

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2633BA	ITS-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
		PE	

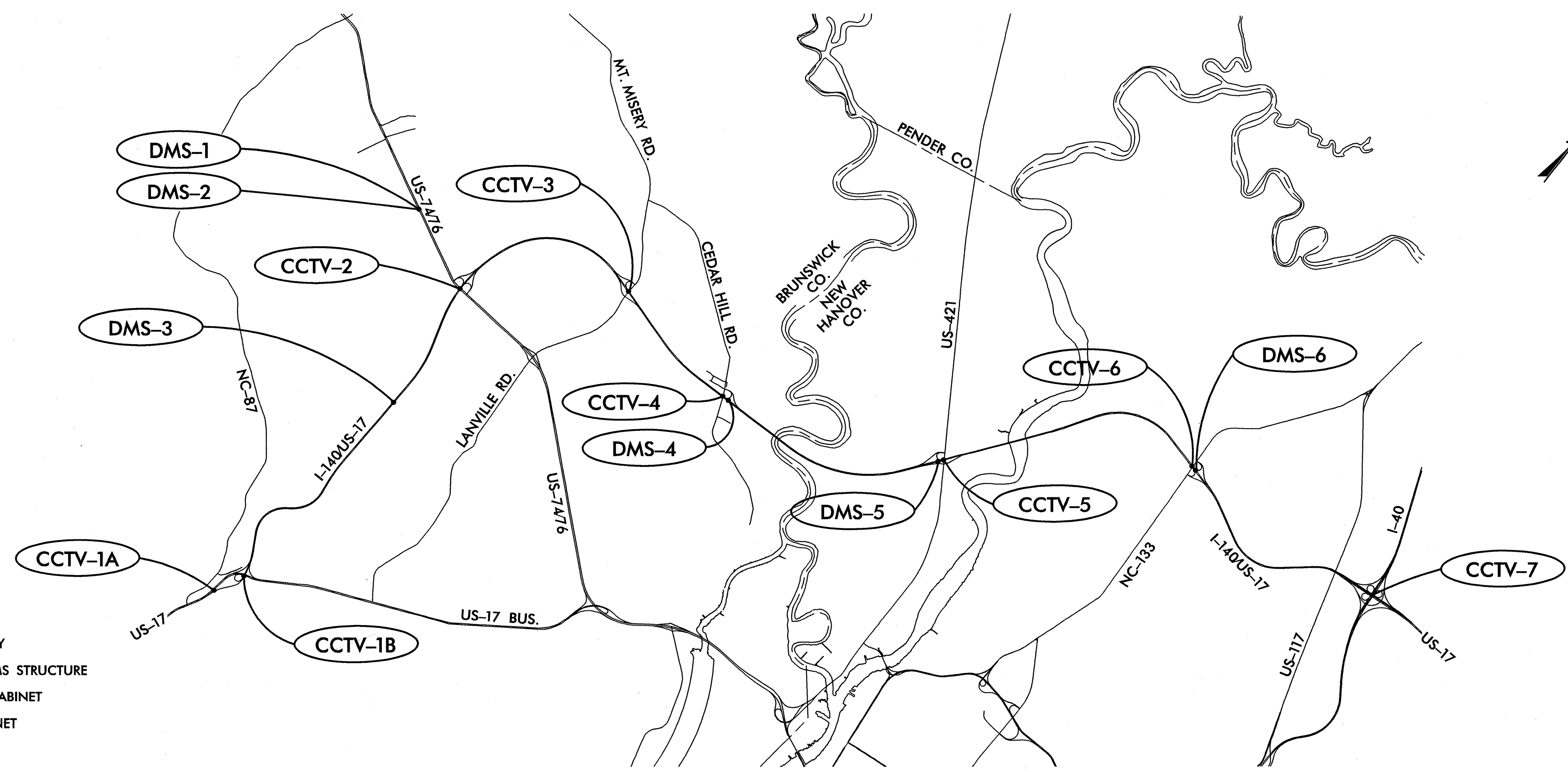
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BRUNSWICK & NEW HANOVER COUNTIES

LOCATION: US 17 (WILMINGTON BYPASS) FROM US 17 IN BRUNSWICK COUNTY TO INTERSTATE 40 IN NEW HANOVER COUNTY

TYPE OF WORK: CCTV CAMERA AND DYNAMIC MESSAGE SIGNS INSTALLATION

CONTRACT: C203199 TIP PROJECT: R-2633BA



LEGEND

	EXISTING GUARDRAIL
	NEW GUARDRAIL
	EXISTING RIGHT-OF-WAY
	NEW WOOD POLE
	EXISTING WOOD POLE
	NEW METAL POLE
	EXISTING METAL POLE
	NEW JUNCTION BOX
	NEW CCTV CAMERA ASSEMBLY
	NEW PEDESTAL-MOUNTED DMS STRUCTURE
	EXISTING FIELD EQUIPMENT CABINET
	NEW FIELD EQUIPMENT CABINET
	NEW ELECTRICAL SERVICE
	EXISTING ELECTRICAL SERVICE
	NEW ITS DEVICE NUMBER

FINAL PLANS

2012 STANDARD SPECIFICATIONS	
PROJECT LENGTH PROJECT LENGTH = 7.6 MILES	
LETTING DATE: JANUARY 21, 2014	
INDEX OF SHEETS	
SHEET ITS-1	TITLE SHEET
SHEET ITS-2	PLAN KEY
SHEET ITS-3-5	TYPICAL CCTV DETAILS
SHEET ITS-6-10	TYPICAL DMS DETAILS
SHEET ITS-11	PROPOSED SYSTEM BLOCK DIAGRAM
SHEET ITS-12-24	DEVICE INSTALLATION PLANS

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 2012 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

NC DOT CONTACTS:
TRANSPORTATION SAFETY AND MOBILITY
INTELLIGENT TRANSPORTATION SYSTEMS SECTION
THOMAS G. PARKER - ITS PROJECT ENGINEER
SHERRY C. YOW - ITS PROJECT DESIGN ENGINEER

PLANS PREPARED BY:

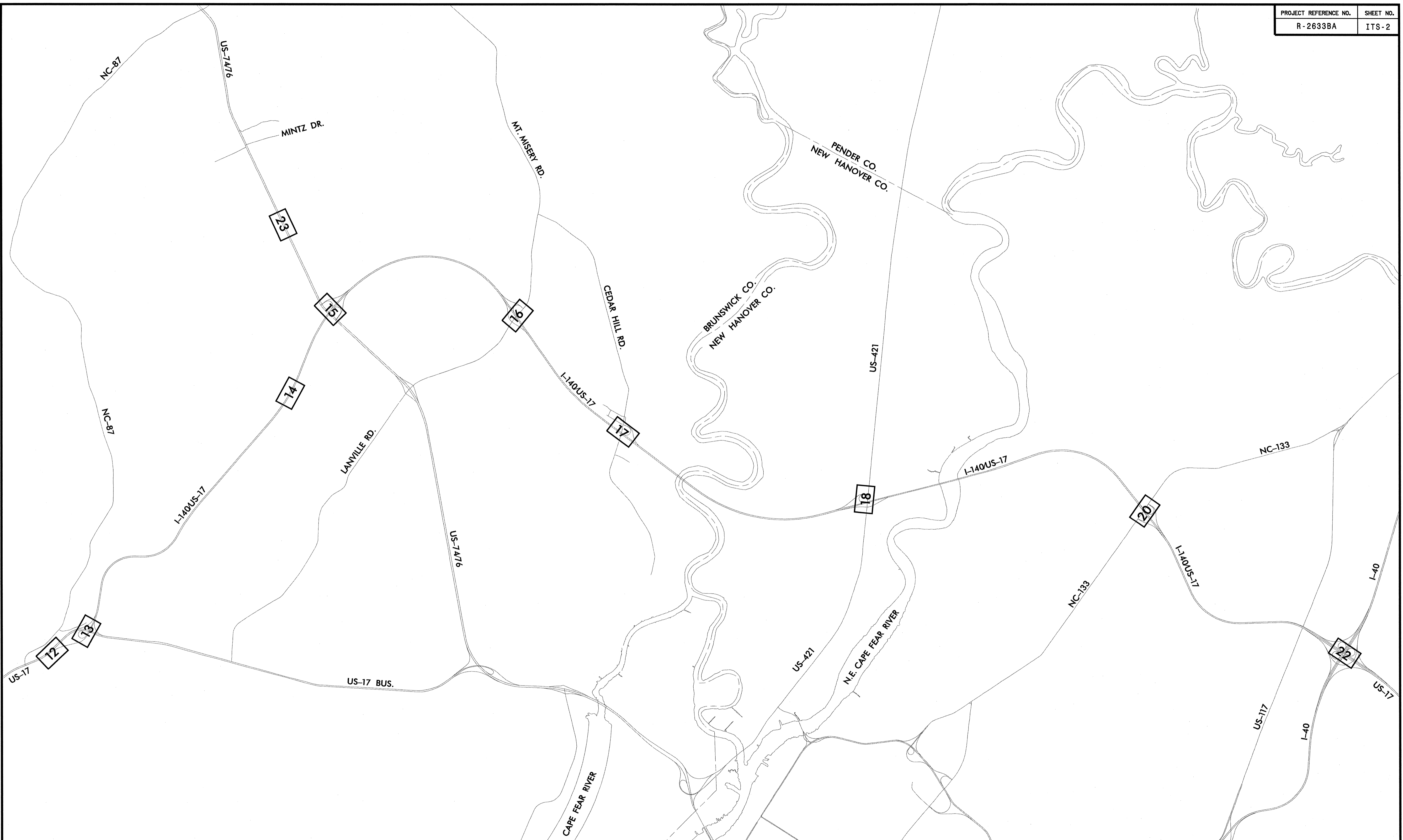
Kimley-Horn and Associates, Inc.
NC License #F-0102
P.O. Box 33068
Raleigh, NC 27636
(919) 677-2000

KIMLEY-HORN CONTACTS: T.F. BURCHETT, P.E. - PROJECT MANAGER
KEVIN W. SMITH, P.E. - PROJECT ENGINEER

750 Greenfield Pkwy., Garner, NC 27529

SEAL	SEAL
<i>Kevin W. Smith</i> 8/30/13	
SIGNATURE	DATE

8/29/2013 4:19:39 PM \$USER\$



8/29/2013 4:05:43 PM K:\RAL\ITFD\ITS\03036239 R-2633BA\Plans\R-2633BA\ITS-02.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 919 677-2000

Plans Prepared For:

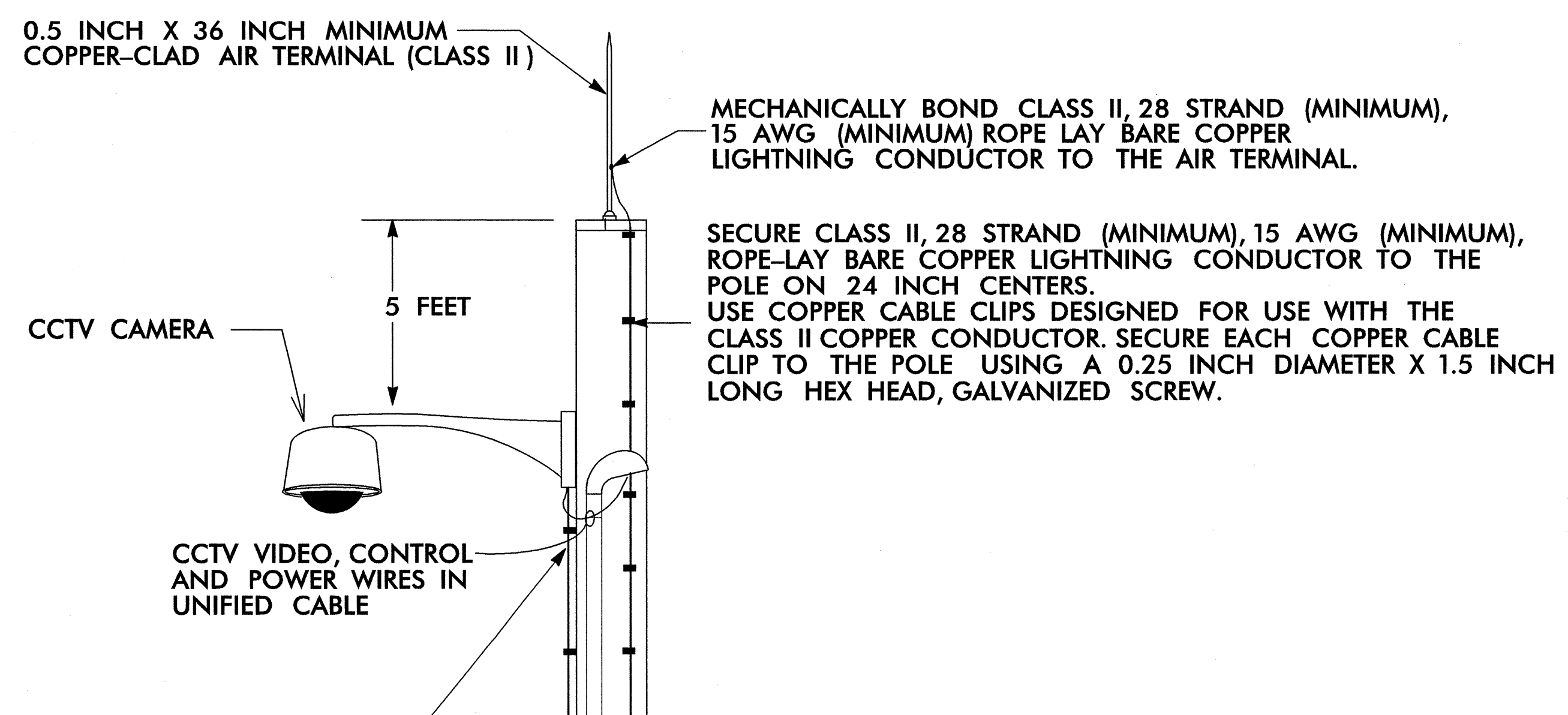
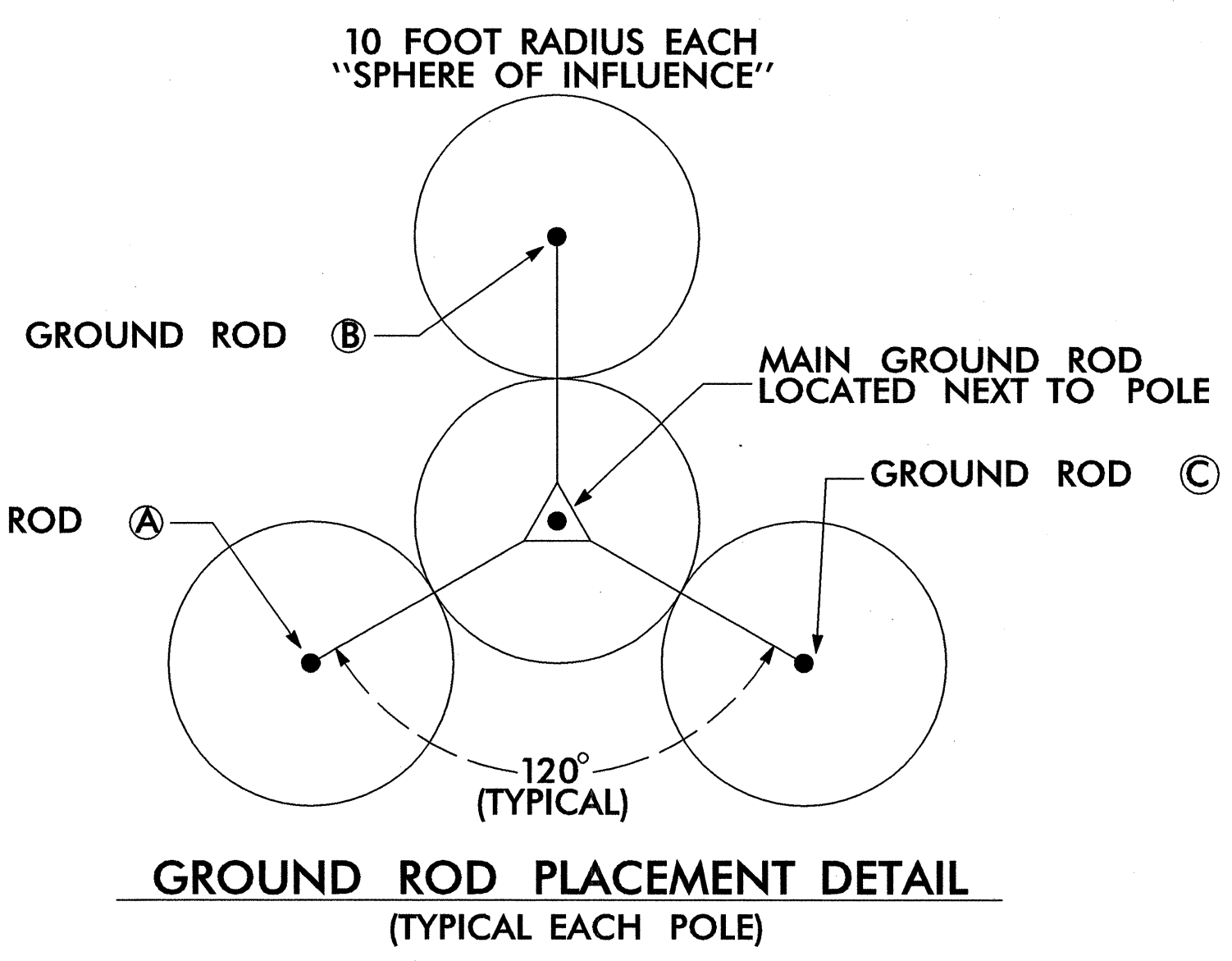
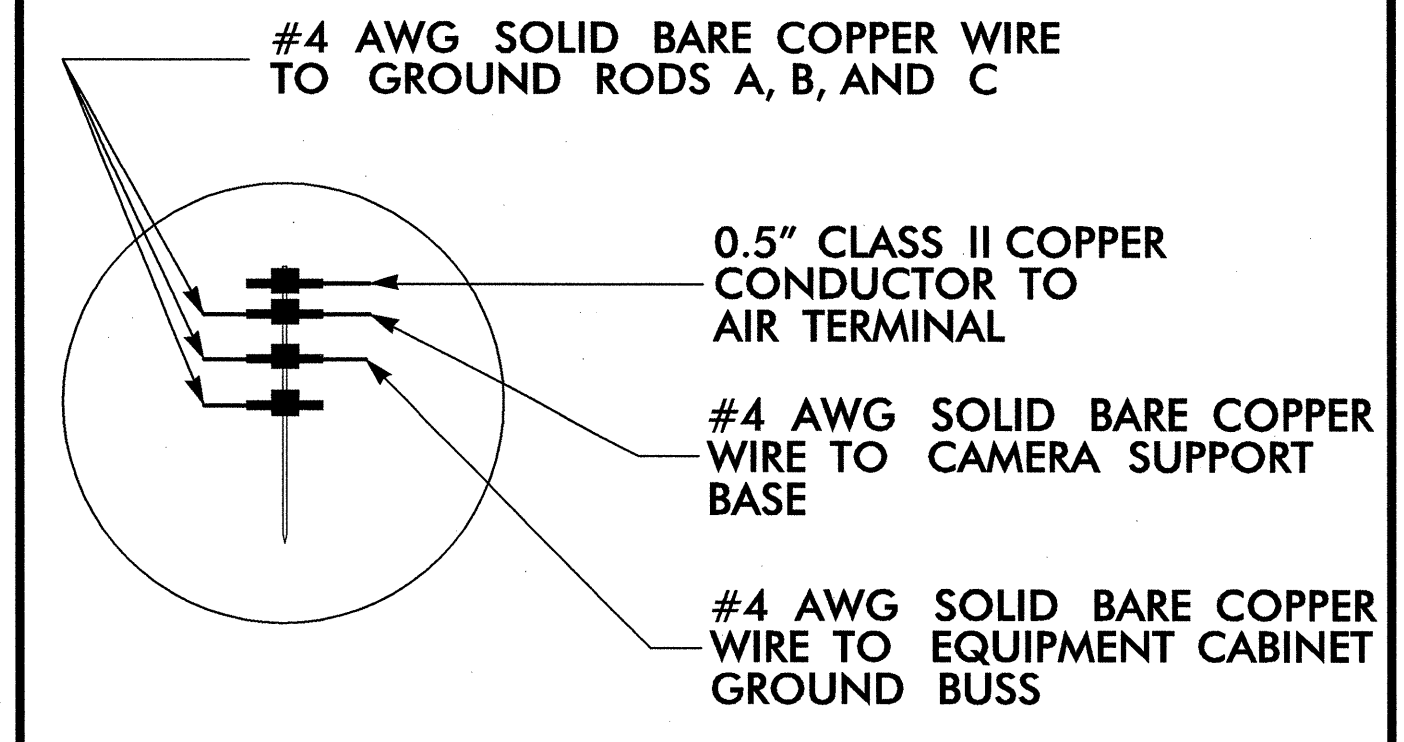
750 N. Greenfield Pkwy., Garner, NC 27529
 SCALE: 0' = 1"

PLAN KEY			
DIVISION 03		BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE:	AUGUST 2013	REVIEWED BY:	
PREPARED BY:	J. CROSS	REVIEWED BY:	K. SMITH
REVISIONS	INIT.	DATE	

SEAL

SIGNATURE: *Kevin W. Smith*
 DATE: 8/30/13
 CADD Filename:

INSET 'A'

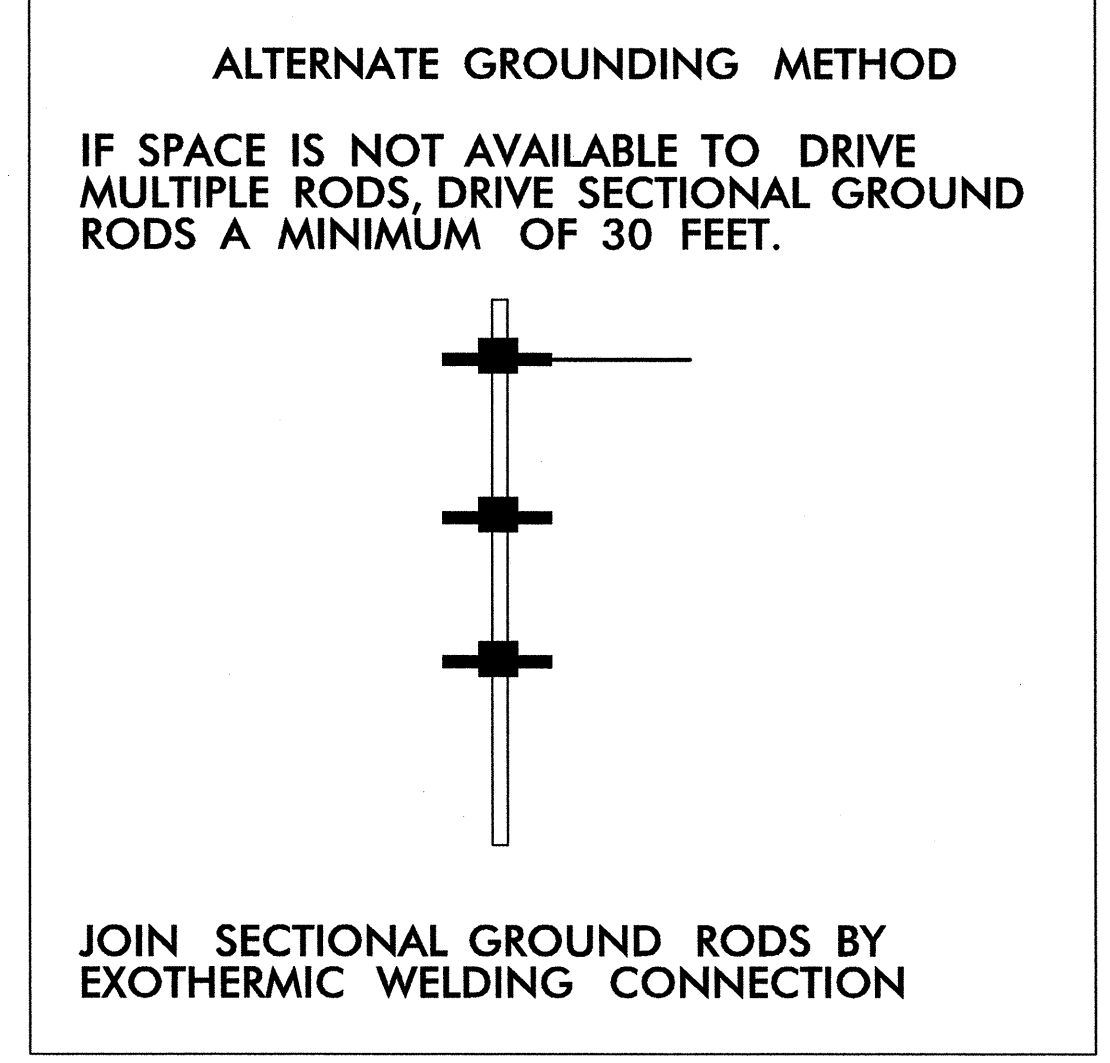
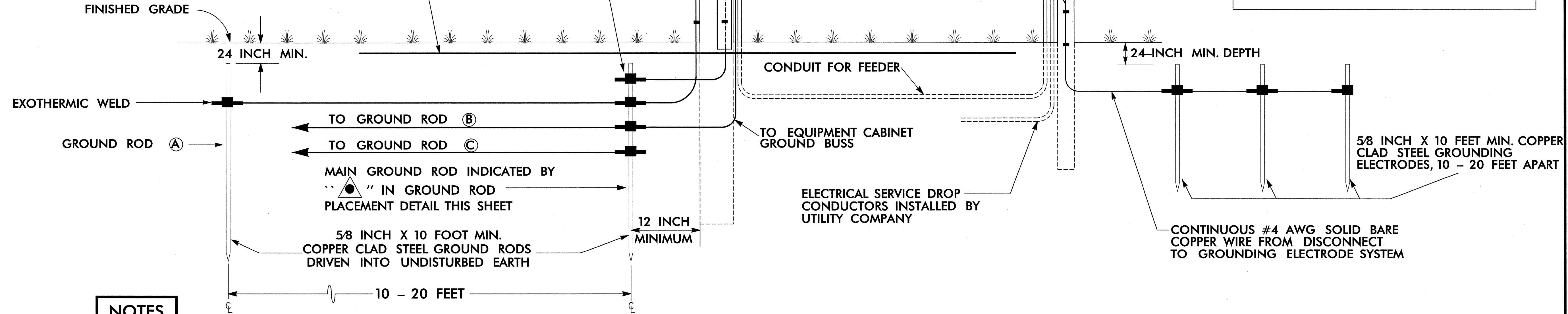


BOND #4 AWG SOLID BARE COPPER WIRE TO CAMERA SUPPORT BASE BY AN ALUMINUM TO COPPER #2 - #14 AWG LUG. ATTACH TO CAMERA BASE WITH A STAINLESS STEEL SELF TAPPING SCREW. REMOVE PAINT OR PROTECTIVE COATING WHERE ATTACHING LUG ONLY.

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

2-INCH RIGID GALVANIZED STEEL RISER FOR POWER AND CONTROL WIRES

INSTALL MARKER TAPE 12 INCHES BELOW GRADE AND ABOVE ALL GROUNDING CONDUCTORS.



NOTES

- BOND CLASS II, 28 STRAND (MINIMUM), 15 AWG (MINIMUM) ROPE-LAY BARE COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD. MAINTAIN MAXIMUM HORIZONTAL SEPARATION BETWEEN COPPER CONDUCTOR AND RISER.
- EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
- THE CONTRACTOR MAY, UPON APPROVAL OF THE ENGINEER, INSTALL A 30-FOOT SECTIONAL GROUND ROD FOR INSTANCES WHEN CONDITIONS WILL NOT ALLOW FOR THE INSTALLATION OF THE 3 - RADIAL GROUND RODS.
- INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12 INCHES.
- REMOVE BONDING JUMPER BETWEEN EQUIPMENT CABINET GROUND BUSS AND NEUTRAL BUSS.

8/29/2013 4:54:46 PM K:\VAL...ITD\...ITS\00056239 R-26338A\Plans\IT-26338A-ITS-03.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 671-2000

Plans Prepared For:

759 N. Greenfield Pkwy., Garner, NC 27529

SCALE: 0

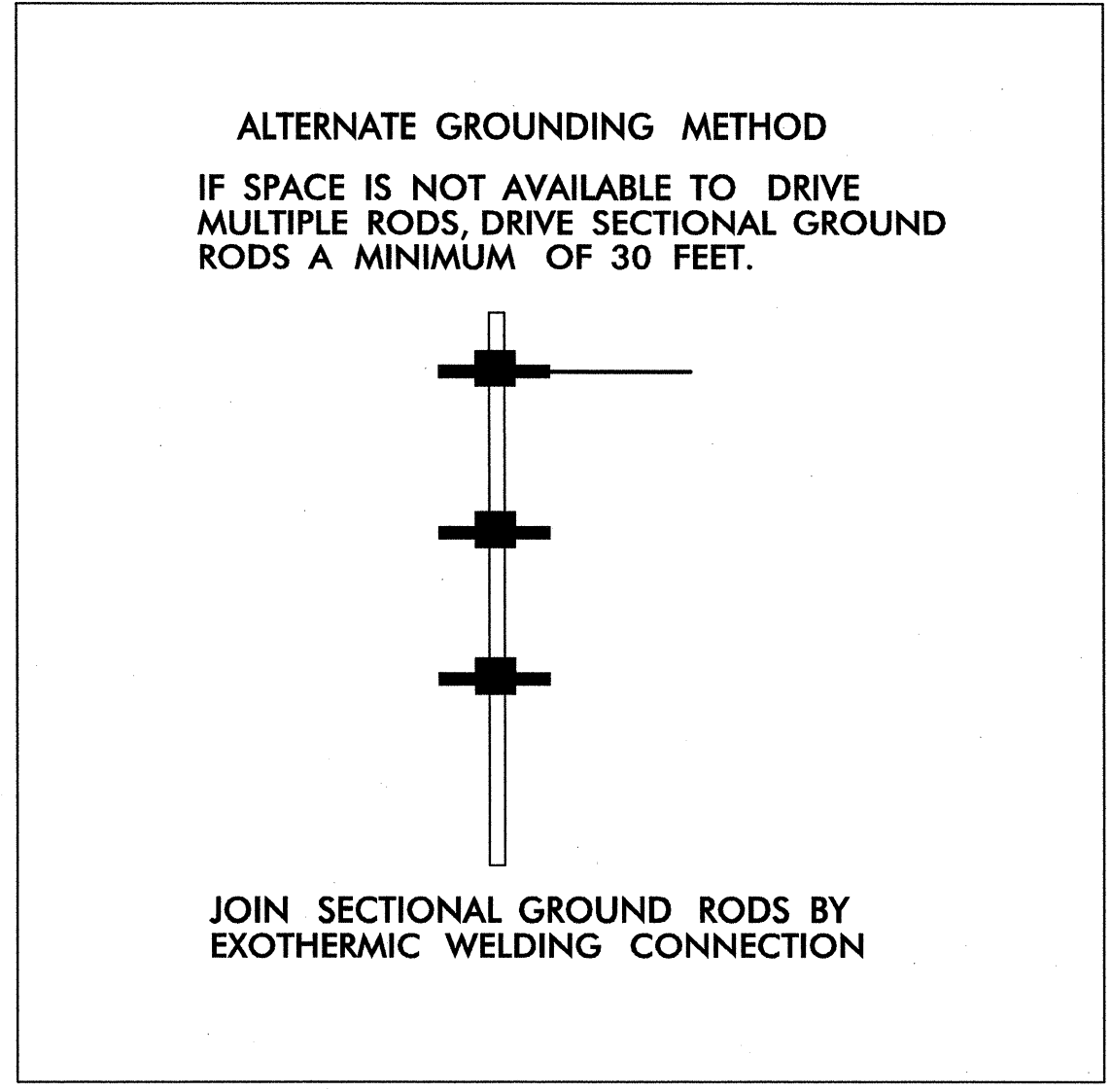
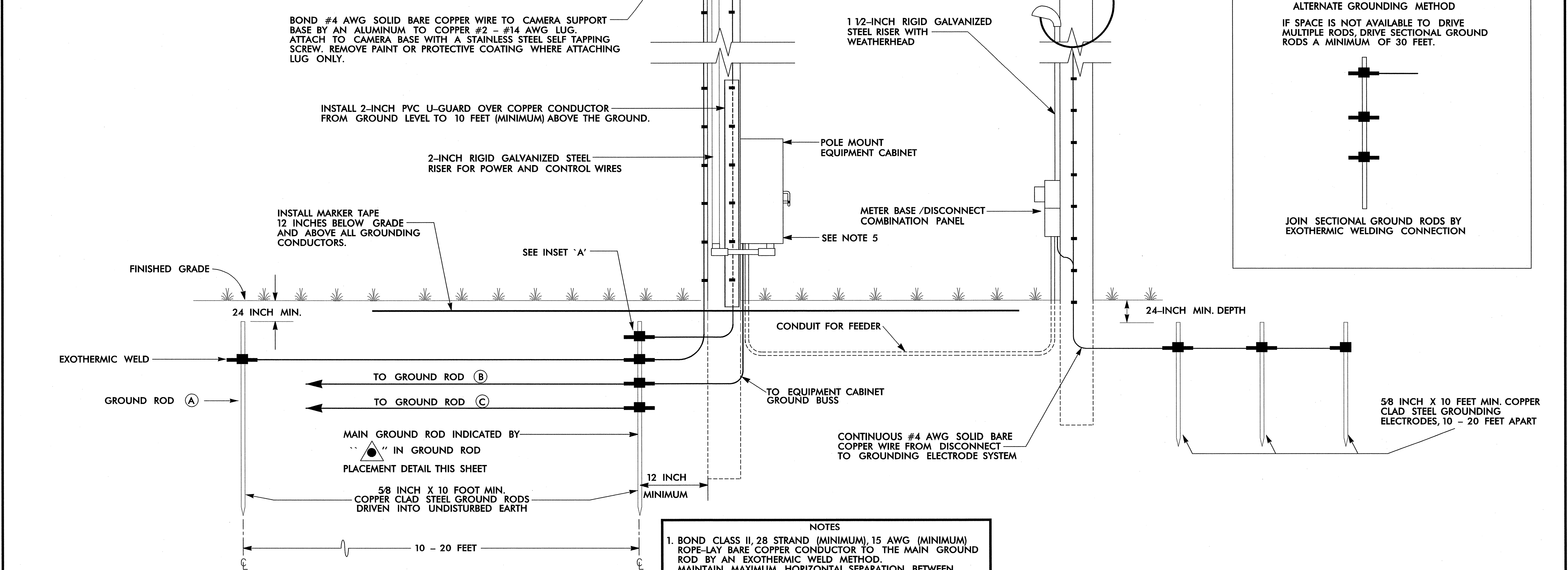
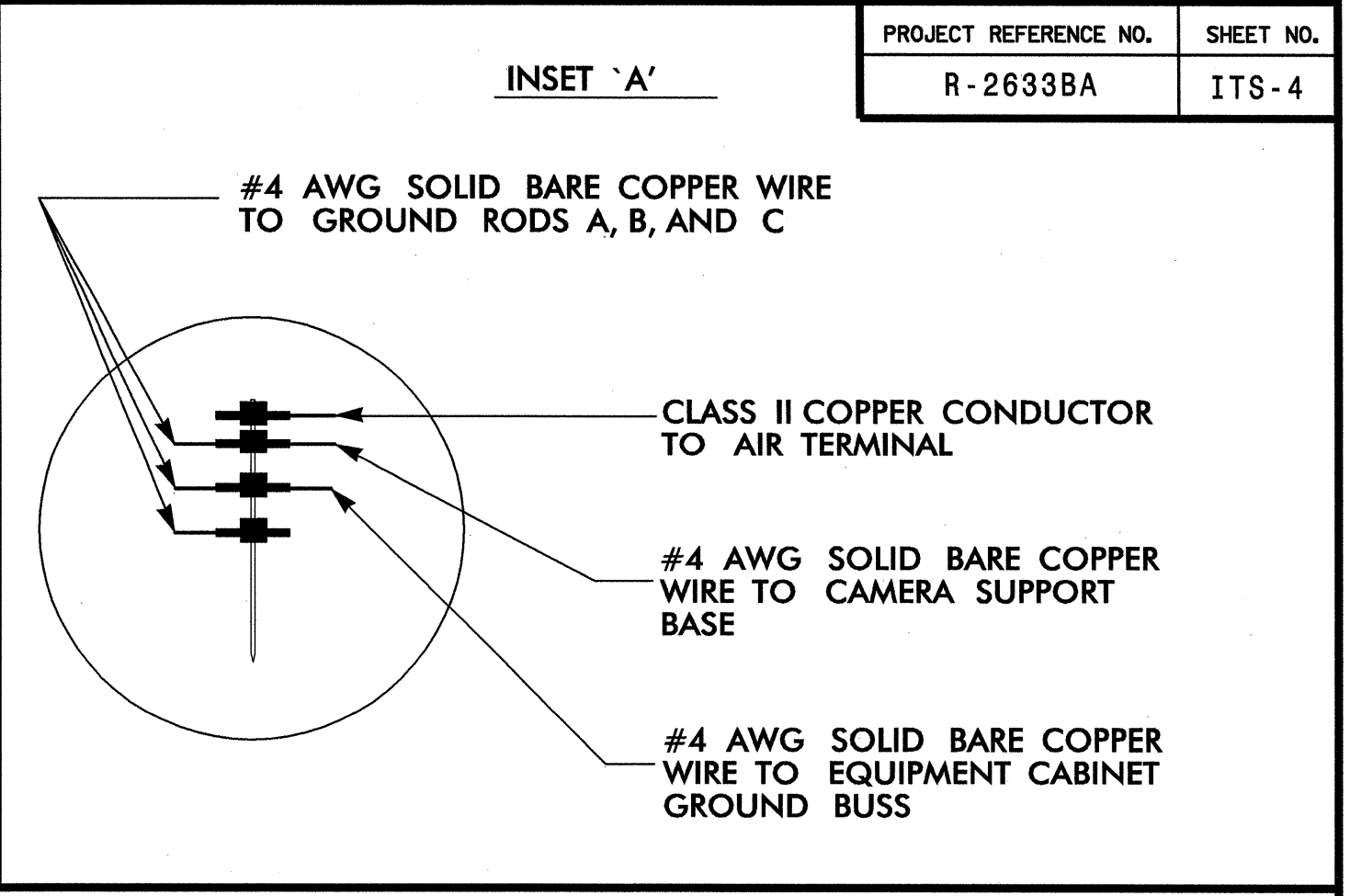
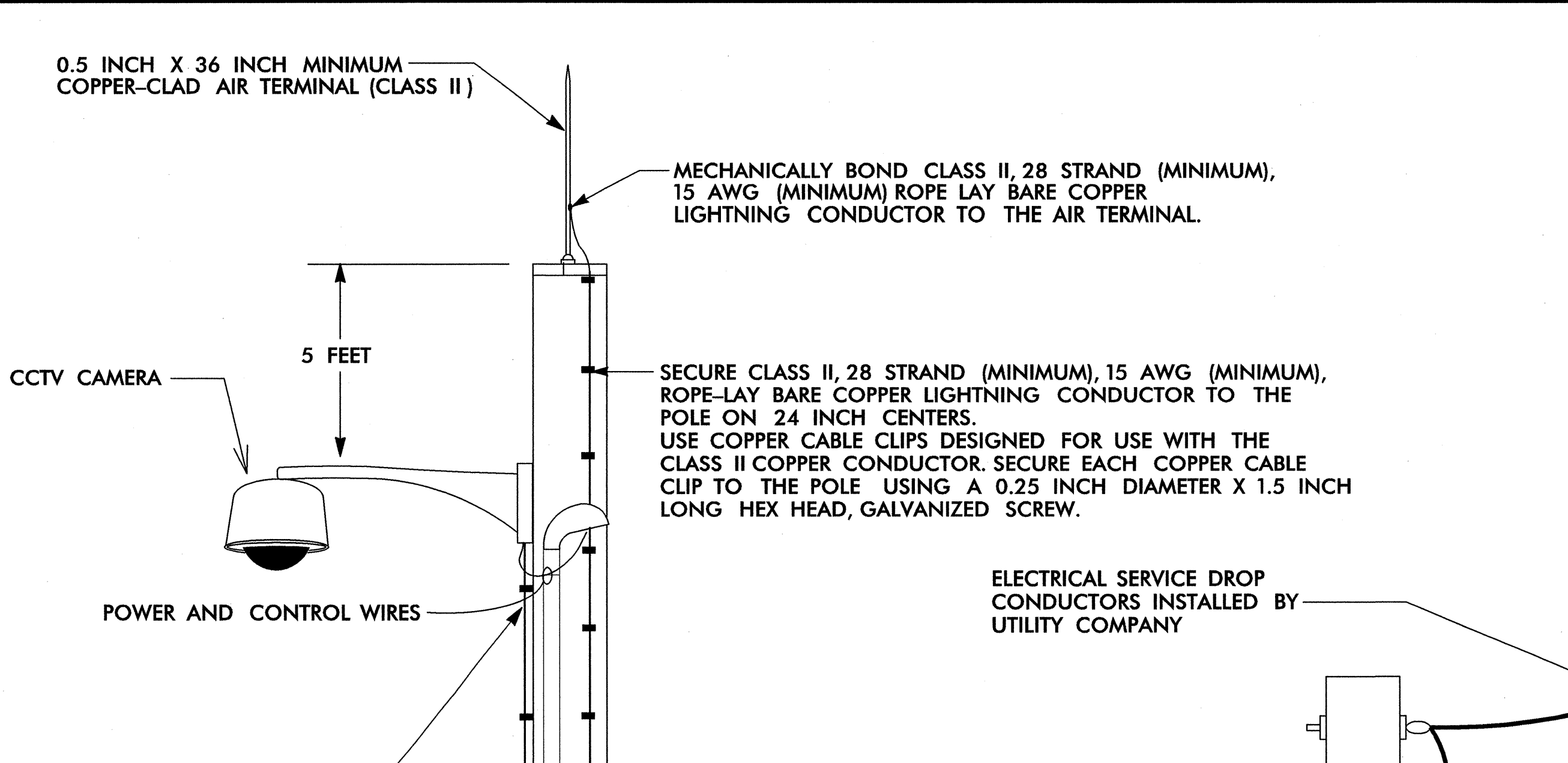
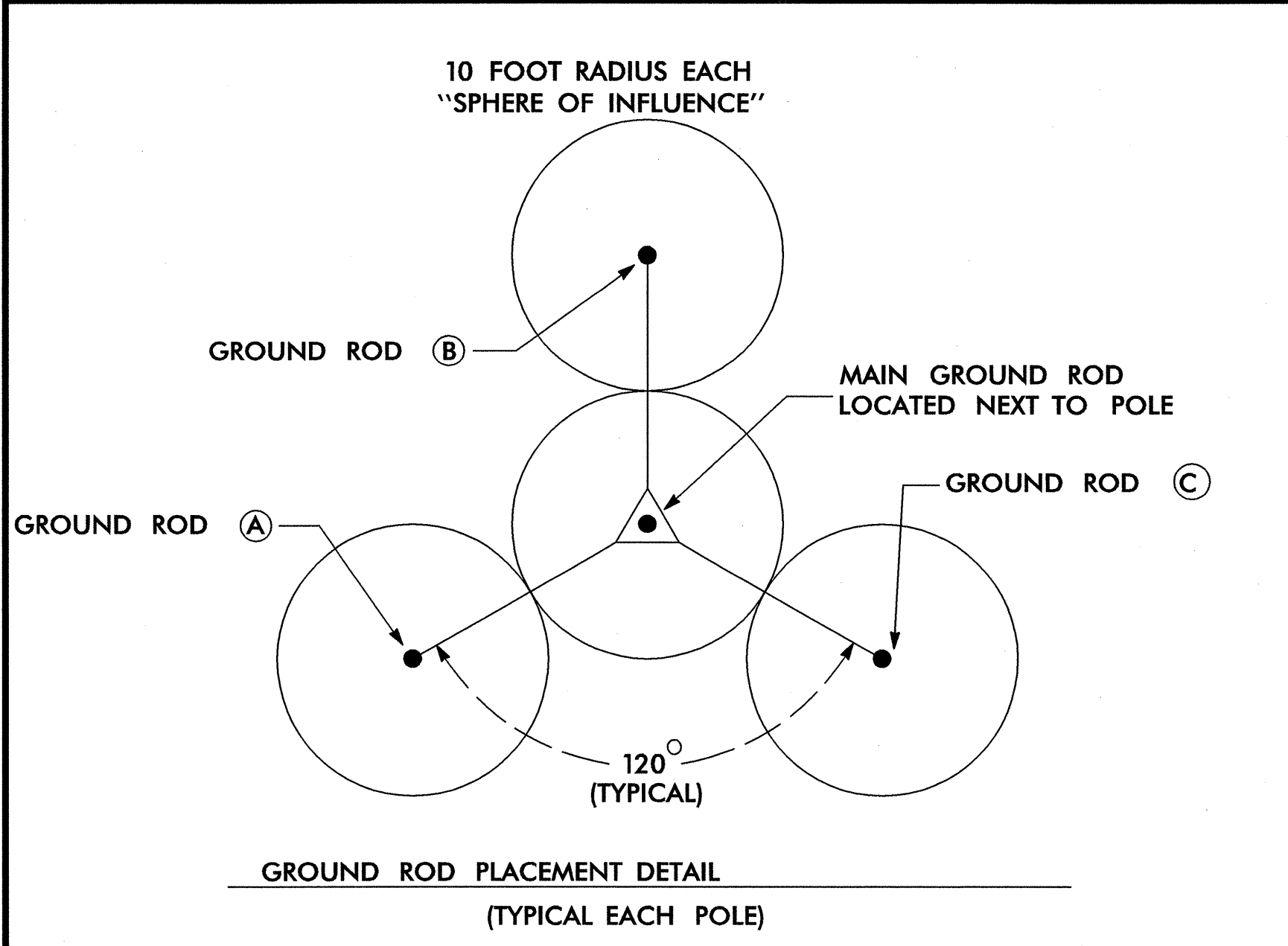
CCTV CAMERA WITH CABINET ON WOOD POLE	
DIVISION 03	BRUNSWICK/NEW HANOVER COUNTY
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

ENGINEER KEVIN W. SMITH

8/30/13

CADD Filename:



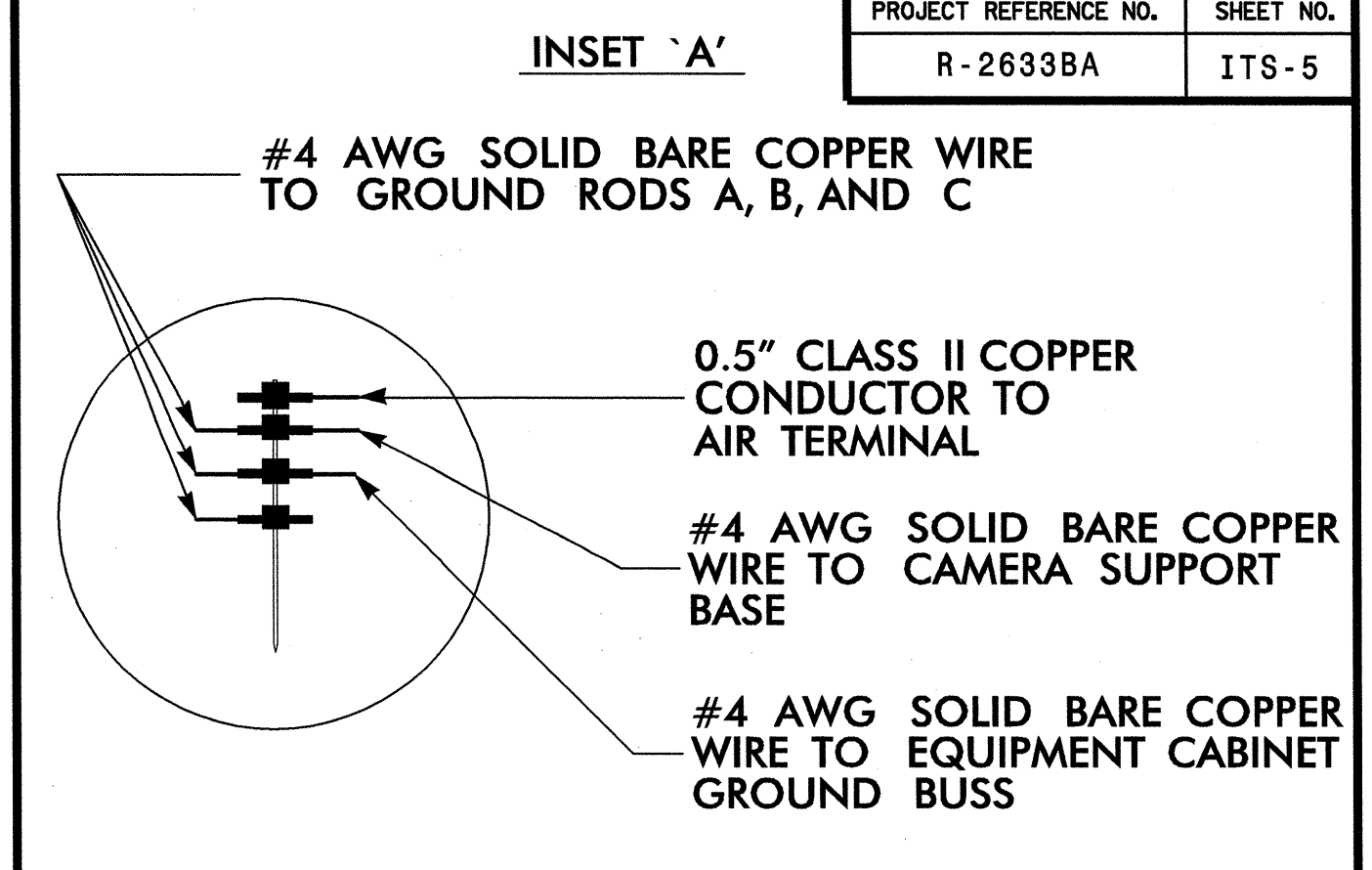
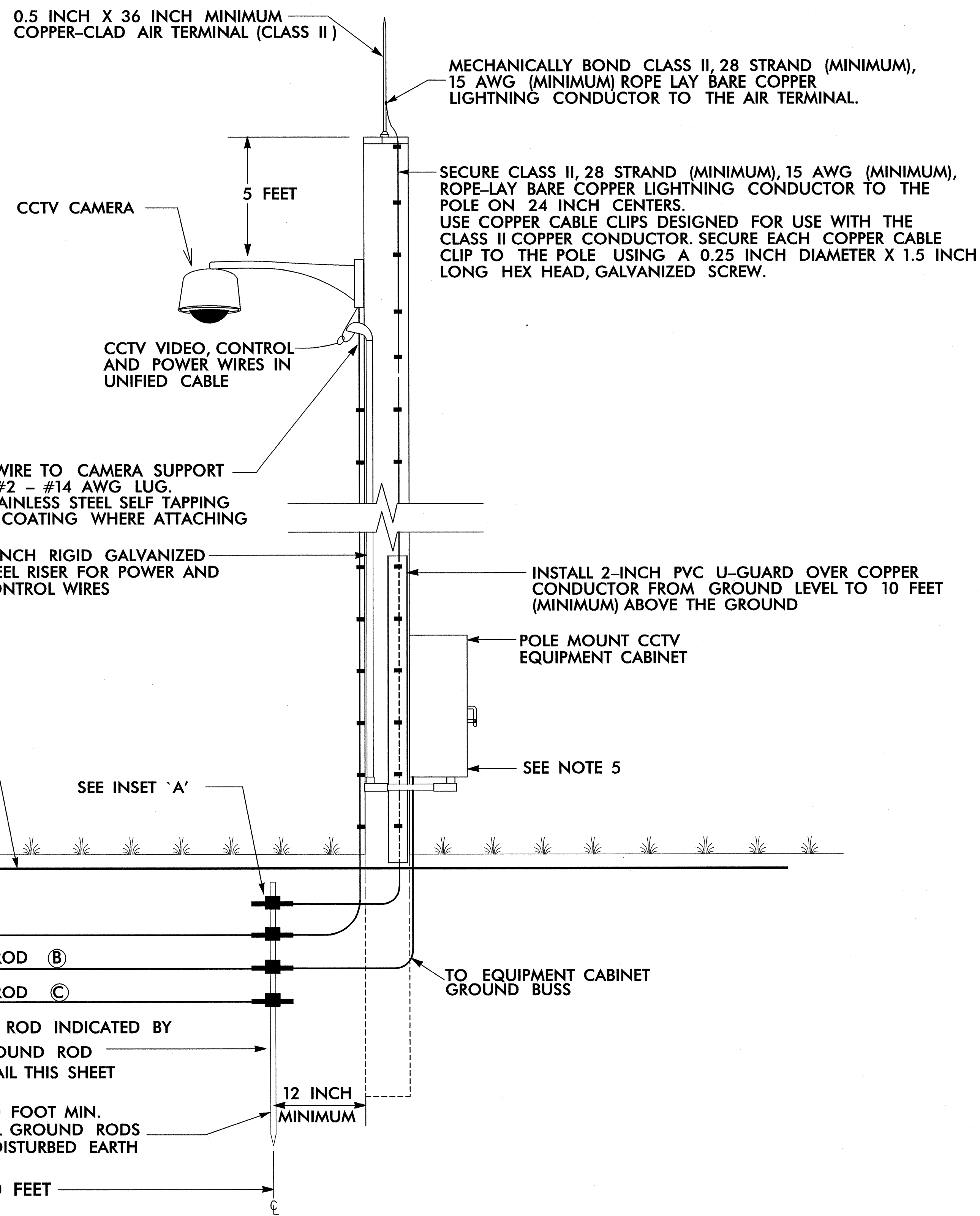
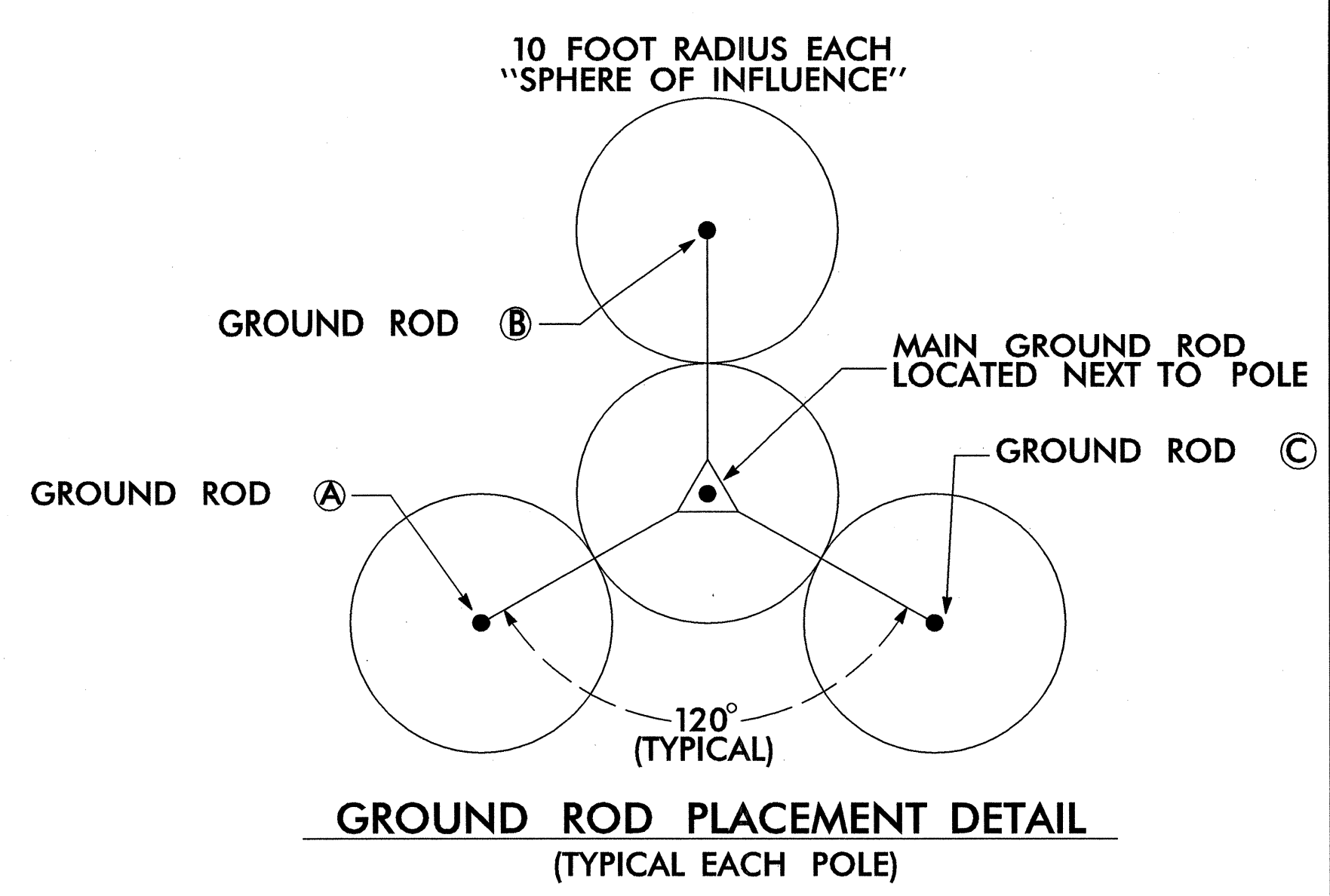
- NOTES
1. BOND CLASS II, 28 STRAND (MINIMUM), 15 AWG (MINIMUM) ROPE-LAY BARE COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD. MAINTAIN MAXIMUM HORIZONTAL SEPARATION BETWEEN COPPER CONDUCTOR AND RISER.
 2. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
 3. THE CONTRACTOR MAY, UPON APPROVAL OF THE ENGINEER, INSTALL A 30-FOOT SECTIONAL GROUND ROD FOR INSTANCES WHEN CONDITIONS WILL NOT ALLOW FOR THE INSTALLATION OF THE 3 - RADIAL GROUND RODS.
 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.

PLANS PREPARED IN THE OFFICE OF:

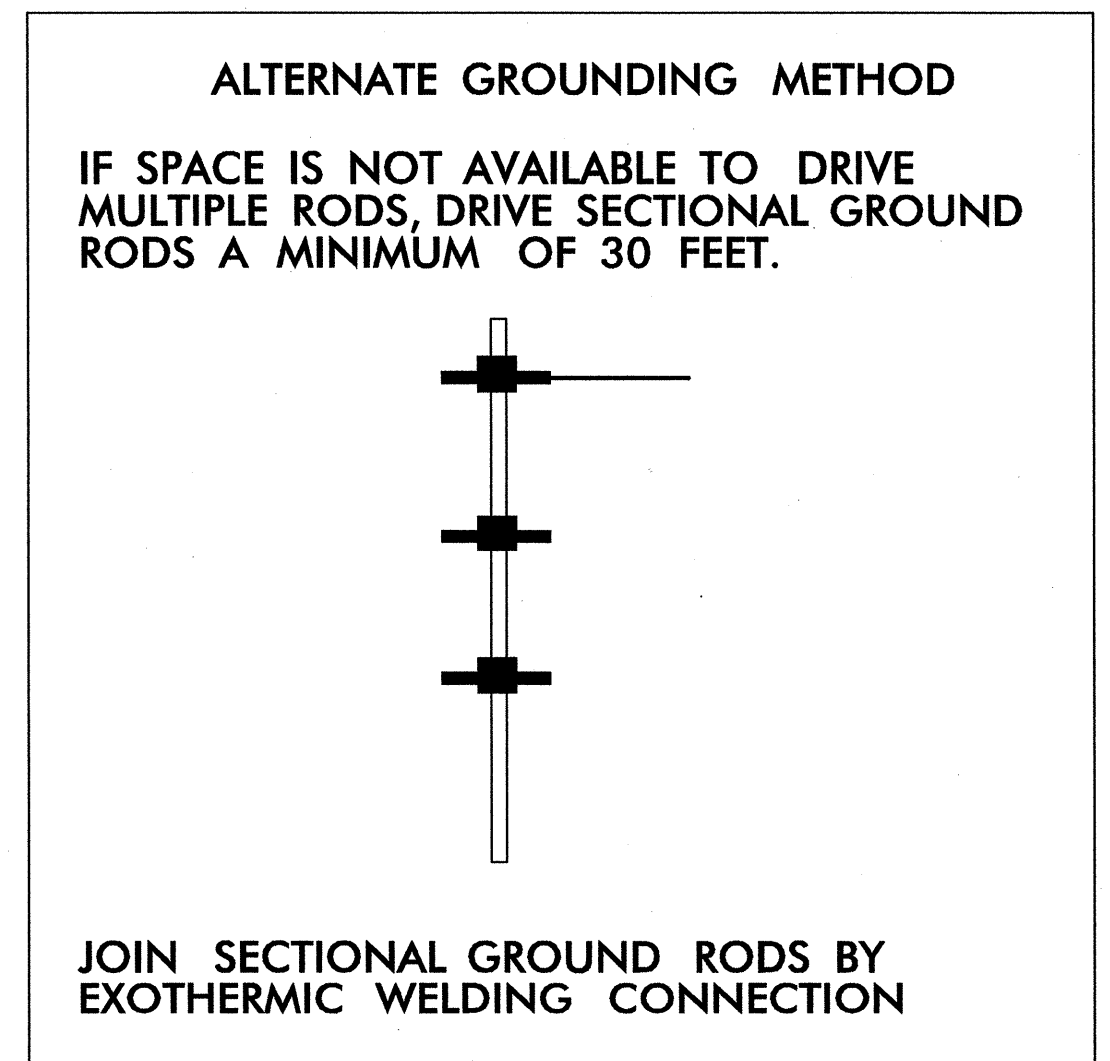
Kimley-Horn and Associates, Inc.
 NC License #F-012
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 877-2000

Plans Prepared For: 750 N. Greenfield Place, Garner, NC 27529		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER KEVIN W. SMITH 030472 8/30/13 DATE	
CCTV CAMERA WITH CABINET ON WOOD POLE			
DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY		PREPARED BY: J. CROSS REVIEWED BY: K. SMITH	
PLAN DATE: AUGUST 2013		REVISIONS:	
SCALE: 0		INIT. DATE	

8/29/2013 4:05:00 PM K:\RAL\17710\ITS_010326239_R-2633BA\Plans\17-2633BA-ITS_04.dgn



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.



NOTES

1. BOND CLASS II, 28 STRAND (MINIMUM), 15 AWG (MINIMUM) ROPE-LAY BARE COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD. MAINTAIN MAXIMUM HORIZONTAL SEPARATION BETWEEN COPPER CONDUCTOR AND RISER.
2. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
3. THE CONTRACTOR MAY, UPON APPROVAL OF THE ENGINEER, INSTALL A 30-FOOT SECTIONAL GROUND ROD FOR INSTANCES WHEN CONDITIONS WILL NOT ALLOW FOR THE INSTALLATION OF THE 3 - RADIAL GROUND RODS.
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.

8/29/2013 4:05:53 PM K:\DAL\1770\ITS\03036239 R-2633BA\Plans\R-2633BA\ITS-05.dgn

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
NC License #F-0102
P.O. Box 33066
Raleigh, NC 27636
(919) 877-2000

Plans Prepared For:
STATE OF NORTH CAROLINA
Department of Transportation
759 N. Greenfield Pkwy., Garner, NC 27529

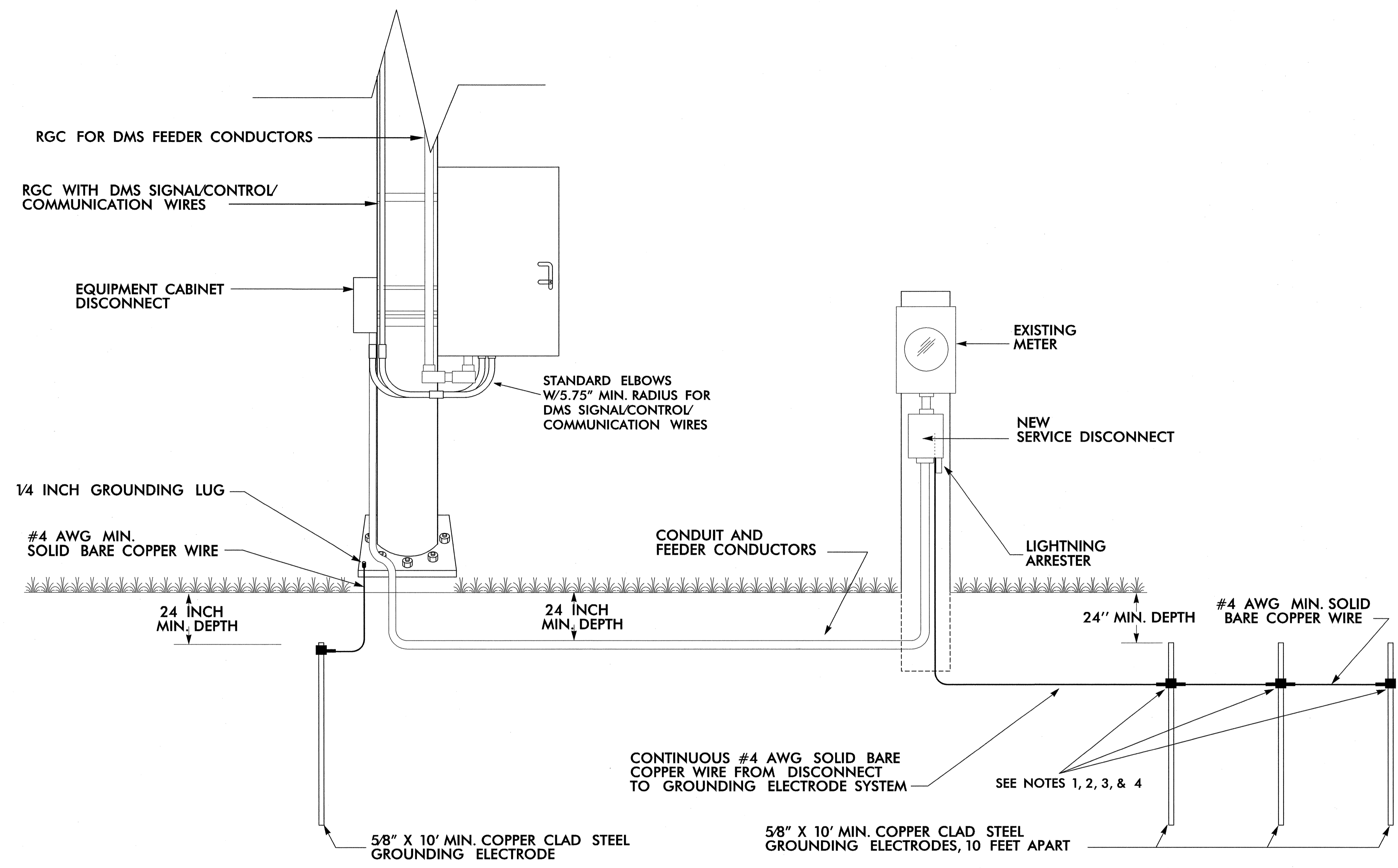
CCTV CAMERA WITH CABINET ON WOOD POLE	
DIVISION 03	BRUNSWICK/NEW HANOVER COUNTY
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

KEVIN W. SMITH
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 030472

Kevin W. Smith
SIGNATURE 8/30/13
DATE

CADD File name:



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. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
4. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12 INCHES.
5. REMOVE BONDING JUMPER IN EQUIPMENT CABINET IF INSTALLED BETWEEN AC NEUTRAL AND EQUIPMENT GROUND.
6. BOND ALL RIGID GALVANIZED STEEL CONDUITS ENTERING THE CABINET TO "EQUIPMENT GROUND".
7. INSTALL CONDUIT BETWEEN DISCONNECT AND CABINET.
8. ENSURE EQUIPMENT GROUND IS ELECTRICALLY BONDED TO CABINET.

8/29/2013 4:05:56 PM K:\MAIL\1770\ITS\01036239 R-2633BA\Plans\R-2633BA-ITS-06.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 877-2000

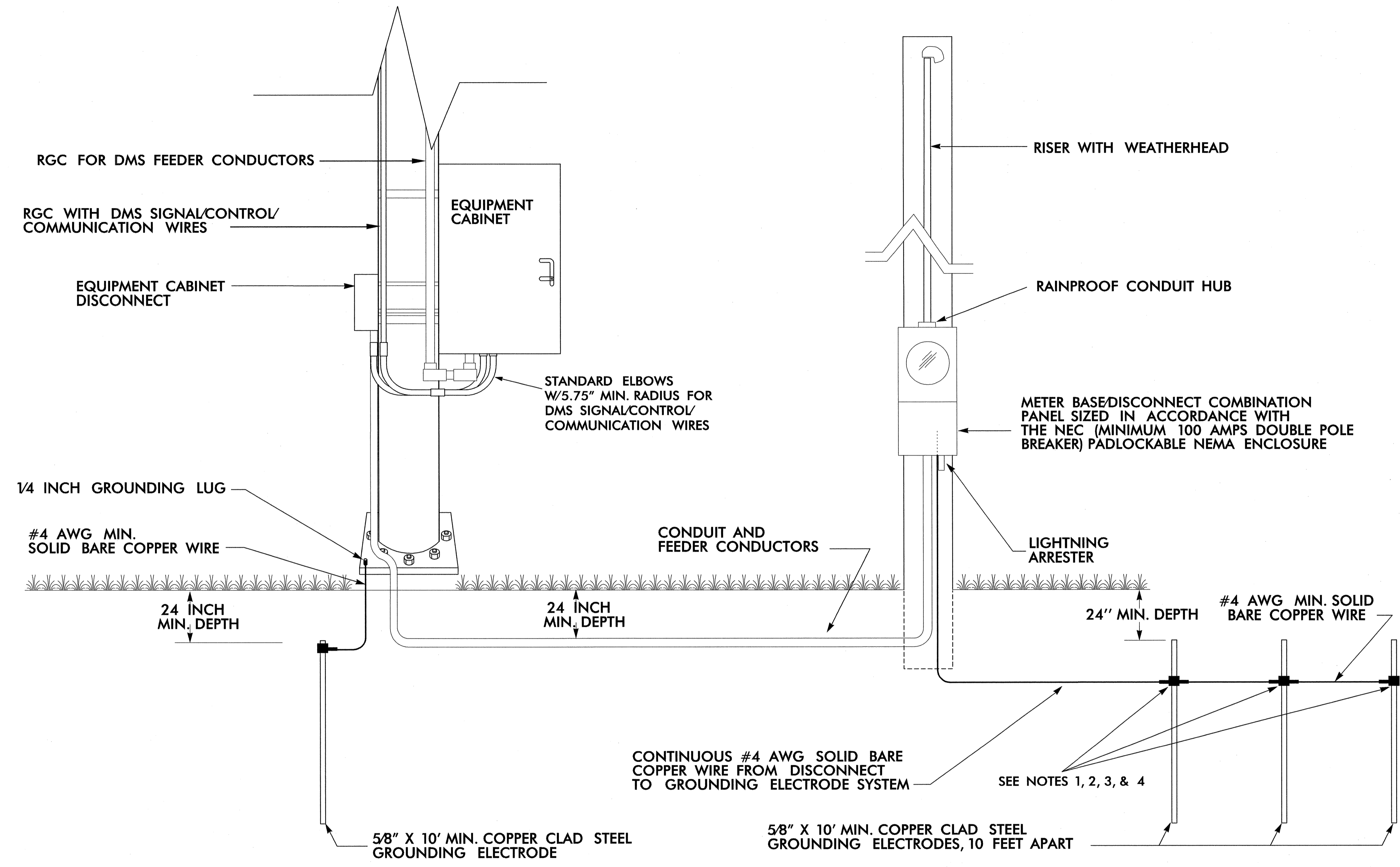
Plans Prepared For:

 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 750 N. Greenfield Pkwy., Garner, NC 27529

DYNAMIC MESSAGE SIGN ELECTRICAL SERVICE AND GROUNDING TYPICAL DETAIL	
DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

SIGNATURE DATE 8/30/13
 CADD File name:



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. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
4. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12 INCHES.
5. REMOVE BONDING JUMPER IN EQUIPMENT CABINET IF INSTALLED BETWEEN AC NEUTRAL AND EQUIPMENT GROUND.
6. BOND ALL RIGID GALVANIZED STEEL CONDUITS ENTERING THE CABINET TO "EQUIPMENT GROUND".
7. INSTALL CONDUIT BETWEEN DISCONNECT AND CABINET.
8. ENSURE EQUIPMENT GROUND IS ELECTRICALLY BONDED TO CABINET.

8/29/2013 4:20:00 PM K:\MAIL\17170\17170.LITS\00036239 R-2633BA\Plans\R-2633BA.LITS.dwg

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33066
 Raleigh, NC 27636
 (919) 577-2000

Plans Prepared For:

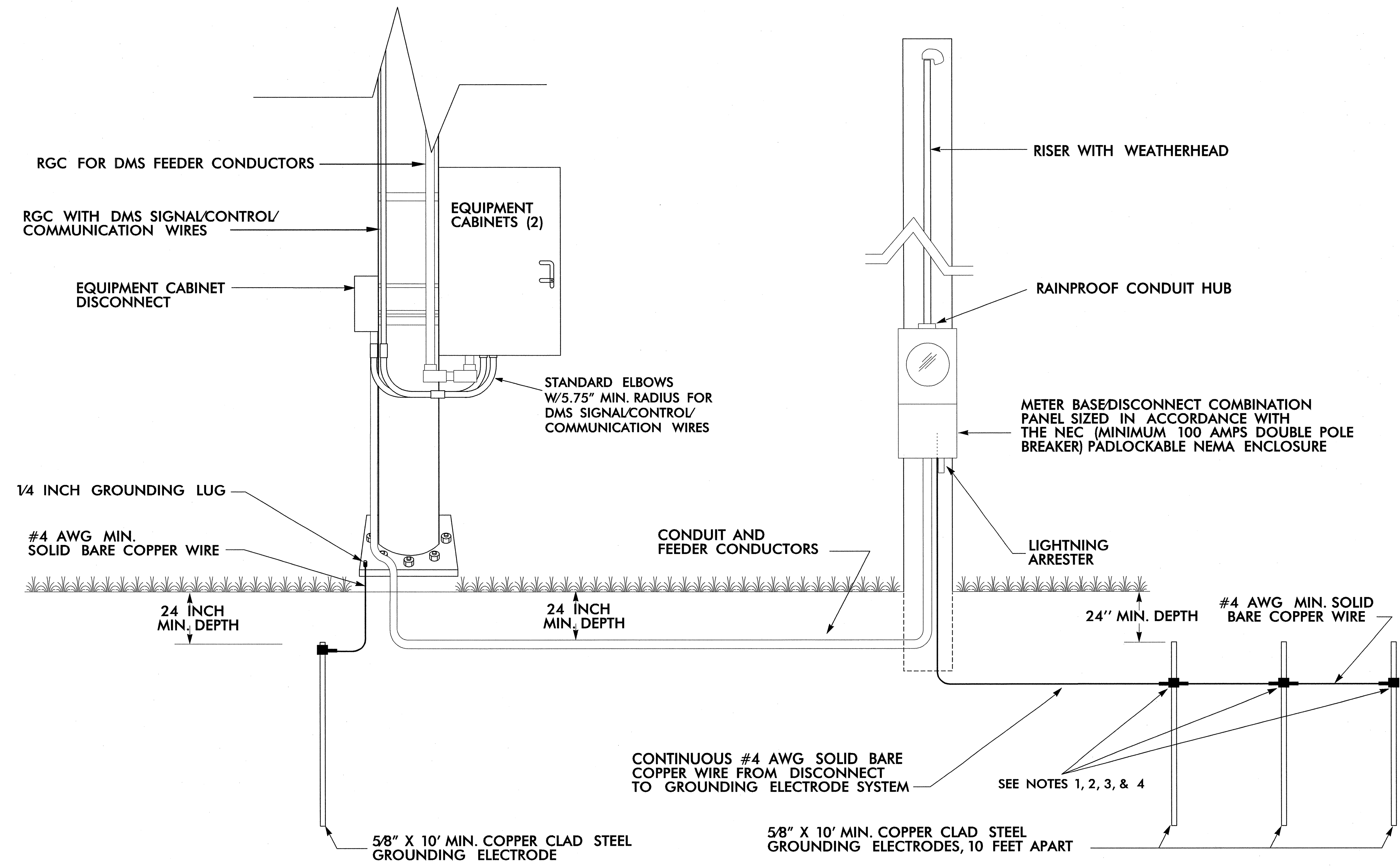
 750 N. Greenfield Place, Garner, NC 27529
 SCALE: 0

DYNAMIC MESSAGE SIGN ELECTRICAL SERVICE AND GROUNDING TYPICAL DETAIL	
DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

ENGINEER
 KEVIN W. SMITH
 SIGNATURE: *Kevin W. Smith* 8/30/13
 DATE

CAAD File name:



NOTES

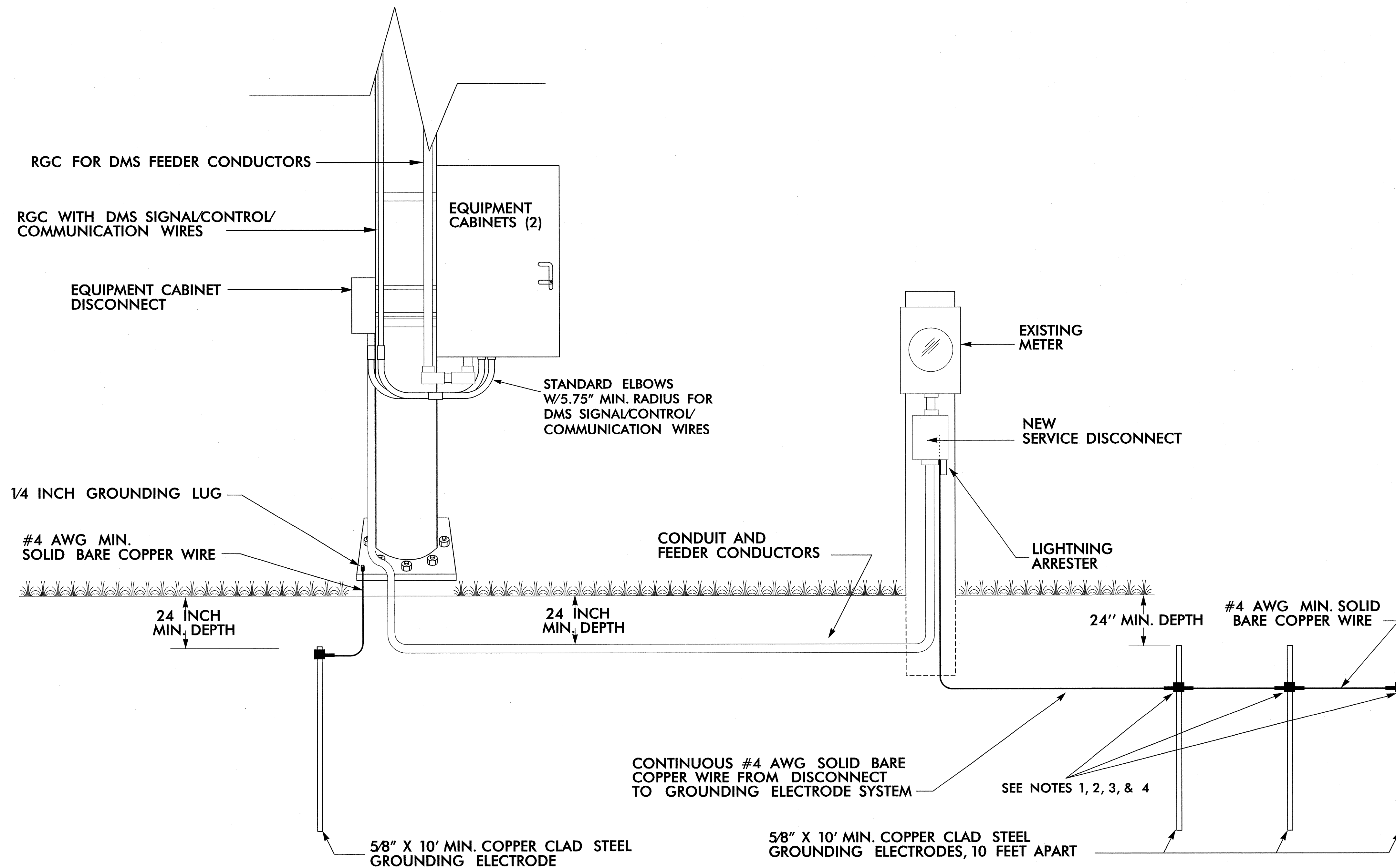
1. INSTALL A MINIMUM OF THREE (3) GROUNDING ELECTRODES SPACED A MINIMUM OF 10 FEET APART. ENSURE THAT EXISTING UNDERGROUND FACILITIES ARE NOT DAMAGED DURING INSTALLATION.
2. TEST GROUNDING SYSTEM USING AN APPROVED METHOD. SYSTEM SHOULD MEASURE TWENTY (20) OHMS OR LESS. ADDITIONAL GROUNDING ELECTRODES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

6/29/2013 4:20:03 PM K:\RAL\1710\1710_ITS\0303229 R-2633BA Plans\R-2633BA ITS_08.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 199 817-2000

Plans Prepared For: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	DOUBLE DYNAMIC MESSAGE SIGN ELECTRICAL SERVICE AND GROUNDING TYPICAL DETAIL		SEAL KEVIN W. SMITH ENGINEER
	DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY PLAN DATE: AUGUST 2013 REVIEWED BY: PREPARED BY: J. CROSS REVIEWED BY: K. SMITH		
SCALE 0	REVISIONS INIT. DATE	REVISIONS INIT. DATE	SIGNATURE DATE: 8/30/13 CADD File name:



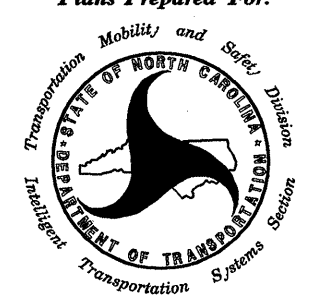
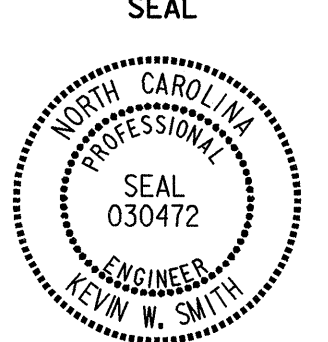


NOTES

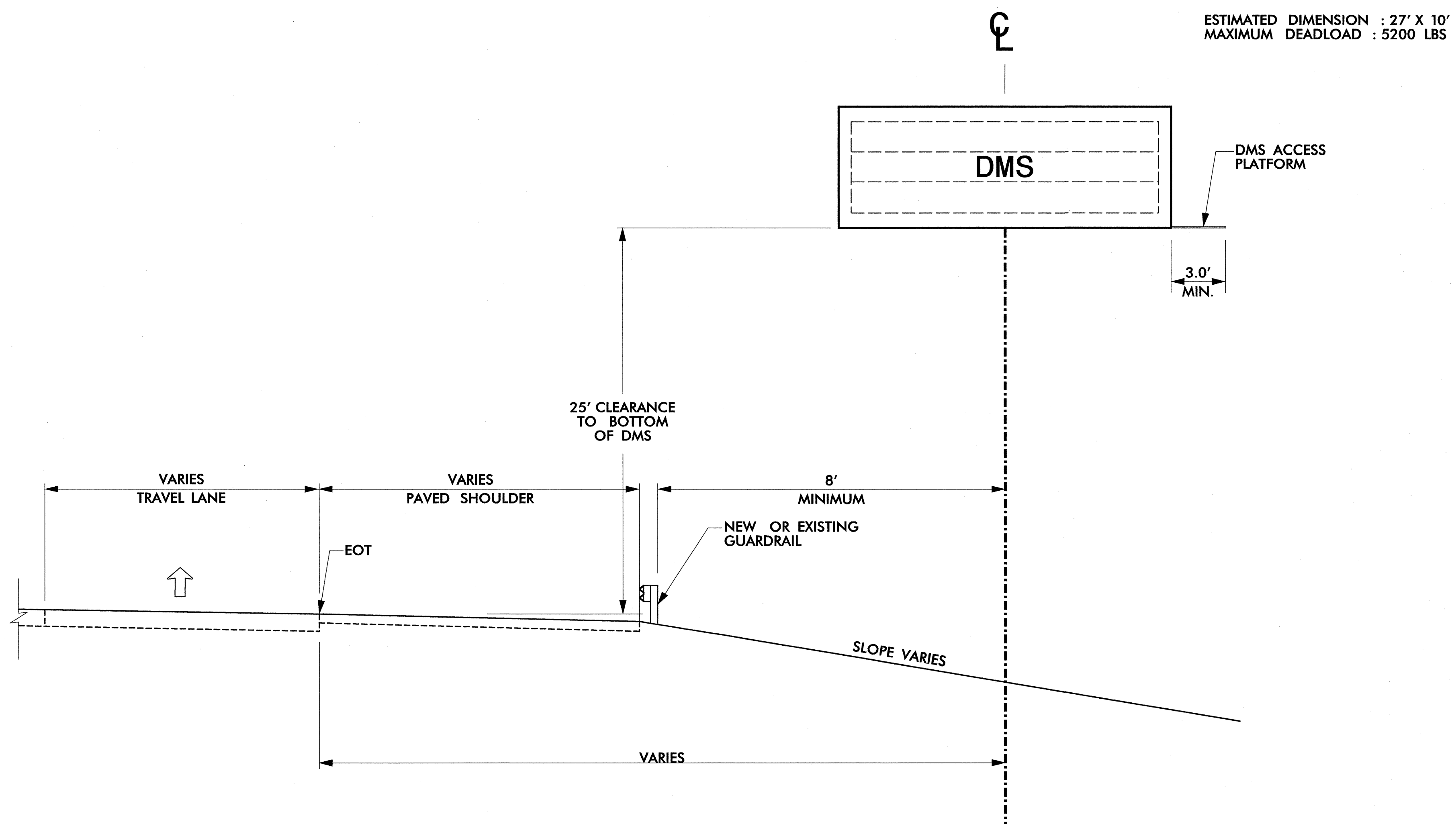
1. INSTALL A MINIMUM OF THREE (3) GROUNDING ELECTRODES SPACED A MINIMUM OF 10 FEET APART. ENSURE THAT EXISTING UNDERGROUND FACILITIES ARE NOT DAMAGED DURING INSTALLATION.
2. TEST GROUNDING SYSTEM USING AN APPROVED METHOD. SYSTEM SHOULD MEASURE TWENTY (20) OHMS OR LESS. ADDITIONAL GROUNDING ELECTRODES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

8/29/2013 4:20:06 PM K:\AVAL\ITD\ITS\0036239 R-2633BA\Plans\R-2633BA\ITS_09.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 677-2000

 Plans Prepared For: Transportation, Mobility and Safety Division DEPARTMENT OF TRANSPORTATION STATE OF NORTH CAROLINA	DMS/CCTV ELECTRICAL SERVICE AND GROUNDING TYPICAL DETAIL		SEAL  NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030472 KEVIN W. SMITH
	DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY PLAN DATE: AUGUST 2013 REVIEWED BY: PREPARED BY: J. CROSS REVIEWED BY: K. SMITH		
SCALE 	REVISIONS INIT. DATE	SIGNATURE 	DATE 8/30/13



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

NOTES

1. CONTRACTOR IS RESPONSIBLE FOR FURNISHING ELEVATIONS FOR DMS-3 AND DMS-4 FOR ENGINEER'S APPROVAL.
2. PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
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 FOOTING 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 STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 130 MPH.
9. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.

8/29/2013 4:20:00 PM K:\RAL\TPTO\ITS_030626219 R-2633BA Plans\R-2633BA-ITS.dwg

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 877-2000

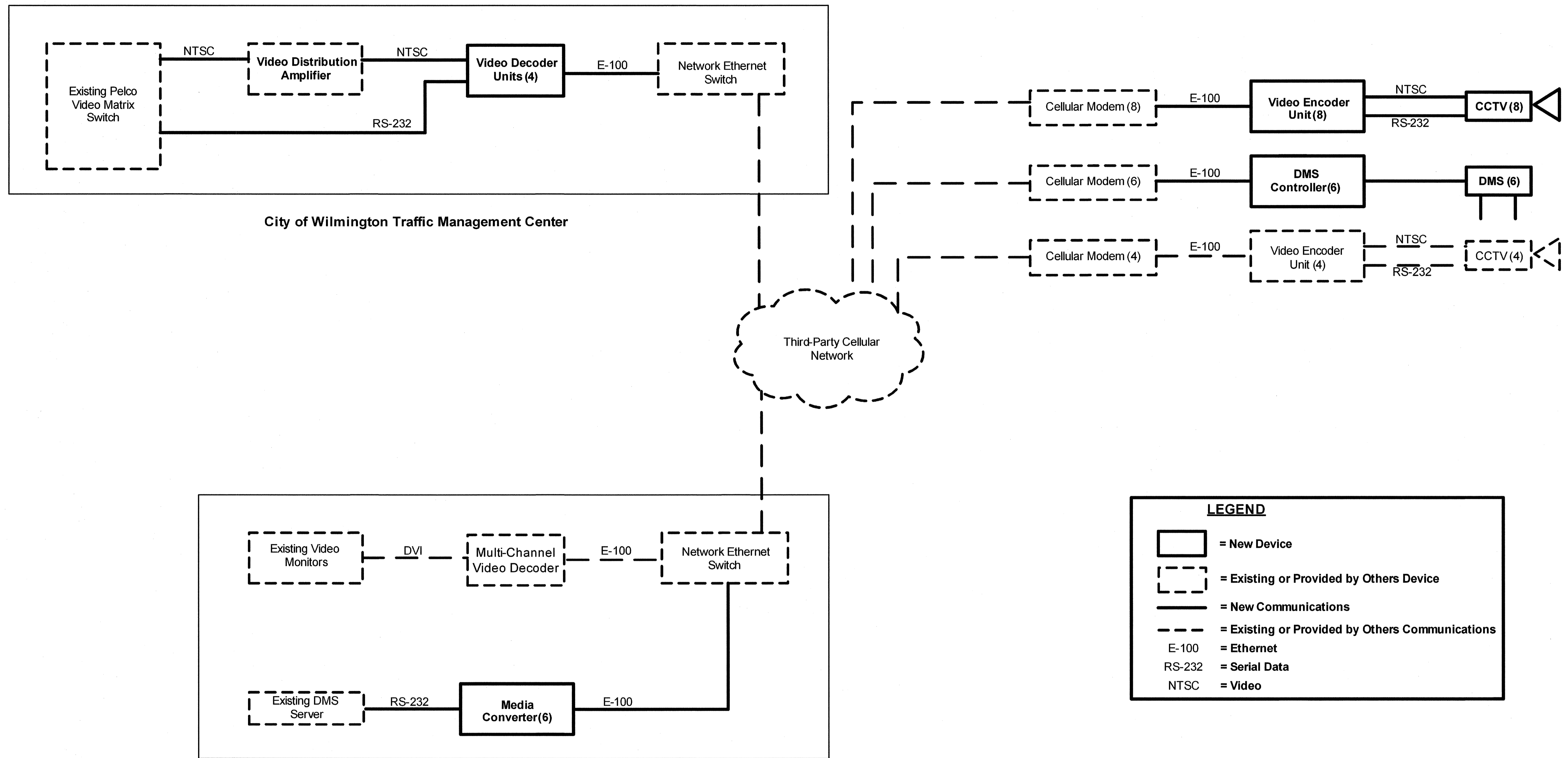
Plans Prepared For:

 750 N. Greenfield Pkwy., Garner, NC 27529

TYPICAL DMS INSTALLATION DMS-3 & DMS-4	
DIVISION 03	BRUNSWICK/NEW HANOVER COUNTY
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

 ENGINEER
 KEVIN W. SMITH
 SIGNATURE: *Kevin W. Smith* DATE: 8/30/13
 CADD Filename:



City of Wilmington Traffic Management Center

LEGEND

- = New Device
- = Existing or Provided by Others Device
- = New Communications
- = Existing or Provided by Others Communications
- E-100 = Ethernet
- RS-232 = Serial Data
- NTSC = Video

8/29/2013 4:44:47 PM K:\RAL\TPTD\TIS\010306239 R-2633BA\Plans\W-2633BA_ITS_11\BLK_DIAGRAM.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 677-2000

Plans Prepared For:

 250 N. Greenfield Pkwy., Garner, NC 27529

PROPOSED SYSTEM BLOCK DIAGRAM	
DIVISION 03	BRUNSWICK/NEW HANOVER COUNTY
PLAN DATE: AUGUST 2013	REVIEWED BY: K. SMITH
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

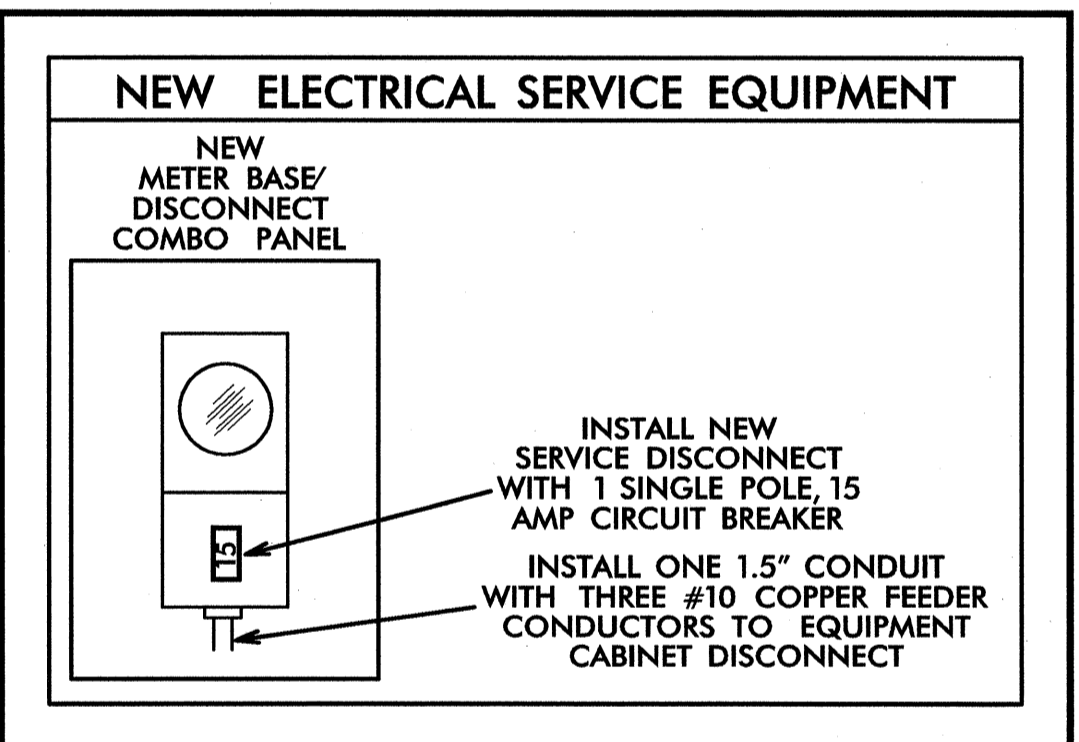
 KEVIN W. SMITH
 ENGINEER
 8/30/13
 SIGNATURE DATE
 CADD File Name:

INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
1	CCTV CAMERA ASSEMBLY
1	CCTV WOOD POLE
1	FIELD EQUIPMENT CABINET
1	VIDEO ETHERNET ENCODER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
4	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

290 LF OF GUARDRAIL
 PLACE 35' FROM EOT ON US-17
 PLACE 18' FROM EOT ON I-140 RAMP
 END UNITS:
 (1) IMPACT ATTENUATOR TYPE 350
 (2) CAT-1
 INSTALL PER STD. 862.01



INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
1	6"x6" WOOD PEDESTAL
1	METER BASE/DISCONNECT COMBINATION PANEL
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

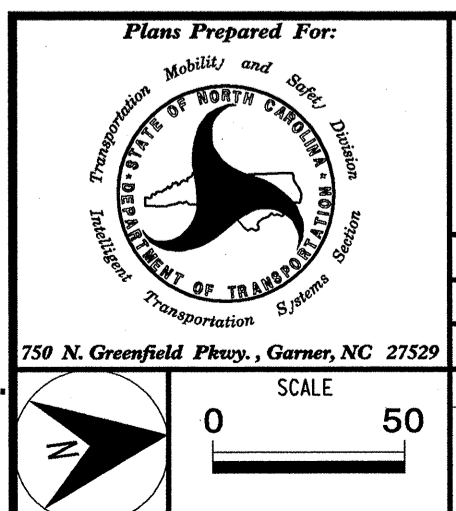
INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
280'	DIRECTIONAL DRILL (2) (1.5")
290'	3-WIRE COPPER FEEDER CONDUCTORS
2	JUNCTION BOX (STANDARD SIZE)

- NOTES:**
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATION PRIOR TO CONSTRUCTION.
 3. MOUNT CCTV CAMERA 35' ABOVE GRADE.
 4. INSTALL NEW FIELD EQUIPMENT CABINET ON NEW CCTV POLE.
 5. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-3 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 6. CONTACT WES THOMAS FROM BRUNSWICK ELECTRIC AT (910) 754-4391 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

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.

PLANS PREPARED IN THE OFFICE OF:

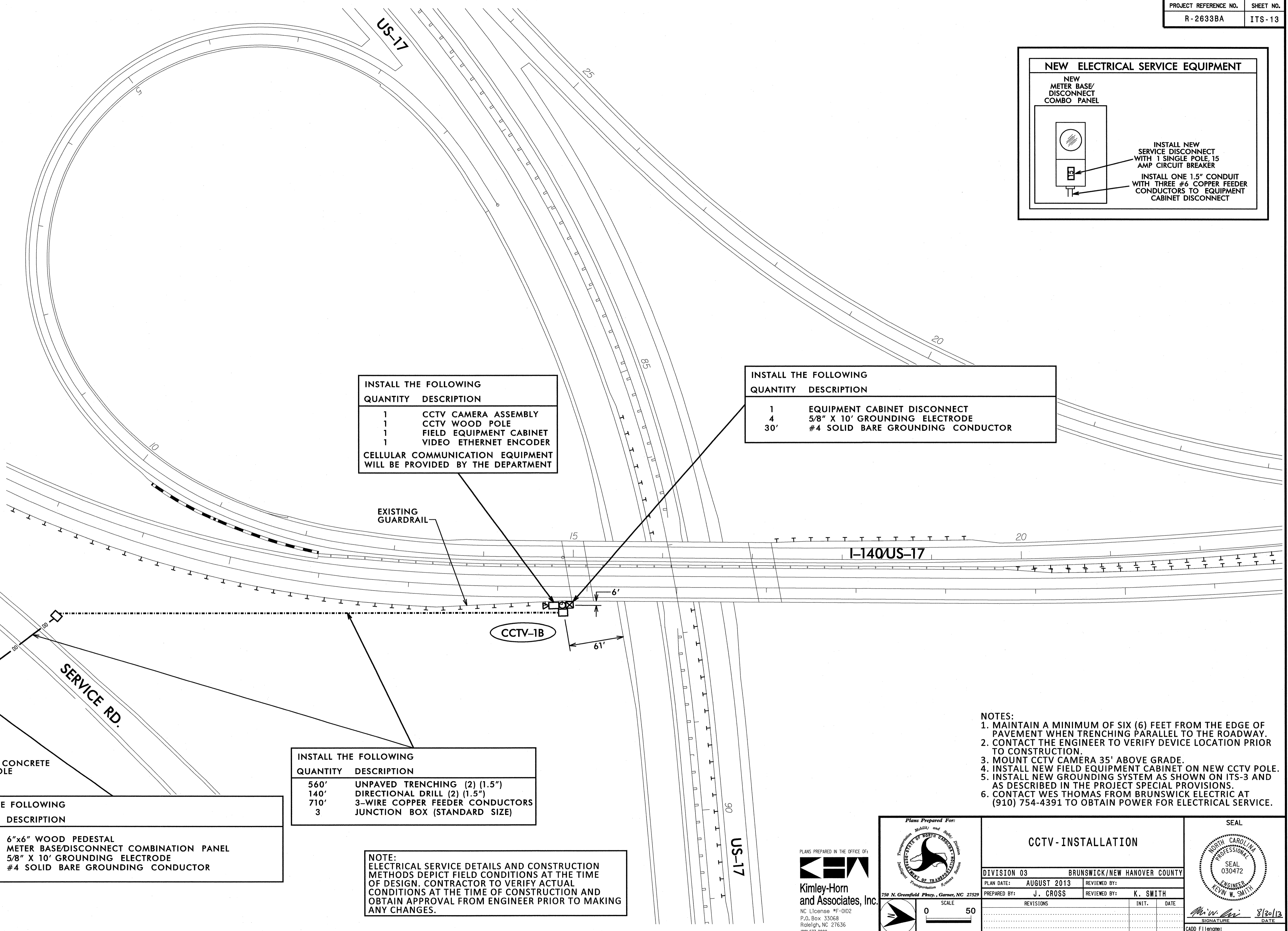
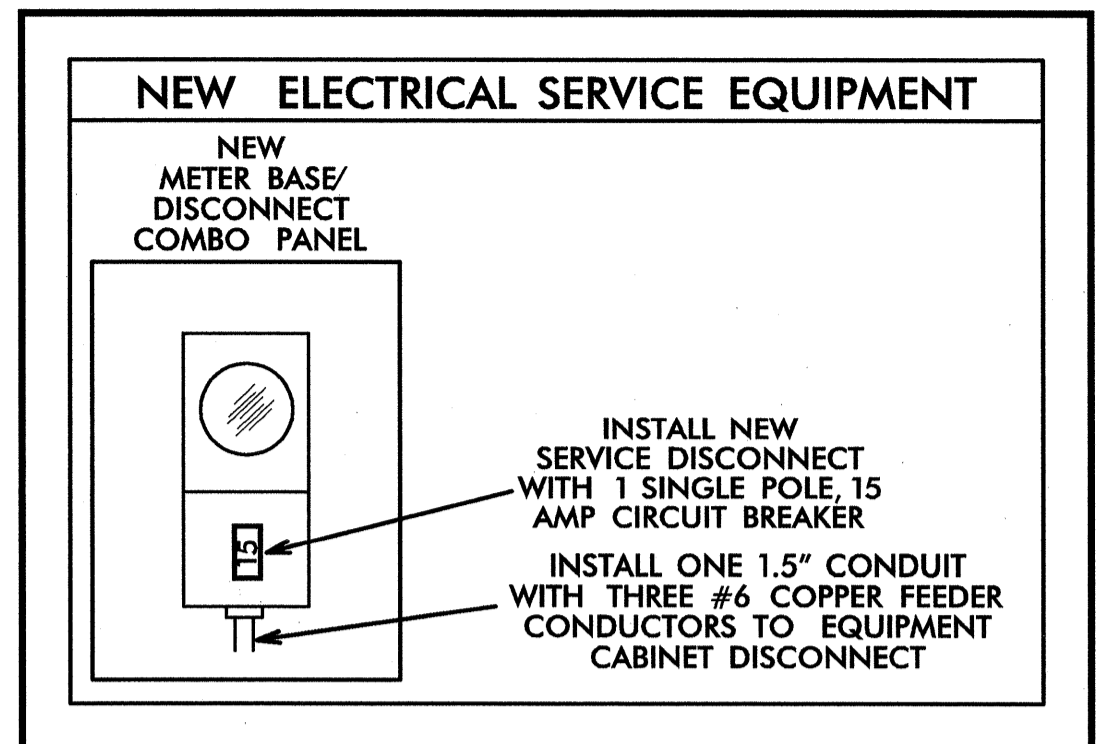
 Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 919.677-2000



CCTV INSTALLATION	
DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 030472
 KEVIN W. SMITH
 SIGNATURE
 8/20/13
 DATE
 CADD File name:

8/29/2013 4:20:05 PM K:\MAIL\PTD\LITS\01036239 R-2633BA\Plans\IT-2633BA-ITS.dgn



INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	CCTV CAMERA ASSEMBLY
1	CCTV WOOD POLE
1	FIELD EQUIPMENT CABINET
1	VIDEO ETHERNET ENCODER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
4	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
560'	UNPAVED TRENCHING (2) (1.5")
140'	DIRECTIONAL DRILL (2) (1.5")
710'	3-WIRE COPPER FEEDER CONDUCTORS
3	JUNCTION BOX (STANDARD SIZE)

INSTALL THE FOLLOWING

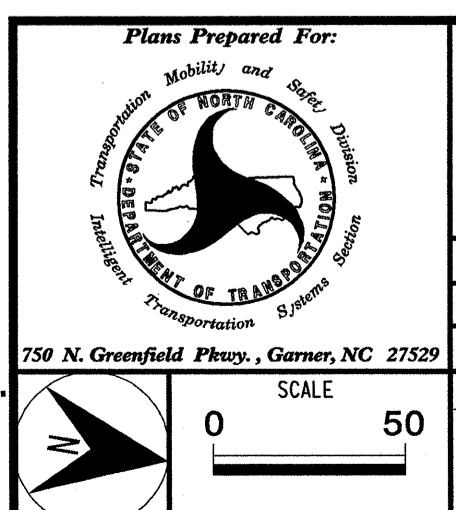
QUANTITY	DESCRIPTION
1	6"x6" WOOD PEDESTAL
1	METER BASE/DISCONNECT COMBINATION PANEL
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

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.

- NOTES:
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATION PRIOR TO CONSTRUCTION.
 3. MOUNT CCTV CAMERA 35' ABOVE GRADE.
 4. INSTALL NEW FIELD EQUIPMENT CABINET ON NEW CCTV POLE.
 5. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-3 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 6. CONTACT WES THOMAS FROM BRUNSWICK ELECTRIC AT (910) 754-4391 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

8/29/2013 4:20:06 PM K:\RAL\ITFD\ITS_08032639_R-2633BA\Plans\R-2633BA_ITS_13.dgn

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
NC License #F-0102
P.O. Box 33068
Raleigh, NC 27636
(919) 877-2000



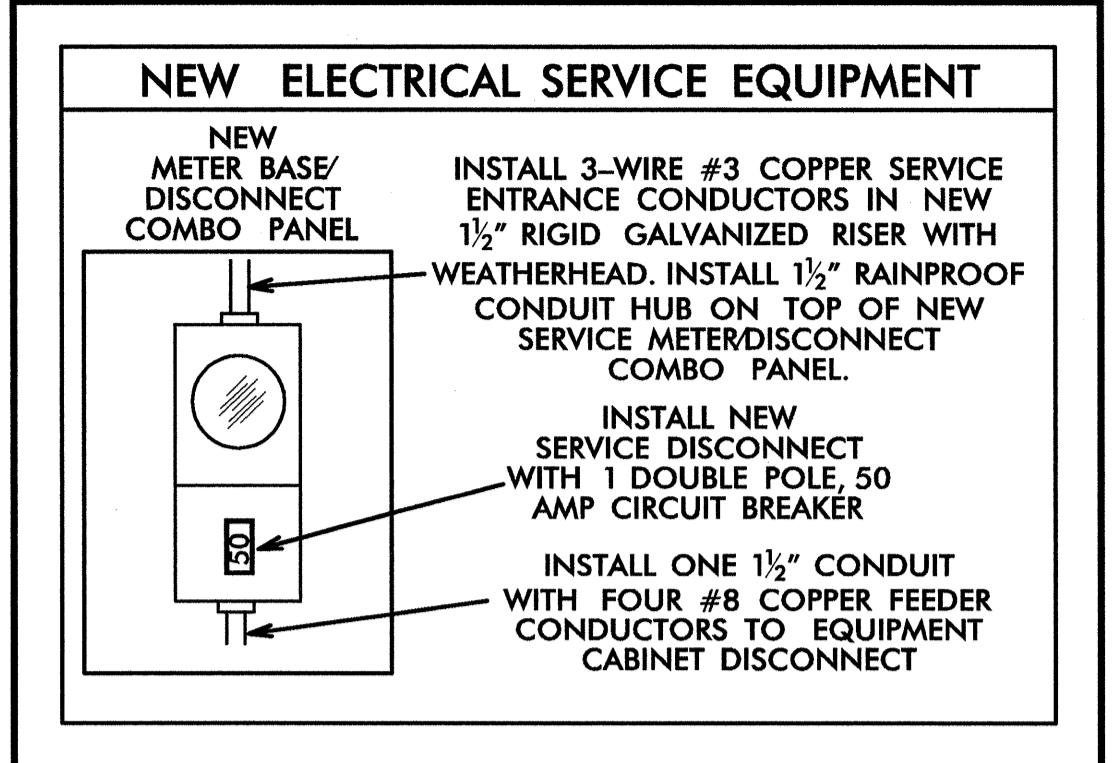
CCTV-INSTALLATION	
DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

NORTH CAROLINA
PROFESSIONAL
ENGINEER
KEVIN W. SMITH
030472

Kevin W. Smith 8/30/13
SIGNATURE DATE

CADD File name:



INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	DMS
1	DMS PEDESTAL STRUCTURE
1	OVERHEAD FOOTINGS
1	DMS ACCESS LADDER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

INSTALL THE FOLLOWING

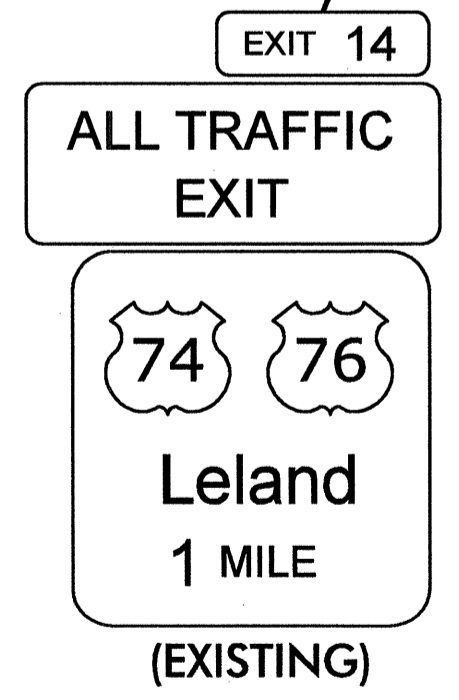
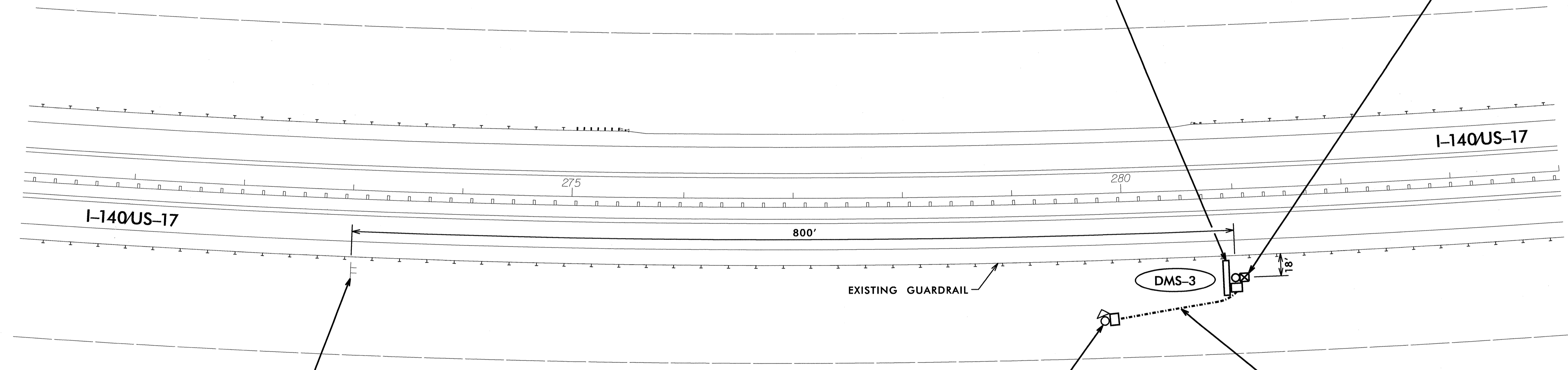
QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
1	5/8" X 10' GROUNDING ELECTRODE
10'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	WOOD POLE
1	METER BASE/DISCONNECT COMBINATION PANEL
20'	1.5" RISER WITH WEATHERHEAD
25'	3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
100'	UNPAVED TRENCHING (2)(1.5")
110'	4-WIRE COPPER FEEDER CONDUCTORS
2	JUNCTION BOX (STANDARD SIZE)



- NOTES:
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATION PRIOR TO CONSTRUCTION.
 3. INSTALL NEW DMS, WALKWAY, AND LADDER ON NEW DMS STRUCTURE.
 4. INSTALL NEW DMS POLE MOUNTD CABINET ON NEW DMS STRUCTURE.
 5. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-7 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 6. CONTACT JERRY PEARSON FROM PROGRESS ENERGY AT (910) 602-4377 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 677-2000

Plans Prepared For:

DMS INSTALLATION

DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY

PLAN DATE: AUGUST 2013 REVIEWED BY:

PREPARED BY: J. CROSS REVIEWED BY: K. SMITH

SCALE 0 50

REVISIONS

INIT. DATE

SEAL

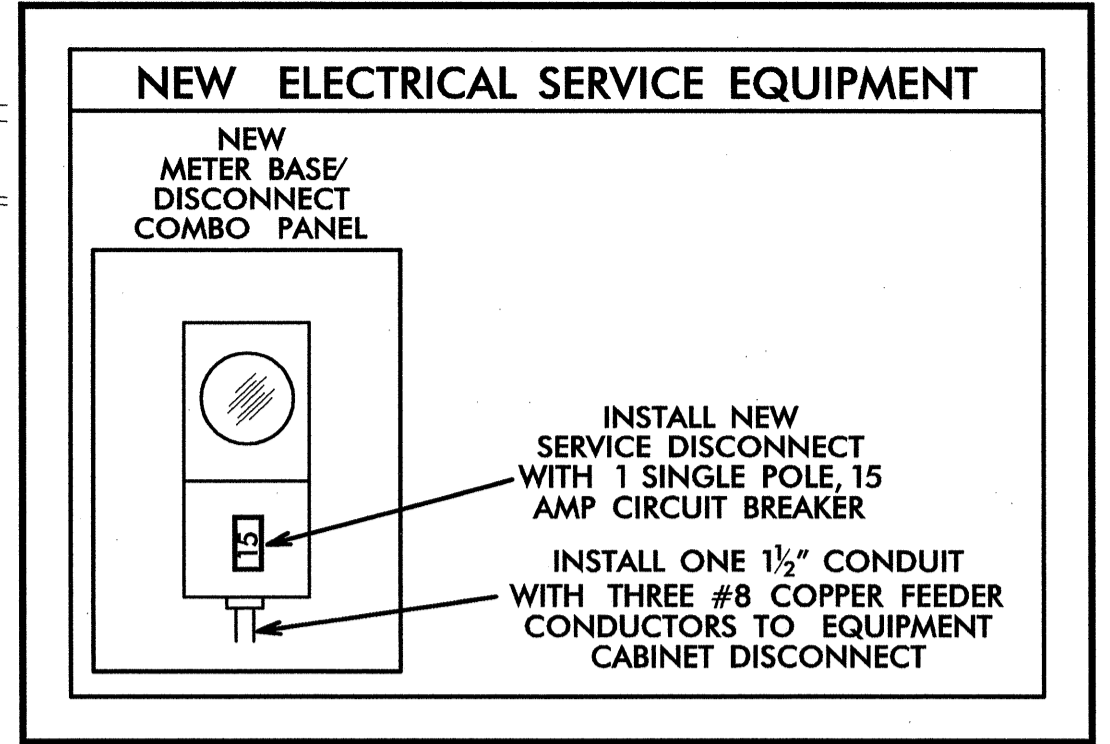
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030472

KEVIN W. SMITH

8/30/13

CADD File name:

8/20/2013 9:05:05 AM K:\RAIL\TPTD\ITS\01036239 R-26338A\Plan\ITS-14.dgn



INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
80'	DIRECTIONAL DRILL (2) (1.5")
250'	UNPAVED TRENCHING (2) (1.5")
340'	3-WIRE COPPER FEEDER CONDUCTORS
3	JUNCTION BOX (STANDARD SIZE)

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	6"x6" WOOD PEDESTAL
1	METER BASE/DISCONNECT COMBINATION PANEL
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
4	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	CCTV CAMERA ASSEMBLY
1	CCTV WOOD POLE
1	FIELD EQUIPMENT CABINET
1	VIDEO ETHERNET ENCODER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

- NOTES:
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATION PRIOR TO CONSTRUCTION.
 3. MOUNT CCTV CAMERA 35' ABOVE GRADE.
 4. INSTALL NEW FIELD EQUIPMENT CABINET ON NEW CCTV POLE.
 5. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-3 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 6. CONTACT JERRY PEARSON FROM PROGRESS ENERGY AT (910) 602-4377 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 677-2000

Plans Prepared For:

750 N. Greenfield Place, Garner, NC 27529

SCALE 0 50

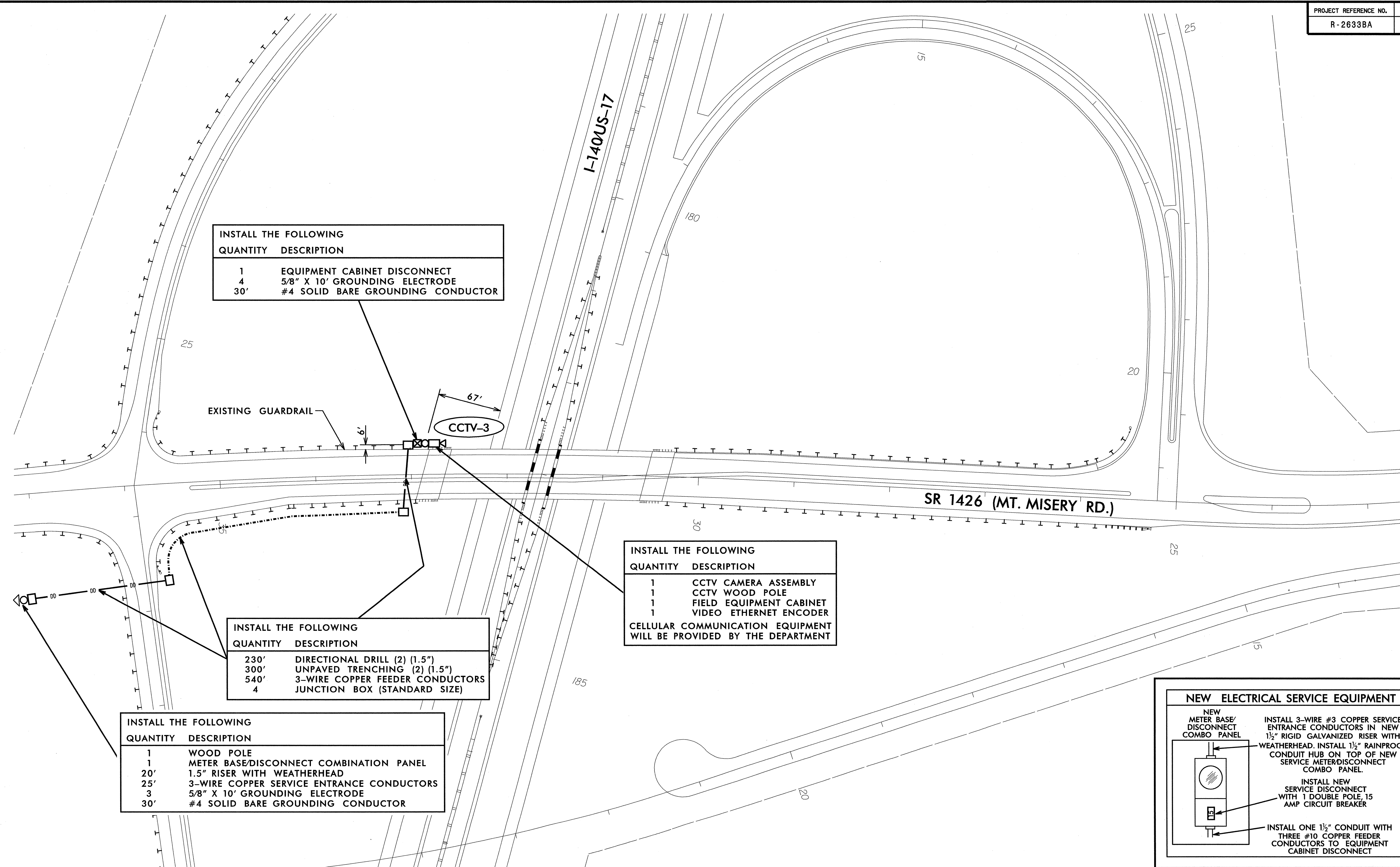
CCTV INSTALLATION

DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

Kevin W. Smith
 ENGINEER
 SIGNATURE DATE 8/30/13
 CADD Filename:

8/29/2013 4:20:23 PM K:\VAL...ITS\01036239 R-2633BA\Plans\ITS-15.dgn

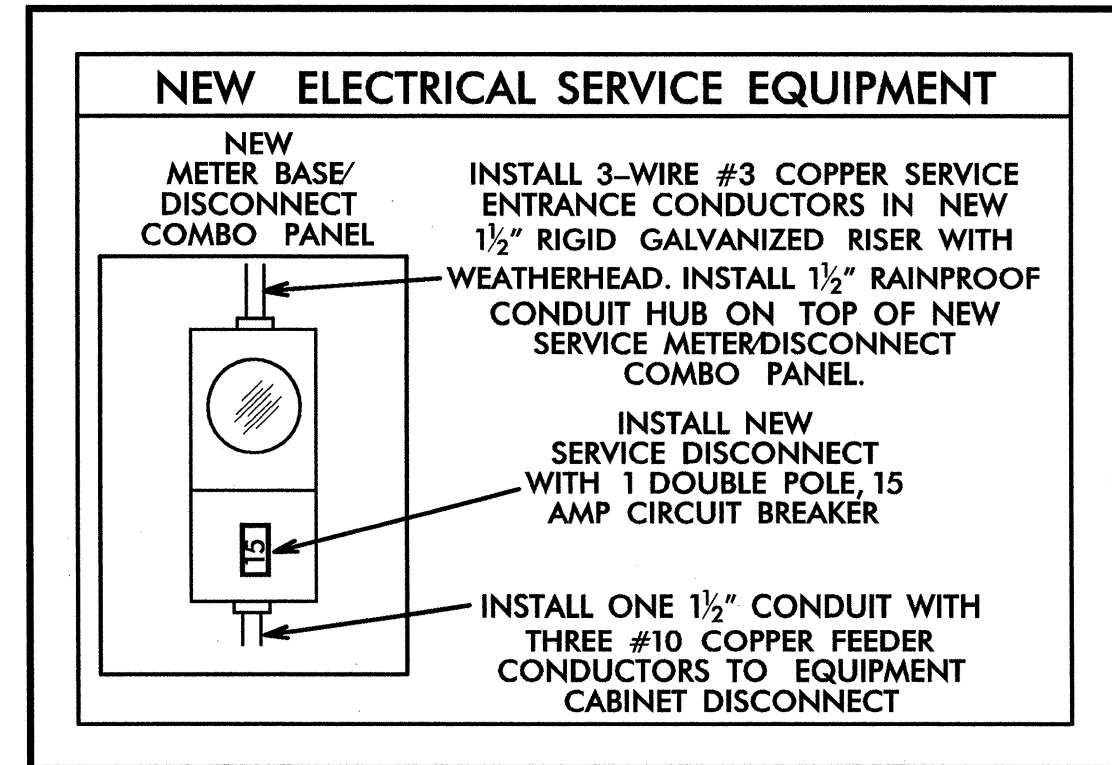


INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
4	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
1	CCTV CAMERA ASSEMBLY
1	CCTV WOOD POLE
1	FIELD EQUIPMENT CABINET
1	VIDEO ETHERNET ENCODER
CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT	

INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
230'	DIRECTIONAL DRILL (2) (1.5")
300'	UNPAVED TRENCHING (2) (1.5")
540'	3-WIRE COPPER FEEDER CONDUCTORS
4	JUNCTION BOX (STANDARD SIZE)

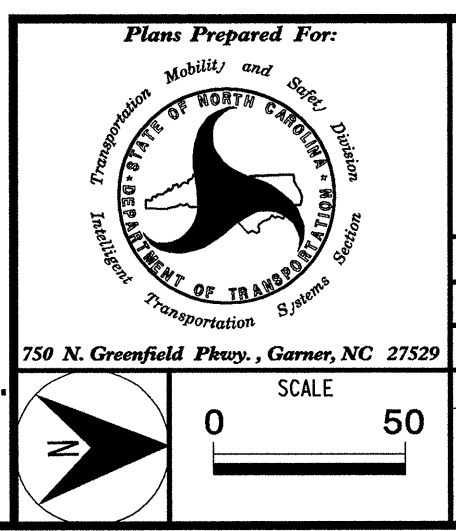
INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
1	WOOD POLE
1	METER BASE/DISCONNECT COMBINATION PANEL
20'	1.5" RISER WITH WEATHERHEAD
25'	3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR



- NOTES:
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATION PRIOR TO CONSTRUCTION.
 3. MOUNT CCTV CAMERA 35' ABOVE GRADE.
 4. INSTALL NEW FIELD EQUIPMENT CABINET ON NEW CCTV POLE.
 5. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-4 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 6. CONTACT JERRY PEARSON FROM PROGRESS ENERGY AT (910) 602-4377 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

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.

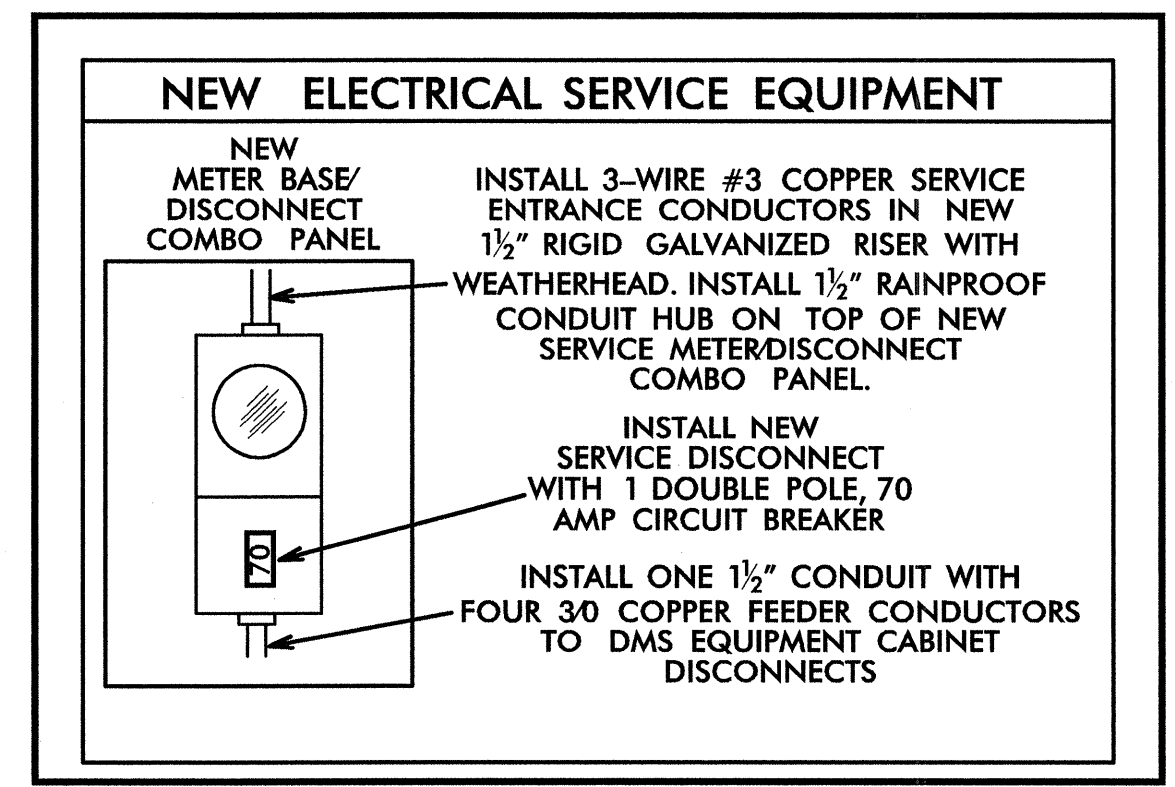
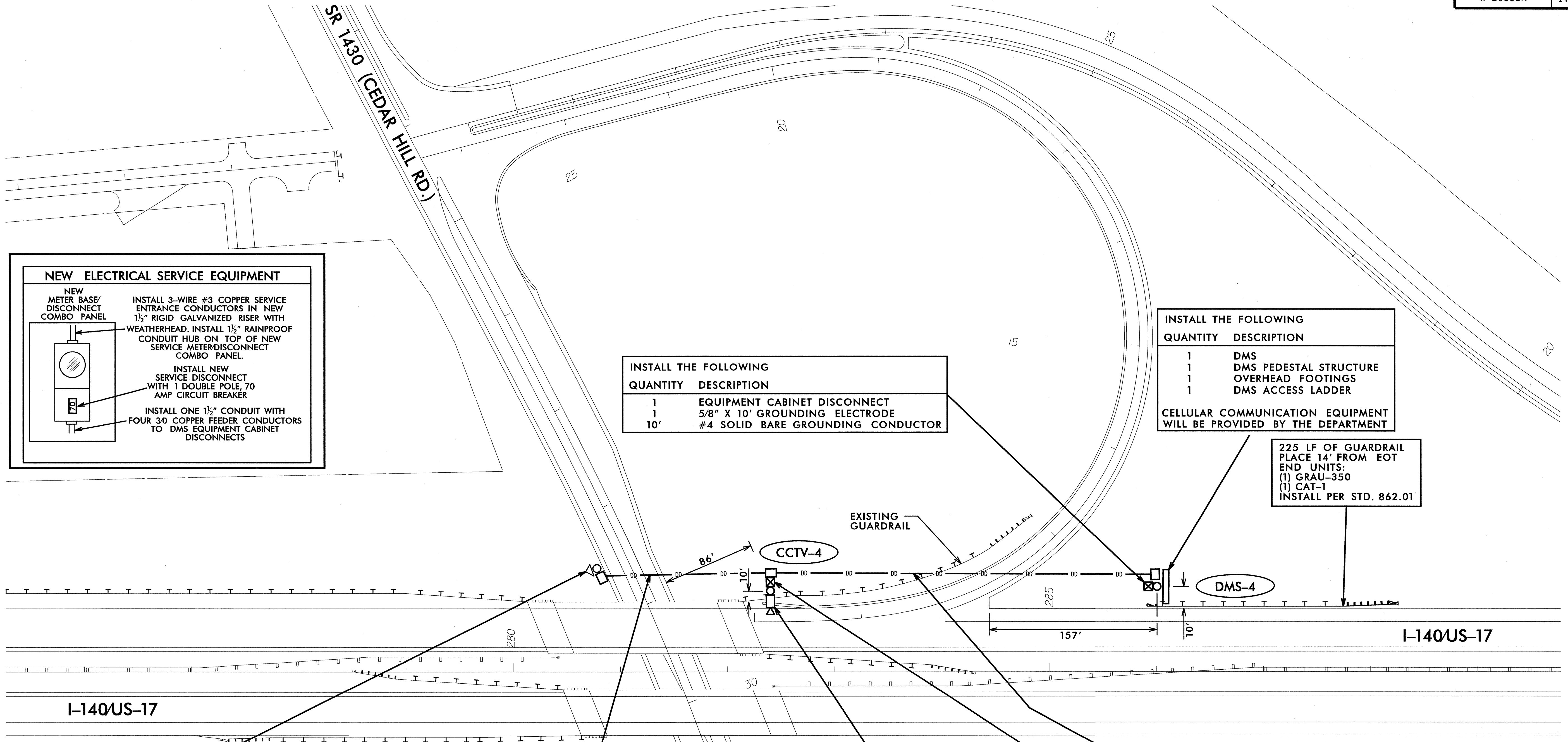
PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
NC License #F-0102
P.O. Box 33068
Raleigh, NC 27636
991-677-2000



CCTV INSTALLATION	
DIVISION 03	BRUNSWICK/NEW HANOVER COUNTY
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 030472
KEVIN W. SMITH
8/30/13
DATE
CADD File name:

8/30/2013 9:05:08 AM K:\RAL\1P10\1ITS\03036239 R-2633BA Plans\R-2633BA-ITS.dwg



INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
1	5/8" X 10' GROUNDING ELECTRODE
10'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	DMS
1	DMS PEDESTAL STRUCTURE
1	OVERHEAD FOOTINGS
1	DMS ACCESS LADDER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

225 LF OF GUARDRAIL PLACE 14' FROM EOT
END UNITS:
(1) GRAU-350
(1) CAT-1
INSTALL PER STD. 862.01

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	WOOD POLE
1	METER BASE/DISCONNECT COMBINATION PANEL
20'	1.5" RISER WITH WEATHERHEAD
25'	3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	CCTV CAMERA ASSEMBLY
1	CCTV WOOD POLE
1	FIELD EQUIPMENT CABINET
1	VIDEO ETHERNET ENCODER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
360'	DIRECTIONAL DRILL (2)(1.5")
1	JUNCTION BOX (STANDARD SIZE)
370'	4-WIRE COPPER FEEDER CONDUCTORS

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT WITH A 50AMP AND 15 AMP BREAKER
4	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
165'	DIRECTIONAL DRILL (2) (1.5")
175'	4-WIRE COPPER FEEDER CONDUCTORS
2	JUNCTION BOX (STANDARD SIZE)

- NOTES:
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATIONS PRIOR TO CONSTRUCTION.
 3. MOUNT CCTV CAMERA 35' ABOVE GRADE.
 4. INSTALL NEW FIELD EQUIPMENT CABINET ON NEW CCTV POLE.
 5. INSTALL NEW DMS, WALKWAY, AND LADDER ON NEW DMS STRUCTURE.
 6. INSTALL NEW DMS POLE MOUNTD CABINET ON NEW DMS STRUCTURE.
 7. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-4 AND ITS-7 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 8. CONTACT JERRY PEARSON FROM PROGRESS ENERGY AT (910) 602-4377 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

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.

8/20/2013 9:03:42 AM K:\MAIL\PTD\LITS\00036239 R-2633BA Plans\SR-2633BA ITS-17.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
NC License #F-0102
P.O. Box 33068
Raleigh, NC 27636
(919) 677-2000

Plans Prepared For:

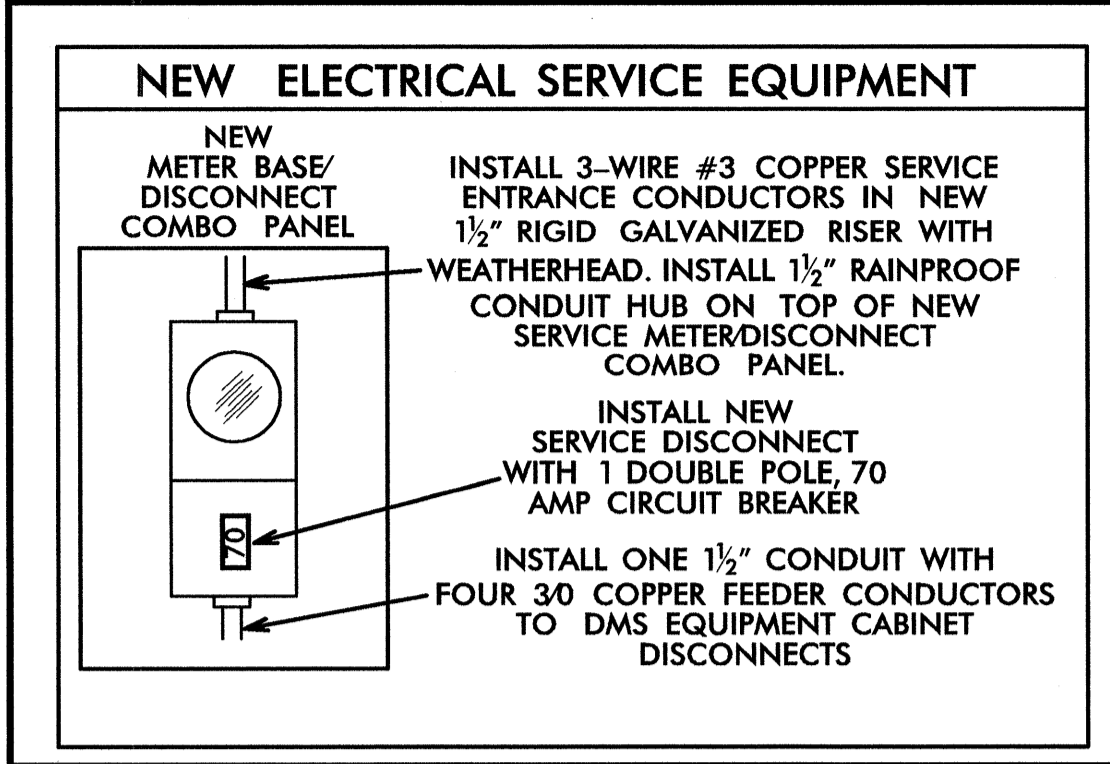
250 N. Greenfield Pkwy., Garner, NC 27529
SCALE 0 50

CCTV & DMS INSTALLATION

DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

ENGINEER
KEVIN W. SMITH
SIGNATURE DATE 8/30/13
CADD File name:



INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	WOOD POLE
1	METER BASE/DISCONNECT COMBINATION PANEL
20'	1.5" RISER WITH WEATHERHEAD
25'	3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
4	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	CCTV CAMERA ASSEMBLY
1	CCTV WOOD POLE
1	FIELD EQUIPMENT CABINET
1	VIDEO ETHERNET ENCODER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
185'	UNPAVED TRENCHING (2) (1.5")
195'	4-WIRE COPPER FEEDER CONDUCTORS
2	JUNCTION BOX (STANDARD SIZE)

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
225'	UNPAVED TRENCHING (2)(1.5")
1	JUNCTION BOXES (STANDARD SIZE)
235'	4-WIRE COPPER FEEDER CONDUCTORS

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
1	5/8" X 10' GROUNDING ELECTRODE
10'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	DMS
1	DMS PEDESTAL STRUCTURE
1	OVERHEAD FOOTINGS
1	DMS ACCESS LADDER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

US-421

US-421

L-1A0US-17

L-1A0US-17

EXISTING GUARDRAIL

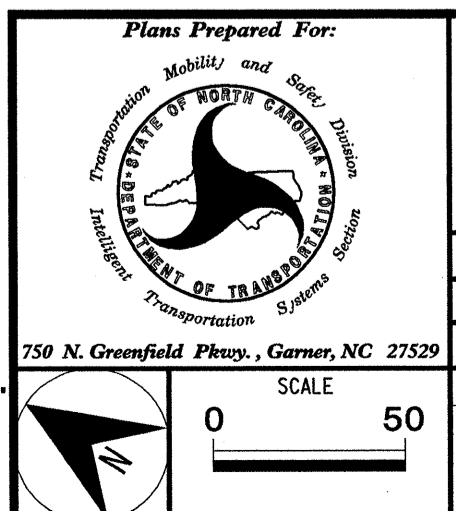
CCTV-5

DMS-5

- NOTES:
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATIONS PRIOR TO CONSTRUCTION.
 3. MOUNT CCTV CAMERA 35' ABOVE GRADE.
 4. INSTALL NEW FIELD EQUIPMENT CABINET ON NEW CCTV POLE.
 5. INSTALL NEW DMS, WALKWAY, AND LADDER ON NEW DMS STRUCTURE.
 6. INSTALL NEW DMS POLE MOUNTD CABINET ON NEW DMS STRUCTURE.
 7. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-4 AND ITS-7 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 8. CONTACT JERRY PEARSON FROM PROGRESS ENERGY AT (910) 602-4377 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

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.

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
NC License #F-002
P.O. Box 33068
Raleigh, NC 27636
919-877-2000

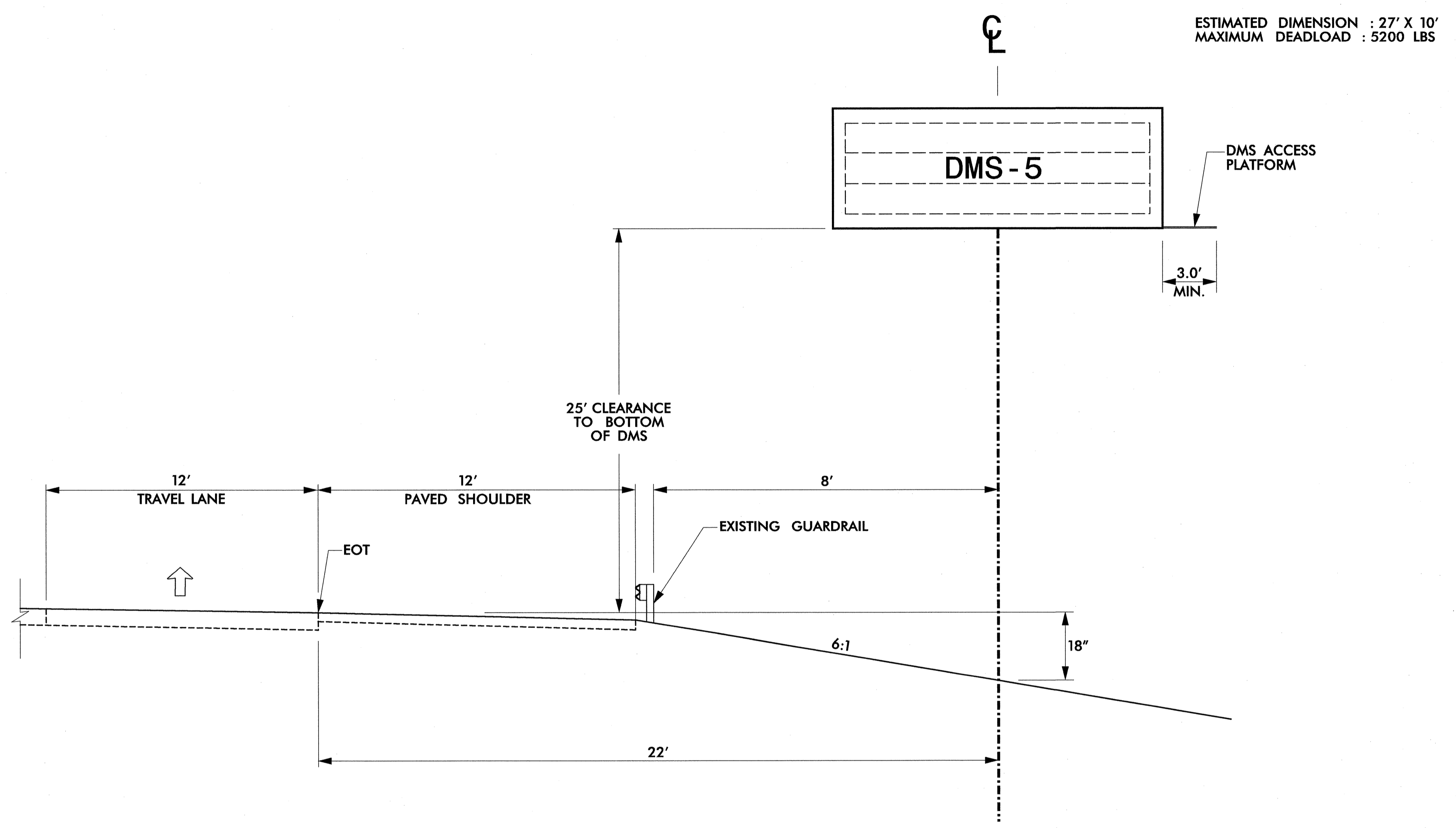


CCTV & DMS INSTALLATION

DIVISION 03	BRUNSWICK/NEW HANOVER COUNTY
PLAN DATE: AUGUST 2013	REVIEWED BY: K. SMITH
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
KEVIN W. SMITH
030472
8/30/13
DATE

8/30/2013 9:02:45 AM K:\DAL\ITPTO\ITS\00026239 R-26338A\Plans\18-26338A-ITS_18.dgn



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

NOTES

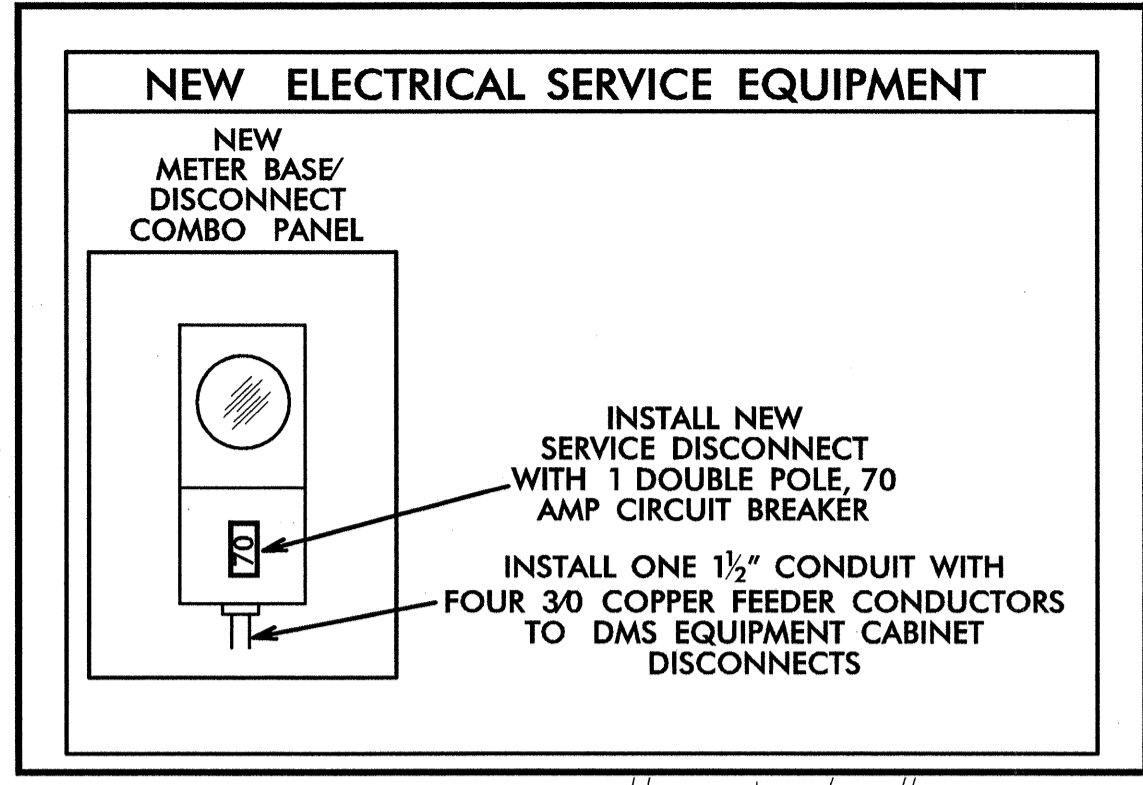
1. PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
2. EQUIP THE LADDER WITH A SECURITY COVER (LADDER GUARD). START THE FIRST LADDER RUNG NO MORE THAN 18 INCHES ABOVE A CONCRETE LANDING PAD. DESIGN RUNGS ON 12 INCH CENTER-TO-CENTER TYPICAL SPACING.
3. INSTALL A CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
4. USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
5. FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTING USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. 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.
7. DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 130 MPH.
8. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.

8/29/2013 4:20:37 PM K:\NAL\ITFD\ITS\01030229 R-2633BA Plans\R-2633BA ITS 19.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 677-2000

Plans Prepared For: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY DMS-5 INSTALLATION		SEAL ENGINEER KEVIN W. SMITH
PLAN DATE: AUGUST 2013 PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH REVIEWED BY: K. SMITH	REVISIONS INIT. DATE	SCALE 0 50	
SIGNATURE: <i>J. Cross</i> DATE: 8/30/13		CADD Filename:		



INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	WOOD PEDESTAL
1	METER BASE/DISCONNECT COMBINATION PANEL
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
195'	UNPAVED TRENCHING (2) (1.5")
240'	DIRECTIONAL DRILL (2) (1.5")
445'	4-WIRE COPPER FEEDER CONDUCTORS
4	JUNCTION BOX (STANDARD SIZE)

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	DMS
1	DMS PEDESTAL STRUCTURE
1	OVERHEAD FOOTINGS
1	DMS ACCESS LADDER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	EQUIPMENT CABINET DISCONNECT
1	5/8" X 10' GROUNDING ELECTRODE
10'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING

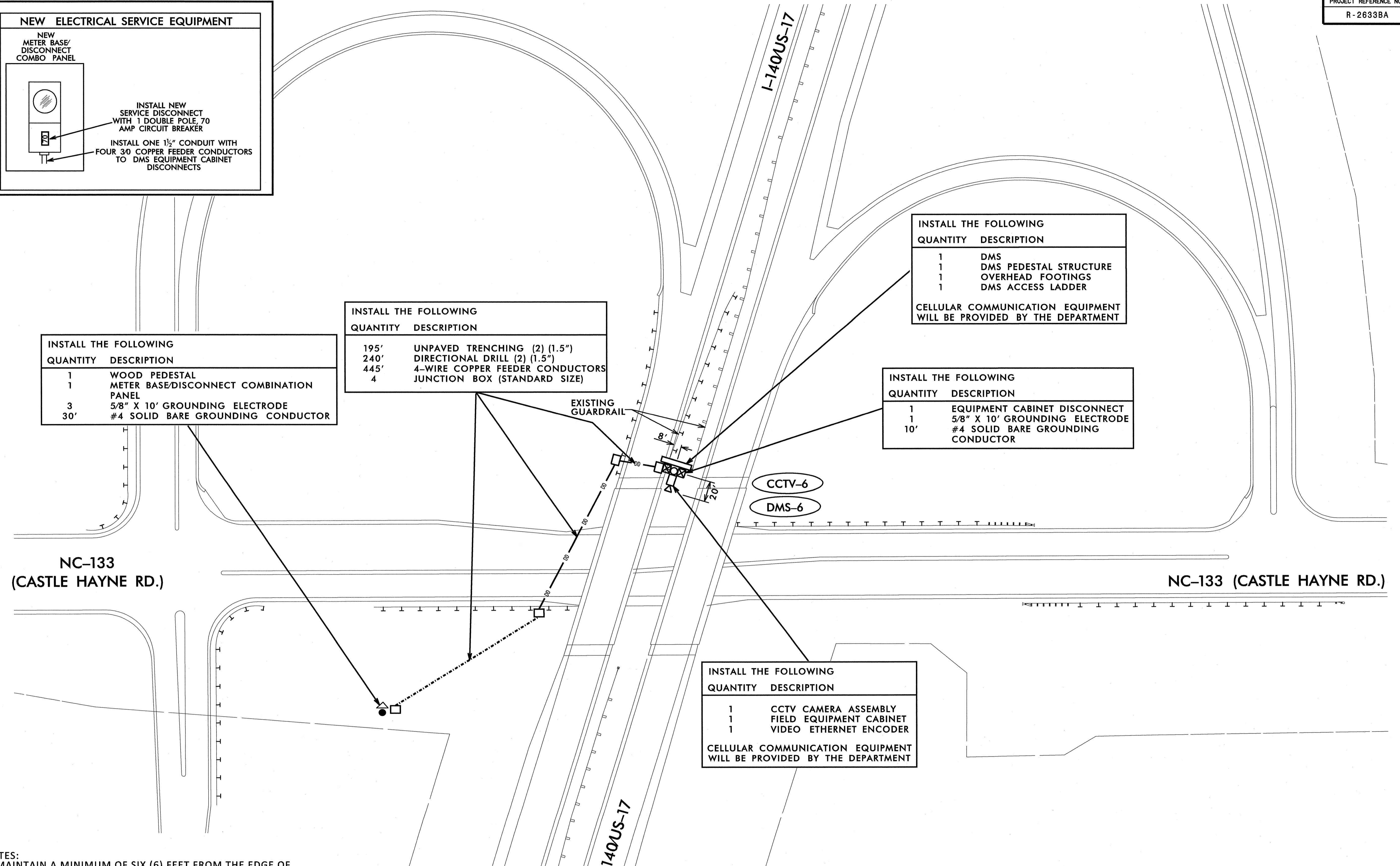
QUANTITY	DESCRIPTION
1	CCTV CAMERA ASSEMBLY
1	FIELD EQUIPMENT CABINET
1	VIDEO ETHERNET ENCODER

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

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.

- NOTES:**
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATIONS PRIOR TO CONSTRUCTION.
 3. MOUNT CCTV CAMERA TO BOTTOM OF DMS WALKWAY.
 4. INSTALL CCTV NEW FIELD EQUIPMENT CABINET ON NEW DMS STRUCTURE.
 5. INSTALL NEW DMS, WALKWAY, AND LADDER ON NEW DMS STRUCTURE.
 6. INSTALL NEW DMS POLE MOUNTD CABINET ON NEW DMS STRUCTURE.
 7. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-9 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 8. CONTACT ROBERT WALKER FROM PROGRESS ENERGY AT (910) 602-4326 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

K:\ARL\PTO\ITS\01035229 R-2633BA Plans\R-2633BA ITS-20.dgn 8/29/2013 4:20:41 PM



PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
NC License #F-012
P.O. Box 33068
Raleigh, NC 27636
(919) 877-2000

Plans Prepared For:
DEPARTMENT OF TRANSPORTATION
750 N. Greenfield Pkwy., Garner, NC 27529

SCALE: 0 50

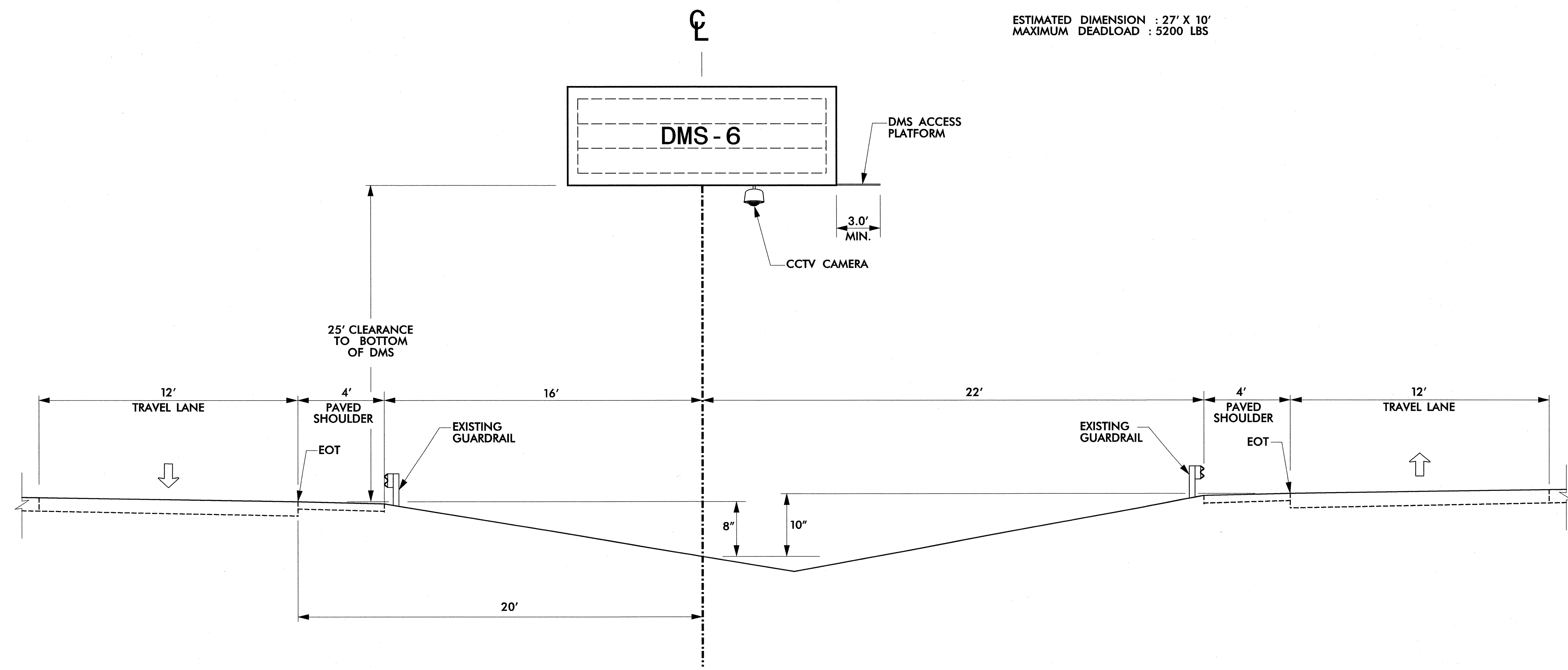
DIVISION 03		BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013	REVIEWED BY:		
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH		
REVISIONS	INIT.	DATE	

SEAL

KEVIN W. SMITH
ENGINEER
030472

8/30/13

CADD Filename:



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

SECTION FACING EAST

NOTES

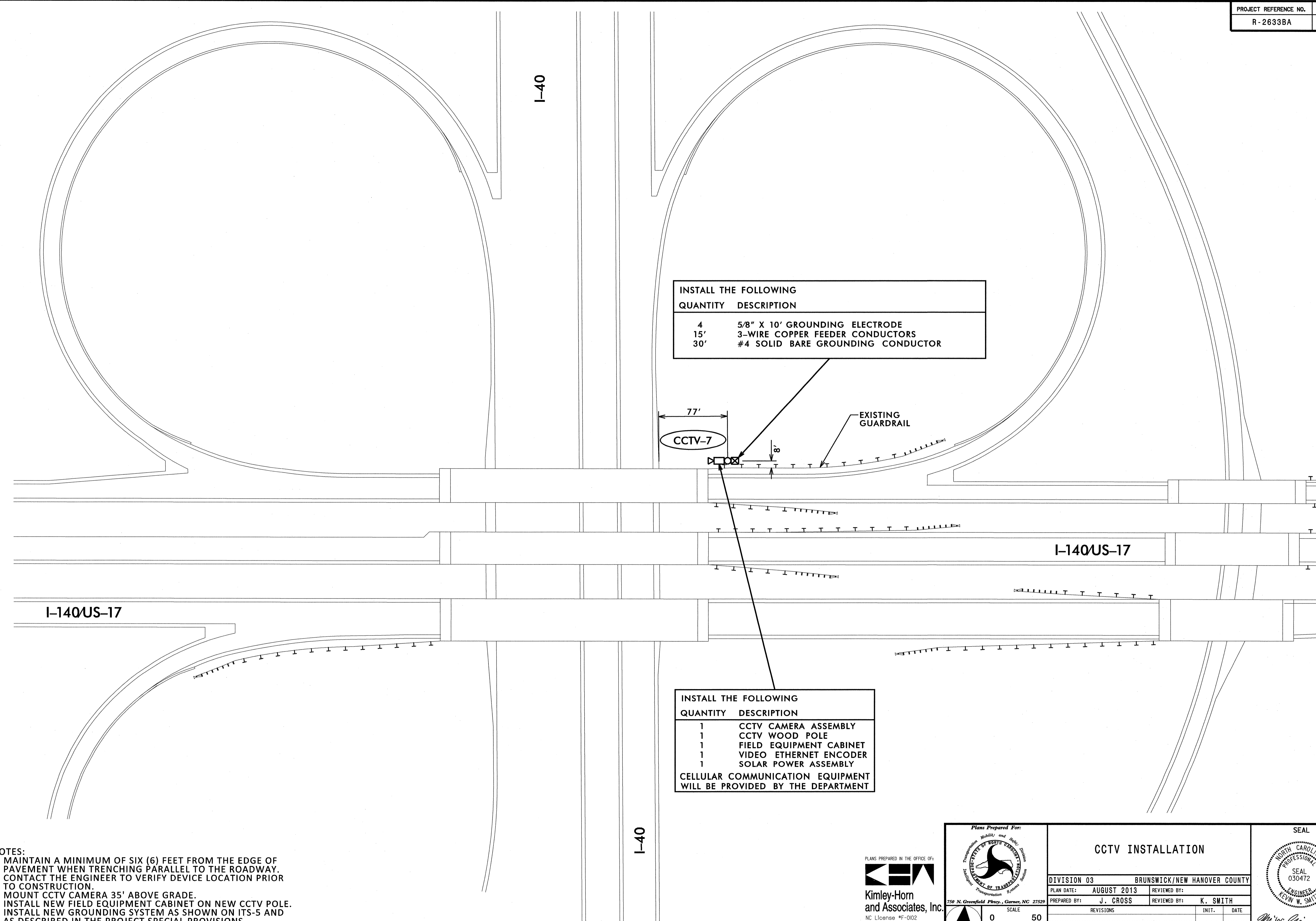
1. PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
2. EQUIP THE LADDER WITH A SECURITY COVER (LADDER GUARD). START THE FIRST LADDER RUNG NO MORE THAN 18 INCHES ABOVE A CONCRETE LANDING PAD. DESIGN RUNGS ON 12 INCH CENTER-TO-CENTER TYPICAL SPACING.
3. INSTALL A CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
4. USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
5. FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTING USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. 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.
7. DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 130 MPH.
8. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.

8/29/2013 4:28:44 PM K:\MAIL\ITFD\ITS\00062639 R-2633BA\Plans\R-2633BA ITS.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 677-2000

	DMS-6 INSTALLATION	
	DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013 PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH	
SCALE: 0 50	REVISIONS	INIT. DATE
SIGNATURE: <i>Kevin W. Smith</i>		DATE: 8/30/13



INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
4	5/8" X 10' GROUNDING ELECTRODE
15'	3-WIRE COPPER FEEDER CONDUCTORS
30'	#4 SOLID BARE GROUNDING CONDUCTOR

INSTALL THE FOLLOWING	
QUANTITY	DESCRIPTION
1	CCTV CAMERA ASSEMBLY
1	CCTV WOOD POLE
1	FIELD EQUIPMENT CABINET
1	VIDEO ETHERNET ENCODER
1	SOLAR POWER ASSEMBLY

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT

- NOTES:**
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATION PRIOR TO CONSTRUCTION.
 3. MOUNT CCTV CAMERA 35' ABOVE GRADE.
 4. INSTALL NEW FIELD EQUIPMENT CABINET ON NEW CCTV POLE.
 5. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-5 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 6. MOUNT SOLAR PANELS ON WOOD POLE AT 20' ABOVE GRADE.

8/29/2013 4:20:41 PM K:\MPL\1P10\1TS\01058229 R-2633BA Plans R-2633BA ITS-22.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 677-2000

Plans Prepared For:

759 N. Greenfield Place, Garner, NC 27529

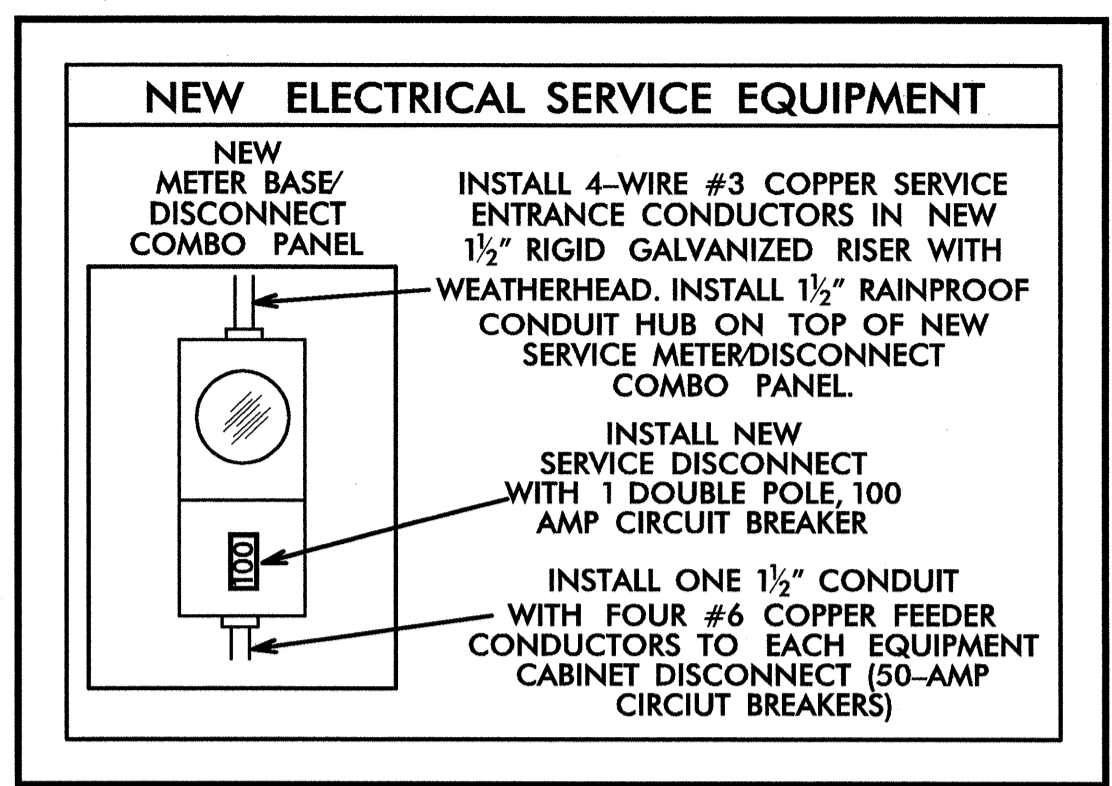
SCALE: 0 50

CCTV INSTALLATION	
DIVISION 03	BRUNSWICK/NEW HANOVER COUNTY
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

Kevin W. Smith 8/30/13
 SIGNATURE DATE

CADD File name:



INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	WOOD POLE
1	METER BASE/DISCONNECT COMBINATION PANEL
3	5/8" X 10' GROUNDING ELECTRODE
30'	#4 SOLID BARE GROUNDING CONDUCTOR
20'	1.5" RISER WITH WEATHERHEAD
25'	3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
90'	DIRECTIONAL DRILL (2)(1.5")
2	JUNCTION BOX (STANDARD)
100'	4-WIRE COPPER FEEDER CONDUCTORS

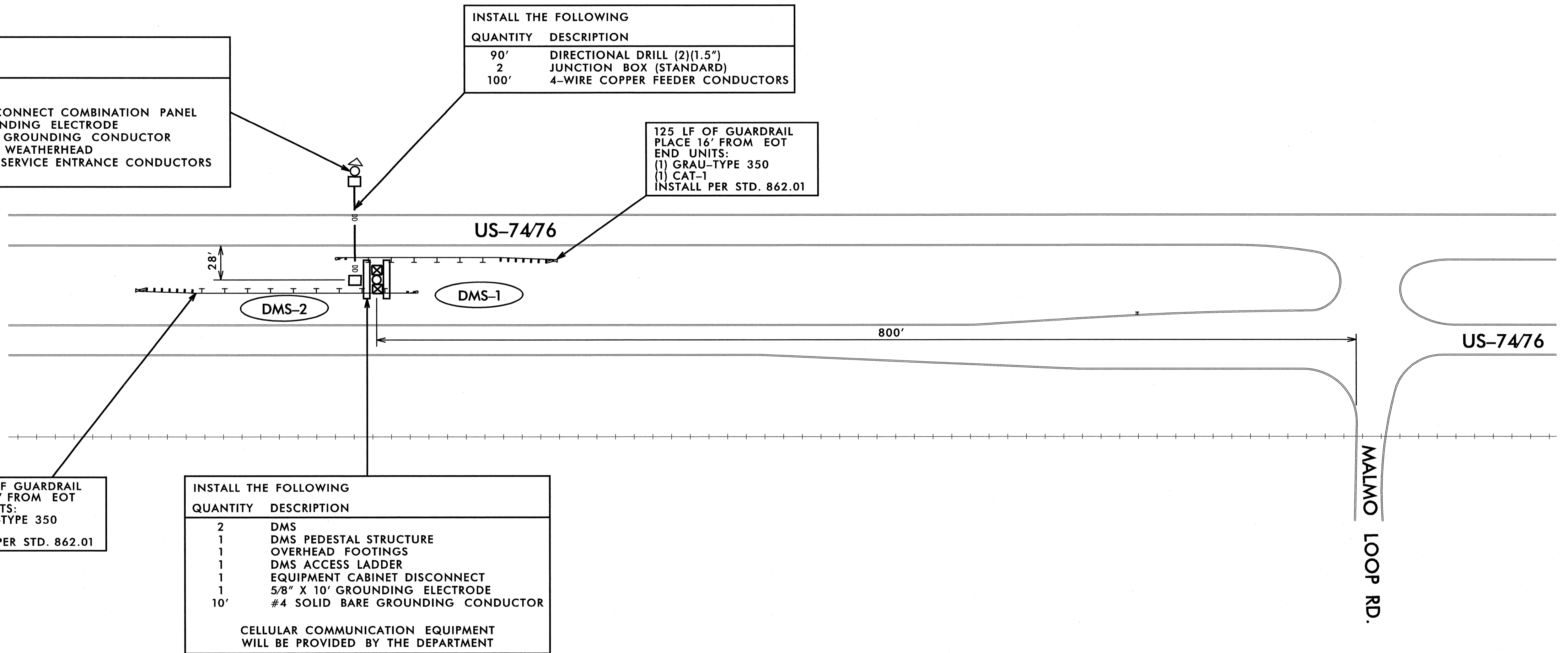
125 LF OF GUARDRAIL PLACE 16' FROM EOT
END UNITS:
(1) GRAU-TYPE 350
(1) CAT-1
INSTALL PER STD. 862.01

175 LF OF GUARDRAIL PLACE 16' FROM EOT
END UNITS:
(1) GRAU-TYPE 350
(1) CAT-1
INSTALL PER STD. 862.01

INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
2	DMS
1	DMS PEDESTAL STRUCTURE
1	OVERHEAD FOOTINGS
1	DMS ACCESS LADDER
1	EQUIPMENT CABINET DISCONNECT
1	5/8" X 10' GROUNDING ELECTRODE
10'	#4 SOLID BARE GROUNDING CONDUCTOR

CELLULAR COMMUNICATION EQUIPMENT WILL BE PROVIDED BY THE DEPARTMENT



- NOTES:
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
 2. CONTACT THE ENGINEER TO VERIFY DEVICE LOCATION PRIOR TO CONSTRUCTION.
 3. INSTALL NEW BACK TO BACK DMS, WALKWAY, AND LADDER ON NEW DMS STRUCTURE.
 4. INSTALL TWO NEW DMS POLE MOUNTED CABINETS ON NEW DMS STRUCTURE.
 5. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON ITS-8 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.
 6. CONTACT JERRY PEARSON FROM PROGRESS ENERGY AT (910) 602-4377 TO OBTAIN POWER FOR ELECTRICAL SERVICE.

8/30/2013 9:03:49 AM K:\NAL...ITS\01036239 R-2633BA\Plans\R-2633BA\ITS.Z3.dgn

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
NC License #F-0102
P.O. Box 33068
Raleigh, NC 27636
(919) 677-2000

Plans Prepared For:
STATE OF NORTH CAROLINA
Department of Transportation
750 N. Greenfield Pkwy., Garner, NC 27529

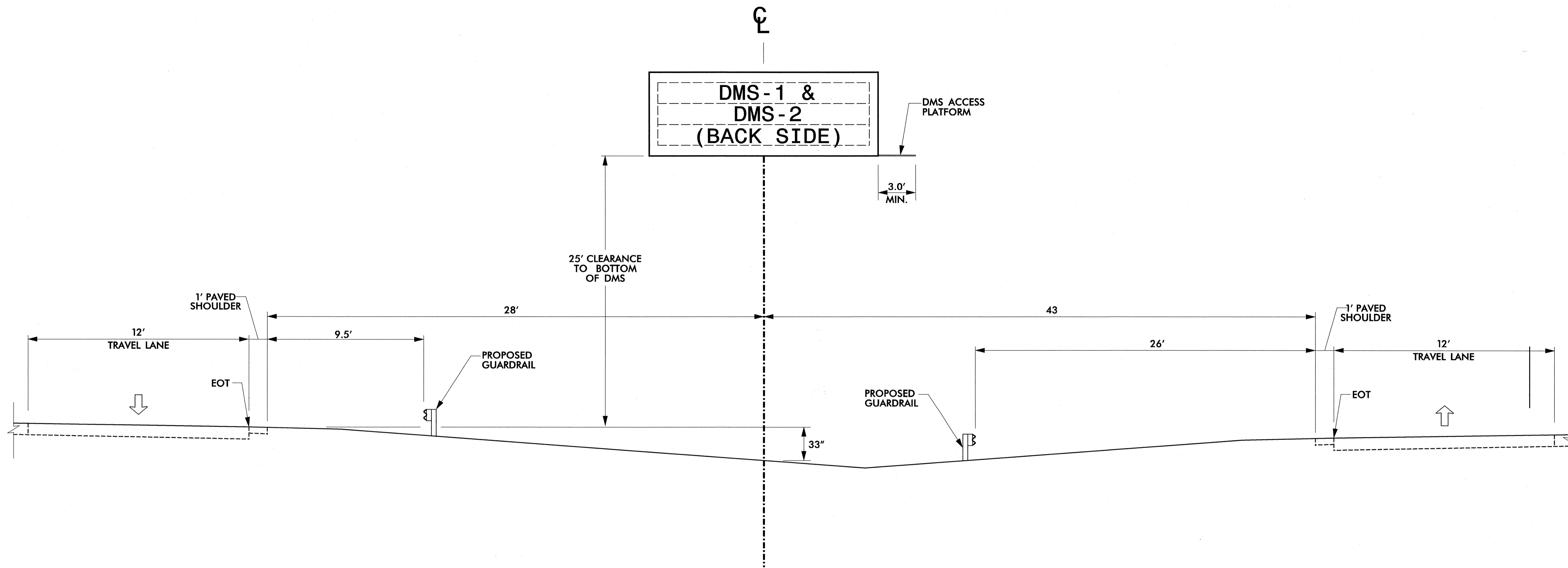
SCALE 0 50

DMS INSTALLATION

DIVISION 03 BRUNSWICK/NEW HANOVER COUNTY	
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

8/30/13
SIGNATURE DATE
CADD File name:



SECTION FACING EAST

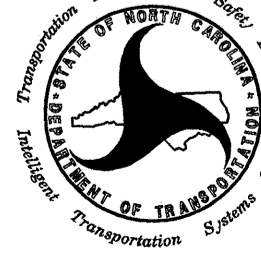
NOTES

1. PROVIDE A SINGLE FIXED LADDER LEADING TO THE ACCESS PLATFORM FOR BOTH DMS UNITS.
2. 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.
3. INSTALL A CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
4. USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
5. FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTING USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. 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.
7. DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 130 MPH.
8. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.

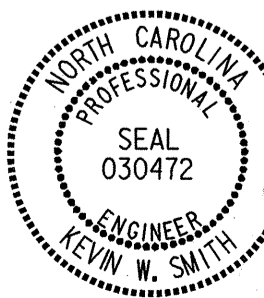
8/29/2013 4:20:54 PM K:\NAL\1\PTD\ITS\01036239 R-2633BA\Plans\R-2633BA ITS-24.dgn

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
 NC License #F-0102
 P.O. Box 33068
 Raleigh, NC 27636
 (919) 877-2000

Plans Prepared For:

 DIVISION 03
 SCALE 0 50

DMS-1 & DMS-2 INSTALLATION	
DIVISION 03	BRUNSWICK/NEW HANOVER COUNTY
PLAN DATE: AUGUST 2013	REVIEWED BY:
PREPARED BY: J. CROSS	REVIEWED BY: K. SMITH
REVISIONS	INIT. DATE

SEAL

 KEVIN W. SMITH
 ENGINEER
 8/30/13
 SIGNATURE DATE
 CADD File name: