

TIP PROJECT: W-5600

CONTRACT: C204359

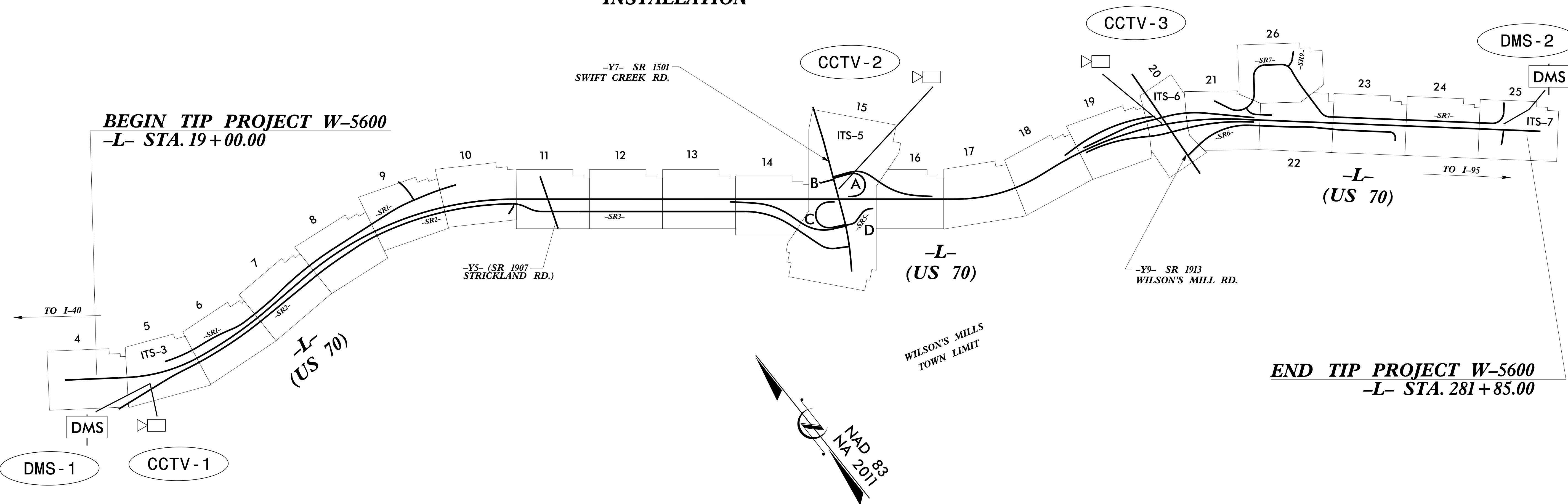
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: US 70 FROM EAST OF US 70 BUSINESS TO WEST OF NEUSE RIVER.

TYPE OF WORK: CCTV AND DYNAMIC MESSAGE SIGN INSTALLATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.
N.C.	W-5600	ITS-1
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50056.3.1	HSIP-0070(163)	CONST.



BEGIN TIP PROJECT W-5600
-L- STA. 19+00.00

END TIP PROJECT W-5600
-L- STA. 281+85.00

2018 STANDARD SPECIFICATIONS

PROJECT LENGTH
PROJECT LENGTH = 4.978 MILES

LETTING DATE:
SEPTEMBER 15, 2020

INDEX OF SHEETS	
SHEET ITS 1	TITLE SHEET
SHEET ITS 2	CONSTRUCTION NOTES AND LEGEND
SHEET ITS 3-8	ITS PLANS
SHEET ITS 9-12	TYPICAL DETAILS

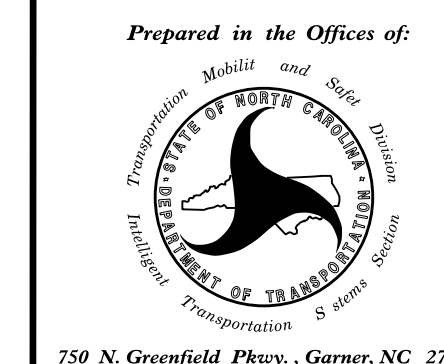
ROADWAY STANDARD DRAWINGS

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:

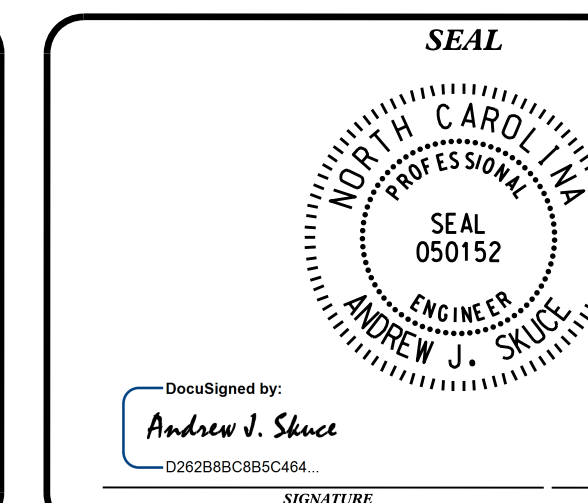
STD. NO.	TITLE
1700.01	ELECTRICAL SERVICE OPTIONS
1700.02	ELECTRICAL SERVICE GROUNDING
1715.01	UNDERGROUND CONDUIT-TRENCHING
1716.01	JUNCTION BOXES
1720.01	WOOD POLES
1751.01	CONTROLLER AND CABINETS
1751.02	CONTROLLER AND CABINETS

2018 STANDARD SPECIFICATION

NC DOT CONTACT:
TRANSPORTATION MOBILITY AND SAFETY
M.A. ASLAMI, P.E.
STATE ITS & SIGNALS
MANAGEMENT ENGINEER



ENGLISH
ALL DIMENSIONS IN THESE PLANS ARE IN FEET UNLESS OTHERWISE NOTED

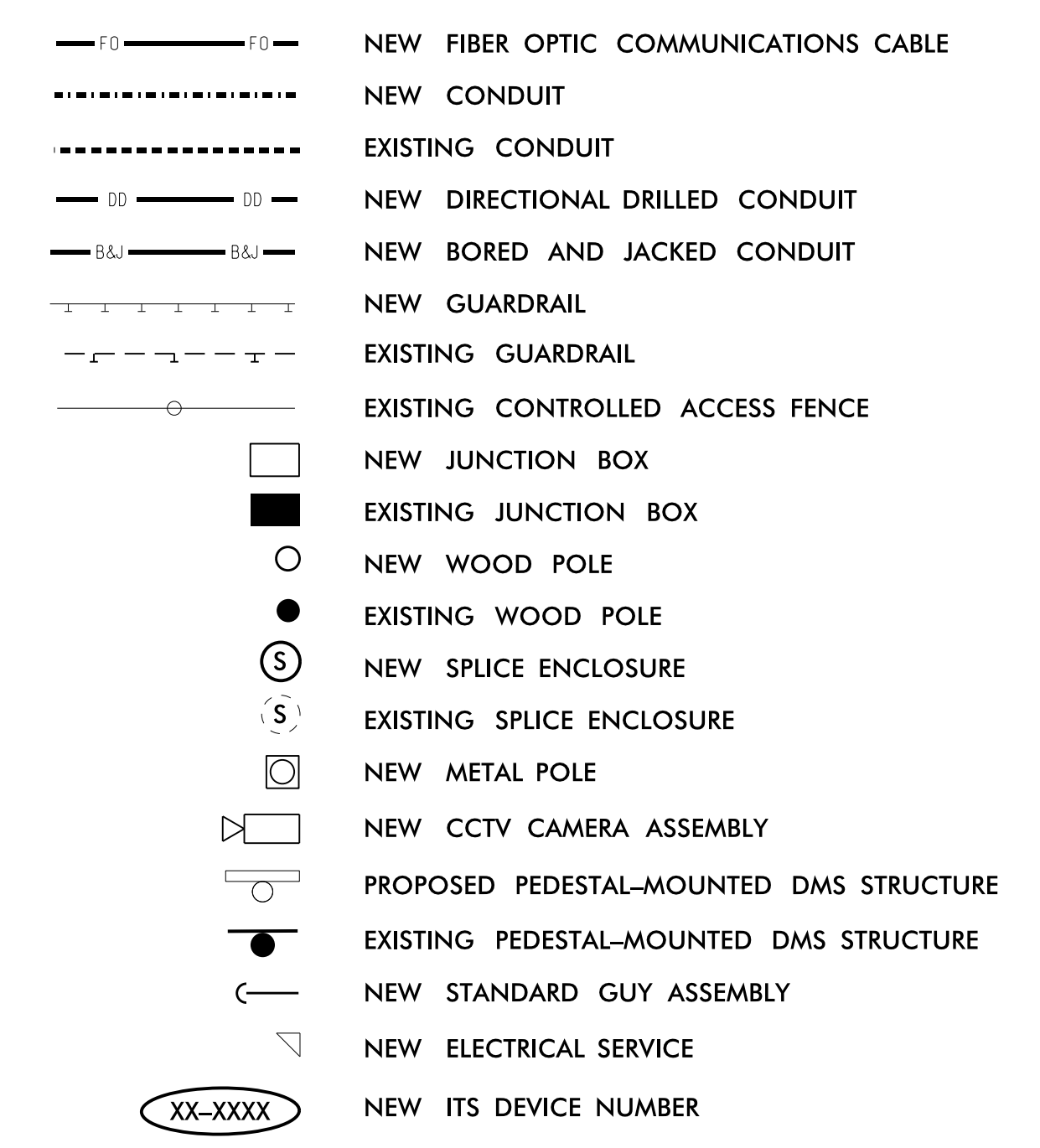


DocuSigned by:
Andrew J. Skuce
026288CB85C464...
DATE: 6/3/2020

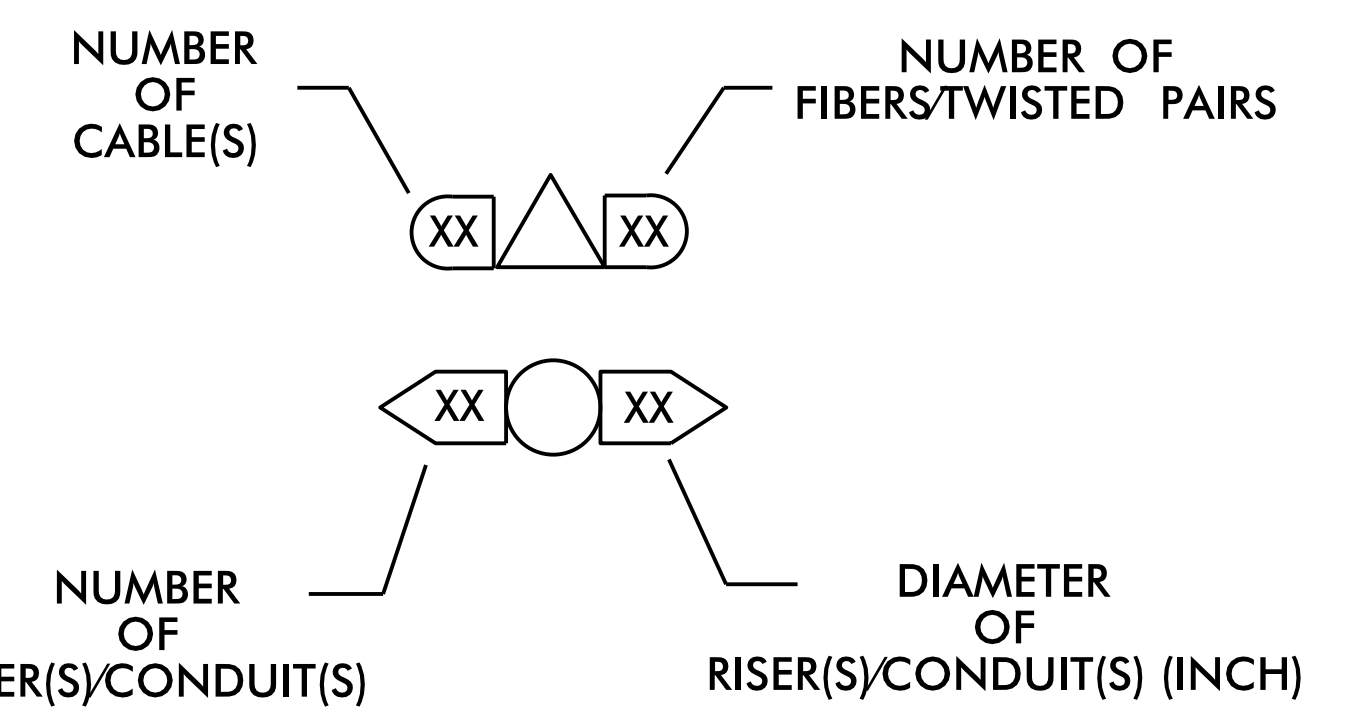
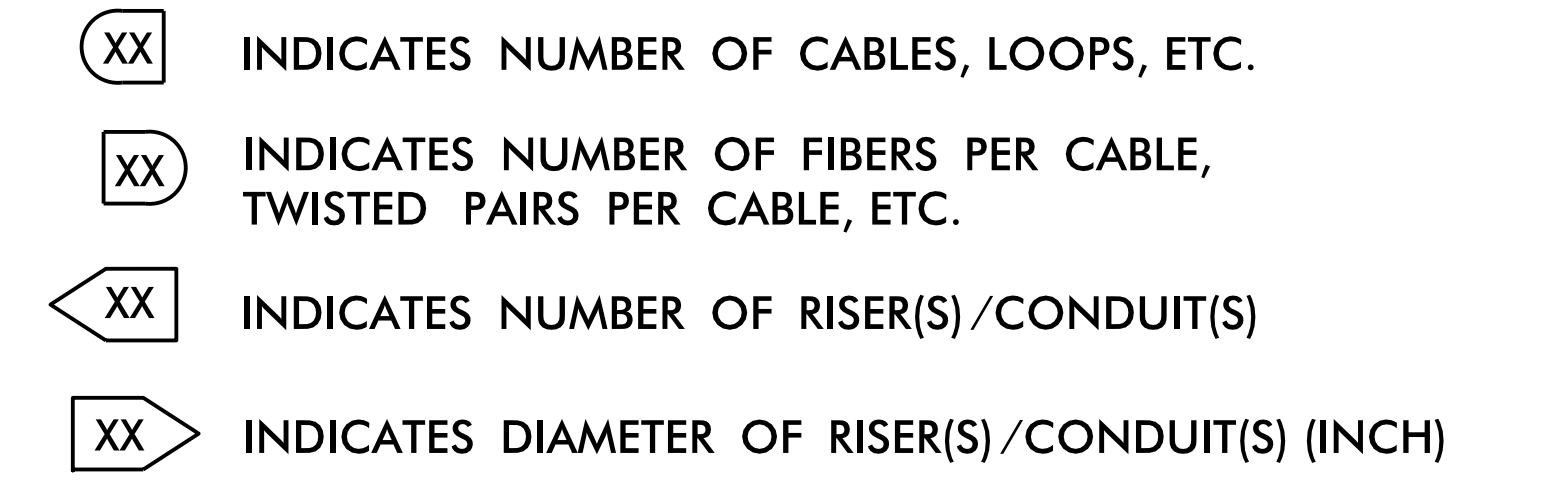
- 1 INSTALL 3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
- 2 INSTALL 4-WIRE COPPER FEEDER CONDUCTORS
- 3 INSTALL 3-WIRE COPPER FEEDER CONDUCTORS
- 4 INSTALL SMFO CABLE
- 5 REUSE EXISTING SMFO CABLE
- 6 INSTALL FIBER OPTIC DROP CABLE
- 7 INSTALL TRACER WIRE
- 8 TRENCH
- 9 INSTALL PVC CONDUIT
- 10 INSTALL 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 POLYETHYLENE CONDUIT IN EXISTING OUTERDUCT
- 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 NEW POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO NEW 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 MODIFY EXISTING UNDERGROUND SPLICE ENCLOSURE
- 31 MODIFY EXISTING BASE MOUNTED SPLICE CABINET
- 32 INSTALL BASE MOUNTED SPLICE CABINET
- 33 REMOVE EXISTING SPLICE CABINET
- 34 INSTALL CABINET FOUNDATION

- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA METAL POLE WITH LOWERING DEVICE AND FOUNDATION
- 38 INSTALL CCTV WOOD POLE
- 39 INSTALL STANDARD JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 INSTALL SPECIAL OVERSIZED JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 INSTALL 6" x 6" WOOD PEDESTAL
- 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 TELEPHONE SERVICE
- 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 NEW MESSENGER CABLE
- 55 INSTALL 10KVA SINGLE PHASE TRANSFORMER
- 56 INSTALL NEW EQUIPMENT CABINET DISCONNECT
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE
- 59 INSTALL NEW POLE MOUNTED CABINET
- 60 INSTALL FIELD ETHERNET SWITCH
- 61 INSTALL SOLAR POWER ASSEMBLY
- 62 INSTALL DMS ASSEMBLY
- 63 INSTALL CCTV EXTENSION POLE
- 64 INSTALL NCDOT SUPPLIED MODEM

LEGEND

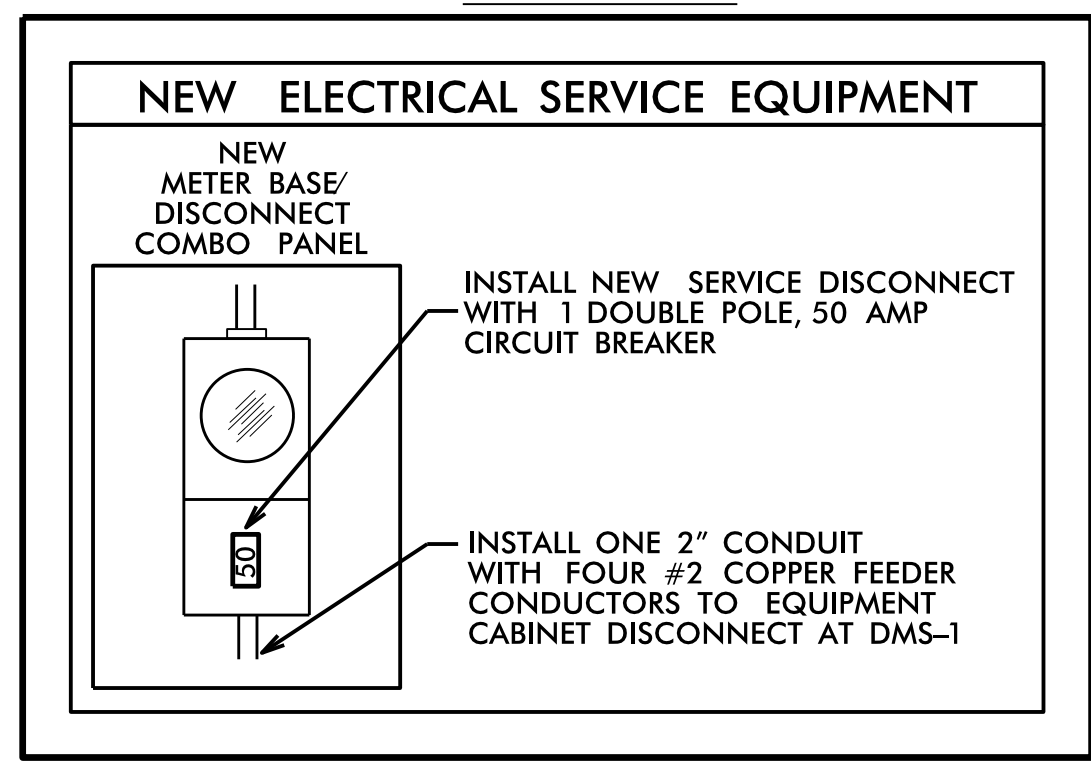


CONSTRUCTION NOTE SYMBOLOGY KEY



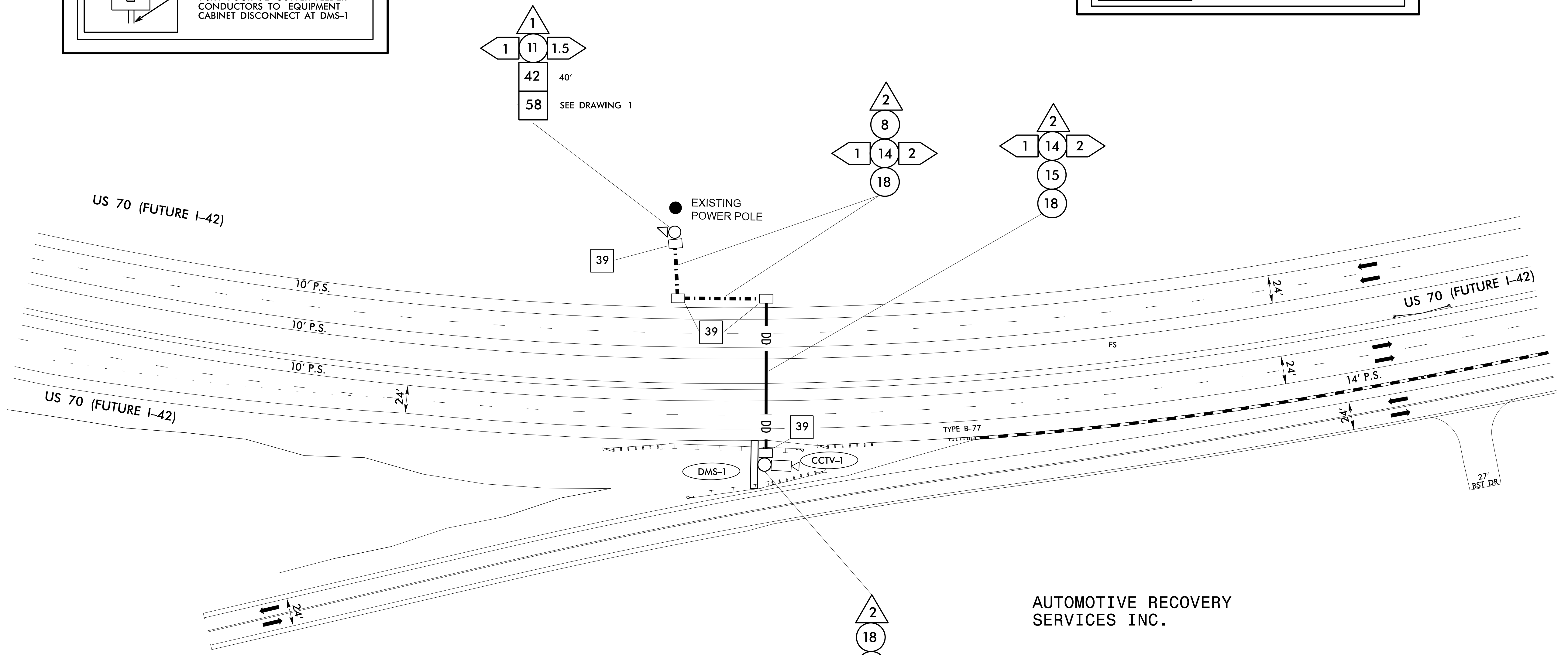
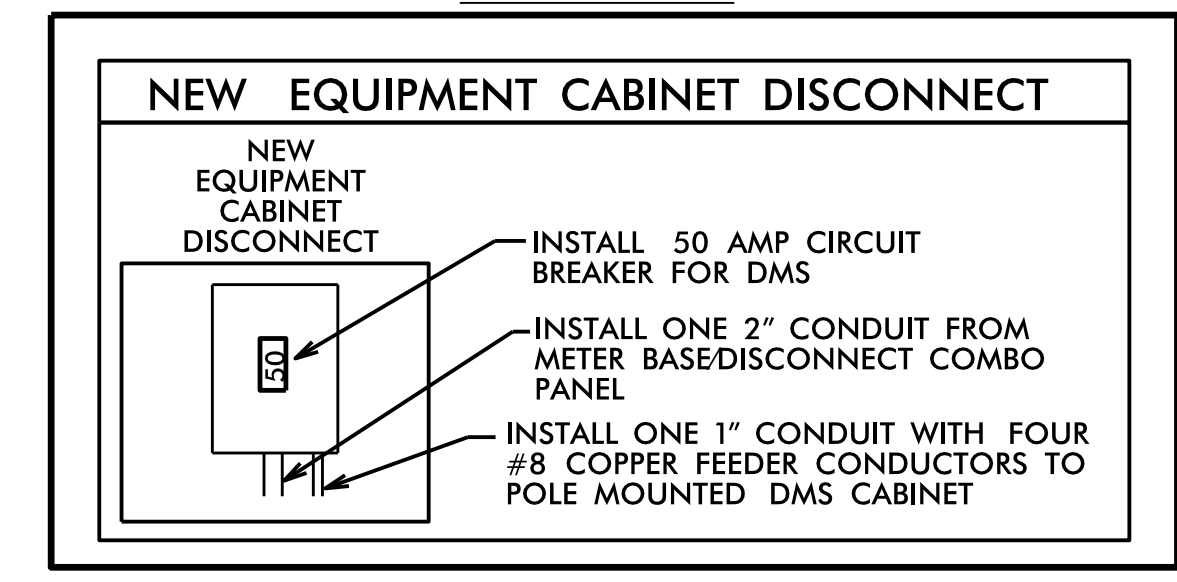
	CONSTRUCTION NOTES AND LEGEND		
	DIVISION 04 JOHNSTON CO. WILSON MILLS		
PLAN DATE: JUNE 2020	REVIEWED BY: A. J. SKUCE	PREPARED BY: L. E. NEAL	REVIEWED BY: I. N. AVERY
SCALE: 0 N/A	REVISIONS:	INIT.:	DATE:
Prepared in the Offices of:			SEAL Andrew J. Skuce 6/3/2020

DRAWING 1



GPS Location:
 Lat 35.59144
 Long -75.40022

DRAWING 2



AUTOMOTIVE RECOVERY SERVICES INC.

NOTES

1. INSTALL DMS-1/CCTV-1 STRUCTURE EIGHT FEET (8') BEHIND GUARDRAIL.
2. OBTAIN FINAL DMS/CCTV LOCATION APPROVAL FROM THE INCIDENT MANAGEMENT ENGINEER (252-640-6506) BEFORE INITIATING ANY WORK AT THIS LOCATION.
3. INSTALL NEW DMS, CCTV & POLE EXTENSION, WALKWAYS, AND LADDERS ON NEW DMS STRUCTURE. INSTALL NEW DMS POLE MOUNTED CABINET ON NEW DMS STRUCTURE.
4. MAINTAIN A MINIMUM OF SIX (6) FEET FROM EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
5. INSTALL NEW GROUNDING SYSTEM AT DMS-1/CCTV-1 AS DESCRIBED ON SHEET ITS-9 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
6. SEE ROADWAY PLANS FOR GUARDRAIL DETAILS.
7. CONTACT ENGINEER TO REQUEST NCDOT SUPPLIED MODEMS AT LEAST SIX (6) WEEKS PRIOR TO INSTALLATION.

NOTE:
 ELECTRICAL SERVICE DETAILS AND CONSTRUCTION METHODS DEPICT FIELD CONDITIONS AT THE TIME OF DESIGN. CONTRACTOR TO VERIFY ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION AND OBTAIN APPROVAL FROM ENGINEER PRIOR TO MAKING ANY CHANGES.

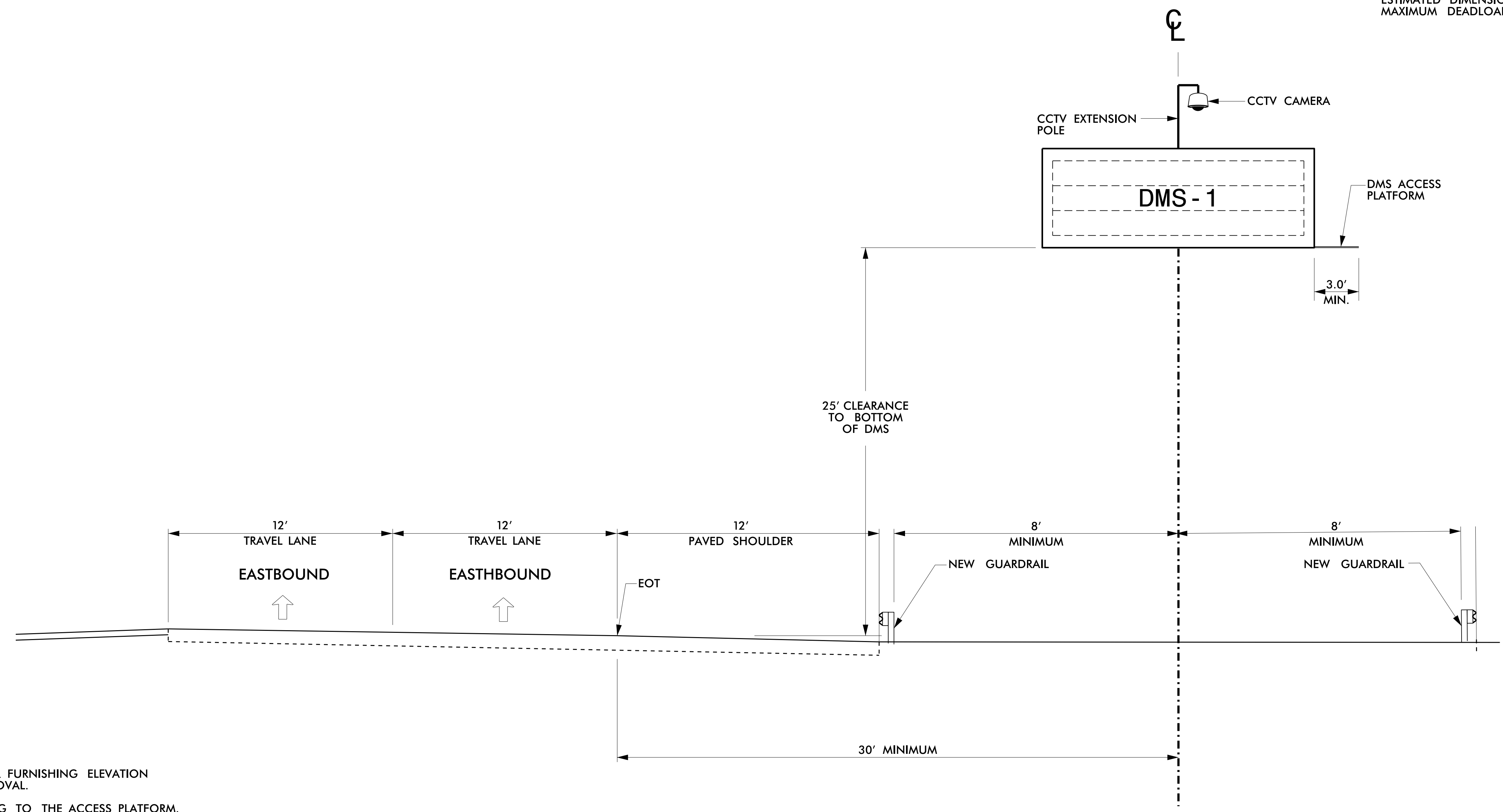
	DMS-1 and CCTV-1		SEAL ANDREW J. SKUCE ENGINEER 050152 NORTH CAROLINA
	DIVISION 04 JOHNSTON CO.	WILSON MILLS	
PLAN DATE: JUNE 2020 PREPARED BY: L.E. NEAL	REVIEWED BY: A.J. SKUCE	REVIEWED BY: I.N. AVERY	DATE:
REVISIONS	INIT.	DATE	DATE: 6/3/2020

750 N. Greenfield Pkwy., Garner, NC 27529

SCALE: N/A

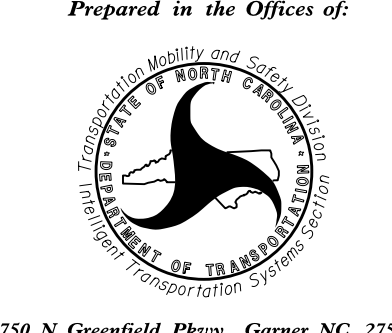
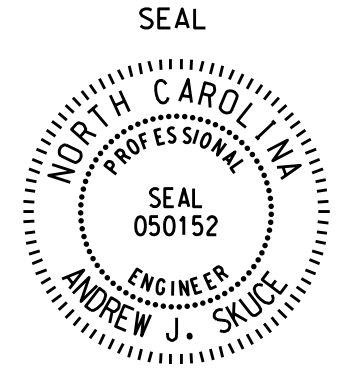
DocuSigned by: Andrew J. Skuce

ESTIMATED DIMENSION : 27' X 10'
 MAXIMUM DEADLOAD : 5200 LBS

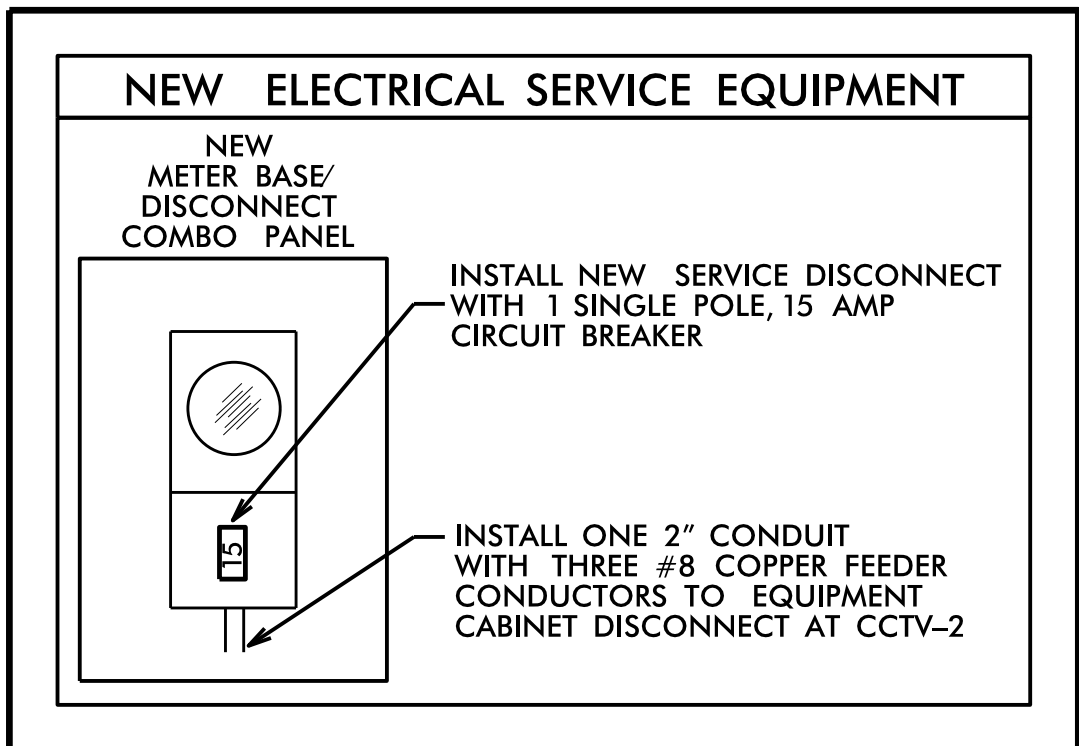


NOTES

- CONTRACTOR IS RESPONSIBLE FOR FURNISHING ELEVATION DRAWINGS FOR ENGINEER'S APPROVAL.
- PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
- 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.
- INSTALL A CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
- USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
- FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTING USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- 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.
- DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 110 MPH.
- VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.
- DESIGN THE STRUCTURE TO ACCOMODATE THE INSTALLATION OF THE DMS WITH A CCTV CAMERA EXTENSION POLE AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
- SEE ROADWAY PLANS FOR GUARDRAIL DETAILS.

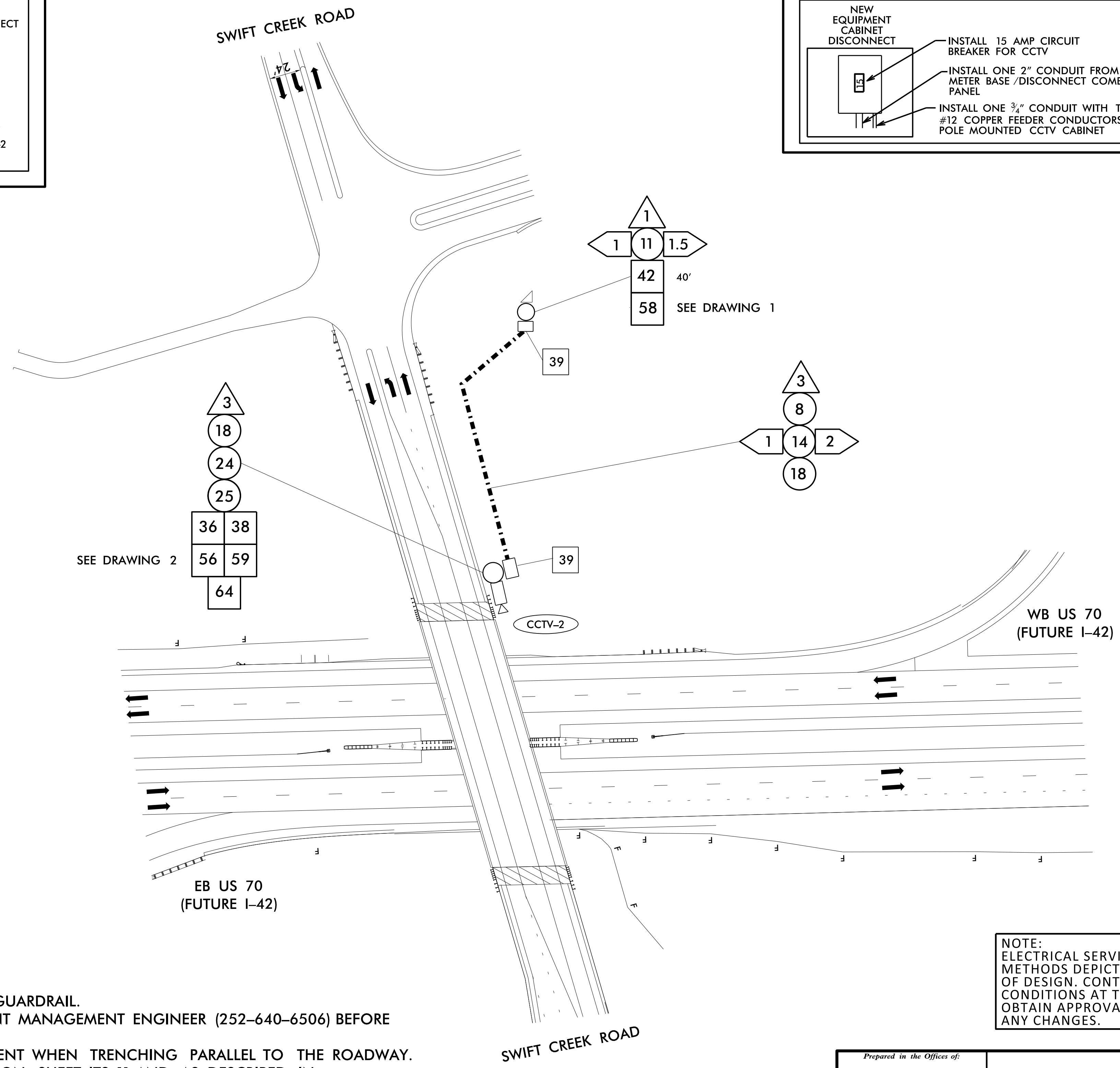
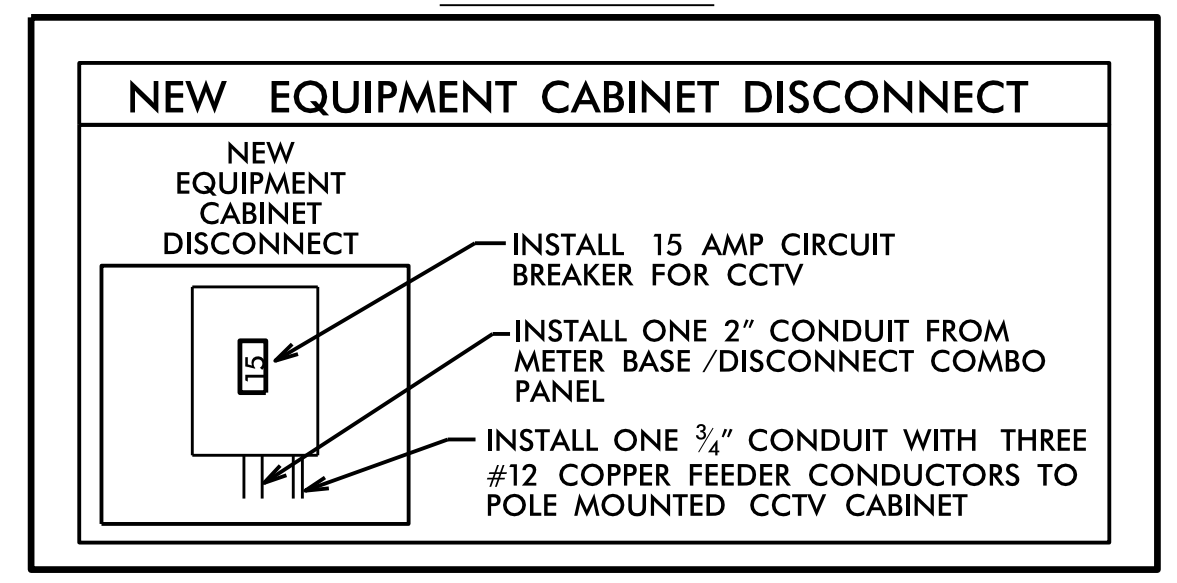
 Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529	DMS ELEVATION		SEAL  ANDREW J. SKUCE
	DIVISION 04 JOHNSTON CO. WILLSON MILLS		
PLAN DATE: JUNE 2020	REVIEWED BY: A. J. SKUCE	PREPARED BY: L. E. NEAL	
REVISIONS	INIT.	DATE	DocuSigned by: Andrew J. Skuce 6/3/2020
SCALE 0 N/A	DATE		

DRAWING 1



GPS Location:
 Lat 35.57785
 Long -75.36296

DRAWING 2



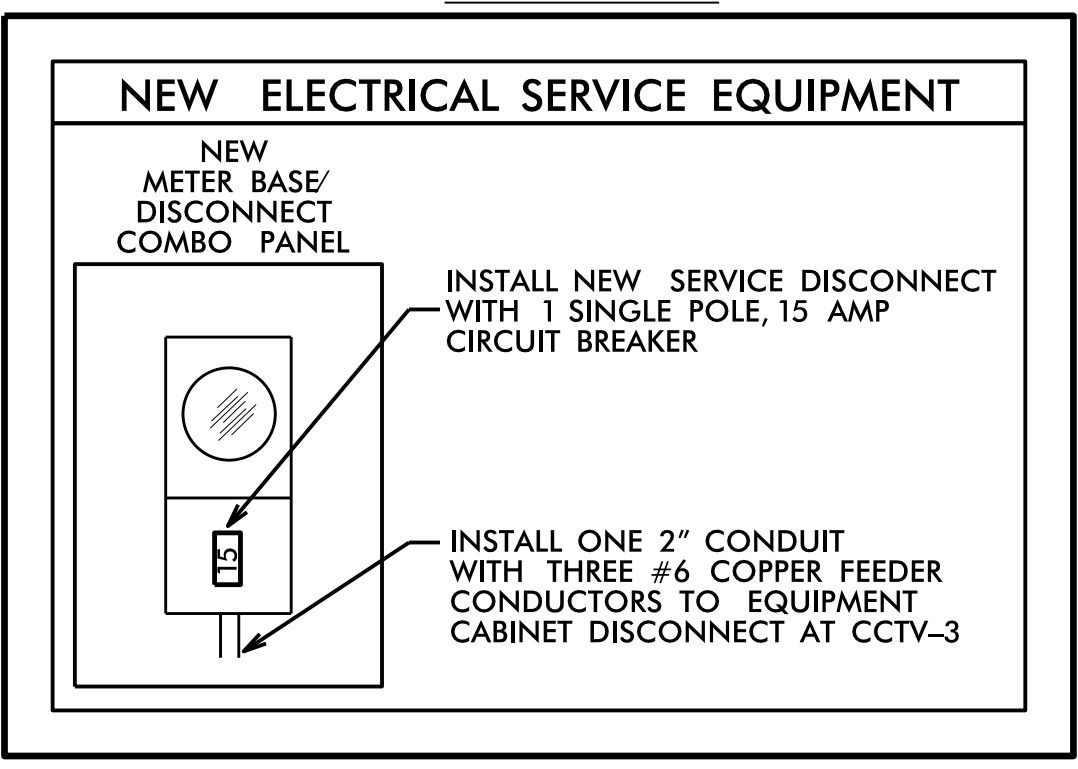
NOTES

1. INSTALL CCTV-2 POLE AT LEAST SIX FEET (6') BEHIND EXISTING GUARDRAIL.
2. OBTAIN FINAL CCTV LOCATION APPROVAL FROM THE INCIDENT MANAGEMENT ENGINEER (252-640-6506) BEFORE INITIATING ANY WORK AT THIS LOCATION.
3. MAINTAIN A MINIMUM OF SIX (6) FEET FROM EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
4. INSTALL NEW GROUNDING SYSTEM AT CCTV-2 AS DESCRIBED ON SHEET ITS-11 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
5. SEE ROADWAY PLANS FOR GUARDRAIL DETAILS.
6. CONTACT ENGINEER TO REQUEST NCDOT SUPPLIED MODEM AT LEAST SIX (6) WEEKS PRIOR TO INSTALLATION.

NOTE:
 ELECTRICAL SERVICE DETAILS AND CONSTRUCTION METHODS DEPICT FIELD CONDITIONS AT THE TIME OF DESIGN. CONTRACTOR TO VERIFY ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION AND OBTAIN APPROVAL FROM ENGINEER PRIOR TO MAKING ANY CHANGES.

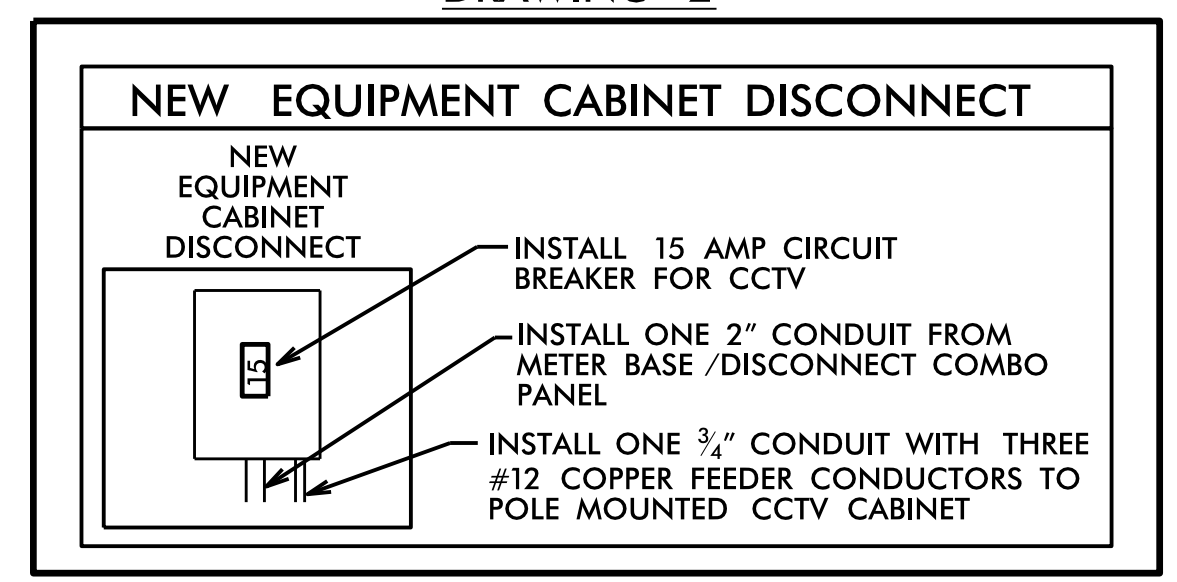
	CCTV-2		SEAL
	DIVISION 4 JOHNSTON CO. WILSON MILLS PLAN DATE: JUNE 2020 REVIEWED BY: A. J. SKUCE PREPARED BY: L. E. NEAL REVIEWED BY: I. N. AVERY		
Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529	SCALE: 0 N/A		Date/Signed by: Andrew J. Skuce

DRAWING 1

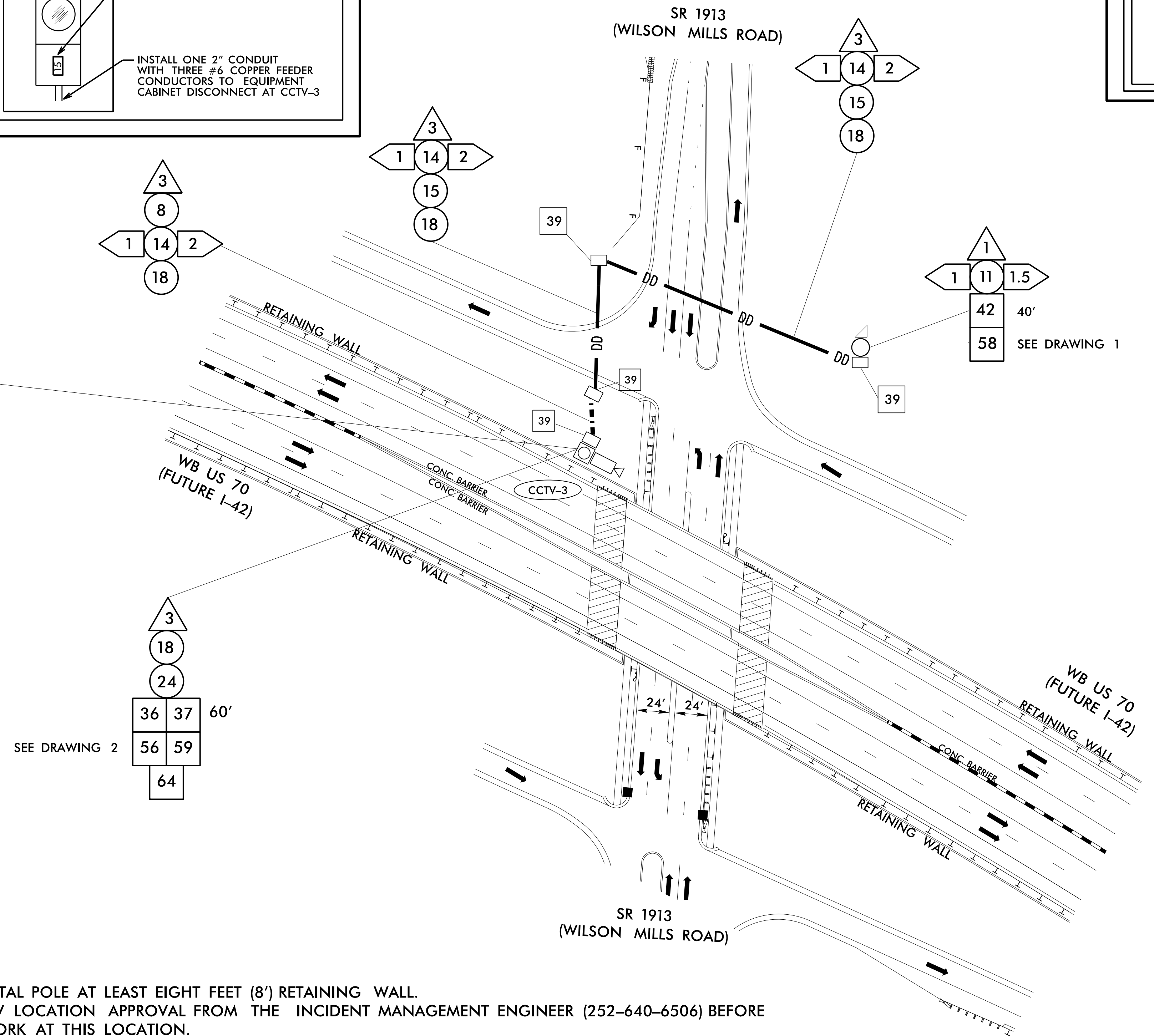


GPS Location:
 Lat 35.57096
 Long -75.34576

DRAWING 2



ITS Structure
 Asset Number:
 ITS-0048



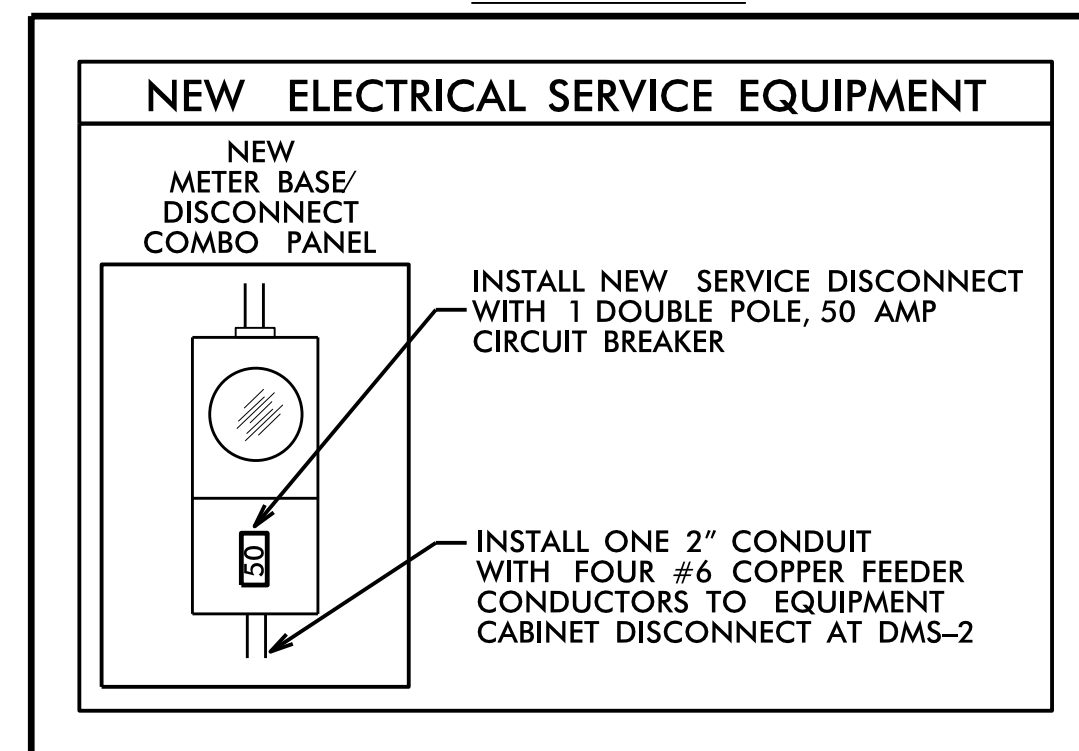
NOTES

1. INSTALL CCTV-3 METAL POLE AT LEAST EIGHT FEET (8') RETAINING WALL.
2. OBTAIN FINAL CCTV LOCATION APPROVAL FROM THE INCIDENT MANAGEMENT ENGINEER (252-640-6506) BEFORE INITIATING ANY WORK AT THIS LOCATION.
3. MAINTAIN A MINIMUM OF SIX (6) FEET FROM EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
4. INSTALL EQUIPMENT CABINET ON METAL POLE SUCH THAT THE LOWERING SYSTEM AND HAND HOLE OPERATE FREE OF OBSTRUCTIONS.
5. INSTALL NEW GROUNDING SYSTEM AT CCTV-3 AS DESCRIBED ON SHEET ITS-12 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
6. CONTACT ENGINEER TO REQUEST NCDOT SUPPLIED MODEM AT LEAST SIX (6) WEEKS PRIOR TO INSTALLATION.

NOTE:
 ELECTRICAL SERVICE DETAILS AND CONSTRUCTION METHODS DEPICT FIELD CONDITIONS AT THE TIME OF DESIGN. CONTRACTOR TO VERIFY ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION AND OBTAIN APPROVAL FROM ENGINEER PRIOR TO MAKING ANY CHANGES.

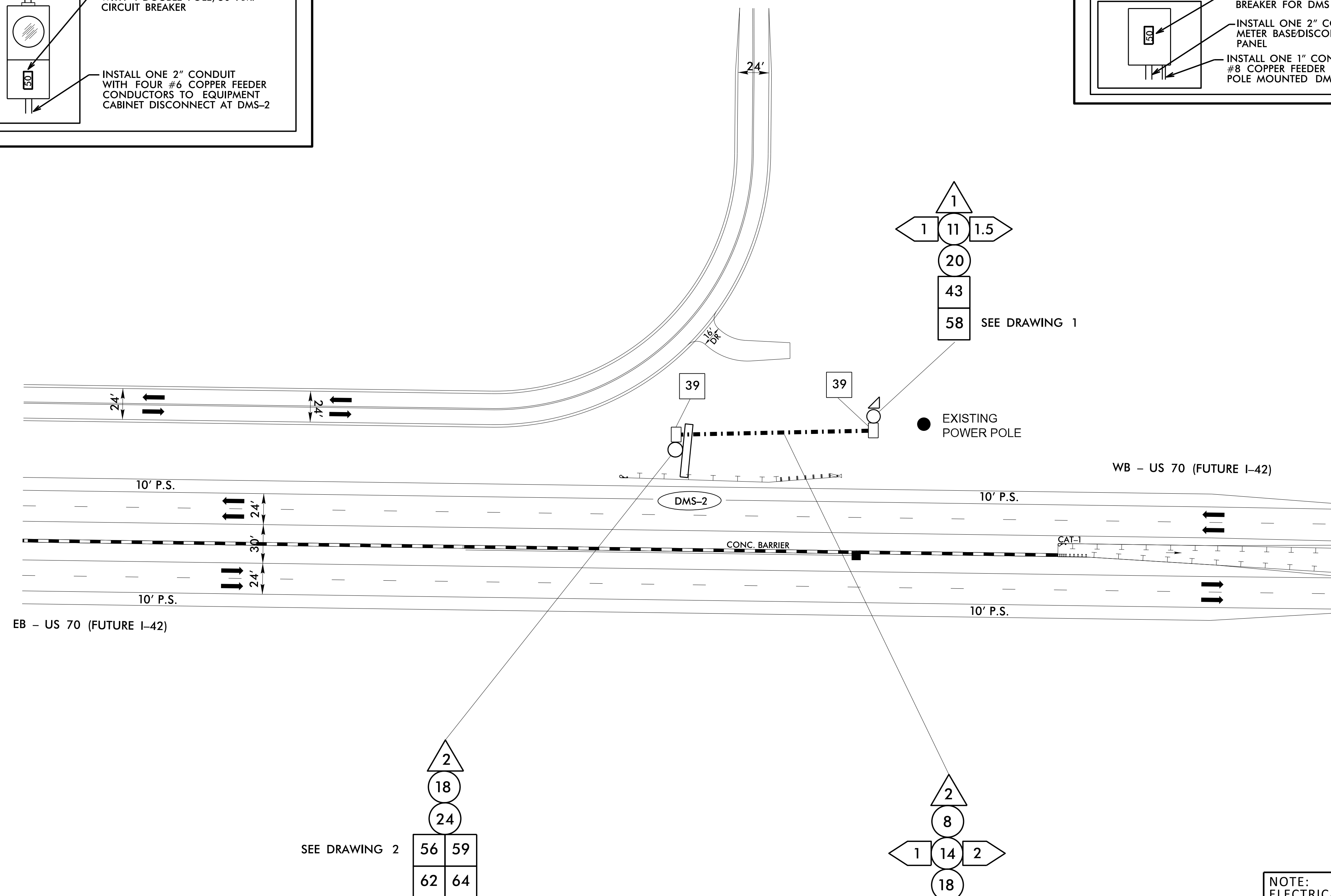
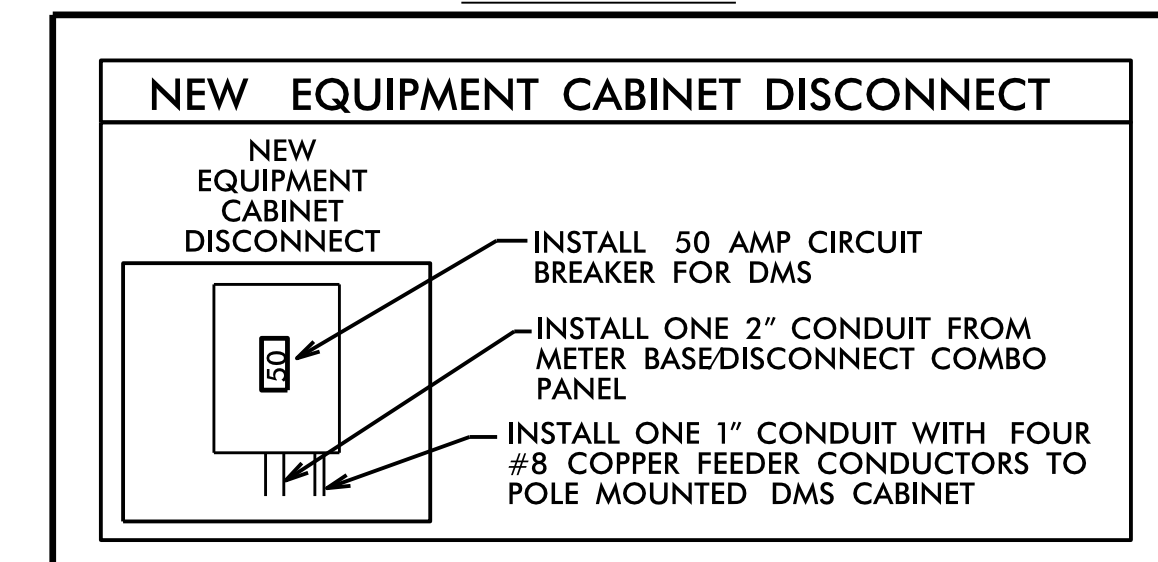
	CCTV-3		SEAL
	DIVISION 04 JOHNSTON CO. WILSON MILLS PLAN DATE: JUNE 2020 REVIEWED BY: A. J. SKUCE PREPARED BY: L. E. NEAL REVIEWED BY: I. N. AVERY		
750 N. Greenfield Pkwy., Garner, NC 27529 	SCALE 0 N/A	REVISIONS _____ _____ _____	INIT. DATE _____ _____ _____
Prepared in the Offices of:			DocuSigned by: Andrew J. Skuce DATE: 6/3/2020

DRAWING 1



GPS Location:
 Lat 35.56014
 Long -75.32958

DRAWING 2



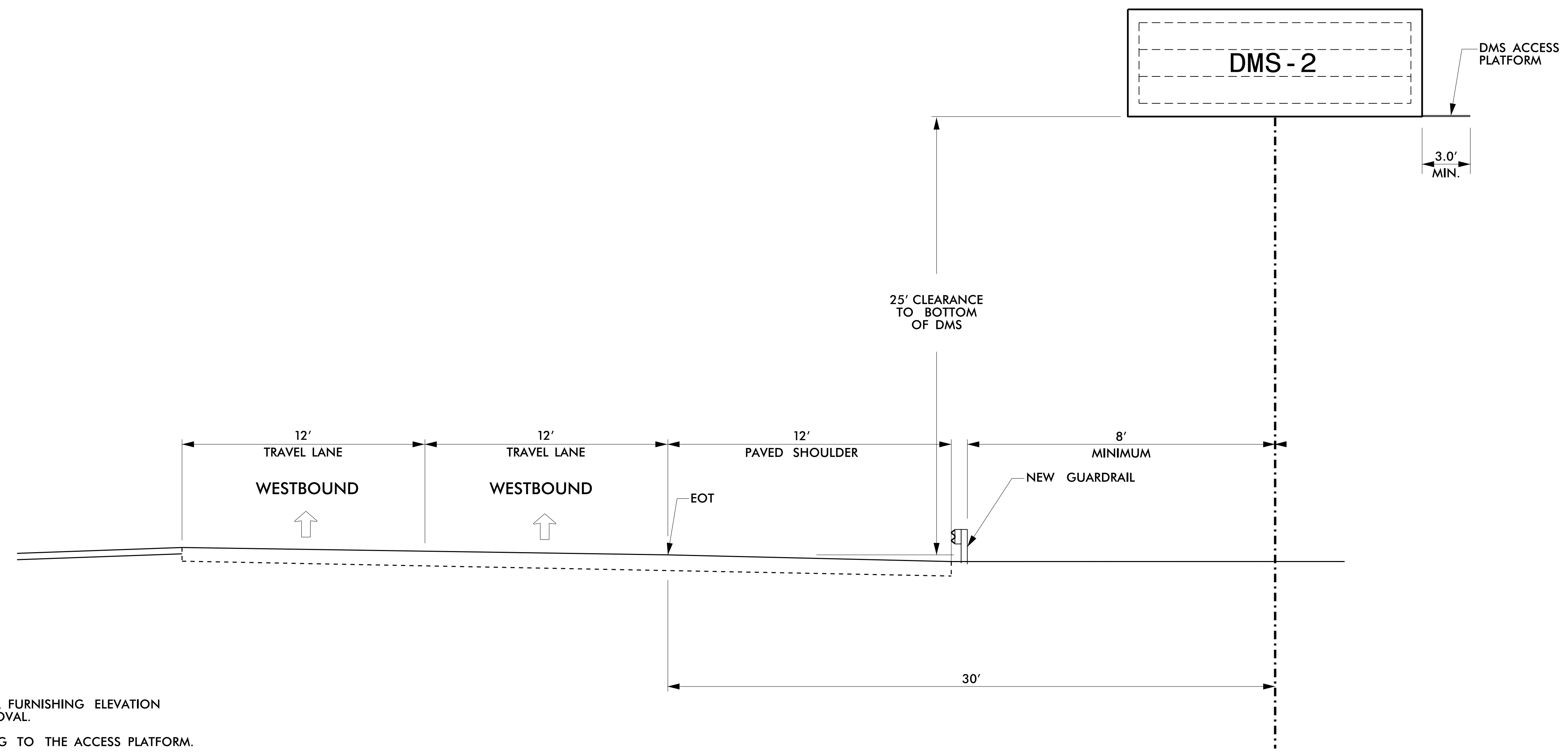
NOTES

1. INSTALL DMS-2 STRUCTURE EIGHT FEET (8') BEHIND GUARDRAIL.
2. OBTAIN FINAL DMS LOCATION APPROVAL FROM THE INCIDENT MANAGEMENT ENGINEER (252-640-6506) BEFORE INITIATING ANY WORK AT THIS LOCATION.
3. INSTALL NEW DMS, AND LADDERS ON NEW DMS STRUCTURE. INSTALL NEW DMS POLE MOUNTED CABINETS ON NEW DMS STRUCTURES.
4. MAINTAIN A MINIMUM OF SIX FEET (6') FROM EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
5. INSTALL NEW GROUNDING SYSTEM AT DMS-2 AS DESCRIBED ON SHEET ITS-10 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
6. SEE ROADWAY PLANS FOR GUARDRAIL DETAILS.
7. CONTACT ENGINEER TO REQUEST NCDOT SUPPLIED MODEM AT LEAST SIX (6) WEEKS PRIOR TO INSTALLATION.

NOTE: ELECTRICAL SERVICE DETAILS AND CONSTRUCTION METHODS DEPICT FIELD CONDITIONS AT THE TIME OF DESIGN. CONTRACTOR TO VERIFY ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION AND OBTAIN APPROVAL FROM ENGINEER PRIOR TO MAKING ANY CHANGES.

	DMS-2		SEAL
	DIVISION 04 JOHNSTON CO. WILSON MILLS PLAN DATE: JUNE 2020 REVIEWED BY: A. J. SKUCE PREPARED BY: L. E. NEAL REVIEWED BY: I. N. AVERY		
750 N. Greenfield Hwy., Garner, NC 27529 	SCALE 0 0 N/A	REVISIONS INIT. DATE	DocuSigned by: Andrew J. Skuce 6/3/2020 DATE

ESTIMATED DIMENSION : 27' X 10'
 MAXIMUM DEADLOAD : 5200 LBS

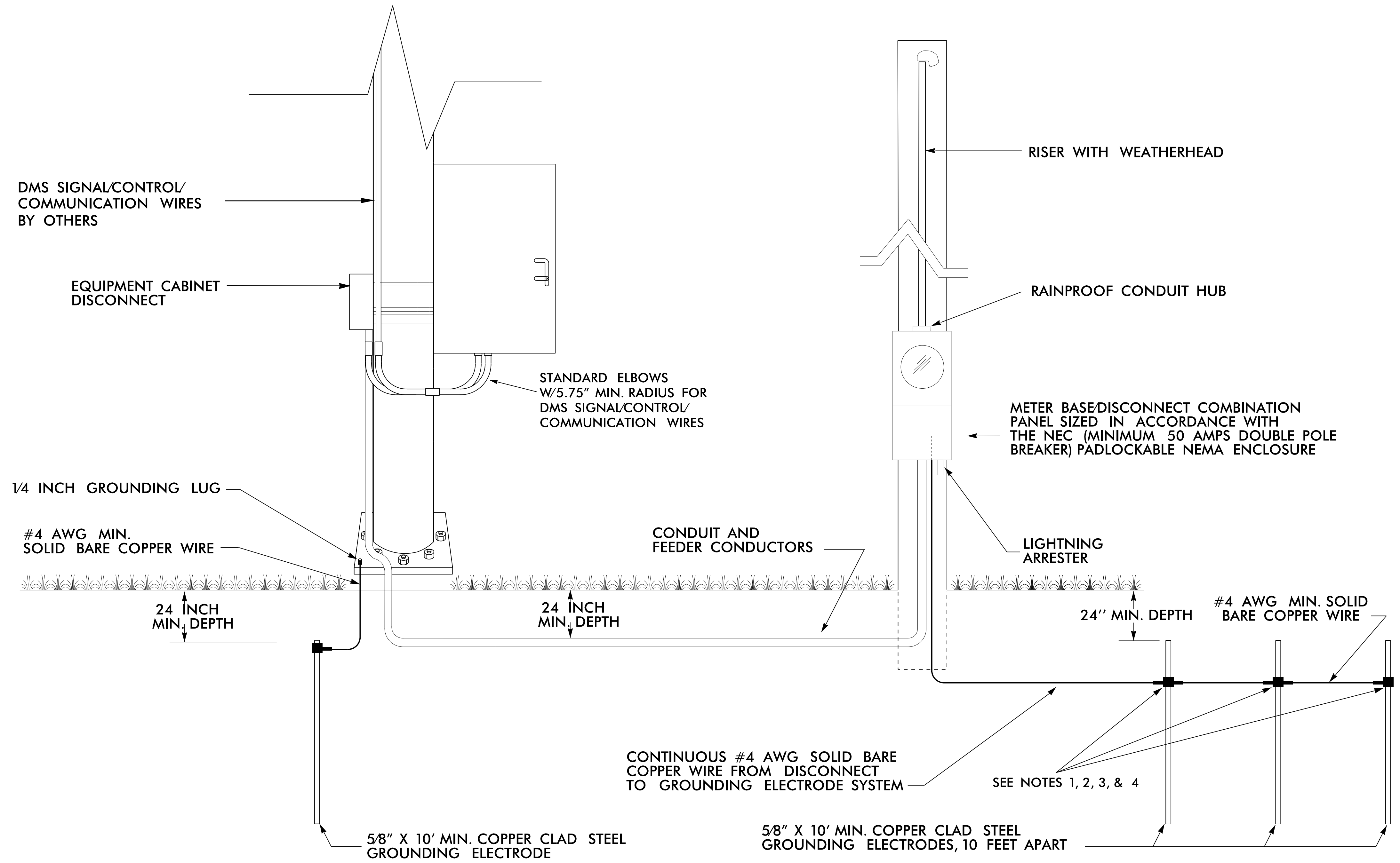


NOTES

- CONTRACTOR IS RESPONSIBLE FOR FURNISHING ELEVATION DRAWINGS FOR ENGINEER'S APPROVAL.
- PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
- 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.
- INSTALL A CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
- USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
- FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTING USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- 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.
- DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 110 MPH.
- VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.
- SEE ROADWAY PLANS FOR GUARDRAIL DETAILS.

	DMS ELEVATION		
	DIVISION 04 JOHNSTON CO. WILSON MILLS PLAN DATE: JUNE 2020 REVIEWED BY: A. J. SKUCE PREPARED BY: L. E. NEAL REVIEWED BY: I. N. AVERY		
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE: 0 N/A	REVISIONS _____ _____	INIT. _____ _____	DATE _____ _____

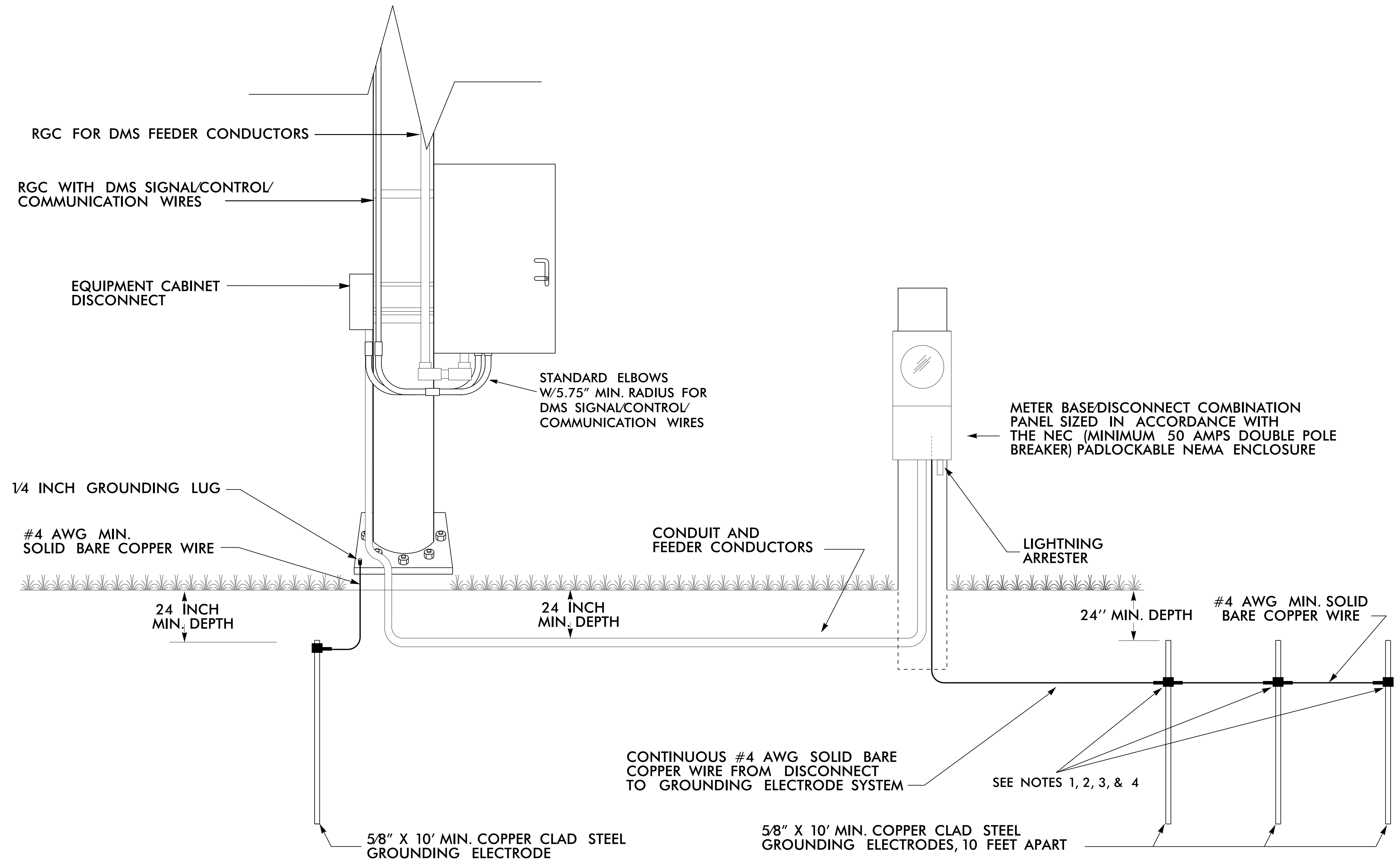
DocuSigned by: Andrew J. Skuce 6/3/2020 DATE



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.

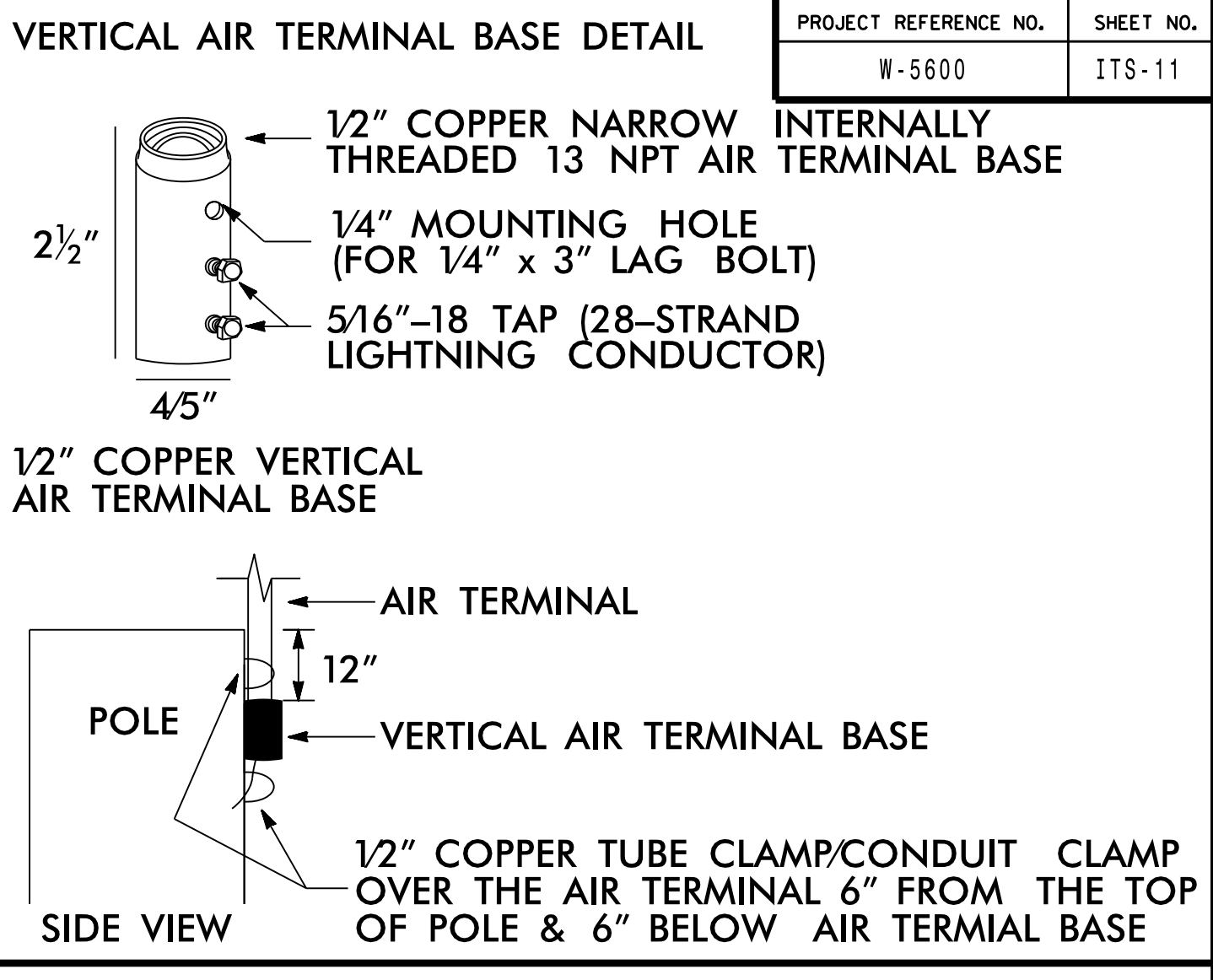
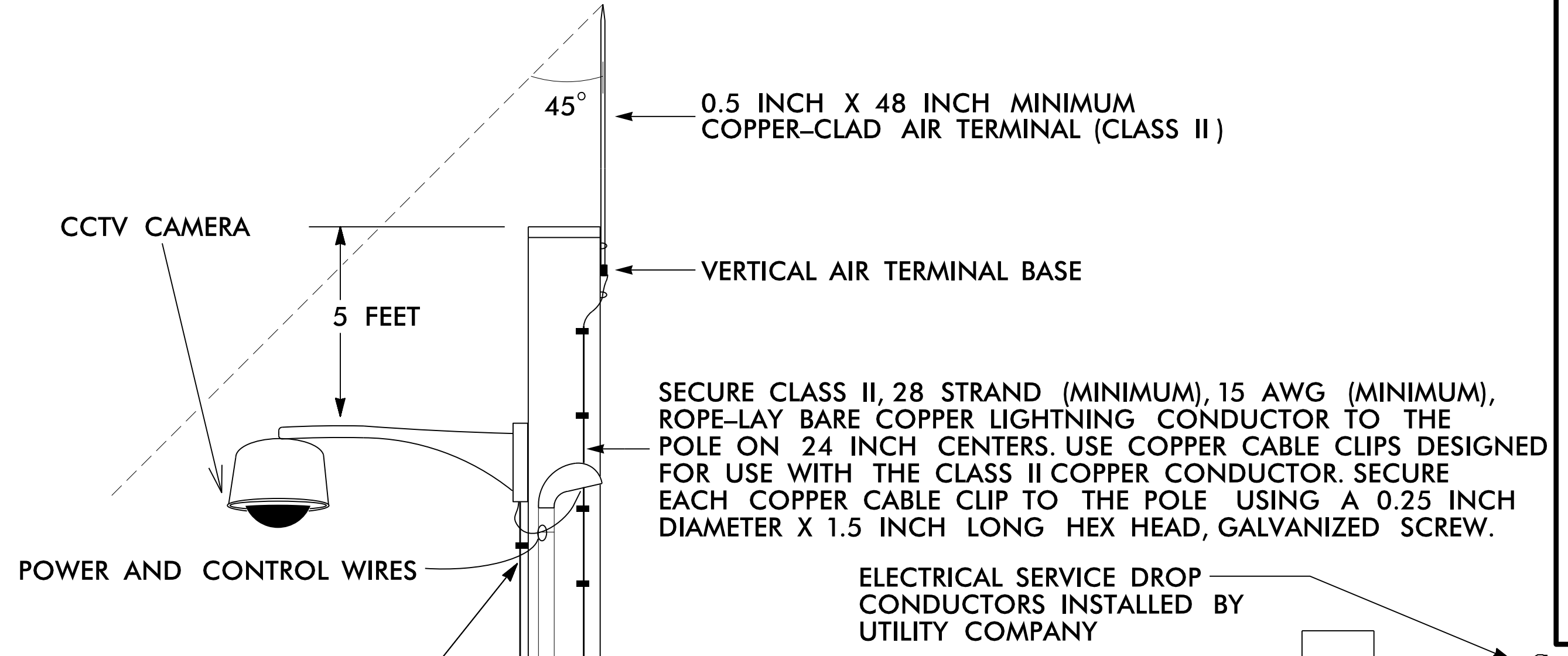
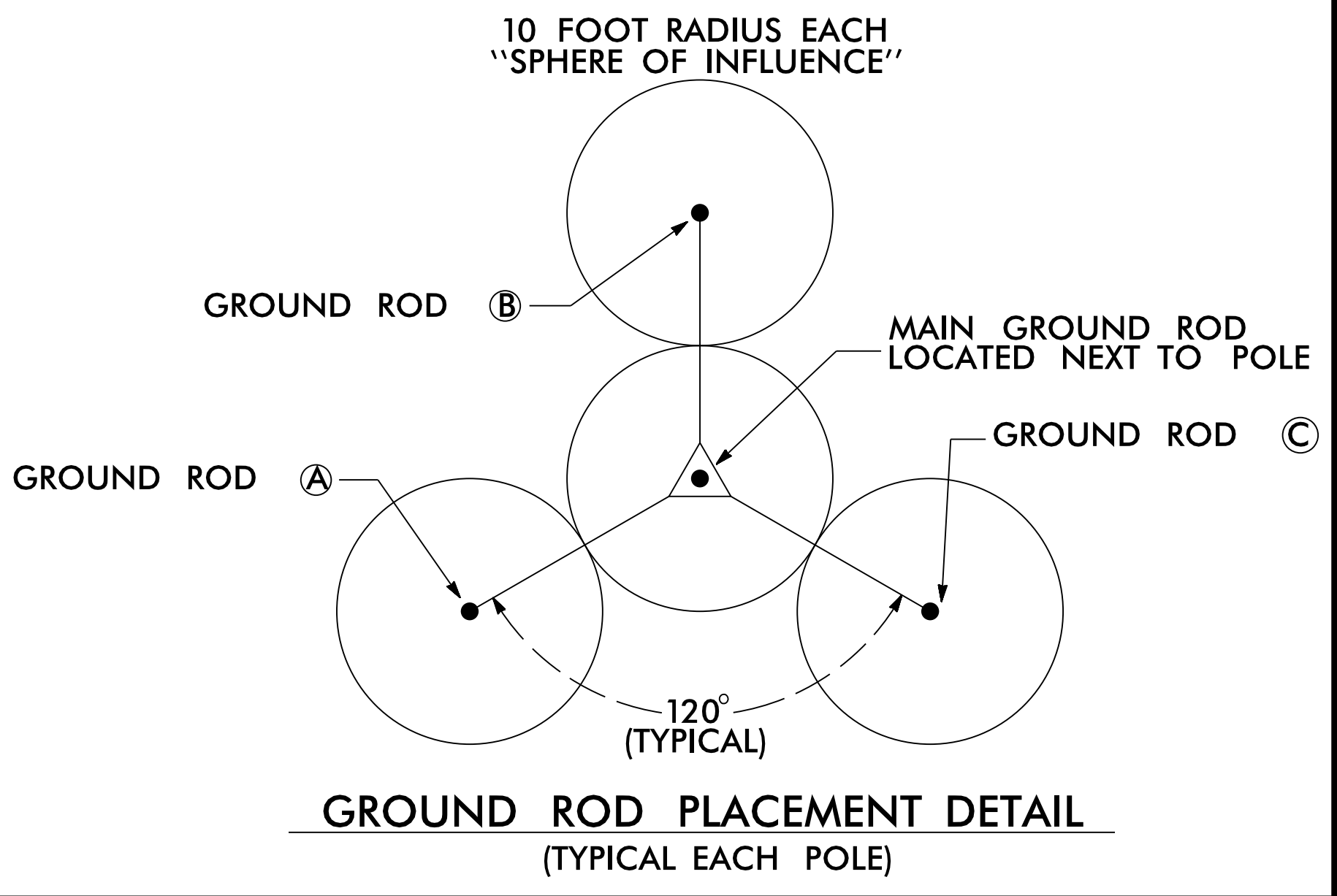
	<p>DYNAMIC MESSAGE SIGN WITH AERIAL ELECTRICAL SERVICE TYPICAL DETAIL</p>		<p>SEAL NORTH CAROLINA PROFESSIONAL ENGINEER ANDREW J. SKUCE 050152</p>
	<p>750 N. Greenfield Pkwy., Garner, NC 27529</p>	<p>DIVISION 04 JOHNSTON CO. WILSON MILLS</p> <p>PLAN DATE: JUNE 2020 REVIEWED BY: A. J. SKUCE</p> <p>PREPARED BY: L. E. NEAL REVIEWED BY: I. N. AVERY</p>	
<p>SCALE: 0 N/A</p>		<p>REVISIONS</p>	<p>INIT. DATE</p>



NOTES

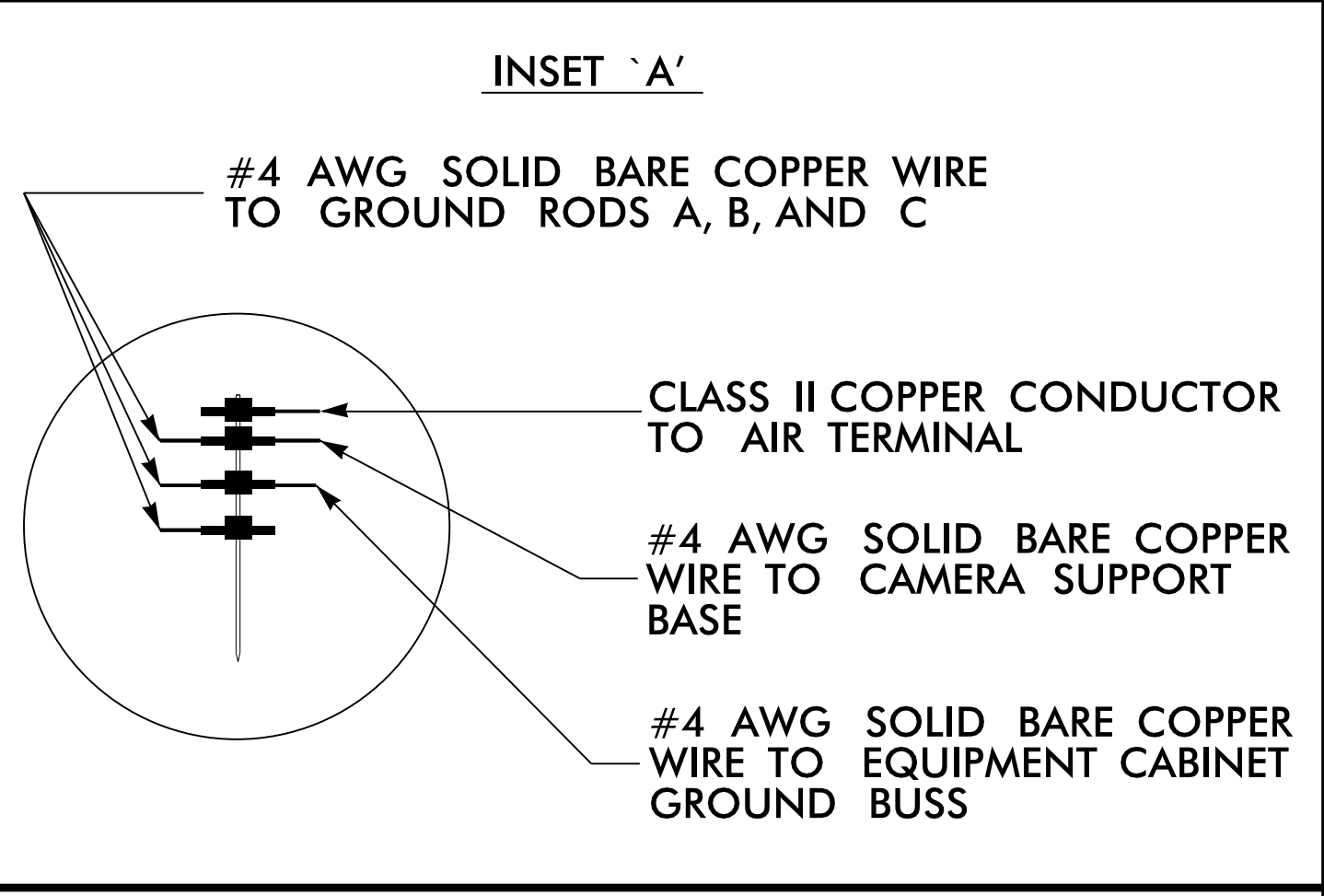
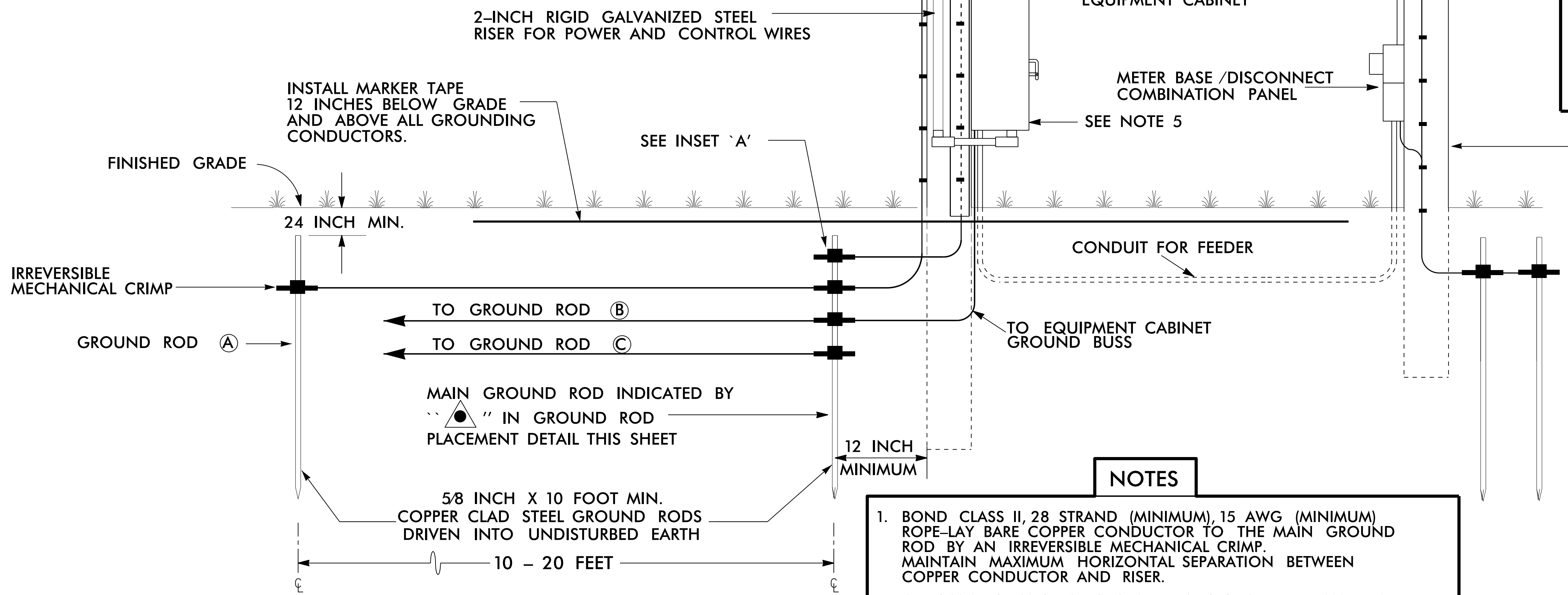
1. INSTALL A MINIMUM OF THREE (3) GROUNDING ELECTRODES SPACED A MINIMUM OF 10 FEET APART. ENSURE THAT EXISTING UNDERGROUND FACILITIES ARE NOT DAMAGED DURING INSTALLATION.
2. TEST GROUNDING SYSTEM USING AN APPROVED METHOD. SYSTEM SHOULD MEASURE TWENTY (20) OHMS OR LESS. ADDITIONAL GROUNDING ELECTRODES 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.

	Prepared in the Offices of: DYNAMIC MESSAGE SIGN WITH UNDERGROUND ELECTRICAL SERVICE TYPICAL DETAIL		SEAL ANDREW J. SKUCE ENGINEER 050152 STATE OF NORTH CAROLINA
	DIVISION 04 JOHNSTON CO. WILSON MILLS PLAN DATE: JUNE 2020 REVIEWED BY: A. J. SKUCE PREPARED BY: L. E. NEAL REVIEWED BY: I. N. AVERY	REVISIONS INIT. DATE	
SCALE 0 N/A	DocuSigned by: Andrew J. Skuce 02022881C805C464		



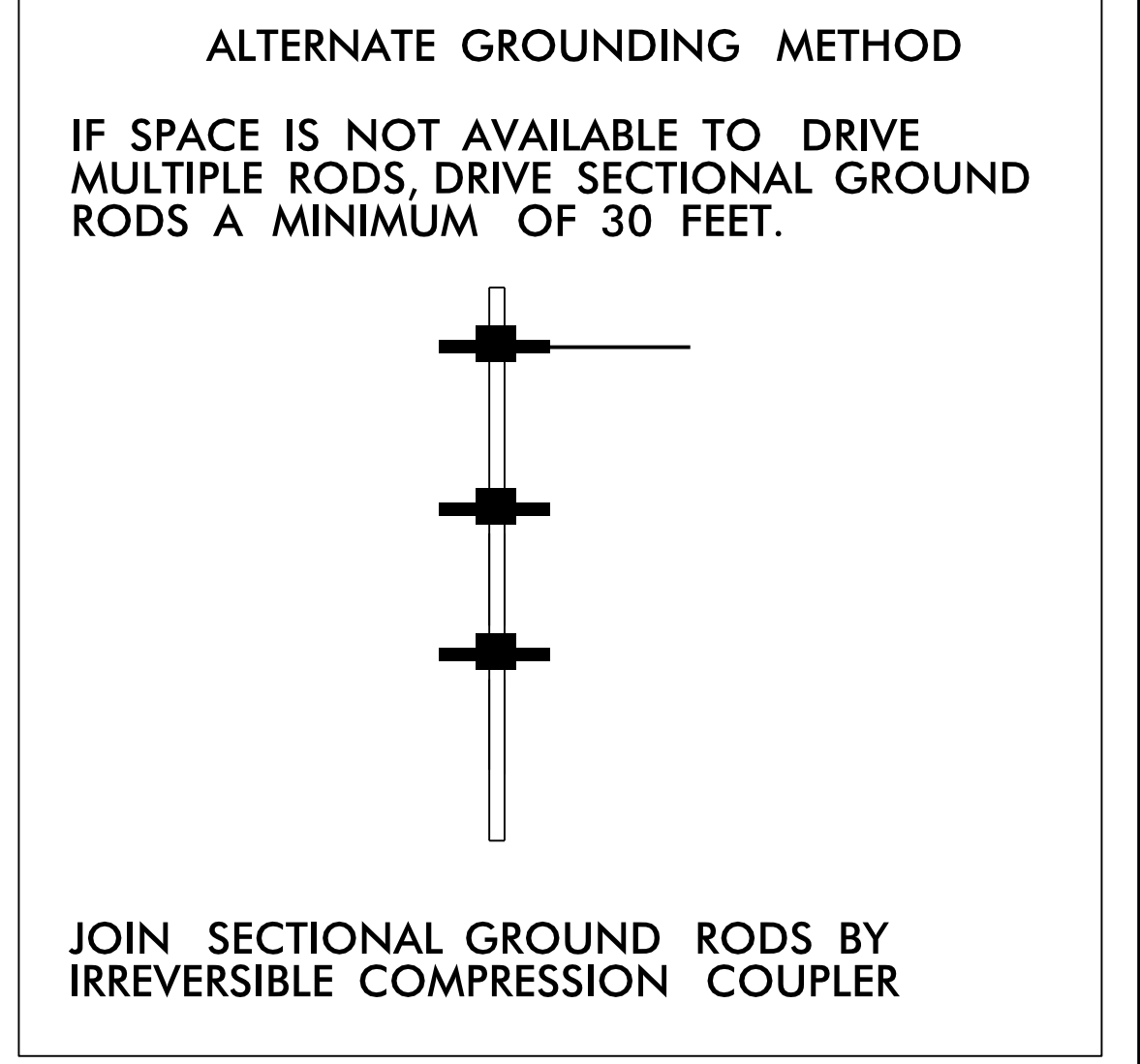
BOND #4 AWG SOLID BARE COPPER WIRE TO CAMERA SUPPORT BASE BY AN ALUMINUM TO COPPER #2 - #14 AWG LUG. ATTACH TO CAMERA BASE WITH A STAINLESS STEEL SELF TAPPING SCREW. REMOVE PAINT OR PROTECTIVE COATING WHERE ATTACHING LUG ONLY.

INSTALL 2-INCH PVC U-GUARD OVER COPPER CONDUCTOR FROM GROUND LEVEL TO 10 FEET (MINIMUM) ABOVE THE GROUND.



NOTES

1. BOND CLASS II, 28 STRAND (MINIMUM), 15 AWG (MINIMUM) ROPE-LAY BARE COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN IRREVERSIBLE MECHANICAL CRIMP. MAINTAIN MAXIMUM HORIZONTAL SEPARATION BETWEEN COPPER CONDUCTOR AND RISER.
2. ALL CONNECTIONS TO GROUND RODS SHOULD BE MADE WITH AN IRREVERSIBLE MECHANICAL CRIMP METHOD.
3. REFER TO STANDARD DRAWING 1700-2 FOR ALTERNATE GROUND ROD INSTALLATION METHOD AS APPROVED BY THE ENGINEER.
4. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12 INCHES.
5. REMOVE BONDING JUMPER BETWEEN EQUIPMENT CABINET GROUND BUSS AND NEUTRAL BUSS.



Prepared in the Offices of:

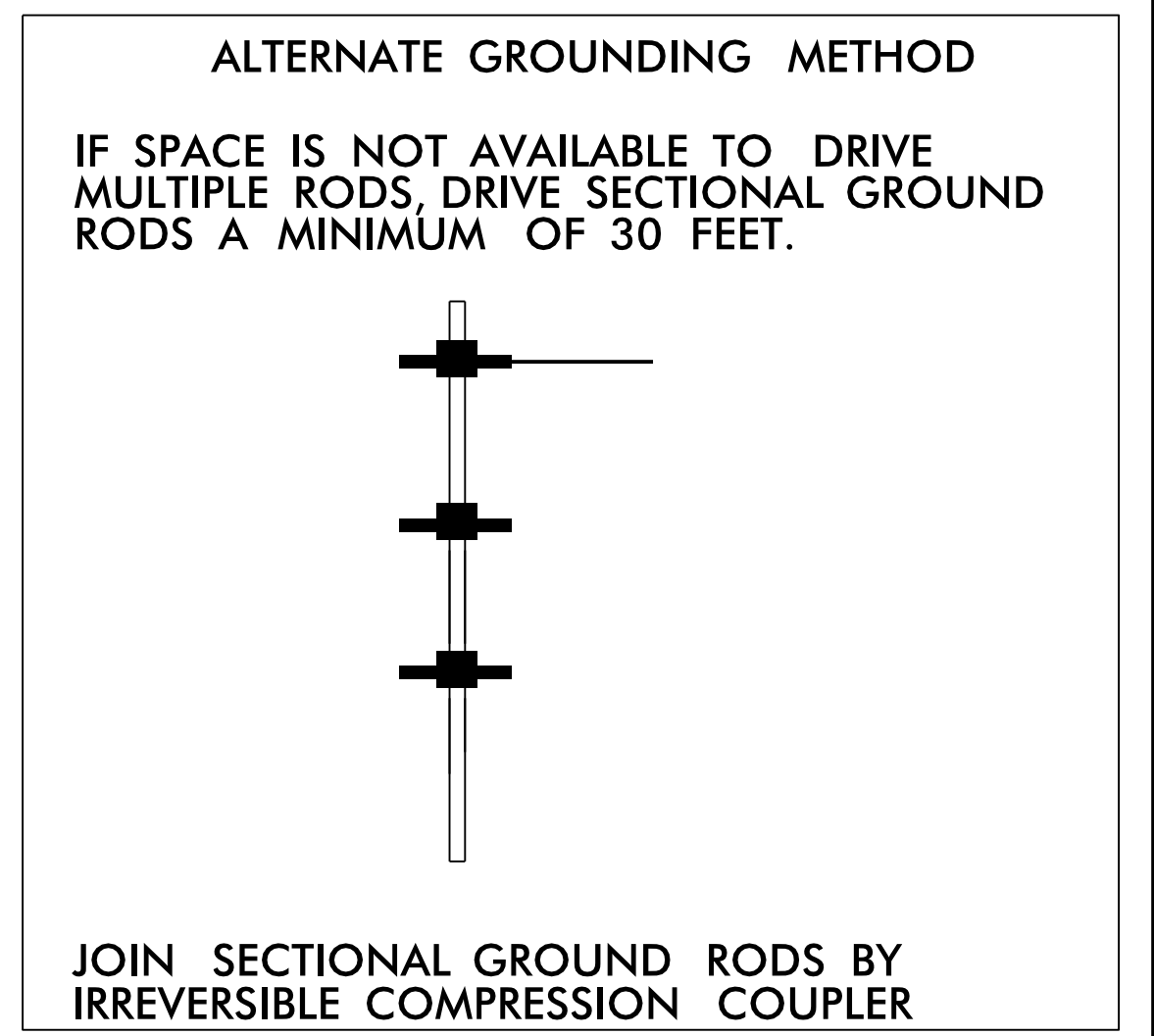
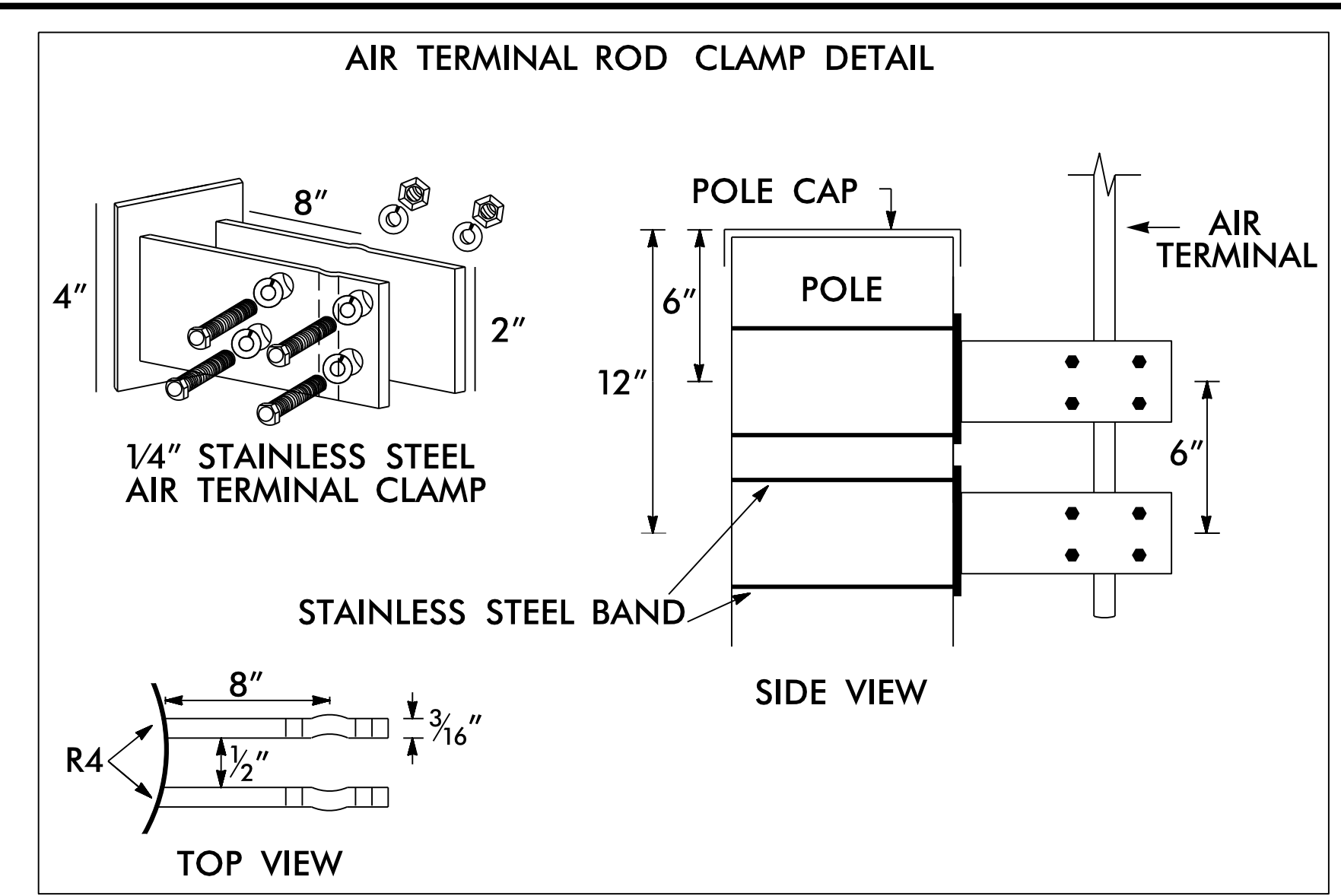
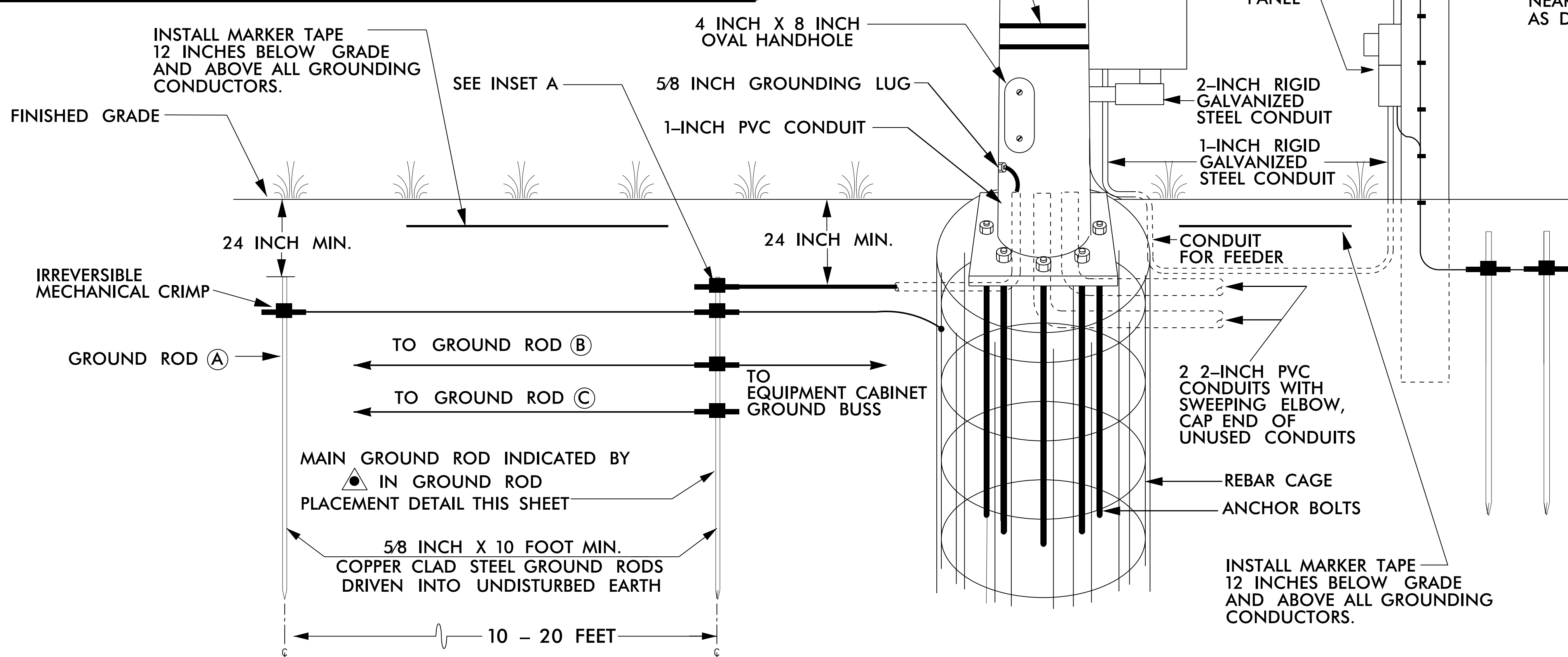
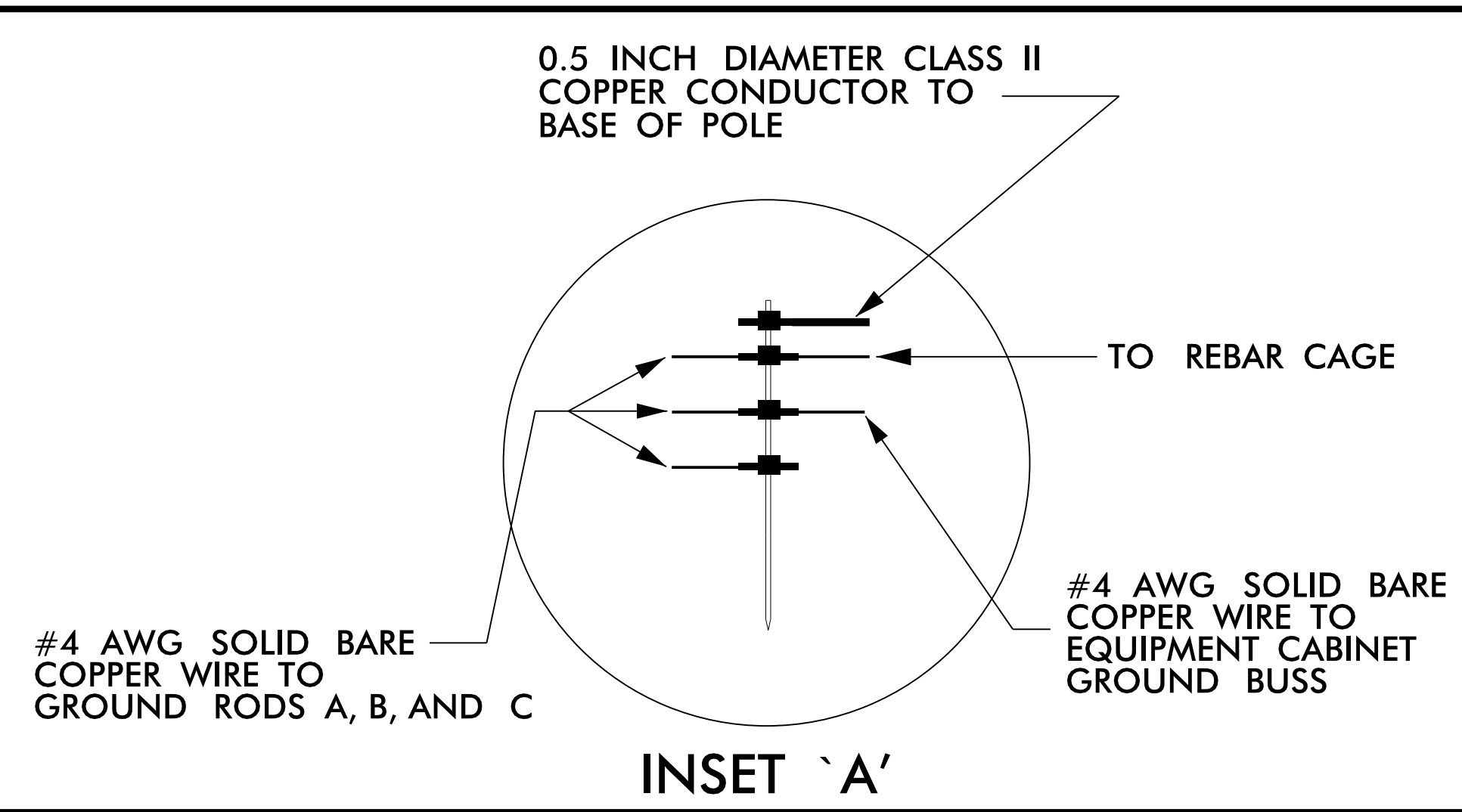
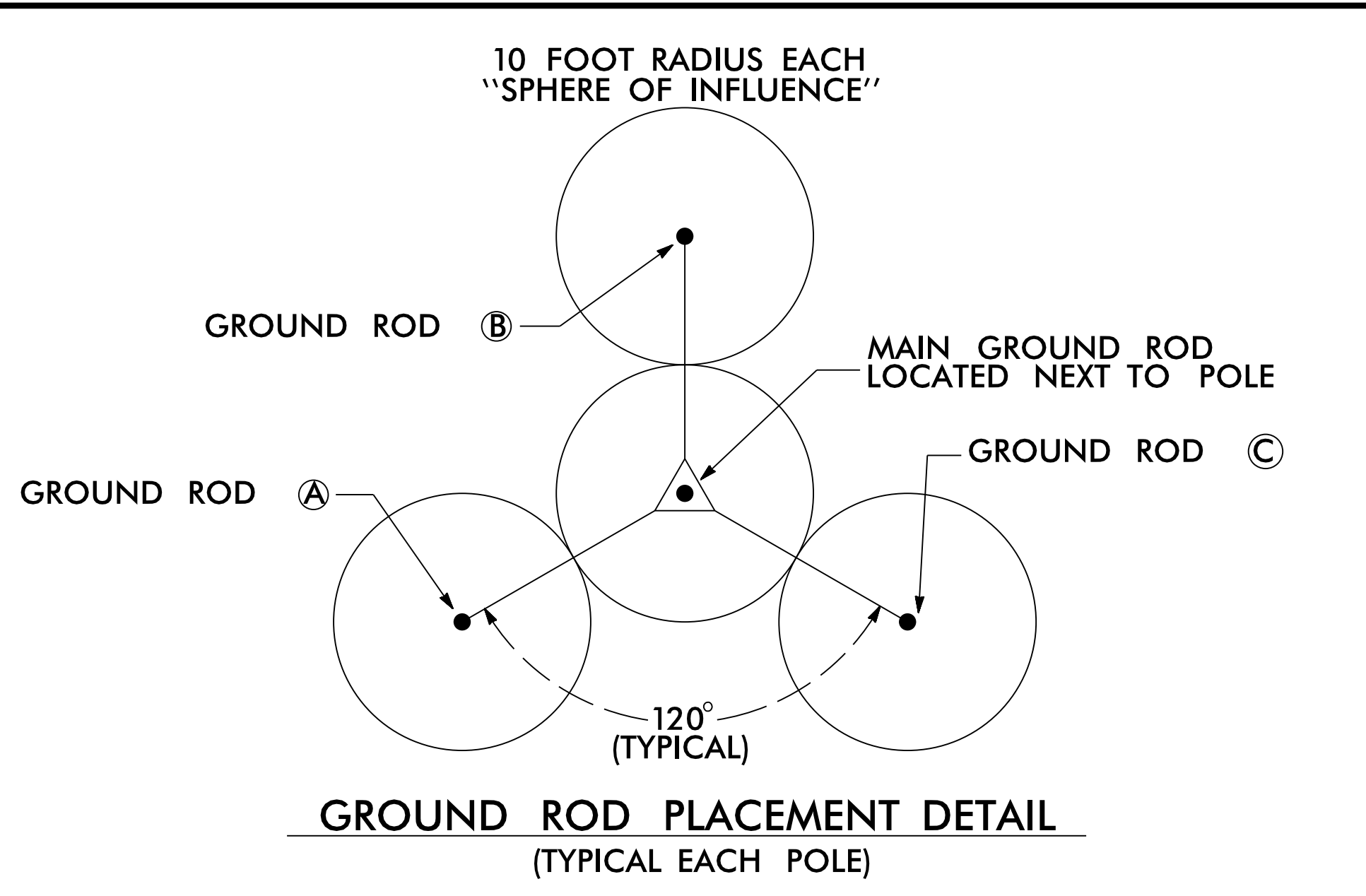
CCTV CAMERA INSTALLATION FOR WOOD POLES WITH AERIAL ELECTRICAL SERVICE TYPICAL DETAIL

PLAN DATE: JUNE 2020 REVIEWED BY: A.J. SKUCE, PE

PREPARED BY: NTS

REVISIONS	INIT.	DATE

DocuSigned by: Andrew J. Skuce 6/3/2020



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.

	CCTV CAMERA INSTALLATION FOR METAL POLE WITH AERIAL ELECTRICAL SERVICE TYPICAL DETAIL		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 050152 ANDREW J. SKUCE
	PLAN DATE: JUNE 2020 PREPARED BY: NTS	REVIEWED BY: A.J. SKUCE, PE DATE:	