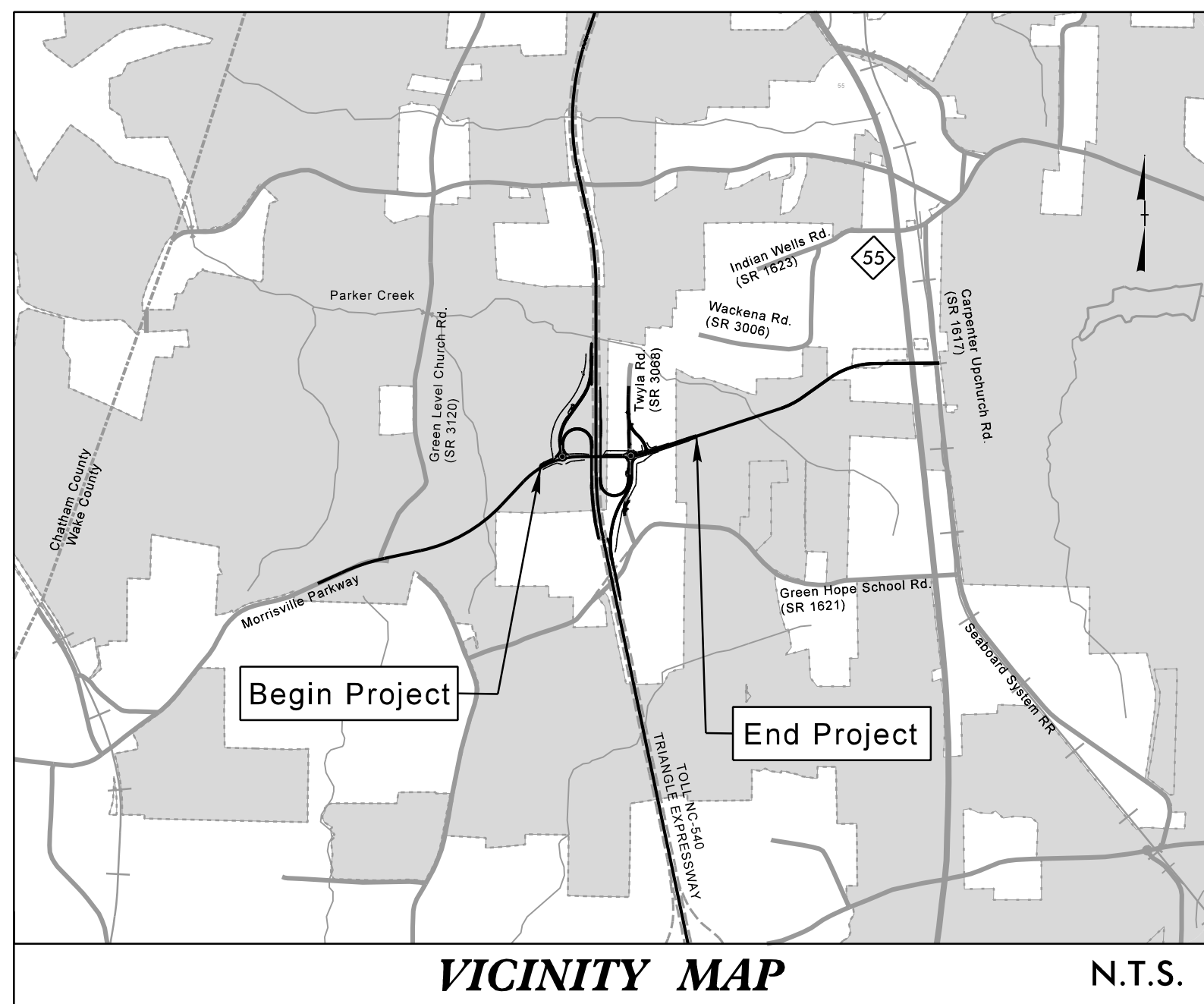


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**CARY PROJECT: ST 1123A/220 TIP PROJECT: U-5315 A&B**



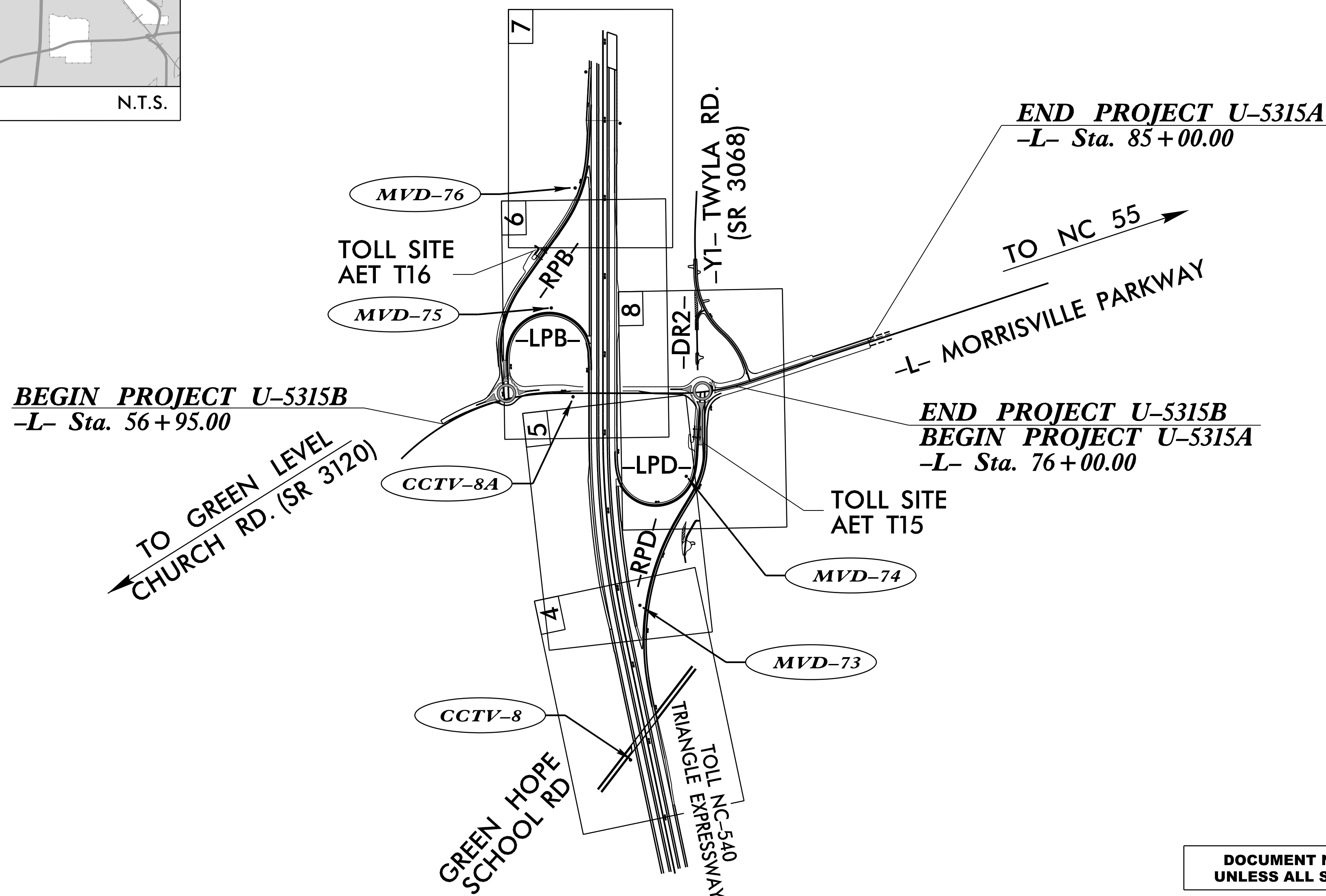
VICINITY MAP N.T.S.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# WAKE COUNTY

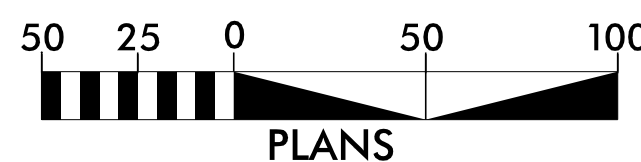
**LOCATION: MORRISVILLE PARKWAY EXTENSION AND NC 540 INTERCHANGE  
FROM WEST OF HIGHCROFT DRIVE TO EAST OF MILLS PARK DRIVE IN CARY  
TYPE OF WORK: COMMUNICATIONS CABLE, CONDUIT ROUTING, CLOSED CIRCUIT TELEVISION  
CAMERAS AND MICROWAVE VEHICLE DETECTORS**

STATE	STATE PROJECT REFERENCE NO.		SHEET NO.	TOTAL SHEETS
N.C.	U-5315A/U-5315B		ITS-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION		
U-5315A	45429.1.F2	STPDA-0503(19)	PE	
U-5315A	45429.2.2	STPDA-0540(38)	RW, UTILITIES	
U-5315B	45429.1.F3	STPDA-0503(19)	PE	
U-5315B	45429.2.3	STPDA-0540(39)	RW, UTILITIES	
U-5315A&B	45429.3.3	STPDA-0540(39)	CONST.	
U-5315B	45429.5.TA1		TURNPIKE CONST.	
U-5315B	45429.5.TA3		TURNPIKE ROW	



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**GRAPHIC SCALES**



**INDEX OF SHEETS**

- |   |   |
|---|---|
| SHEET ITS-1<br>SHEET IT-1A<br>SHEET IT-2A THRU ITS-2P<br>SHEET ITS-3A THRU ITS-3D | TITLE SHEET<br>CONSTRUCTION NOTES<br>STANDARD ITS & AET DETAILS<br>TOLL SITE PAD, JUNCTION BOX, AND CONDUIT DETAILS |
| SHEET ITS-4 THRU ITS-8<br>SHEET ITS-9 THRU ITS-15                                 | COMMUNICATIONS CABLE AND CONDUIT ROUTING<br>SPlice DETAILS  |

PREPARED IN THE OFFICE OF:  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE, SUITE 350  
RALEIGH, NORTH CAROLINA 27609  
NC LICENSE NO. F-0112  
**FOR NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

2012 STANDARD SPECIFICATIONS

LETTING DATE:  
DECEMBER 19, 2017

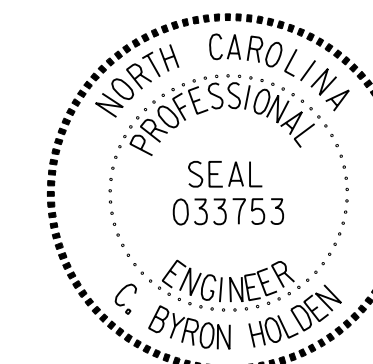
C. BYRON HOLDEN, P.E.  
PROJECT ENGINEER

DAVID SEARS, P.E.  
PROJECT DESIGN ENGINEER

**NCDOT CONTACTS:  
NORTH CAROLINA TURNPIKE AUTHORITY  
DENNIS JERNIGAN, P.E.**

**TRANSPORTATION AND MOBILITY  
INTELLIGENT TRANSPORTATION  
SYSTEMS SECTION  
SHERRY YOW**

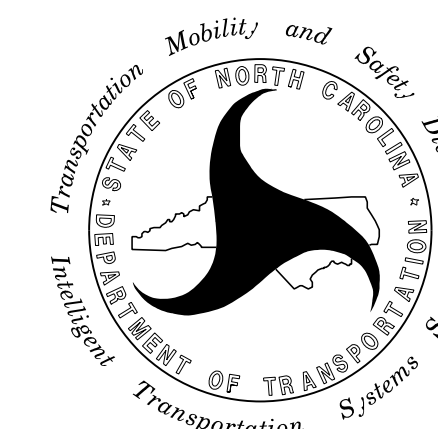
SEAL



DocuSigned by:  
C. Byron Holden

12/10/2017  
DATE

Prepared for the Offices of:



750 N. Greenfield Pkwy., Garner, NC 27529

- 1 INSTALL RS-485 CABLE
- 2 INSTALL SIZE 350 MCM 4-WIRE COPPER FEEDER CONDUCTORS
- 3 INSTALL 3-WIRE COPPER FEEDER CONDUCTORS
- 4 INSTALL SMFO CABLE
- 5 INSTALL MMFO 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 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 EXISTING POLE MOUNTED CABINET
- 26 TERMINATE COMMUNICATIONS CABLE ON EXISTING TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 27 INSTALL NEW TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPlice CABLE IN CABINET OR RACK IN VAULT
- 29 INSTALL UNDERGROUND SPlice ENCLOSURE
- 30 INSTALL AERIAL SPlice ENCLOSURE
- 31 INSTALL POLE 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 WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX WITH 18" REINFORCED CONCRETE COLLAR 4" THICK MIN.
- 40 INSTALL OVERSIZED JUNCTION BOX WITH 18" REINFORCED CONCRETE COLLAR 4" THICK MIN.
- 41 INSTALL OVERSIZED SPlice BOX WITH 18" REINFORCED CONCRETE COLLAR 4" THICK MIN.
- 42 INSTALL WOOD POLE
- 43 REMOVE EXISTING WOOD POLE
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
- 49 REMOVE EXISTING COMMUNICATIONS CABLE
- 50 INSTALL TELEPHONE SERVICE
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52 INSTALL DELINEATOR MARKER
- 53 STORE 50 FEET OF EACH COMMUNICATIONS CABLE
- 54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
- 55 LASH CABLE(S) TO EXISTING MESSENGER CABLE
- 56 LASH CABLE(S) TO NEW MESSENGER CABLE
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE
- 59 INSTALL ETHERNET SWITCH
- 60 INSTALL MVD ASSEMBLY
- 61 INSTALL MVD METAL POLE AND FOUNDATION
- 62 INSTALL EQUIPMENT CABINET
- 63 INSTALL MVD TERMINAL SERVER ASSEMBLY
- 64 REMOVE EXISTING JUNCTION BOXES

CONTRACTOR SHALL INSTALL AND UTILIZE CONDUITS AS SHOWN.

CONDUIT	USE
BLUE	TOLL FOC
WHITE	TOLL SPARE
BLACK	ITS FOC
ORANGE	ITS SPARE

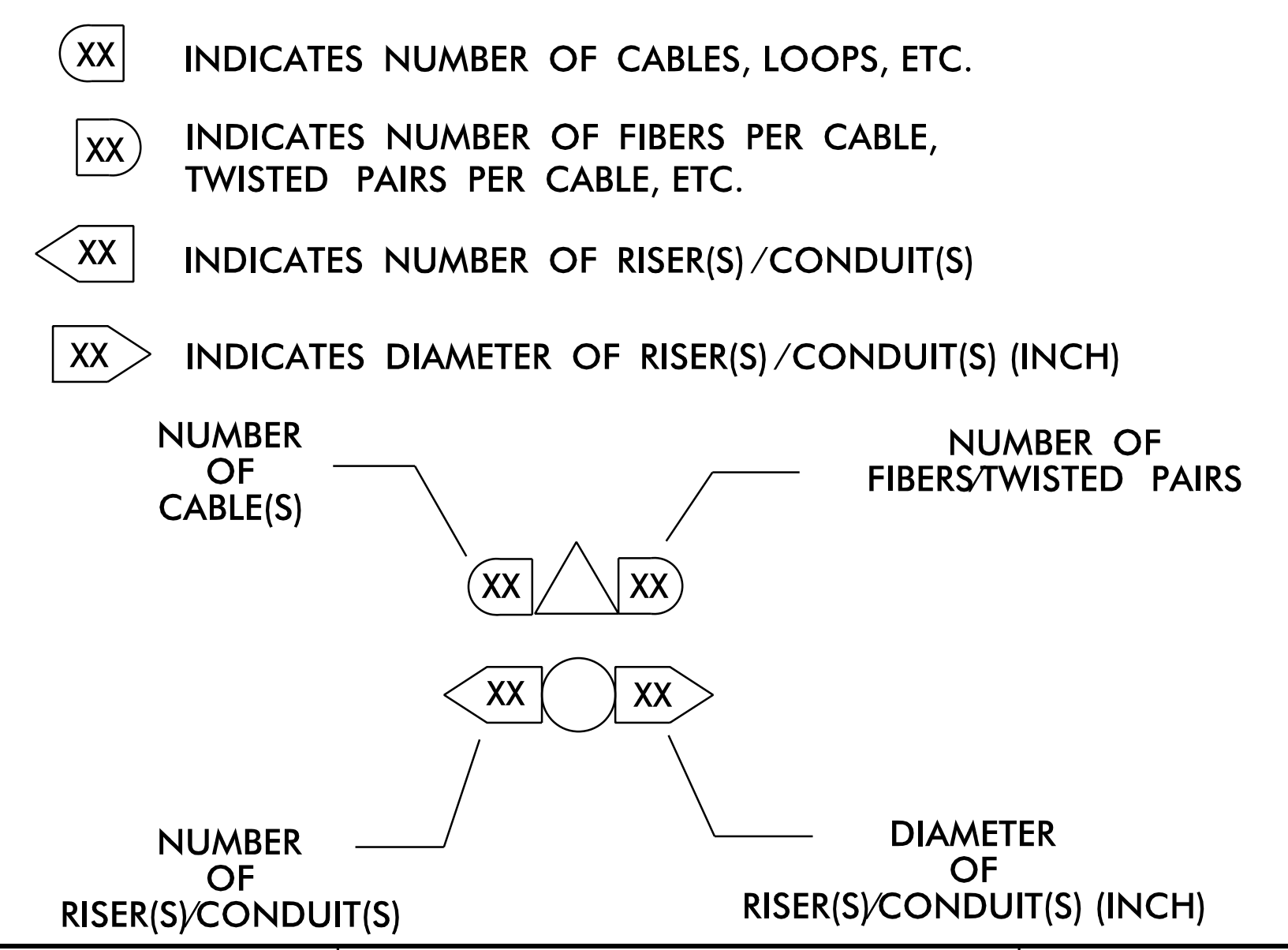
**LEGEND**

- EXI — EXISTING COMMUNICATIONS CABLE
- REM — EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW CONDUIT
- EXISTING CONDUIT
- DD — DD — NEW DIRECTIONAL DRILLED CONDUIT
- NEW OVERSIZED, HEAVY DUTY JUNCTION BOX WITH 18" REINFORCED CONCRETE APRON 4" THICK MIN.
- NEW OVERSIZED, HEAVY DUTY SPlice BOX WITH 18" REINFORCED CONCRETE APRON 4" THICK MIN.
- C NEW TOLL SITE COMMUNICATIONS GROUND BOX WITH 18" REINFORCED CONCRETE APRON 4" THICK MIN.
- P NEW TOLL SITE POWER GROUND BOX WITH 18" REINFORCED CONCRETE APRON 4" THICK MIN.
- S NEW TOLL SITE LOOP SPlice BOX WITH 18" REINFORCED CONCRETE APRON 4" THICK MIN.
- EXISTING OVERSIZED, HEAVY DUTY JUNCTION BOX
- S NEW SPlice ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- ▶ NEW CCTV CAMERA ASSEMBLY
- ▶ EXISTING CCTV CAMERA ASSEMBLY
- (((o))) NEW MICROWAVE DETECTOR (MVD) ASSEMBLY
- (((■))) EXISTING MICROWAVE DETECTOR (MVD) ASSEMBLY
- NEW RWIS ASSEMBLY
- EXISTING RWIS ASSEMBLY
- ▣ EXISTING FIELD EQUIPMENT CABINET
- ▣ NEW FIELD EQUIPMENT CABINET

**ABBREVIATIONS**

- CCTV CLOSED-CIRCUIT TELEVISION
- ITS INTELLIGENT TRANSPORTATION SYSTEM
- MVD MICROWAVE VEHICLE DETECTION
- AET ALL-ELECTRONIC TOLLING

**CONSTRUCTION NOTE SYMBOLOGY KEY**



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PLANS PREPARED BY :

**RK&K**

RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

MORRISVILLE PARKWAY PLANS NOTES

DIVISION 05 WAKE COUNTY TOWN OF GARY

PLAN DATE: DECEMBER 2017 REVIEWED BY: C.B. HOLDEN

PREPARED BY: D.T. SEARS REVIEWED BY:

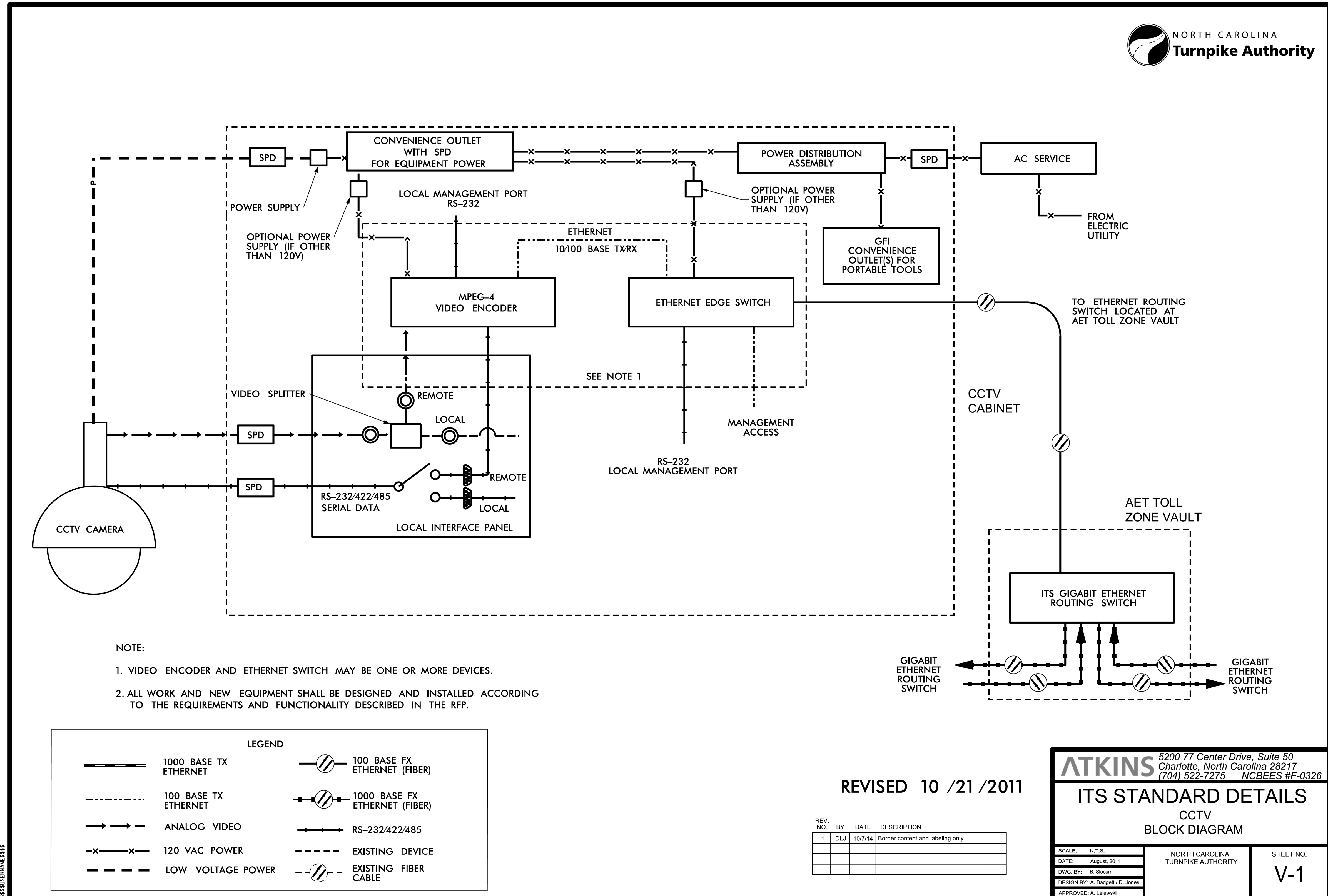
REVISIONS INIT. DATE

SCALE: N/A

Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033753 C. BYRON HOLDEN

DocuSigned by: C. Byron Holden 12/10/2017

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REVISED 10 /21 /2011

**ATKINS** 5200 77 Center Drive, Suite 50  
 Charlotte, North Carolina 28217  
 (704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
 CCTV  
 BLOCK DIAGRAM

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. V-1
DATE: August, 2011	DESIGN BY: A. Badgett / D. Jones	APPROVED: A. Lelowski
DWG. BY: B. Slocum		

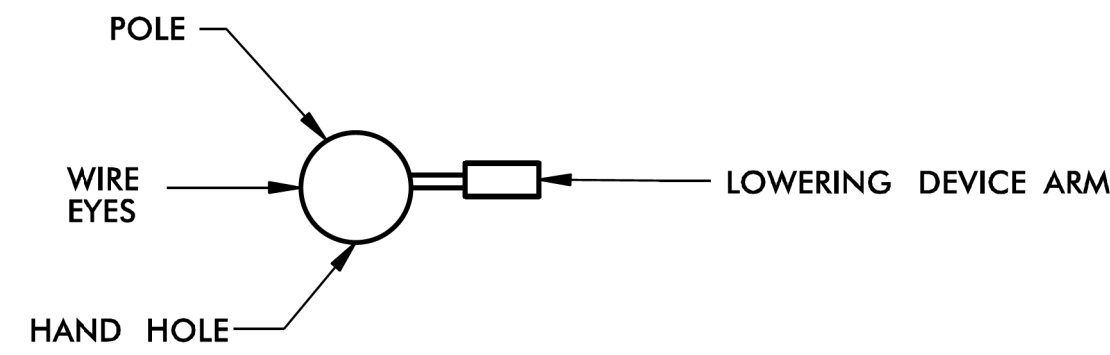
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 RUMMEL, KLEPPER & KAHL, LLP  
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 NC LICENSE NO. F-0112 • (919) 878-9560

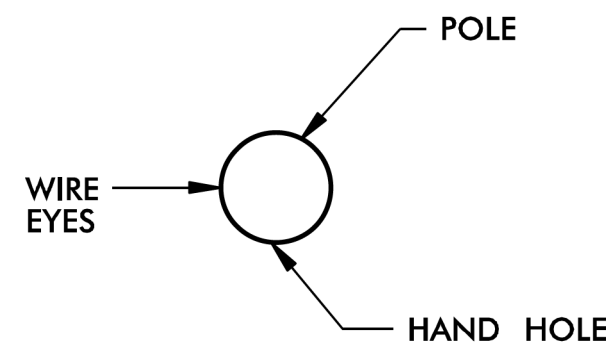
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 750 N. Greenfield Place, Garner, NC 27529  
 SCALE: N/A

**NORTH CAROLINA TURNPIKE AUTHORITY**  
 ITS STANDARD DETAIL

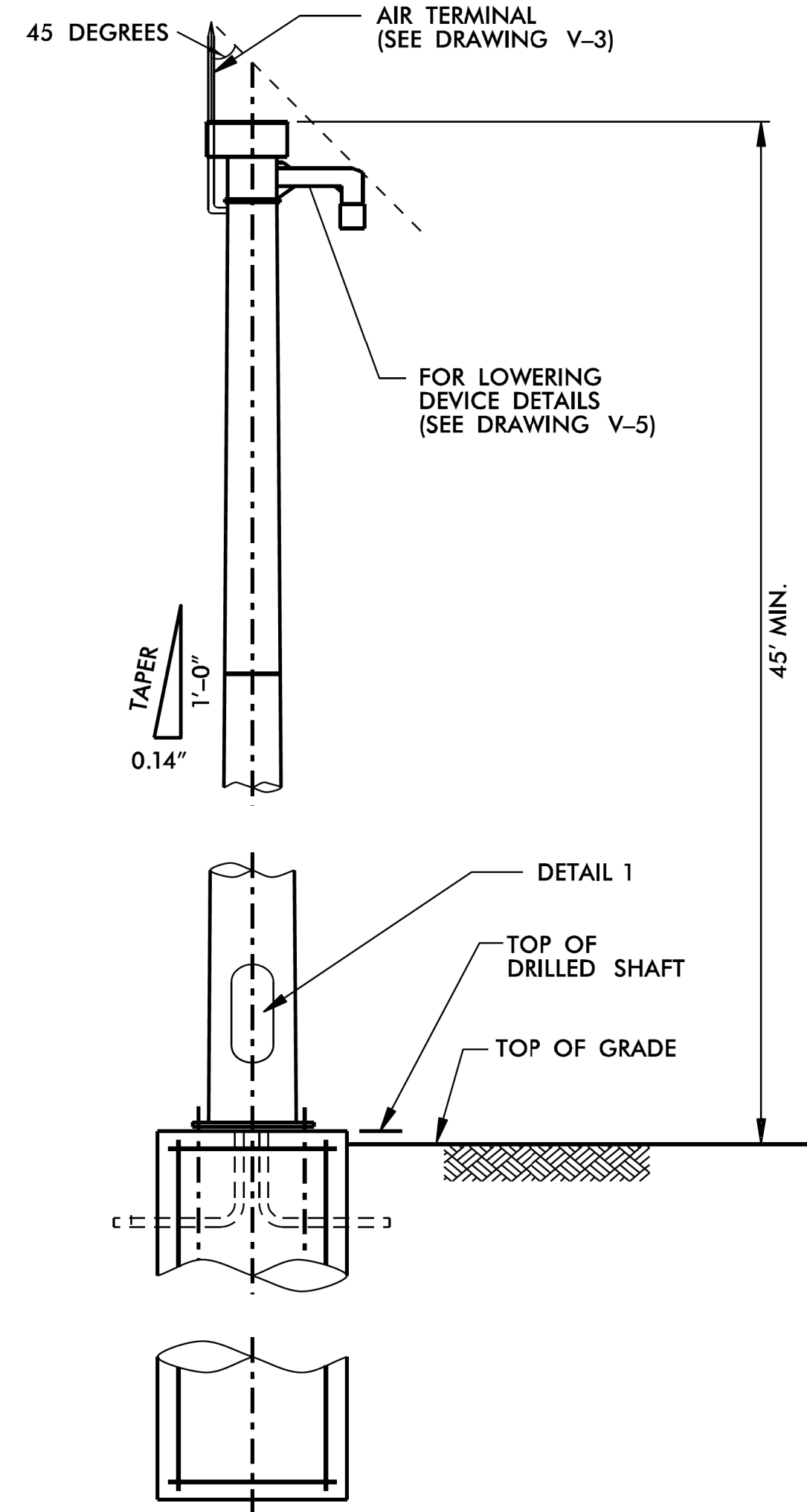
DIVISION 05	WAKE COUNTY	TOWN OF CARY
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C.B. HOLDEN	
PREPARED BY: D.T. SEARS	REVIEWED BY:	
REVISIONS	INIT.	DATE



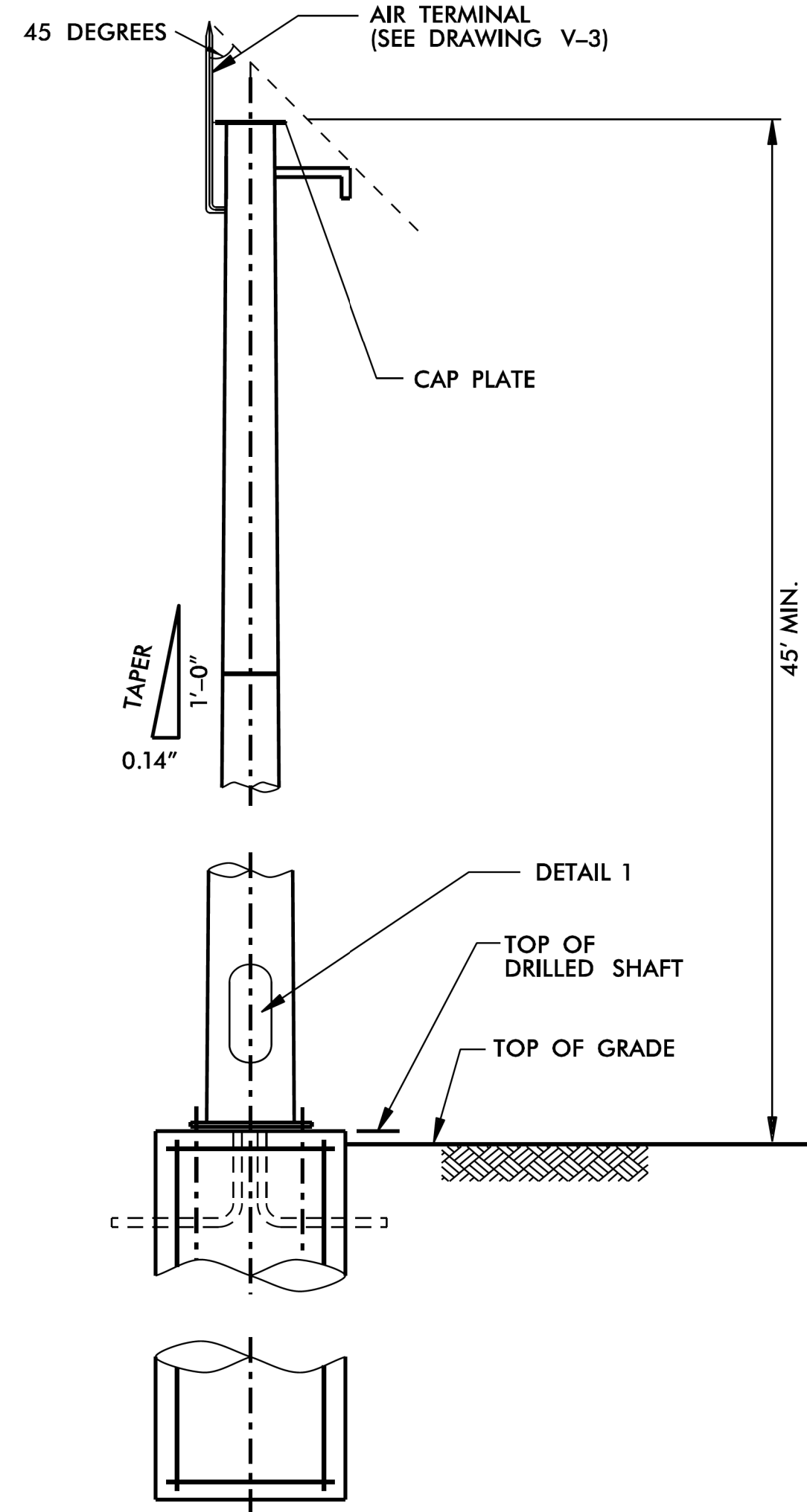
ORIENTATION VIEW



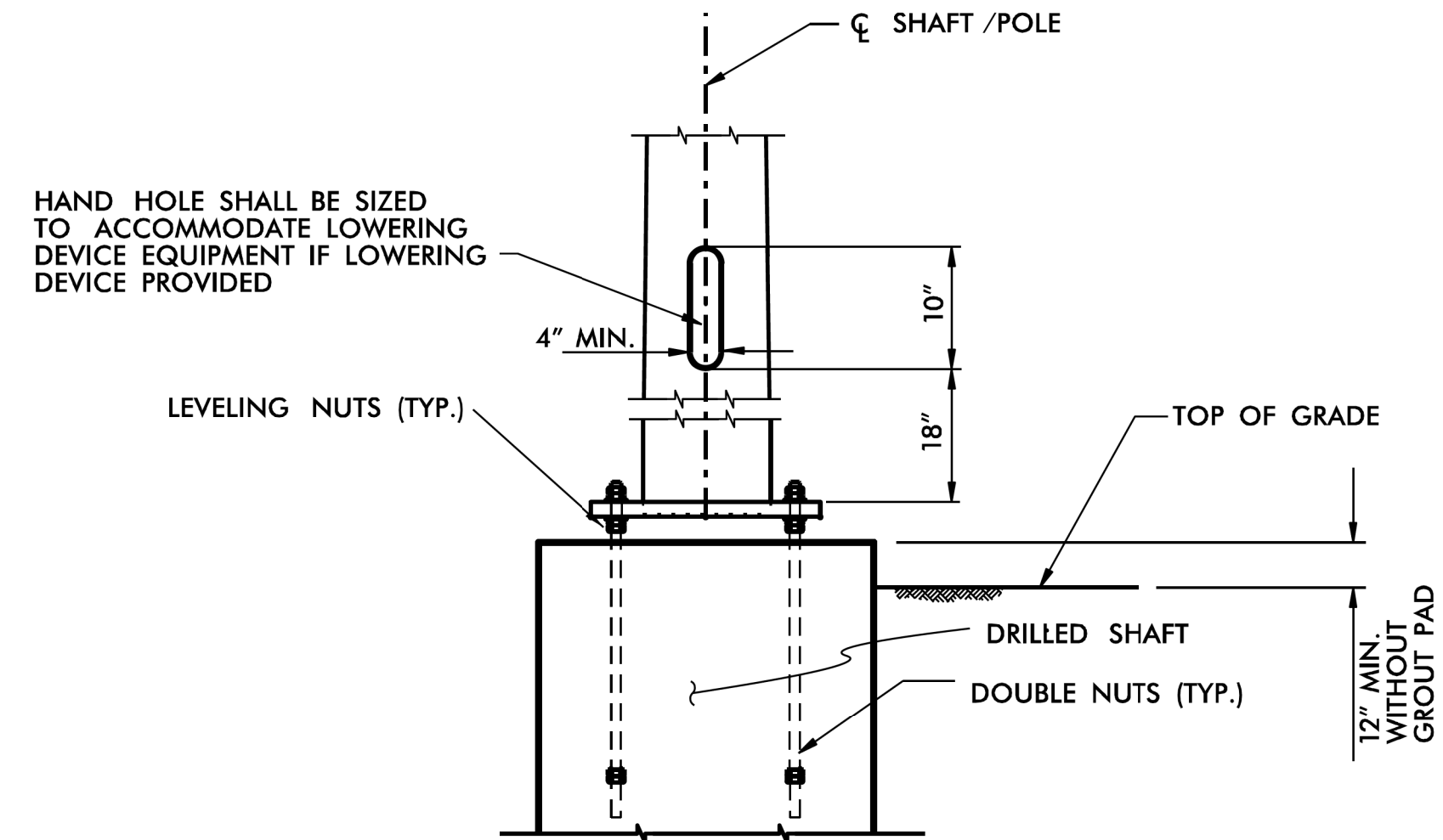
ORIENTATION VIEW



WITH LOWERING DEVICE ELEVATION



WITHOUT LOWERING DEVICE ELEVATION



DETAIL 1

HAND HOLE SHALL BE SIZED TO ACCOMMODATE LOWERING DEVICE EQUIPMENT IF LOWERING DEVICE PROVIDED

- NOTE
1. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.
  2. BANDING TO ATTACH CABINET AND ANY CONDUITS SHALL NOT INTERFERE WITH THE HAND HOLE.

\*\*\*\*\*SYTIME\*\*\*\*\*  
 \*\*\*\*\*PLANNING\*\*\*\*\*  
 \*\*\*\*\*DESIGN\*\*\*\*\*

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only

**ATKINS** 5200 77 Center Drive, Suite 50  
 Charlotte, North Carolina 28217  
 (704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
 CCTV  
 STEEL POLE

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. V-2
DATE: August, 2011		
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

11/13/2017  
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PLANS PREPARED BY :

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 NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

750 N. Greenfield Place, Garner, NC 27529  
 SCALE: N/A

NORTH CAROLINA TURNPIKE AUTHORITY  
 ITS STANDARD DETAIL

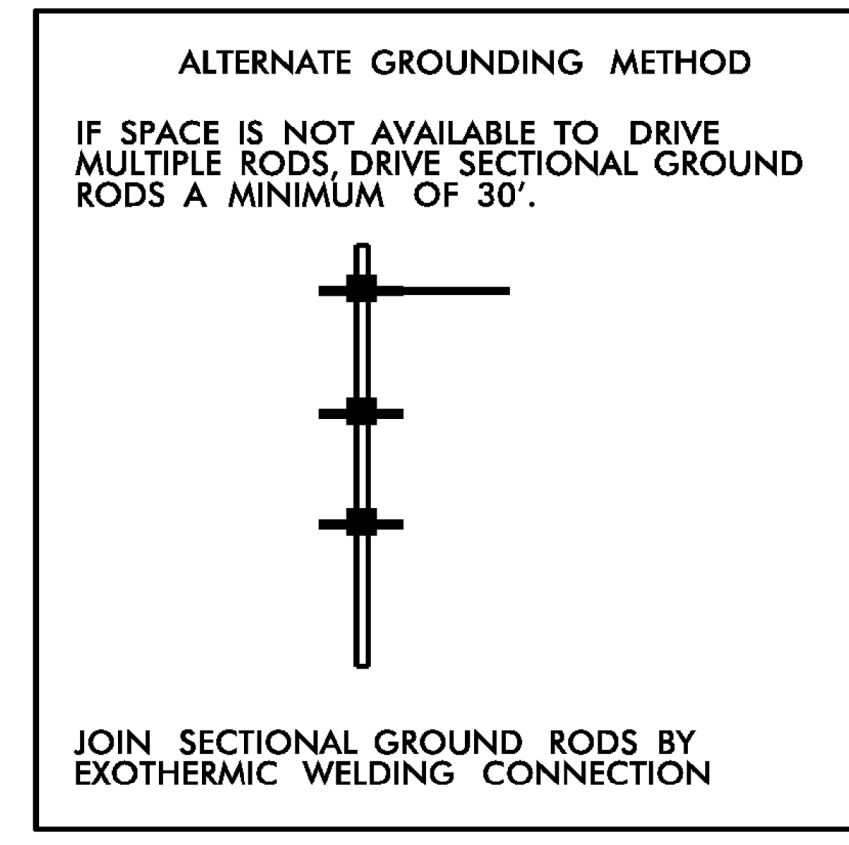
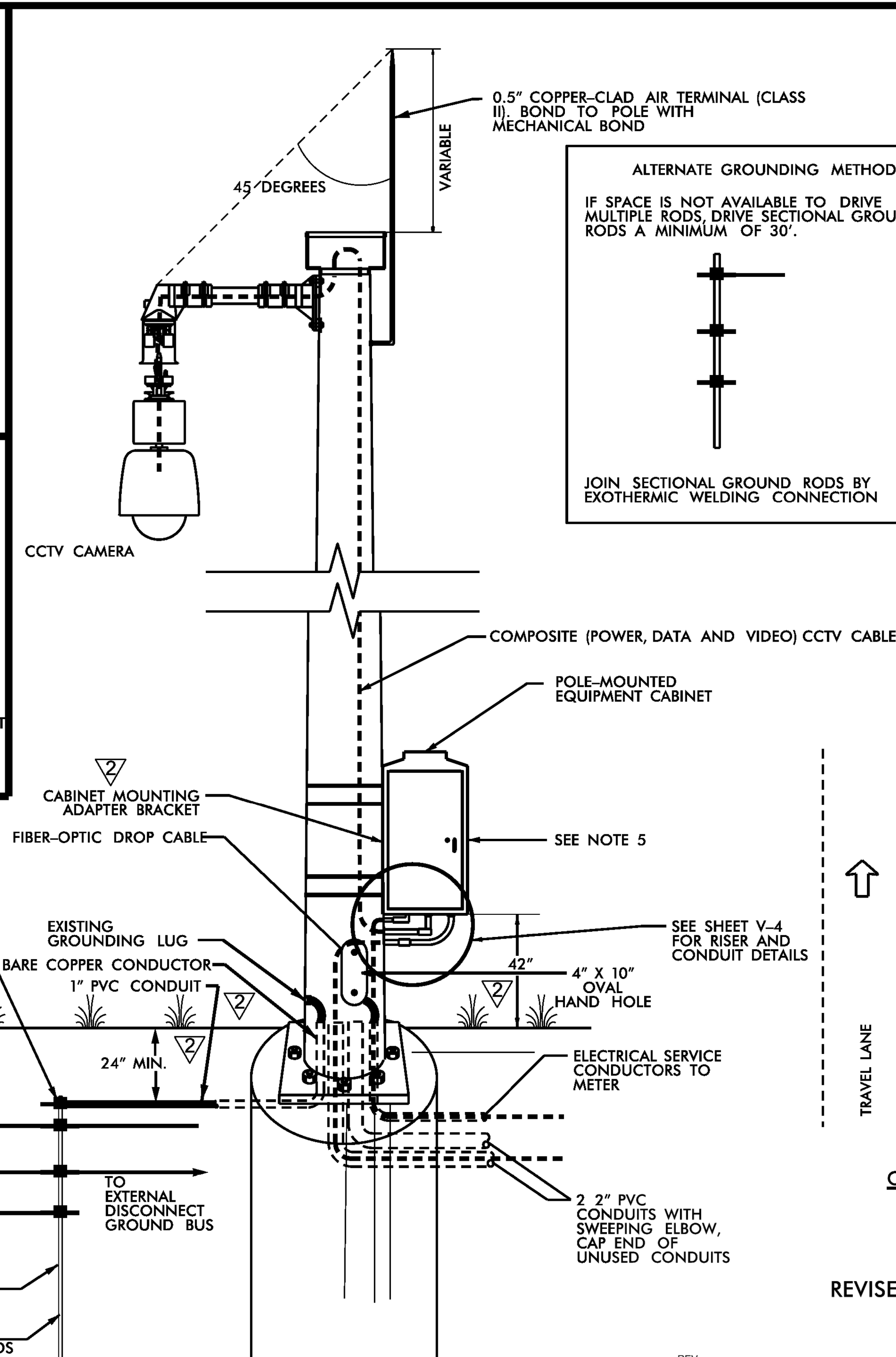
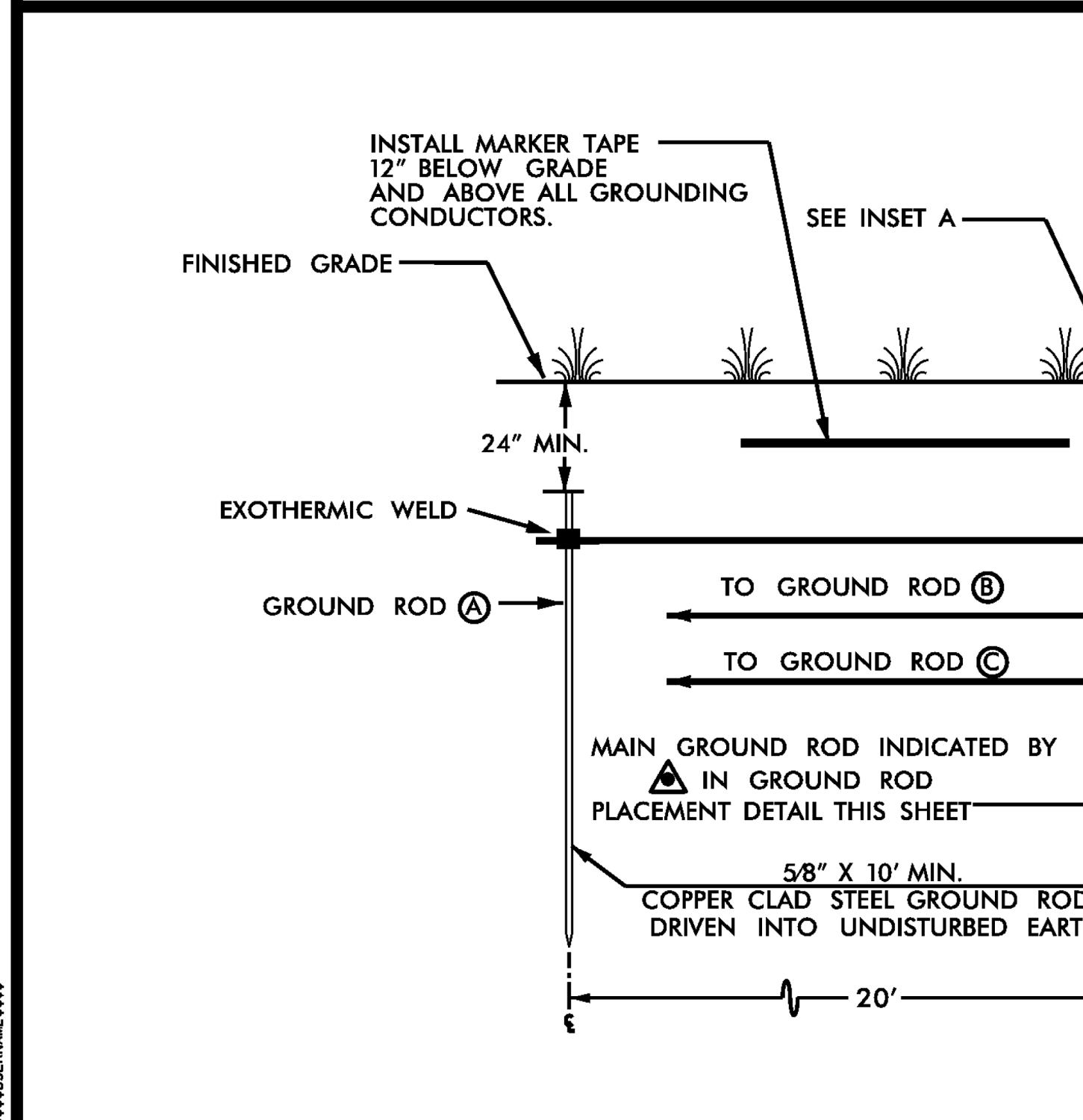
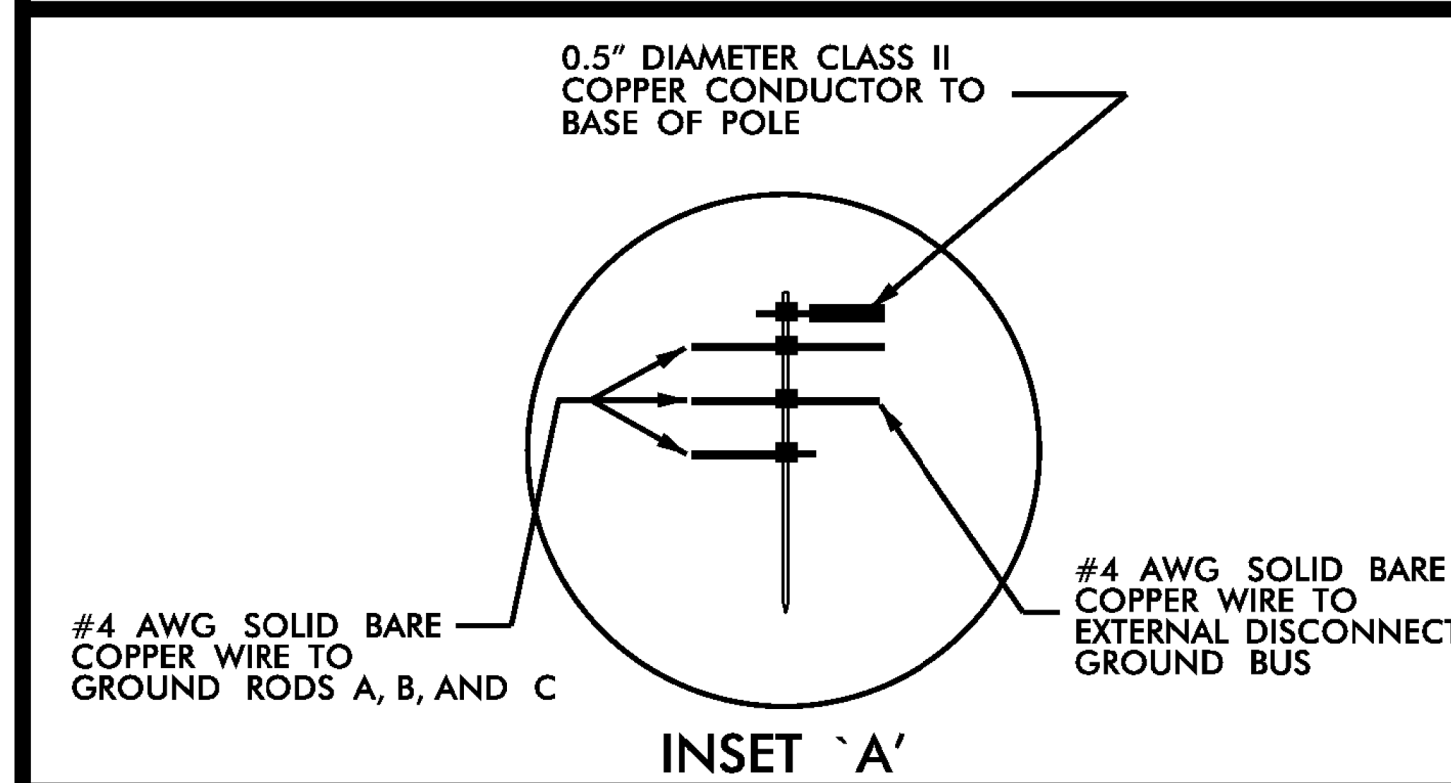
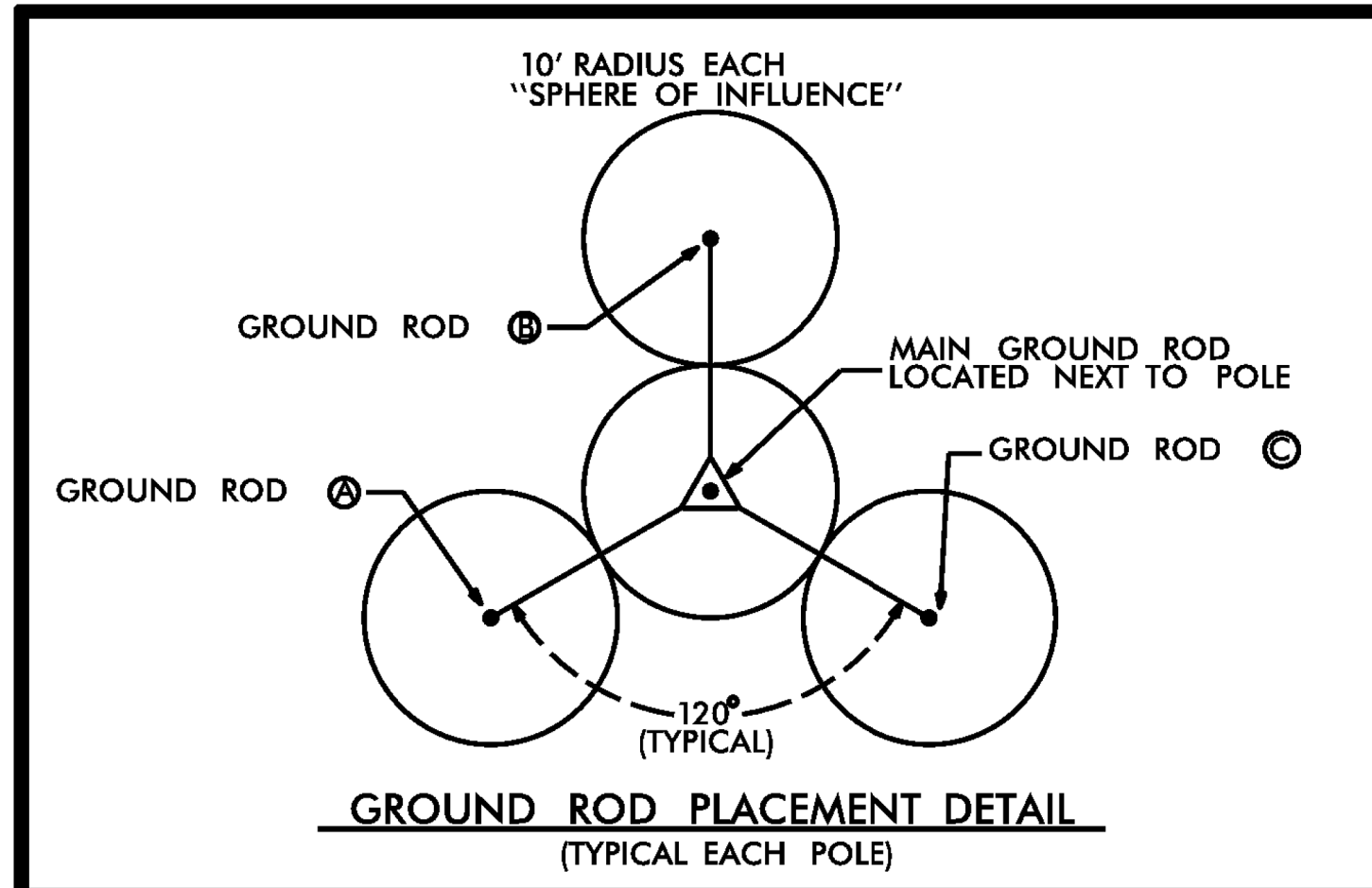
DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

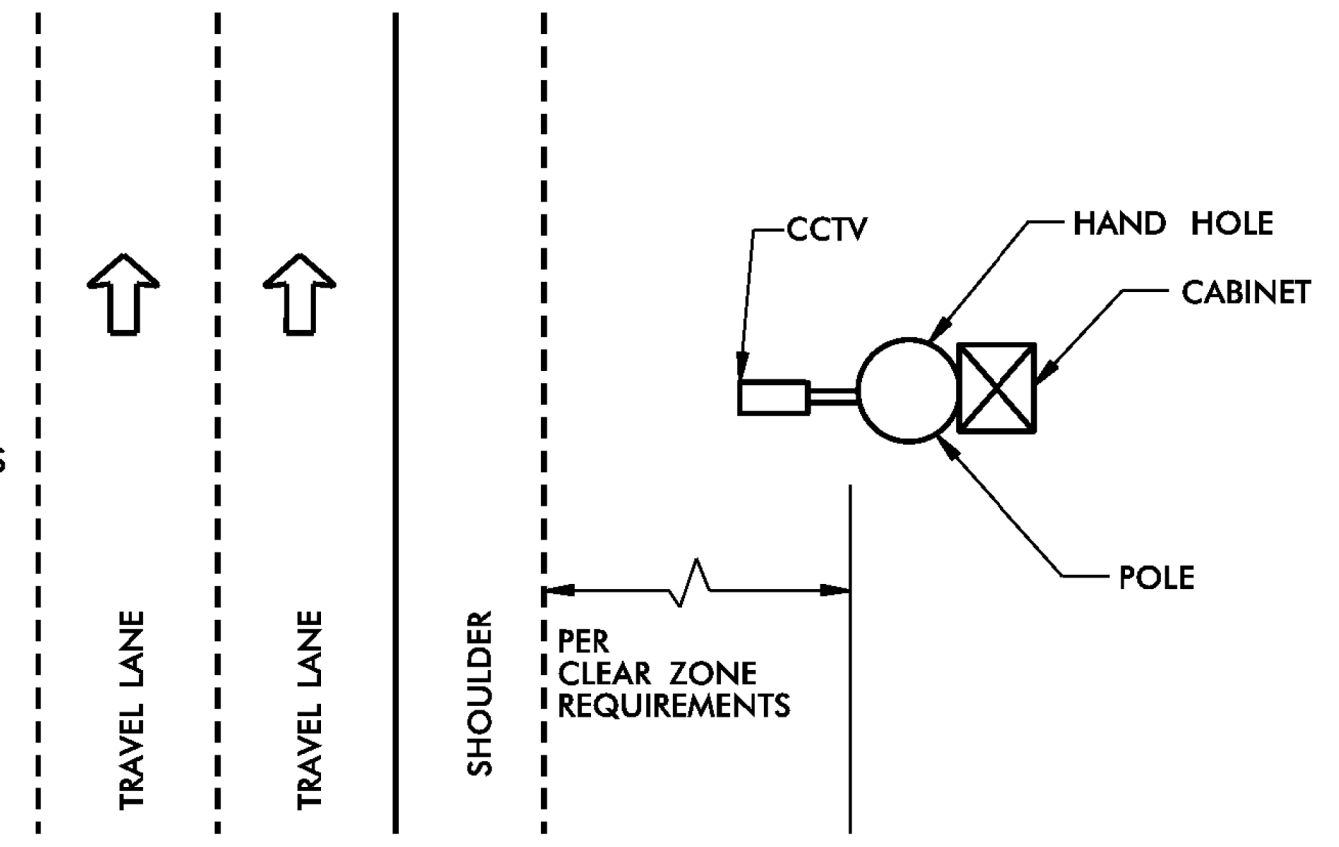
PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

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- NOTES**
- BOND 0.5" DIAMETER, 28 STRAND (MINIMUM) CLASS II COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD.
  - EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
  - BOND #4 AWG SOLID BARE COPPER WIRE TO REBAR CAGE AND THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD.
  - ENSURE CAMERA HOUSING, CAMERA, AND PAN-TILT UNIT ARE BONDED TO POLE.
  - REMOVE BONDING JUMPER BETWEEN EQUIPMENT CABINET GROUND BUS AND NEUTRAL BUS.
  - THE CONTRACTOR MAY, UPON APPROVAL OF THE ENGINEER, INSTALL A 30-FOOT SECTIONAL GROUND ROD WHEN CONDITIONS WILL NOT ALLOW FOR THE INSTALLATION OF THE 3 - RADIAL GROUND RODS.
  - INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12".
  - AIR TERMINAL LENGTH DEPENDS ON LENGTH OF LOWERING DEVICE ARM.
  - ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.



REVISED 10 /21 /2011

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only
2	DLJ	8/31/16	See Notes

**ATKINS** 5200 77 Center Drive, Suite 50  
Charlotte, North Carolina 28217  
(704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
CCTV  
POLE GROUNDING

SCALE: N.T.S.  
DATE: August, 2011  
DWG. BY: B. Slocum  
DESIGN BY: A. Badgett / D. Jones  
APPROVED: A. Lelowski

NORTH CAROLINA TURNPIKE AUTHORITY

SHEET NO. **V-3**

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RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

**STATE OF NORTH CAROLINA**  
Department of Transportation

750 N. Greenfield Place, Garner, NC 27529

SCALE: N/A

**NORTH CAROLINA TURNPIKE AUTHORITY**  
ITS STANDARD DETAIL

DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

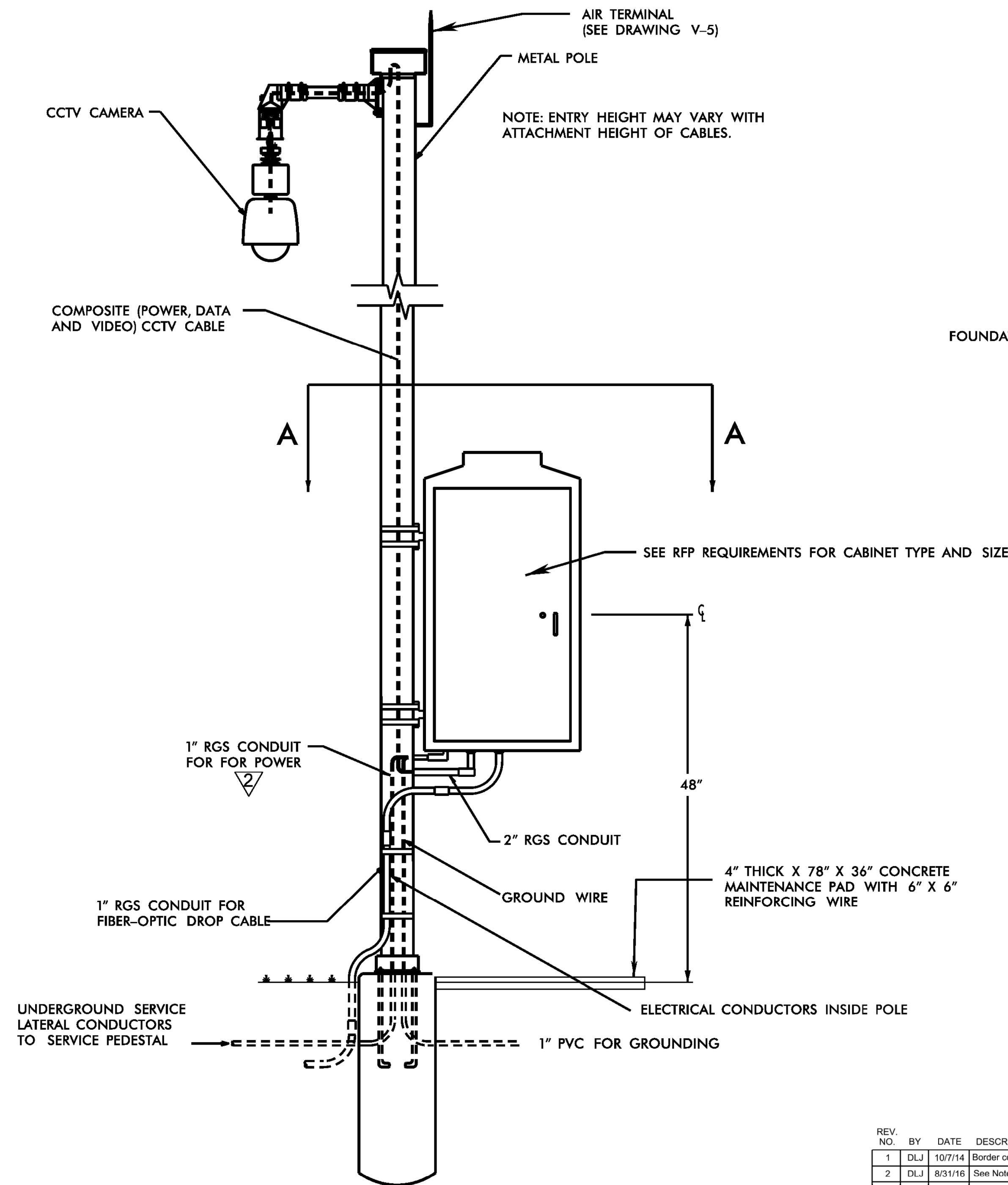
PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

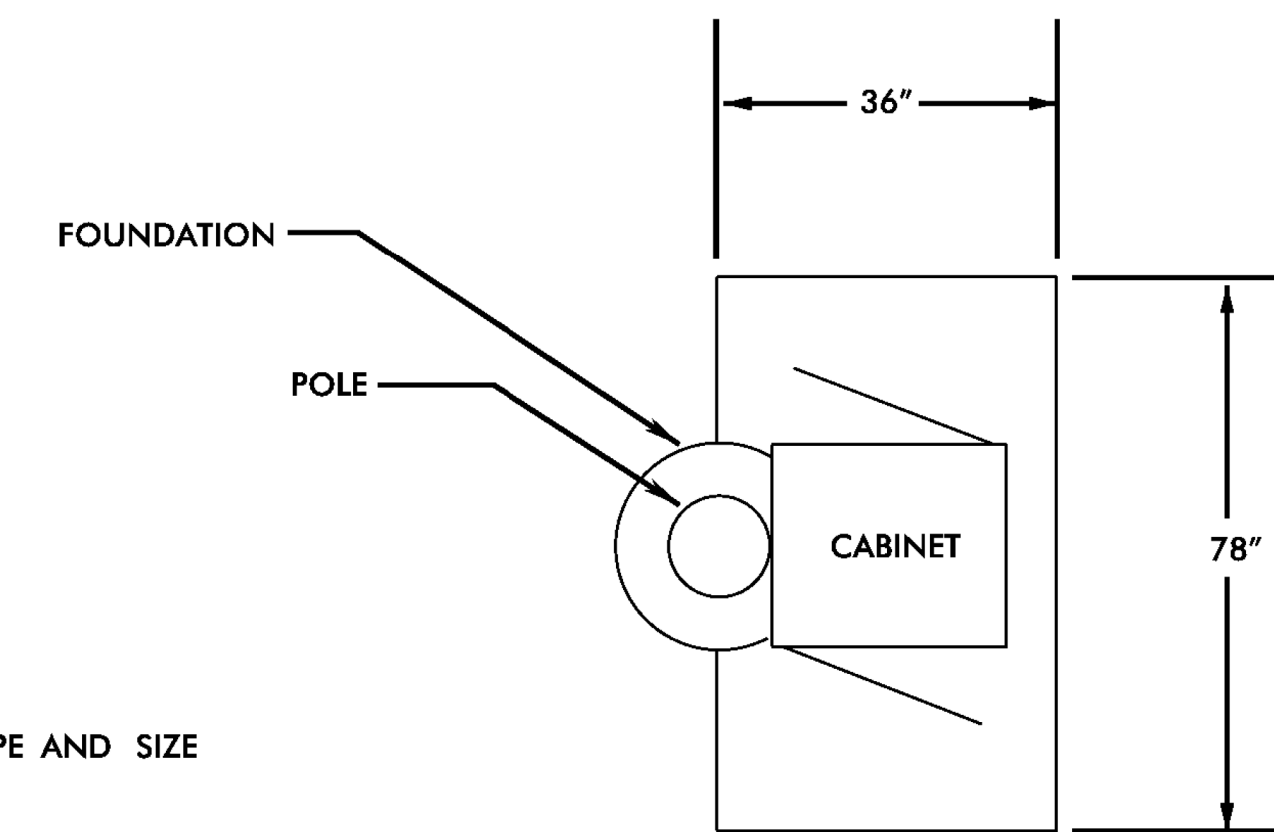
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dsccors



**POLE-MOUNTED CCTV CABINET DETAIL**



**SECTION A-A**



**NOTES**

1. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.
2. ENSURE CONDUITS STRAPS DO NOT OBSTRUCT ACCESS TO HANDHOLES.
3. DO NOT INSTALL MAINTENANCE PAD ON EXCESSIVE SLOPE (GREATER THAN 3:1)

REVISED 8 / 24 / 11

5200 77 Center Drive, Suite 50  
Charlotte, North Carolina 28217  
(704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
CCTV  
POLE-MOUNTED CABINET

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. V-4
DATE: August, 2011		
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

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1	DLJ	10/7/14	Border content and labeling only
2	DLJ	8/31/16	See Notes

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\*\*\*\*\*PROJECT\*\*\*\*\*  
\*\*\*\*\*DATE\*\*\*\*\*

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PLANS PREPARED BY :

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900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

750 N. Greenfield Place, Garner, NC 27529  
SCALE: N/A

NORTH CAROLINA  
TURNPIKE AUTHORITY  
ITS STANDARD DETAIL

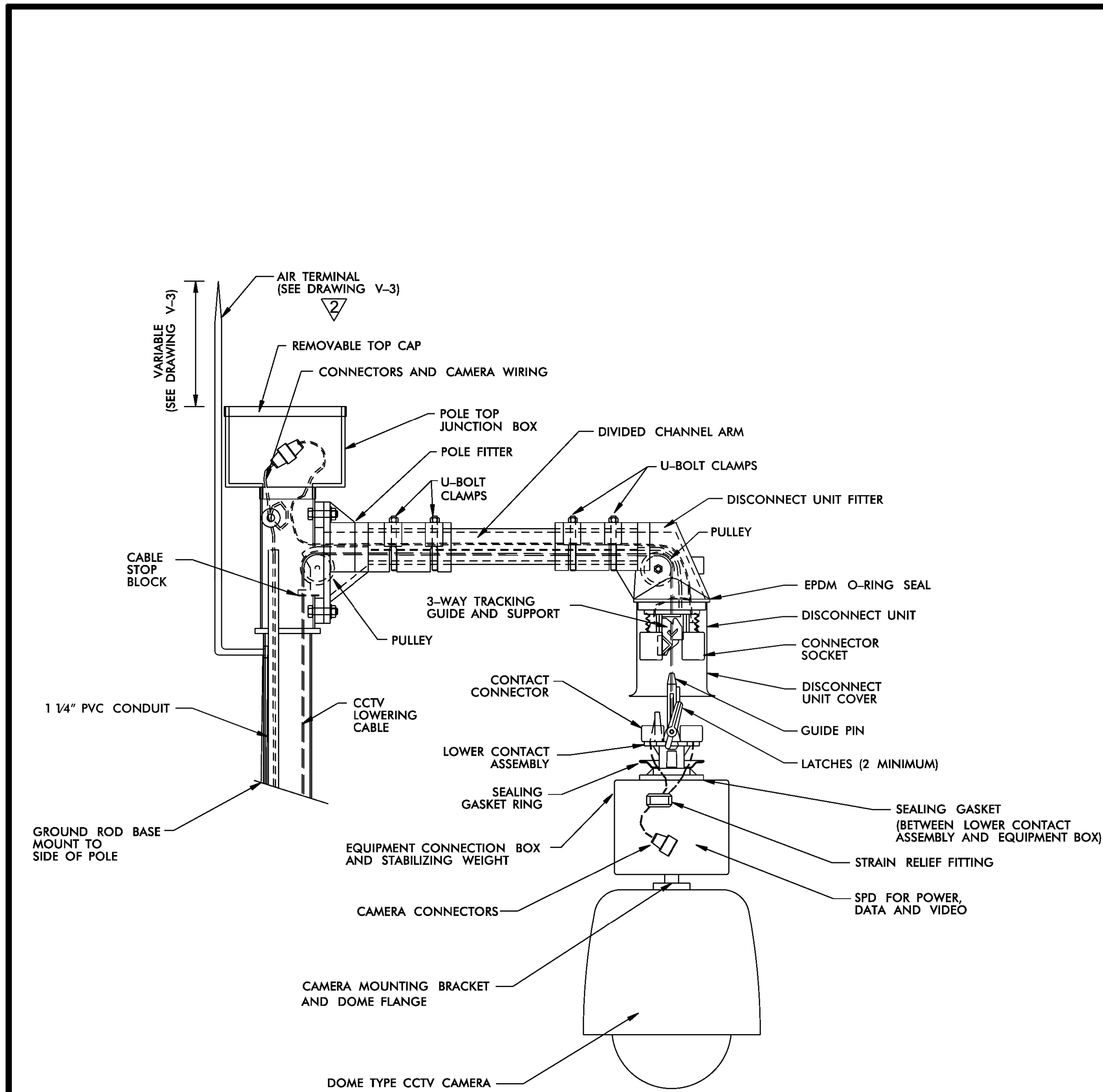
DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

CADD File name: u5315\_its\_standarddetail1.dgn



**GENERAL NOTES:**

1. LOWERING DEVICE TO BE SHIPPED READY FOR POLE ATTACHMENT TO INCLUDE 100 FT. OF COMPOSITE POWER AND SIGNAL CABLE PREWIRED TO LOWERING DEVICE AT THE FACTORY.
2. THE LOWERING DEVICE MANUFACTURER SHALL SUPPLY BOTH A PORTABLE LOWERING TOOL WITH A MANUAL HAND CRANK AND A PORTABLE ELECTRIC DRILL MOTOR WITH CUSTOM CLUTCH ADAPTER. ONE LOWERING TOOL PER EVERY 10 LOWERING DEVICES IS REQUIRED.
3. THE LOWERING DEVICE MANUFACTURER SHALL PROVIDE AN ON-SITE INSTALLATION INSPECTION AND OPERATOR INSTRUCTION AND CERTIFICATION. THIS ENSURES THE PRODUCT IS ASSEMBLED CORRECTLY AND, MORE IMPORTANTLY, THAT ALL NECESSARY PERSONS ARE TRAINED IN THE PROPER, SAFE OPERATION OF THE SYSTEM. BEFORE ERECTING THE FIRST POLE THE CONTRACTOR MUST CONTACT THE LOWERING DEVICE SUPPLIER AND SCHEDULE A FACTORY REPRESENTATIVE TO BE ON-SITE.
4. LOWERING DEVICE CONNECTION TO TOP OF POLE SHALL BE CAPABLE OF SERVICE TENSION AND SHEAR OF 1 KIP MINIMUM. THE CONTRACTOR SHALL PROVIDE PRODUCT CUT SHEET AND CAPACITY DATA FOR THE ENGINEER'S REVIEW AND APPROVAL PRIOR TO INSTALLATION.
5. CAMERA TO BE MOUNTED TO CAMERA JUNCTION BOX AND STABILIZING WEIGHT VIA 1 1/2" STANDARD NPT PIPE THREAD.
6. USE AIR TERMINAL EXTENSION WHEN THE POLE TOP JUNCTION BOX IS WIDER THAN TOP OF POLE.
7. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.

REVISED 10 /21 /2011

**ATKINS** 5200 77 Center Drive, Suite 50  
Charlotte, North Carolina 28217  
(704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**

**CCTV  
CAMERA LOWERING DEVICE**

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. <b>V-5</b>
DATE: August, 2011		
DWG. BY: B. Sloum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelewski		

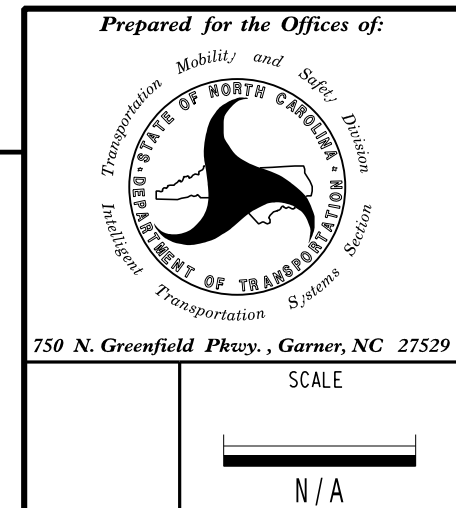
REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only
2	DLJ	8/31/16	See Notes

\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*PROJECT\*\*\*\*\*  
\*\*\*\*\*DATE\*\*\*\*\*

11/13/2017  
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dsears

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**PLANS PREPARED BY :**  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

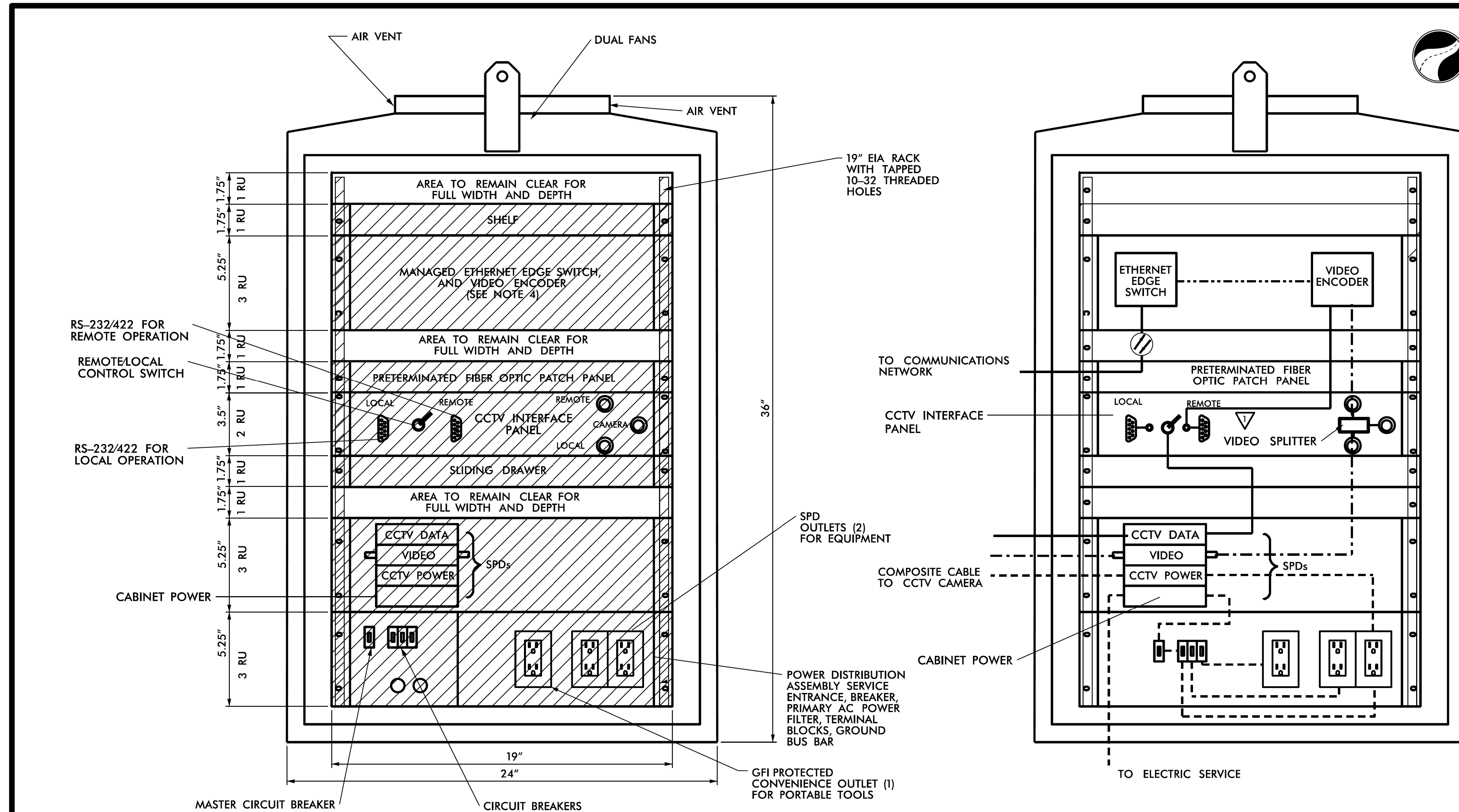


**NORTH CAROLINA  
TURNPIKE AUTHORITY  
ITS STANDARD DETAIL**

DIVISION 05 WAKE COUNTY TOWN OF CARY  
PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN  
PREPARED BY: D.T. SEARS REVIEWED BY:  
REVISIONS  
INIT. DATE

CADD File name: u5315\_its\_standard-detail1.s.dgn



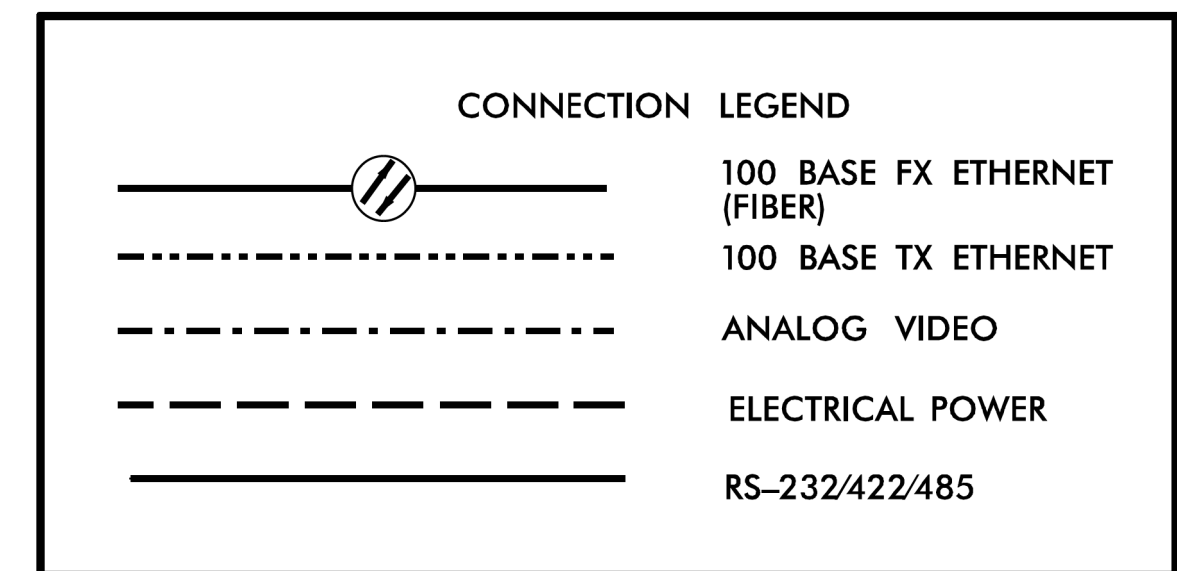


**FRONT VIEW**

**CABINET WIRING VIEW**

**NOTES**

1. SEE RFP REQUIREMENTS FOR CABINET TYPE.
2. ALL DIMENSIONS AND SCALE ARE APPROXIMATE.
3. THE MINIMUM CCTV CABINET DIMENSIONS SHALL BE 36"H X 24"W X 22"D.
4. CONDUIT ENTRANCES ARE IN BOTTOM OF CABINET.
5. MINIMUM NUMBER OF OUTLETS IS THREE: (2) SPD AND (1) GFI PROTECTED.
6. THERE SHALL BE FRONT AND REAR DOORS. BOTH DOORS SHALL HAVE THE HINGE SIDE NEXT TO THE POLE WHEN POLE MOUNTED.
7. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.



REV. NO. BY DATE DESCRIPTION

1	DLJ	10/7/14	Border content and labeling only

**ATKINS** 5200 77 Center Drive, Suite 50  
Charlotte, North Carolina 28217  
(704) 522-7275 NCBEES #F-0326

**ITS STANDARD DETAILS**  
CCTV  
CABINET LAYOUT

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO.
DATE: August, 2011		V-6
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

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\$\$\$\$\$DATE\$\$\$\$\$  
\$\$\$\$\$USER\$\$\$\$\$

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**PLANS PREPARED BY :**  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
**TURNPIKE AUTHORITY OF NORTH CAROLINA**  
750 N. Greenfield Place, Garner, NC 27529  
SCALE: N/A

**NORTH CAROLINA TURNPIKE AUTHORITY**  
ITS STANDARD DETAIL

DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

CADD File name: u5315\_its\_standarddetail1.rvt

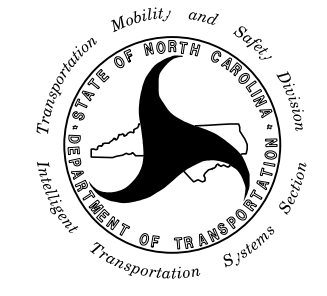
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 bholden

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**PLANS PREPARED BY :**  
  
**RUMMEL, KLEPPER & KAHL, LLP**  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:



750 N. Greenfield Place, Garner, NC 27529  
 SCALE  
 N/A

<b>NORTH CAROLINA TURNPIKE AUTHORITY ITS STANDARD DETAIL</b>			
DIVISION 05		WAKE COUNTY	TOWN OF CARY
PLAN DATE:	NOVEMBER 2017	REVIEWED BY:	C. B. HOLDEN
PREPARED BY:	D. T. SEARS	REVIEWED BY:	
REVISIONS	INIT.	DATE	

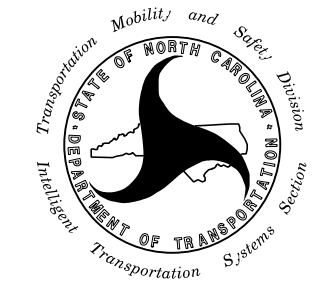
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12/10/2017  
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 bholiden

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**PLANS PREPARED BY :**  
  
**RUMMEL, KLEPPER & KAHL, LLP**  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:



750 N. Greenfield Place, Garner, NC 27529  
 SCALE  
 N/A

<b>NORTH CAROLINA TURNPIKE AUTHORITY ITS STANDARD DETAIL</b>			
DIVISION 05		WAKE COUNTY	TOWN OF CARY
PLAN DATE:	NOVEMBER 2017	REVIEWED BY:	C.B. HOLDEN
PREPARED BY:	D.T. SEARS	REVIEWED BY:	
REVISIONS	INIT.	DATE	

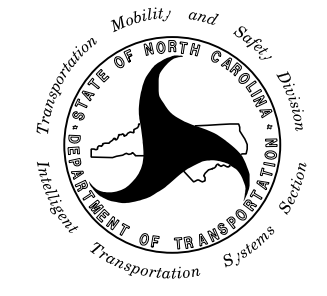
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12/10/2017  
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 bholden

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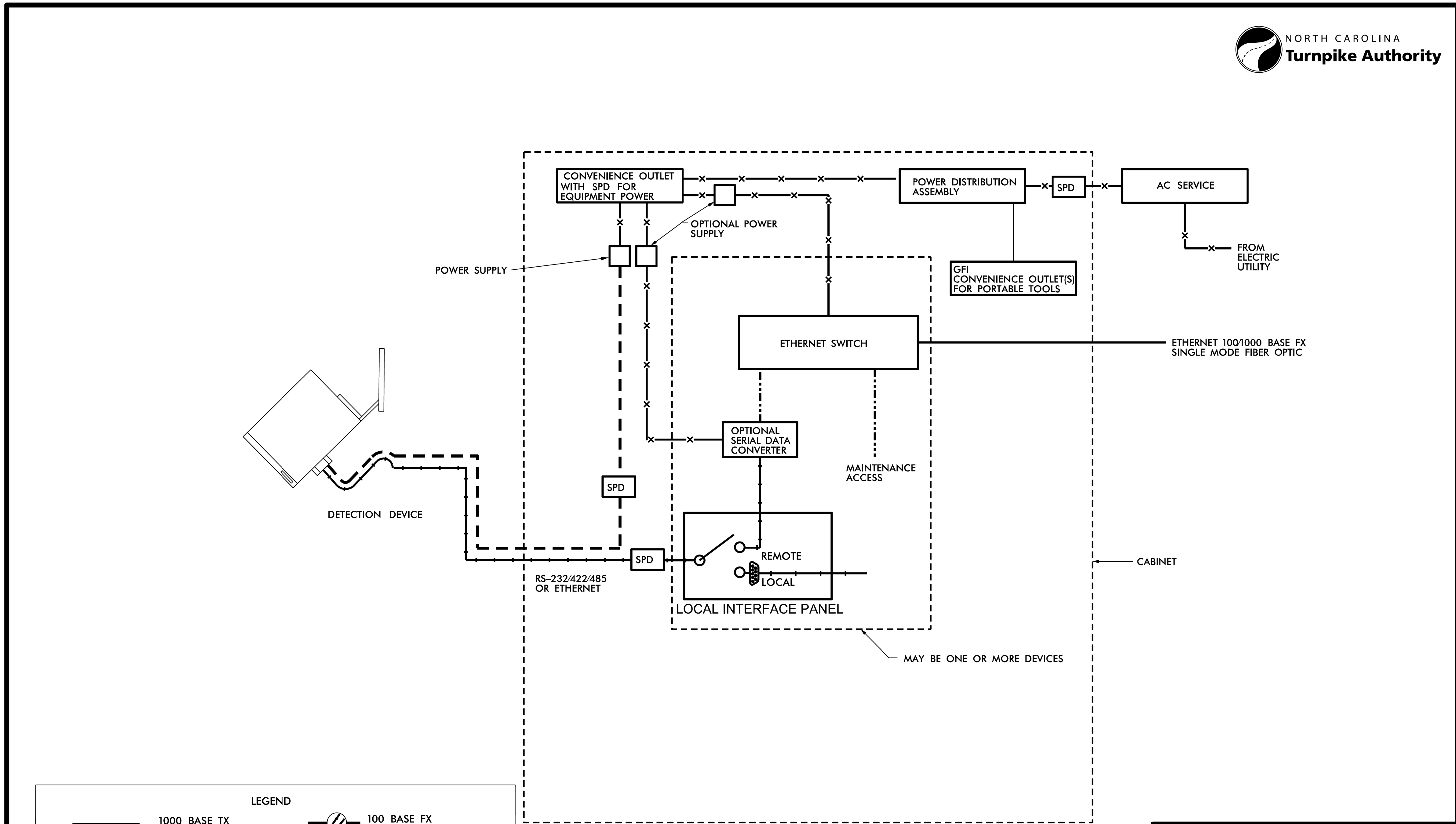
**PLANS PREPARED BY :**  
  
**RUMMEL, KLEPPER & KAHL, LLP**  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:



750 N. Greenfield Place, Garner, NC 27529  
 SCALE  
 N/A

<b>NORTH CAROLINA TURNPIKE AUTHORITY ITS STANDARD DETAIL</b>			
DIVISION 05		WAKE COUNTY	TOWN OF CARY
PLAN DATE:	NOVEMBER 2017	REVIEWED BY:	C.B. HOLDEN
PREPARED BY:	D.T. SEARS	REVIEWED BY:	
REVISIONS	INIT.	DATE	



LEGEND	
	1000 BASE TX ETHERNET
	100 BASE TX ETHERNET
	ANALOG VIDEO
	120 VAC POWER
	LOW VOLTAGE POWER
	100 BASE FX ETHERNET (FIBER)
	1000 BASE FX ETHERNET (FIBER)
	RS-232/422/485
	EXISTING DEVICE
	EXISTING FIBER CABLE

**NOTES**  
 1. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only

**ATKINS** 5200 77 Center Drive, Suite 50  
 Charlotte, North Carolina 28217  
 (704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
 MICROWAVE DETECTION  
 BLOCK DIAGRAM

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. M-1
DATE: August, 2011	DESIGN BY: A. Badgett / D. Jones	APPROVED: A. Lelowski

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**PLANS PREPARED BY :**  
  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
  
 NORTH CAROLINA TURNPIKE AUTHORITY  
 ITS STANDARD DETAIL

DIVISION 05	WAKE COUNTY	TOWN OF CARY
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C.B. HOLDEN	PREPARED BY: D.T. SEARS
REVISIONS	INIT.	DATE

SCALE: N/A

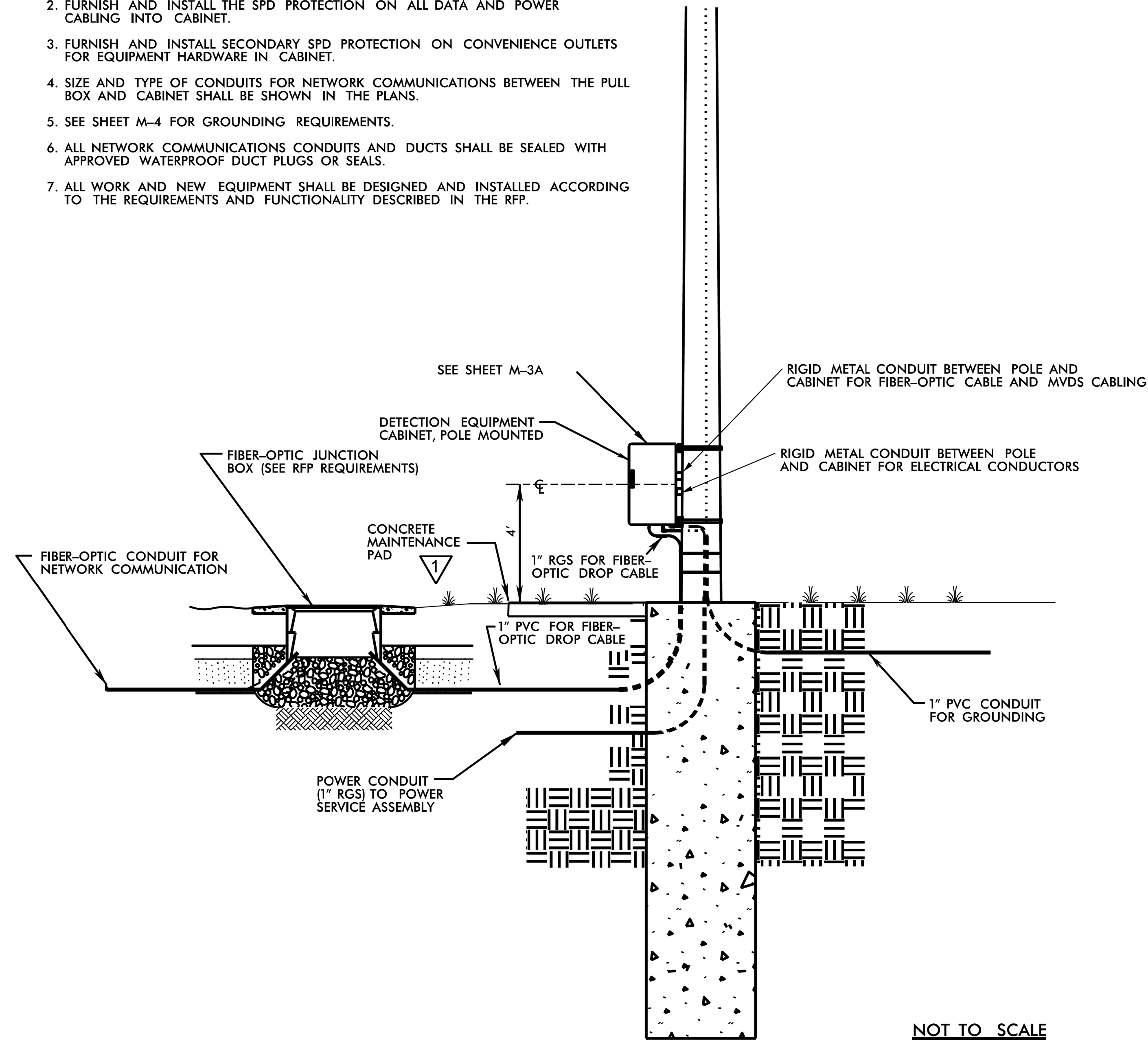
CADD File name: U5315 ITS standard detail.dgn

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**NOTES:**

1. CONTRACTOR SHALL TERMINATE FIBER-OPTIC CABLES IN CABINET WITH PRETERMINATED PATCH PANEL.
2. FURNISH AND INSTALL THE SPD PROTECTION ON ALL DATA AND POWER CABLING INTO CABINET.
3. FURNISH AND INSTALL SECONDARY SPD PROTECTION ON CONVENIENCE OUTLETS FOR EQUIPMENT HARDWARE IN CABINET.
4. SIZE AND TYPE OF CONDUITS FOR NETWORK COMMUNICATIONS BETWEEN THE PULL BOX AND CABINET SHALL BE SHOWN IN THE PLANS.
5. SEE SHEET M-4 FOR GROUNDING REQUIREMENTS.
6. ALL NETWORK COMMUNICATIONS CONDUITS AND DUCTS SHALL BE SEALED WITH APPROVED WATERPROOF DUCT PLUGS OR SEALS.
7. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.



REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content/labeling; drew maint. pad

**ATKINS** 5200 77 Center Drive, Suite 50  
Charlotte, North Carolina 28217  
(704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
MICROWAVE DETECTION  
ELEVATION VIEW

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. M-2
DATE: August, 2011		
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

\$\$\$\$\$SYTIME\$\$\$\$\$  
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dscaors

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**PLANS PREPARED BY :**  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
Department of Transportation  
Division of Transportation Systems  
750 N. Greenfield Pkwy., Garner, NC 27529

SCALE: N/A

**NORTH CAROLINA TURNPIKE AUTHORITY**  
**ITS STANDARD DETAIL**

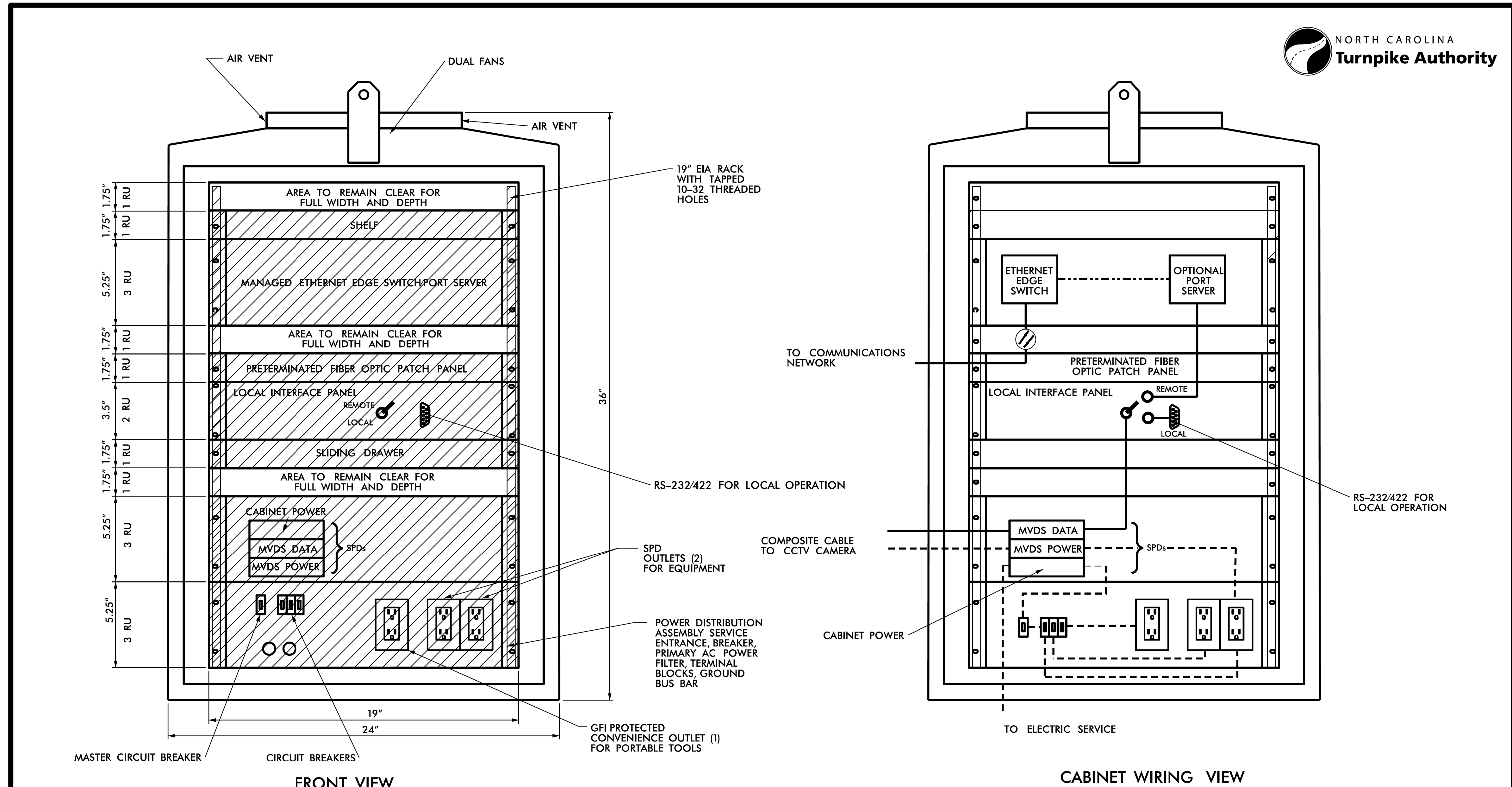
DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

CADD File name: u5315\_its\_standarddetail1.rvt



**NOTES**

1. ALL DIMENSIONS AND SCALE ARE APPROXIMATE.
2. ALL EQUIPMENT RACKS SHALL HAVE A MINIMUM OF ONE RACK UNIT SPACE IN BETWEEN THEM FOR VENTILATION
3. SEE RFP REQUIREMENTS FOR CABINET SIZE AND TYPE.
4. CONDUIT ENTRANCES ARE IN BOTTOM OF CABINET.
5. MINIMUM NUMBER OF OUTLETS IS THREE, (2) SPD AND (1) GFI PROTECTED.
6. SPD SHALL FULLY PROTECT ALL DATA COMMUNICATIONS BETWEEN DETECTOR AND CABINET.
7. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.

**CONNECTION LEGEND**

	100 BASE FX ETHERNET (FIBER)
	100 BASE TX ETHERNET
	ANALOG VIDEO
	ELECTRICAL POWER
	RS-232/422/485

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only

**ATKINS** 5200 77 Center Drive, Suite 50  
Charlotte, North Carolina 28217  
(704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
MICROWAVE DETECTION  
CABINET LAYOUT

SCALE: N.T.S.  
DATE: August, 2011  
DWG. BY: B. Slocum  
DESIGN BY: A. Badgett / D. Jones  
APPROVED: A. Lelowski

NORTH CAROLINA TURNPIKE AUTHORITY  
SHEET NO. **M-3A**

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Prepared for the Offices of:  
**NORTH CAROLINA TURNPIKE AUTHORITY**  
ITS STANDARD DETAIL

DIVISION 05 WAKE COUNTY TOWN OF CARY  
PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN  
PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

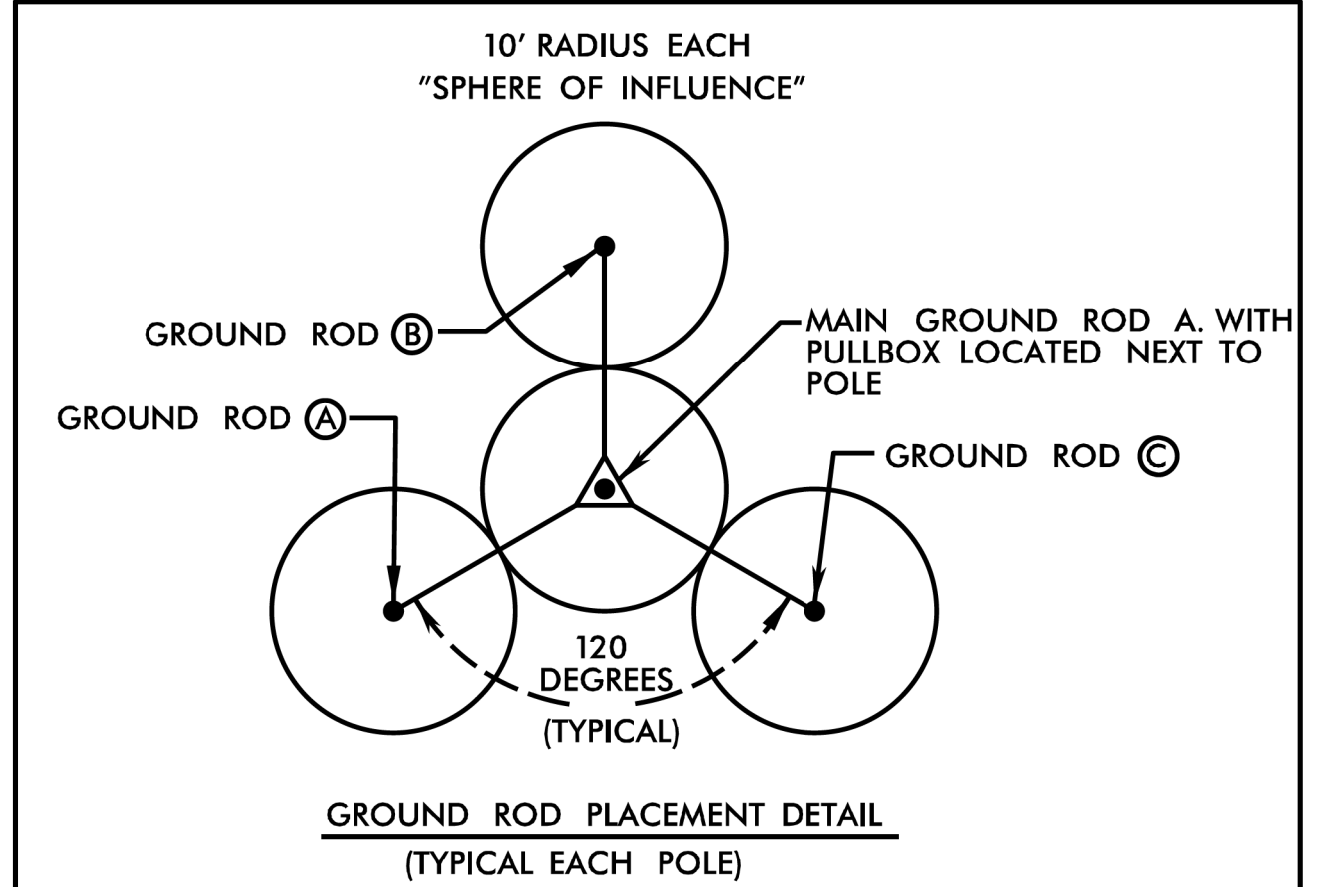
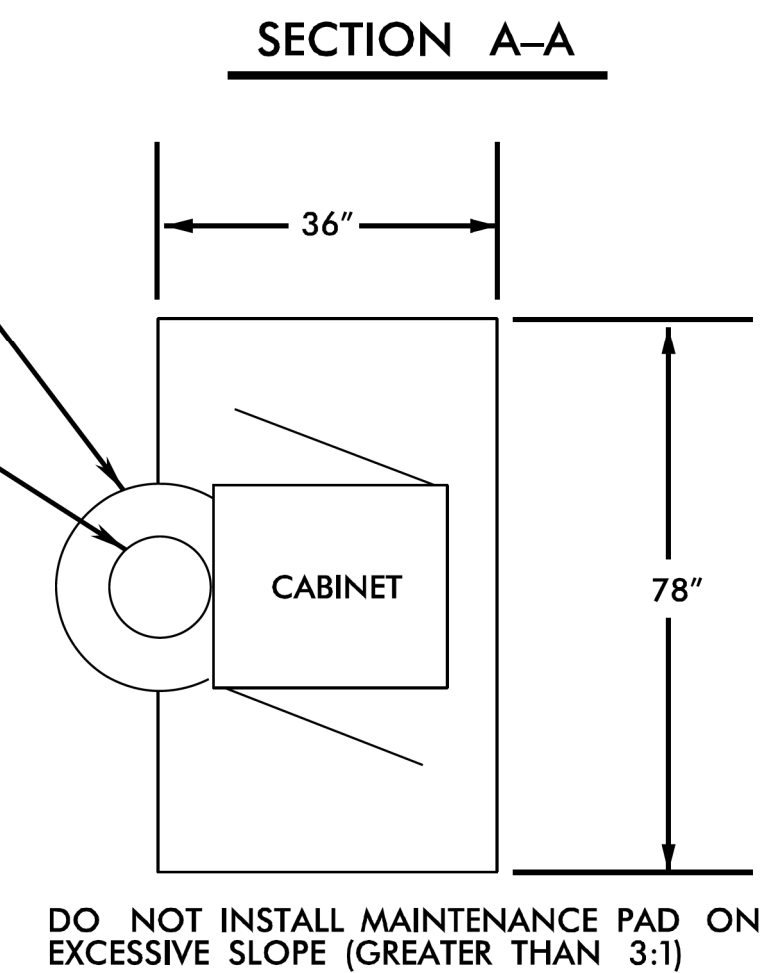
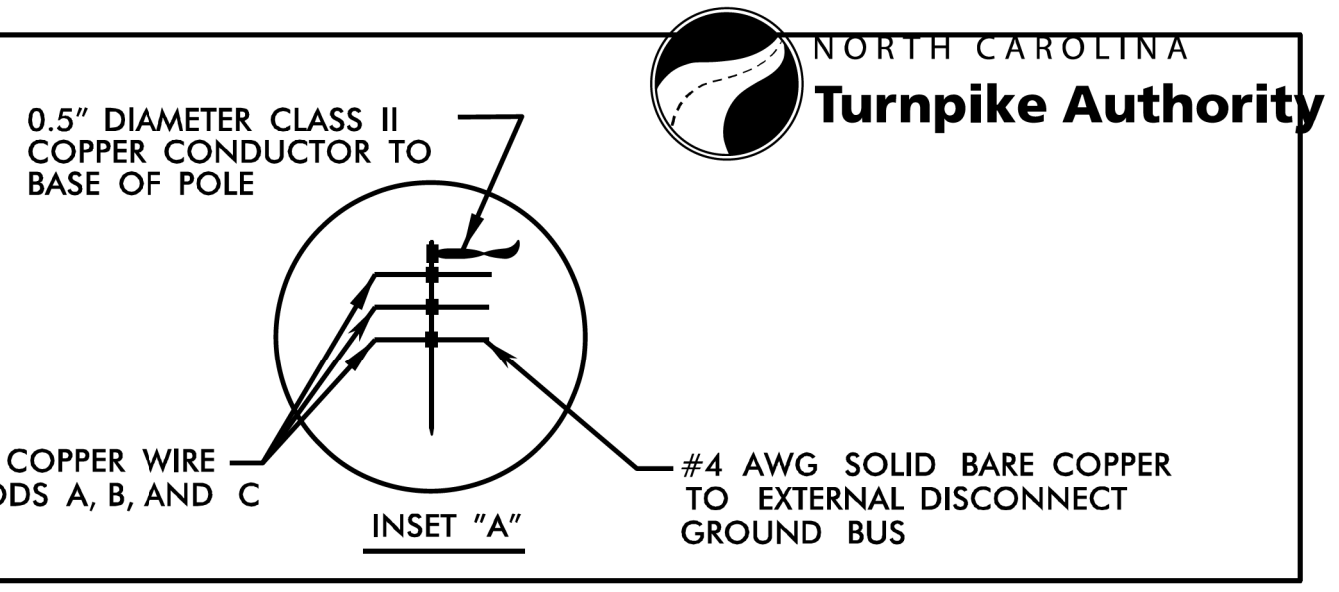
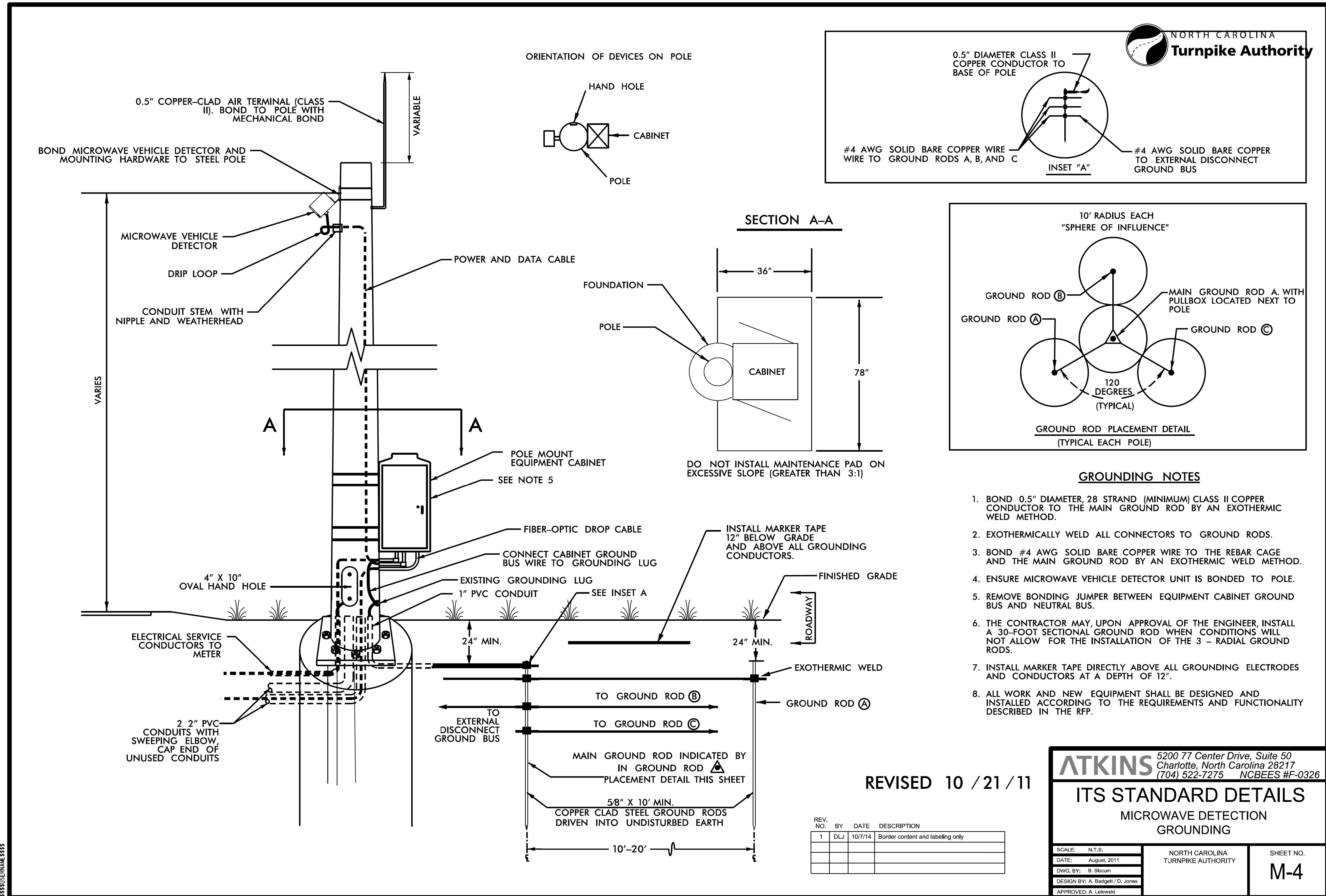
SCALE: N/A

CADD File name: u5315\_its\_standarddetail1.dgn

**PLANS PREPARED BY :**  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
**STATE OF NORTH CAROLINA**  
DEPARTMENT OF TRANSPORTATION  
750 N. Greenfield Place, Garner, NC 27529

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- GROUNDING NOTES**
1. BOND 0.5" DIAMETER, 28 STRAND (MINIMUM) CLASS II COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD.
  2. EXOTHERMICALLY WELD ALL CONNECTORS TO GROUND RODS.
  3. BOND #4 AWG SOLID BARE COPPER WIRE TO THE REBAR CAGE AND THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD.
  4. ENSURE MICROWAVE VEHICLE DETECTOR UNIT IS BONDED TO POLE.
  5. REMOVE BONDING JUMPER BETWEEN EQUIPMENT CABINET GROUND BUS AND NEUTRAL BUS.
  6. THE CONTRACTOR MAY, UPON APPROVAL OF THE ENGINEER, INSTALL A 30-FOOT SECTIONAL GROUND ROD WHEN CONDITIONS WILL NOT ALLOW FOR THE INSTALLATION OF THE 3 - RADIAL GROUND RODS.
  7. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12".
  8. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.

REVISED 10 / 21 / 11

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/27/14	Border content and labeling only

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Charlotte, North Carolina 28217  
(704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
MICROWAVE DETECTION  
GROUNDING

SCALE: N.T.S.  
DATE: August, 2011  
DWG. BY: B. Slocum  
DESIGN BY: A. Badgett / D. Jones  
APPROVED: A. Lelewski

NORTH CAROLINA TURNPIKE AUTHORITY  
SHEET NO. M-4

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PLANS PREPARED BY:  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
**STATE OF NORTH CAROLINA**  
Department of Transportation  
750 N. Greenfield Place, Garner, NC 27529  
SCALE: N/A

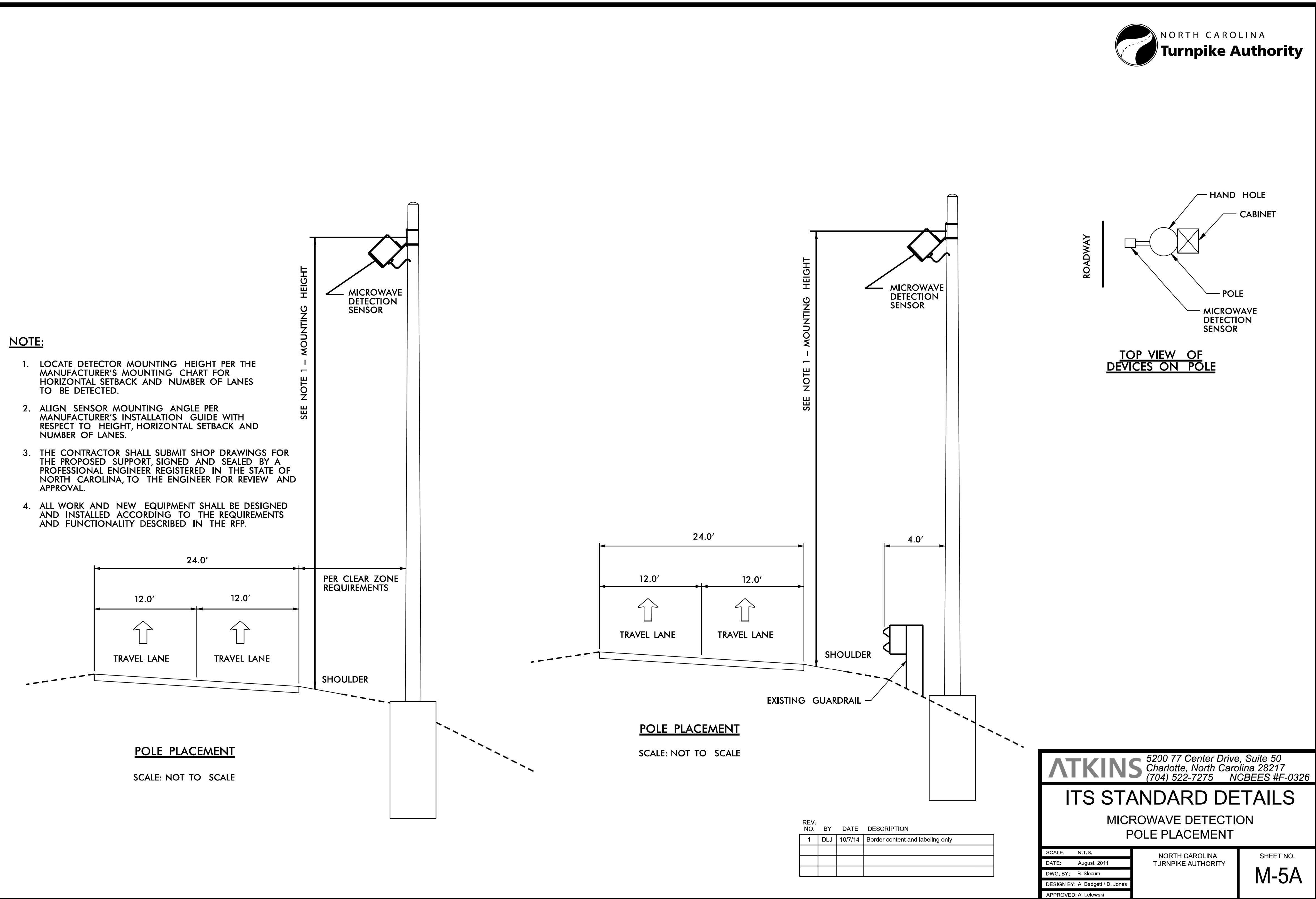
**NORTH CAROLINA TURNPIKE AUTHORITY**  
ITS STANDARD DETAIL

DIVISION 05 WAKE COUNTY TOWN OF CARY  
PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN  
PREPARED BY: D.T. SEARS REVIEWED BY:  
REVISIONS INIT. DATE

CADD File name: u5315\_its\_standarddetail1.sgn

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\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*PLOT\*\*\*\*\*  
\*\*\*\*\*DATE\*\*\*\*\*

11/13/2017  
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REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only

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Charlotte, North Carolina 28217  
(704) 522-7275 NCBEES #F-0326

**ITS STANDARD DETAILS**  
MICROWAVE DETECTION  
POLE PLACEMENT

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. <b>M-5A</b>
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DESIGN BY: A. Badgett / D. Jones  
APPROVED: A. Lelewski

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**PLANS PREPARED BY :**  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
Department of Transportation  
Division of Transportation Services  
750 N. Greenfield Pkwy., Garner, NC 27529  
SCALE: N/A

**NORTH CAROLINA  
TURNPIKE AUTHORITY  
ITS STANDARD DETAIL**

DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

PREPARED BY: D.T. SEARS REVIEWED BY:

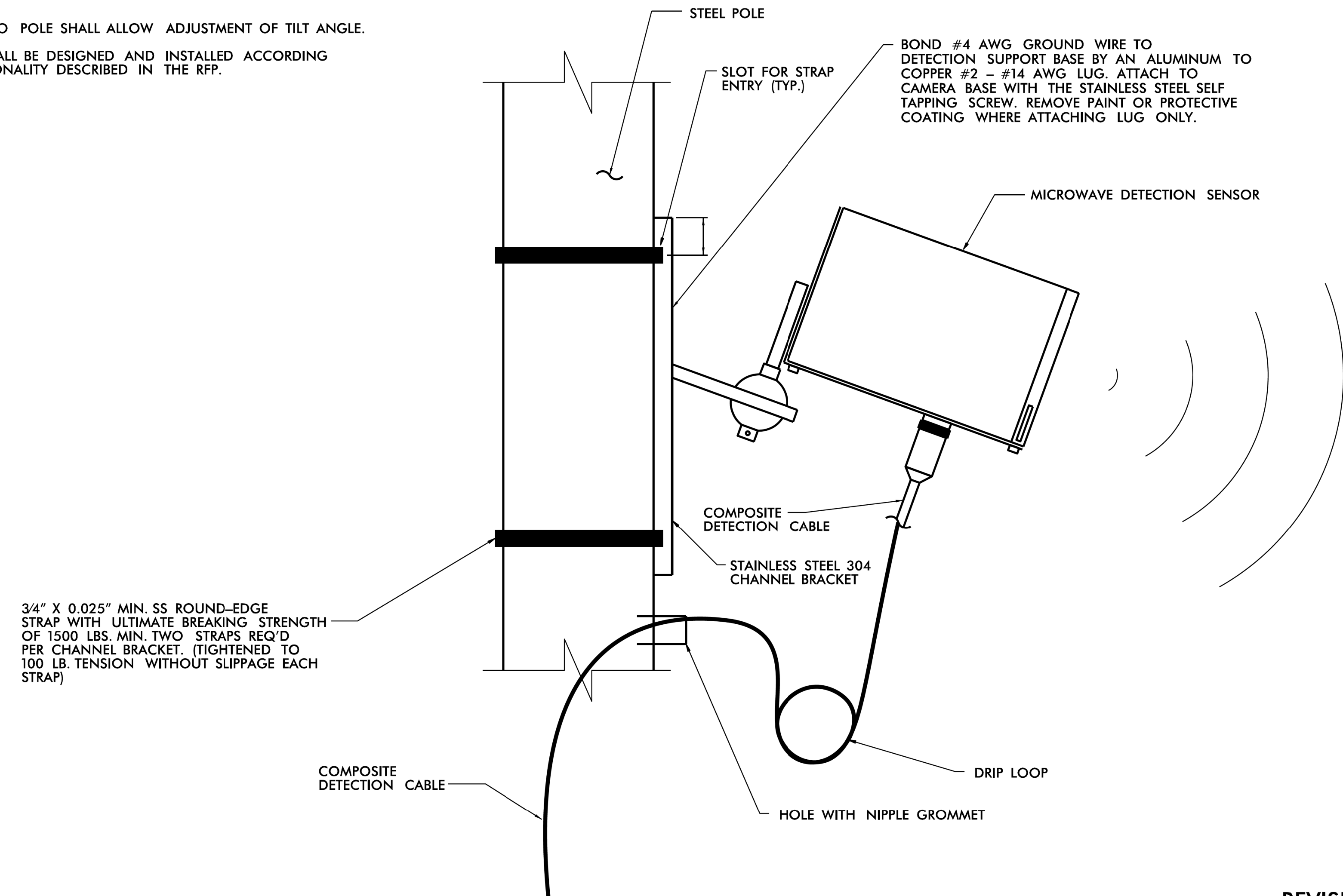
REVISIONS	INIT.	DATE

CADD File name: U5315\_ITS\_standarddetail1.dgn



**NOTES:**

1. NO FIELD WELDING SHALL BE PERMITTED.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PROPOSED SUPPORT, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA, TO THE ENGINEER FOR REVIEW AND APPROVAL.
3. MOUNTING BRACKET CONNECTION TO POLE SHALL ALLOW ADJUSTMENT OF TILT ANGLE.
4. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.



**MICROWAVE DETECTION SENSOR ELEVATION VIEW**

NOT TO SCALE

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only

REVISED 10 /21 /2011

**ATKINS** 5200 77 Center Drive, Suite 50  
Charlotte, North Carolina 28217  
(704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
MICROWAVE DETECTION  
SENSOR MOUNTING

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. <b>M-6</b>
DATE: August, 2011		
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DATE\$\$\$\$\$  
\$\$\$\$\$DRAWING NO. \$\$\$\$\$  
\$\$\$\$\$DESIGNER\$\$\$\$\$

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

**PLANS PREPARED BY :**  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

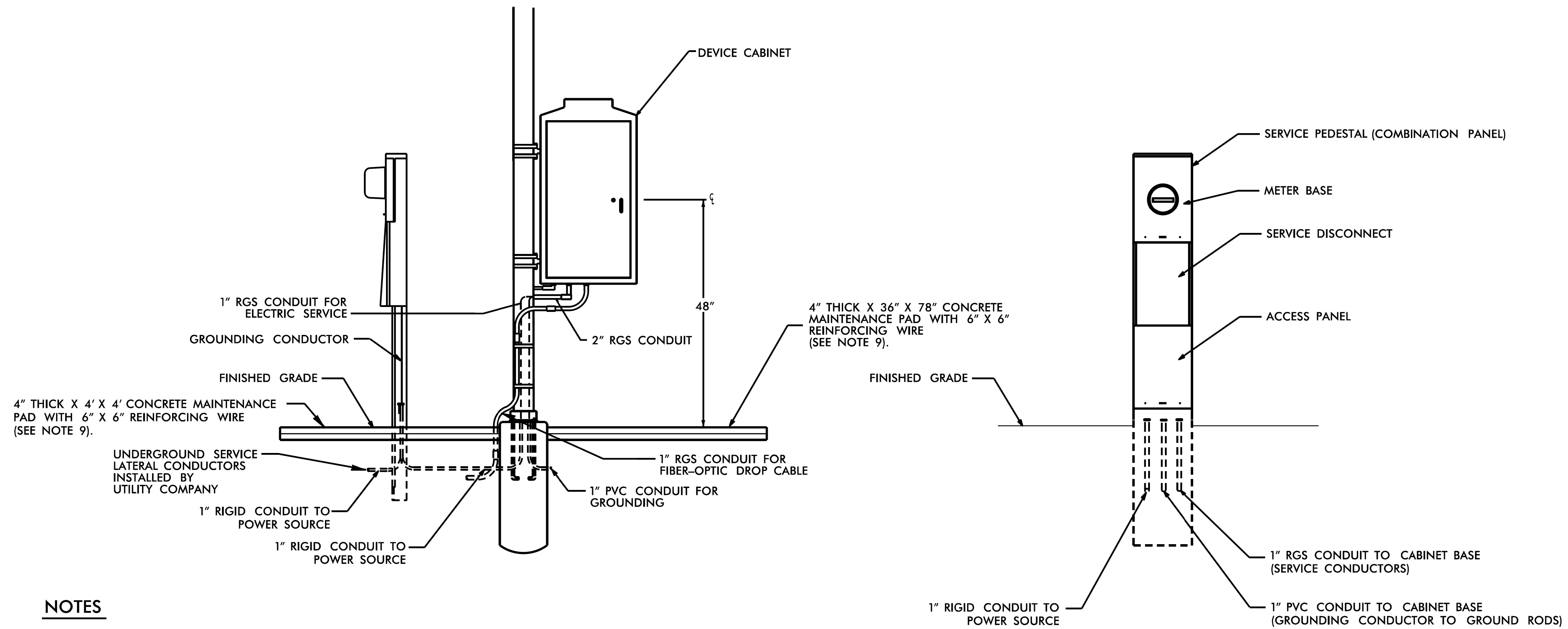
Prepared for the Offices of:  
Department of Transportation  
NORTH CAROLINA  
TURNPIKE AUTHORITY  
750 N. Greenfield Place, Garner, NC 27529  
SCALE: N/A

**NORTH CAROLINA  
TURNPIKE AUTHORITY  
ITS STANDARD DETAIL**

DIVISION 05	WAKE COUNTY	TOWN OF CARY
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C. B. HOLDEN	
PREPARED BY: D. T. SEARS	REVIEWED BY:	



DO NOT INSTALL MAINTENANCE PAD ON EXCESSIVE SLOPE (GREATER THAN 3:1)



**NOTES**

1. TEST GROUNDING SYSTEM USING AN APPROVED METHOD IN ACCORDANCE WITH SPECIAL PROVISIONS. INSTALL GROUND RODS AS DIRECTED BY THE ENGINEER TO MEET THIS REQUIREMENT.
2. REMOVE ANY EXISTING GROUND RODS IN CONCRETE CABINET FOUNDATION BY CUTTING OFF FLUSH WITH FOUNDATION SURFACE.
3. REMOVE BONDING JUMPER IN EQUIPMENT CABINET IF INSTALLED BETWEEN AC NEUTRAL AND EQUIPMENT GROUND.
4. BOND ALL RIGID GALVANIZED STEEL CONDUITS ENTERING THE CABINET TO "EQUIPMENT GROUND".
5. INSTALL RIGID GALVANIZED STEEL CONDUIT (MINIMUM 1") BETWEEN DISCONNECT AND CABINET.
6. SERVICE DISCONNECT GROUND BUS BAR SHALL PROVIDE FOR 2 #4 AWG CONNECTIONS.
7. IF CONDITIONS REQUIRE SERVICE PEDESTAL TO BE INSTALLED IN FRONT OR REAR OF CABINET, MAINTAIN SUFFICIENT CLEARANCE FOR DOOR TO FULLY OPEN.
8. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.
9. CONCRETE PADS FOR SERVICE PEDESTAL AND CABINET SHALL BE COMBINED INTO A SINGLE PAD, IF PEDESTAL IS PRESENT NEXT TO POLE. COMBINATION PANELS NOT ADJACENT TO CABINETS DO NOT REQUIRE A MAINTENANCE PAD.

REVISED 8 / 24 / 11

**ATKINS** 5200 77 Center Drive, Suite 50  
Charlotte, North Carolina 28217  
(704) 522-7275 NCBEEES #F-0326

**ITS STANDARD DETAILS**  
POWER SERVICE DETAIL  
POLE-MOUNTED CABINET

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Meter pad, border content

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. P-2
DATE: August, 2011		
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*SYTIME\*\*\*\*\*

11/13/2017  
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dsccrs

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UNLESS ALL SIGNATURES COMPLETED

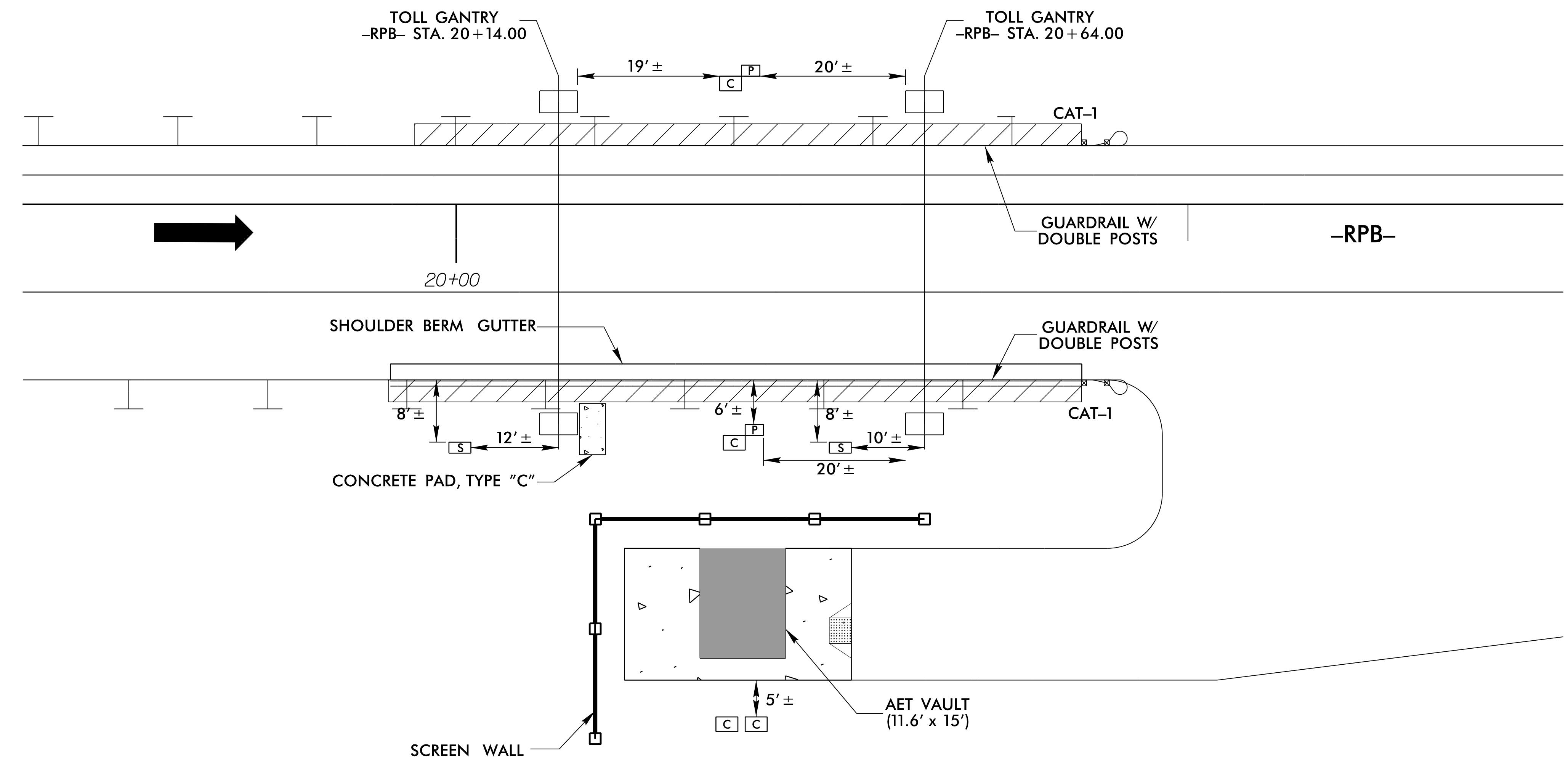
PLANS PREPARED BY:  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
**STATE OF NORTH CAROLINA**  
Department of Transportation  
750 N. Greenfield Place, Garner, NC 27529  
SCALE: N/A

**NORTH CAROLINA TURNPIKE AUTHORITY**  
ITS STANDARD DETAIL

DIVISION 05	WAKE COUNTY	TOWN OF CARY
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C.B. HOLDEN	
PREPARED BY: D.T. SEARS	REVIEWED BY:	
REVISIONS	INIT.	DATE

CADD File name: u5315\_its\_standard-detail1.dgn



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- NOTES:
1. FINAL LOOP SPLICE BOX LOCATIONS TO BE DETERMINED AFTER CONSULTATION WITH TOLL SYSTEMS INTEGRATOR.
  2. ADD CONCRETE APRONS TO BOXES AS SHOWN IN AET-11.

PLANS PREPARED BY :

RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

750 N. Greenfield Pkwy., Garner, NC 27529

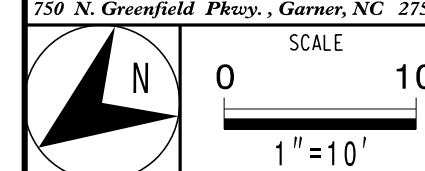
MORRISVILLE PARKWAY TOLL SITE AET T16 CONCRETE PAD AND JUNCTION BOX LOCATION DETAILS	
DIVISION 05	WAKE COUNTY TOWN OF CARY
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C.B. HOLDEN
PREPARED BY: L.A. TUTT	REVIEWED BY:
REVISIONS	INIT. DATE

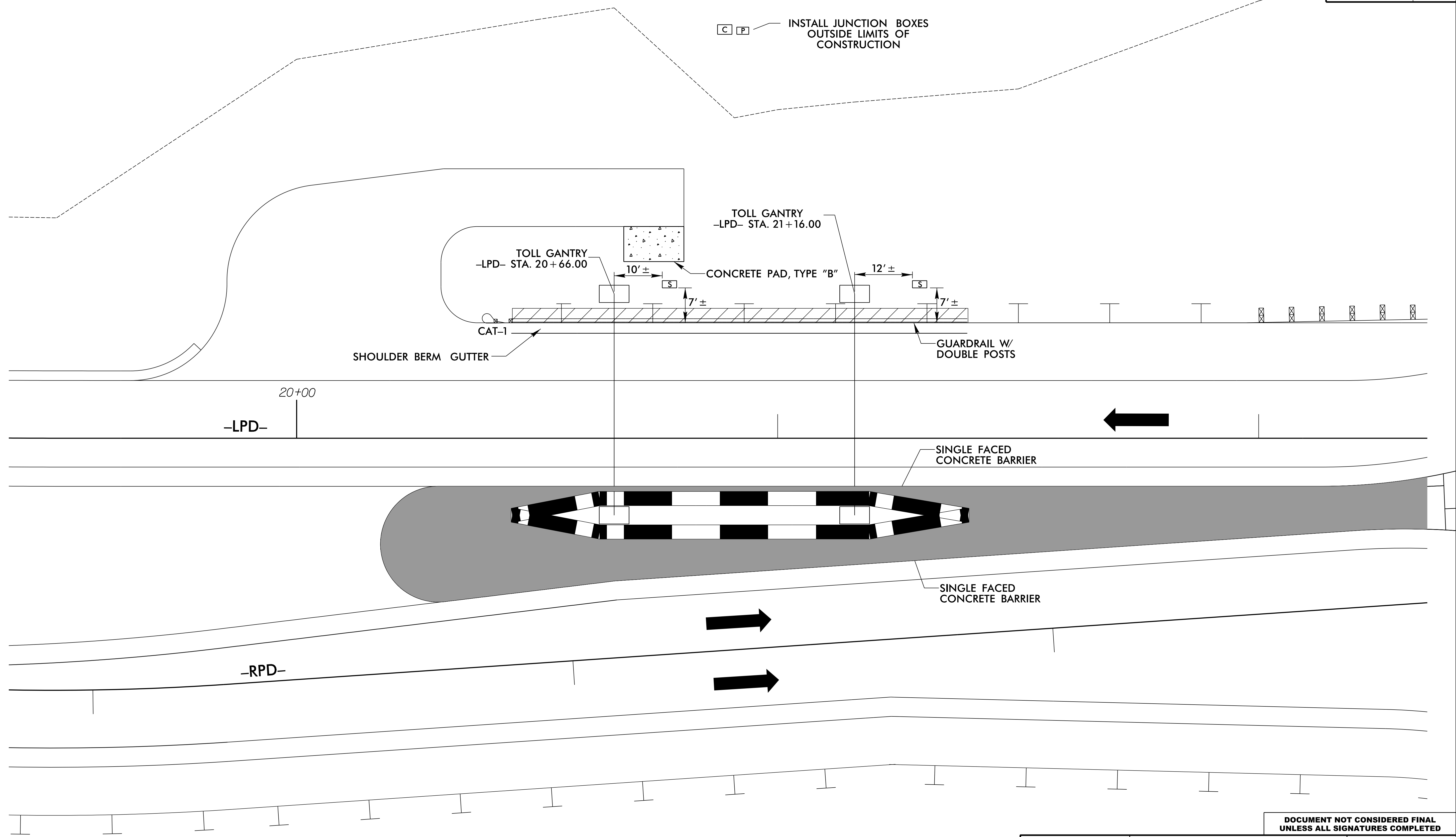
SEAL

SEAL  
033753  
ENGINEER  
C. BYRON HOLDEN

Signature: C. Byron Holden  
Date: 11/13/2017

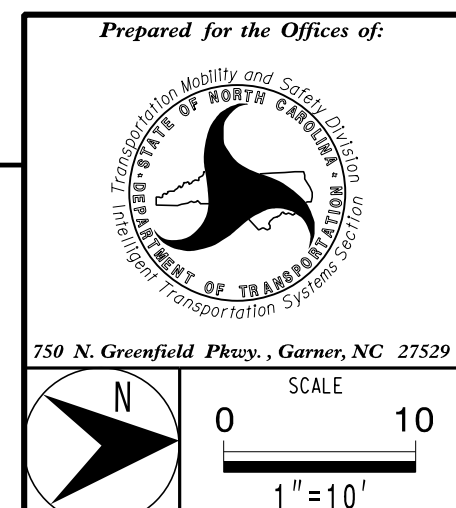
CADD Filename: U5315\_ITS\_PSH03A.dgn





NOTES:  
 1. FINAL LOOP SPLICE BOX LOCATIONS TO BE DETERMINED AFTER CONSULTATION WITH TOLL SYSTEMS INTEGRATOR.  
 2. ADD CONCRETE APRONS TO BOXES AS SHOWN IN AET-1J.

PLANS PREPARED BY:  
**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27409-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560



MORRISVILLE PARKWAY  
 TOLL SITE AET T15  
 CONCRETE PAD AND JUNCTION  
 BOX LOCATION DETAILS  
 DIVISION 05 WAKE COUNTY TOWN OF CARY  
 PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN  
 PREPARED BY: L.A. TUTT REVIEWED BY:  
 REVISIONS INIT. DATE  
 SIGNATURE DATE

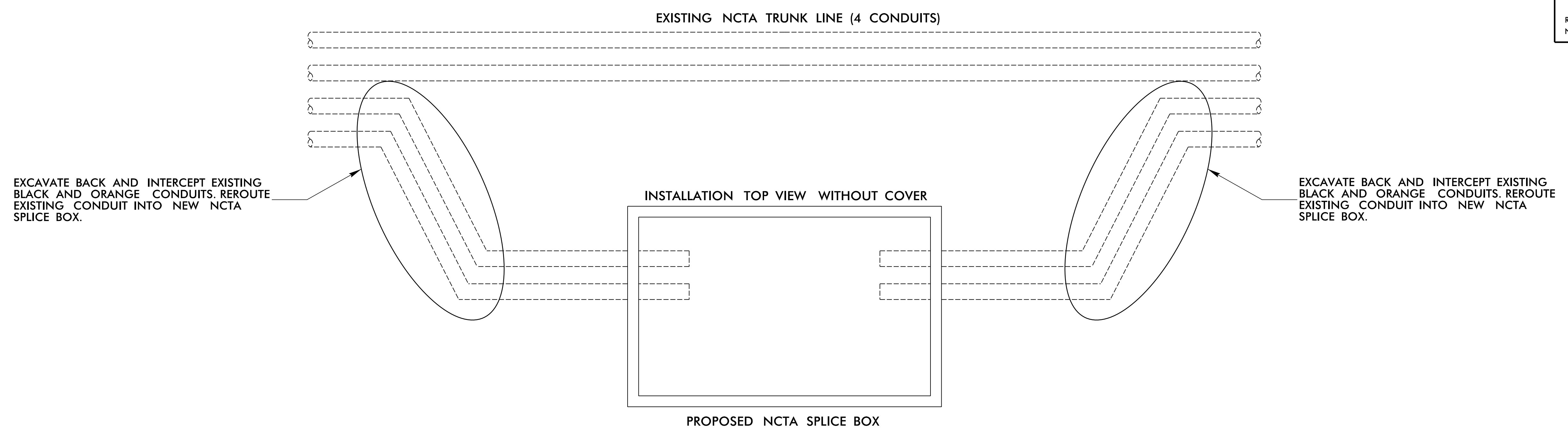
SEAL  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 033753  
 ENGINEER  
 C. BYRON HOLDEN  
 11/13/2017  
 CADD File Name: U5315 ITS\_PSH03B.dgn

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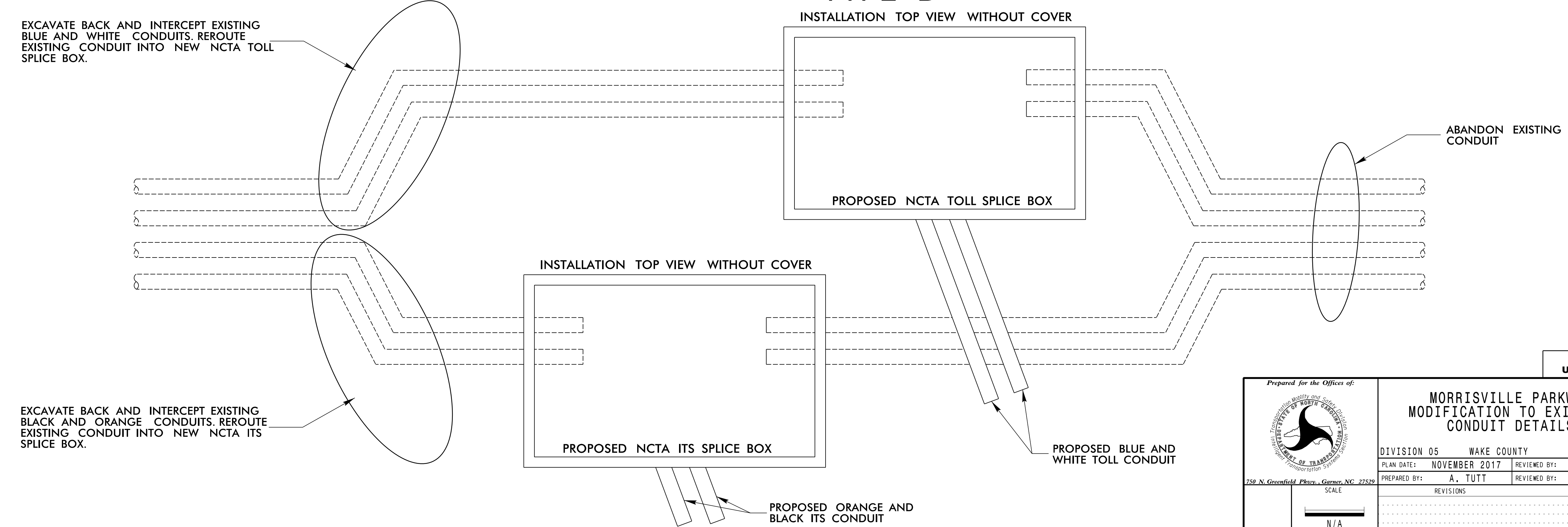
# MODIFICATION TO EXISTING CONDUIT SYSTEM TYPE A

PROJECT REFERENCE NO.	SHEET NO.
U-5315 A&B	ITS-3C

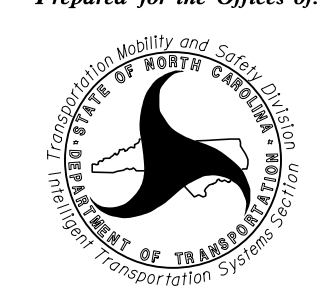
**PLANS PREPARED BY :**  
  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560



# MODIFICATION TO EXISTING CONDUIT SYSTEM TYPE B

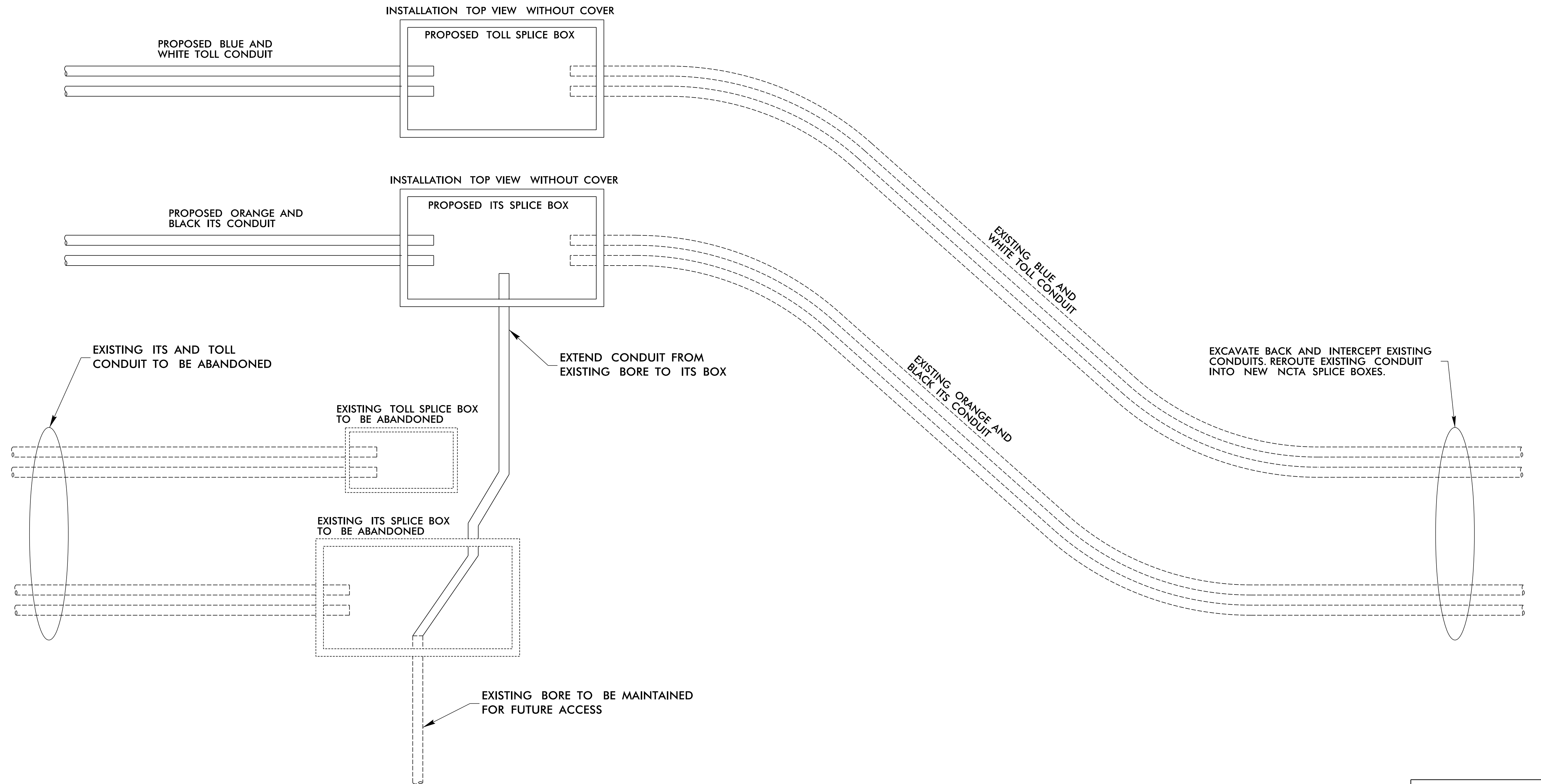


**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

 Prepared for the Offices of: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Division of Transportation Systems Preparation 730 N. Greenfield Pkwy., Garner, NC 27529	<b>MORRISVILLE PARKWAY MODIFICATION TO EXISTING CONDUIT DETAILS</b>		SEAL NORTH CAROLINA PROFESSIONAL SEAL 033753 ENGINEER C. BYRON HOLDEN
	DIVISION 05 WAKE COUNTY TOWN OF CARY PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN PREPARED BY: A. TUTT REVIEWED BY:	REVISIONS _____ _____ _____	INIT. DATE _____ _____ _____
SIGNATURE _____		DATE 11/13/2017	CADD File name: u5315 ITS_splicedetails.dgn

11/13/2017  
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 dseor's

# MODIFICATION TO EXISTING CONDUIT SYSTEM TYPE C



**NOTES:**  
 CONTRACTOR TO COORDINATE MODIFICATION TO EXISTING CONDUIT SYSTEM WITH THE GRADING OPERATION TO ENSURE NO DAMAGE TO THE EXISTING FIBER OPTIC TRUNK LINE. SEE TRANSPORTATION MANAGEMENT PLAN FOR CONSTRUCTION PHASING.

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12/10/2017  
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 bho/len

**PLANS PREPARED BY :**

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 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

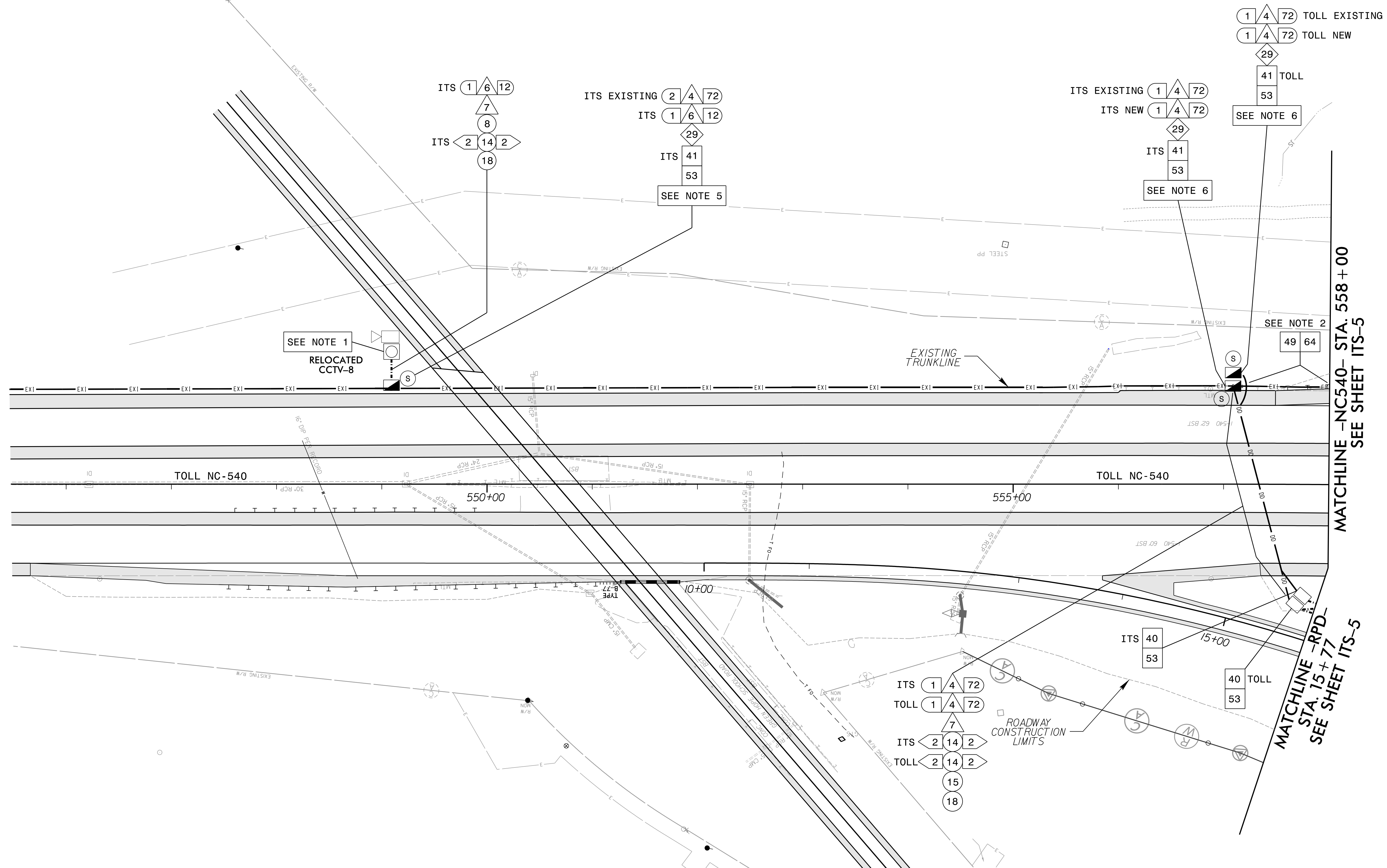
Prepared for the Offices of:

730 N. Greenfield Pkwy., Garner, NC 27529  
 SCALE: N/A

<b>MORRISVILLE PARKWAY MODIFICATION TO EXISTING CONDUIT DETAILS</b>	
DIVISION 05	WAKE COUNTY
TOWN OF CARY	TOWN OF CARY
PLAN DATE: DECEMBER 2017	REVIEWED BY: C.B. HOLDEN
PREPARED BY: A. TUTT	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL

C. Byron Holden  
 12/10/2017  
 DATE

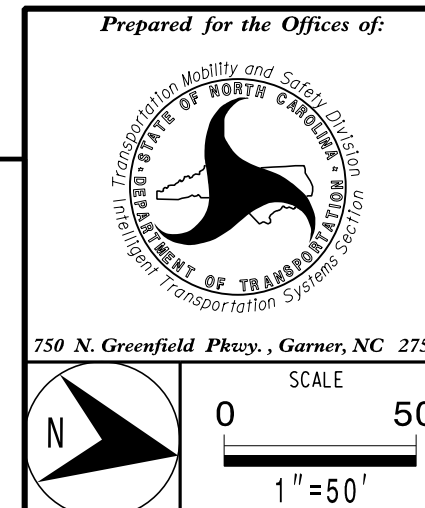


NOTES:

1. RELOCATE AND RE-USE CCTV-8 METAL POLE, COMMUNICATIONS EQUIPMENT, AND CAMERA ASSEMBLY. SEE SHEET ITS-5 FOR EXISTING CCTV-8 LOCATION. RELOCATE EXISTING ELECTRICAL SERVICE FOR NEW CCTV-8 LOCATION. SPLICE INTO EXISTING ITS 72-FIBER TRUNKLINE WITHOUT DISTURBING UNUSED BUFFER TUBES (SEE ITS-9 FOR DETAILS).
2. ABANDON EXISTING CONDUIT IN PLACE.
3. ONE BLUE CONDUIT AND ONE WHITE CONDUIT SHALL BE USED FOR ALL TOLL DEVICES.
4. ONE BLACK CONDUIT AND ONE ORANGE CONDUIT SHALL BE USED FOR ALL ITS TECHNOLOGY DEVICES.
5. SEE SHEET ITS-3C (TYPE A) FOR MODIFICATION TO EXISTING CONDUIT SYSTEM DETAILS.
6. SEE SHEET ITS-3C (TYPE B) FOR MODIFICATION TO EXISTING CONDUIT SYSTEM DETAILS.
7. CONTRACTOR TO REFERENCE SIGNING AND LIGHTING PLANS FOR PROPOSED SIGN AND LIGHT LOCATIONS PRIOR TO CONDUIT INSTALLATION.

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PLANS PREPARED BY:  
**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560



<b>MORRISVILLE PARKWAY          ITS/COMMUNICATION CABLE          AND CONDUIT ROUTING</b>	
DIVISION 05	WAKE COUNTY
TOWN OF CARY	
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C.B. HOLDEN
PREPARED BY: D.T. SEARS	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 C. BYRON HOLDEN  
 License No. 033753  
 11/13/2017  
 SIGNATURE DATE  
 CADD Filename: U5315\_ITS\_psh04.dgn

MATCHLINE - NC540 - STA. 558 + 00  
SEE SHEET ITS-5

MATCHLINE - RPD -  
STA. 15 + 77  
SEE SHEET ITS-5

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ITS 1 4 72 TOLL NEW

ITS EXISTING 1 4 72  
ITS NEW 1 4 72

ITS EXISTING 2 4 72  
ITS 1 6 12

ITS 1 6 12  
ITS 2 14 2

ITS 41  
53  
SEE NOTE 6

ITS 41  
53  
SEE NOTE 5

SEE NOTE 1  
RELOCATED  
CCTV-8

SEE NOTE 2  
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EXISTING  
TRUNKLINE

TOLL NC-540

TOLL NC-540

550+00

555+00

560+00

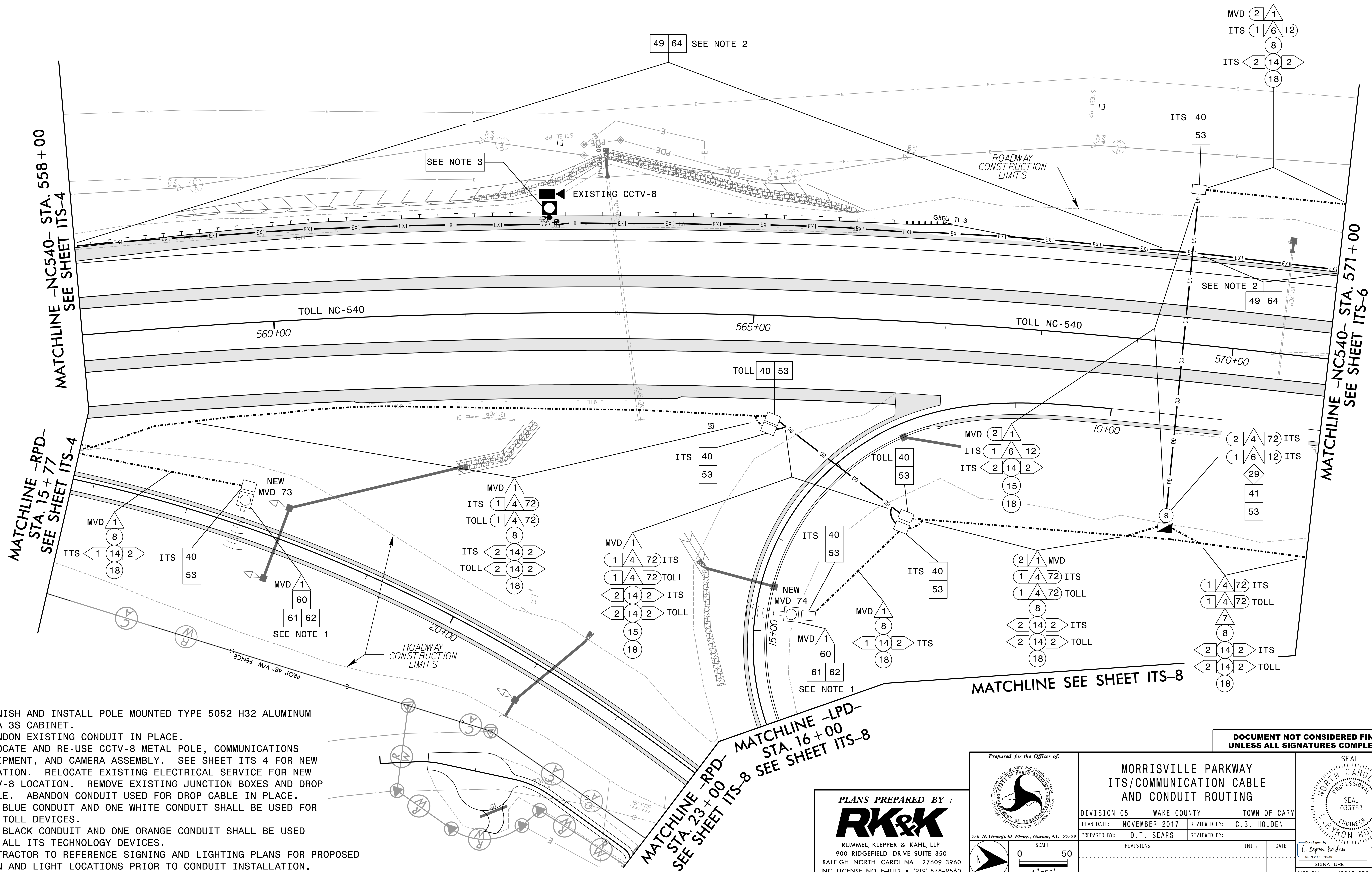
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TOLL 2 14 2  
15  
18

ROADWAY  
CONSTRUCTION  
LIMITS





- NOTES:**
1. FURNISH AND INSTALL POLE-MOUNTED TYPE 5052-H32 ALUMINUM NEMA 3S CABINET.
  2. ABANDON EXISTING CONDUIT IN PLACE.
  3. RELOCATE AND RE-USE CCTV-8 METAL POLE, COMMUNICATIONS EQUIPMENT, AND CAMERA ASSEMBLY. SEE SHEET ITS-4 FOR NEW LOCATION. RELOCATE EXISTING ELECTRICAL SERVICE FOR NEW CCTV-8 LOCATION. REMOVE EXISTING JUNCTION BOXES AND DROP CABLE. ABANDON CONDUIT USED FOR DROP CABLE IN PLACE.
  4. ONE BLUE CONDUIT AND ONE WHITE CONDUIT SHALL BE USED FOR ALL TOLL DEVICES.
  5. ONE BLACK CONDUIT AND ONE ORANGE CONDUIT SHALL BE USED FOR ALL ITS TECHNOLOGY DEVICES.
  6. CONTRACTOR TO REFERENCE SIGNING AND LIGHTING PLANS FOR PROPOSED SIGN AND LIGHT LOCATIONS PRIOR TO CONDUIT INSTALLATION.

MATCHLINE -RPD- STA. 15+77 SEE SHEET ITS-4

MATCHLINE -NC540- STA. 558+00 SEE SHEET ITS-4

MATCHLINE -RPD- STA. 23+00 SEE SHEET ITS-8

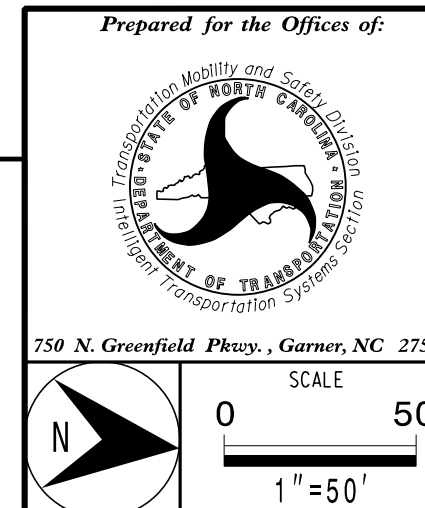
MATCHLINE -LPD- STA. 16+00 SEE SHEET ITS-8

MATCHLINE -NC540- STA. 571+00 SEE SHEET ITS-6

PLANS PREPARED BY:

**RK&K**

RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560



**MORRISVILLE PARKWAY  
ITS/COMMUNICATION CABLE  
AND CONDUIT ROUTING**

DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

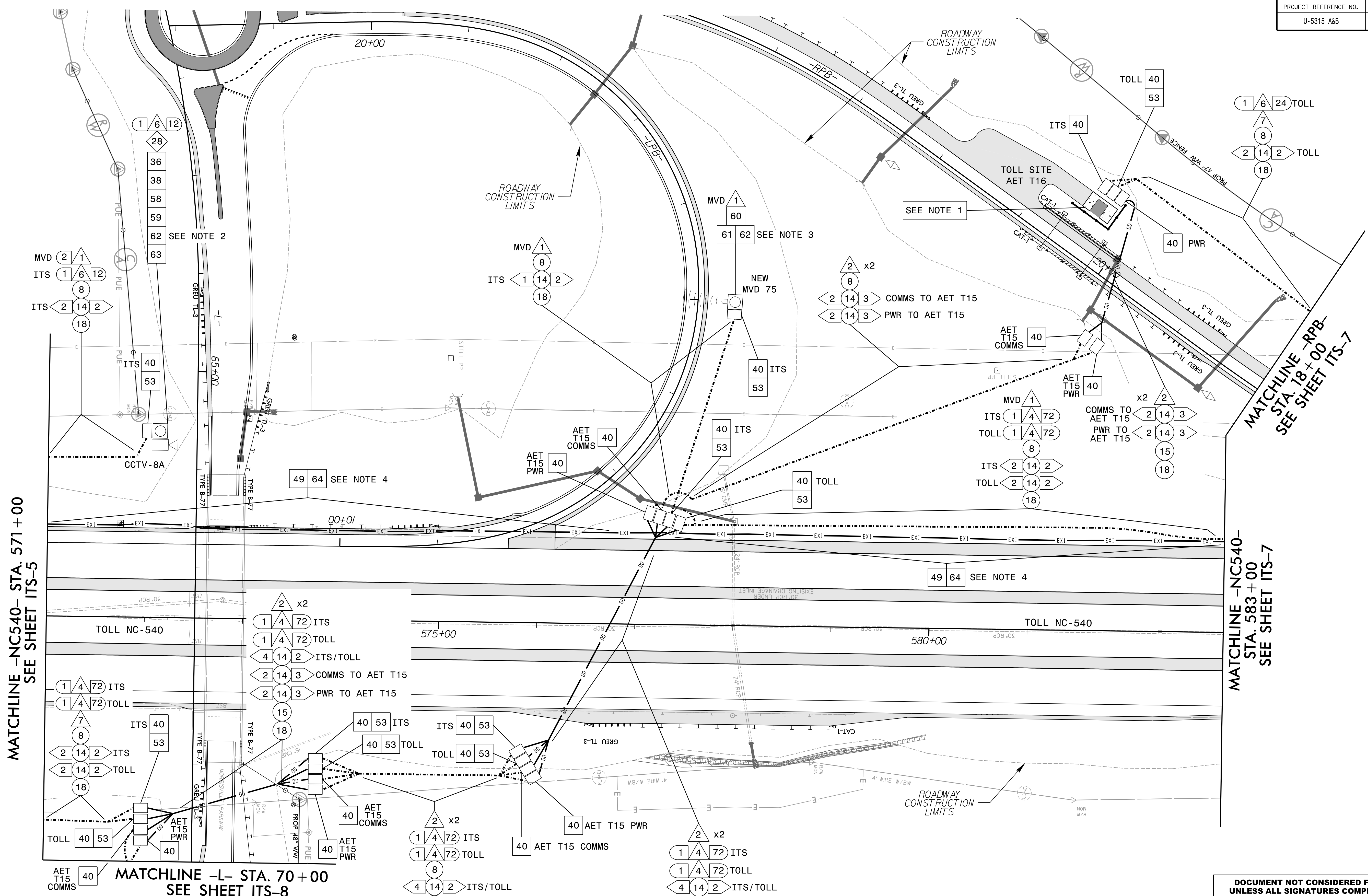
PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

SIGNATURE: *C. Byron Holden* DATE: 11/13/2017

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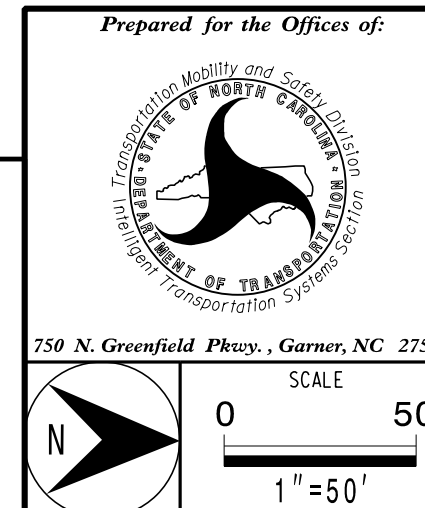
**DOCUMENT NOT CONSIDERED FINAL  
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NOTES:

1. SEE SHEET ITS-3A FOR AET T16 CONCRETE PAD AND JUNCTION BOX DETAILS.
2. FURNISH AND INSTALL POLE MOUNTED TYPE 336 CABINET
3. FURNISH AND INSTALL POLE-MOUNTED TYPE 5052-H32 ALUMINUM NEMA 3S CABINET.
4. ABANDON EXISTING CONDUIT IN PLACE.
5. ONE BLUE CONDUIT AND ONE WHITE CONDUIT SHALL BE USED FOR ALL TOLL DEVICES.
6. ONE BLACK CONDUIT AND ONE ORANGE CONDUIT SHALL BE USED FOR ALL ITS TECHNOLOGY DEVICES.
7. CONTRACTOR TO REFERENCE SIGNING AND LIGHTING PLANS FOR PROPOSED SIGN AND LIGHT LOCATIONS PRIOR TO CONDUIT INSTALLATION.

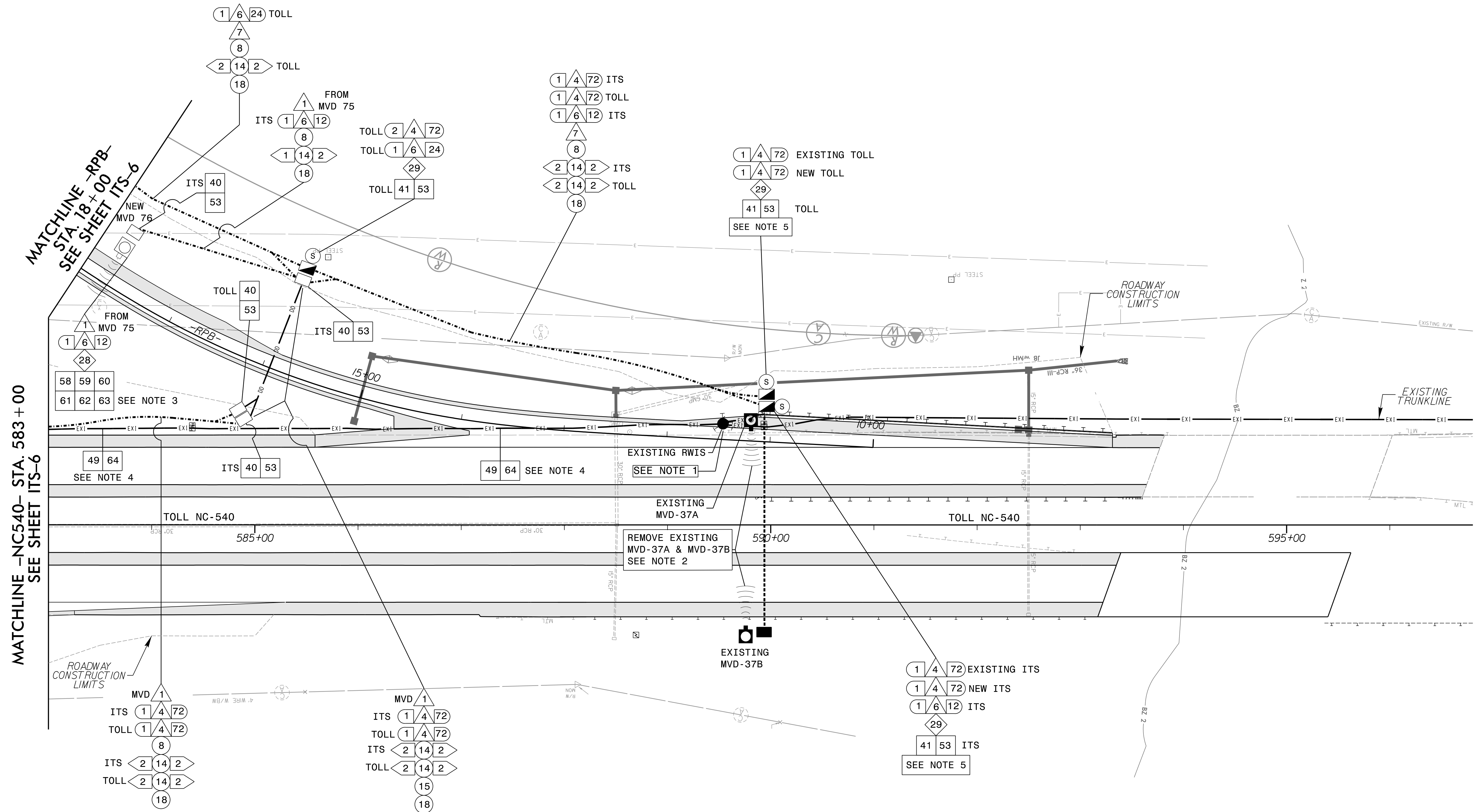
PLANS PREPARED BY:  
**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560



<b>MORRISVILLE PARKWAY          ITS/COMMUNICATION CABLE          AND CONDUIT ROUTING</b>	
DIVISION 05	WAKE COUNTY
PLAN DATE: DECEMBER 2017	REVIEWED BY: C.B. HOLDEN
PREPARED BY: D.T. SEARS	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 033753  
 C. BYRON HOLDEN  
 12/10/2017  
 DATE  
 CADD Filename: U5315 ITS\_psh06.dgn

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- NOTES:**
1. REMOVE AND DISPOSE OF EXISTING RWIS ASSEMBLY, METAL POLE, COMMUNICATIONS EQUIPMENT, EQUIPMENT CABINET, AND ELECTRICAL SERVICE. REMOVE EXISTING JUNCTION BOXES AND DROP CABLE. ABANDON EXISTING CONDUIT USED FOR DROP CABLE IN PLACE.
  2. CONTRACTOR SHALL DELIVER MVD SENSOR, POLE, AND CABINET TO SITE DESIGNATED BY NCTA FOR STORAGE. THE METAL POLE FOUNDATION FOR MVD-37B ONLY, MAY REMAIN IN PLACE.
  3. FURNISH AND INSTALL POLE-MOUNTED TYPE 336 CABINET.
  4. ABANDON EXISTING CONDUIT IN PLACE.
  5. INTERCEPT EXISTING ITS TRUNKLINE AND SPLICE TO NEW 72-FIBER ITS TRUNKLINE. INTERCEPT EXISTING TOLL TRUNKLINE AND SPLICE TO NEW 72-FIBER TOLL TRUNKLINE. SEE SHEET ITS-3D FOR DETAILS.
  6. ONE BLUE CONDUIT AND ONE WHITE CONDUIT SHALL BE USED FOR ALL TOLL DEVICES.
  7. ONE BLACK CONDUIT AND ONE ORANGE CONDUIT SHALL BE USED FOR ALL ITS TECHNOLOGY DEVICES.
  8. CONTRACTOR TO REFERENCE SIGNING AND LIGHTING PLANS FOR PROPOSED SIGN AND LIGHT LOCATIONS PRIOR TO CONDUIT INSTALLATION.

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UNLESS ALL SIGNATURES COMPLETED**

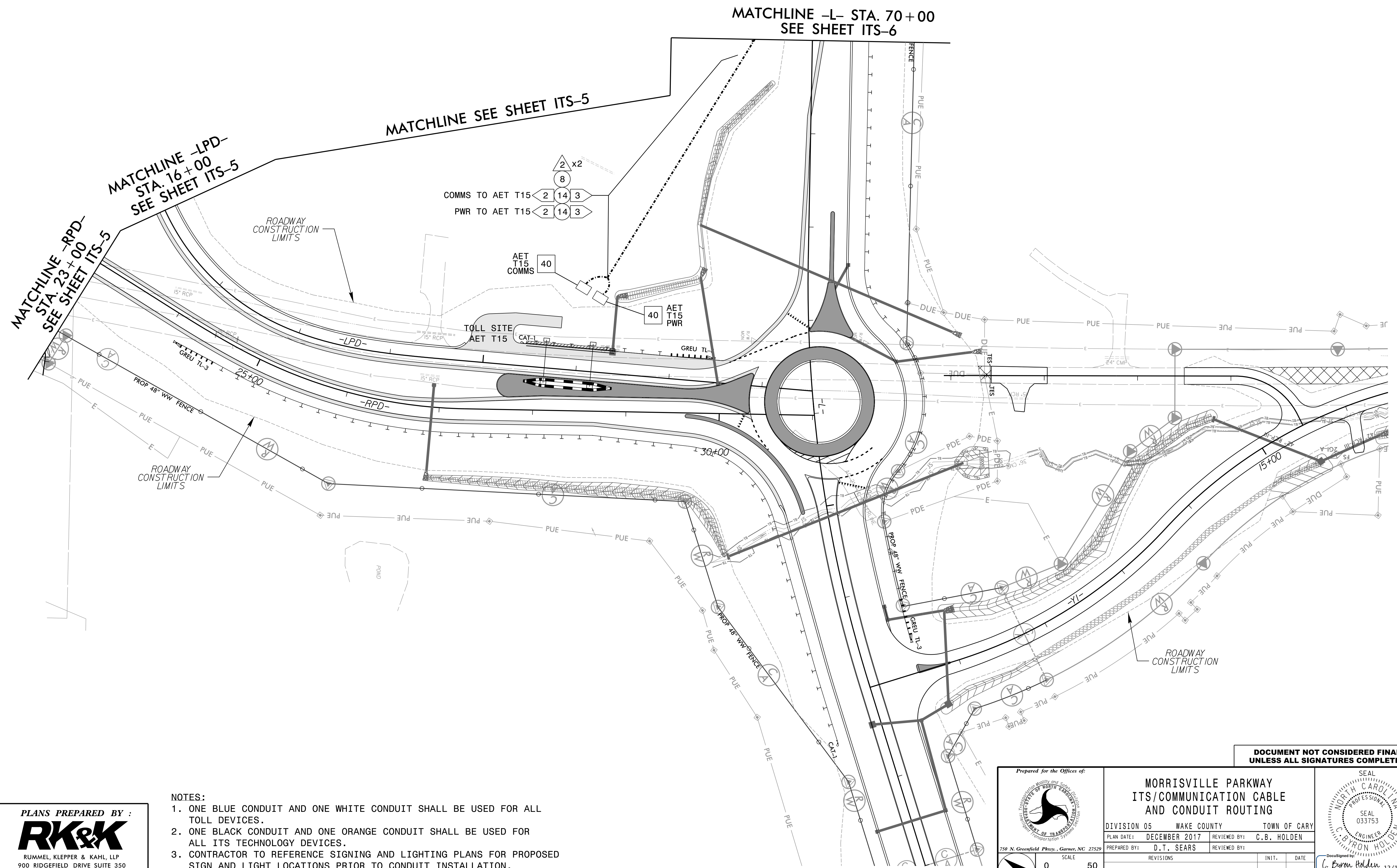
**PLANS PREPARED BY :**  
  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
  
 750 N. Greenfield Pkwy., Garner, NC 27529  
 SCALE  
 0 50  
 1"=50'

**MORRISVILLE PARKWAY  
ITS/COMMUNICATION CABLE  
AND CONDUIT ROUTING**

DIVISION 05 WAKE COUNTY TOWN OF CARY  
 PLAN DATE: DECEMBER 2017 REVIEWED BY: C.B. HOLDEN  
 PREPARED BY: D.T. SEARS REVIEWED BY:  
 REVISIONS INIT. DATE

SEAL  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 C. BYRON HOLDEN  
 033753  
 12/10/2017  
 CADD File name: U5315\_ITS\_psh07.dgn



PLANS PREPARED BY :  
**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

- NOTES:
- ONE BLUE CONDUIT AND ONE WHITE CONDUIT SHALL BE USED FOR ALL TOLL DEVICES.
  - ONE BLACK CONDUIT AND ONE ORANGE CONDUIT SHALL BE USED FOR ALL ITS TECHNOLOGY DEVICES.
  - CONTRACTOR TO REFERENCE SIGNING AND LIGHTING PLANS FOR PROPOSED SIGN AND LIGHT LOCATIONS PRIOR TO CONDUIT INSTALLATION.

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

Prepared for the Offices of:  
  
 750 N. Greenfield Pkwy., Garner, NC 27529  
 SCALE 1"=50'

<b>MORRISVILLE PARKWAY ITS/COMMUNICATION CABLE AND CONDUIT ROUTING</b>	
DIVISION 05	WAKE COUNTY
PLAN DATE: DECEMBER 2017	REVIEWED BY: C.B. HOLDEN
PREPARED BY: D.T. SEARS	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 C. BYRON HOLDEN  
 033753  
 C. Byron Holden 12/10/2017  
 DATE  
 CADD Filename: U5315\_ITS\_psh08.dgn

# FIBER OPTIC CABLE

ITS SPLICE ENCLOSURE  
RELOCATED CCTV-8

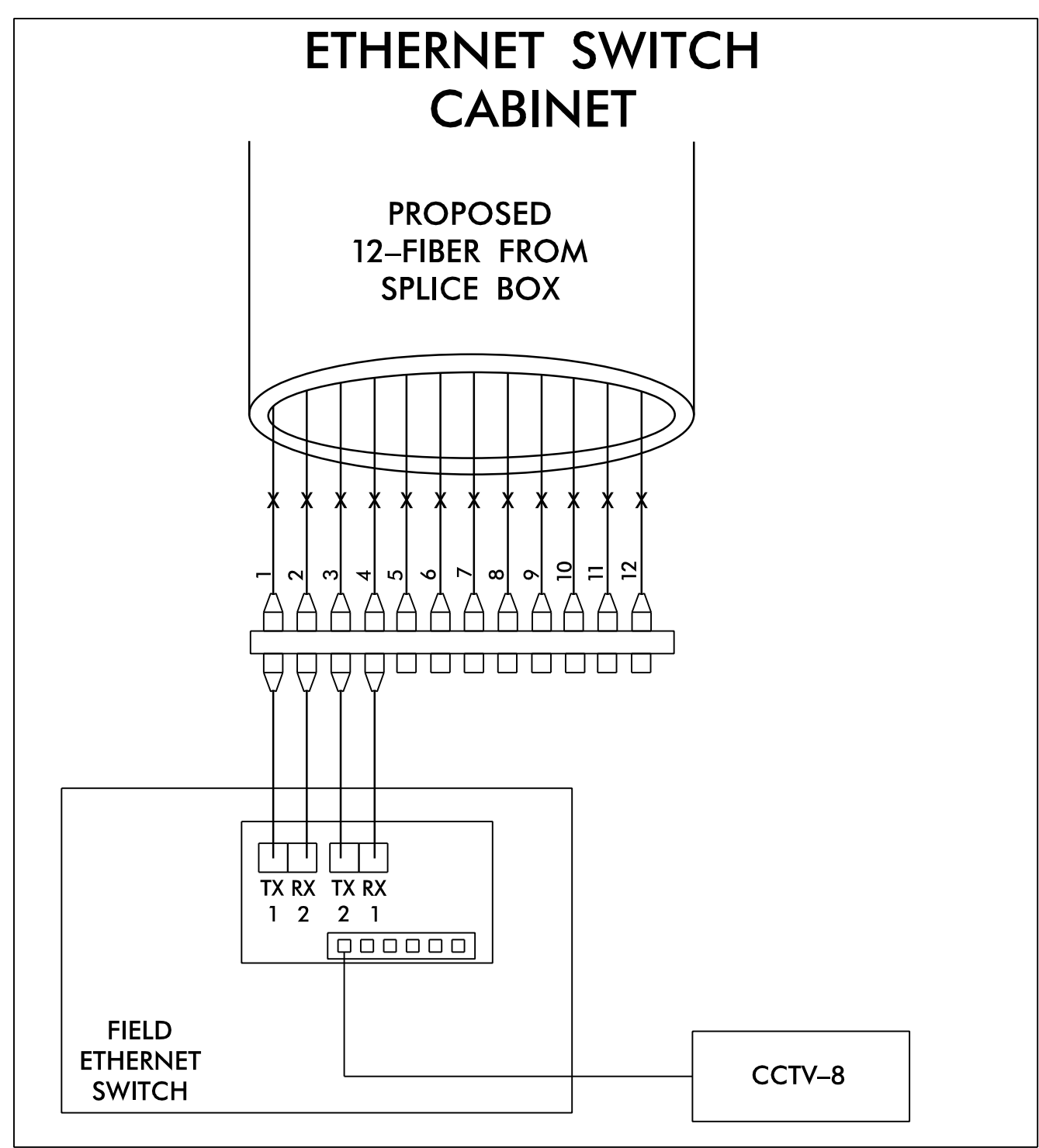
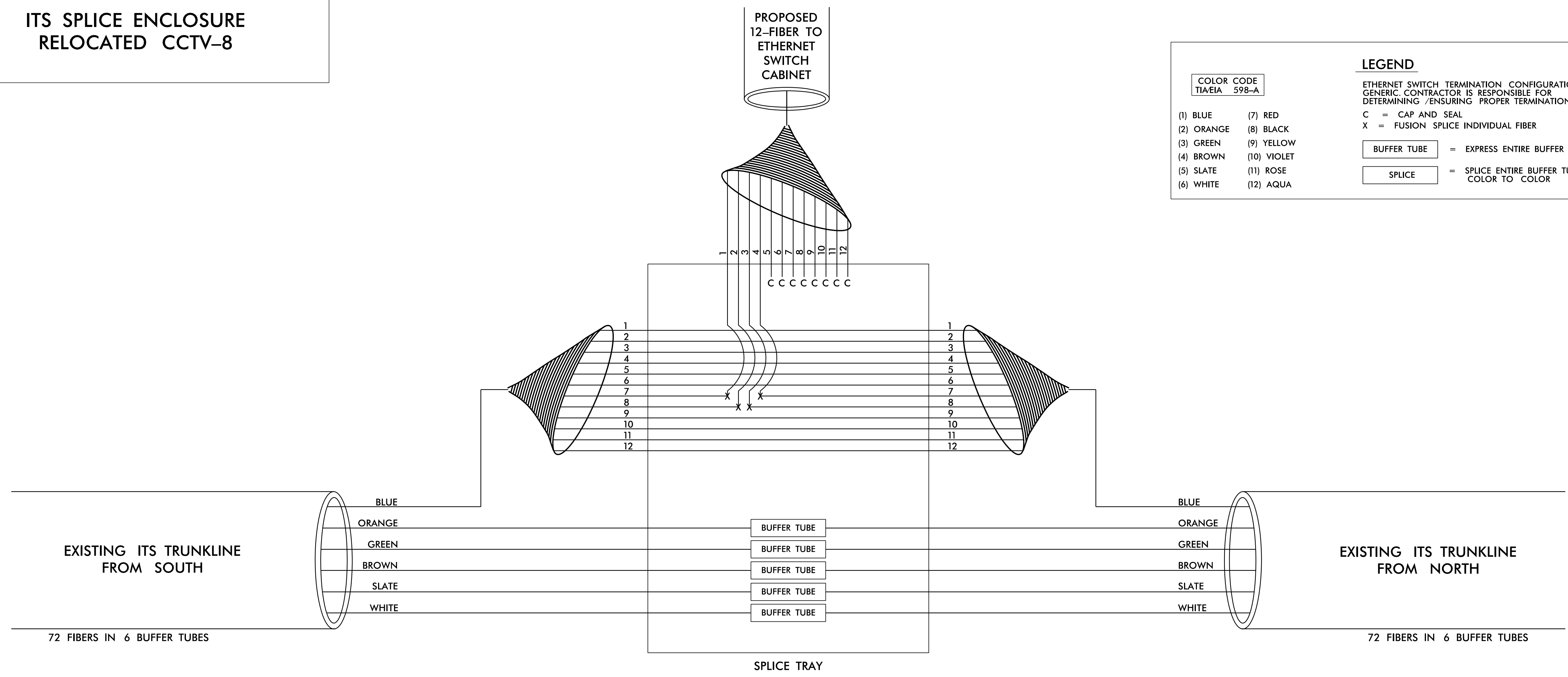
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TIA/EIA 598-A

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

### LEGEND

ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING /ENSURING PROPER TERMINATION.

- C = CAP AND SEAL
- X = FUSION SPLICE INDIVIDUAL FIBER
- BUFFER TUBE = EXPRESS ENTIRE BUFFER TUBE
- SPLICE = SPLICE ENTIRE BUFFER TUBE COLOR TO COLOR



- NOTES:
1. FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY, ACTUAL EQUIPMENT FORM MAY VARY.
  2. ORANGE, GREEN, BROWN, SLATE, AND WHITE BUFFER TUBES OF EXISTING TRUNKLINE ARE TO REMAIN INTACT.
  3. CONTRACTOR MAY PROVIDE 6-FIBER DROP CABLES IN LIEU OF 12-FIBER AND MAY PROVIDE 6-FIBER PRE-TERMINATED DROP CABLES IN LIEU OF DROP CABLES AND INTERCONNECT CENTER.

PLANS PREPARED BY :

RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

750 N. Greenfield Place, Garner, NC 27529  
SCALE: N/A

MORRISVILLE PARKWAY  
SPLICE DETAILS

DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

SEAL  
C. BYRON HOLDEN  
11/13/2017

11/13/2017 10:11:11 AM R:\Projects\ITS\5315\_ITS-sp\1\cedet011.s.dgn dseors

# FIBER OPTIC CABLE

ITS SPLICE ENCLOSURE  
CCTV-8A

PROPOSED  
12-FIBER TO  
ETHERNET  
SWITCH  
CABINET

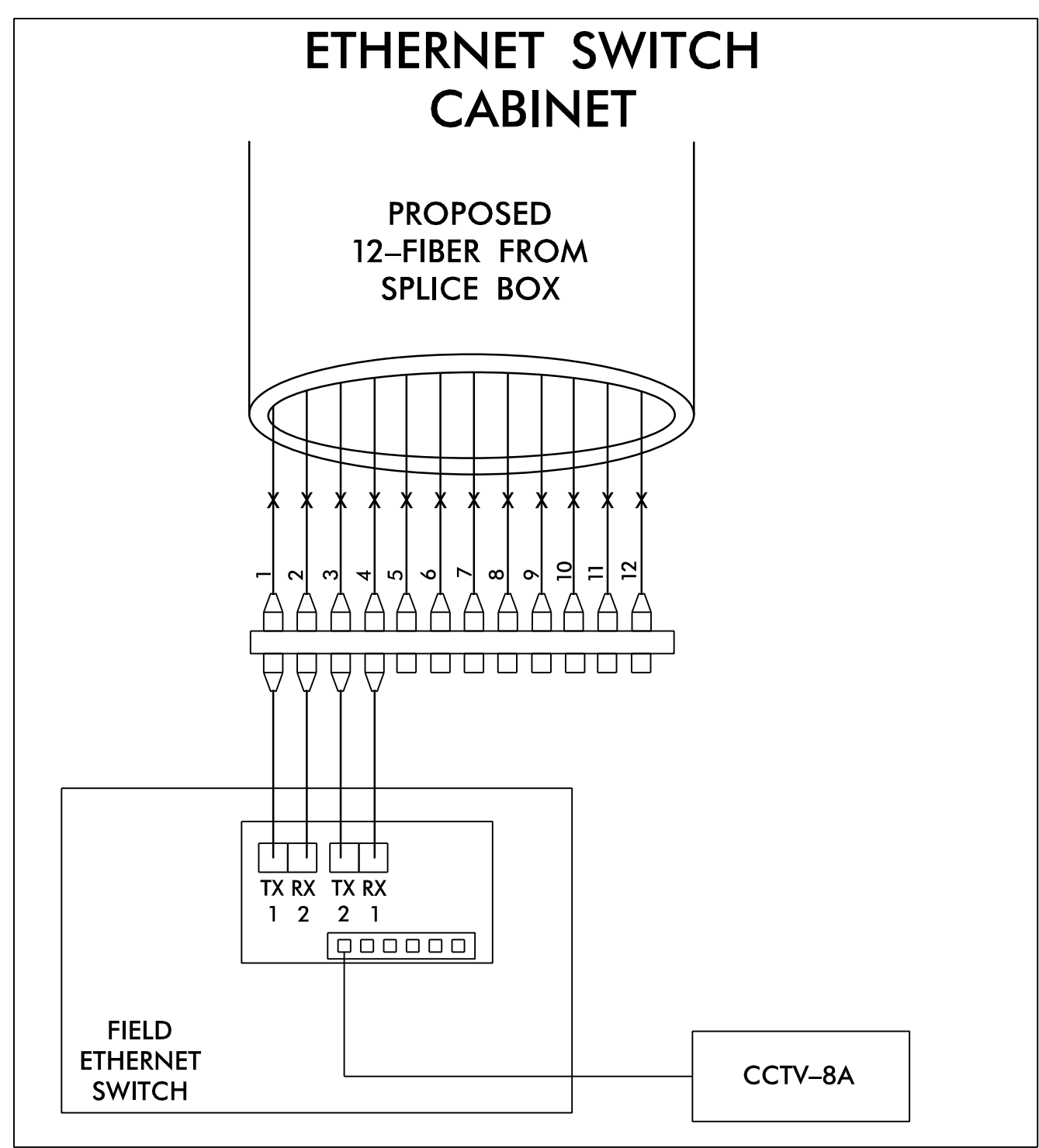
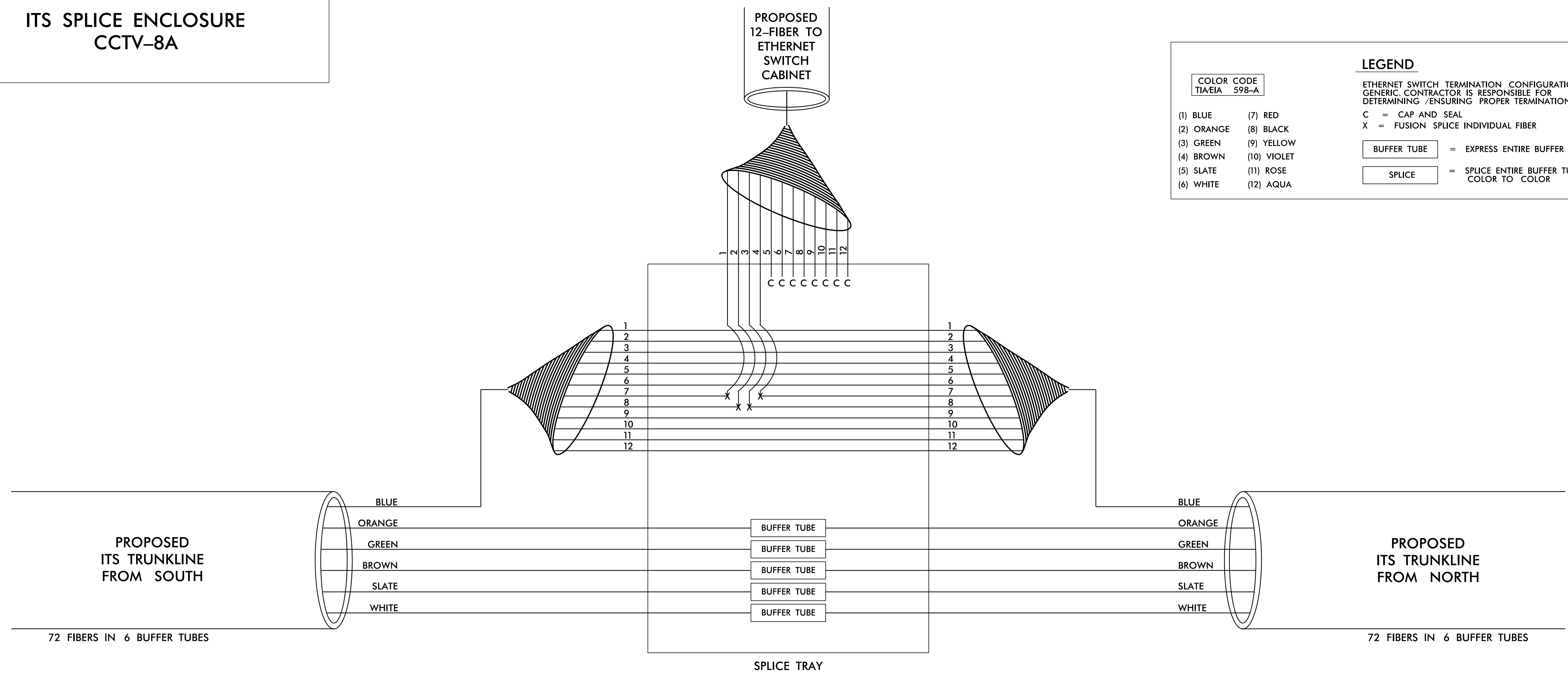
COLOR CODE  
TIA/EIA 598-A

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

### LEGEND

ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING /ENSURING PROPER TERMINATION.

- C = CAP AND SEAL  
X = FUSION SPLICE INDIVIDUAL FIBER
- BUFFER TUBE** = EXPRESS ENTIRE BUFFER TUBE
- SPLICE** = SPLICE ENTIRE BUFFER TUBE COLOR TO COLOR



### NOTES:

1. FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY, ACTUAL EQUIPMENT FORM MAY VARY.
2. CONTRACTOR MAY PROVIDE 6-FIBER DROP CABLES IN LIEU OF 12-FIBER AND MAY PROVIDE 6-FIBER PRE-TERMINATED DROP CABLES IN LIEU OF DROP CABLES AND INTERCONNECT CENTER.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY :

RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

750 N. Greenfield Place, Garner, NC 27529  
SCALE: N/A

MORRISVILLE PARKWAY  
SPLICE DETAILS

DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL

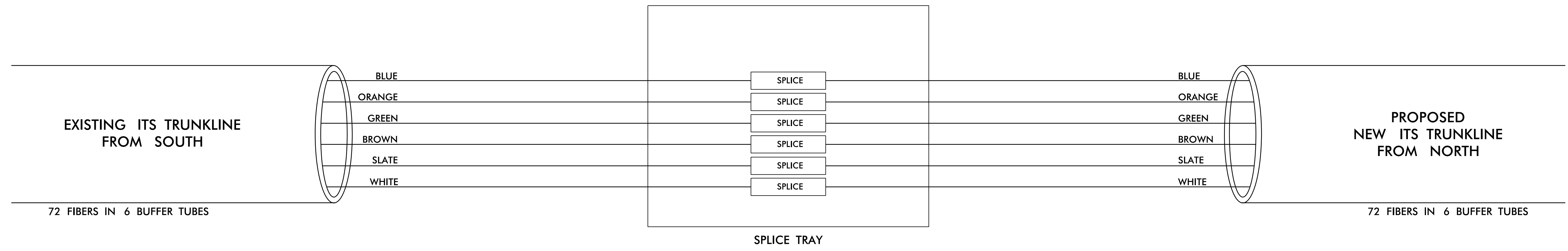
C. BYRON HOLDEN  
ENGINEER  
SEAL 033753  
DATE: 11/13/2017

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# FIBER OPTIC CABLE

ITS SPLICE ENCLOSURE  
EXISTING TRUNKLINE  
TO NEW TRUNKLINE  
-NC540- STA. 557+00 LT

<b>COLOR CODE</b> TIA/EIA 598-A		<b>LEGEND</b> ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING /ENSURING PROPER TERMINATION. C = CAP AND SEAL X = FUSION SPLICE INDIVIDUAL FIBER BUFFER TUBE = EXPRESS ENTIRE BUFFER TUBE SPLICE = SPLICE ENTIRE BUFFER TUBE COLOR TO COLOR
(1) BLUE (2) ORANGE (3) GREEN (4) BROWN (5) SLATE (6) WHITE	(7) RED (8) BLACK (9) YELLOW (10) VIOLET (11) ROSE (12) AQUA	



**NOTES:**

- FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY, ACTUAL EQUIPMENT FORM MAY VARY.

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

**PLANS PREPARED BY :**

RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

750 N. Greenfield Place, Garner, NC 27529

**MORRISVILLE PARKWAY  
SPLICE DETAILS**

DIVISION 05	WAKE COUNTY	TOWN OF CARY
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C.B. HOLDEN	
PREPARED BY: D.T. SEARS	REVIEWED BY:	
REVISIONS	INIT.	DATE

SEAL

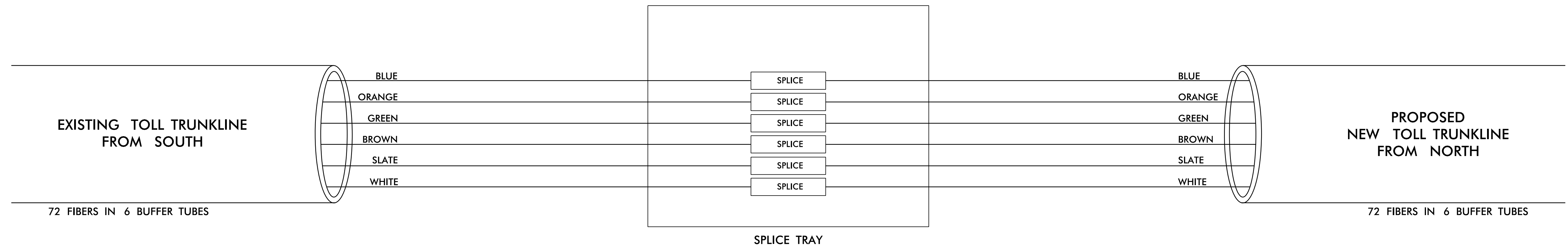
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# FIBER OPTIC CABLE

**TOLL SPLICE ENCLOSURE  
EXISTING TRUNKLINE  
TO NEW TRUNKLINE  
-NC540- STA. 557+00 LT**

<b>COLOR CODE</b> TIA/EIA 598-A		<b>LEGEND</b> ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING /ENSURING PROPER TERMINATION. C = CAP AND SEAL X = FUSION SPLICE INDIVIDUAL FIBER
(1) BLUE	(7) RED	
(2) ORANGE	(8) BLACK	<b>BUFFER TUBE</b> = EXPRESS ENTIRE BUFFER TUBE
(3) GREEN	(9) YELLOW	<b>SPLICE</b> = SPLICE ENTIRE BUFFER TUBE COLOR TO COLOR
(4) BROWN	(10) VIOLET	
(5) SLATE	(11) ROSE	
(6) WHITE	(12) AQUA	



**NOTES:**

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

**PLANS PREPARED BY :**  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
  
 750 N. Greenfield Place, Garner, NC 27529  
 SCALE: N/A

**MORRISVILLE PARKWAY  
SPLICE DETAILS**

DIVISION 05	WAKE COUNTY	TOWN OF CARY
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C.B. HOLDEN	
PREPARED BY: D.T. SEARS	REVIEWED BY:	
REVISIONS	INIT.	DATE

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 SEAL 033753  
 C. BYRON HOLDEN  
 ENGINEER  
 11/13/2017  
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TOLL SPlice ENCLOSURE  
TRUNKLINE TO  
TOLL SITE AET T16 SWITCH RACK  
-RPB- STA. 16+00 RT

# FIBER OPTIC CABLE

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

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

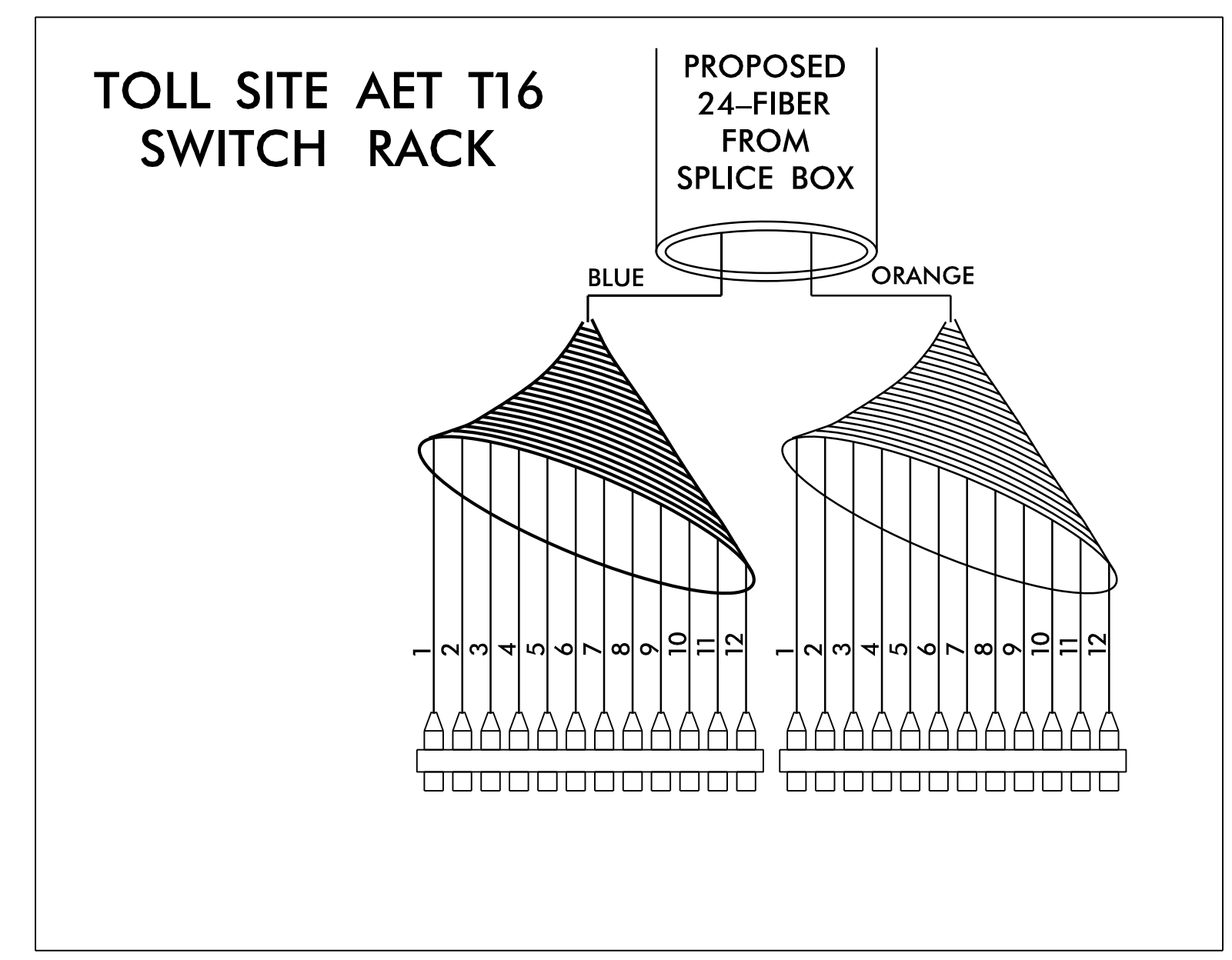
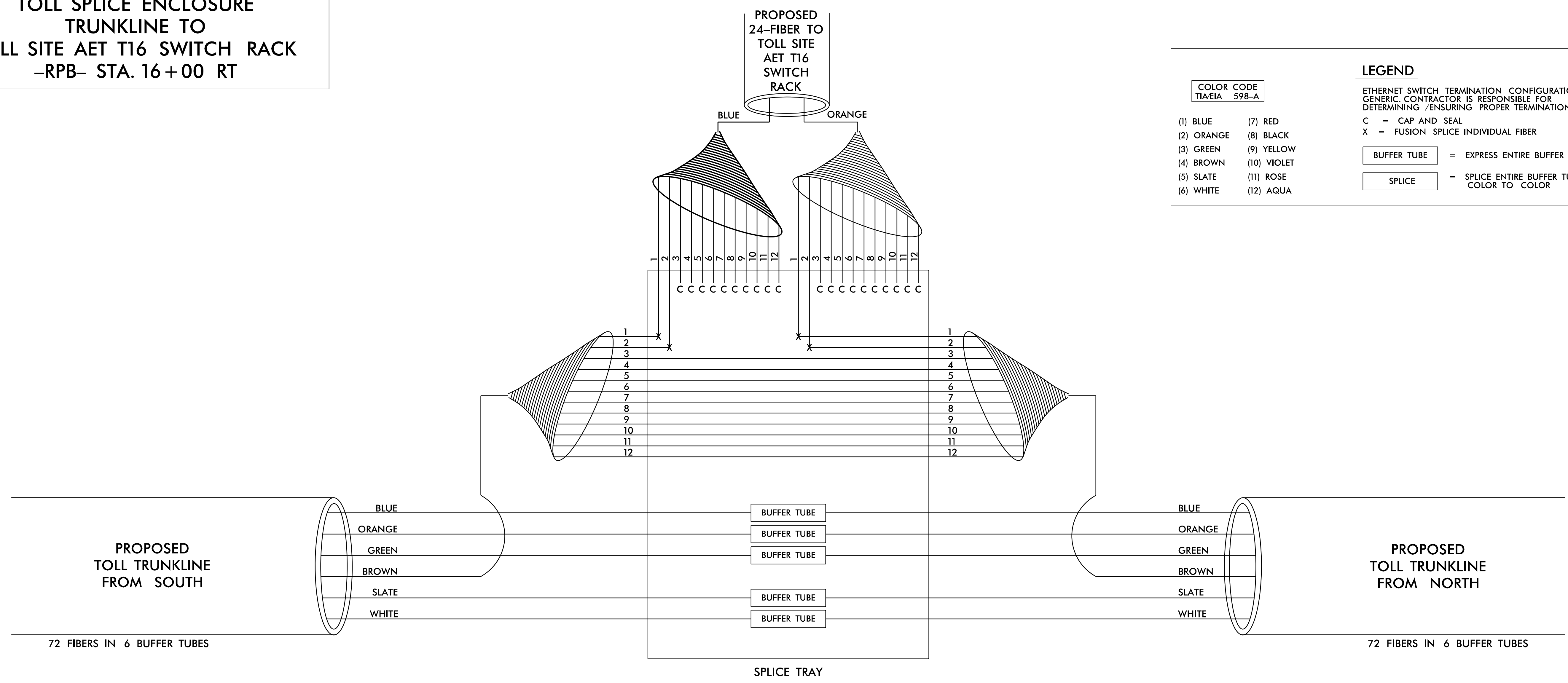
**LEGEND**

ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING /ENSURING PROPER TERMINATION.

C = CAP AND SEAL  
X = FUSION SPLICE INDIVIDUAL FIBER

**BUFFER TUBE** = EXPRESS ENTIRE BUFFER TUBE

**SPLICE** = SPLICE ENTIRE BUFFER TUBE COLOR TO COLOR



**NOTES:**

- FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY, ACTUAL EQUIPMENT FORM MAY VARY.

**PLANS PREPARED BY :**

RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:

750 N. Greenfield Place, Garner, NC 27529

SCALE: N/A

**MORRISVILLE PARKWAY SPLICE DETAILS**

DIVISION 05 WAKE COUNTY TOWN OF CARY

PLAN DATE: NOVEMBER 2017 REVIEWED BY: C.B. HOLDEN

PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL

C. BYRON HOLDEN  
ENGINEER  
11/13/2017

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ITS SPLICE ENCLOSURE  
NEW TRUNKLINE TO  
EXISTING TRUNKLINE & MVD 76  
-NC540- STA. 593+50 LT

# FIBER OPTIC CABLE

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

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

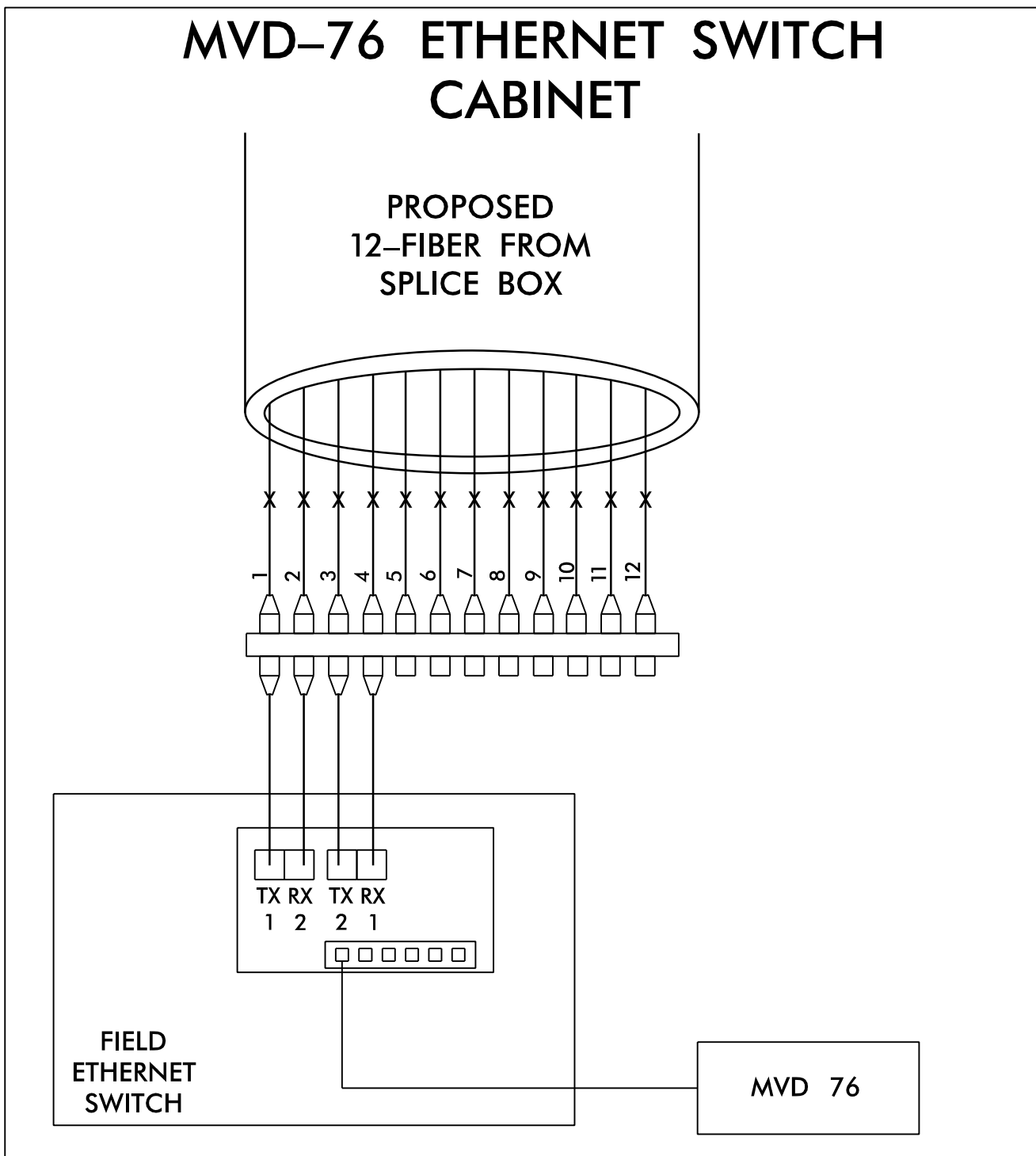
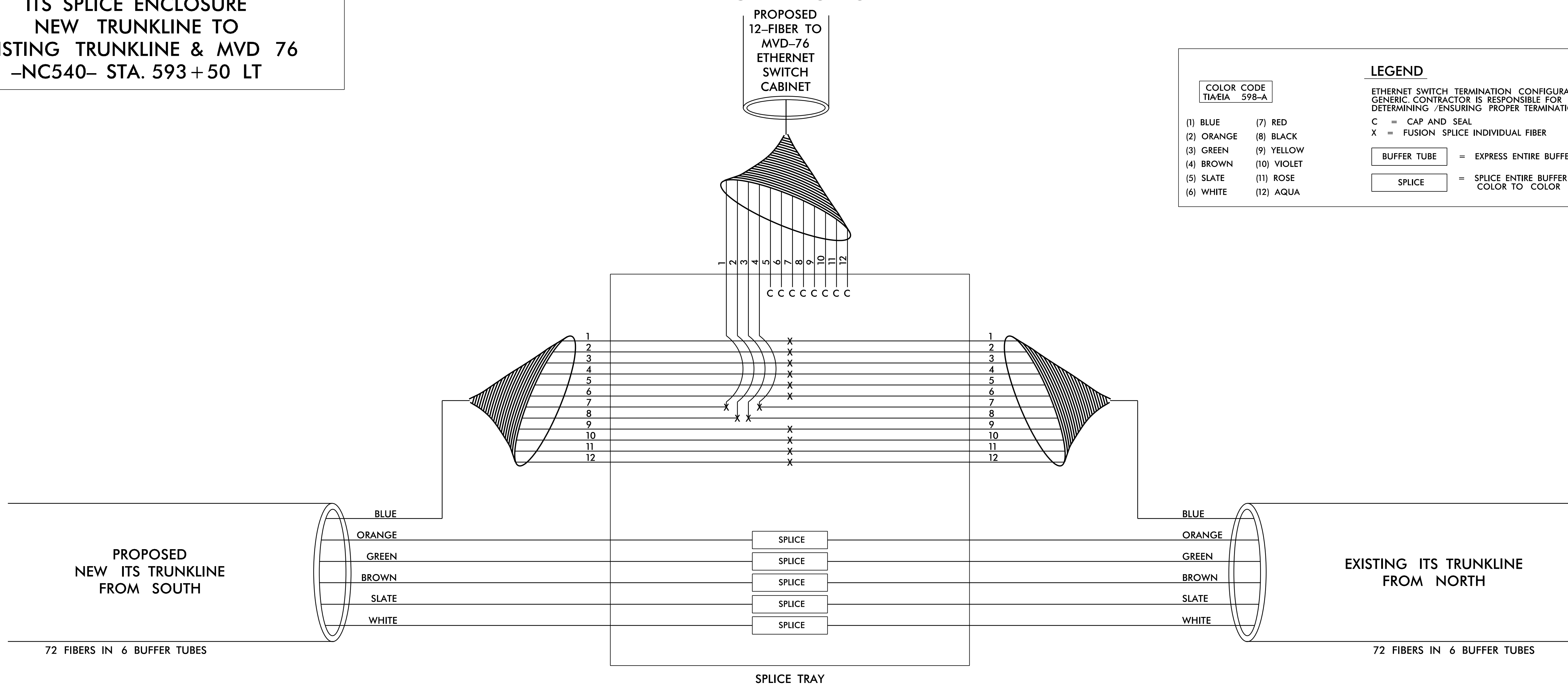
**LEGEND**

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C = CAP AND SEAL  
X = FUSION SPLICE INDIVIDUAL FIBER

**BUFFER TUBE** = EXPRESS ENTIRE BUFFER TUBE

**SPLICE** = SPLICE ENTIRE BUFFER TUBE COLOR TO COLOR



**NOTES:**

- FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY, ACTUAL EQUIPMENT FORM MAY VARY.
- CONTRACTOR MAY PROVIDE 6-FIBER DROP CABLES IN LIEU OF 12-FIBER AND MAY PROVIDE 6-FIBER PRE-TERMINATED DROP CABLES IN LIEU OF DROP CABLES AND INTERCONNECT CENTER.

**PLANS PREPARED BY :**  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
Division of Transportation  
North Carolina  
750 N. Greenfield Place, Garner, NC 27529  
SCALE: N/A

**MORRISVILLE PARKWAY SPLICE DETAILS**

DIVISION 05 WAKE COUNTY TOWN OF CARY  
PLAN DATE: DECEMBER 2017 REVIEWED BY: C.B. HOLDEN  
PREPARED BY: D.T. SEARS REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL  
NORTH CAROLINA  
PROFESSIONAL  
ENGINEER  
C. BYRON HOLDEN  
033753  
DocuSigned by:  
C. Byron Holden 2/10/2017  
DATE

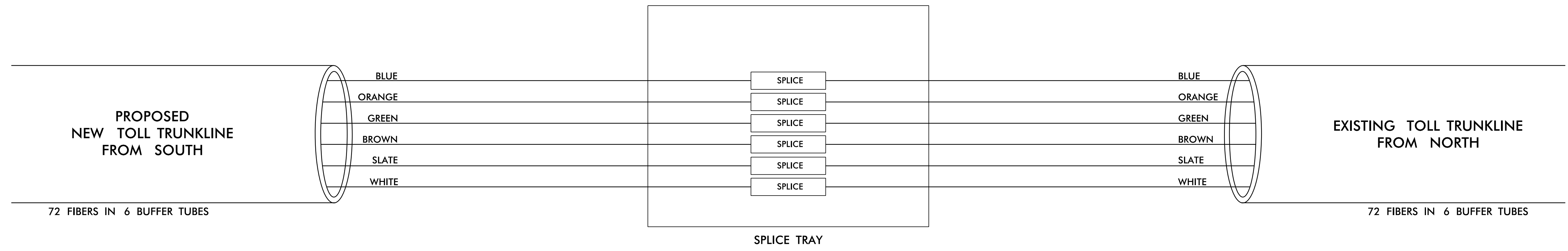
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# FIBER OPTIC CABLE

**TOLL SPLICE ENCLOSURE  
NEW TRUNKLINE TO  
EXISTING TRUNKLINE  
-NC540- STA. 593 + 50 LT**

<b>COLOR CODE</b> TIA/EIA 598-A		<b>LEGEND</b> ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING /ENSURING PROPER TERMINATION. C = CAP AND SEAL X = FUSION SPLICE INDIVIDUAL FIBER
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(3) GREEN	(9) YELLOW	<b>SPLICE</b> = SPLICE ENTIRE BUFFER TUBE COLOR TO COLOR
(4) BROWN	(10) VIOLET	
(5) SLATE	(11) ROSE	
(6) WHITE	(12) AQUA	

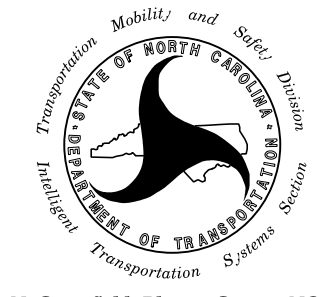


**NOTES:**

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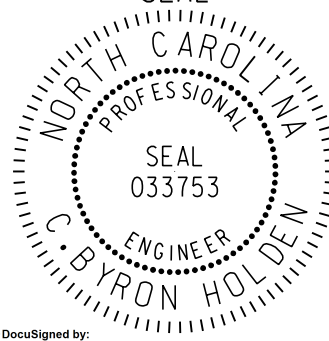
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**PLANS PREPARED BY :**  
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900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

Prepared for the Offices of:  
  
 750 N. Greenfield Place, Garner, NC 27529  
 SCALE: N/A

**MORRISVILLE PARKWAY  
SPLICE DETAILS**

DIVISION 05	WAKE COUNTY	TOWN OF CARY
PLAN DATE: NOVEMBER 2017	REVIEWED BY: C.B. HOLDEN	
PREPARED BY: D.T. SEARS	REVIEWED BY:	
REVISIONS	INIT.	DATE

SEAL  
  
 SEAL 033753  
 C. BYRON HOLDEN  
 ENGINEER  
 11/13/2017  
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