

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

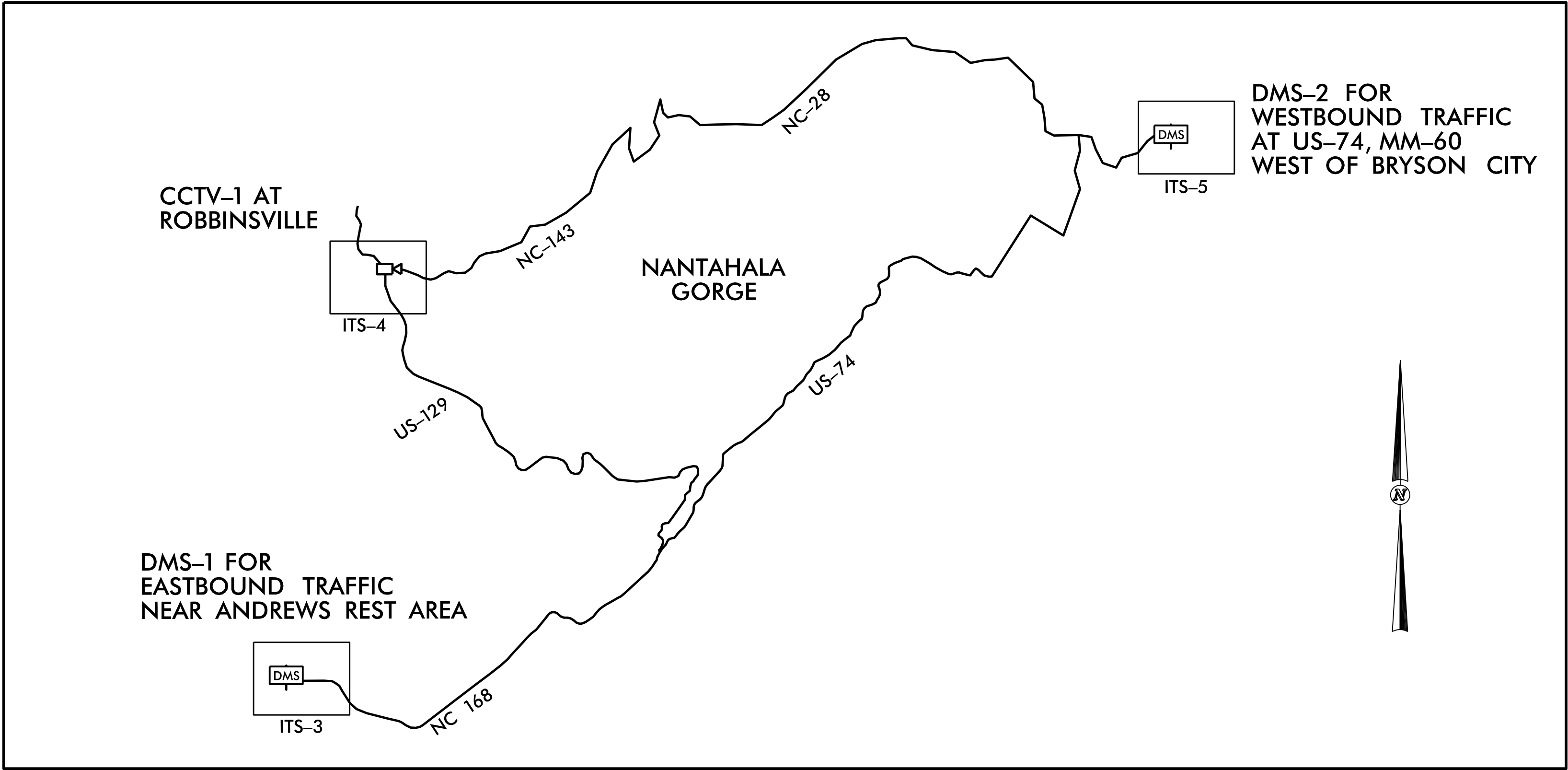
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CHEROKEE, GRAHAM, SWAIN

LOCATION: THREE LOCATIONS AROUND THE
NANTAHALA GORGE CORRIDOR

TYPE OF WORK: ITS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.
N.C.	SM-6114D	ITS-1
STATE PROJ.NO.	F.A. PROJ.NO.	DESCRIPTION
51306		PE CONST.



2024 STANDARD SPECIFICATION

PROJECT SCOPE
THREE STRATEGIC LOCATIONS

LETTING DATE:
AUGUST 25, 2026

INDEX OF SHEETS

SHEET ITS 1	TITLE SHEET
SHEET ITS 2	CONSTRUCTION NOTES
SHEET ITS 3-5	ITS PLANS
SHEET ITS 6-7	TYPICAL DETAILS
SHEET ITS 8-9	DMS ELEVATIONS
ROADWAY SHEETS	GUARDRAIL 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 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1700.01	ELECTRICAL SERVICE OPTIONS
1700.02	ELECTRICAL SERVICE GROUNDING
1715.01	UNDERGROUND CONDUIT-TRENCHING
1716.01	JUNCTION BOXES

NCDOT CONTACT:
TRANSPORTATION MOBILITY AND SAFETY

NATHAN P. DOMINGUEZ, PE
STATE ITS DESIGN ENGINEER

Prepared in the Offices of:



750 N. Greenfield Pkwy., Garner, NC 27529



ALL DIMENSIONS IN THESE
PLANS ARE IN FEET
UNLESS OTHERWISE NOTED

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SEAL

DocuSigned by:
Nathan P. Dominguez

07/07/2026

- 1

INSTALL ETHERNET CABLE
- 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 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 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 HUB 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 DMS ASSEMBLY
- 45

INSTALL DMS PEDESTAL STRUCTURE
- 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

INSTALL NEW SOLAR ASSEMBLY
- 57

INSTALL 10KVA SINGLE PHASE TRANSFORMER
- 58

INSTALL NEW ELECTRICAL SERVICE
- 59

INSTALL NEW EQUIPMENT CABINET DISCONNECT
- 60

BOND TRACER WIRE TO EQUIPMENT
GROUND BUS
- 61

DO NOT BOND TRACER WIRE TO
EQUIPMENT GROUND BUS
- 62

BOND RISER AND MESSENGER CABLE
TO POLE GROUND
- 63

BOND RISER TO POLE GROUND
- 64

BOND MESSENGER CABLE TO POLE GROUND
- 65

INSTALL HEAT SHRINK TUBING RETROFIT KIT
- 66

INSTALL MOLDABLE DUCT SEAL
- 67

BACK PULL EXISTING COMMUNICATION CABLE

LEGEND			
	FO		NEW FIBER OPTIC COMMUNICATIONS CABLE
	EXI		EXISTING COMMUNICATIONS CABLE
	REM		EXISTING COMMUNICATIONS CABLE TO BE REMOVED
			NEW AERIAL GUY ASSEMBLY
			NEW CONDUIT
			EXISTING CONDUIT
	DD		NEW DIRECTIONAL DRILLED CONDUIT

NEW		EXISTING	
	OVERSIZED JUNCTION BOX		
	WOOD POLE		
	AERIAL SPLICE ENCLOSURE		
	UNDERGROUND SPLICE ENCLOSURE		
	METAL POLE		
	CCTV ASSEMBLY		
	STANDARD GUY ASSEMBLY		
	SIDEWALK GUY ASSEMBLY		
	SIGNAL/EQUIPMENT CABINET		
	SPLICE CABINET		
	DEVICE INVENTORY NUMBER		
	ELECTRICAL SERVICE		
	DMS ASSEMBLY ON PEDESTAL		
	METAL SIGNAL POLE WITH MAST ARM		

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)
NUMBER OF CABLE(S)	NUMBER OF FIBERS
NEW/EXISTING CABLE	REMOVE/MODIFY CABLE
CONDUIT/RISER	
NUMBER OF RISER(S)/CONDUIT(S)	DIAMETER OF RISER(S)/CONDUIT(S) (INCH)

ATTACHMENT POINT:	
	DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT
	REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT

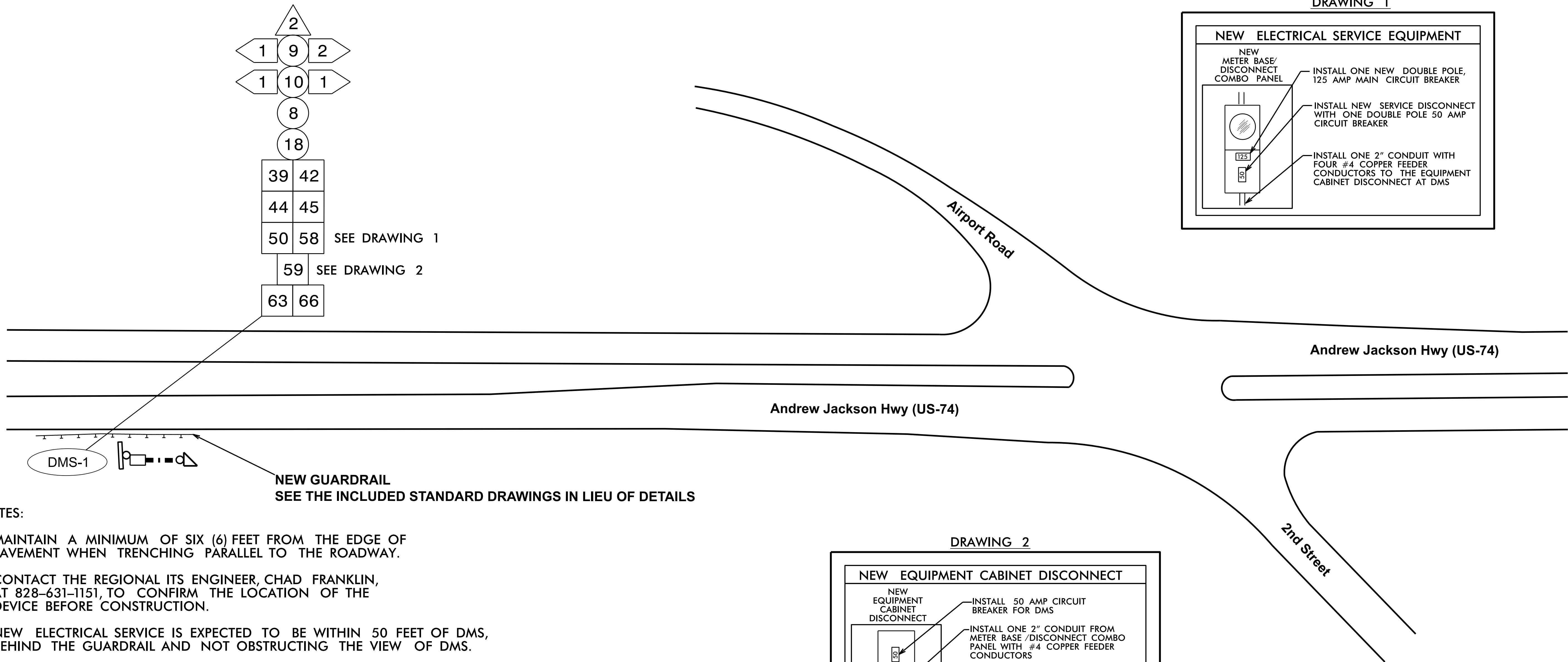
"SS" REFERENCE LOCATION
FS = FRONT SIDE OF POLE
BS = BACK SIDE OF POLE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529	CONSTRUCTION NOTES		SEAL DocuSigned by Nathan Dominguez 06/22/2026	
	DIVISION 14			
	PLAN DATE: JUNE 2026	REVIEWED BY: N. DOMINGUEZ, PE		
	PREPARED BY: B. CHRISTIAN			
	REVISIONS	INIT.	DATE	

DMS-1 FOR EASTBOUND TRAFFIC
GPS: 35.201083, -83.844196

PROJECT REFERENCE NO.	SHEET NO.
SM-6114D	ITS-3



- NOTES:
- 1) MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 - 2) CONTACT THE REGIONAL ITS ENGINEER, CHAD FRANKLIN, AT 828-631-1151, TO CONFIRM THE LOCATION OF THE DEVICE BEFORE CONSTRUCTION.
 - 3) NEW ELECTRICAL SERVICE IS EXPECTED TO BE WITHIN 50 FEET OF DMS, BEHIND THE GUARDRAIL AND NOT OBSTRUCTING THE VIEW OF DMS.
 - 4) CONTACT ENGINEER TO REQUEST CELL MODEM AT LEAST 6 WEEKS BEFORE INSTALLATION.
 - 5) WHEN INSTALLING OR MODIFYING AN ELECTRICAL SERVICE PANEL OR DISCONNECT, CONTRACTOR SHALL ENSURE ALL ABOVE GROUND CONDUIT BETWEEN THE CABINET AND THE ITS DEVICE /DISCONNECT SHALL BE RIGID GALVANIZED STEEL CONDUIT.

1	INSTALL ETHERNET CABLE	12	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	23	INSTALL NEW RISER INTO CABINET BASE (USE EXISTING CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE
2	INSTALL 4-WIRE FEEDER CONDUCTORS	13	INSTALL OUTER-DUCT POLYETHYLENE CONDUIT	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	35	INSTALL CCTV FIELD EQUIPMENT CABINET	47	INSTALL MESSENGER CABLE	58	INSTALL NEW ELECTRICAL SERVICE
3	INSTALL 3-WIRE FEEDER CONDUCTORS	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	59	INSTALL NEW EQUIPMENT CABINET DISCONNECT
4	INSTALL SMFO CABLE	15	DIRECTIONAL DRILL CONDUIT	26	INSTALL NEW ETHERNET EDGE SWITCH	37	INSTALL CCTV CAMERA WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	60	MOUNT CCTV CAMERA ASSEMBLY TO DMS STRUCTURE WITH EXTENSION POLE
5	EXISTING SMFO CABLE	16	BORE AND JACK CONDUIT	27	INSTALL NEW FIBER OPTIC TRANSCEIVER	38	INSTALL CCTV CAMERA METAL POLE	50	INSTALL CELL MODEM AND ANTENNA	61	INSTALL ELECTRICAL SERVICE ON WOOD PEDESTAL
6	INSTALL FIBER-OPTIC DROP CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	28	INSTALL INTERCONNECT CENTER PATCH PANEL, JUMPERS, AND FUSION SPlice CABLE IN CABINET	39	INSTALL STANDARD JUNCTION BOX	51	INSTALL CABLE STORAGE RACK(S) [SNOW SHOE(S)] AND STORE 100 FEET OF CABLE	62	INSTALL DISCONNECT ON OR NEAR CCTV POLE, DMS STRUCTURE, HUB, OR TRANSFORMER.
7	INSTALL TRACER WIRE	18	INSTALL CABLE(S) IN NEW CONDUIT	29	INSTALL UNDERGROUND SPlice ENCLOSURE	40	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	63	BOND RISER TO POLE GROUND
8	TRENCH	19	INSTALL CABLE(S) IN EXISTING RISER	30	INSTALL AERIAL SPlice ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53A	STORE 20 FEET OF EACH COMMUNICATIONS CABLE	64A	INSTALL SINGLE PEDESTAL DMS STRUCTURE, FOUNDATION AND DMS
9	INSTALL PVC CONDUIT	20	INSTALL CABLE(S) IN NEW RISER	31	MODIFY EXISTING INTERCONNECT CENTER	42	INSTALL WOOD POLE	53B	STORE 50 FEET OF EACH COMMUNICATIONS CABLE	64B	INSTALL BACK-TO-BACK PEDESTAL DMS STRUCTURE, FOUNDATION AND 2 DMS
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS	32	INSTALL POLE MOUNTED SPlice CABINET	43	REMOVE EXISTING WOOD POLE	54	STORE 100 FEET OF COMMUNICATIONS CABLE	65	INSTALL HEAT SHRINK TUBING RETROFIT KIT
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EXISTING CONDUIT STUBOUTS WHEN AVAILABLE)	33	INSTALL BASE MOUNTED HUB CABINET	44	INSTALL DMS ASSEMBLY	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	66	INSTALL MOLDABLE DUCT SEAL
						45	INSTALL DMS PEDESTAL STRUCTURE	56	LASH CABLE(S) TO NEW MESSENGER	67	BACK PULL EXISTING COMMUNICATION CABLE

Prepared in the Offices of:

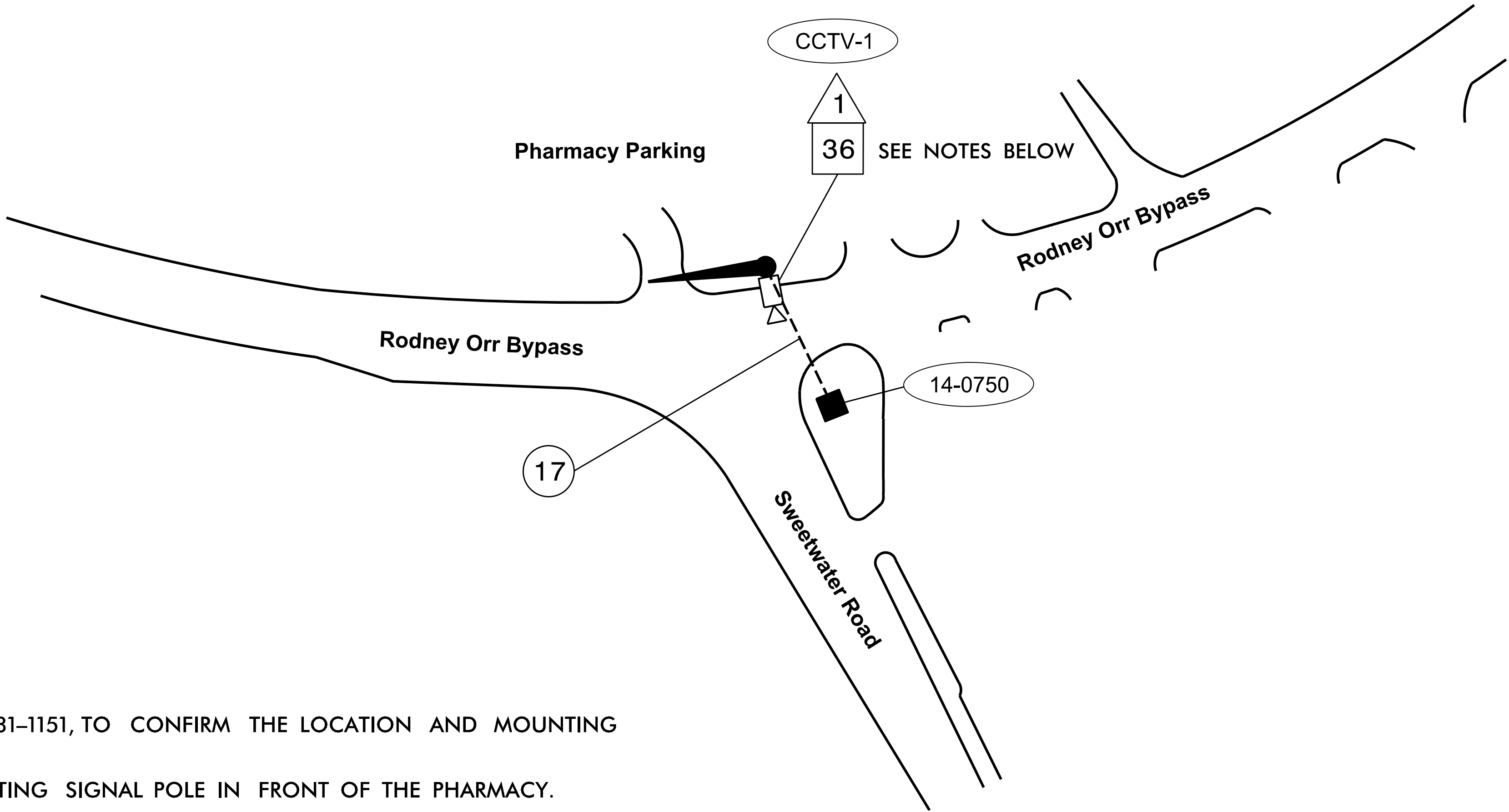
750 N. Greenfield Hwy., Garner, NC 27529

ITS DEVICE CONSTRUCTION PLANS
DIVISION 14 CHEROKEE COUNTY ANDREWS
PLAN DATE: JUNE 2026 REVIEWED BY: N. DOMINGUEZ, PE
PREPARED BY: B. CHRISTIAN
REVISIONS
INIT. DATE
SCALE: NTS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 055078
NATHAN P. DOMINGUEZ
Nathan Dominguez 5/06/22/2026

CCTV-1 AT SWEETWATER RD
GPS: 35.324148, -83.802344

PROJECT REFERENCE NO.	SHEET NO.
SM-6114D	ITS-4



NOTES:

- 1) CONTACT THE REGIONAL ITS ENGINEER, CHAD FRANKLIN, AT 828-631-1151, TO CONFIRM THE LOCATION AND MOUNTING OF THE CCTV BEFORE CONSTRUCTION.
- 2) MOUNT THE CCTV BELOW THE MAST ARM SUPPORT ON THE EXISTING SIGNAL POLE IN FRONT OF THE PHARMACY.
- 3) INSTALL AND SECURE TO THE RAILS THE POE INJECTOR AND DATA SURGE PROTECTOR FOR THE CCTV IN THE CABINET CONTAINING THE SIGNAL CONTROLLER.
- 4) CONNECT WITH SHIELDED POE CABLE THE CCTV ON THE SIGNAL POLE TO THE CCTV EQUIPMENT INSTALLED IN THE EXISTING SIGNAL CABINET WHERE THE SIGNAL NETWORK CAN BE ACCESSED.
- 5) INSTALL THE POE CABLE CONNECTING THE CCTV TO THE SIGNAL CABINET USING THE EXISTING PATH AND CONDUIT USED TO ROUTE THE SIGNAL HEAD WIRES TO THE SIGNAL CABINET. PLEASE PROVIDE FIVE FEET OF SLACK IN THE CABINET.
- 6) CONFIGURE AND CONNECT THE CCTV TO THE SIGNAL NETWORK SWITCH FOR REMOTE COMMUNICATION.

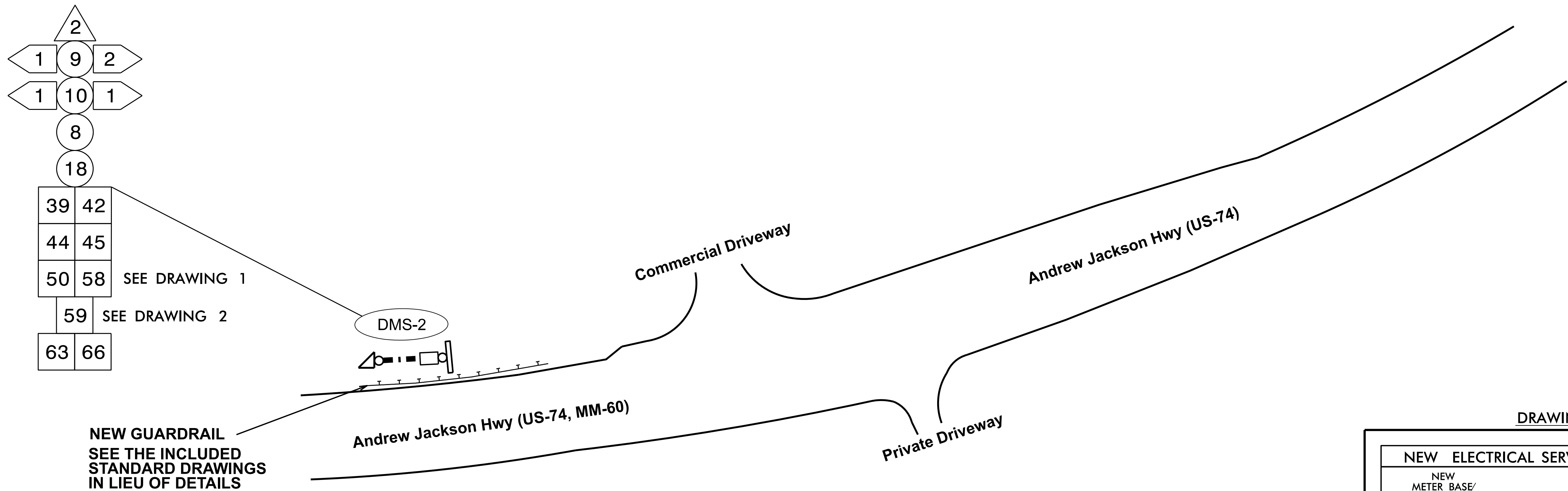
1	INSTALL ETHERNET CABLE	12	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	23	INSTALL NEW RISER INTO CABINET BASE (USE EXISTING CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE
2	INSTALL 4-WIRE FEEDER CONDUCTORS	13	INSTALL OUTER-DUCT POLYETHYLENE CONDUIT	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	35	INSTALL CCTV FIELD EQUIPMENT CABINET	47	INSTALL MESSENGER CABLE	58	INSTALL NEW ELECTRICAL SERVICE
3	INSTALL 3-WIRE FEEDER CONDUCTORS	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	59	INSTALL NEW EQUIPMENT CABINET DISCONNECT
4	INSTALL SMFO CABLE	15	DIRECTIONAL DRILL CONDUIT	26	INSTALL NEW ETHERNET EDGE SWITCH	37	INSTALL CCTV CAMERA WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	60	MOUNT CCTV CAMERA ASSEMBLY TO DMS STRUCTURE WITH EXTENSION POLE
5	EXISTING SMFO CABLE	16	BORE AND JACK CONDUIT	27	INSTALL NEW FIBER OPTIC TRANSCEIVER	38	INSTALL CCTV CAMERA METAL POLE	50	INSTALL CELL MODEM AND ANTENNA	61	INSTALL ELECTRICAL SERVICE ON WOOD PEDESTAL
6	INSTALL FIBER-OPTIC DROP CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	39	INSTALL STANDARD JUNCTION BOX	51	INSTALL CABLE STORAGE RACK(S) [SNOW SHOE(S)] AND STORE 100 FEET OF CABLE	62	INSTALL DISCONNECT ON OR NEAR CCTV POLE, DMS STRUCTURE, HUB, OR TRANSFORMER.
7	INSTALL TRACER WIRE	18	INSTALL CABLE(S) IN NEW CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	40	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	63	BOND RISER TO POLE GROUND
8	TRENCH	19	INSTALL CABLE(S) IN EXISTING RISER	30	INSTALL AERIAL SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53A	STORE 20 FEET OF EACH COMMUNICATIONS CABLE	64A	INSTALL SINGLE PEDESTAL DMS STRUCTURE, FOUNDATION AND DMS
9	INSTALL PVC CONDUIT	20	INSTALL CABLE(S) IN NEW RISER	31	MODIFY EXISTING INTERCONNECT CENTER	42	INSTALL WOOD POLE	53B	STORE 50 FEET OF EACH COMMUNICATIONS CABLE	64B	INSTALL BACK-TO-BACK PEDESTAL DMS STRUCTURE, FOUNDATION AND 2 DMS
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS	32	INSTALL POLE MOUNTED SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	54	STORE 100 FEET OF COMMUNICATIONS CABLE	65	INSTALL HEAT SHRINK TUBING RETROFIT KIT
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EXISTING CONDUIT STUBOUTS WHEN AVAILABLE)	33	INSTALL BASE MOUNTED HUB CABINET	44	INSTALL DMS ASSEMBLY	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	66	INSTALL MOLDABLE DUCT SEAL
						45	INSTALL DMS PEDESTAL STRUCTURE	56	LASH CABLE(S) TO NEW MESSENGER	67	BACK PULL EXISTING COMMUNICATION CABLE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

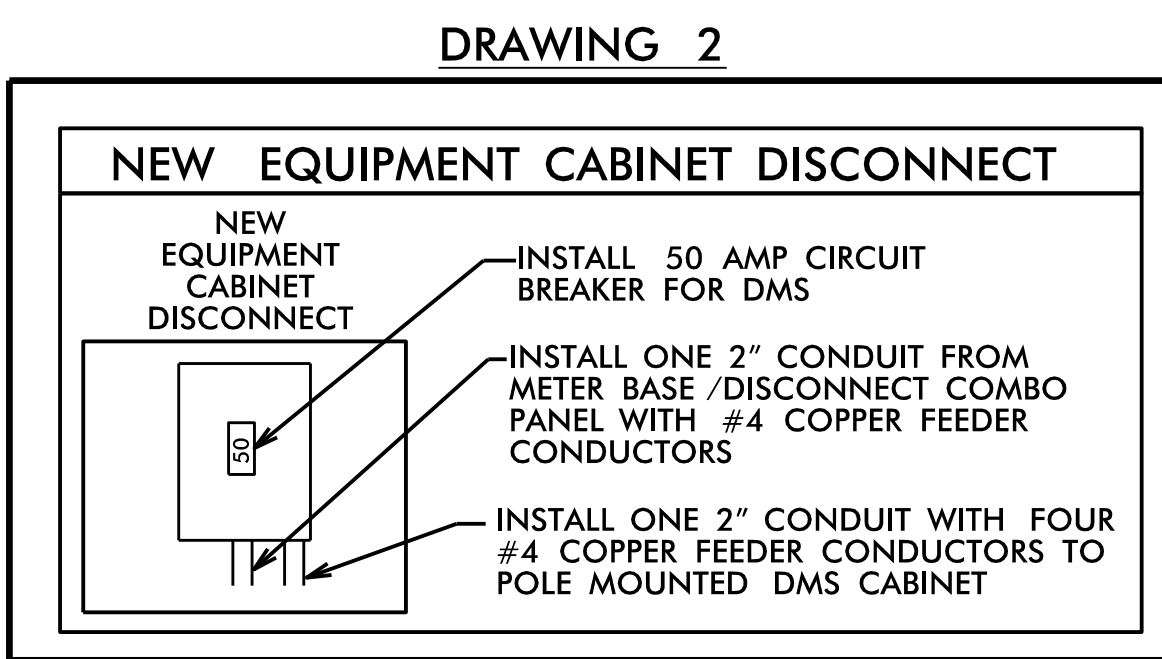
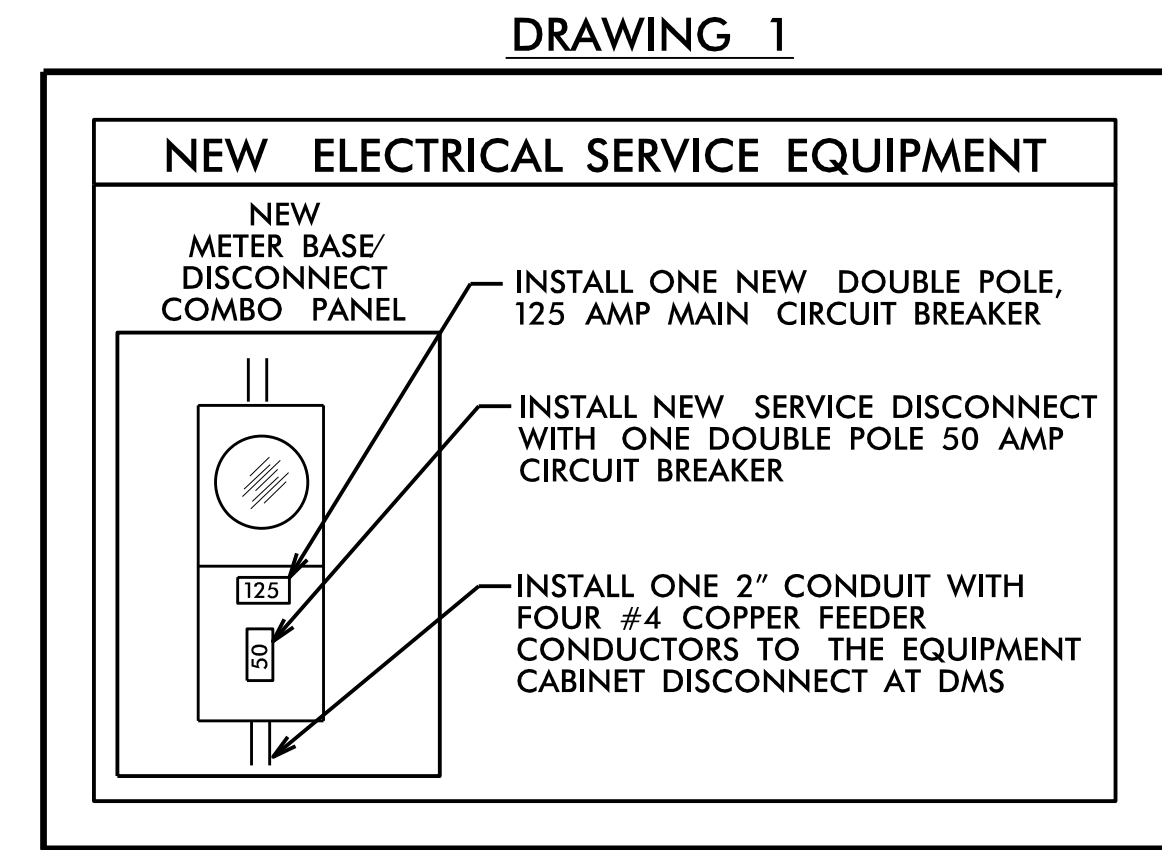
Prepared in the Offices of:		ITS DEVICE CONSTRUCTION PLANS		SEAL	
		DIVISION 14 GRAHAM COUNTY ROBBINSVILLE			
PLAN DATE: JUNE 2026		REVIEWED BY: N. DOMINGUEZ, PE		SEAL 055078	
PREPARED BY: B. CHRISTIAN		REVISIONS		INIT. DATE	
750 N. Greenfield Pkwy., Garner, NC 27529				Nathan P. Dominguez 06/22/2026	
SCALE					
NTS					

DMS-2 FOR WESTBOUND TRAFFIC
GPS: 35.373888, -83.531944

PROJECT REFERENCE NO.	SHEET NO.
SM-6114D	ITS-5



- NOTES:
- 1) MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 - 2) CONTACT THE REGIONAL ITS ENGINEER, CHAD FRANKLIN, AT 828-631-1151, TO CONFIRM THE LOCATION OF THE DEVICE BEFORE CONSTRUCTION.
 - 3) NEW ELECTRICAL SERVICE IS EXPECTED TO BE WITHIN 50 FEET OF DMS, BEHIND THE GUARDRAIL AND NOT OBSTRUCTING THE VIEW OF DMS.
 - 4) CONTACT ENGINEER TO REQUEST CELL MODEM AT LEAST 6 WEEKS BEFORE INSTALLATION.
 - 5) WHEN INSTALLING OR MODIFYING AN ELECTRICAL SERVICE PANEL OR DISCONNECT, CONTRACTOR SHALL ENSURE ALL ABOVE GROUND CONDUIT BETWEEN THE CABINET AND THE ITS DEVICE /DISCONNECT SHALL BE RIGID GALVANIZED STEEL CONDUIT.



1	INSTALL ETHERNET CABLE	12	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	23	INSTALL NEW RISER INTO CABINET BASE (USE EXISTING CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE
2	INSTALL 4-WIRE FEEDER CONDUCTORS	13	INSTALL OUTER-DUCT POLYETHYLENE CONDUIT	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	35	INSTALL CCTV FIELD EQUIPMENT CABINET	47	INSTALL MESSENGER CABLE	58	INSTALL NEW ELECTRICAL SERVICE
3	INSTALL 3-WIRE FEEDER CONDUCTORS	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	59	INSTALL NEW EQUIPMENT CABINET DISCONNECT
4	INSTALL SMFO CABLE	15	DIRECTIONAL DRILL CONDUIT	26	INSTALL NEW ETHERNET EDGE SWITCH	37	INSTALL CCTV CAMERA WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	60	MOUNT CCTV CAMERA ASSEMBLY TO DMS STRUCTURE WITH EXTENSION POLE
5	EXISTING SMFO CABLE	16	BORE AND JACK CONDUIT	27	INSTALL NEW FIBER OPTIC TRANSCEIVER	38	INSTALL CCTV CAMERA METAL POLE	50	INSTALL CELL MODEM AND ANTENNA	61	INSTALL ELECTRICAL SERVICE ON WOOD PEDESTAL
6	INSTALL FIBER-OPTIC DROP CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPlice CABLE IN CABINET	39	INSTALL STANDARD JUNCTION BOX	51	INSTALL CABLE STORAGE RACK(S) [SNOW SHOE(S)] AND STORE 100 FEET OF CABLE	62	INSTALL DISCONNECT ON OR NEAR CCTV POLE, DMS STRUCTURE, HUB, OR TRANSFORMER.
7	INSTALL TRACER WIRE	18	INSTALL CABLE(S) IN NEW CONDUIT	29	INSTALL UNDERGROUND SPlice ENCLOSURE	40	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	63	BOND RISER TO POLE GROUND
8	TRENCH	19	INSTALL CABLE(S) IN EXISTING RISER	30	INSTALL AERIAL SPlice ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53A	STORE 20 FEET OF EACH COMMUNICATIONS CABLE	64A	INSTALL SINGLE PEDESTAL DMS STRUCTURE, FOUNDATION AND DMS
9	INSTALL PVC CONDUIT	20	INSTALL CABLE(S) IN NEW RISER	31	MODIFY EXISTING INTERCONNECT CENTER	42	INSTALL WOOD POLE	53B	STORE 50 FEET OF EACH COMMUNICATIONS CABLE	64B	INSTALL BACK-TO-BACK PEDESTAL DMS STRUCTURE, FOUNDATION AND 2 DMS
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS	32	INSTALL POLE MOUNTED SPlice CABINET	43	REMOVE EXISTING WOOD POLE	54	STORE 100 FEET OF COMMUNICATIONS CABLE	65	INSTALL HEAT SHRINK TUBING RETROFIT KIT
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EXISTING CONDUIT STUBOUTS WHEN AVAILABLE)	33	INSTALL BASE MOUNTED HUB CABINET	44	INSTALL DMS ASSEMBLY	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	66	INSTALL MOLDABLE DUCT SEAL
						45	INSTALL DMS PEDESTAL STRUCTURE	56	LASH CABLE(S) TO NEW MESSENGER	67	BACK PULL EXISTING COMMUNICATION CABLE

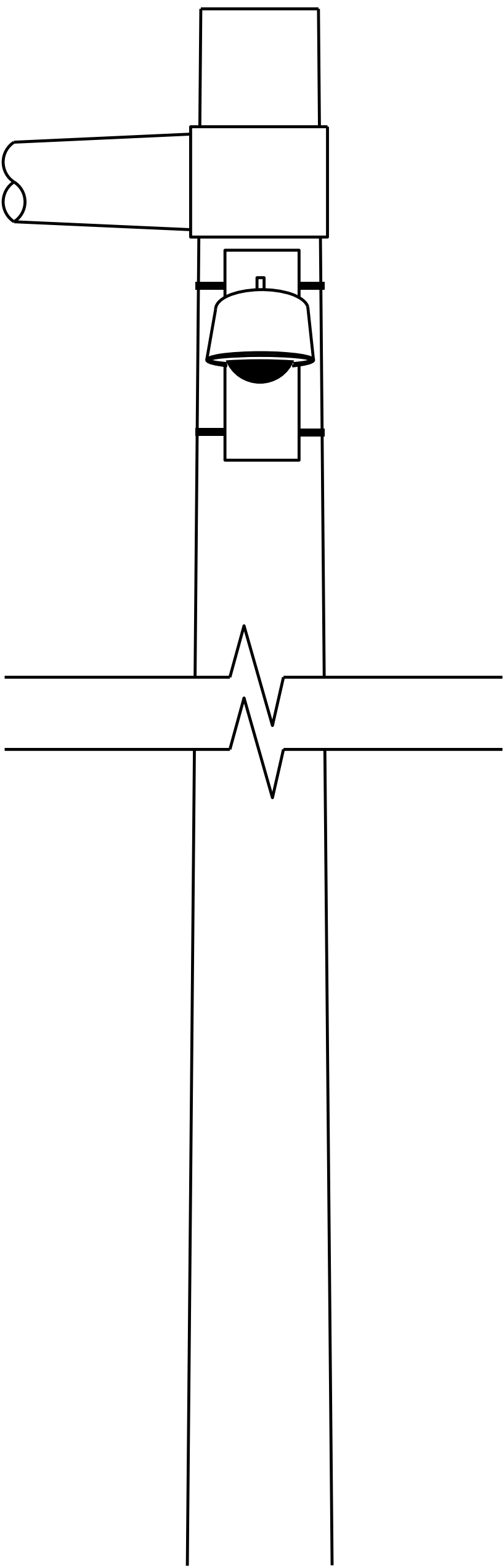
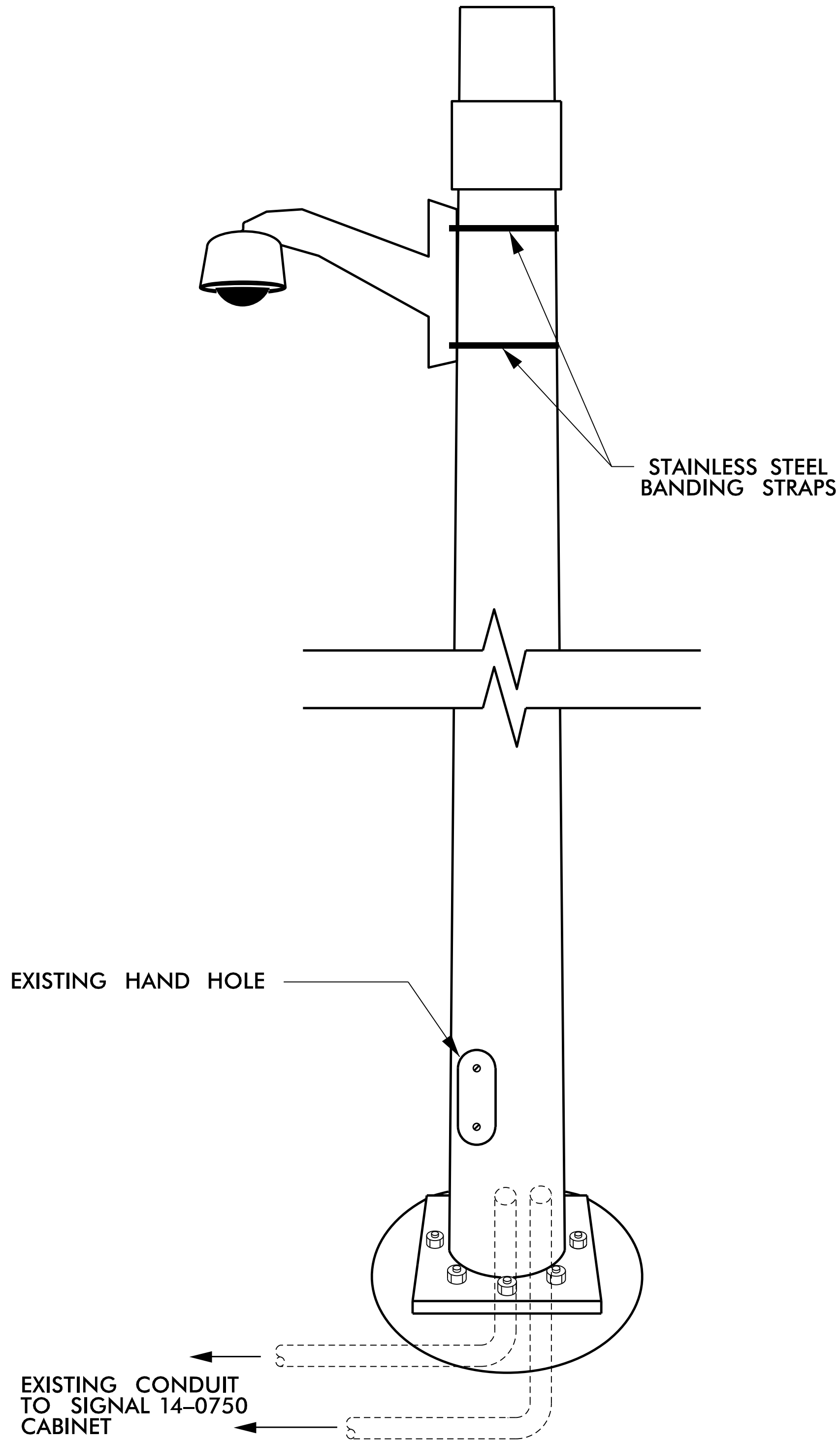
Prepared in the Offices of:

750 N. Greenfield Hwy., Garner, NC 27529

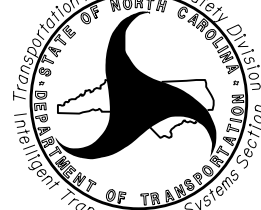
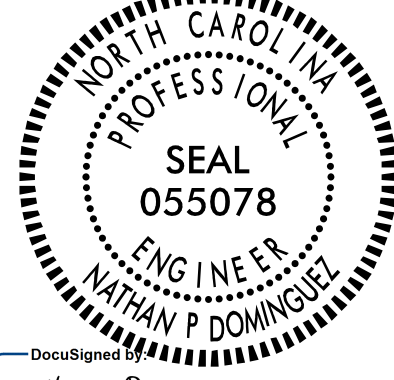
ITS DEVICE CONSTRUCTION PLANS
DIVISION 14 SWAIN COUNTY ANDREWS
PLAN DATE: JUNE 2026 REVIEWED BY: N. DOMINGUEZ, PE
PREPARED BY: B. CHRISTIAN
REVISIONS
INIT. DATE
SCALE: NTS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 055078
NATHAN P. DOMINGUEZ
Nathan Dominguez 06/22/2026

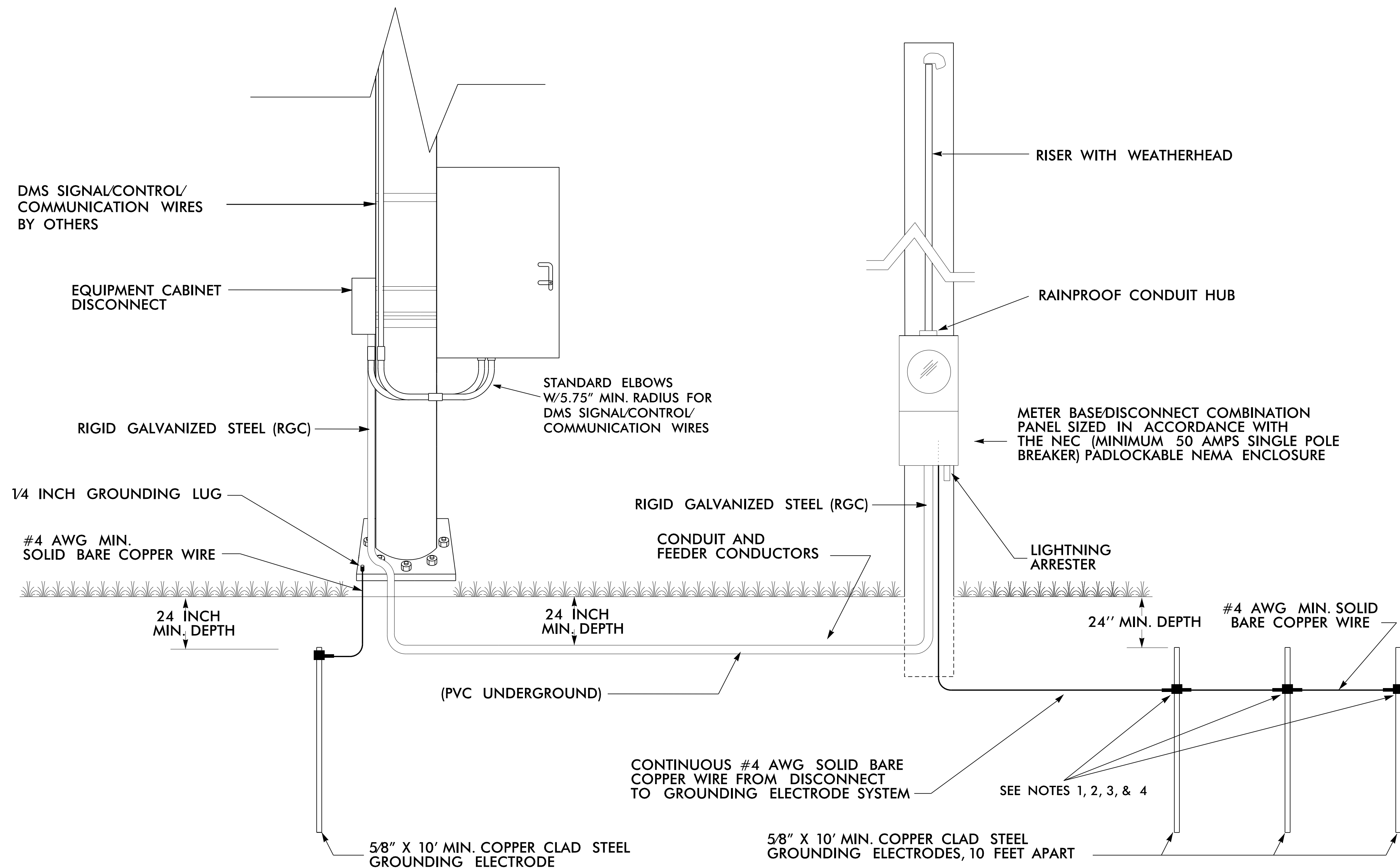
MOUNT ON THE EAST SIDE TOWARDS
SWEETWATER ROAD



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:  750 N. Greenfield Pkwy., Garner, NC 27529	CCTV MOUNTING DETAIL ON EXISTING SIGNAL POLE BELOW MAST ARM SUPPORT		SEAL  DocuSign	
	DIVISION 14 GRAHAM COUNTY ROBBINSVILLE			
	PLAN DATE: JUNE 2026	REVIEWED BY: N. DOMINGUEZ, PE		
	PREPARED BY: B. CHRISTIAN	REVIEWED BY:	INIT.	DATE
SCALE	REVISIONS			
NTS				

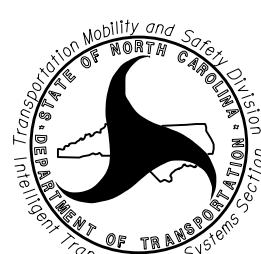
Nathan Dominguez 06/22/2026



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.

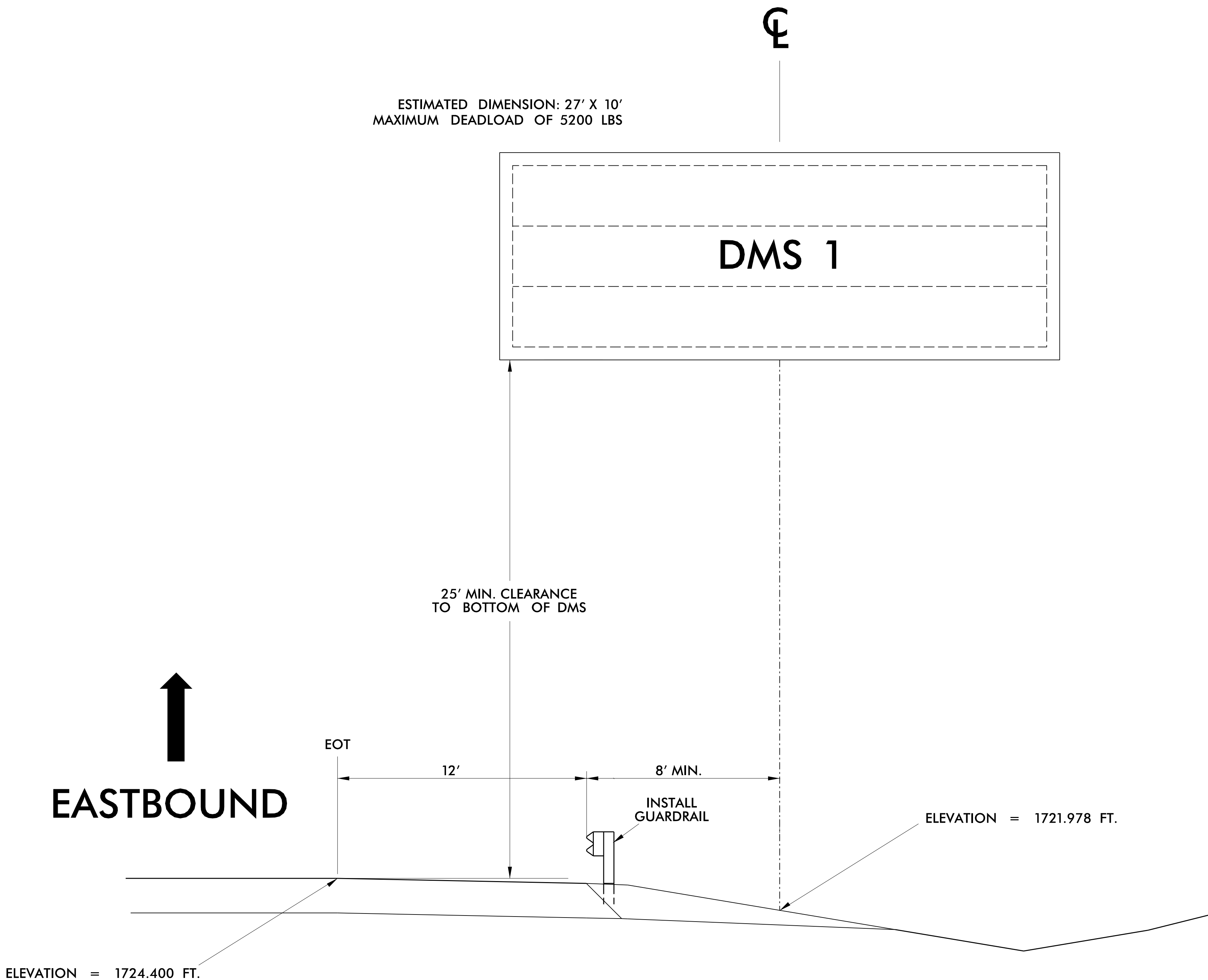
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:  250 N. Greenfield Place, Garner, NC 27529	DYNAMIC MESSAGE SIGN WITH AERIAL ELECTRICAL SERVICE TYPICAL DETAIL		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER NATHAN P. DOMINGUEZ 055078
	DIVISION 14 CHEROKEE & SWAIN COUNTIES		
	PLAN DATE: JUNE 2026	REVIEWED BY: N. DOMINGUEZ, PE	
	PREPARED BY: B. CHRISTIAN	REVIEWED BY:	
SCALE	REVISIONS	INIT.	DATE
NTS			

DocuSign
Nathan Dominguez 06/22/2026

DMS-1 FOR EASTBOUND TRAFFIC
GPS: 35.201083, -83.844196

PROJECT REFERENCE NO.	SHEET NO.
SM-6114D	ITS-8



NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR FURNISHING DMS ELEVATIONS FOR ENGINEER'S APPROVAL.
2. USE THE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS PROVIDED BY THE DMS FABRICATOR TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
3. FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTINGS USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
4. 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.
5. DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 120 MPH.
6. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT COMMUNICATIONS CABLE DURING CONSTRUCTION.
7. PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
8. 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.
9. INSTALL A CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
10. CONTRACTOR SHALL COORDINATE WITH THE DIVISION FOR GUARDRAIL PLANS AND INSTALLATION.

EOT = EDGE OF TRAVEL (LANE)

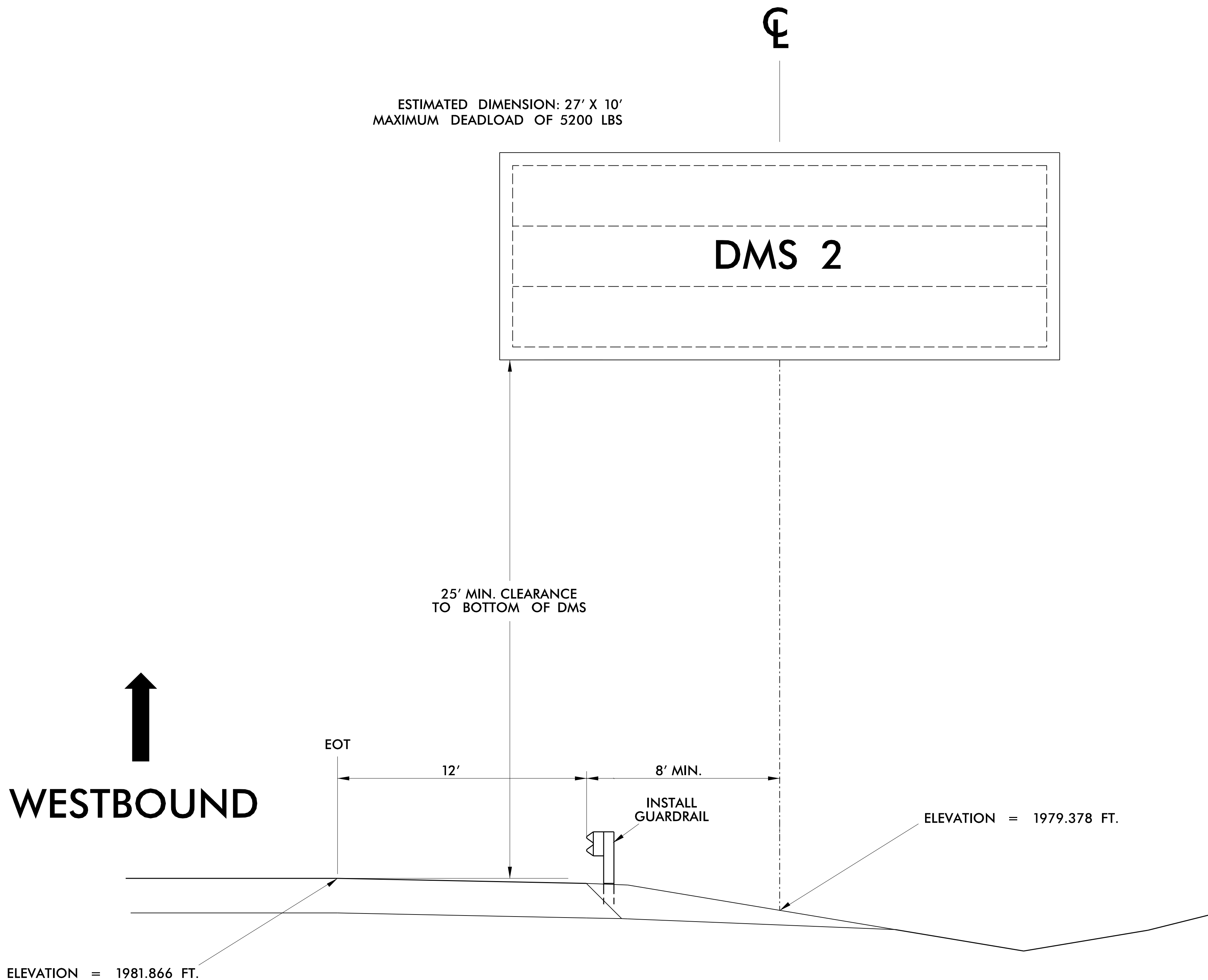
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:		DMS-1 ELEVATION DETAIL		SEAL	
		DIVISION 14 CHEROKEE COUNTY ANDREWS			
750 N. Greenfield Pkwy., Garner, NC 27529		PLAN DATE: JUNE 2026	REVIEWED BY: N. DOMINGUEZ, PE		
		PREPARED BY: B. CHRISTIAN			
SCALE		REVISIONS	INIT.	DATE	
NTS					

DocuSigned by: Nathan P. Dominguez 06/22/2026

DMS-2 FOR WESTBOUND TRAFFIC
GPS: 35.373888, -83.531944

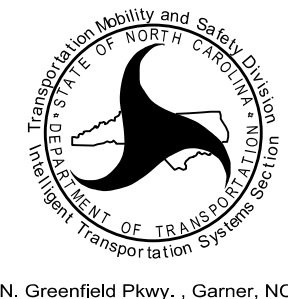
PROJECT REFERENCE NO.	SHEET NO.
SM-6114D	ITS-9

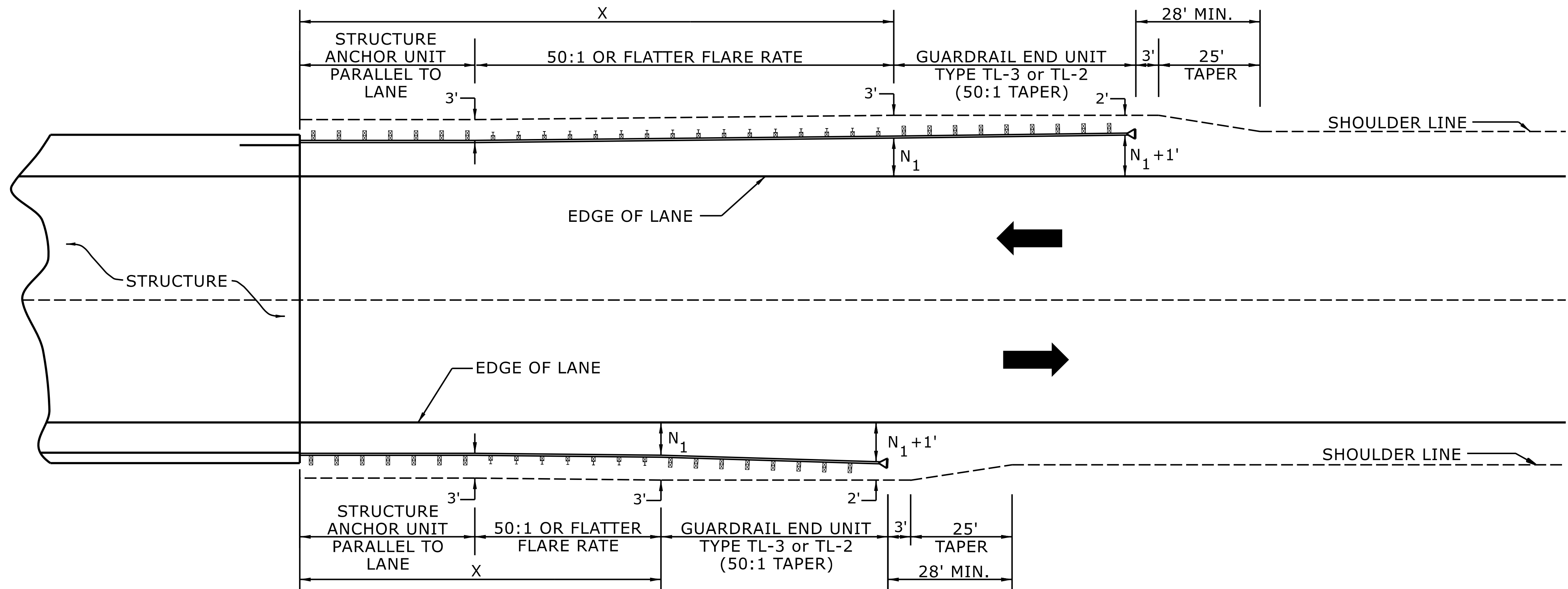


- NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR FURNISHING DMS ELEVATIONS FOR ENGINEER'S APPROVAL.
 2. USE THE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS PROVIDED BY THE DMS FABRICATOR TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
 3. FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTINGS USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
 4. 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.
 5. DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 120 MPH.
 6. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT COMMUNICATIONS CABLE DURING CONSTRUCTION.
 7. PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
 8. 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.
 9. INSTALL A CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
 10. CONTRACTOR SHALL COORDINATE WITH THE DIVISION FOR GUARDRAIL PLANS AND INSTALLATION.

EOT = EDGE OF TRAVEL (LANE)

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:  750 N. Greenfield Pkwy., Garner, NC 27529		DMS-2 ELEVATION DETAIL DIVISION 14 SWAIN COUNTY ANDREWS PLAN DATE: JUNE 2026 REVIEWED BY: N. DOMINGUEZ, PE PREPARED BY: B. CHRISTIAN		 SEAL NORTH CAROLINA PROFESSIONAL ENGINEER NATHAN P. DOMINGUEZ 055078 DocuSign Nathan.Dominguez@ncdot.gov 06/22/2026	
SCALE	NTS	REVISIONS	INIT.	DATE	



USE FLARE RATE AS THE CONTROL IF THE " N_1 " DISTANCE IS NOT OBTAINED.
(" N_1 " IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS $\geq$ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS $<$ 45MPH USE GREU TYPE TL-2

GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

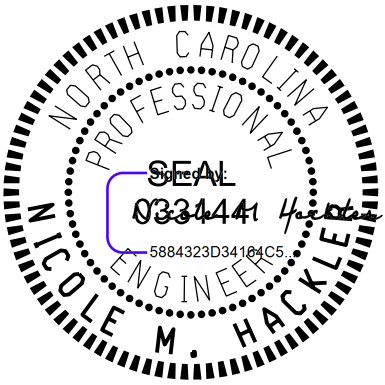
LENGTHS AND OFFSETS FOR PROPOSED GUARDRAIL AT TWO LANE - TWO WAY LOCATIONS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15

862D01



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

Office 919-707-6950 FAX 919-250-4119

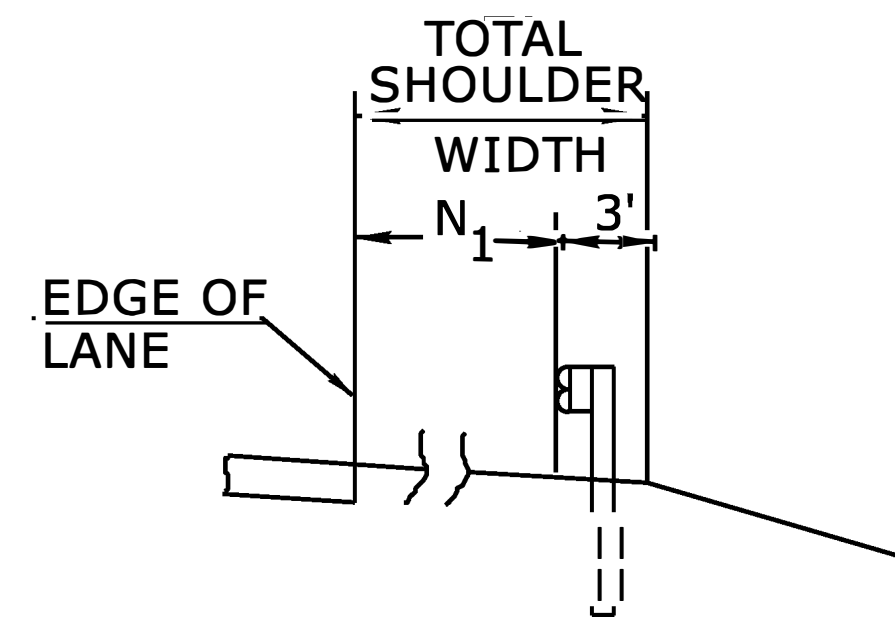
SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

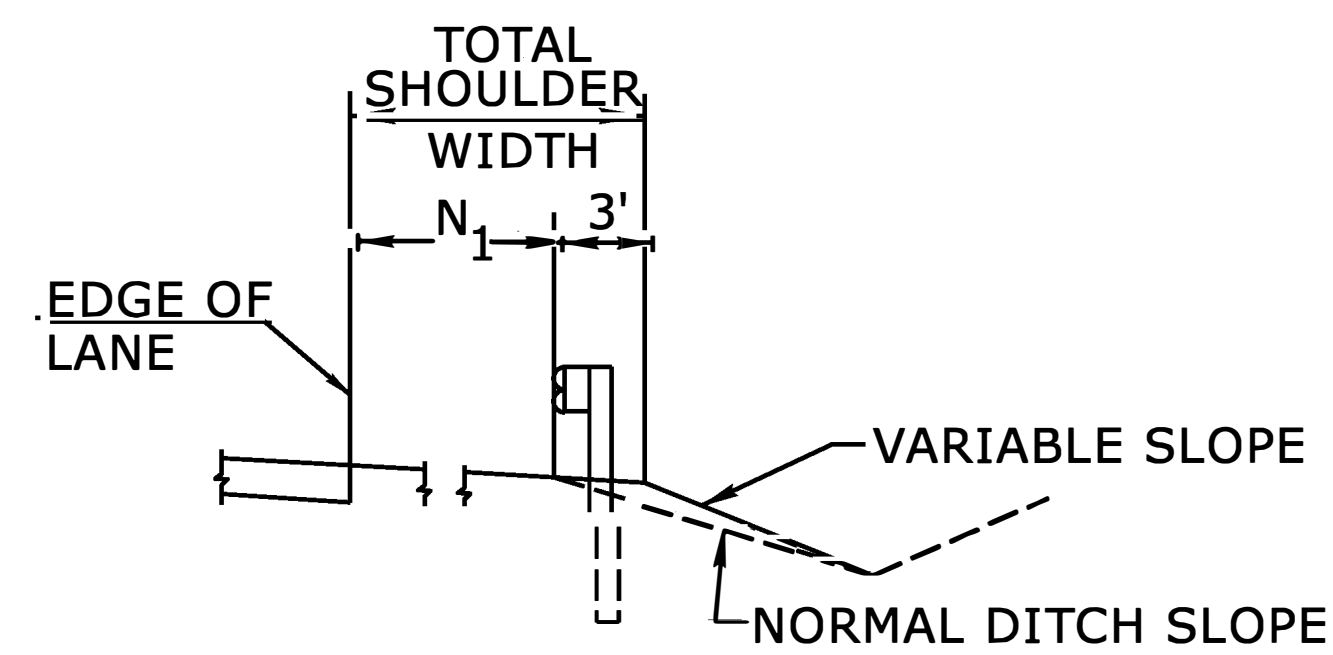
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01

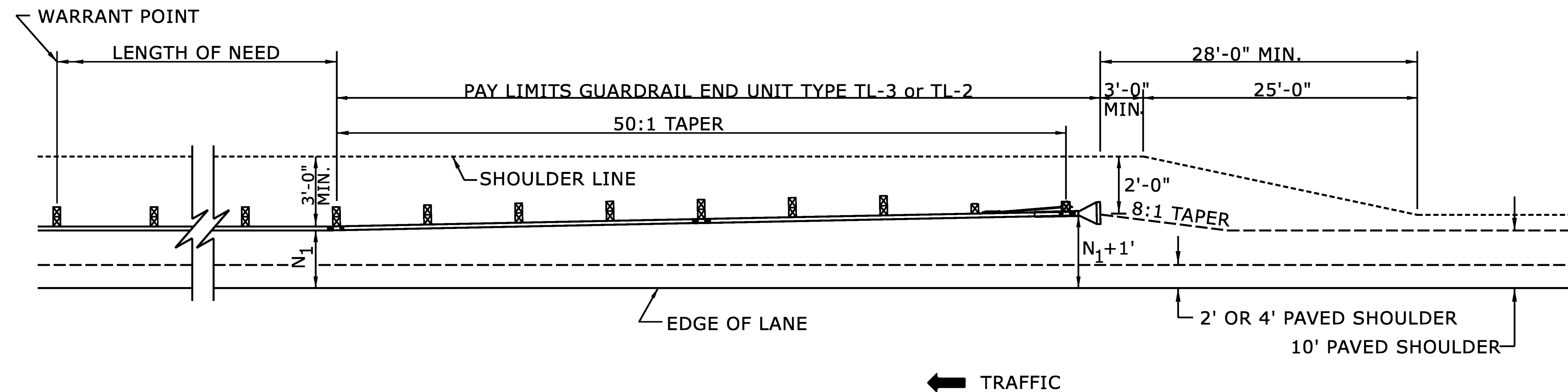


FILL SECTION



CUT SECTION

"N₁" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.



FOR POSTED SPEEDS $\geq$ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS $<$ 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

CONTRACTS STANDARDS AND DEVELOPMENT UNIT

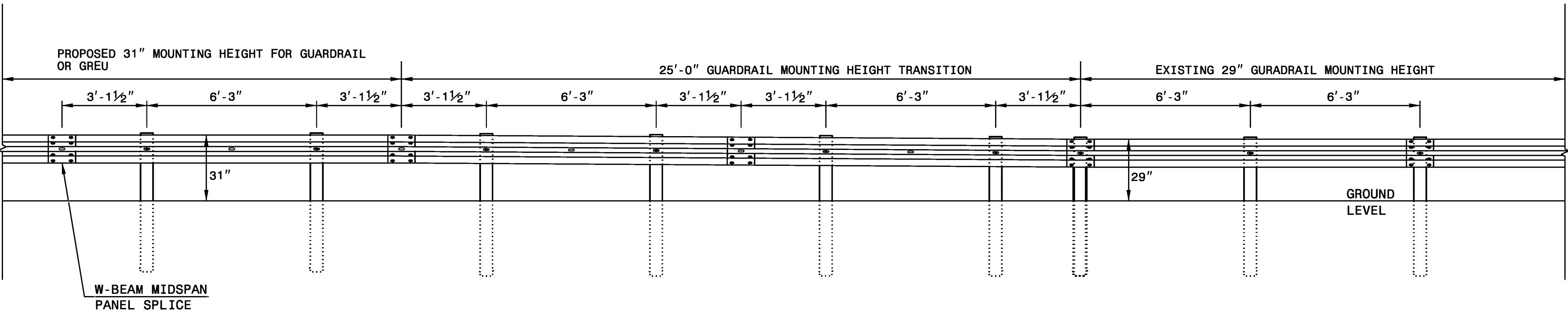
Office 919-707-6950

FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

NOTE: IF EXISTING GUARDRAIL IS LOWER THAN 29", USE AN ADDITIONAL 12'-6" LONG SECTION OF GUARDRAIL,
FOR EVERY 1" OF HEIGHT DIFFERENCE, TO TRANSITION FROM EXISTING GUARDRAIL TO PROPOSED 31" GUARDRAIL.



ELEVATION VIEW

TRANSITION FROM 29" TO 31" W-BEAM GUARDRAIL MOUNTING HEIGHT

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 5 OF 9
862D02



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
CONTRACTS STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-8950 FAX 919-250-4119	
SEE TITLE BLOCK	
ORIGINAL BY: K. Aldridge	DATE: 02-25
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	