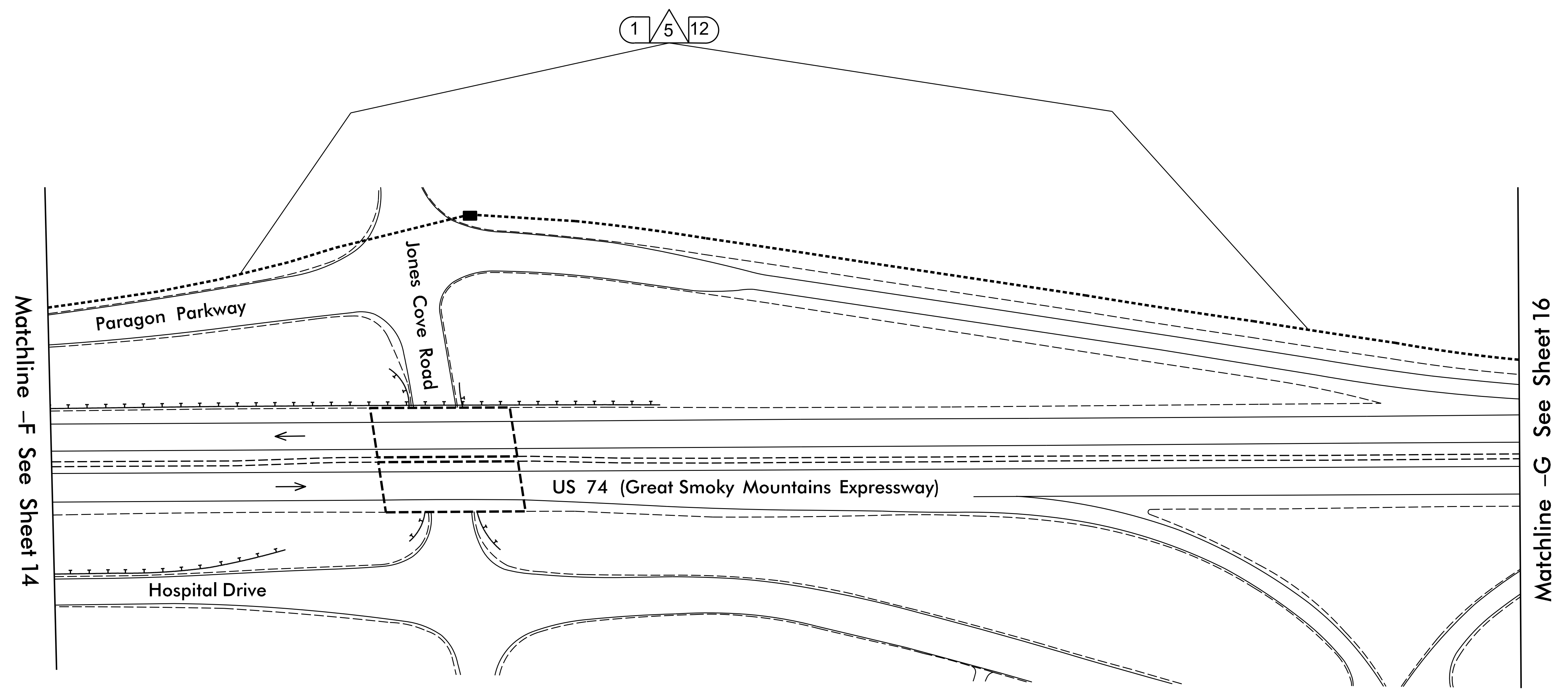
ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County Waynesville
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE

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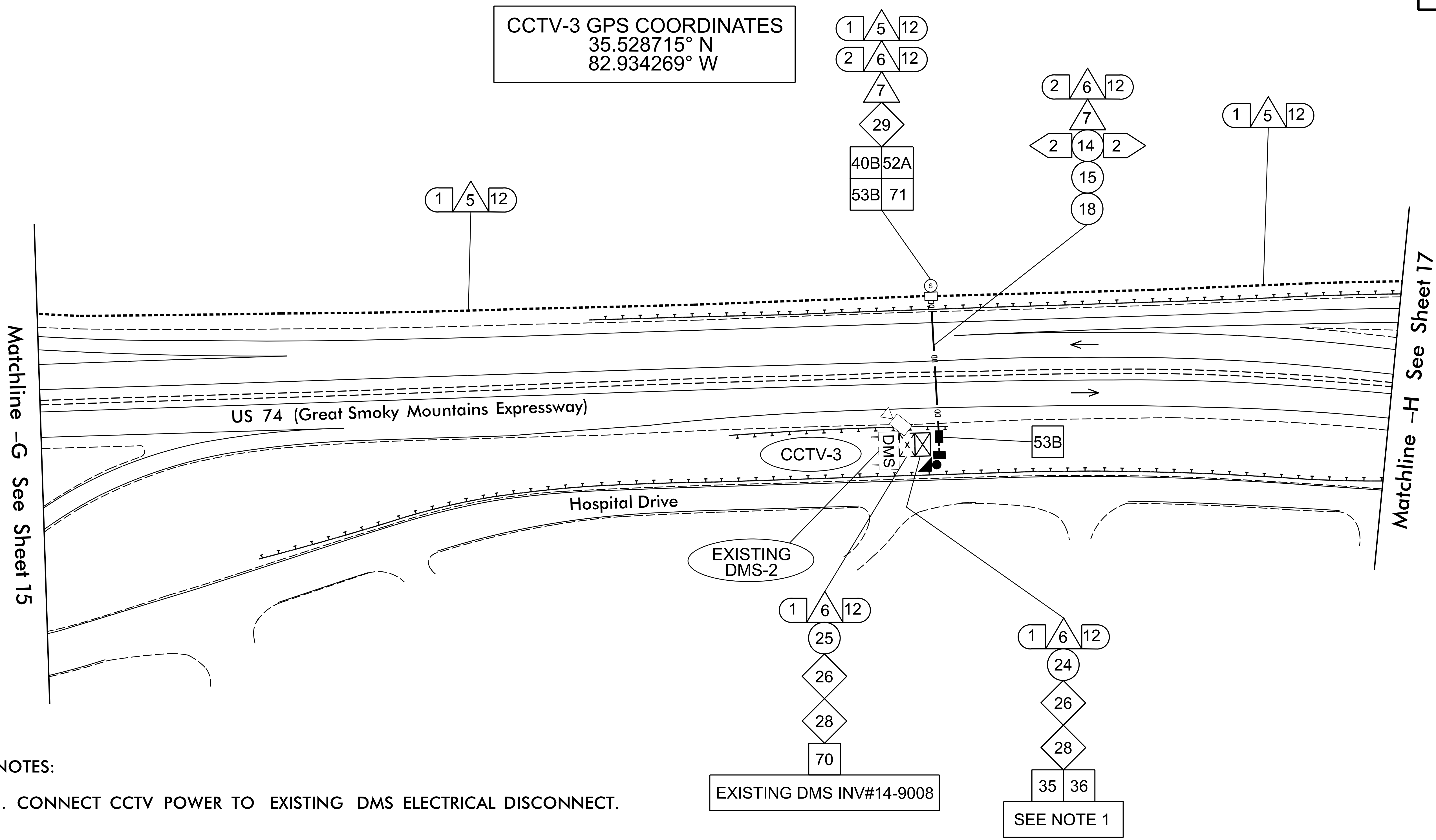
SCALE
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1"=50'

ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County Waynesville
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL

DocuSigned by:
Rochelle Garrett 8/4/2023
SIGNATURE DATE
CADD Filename:

CCTV-3 GPS COORDINATES
 35.528715° N
 82.934269° W

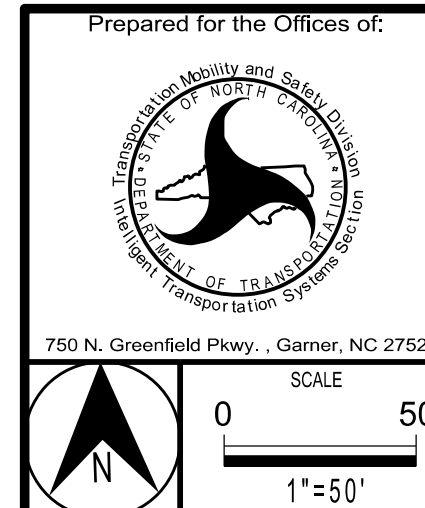


NOTES:

1. CONNECT CCTV POWER TO EXISTING DMS ELECTRICAL DISCONNECT.

8/4/2023
 pw://aecom-na-pw-bentley.com:AECDMUSA_NorthCarolina/Ino/Documents/60670967-1-NCDDT_85898_B3186/900-CAD_GIS/910-CAD/70-NCDDT_TIP/Ino/Ino/Transportation_Systems/B-5898-ITS_PSH16.dgn
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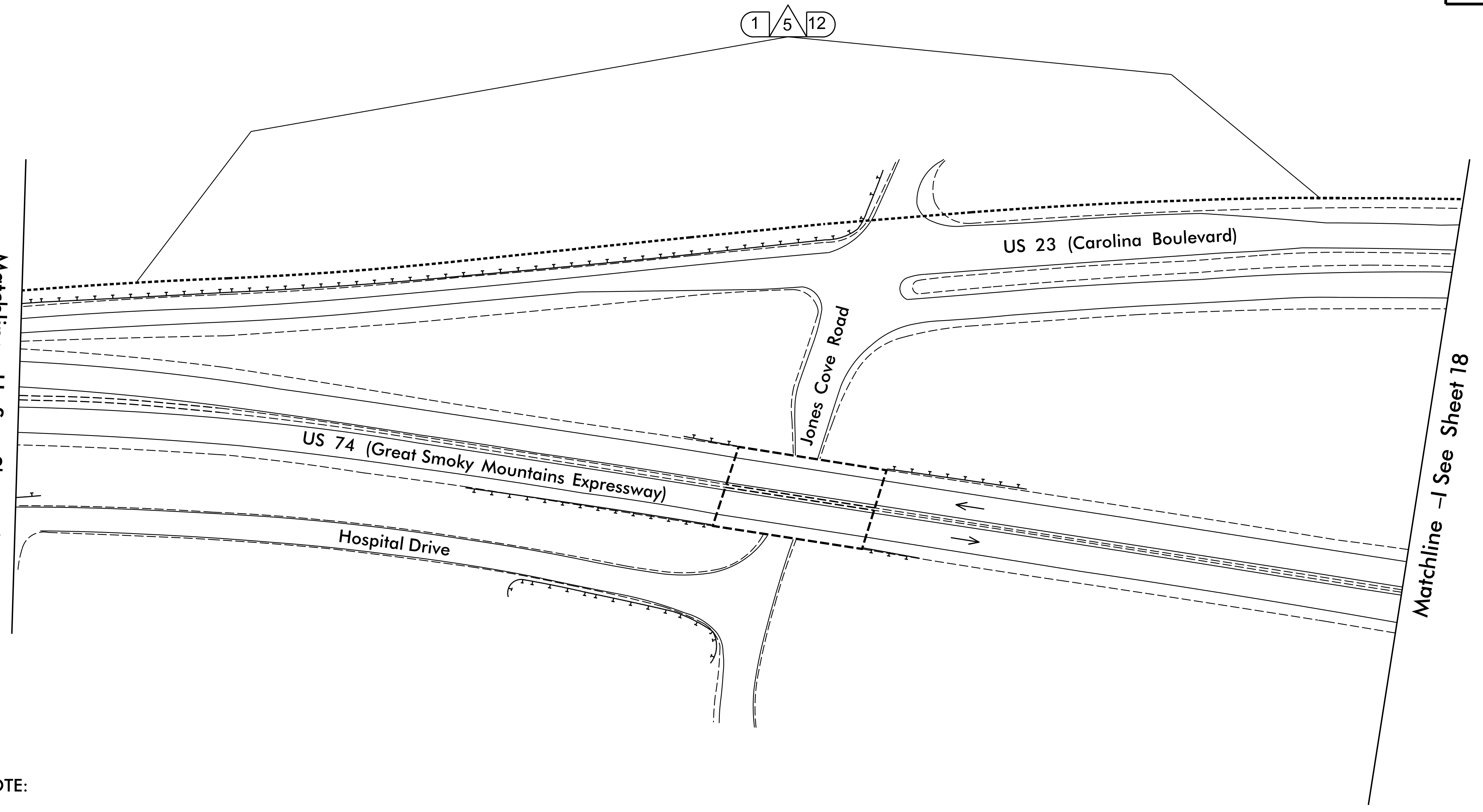
Prepared for the Offices of:		ITS Communication Cable and Conduit Routing Plans	
Division 14		Haywood County	
Waynesville		Waynesville	
PLAN DATE:	August 2023	REVIEWED BY:	R. Garrett
PREPARED BY:	M. Tindal	REVIEWED BY:	
REVISIONS	INIT.	DATE	

DocuSigned by:
 Rachelle Garrett
 8/4/2023
 CADD Filename:

1 5 12

Matchline -H See Sheet 16

Matchline -I See Sheet 18



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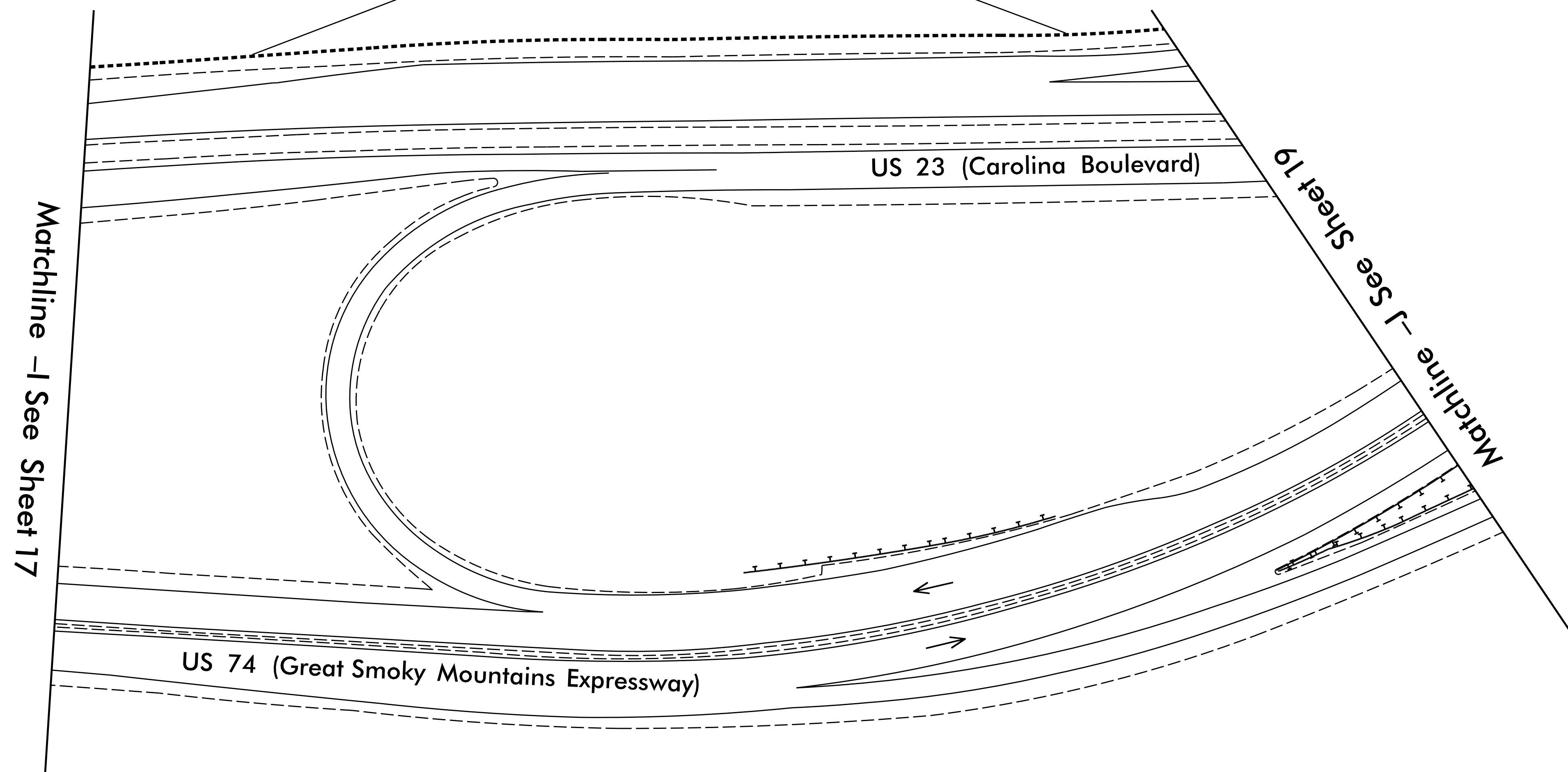
750 N. Greenfield Pkwy., Garner, NC 27529

ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County Waynesville
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE

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DocuSigned by:
Rochelle Garrett 8/4/2023
 SIGNATURE DATE
 CADD Filename:

1 5 12



Matchline -I See Sheet 17

Matchline -J See Sheet 19

US 23 (Carolina Boulevard)

US 74 (Great Smoky Mountains Expressway)

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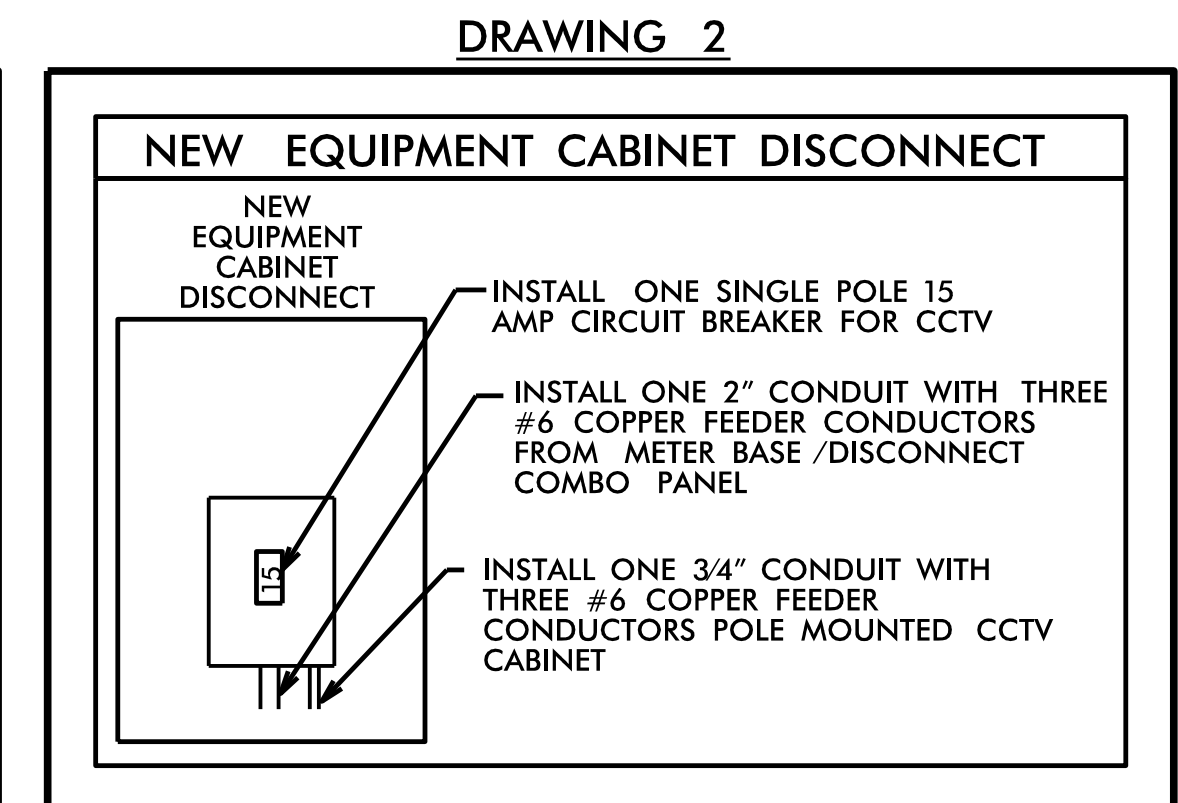
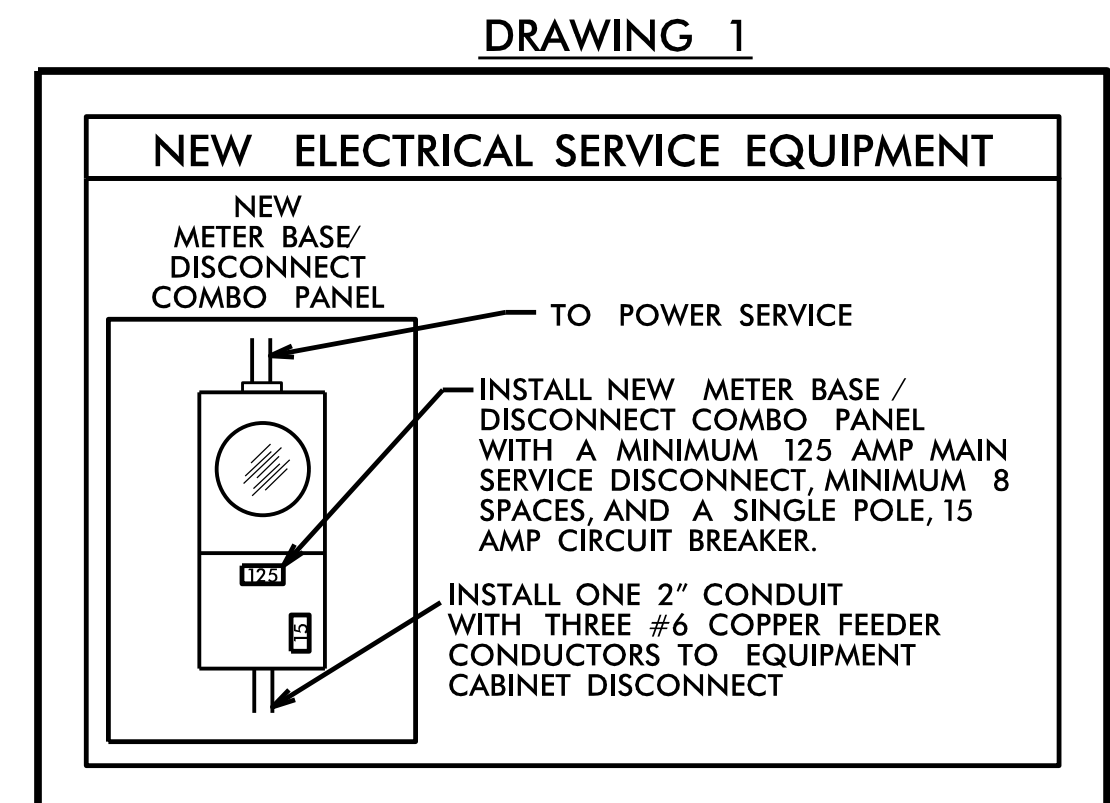
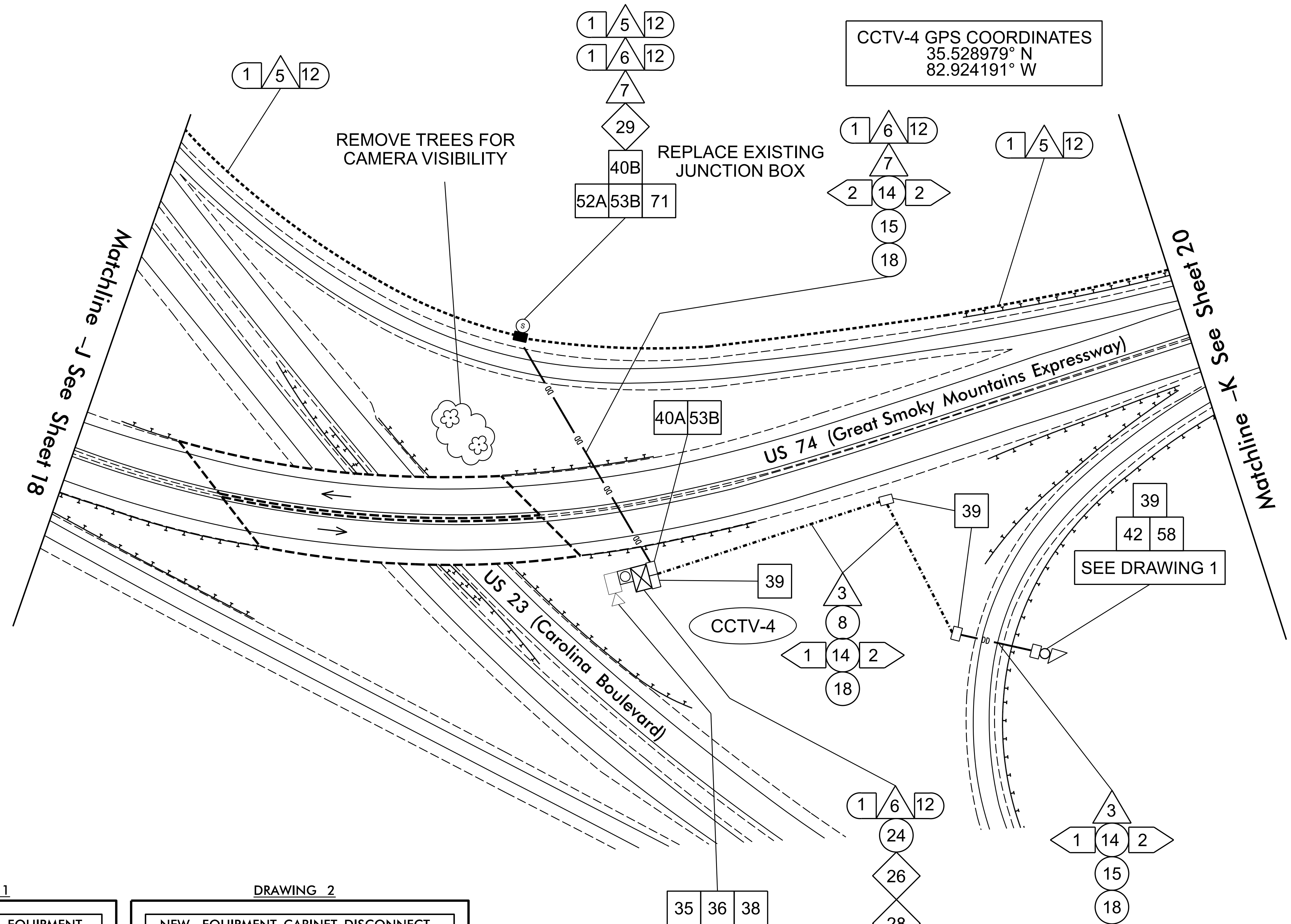
750 N. Greenfield Pkwy., Garner, NC 27529

SCALE
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1"=50'

ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County Waynesville
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL

DocuSigned by:
Rochelle Garrett 8/4/2023
SIGNATURE DATE
CADD Filename:



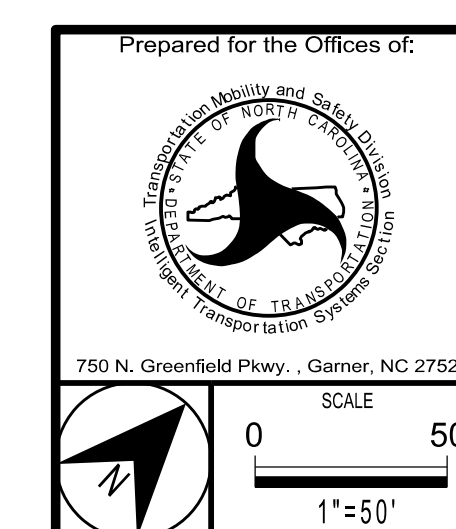
SEE DRAWING 1

SEE DRAWING 2

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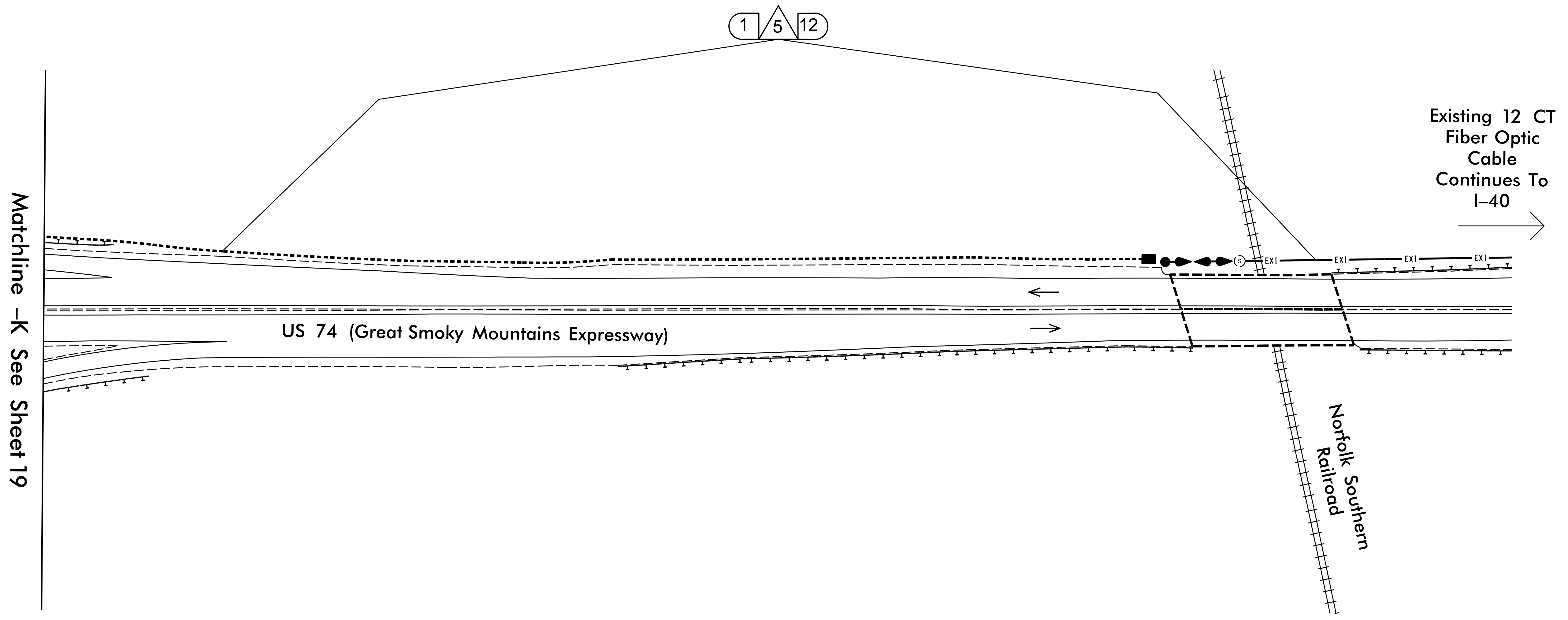
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ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County
Waynesville	
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE

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Rochelle Garrett
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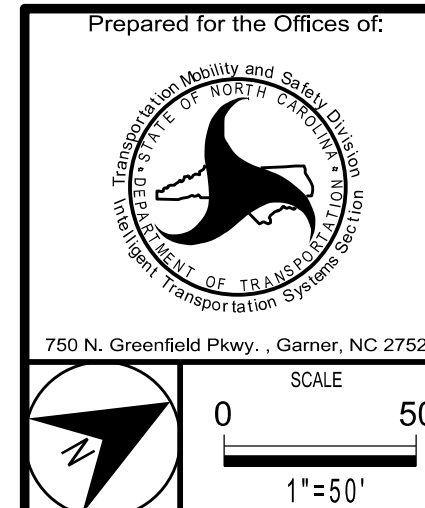


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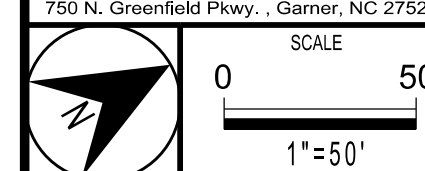
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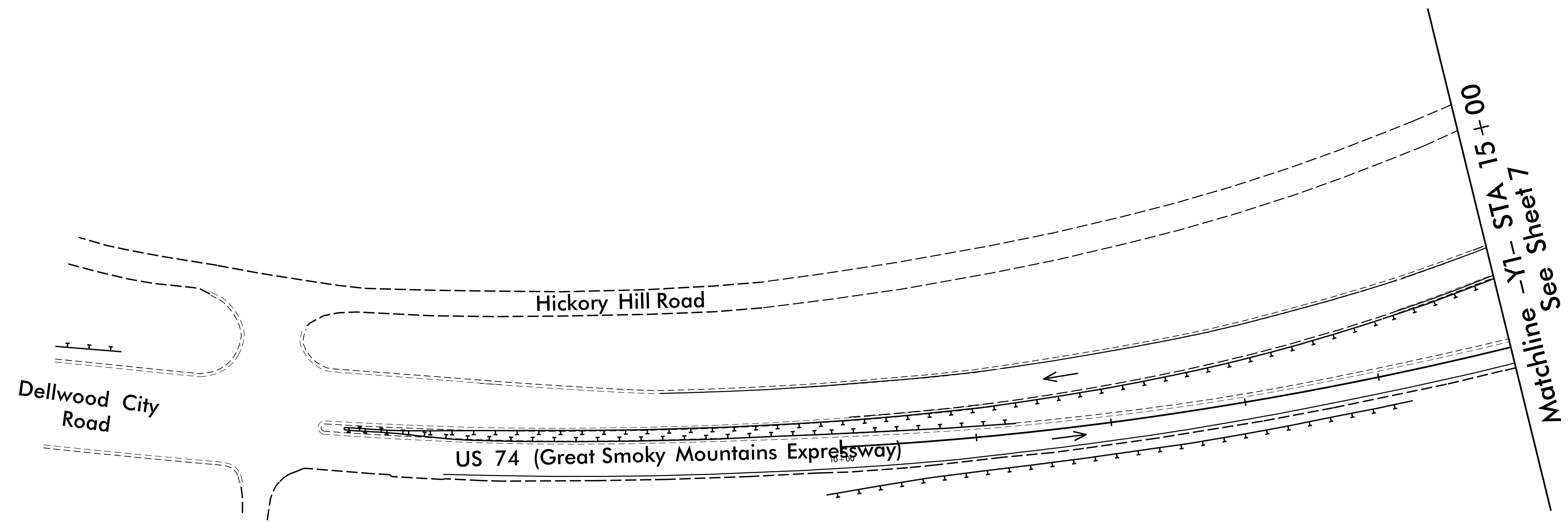
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 Suite 200 Raleigh, NC 27607
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Prepared for the Offices of:		ITS Communication Cable and Conduit Routing Plans	
Division 14		Haywood County	
Waynesville		Waynesville	
PLAN DATE:	August 2023	REVIEWED BY:	R. Garrett
PREPARED BY:	M. Tindal	REVIEWED BY:	
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Phone: 919-461-1100

Prepared for the Offices of:

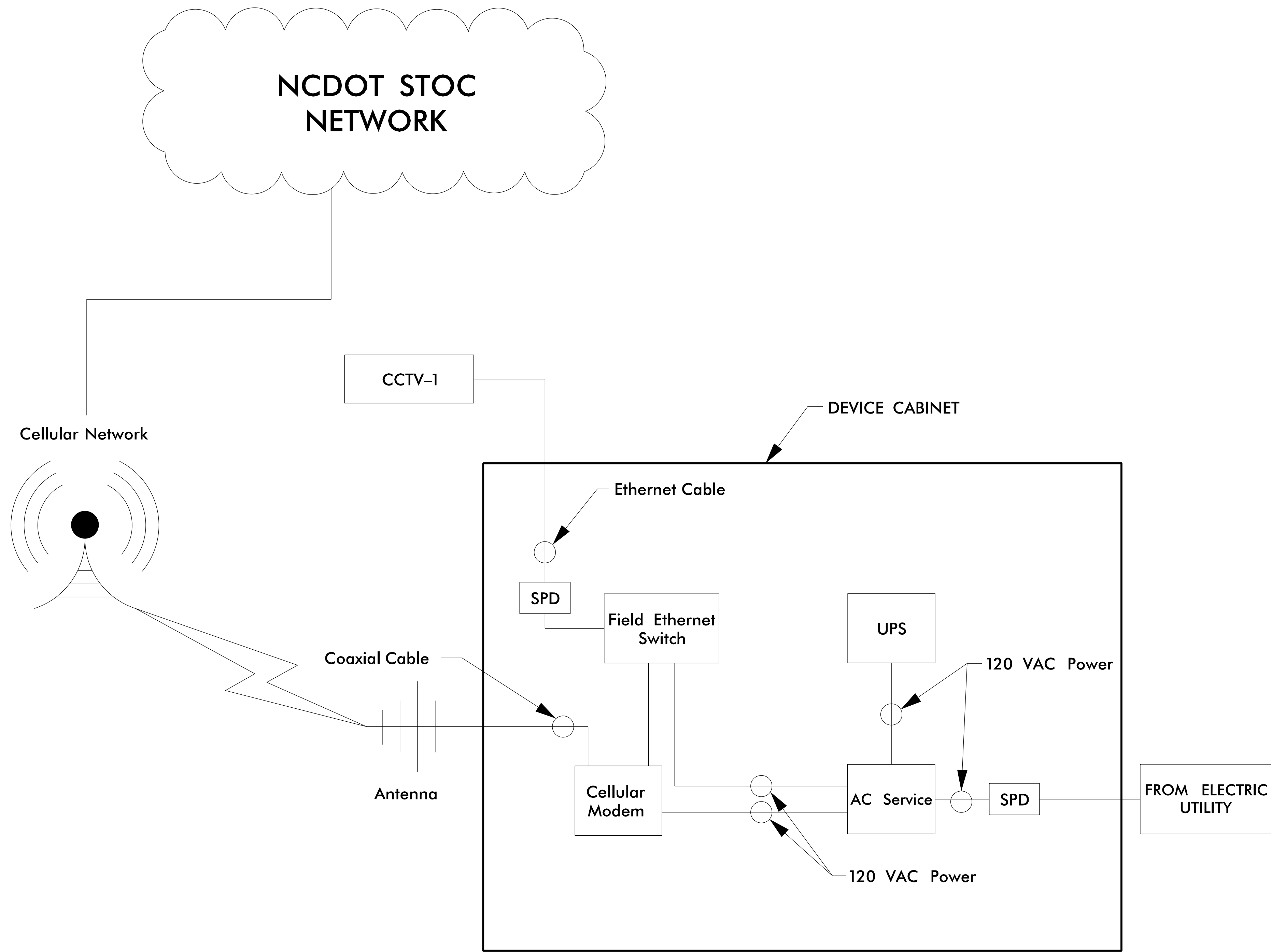
750 N. Greenfield Pkwy., Garner, NC 27529

SCALE
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1"=50'

ITS Communication Cable and Conduit Routing Plans	
Division 14	Haywood County Waynesville
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL

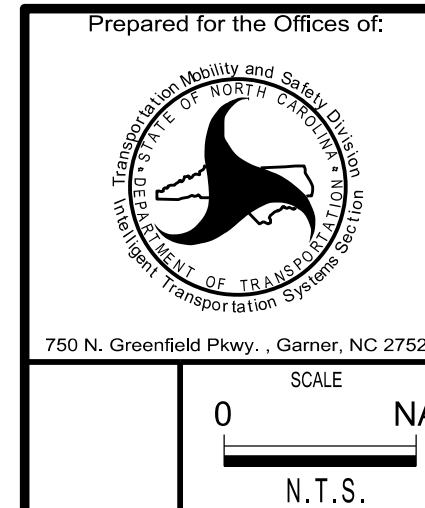
DocuSigned by:
Rochelle Garrett 8/4/2023
SIGNATURE DATE
CADD Filename:



CCTV-1 CABINET WITH CELLULAR MODEM

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8/4/2023
pw://aecom-na-pw-bentley.com/AECOM/USA_NorthCarolina/Documents/60670967-1-NCDDT_85898_B3186/900-CAD_GIS/910-CAD/70-NCDDT_TIP/Intel/igent/Transportation_Systems/B-5898-ITS_PSH22.dgn
T.Tindal



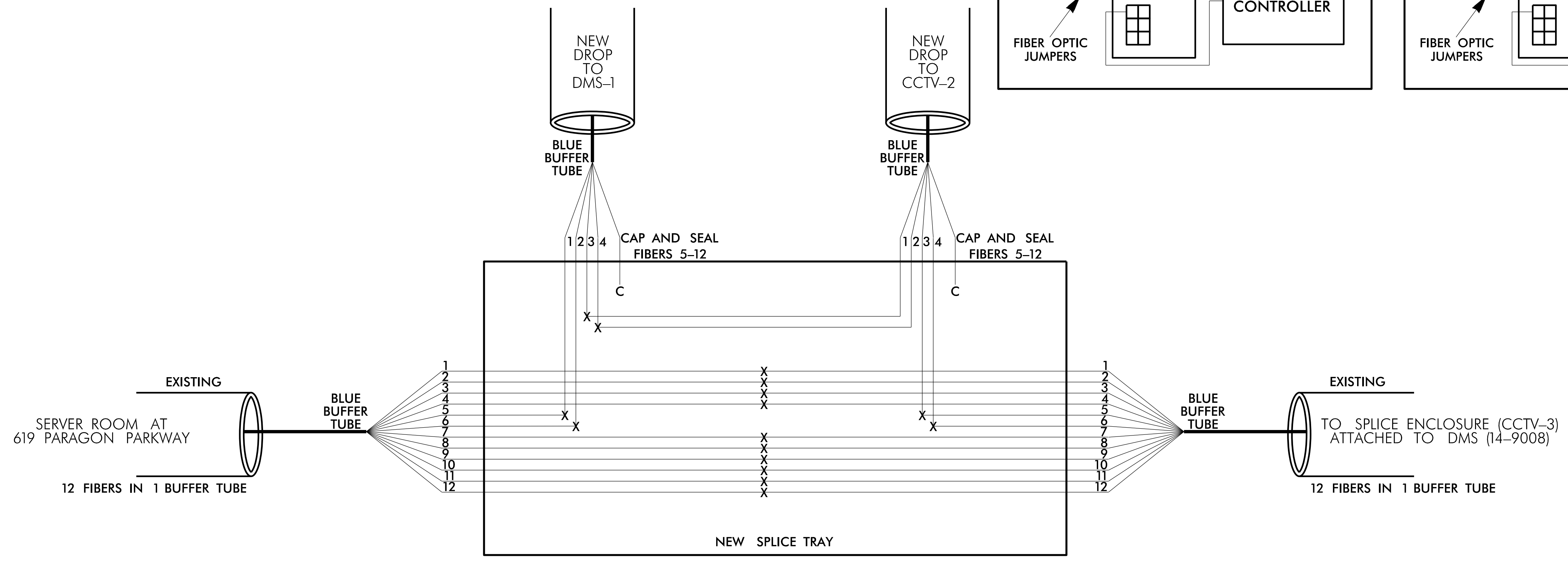
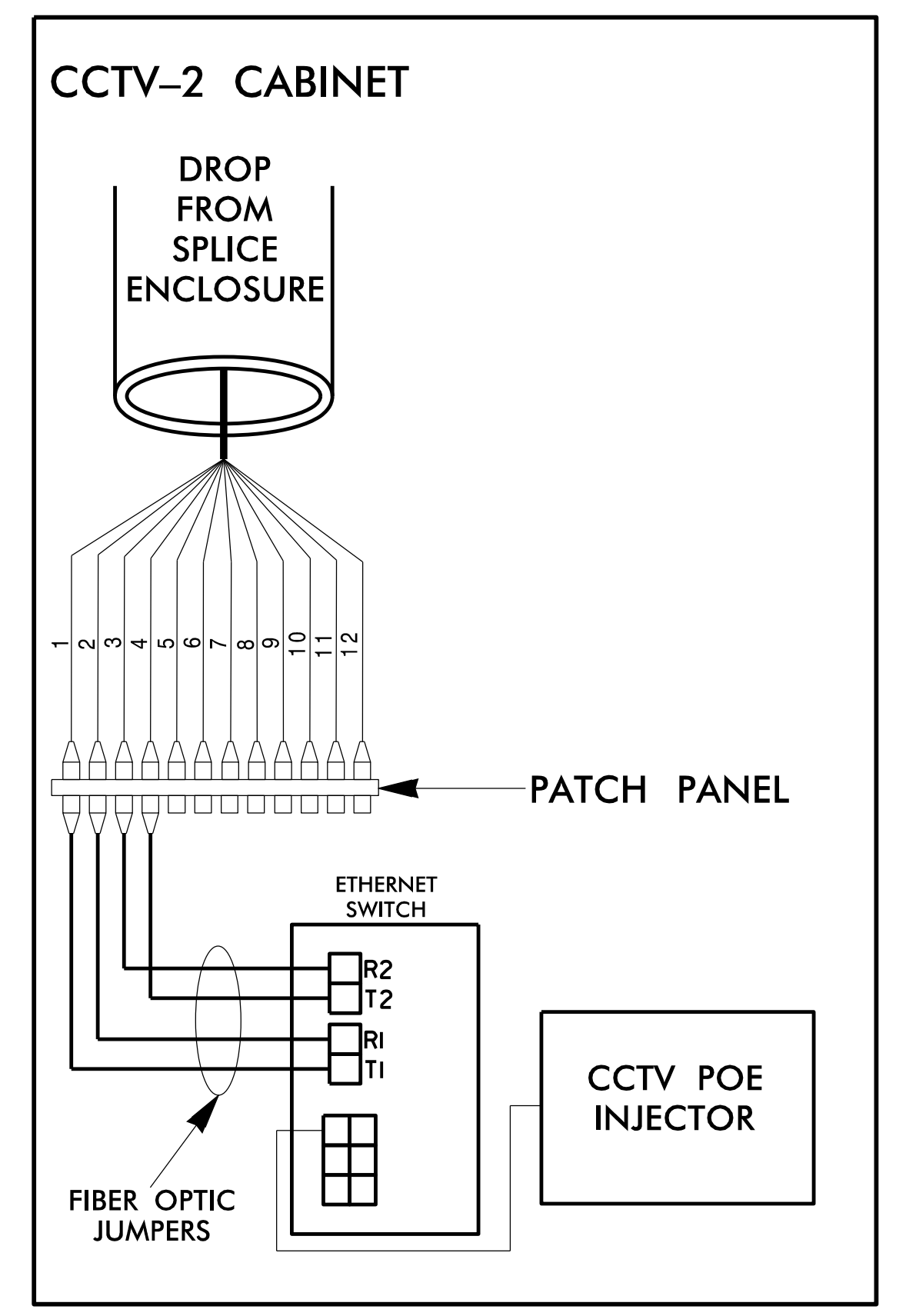
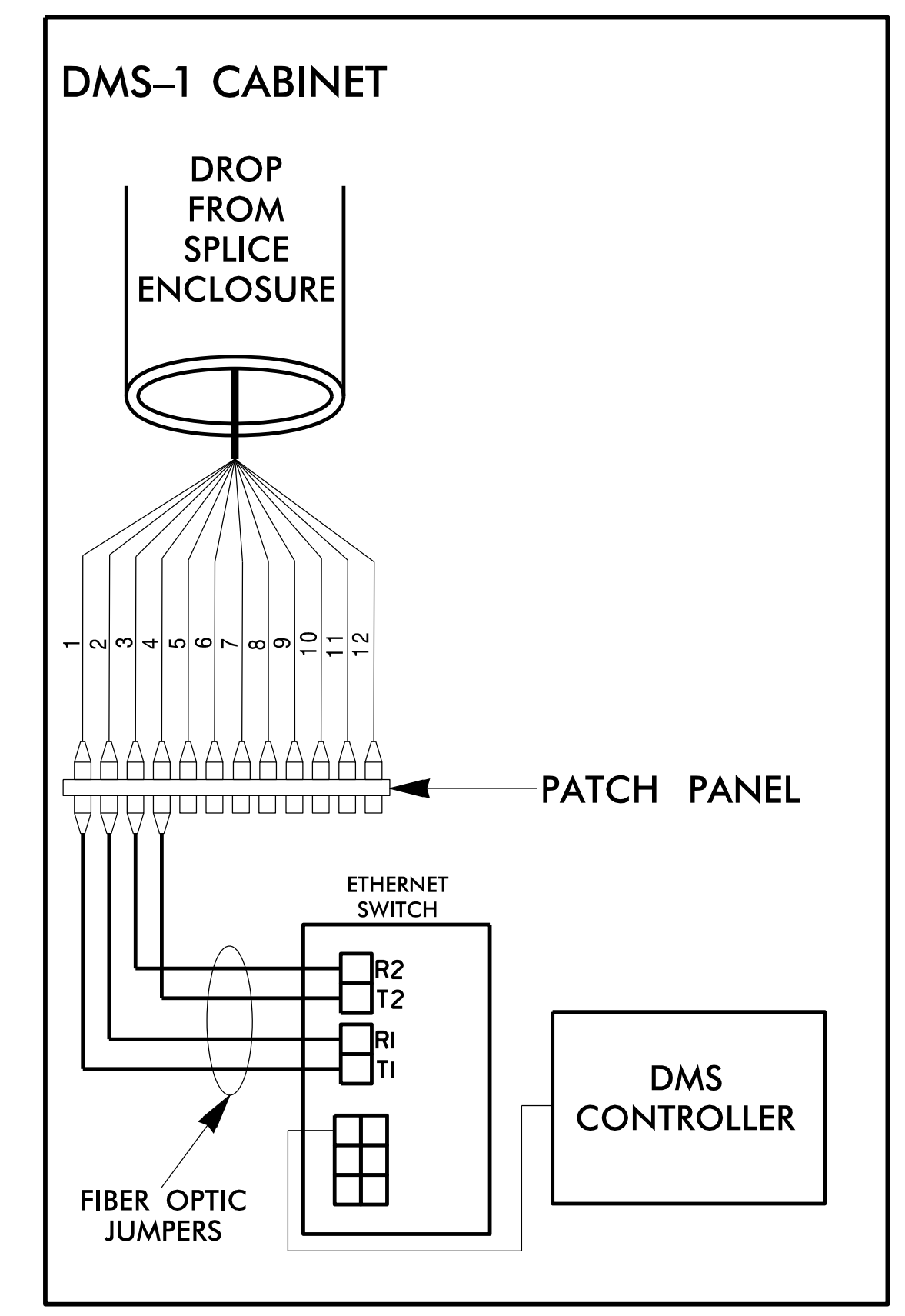
ITS DEVICES AND COMMUNICATIONS BLOCK DIAGRAM	
Division 14	Haywood County
Waynesville	
PLAN DATE: August 2023	REVIEWED BY: R. Garrett
PREPARED BY: M. Tindal	REVIEWED BY:
REVISIONS	INIT. DATE



NEW UNDERGROUND SPLICE ENCLOSURE
DMS-1 / CCTV-2
619 PARAGON PARKWAY AT DIVISION 14
MAINTENANCE YARD ENTRANCE
DMS INV. # 14-____
CCTV INV. # 14-____

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

COLOR CODE TIA/EIA 598-A		LEGEND	
(1) BLUE	(7) RED	X = FUSION SPLICE	
(2) ORANGE	(8) BLACK	E = EXISTING SPLICE	
(3) GREEN	(9) YELLOW	C = CAP IN TRAY	
(4) BROWN	(10) VIOLET	EXPRESS = EXPRESS ALL FIBERS/ BUFFER TUBES	
(5) SLATE	(11) ROSE	SPLICE = SPLICE ALL FIBERS/ BUFFER TUBES	
(6) WHITE	(12) AQUA		



- NOTES:
- DIVISION OFFICE TO TEST FIBERS BETWEEN I-40 AND NCDOT MAINTENANCE FACILITY AND VERIFY OPERATION AND MAKE NECESSARY REPAIRS PRIOR TO PROJECT START.
 - AS-BUILT PLANS SHOW FIBERS 1, 2, 3, 11 AND 12 IN USE BY NCDOT FOR CCTV ON I-40.



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FIBER OPTIC SPLCE DETAILS

Division 14 Haywood County Waynesville

PLAN DATE: August 2023 REVIEWED BY: R. Garrett

PREPARED BY: M. Cavanaugh REVIEWED BY:

REVISIONS INIT. DATE

SCALE: 0 NA N.T.S.

Seal: NORTH CAROLINA PROFESSIONAL SEAL 026679 ROCHELLE GARRETT

DocuSigned by: Rochelle Garrett 8/4/2023

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NEW UNDERGROUND SPLICE ENCLOSURE
DMS-2 /CCTV-3
EXISTING DMS (14-9008)
CCTV INV. # 14-___

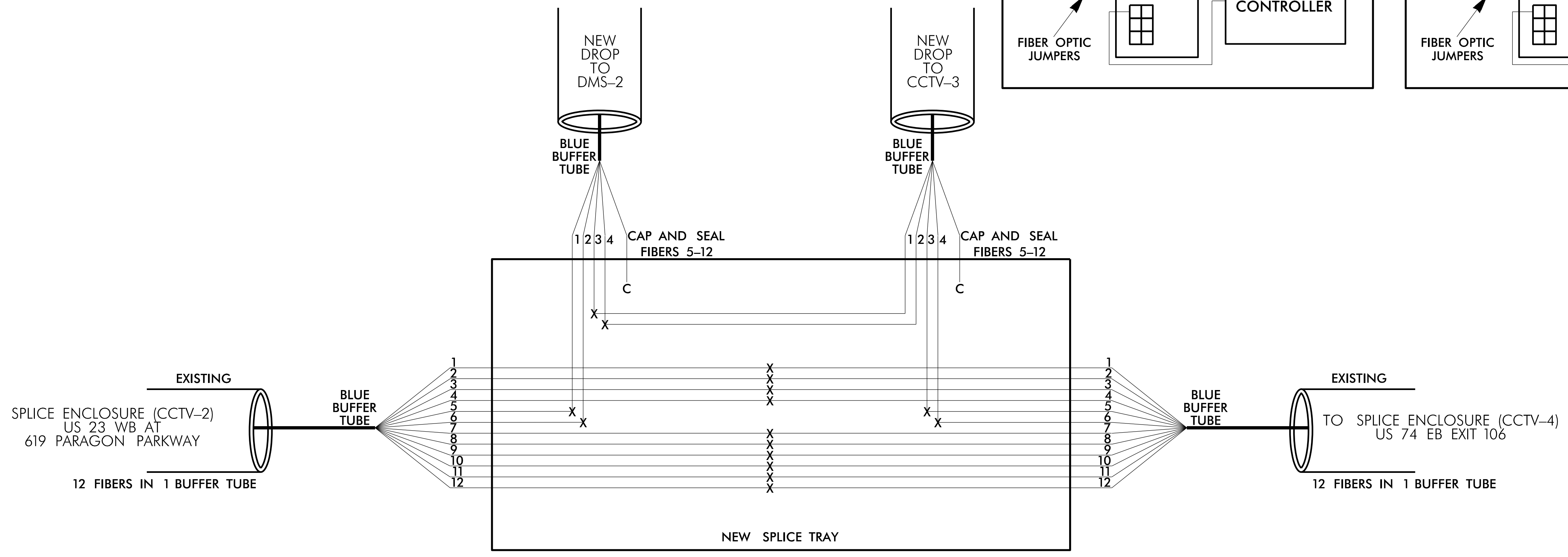
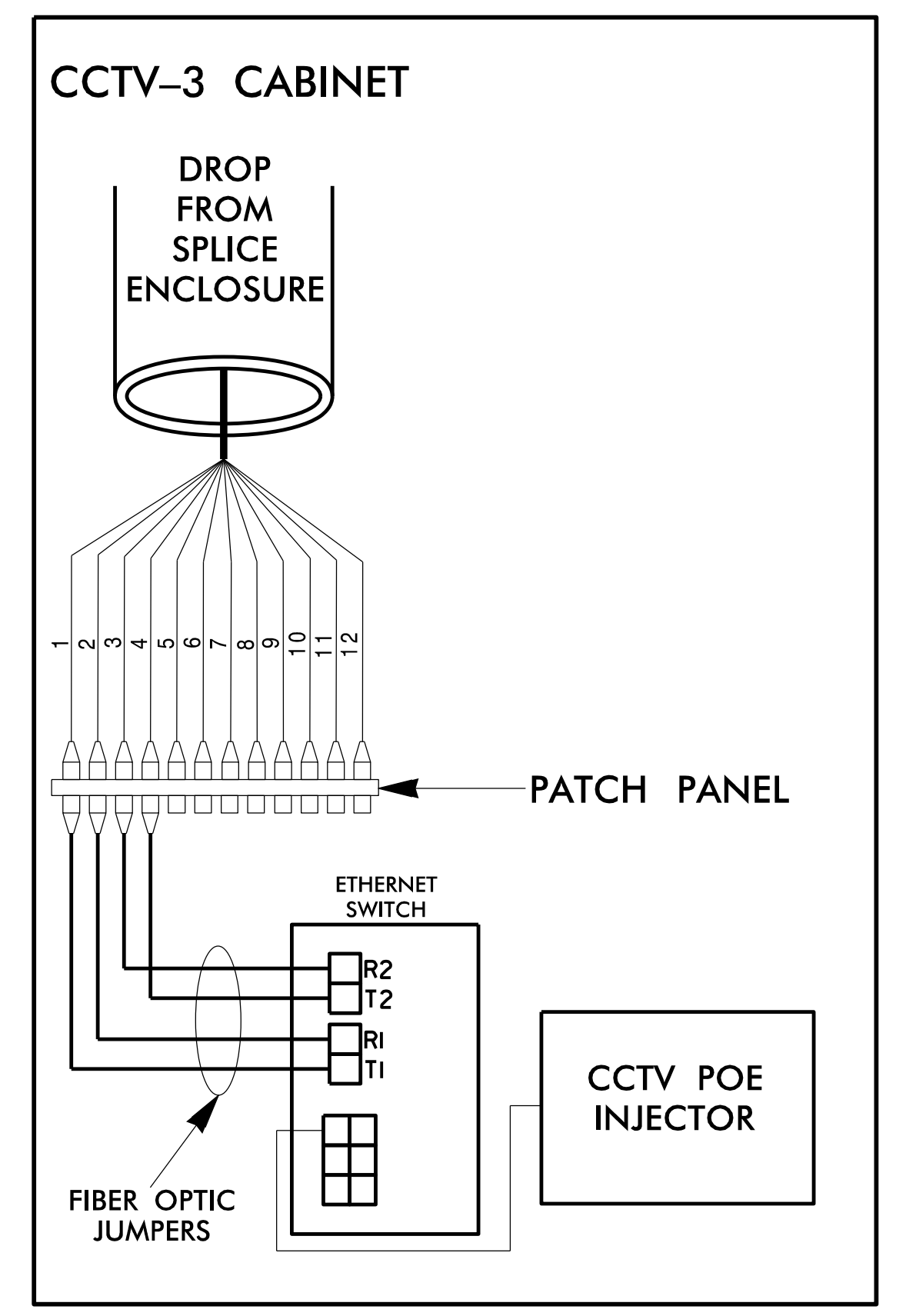
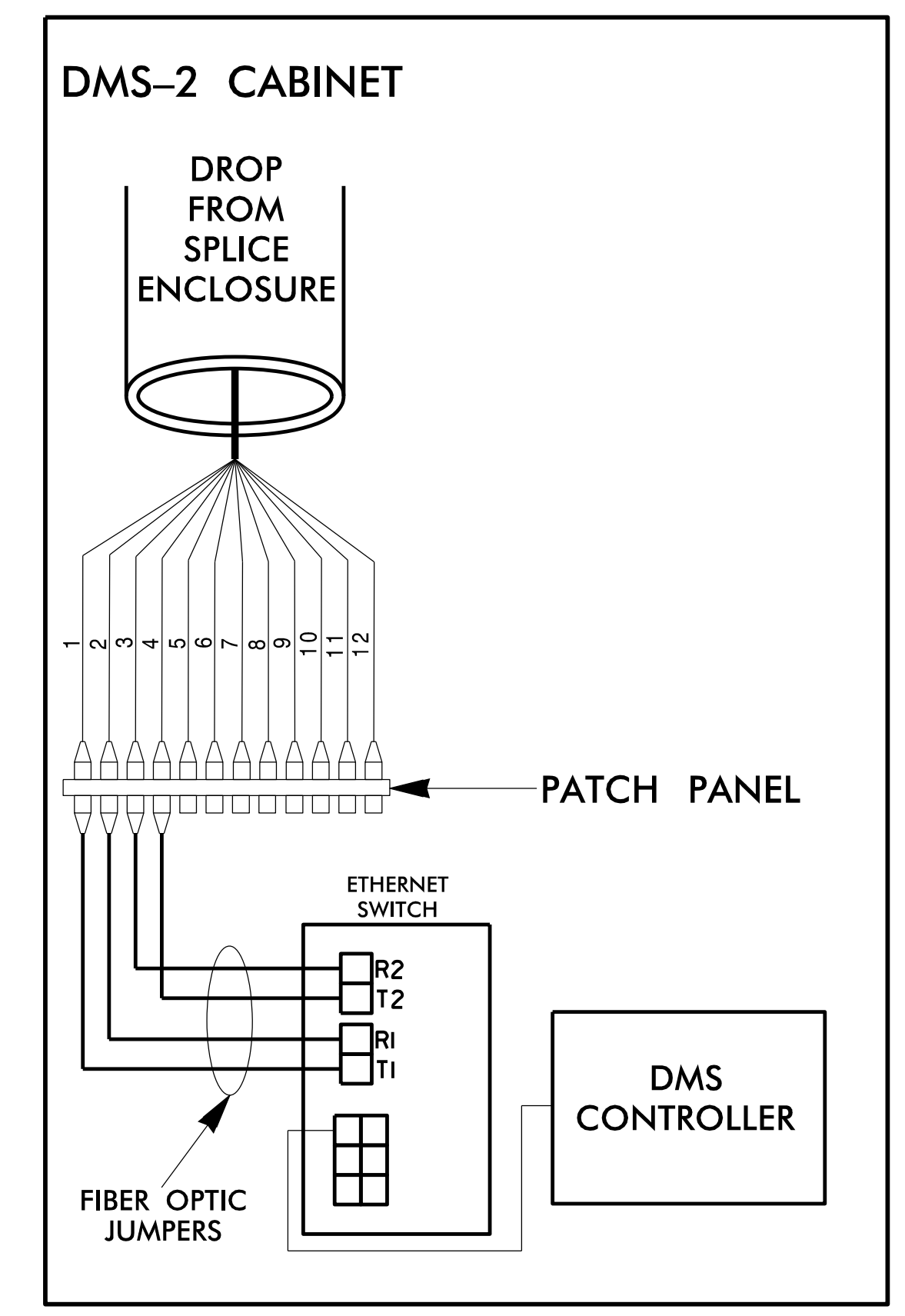
Notes:
Unused fibers left coiled and stored in splice tray.
Unused Buffer Tubes left coiled and stored in splice tray.

COLOR CODE
TIA/EIA 598-A

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

LEGEND

X	= FUSION SPLICE
E	= EXISTING SPLICE
C	= CAP IN TRAY
EXPRESS	= EXPRESS ALL FIBERS/ BUFFER TUBES
SPLICE	= SPLICE ALL FIBERS/ BUFFER TUBES



- NOTES:**
- DIVISION OFFICE TO TEST FIBERS BETWEEN I-40 AND NCDOT MAINTENANCE FACILITY AND VERIFY OPERATION AND MAKE NECESSARY REPAIRS PRIOR TO PROJECT START.
 - AS-BUILT PLANS SHOW FIBERS 1, 2, 3, 11 AND 12 IN USE BY NCDOT FOR CCTV ON I-40.



Prepared for the Offices of:

FIBER OPTIC SPLCE DETAILS

Division 14 Haywood County Waynesville

PLAN DATE: August 2023 REVIEWED BY: R. Garrett

PREPARED BY: M. Cavanaugh REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE: 0 NA N.T.S.

DocuSigned by: Rochelle Garrett 8/4/2023

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NEW UNDERGROUND SPLICE ENCLOSURE
CCTV-4
US 74 EB EXIT 106
CCTV INV. # 14-___

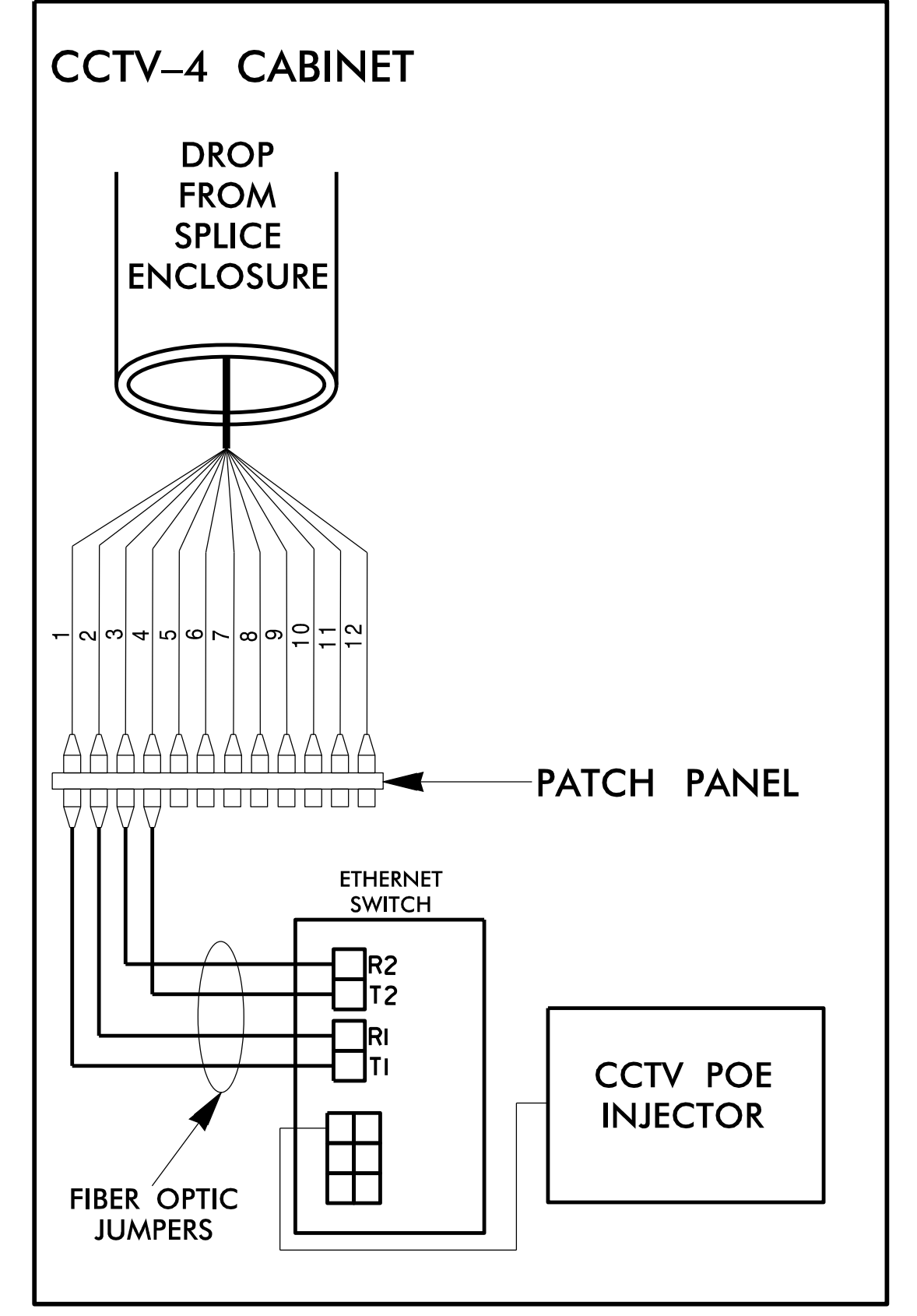
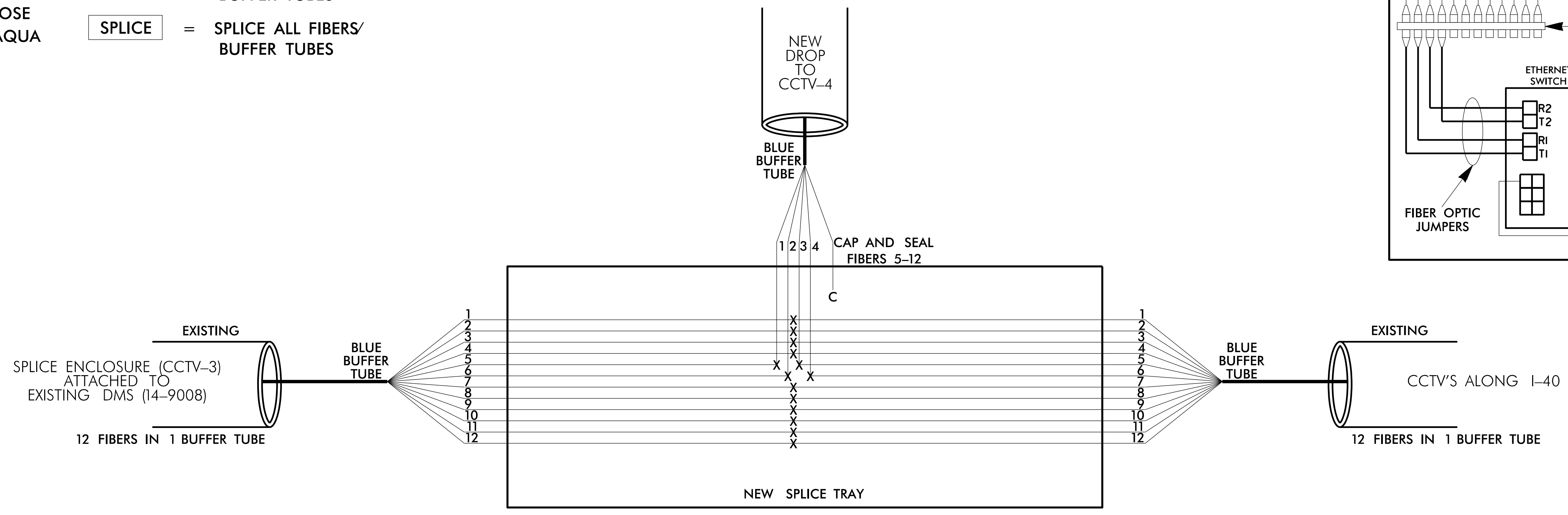
Notes:
Unused fibers left coiled and stored in splice tray.
Unused Buffer Tubes left coiled and stored in splice tray.

COLOR CODE
TIA/EIA 598-A

- (1) BLUE
- (2) ORANGE
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- (5) SLATE
- (6) WHITE
- (7) RED
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- (11) ROSE
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LEGEND

- X = FUSION SPLICE
- E = EXISTING SPLICE
- C = CAP IN TRAY
- EXPRESS** = EXPRESS ALL FIBERS/
BUFFER TUBES
- SPLICE** = SPLICE ALL FIBERS/
BUFFER TUBES



NOTES:

- DIVISION OFFICE TO TEST FIBERS BETWEEN I-40 AND NCDOT MAINTENANCE FACILITY AND VERIFY OPERATION AND MAKE NECESSARY REPAIRS PRIOR TO PROJECT START.
- AS-BUILT PLANS SHOW FIBERS 1, 2, 3, 11 AND 12 IN USE BY NCDOT FOR CCTV ON I-40.

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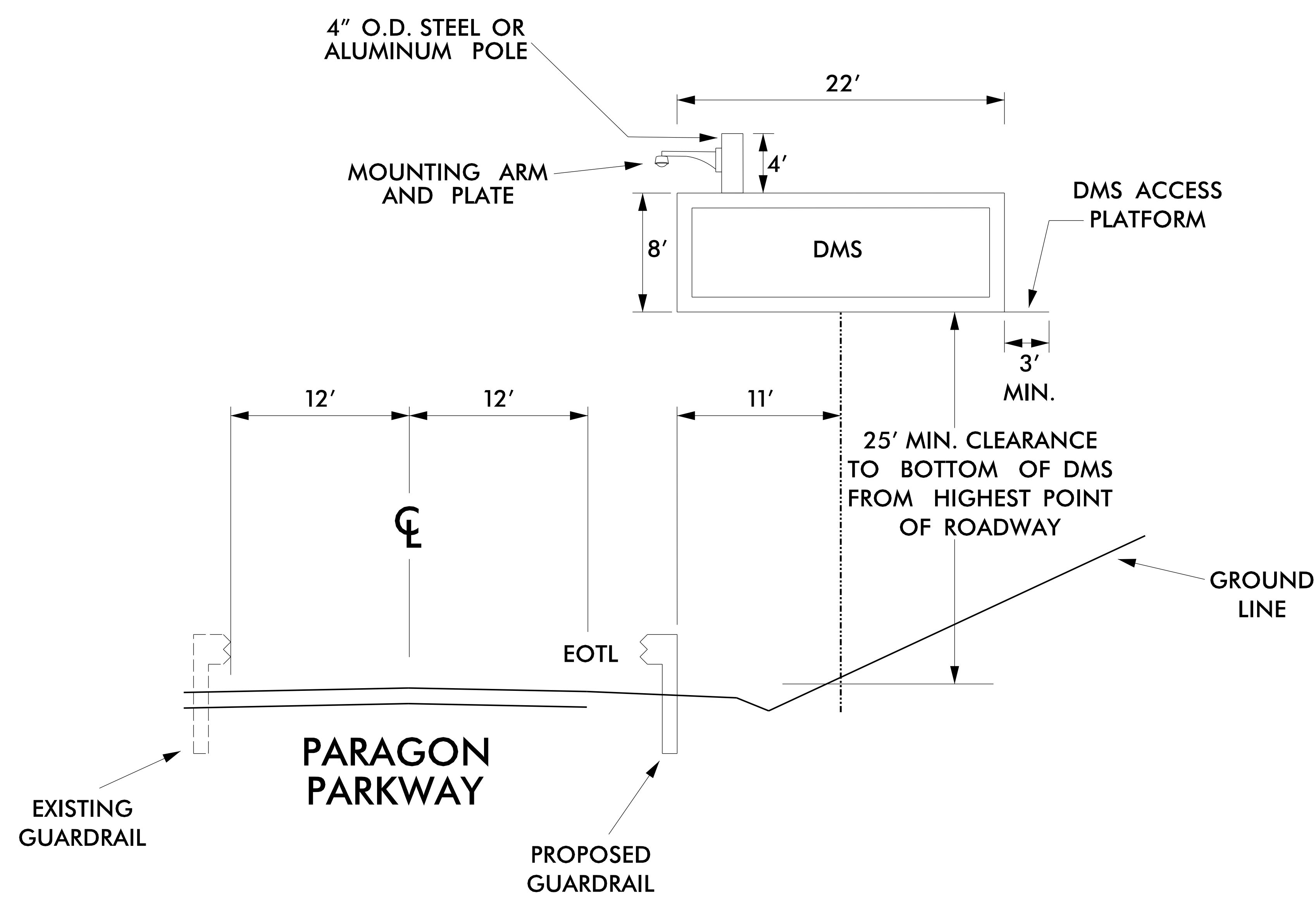
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	FIBER OPTIC SPLCE DETAILS		
	Division 14 Haywood County Waynesville	PLAN DATE: August 2023	
PREPARED BY: M. Cavanaugh	REVISIONS	REVIEWED BY:	DATE
SCALE: 0 NA N.T.S.	REVISIONS	INIT.	DATE
DocuSigned by: <i>Rochelle Garrett</i> 8/4/2023			SIGNATURE DATE

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR FURNISHING ELEVATION DRAWINGS FOR ENGINEER'S APPROVAL.
2. PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM FOR THE DMS AS INDICATED IN THE PROJECT SPECIAL PROVISIONS.
3. EQUIP THE LADDER WITH A SECURITY COVER (LADDER GUARD). START THE FIRST LADDER RUNG NO MORE THAN 18 INCHES ABOVE A CONCRETE LANDING PAD. DESIGN RUNGS ON 12 INCH CENTER-TO-CENTER TYPICAL SPACING.
4. INSTALL A CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
5. USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
6. FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTINGS USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
7. 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.
8. DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURES AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 120 MPH.
9. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT COMMUNICATIONS CABLE DURING CONSTRUCTION.
10. REFER TO THE PROJECT SPECIAL PROVISIONS FOR INFORMATION ABOUT THE MATERIALS NEEDED FOR THE CCTV EXTENSION ARM AND BANDING.



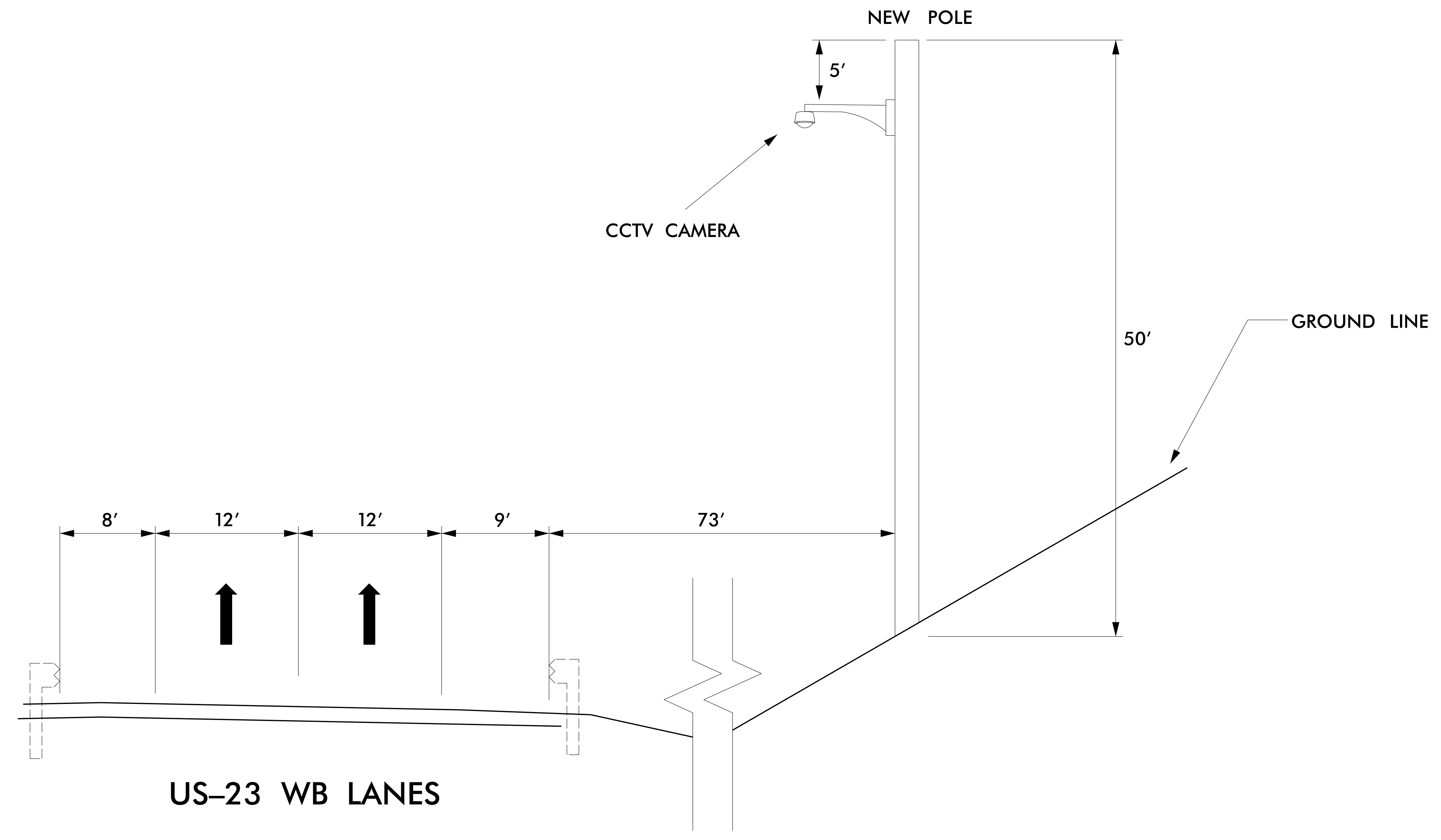
**619 Paragon Parkway at
Division 14 Maintenance Yard Entrance**

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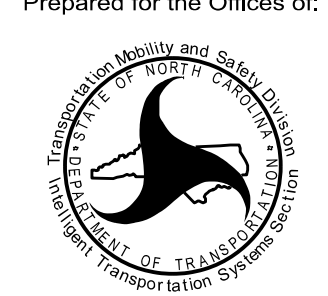
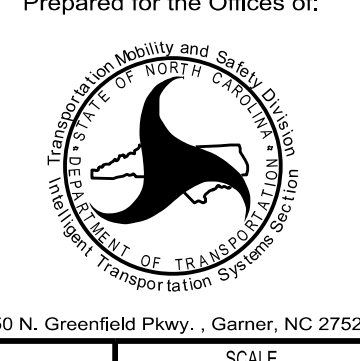
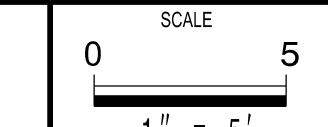

	Prepared for the Offices of: Elevation View CCTV-2/DMS-1 Division 14 Haywood County Waynesville	
	PLAN DATE: August 2023 PREPARED BY: M. Cavanaugh	REVIEWED BY: R. Garrett REVIEWED BY:
SCALE: 1" = 5' 	REVISIONS:	INIT. DATE:
DocuSigned by: Rochelle Garrett 8/4/2023		DATE:

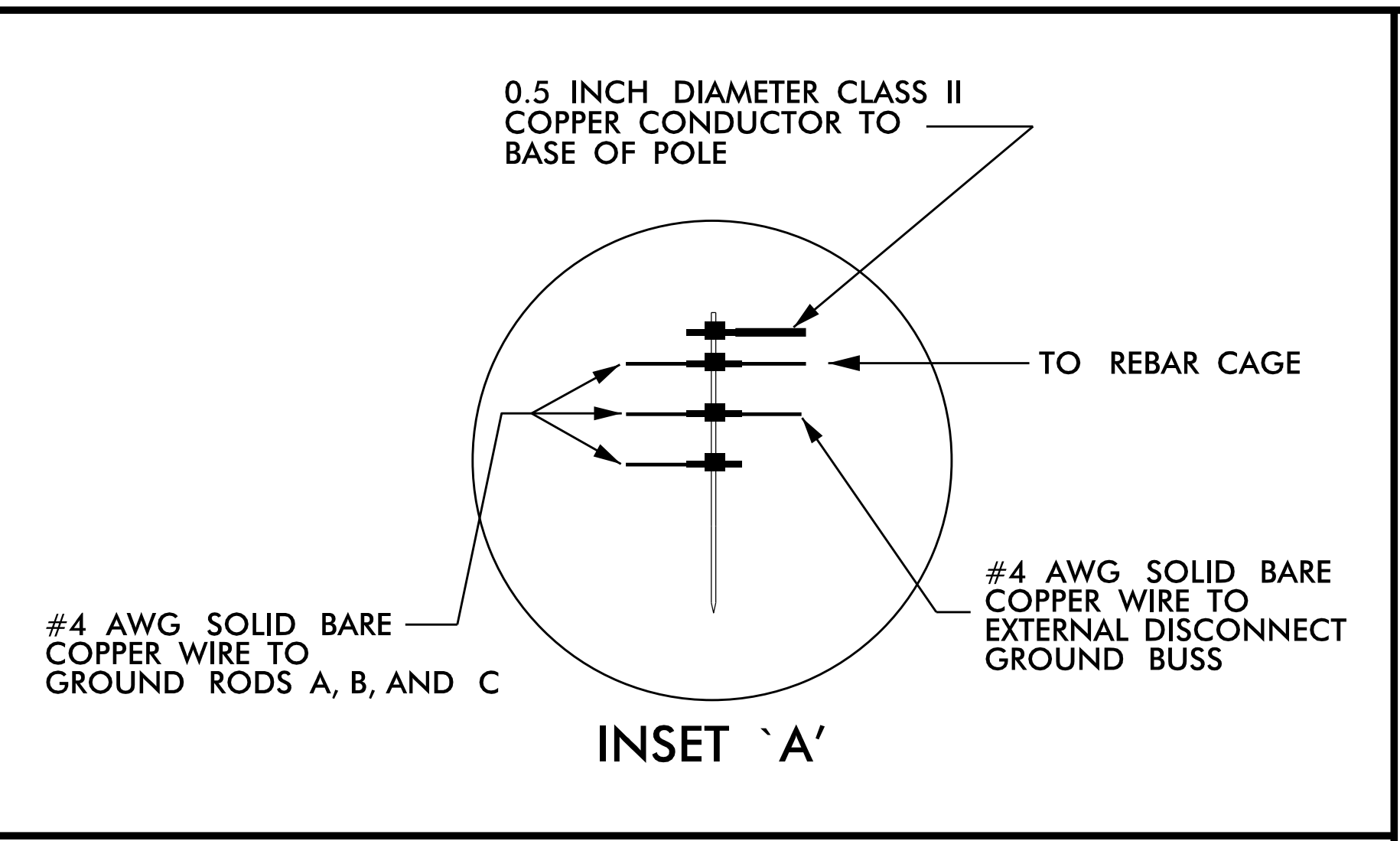


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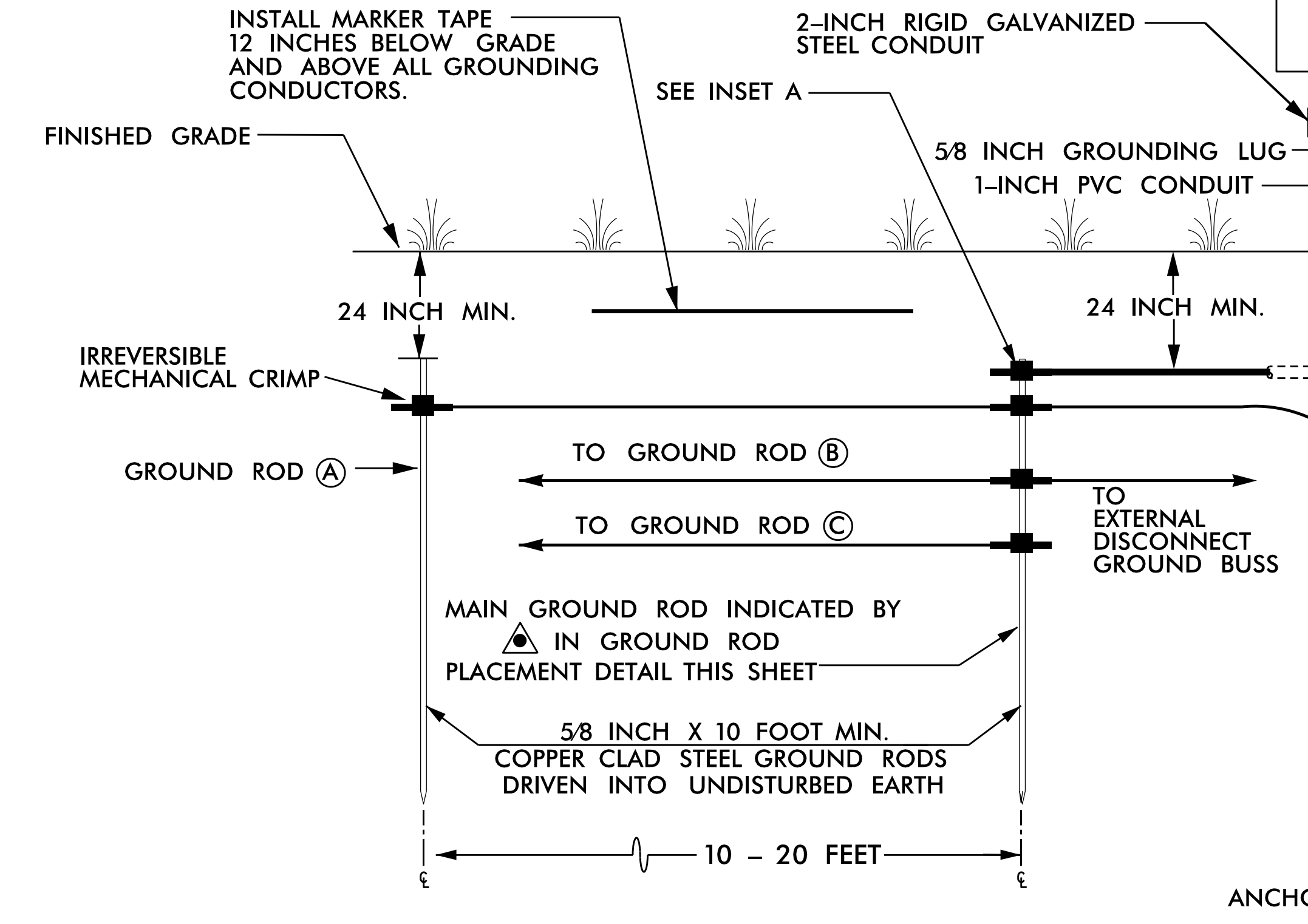
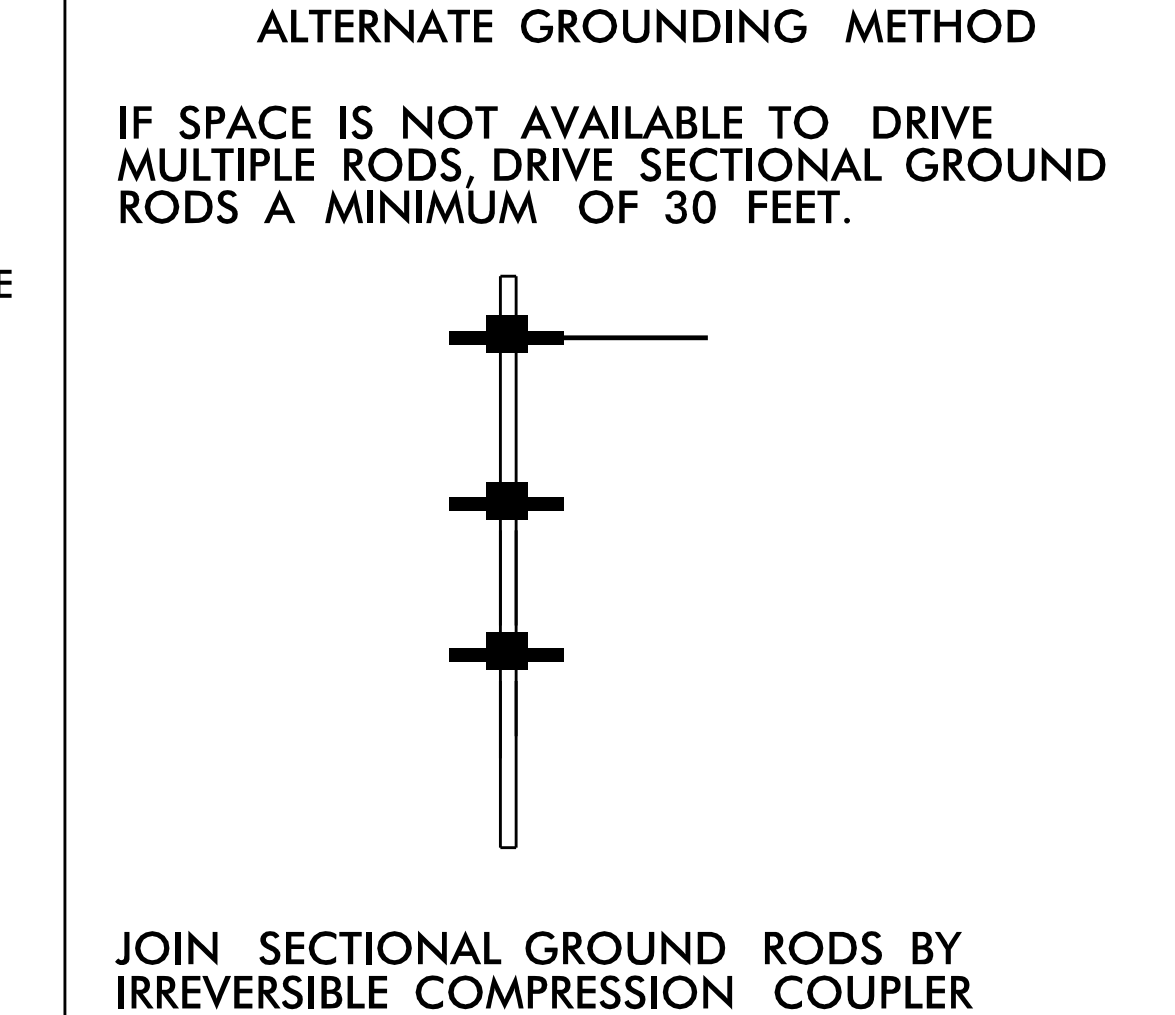
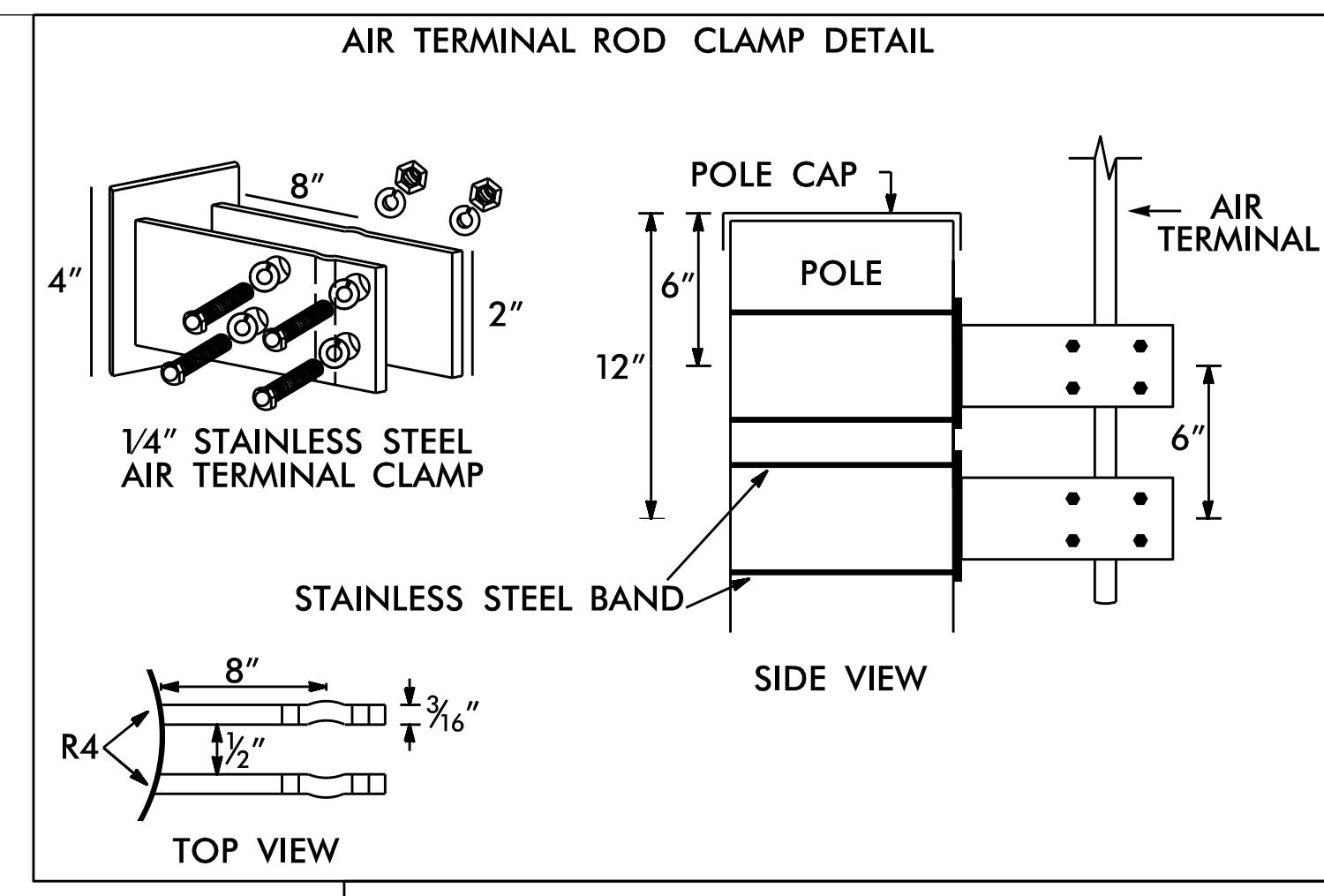
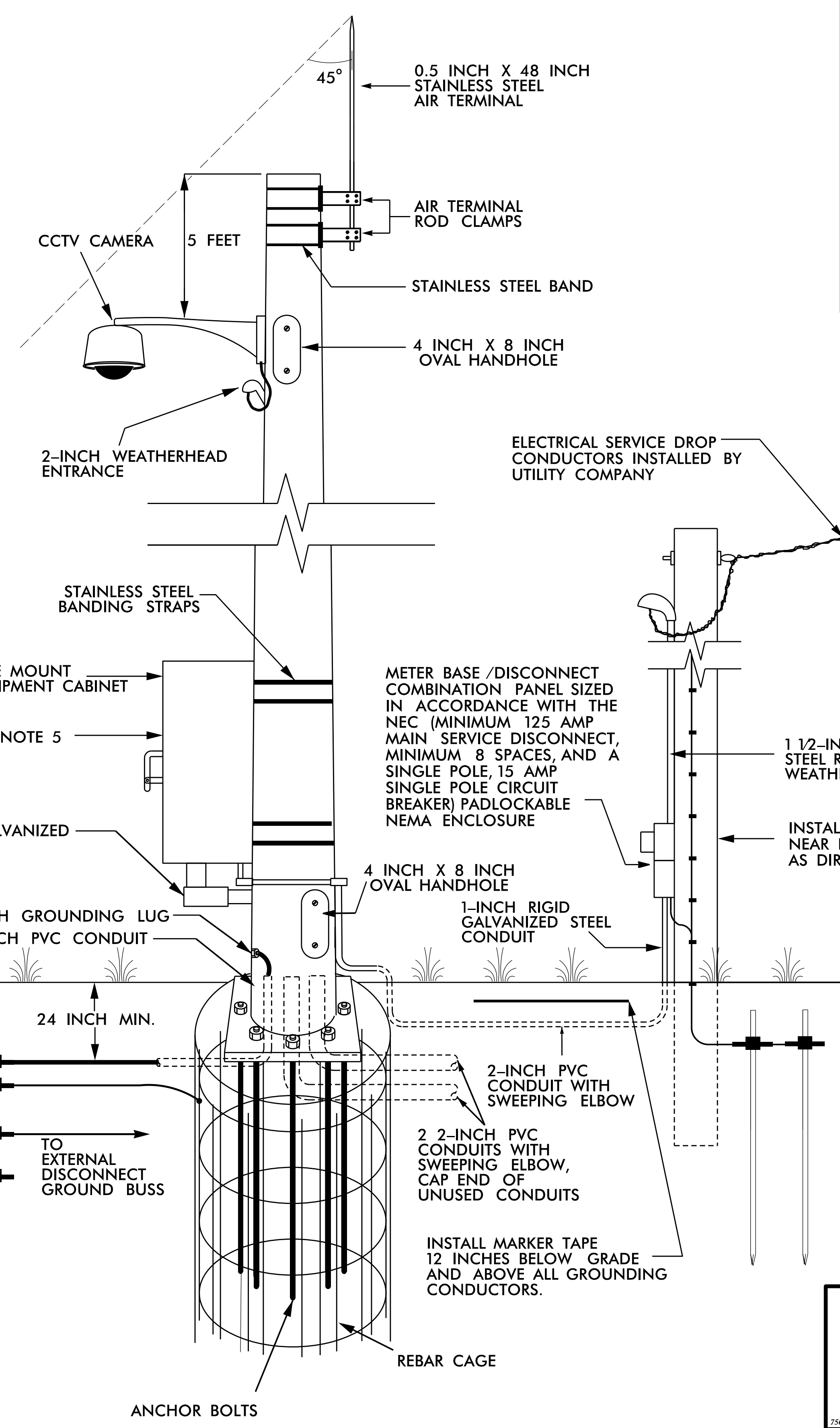
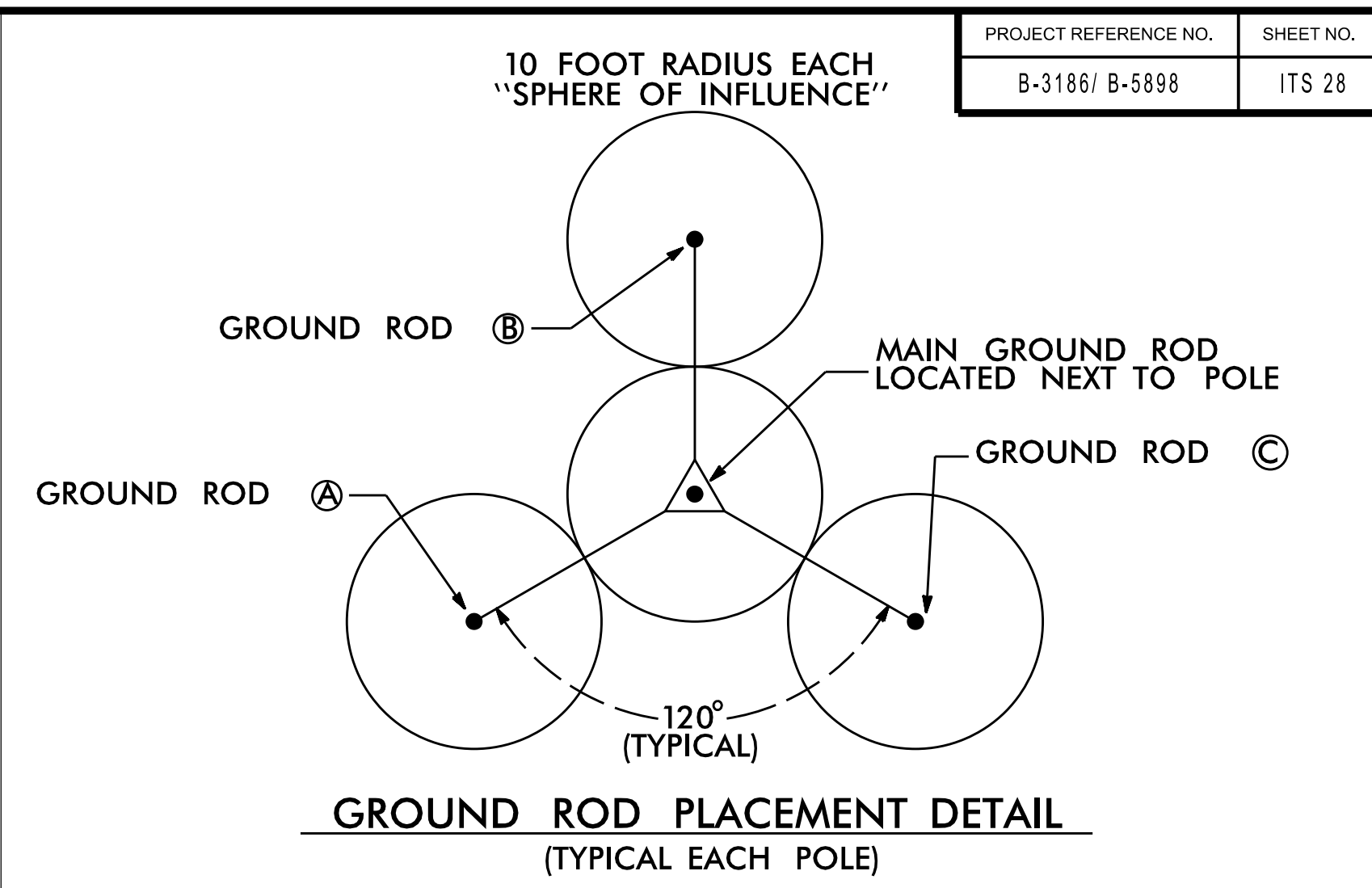
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Prepared for the Offices of:  750 N. Greenfield Pkwy., Garner, NC 27529	Elevation View CCTV-4 US 23 WB AT US 74		SEAL  ROACHELLE GARRETT
	Division 14 Haywood County Waynesville PLAN DATE: August 2023 PREPARED BY: M. Cavanaugh	REVIEWED BY: R. Garrett REVIEWED BY:	
SCALE 	DocuSigned by:  Rochelle Garrett 8/4/2023 SIGNATURE DATE CADD Filename:		DATE



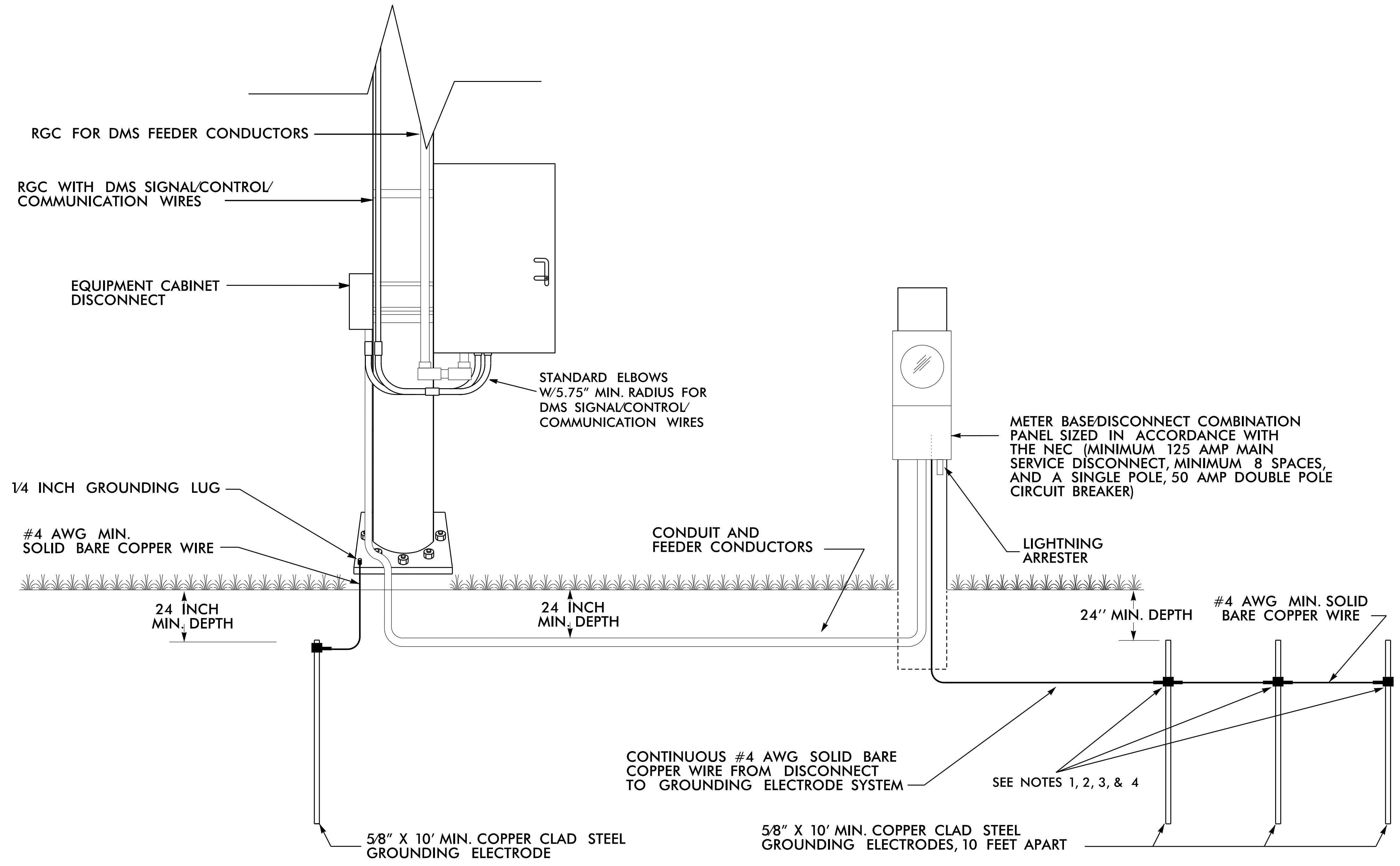
- NOTES**
1. BOND 0.5 INCH DIAMETER, 28 STRAND (MINIMUM) CLASS II COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN IRREVERSIBLE MECHANICAL CRIMP METHOD.
 2. ALL CONNECTIONS TO GROUND RODS SHOULD BE MADE WITH AN IRREVERSIBLE MECHANICAL CRIMP METHOD.
 3. BOND #4 AWG SOLID BARE COPPER WIRE TO REBAR CAGE AND THE MAIN GROUND ROD BY AN IRREVERSIBLE MECHANICAL CRIMP.
 4. ENSURE CAMERA HOUSING, CAMERA, AND PAN -TILT UNIT ARE BONDED TO POLE.
 5. REMOVE BONDING JUMPER BETWEEN EQUIPMENT CABINET GROUND BUSS AND NEUTRAL BUSS.
 6. REFER TO STANDARD DRAWING 1700-2 FOR ALTERNATE GROUND ROD INSTALLATION METHOD AS APPROVED BY THE ENGINEER.
 7. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12 INCHES.



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<p>Prepared for the Offices of: Public Engineering and Safety, Southern Branch STATE OF NORTH CAROLINA DIVISION OF TRANSPORTATION</p> <p>750 N. Greenfield Place, Garner, NC 27529</p>	<p>CCTV CAMERA INSTALLATION FOR METAL POLE WITH UNDERGROUND ELECTRICAL SERVICE TYPICAL DETAIL</p> <p>Division 14 Haywood County Waynesville</p> <p>PLAN DATE: August 2023 REVIEWED BY: R. Garrett</p> <p>PREPARED BY: M. Tindal REVIEWED BY:</p>		<p>SEAL ROCHELLE GARRETT ENGINEER 026679</p>					
	<p>NTS</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		
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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. MECHANICALLY CRIMP ALL CONNECTIONS TO GROUND RODS USING AN IRREVERSIBLE COMPRESSION TOOL.
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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	Prepared for the Offices of: DYNAMIC MESSAGE SIGN WITH UNDERGROUND ELECTRICAL SERVICE TYPICAL DETAIL		
	Division 14 Haywood County Waynesville	PLAN DATE: August 2023 REVIEWED BY: R. Garrett	
NTS	REVISIONS	INIT. DATE	Date Signed: 8/4/2023 Signature: Rochelle Garrett CADD Filename:

8/4/2023
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